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# Re-Development Project

351 Southern Boulevard  
Albany, NY

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## TRAFFIC IMPACT STUDY

October 2017

*Prepared for:*

Diamond Retail Development, LLC  
18 Computer Dive E.  
Albany, NY 12205

*Prepared by:*



3 Winners Circle  
Albany, NY 12205

CHA File: 31452

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## 1.0 INTRODUCTION

The site at 351 Southern Boulevard in Albany, NY is being redeveloped from the former Howard Johnson's restaurant and hotel to a multi-use recreational, retail and commercial development. The proposed development includes the conversion of two existing buildings to a gym/ health club (47,283 s.f.), and the construction of a 15,600 s.f., 105 room hotel, a 4,608 s.f. convenience store with drive thru and 12 fueling stations and a 4,418 s.f. car wash, two drive thru restaurants (3,500 s.f. and 2,344 s.f.), and two retail uses (7,387 s.f. and 7,002 s.f.).

Existing site access consists of three full movement drives on Southern Boulevard; one via the signalized intersection at the NYS Police & Thruway Authority and two of them via an unsignalized access; and two full movement access drives on Mt. Hope Drive. The applicant proposes to utilize access management strategies by reducing the number of site accesses from 5 to 4. The existing signalized full movement access drive at the NYS Police & Thruway Authority will be retained and one right turn in/ right turn out only access is proposed on Southern Boulevard. Two full movement accesses are proposed on Mt. Hope Drive. See the proposed conceptual site plan in Appendix A.

Sidewalks are proposed along both of the Southern Boulevard and Mt. Hope Drive frontages and internal to the site.

Capital District Transportation Authority (CDTA) currently operates a route east on Mt. Hope Drive but they cannot circulate in both directions due to the difficulties of turning left onto Southern Boulevard without the signal. The proposed project includes a circulation plan and access between Mt. Hope Drive to the signalized access on Southern Boulevard that will allow CDTA to modify their existing route to serve Mt. Hope Drive and Southern Boulevard in both directions. The project also includes bus stops with shelters to enhance transit use.

The purpose of this report is to evaluate the potential traffic impacts of the proposed redevelopment of this site on the adjacent roadway network.

## 2.0 EXISTING CONDITIONS

### A. ADJACENT SITE AREA

The site is located across from the existing Thruway Authority Building on US Route 9W. The location of the project is shown in Exhibit 1 (Area Location Map) and in Exhibit 2 (Site Location Map). The intersections of study include the following:

1. US Route 9W (Southern Boulevard) & Existing Site Access / NYS Police & Thruway Authority
2. US Route 9W (Southern Boulevard) & Mt Hope Drive
3. US Route 9W (Southern Boulevard) & I-87 Off-Ramps
4. US Route 9W (Southern Boulevard) & I-87 On-Ramp

Exhibit 1 Area Location Map

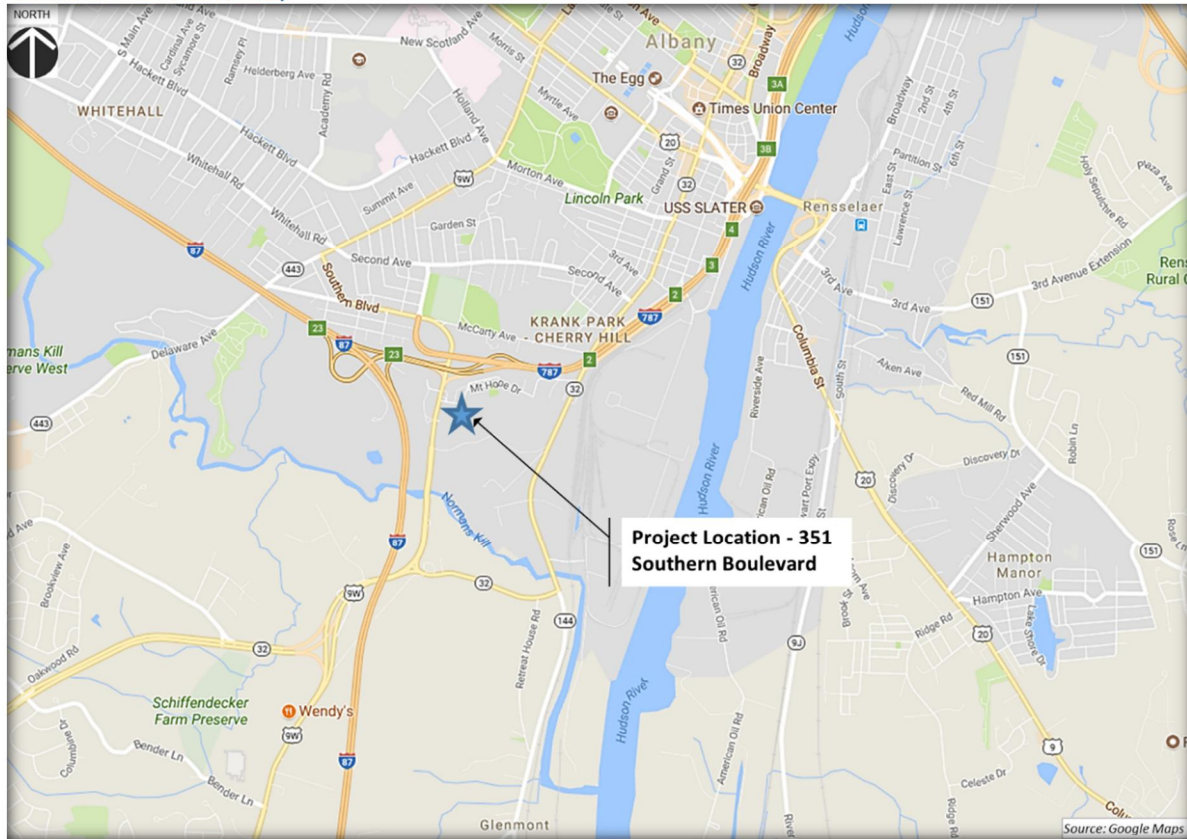


Exhibit 2 Site Location Map



## 1. Roadway Network

Southern Boulevard (US Route 9W) is a four lane north-south roadway that is classified as an urban principal arterial and is under the New York State Department of Transportation's jurisdiction. The roadway generally features two travel lanes and shoulders in each direction with a two-way left turn lane (TWLTL). Southern Boulevard has a posted speed limit of 30 miles per hour (mph). There are no separate pedestrians or bicycle facilities along Southern Boulevard.

Mt. Hope Drive is generally a two lane east-west roadway that extends between Southern Boulevard and S. Pearl Street (NYS Route 32). It is an urban local roadway with a posted speed limit of 30 mph and is under the City of Albany's jurisdiction. Mt. Hope Drive provides access to both retail/commercial uses as well as residential uses east of the project site. There are no separate pedestrians or bicycle facilities along Southern Boulevard.

## 2. Transit

Transit service in the study area is provided by the Capital District Transportation Authority (CDTA). CDTA currently operates a route (6) east on Mt. Hope Drive but they cannot circulate in both directions due to the difficulties of turning left from Mt. Hope Drive onto Southern Boulevard without a signal. Bus Route 6 from Glenmont to Albany, operates on the weekdays from 6 am to 12 am, on Saturdays from 7 am to 10:50 pm and on Sundays from 8:41 am to 7:10 pm.

A bus stop exists on the east side of the Southern Boulevard & New York State Thruway Authority intersection on the northbound approach (Bus Stop 719) and on the west side of the southbound approach (Bus Stop 719). A bus stop (stops 7 and 116) exists in the eastbound direction of Mt. Hope Drive just east of the Sunoco gas station, with several additional stops along the length of Mt. Hope Drive; none of which have bus shelters or bus turnouts.

## 3. Study Intersections

The proposed site consists of one full access driveway on Southern Boulevard, a right turn in / right turn out only driveway on Southern Boulevard, and two full access drives on Mt. Hope Drive. Based on the proposed accesses and redevelopment of the site, four intersections, as discussed below, were included in the study.

*Southern Boulevard & Existing Site Access / NYS Police & Thruway Authority* intersect at a 4-way signalized intersection. The Southern Boulevard northbound approach consists of an exclusive left-turn lane, an exclusive through lane and a shared through / right-turn lane. The Southern Boulevard southbound approach consists of an exclusive left turn lane, an exclusive through lane and a shared through / right-turn lane. The NYS Police / Thruway Authority eastbound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The existing site access westbound approach consists of a shared left-turn / through /right-turn lane. Currently, access to the existing site is blocked by concrete barrier. Upon redevelopment of the site, the site access will be reopened with two-way access. A bus stop exists on the east side of the northbound approach (Bus Stop 719) and the west side of the southbound approach (Bus Stop 719). A crosswalk and pedestrian pushbuttons exist to cross the north leg of the intersection. All approaches operate under permitted phasing.

*Southern Boulevard & I-87 Off-Ramp at Exit 23* intersects at a signalized "T" intersection. The Southern Boulevard northbound approach consists of two exclusive through lanes. The Southern Boulevard

southbound approach also consists of two exclusive through lanes. The I-87 Off-Ramp westbound approach consists of an exclusive left turn lane and a channelized right turn lane that is yield controlled. There are no crosswalks or pedestrian facilities at this intersection. All approaches operate with permitted phasing. This intersection is coordinated with the Southern Boulevard I-87 On- Ramp.

*Southern Boulevard & I-87 On-Ramp at Exit 23* intersect at a signalized "T" intersection. The Southern Boulevard northbound approach consists of a shared left-turn / through lane and an exclusive through lane. The Southern Boulevard southbound approach consists of an exclusive through lane and a shared through / right-turn lane. The west leg is a one-way westbound approach to I-87. There are no crosswalks or pedestrian facilities at this intersection. The northbound approach consists of permitted/ protected phasing. This intersection is coordinated with the Southern Boulevard & I-87 Off-Ramp intersection.

Southern Boulevard & Mt. Hope Drive intersect at an unsignalized "T" intersection. Mt. Hope Drive is the stop controlled approach to the intersection. The Southern Boulevard southbound approach consists of two exclusive through lanes and a TWLTL. The Southern Boulevard northbound approach consists of one exclusive through lane and a shared through / right-turn lane with a TWLTL. The Mt. Hope Drive westbound approach consists of a shared left-turn/ through/ right-turn lane. At its intersection with Southern Boulevard, the approach widens (flares) such that it can accommodate two vehicles side by side. There are no crosswalks or pedestrian facilities at this intersection. A bus stop (stop 7 and 116) exists in the eastbound direction just east of the Sunoco gas station, with several additional stops along the length of Mt. Hope Drive.

## B. TRAFFIC VOLUMES

To analyze traffic operations in the vicinity of the project, it was first necessary to determine the time period during which the combined effect of the proposed project traffic and external (background) traffic would have the greatest effect on the roadway system. Based upon a review of typical generating characteristics of the proposed development, and given the amount of commuter traffic in the area, the weekday AM and PM peak hour and the Saturday midday peak hours of adjacent street traffic were determined to be critical with respect to overall traffic operations for this development. The weekday AM, weekday PM and Saturday peak hours are analyzed in detail in this report.

Traffic volume data was compiled from a field data collection program. Manual Turning Movement Counts were conducted at the 4 study area intersections on Saturday, September 9, 2017 during the midday peak period (11 AM–1 PM) and on Wednesday, September 20, 2017 during the weekday AM peak period (7-9 AM) and the weekday PM peak period (3-6 PM). The counts were recorded at 15-minute increments with all counts classified as either passenger cars, medium trucks or heavy trucks. Pedestrian and bicycle counts were also recorded at the intersections concurrently with the vehicle counts. The four highest consecutive 15-minute intervals during each of these count periods constitute the peak hours that are the basis of the traffic analysis provided in this report. Appendix C contains the turning movement count data.

To determine the existing hourly traffic volumes for the current year based on the traffic count data collected, seasonal variation data from NYSDOT was reviewed for September. This data, which is calculated for various categories of roadway, provides adjustment factors that can be used to convert data collected in any specific month to an average value that would be present in a typical month of the year. Reviewing these factors revealed that the combined (full week) traffic data collection is higher than the average condition. Therefore, to be conservative, no seasonal adjustment factor was applied.

The existing traffic volumes were balanced between the following intersections:

- Southern Boulevard & Existing Site Access 1 / NYS Police & Thruway Authority and Southern Boulevard & Mt. Hope Drive
- Southern Boulevard & I-87 off-ramps and the Southern Boulevard & I-87 on-ramp.

The weekday peak hours were generally from 7:30 am to 8:30 am and 4:30 pm to 5:30 pm and the Saturday peak hour was from 11:30 am to 12:30 pm. Table 1 summarizes the traffic data. The 2017 Existing peak hour traffic volume is shown in Figure 1 in Appendix B.

Table 1 Existing Traffic Data

Intersection	Intersection Peak Hour	Peak Hour Intersection Volume		
		Vehicular	Pedestrians / Bicyclists	% Trucks
Southern Boulevard & Existing Site Access/ NYS Police	AM	2,962	3	7%
	PM	2,815	0	4%
	Saturday	1,911	0	3%
Southern Boulevard & I-87 Off-Ramps	AM	2,306	1	7%
	PM	2,425	0	3%
	Saturday	1,590	0	2%
Southern Boulevard & I-87 On-Ramp	AM	2,204	0	6%
	PM	2,520	0	2%
	Saturday	1,508	0	2%
Southern Boulevard & Mt. Hope Drive	AM	3,011	0	7%
	PM	2,760	0	4%
	Saturday	1,950	0	3%

The data indicates that the weekday AM and PM peak hours are the critical hours due to the higher traffic volumes and the percentage of heavy truck traffic during these hours. The data also shows that there is minimal pedestrian and bicycle movements in the area.

Although traffic counts were not performed at the two existing intersections on Mt. Hope Drive, the traffic volumes were extrapolated using the turning movement volume data and the recorded data at the Southern Boulevard & Mt. Hope Drive intersection.

### C. ACCIDENT ANALYSIS

Accident data was obtained from NYSDOT for the period from January 1, 2014 to August 31, 2017 (the most recent available data) for Southern Boulevard from Kenwood Road (9W11052002) to the McCarty Avenue & OGS Parking lot (9W11052007). The accident data showed a total of 99 accidents reported to have occurred within this area. The accident rate for the entire area was reported by NYSDOT as 4.23 accidents per million vehicle miles. The statewide average accident rate for similar facilities is 5.5 accidents per million vehicle miles. This analysis indicates that although there was a high number of accidents, the study area is below the statewide average rate for similar facilities.



Southern Boulevard, from mile marker 9W11052003 and 9W11052004, is a Priority Investigation Location based upon the accidents during the period of January 2015 and December 2016. The segment of Southern Boulevard between Kenwood Road (9W11052002) and Noonan Road (9W11052004) was also identified as a specialty high accident location (HAL) as a result of the number of accidents that occurred due to snow/ice / slush road.

Tables 2 and 3 below summarizes the accident severity for the intersections and links, respectively. Tables 4 and 5 summarizes the accidents by type for the intersections and links, respectively.

Table 2 Intersection Severity

Intersection	Intersection #	Fatality	Injury	Property Damage Only	Non-Reportable	Total	Total (%)
Southern Boulevard & Existing Site Access / NYS Police & Thruway Authority	85	0	0	0	5	5	9%
Southern Boulevard & Mt Hope Drive	37	0	1	2	0	3	5%
Southern Boulevard & Noonan Road	38	0	0	0	1	1	2%
Southern Boulevard & I787 Ramp	91	0	0	0	1	1	2%
Southern Boulevard & I-87 Off-Ramp Southbound	92	0	2	9	6	17	29%
Southern Boulevard & I-87 Off-Ramps Northbound	90	0	1	2	5	8	13%
Southern Boulevard & I-87 On-Ramps	93	0	2	1	2	5	9%
Southern Boulevard & McCarty Ave / OGS Parking Lot	81	0	2	9	7	18	31%
Total		0	8	23	27	58	100%
Total (%)		0%	13%	40%	47%	100%	

The accident data showed that the majority of the accidents (47% intersection and 51% link) were non-reportable accidents.

Table 3 Link Severity

Link	Between Reference #'s (9W1105 XXXX - 9W1105 YYYY)	Fatality	Injury	Property Damage Only	Non-Reportable	Total	Total (%)
Kenwood Road to Existing Site Access / NYS Police & Thruway Authority	2002 - 2003	0	3	5	4	12	29%
Existing Site Access / NYS Police & Thruway Authority to Mt. Hope Dr.	2003-2004	0	1	8	11	20	49%
Noonan to northbound ramp to I787 northbound	2004-2005	0	1	0	3	4	10%
Northbound ramp from Thruway Exit 23 to NB & SB ramp to Thruway Exit 23	2005-2006	0	0	2	1	3	7%
NB & SB ramp to Thruway Exit 23 to McCarty Ave/ OGS Parking Lot	2006-2007	0	0	0	2	2	5%
<b>Total</b>		<b>0</b>	<b>5</b>	<b>15</b>	<b>21</b>	<b>41</b>	
<b>Total (%)</b>		<b>0%</b>	<b>12%</b>	<b>37%</b>	<b>51%</b>	<b>100%</b>	

Table 4 Accident Type - Intersection

Intersection	Intersection #	Head On	Right Angle	Rear End	Left Turn	Fixed Object	Overtake	Side-swipe	Ped / Bike	Backing	Unk. / Other	Total	Total (%)
Southern Boulevard & Existing Site Access / NYS Police & Thruway Authority	85	0	0	5	0	0	0	0	0	0	0	5	9%
Southern Boulevard & Mt Hope Drive	37	0	1	0	2	0	0	0	0	0	0	3	5%
Southern Boulevard & Noonan Road	38	0	1	0	0	0	0	0	0	0	0	1	2%
Southern Boulevard & I787 Ramp	91	0	0	0	0	0	1	0	0	0	0	1	2%
Southern Boulevard & I-87 Off-Ramp Southbound	92	0	0	16	0	0	0	0	0	0	1	17	29%
Southern Boulevard & I-87 Off-Ramps Northbound	90	0	0	8	0	0	0	0	0	0	0	8	13%
Southern Boulevard & I-87 On-Ramps	93	0	0	5	0	0	0	0	0	0	0	5	9%
Southern Boulevard & McCarty Ave / OGS Parking Lot	81	0	1	12	2	0	2	0	0	0	1	18	31%
<b>Total</b>		<b>0</b>	<b>3</b>	<b>46</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>58</b>	<b>100%</b>
<b>Total (%)</b>		<b>0%</b>	<b>5%</b>	<b>80%</b>	<b>7%</b>	<b>0%</b>	<b>5%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>3%</b>	<b>100%</b>	

The Southern Boulevard & Existing Site Access 1 / NYS Police & Thruway Authority and the Southern Boulevard & Mt. Hope Drive intersections will experience the greatest volume of traffic from this proposed project. The accident data revealed that 9% of the total accidents occurred at the Southern Boulevard & Existing Site Access 1 / NYS Police & Thruway Authority; all of which were rear-end non-reportable accidents. Two occurred in the north direction, 2 occurred in the south direction and 1 occurred in the west direction. Five (5%) percent of the total accidents occurred at the Southern Boulevard / Mt. Hope Dr. intersection; two of which were left-turn accidents and 1 was a right turn accident.

Further review of the intersection accidents at these two locations shows that a) 2 accidents occurred in 2014, b) 3 occurred in 2015, c) 1 occurred in 2016, and d) 2 occurred in 2017.

Table 5 Accident Type - Link

Link	Between Reference #'s (9W1105 XXXX - 9W1105 YYYY)	Head On	Right Angle	Rear End	Left Turn	Fixed Object	Overtake	Sideswipe	Pedestrian/ Bike	Backing	Other (Unknown)	Total	
Kenwood Road to Existing Site Access / NYS Police & Thruway Authority	2002 - 2003	0	0	9	0	0	2	0	0	0	1	12	29%
Existing Site Access / NYS Police & Thruway Authority to Mt. Hope Dr.	2003- 2004	0	1	5	2	0	8	0	0	0	4	20	49%
Noonan to northbound ramp to I787 northbound	2004- 2005	0	0	2	0	0	2	0	0	0	0	4	10%
Northbound ramp from Thruway Exit 23 to NB & SB ramp to Thruway Exit 23	2005- 2006	0	0	1	0	1	1	0	0	0	0	3	7%
NB & SB ramp to Thruway Exit 23 to McCarty Ave/ OGS Parking Lot	2006- 2007	0	0	1	0	0	1	0	0	0	0	2	5%
Total		0	1	18	2	1	14	0	0	0	5	41	
Total (%)		0%	2%	44%	5%	2%	35%	0%	0%	0%	12%	100%	

The predominate accident type (intersection and link) for all of the corridor accidents was rear-end accidents. A high occurrence of rear end accidents typically correlates to traffic congestion where vehicles are in stop and go traffic and/or reaching the end of forming queues. Contributing factors of failing to yield right-of-way, traffic control disregarded, driver inattention and following too closely were identified.

### 3.0 NO-BUILD TRAFFIC VOLUMES

In order to assess the traffic impacts associated with the proposed development, it is first necessary to estimate the traffic volumes on the adjacent roadways for the future condition without the project (No-Build Condition) and then apply the traffic generated from the proposed project to obtain the future conditions with the project (Build Condition).

#### A. BACKGROUND GROWTH

Whether or not the project is built, it is assumed that background growth and development unrelated to the project will affect street operations within the study area. The project has an estimated time of completion date of late 2018 for the project. To be conservative, 2019 No-Build conditions were analyzed.

A review of the historical traffic volume data and estimates of volumes on Southern Boulevard compiled from NYSDOT for the period between 2001 and 2015 indicates that the volumes on Southern Boulevard in the immediate vicinity of the project have decreased annually by approximately 2.5% over the last 11 years. For the purposes of this study, a conservative annual growth rate of 0.5% per year was applied to adjust the 2017 existing volumes to 2019. As such, the analysis will represent conservative conditions.

#### B. OTHER SPECIFIC PROJECTS

According to the City of Albany, there are no other developments currently proposed and approved in the vicinity of this project that should be included in this analysis.

#### C. NO-BUILD CONDITIONS

The 2019 No-Build conditions were developed by applying the 0.5% per year growth rate to the 2017 Existing weekday AM and PM and the Saturday peak hour volumes, which are shown on Figure 2 in Appendix B.

## 4.0 BUILD TRAFFIC VOLUMES

The project includes the following:

- Health / Fitness club - 47,283 s.f. (this is the result of converting the two existing interconnected tennis club buildings)
- Hotel - 105 room, 15,600 s.f. building
- Two retail uses - 7,387 s.f and 7,002 s.f.
- Convenience market with drive thru and gasoline pumps – 4,608 s.f. with 12 fueling positions
- Drive thru restaurant - 3,500 s.f.
- Drive Thru coffee/ donut shop - 2,344 s.f.
- Automated car wash - 4,418 s.f.

### A. TRIP GENERATION

Trip generation determines the quantity of traffic expected to travel to/from the project site. The Institute of Transportation Engineers (ITE) *Trip Generation Manual*, ninth edition, is the industry standard for determining trip generation for various land uses. The ITE provides trip generation information on the various uses proposed for redevelopment of the existing site. Therefore, the site generated trips were estimated for the weekday AM and PM and the Saturday midday peak hours based on the following ITE Lane Use Codes (LUC's):

- LUC 310: Hotel
- LUC 492: Health / Fitness Club
- LUC 826: Specialty Retail
- LUC 853: Convenience Market with Gasoline Pumps
- LUC 934: Fast Food Restaurant with Drive-Through Window
- LUC 937: Coffee/ Donut Shop
- LUC 948: Automated Car Wash

Site trips generated by the proposed development can be divided into two categories; Primary (new) trips and pass-by trips. Primary trips represent motorists whose primary destination is within the zone and travel along the adjacent road is not linked to additional purposes. Pass-by trips are secondary trips that are attracted from traffic passing the site on an adjacent street that offers direct access to the generator.

The ITE provides trip generation to be calculated by various independent variables, such as square foot, number of rooms, number of pumps, etc., depending on the type of land use. The building s.f. was used to calculate trip generation for all of the land uses except the hotel which was based on the number of rooms. Table 6 summarizes the variable that was used to determine the total trips for each of the land uses as well as the average pass-by trip credit that was applied. See Table 6 for the trip generation for the project.

The ITE *Trip Generation Handbook, 3<sup>rd</sup> Edition* is the industry standard that provides pass-by trip rates for various land uses. The following pass-by trip rates were estimated for the development based on the ITE information and engineering experience/judgement:

- Retail: 25% pass-by trips
- Convenience market with gasoline pumps: 65%
- Fast food restaurant with drive-through window: 50%
- Coffee/Donut Shop: 60% pass-by trips

Hotels, health / fitness clubs and automated car wash uses do not typically generate pass-by trips and therefore, no credit was applied. The pass-by credit used for each of the other uses was the average pass-by credit. See Table 6 for the pass-by trip generation rates for the project.

Internal capture is another trip generation concept, which is related to travel within the development. ITE has limited information pertaining to this effect, but what information does exist shows that the interaction between the proposed uses would be similar to the daily variation in traffic volume. Therefore, the trip generation estimates for the Build condition did not consider a trip reduction for these types of trips.

Table 6 Trip Generation (Peak Hour Trips)

Land Use	LUC	Variable	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
<b>TOTAL TRIPS</b>											
Hotel	310	105 rooms	33	23	56	32	31	63	43	34	77
Health/Fitness Club	492	47,283 s.f.	34	33	67	95	72	167	59	73	132
Specialty Retail <sup>1</sup>	826	14,389 s.f	NA	NA	NA	25	31	56	36	34	70
Convenience Market with Gasoline Pumps	853	4,608 s.f	95	94	189	118	117	235	108	104	212
Fast Food Restaurant with Drive-Thru Window <sup>1</sup>	934	3,500 s.f	NA	NA	NA	86	80	166	106	101	207
Coffee/Donut Shop	937	2,344 s.f	120	116	236	50	50	100	100	99	199
Automated Car Wash	948	4,418 s.f	0	0	0	31	31	62	31	31	62
<b>Subtotal</b>			<b>282</b>	<b>266</b>	<b>548</b>	<b>437</b>	<b>412</b>	<b>849</b>	<b>483</b>	<b>476</b>	<b>959</b>
<b>PASS-BY TRIPS</b>											
Retail-25%	826		NA	NA	NA	-6	-8	-14	-10	-8	-18
Convenience Market-65%	853		-62	-61	-123	-77	-76	-153	-70	-68	-138
Restaurant-50%	934		NA	NA	NA	-43	-40	-83	-53	-51	-104
Coffee/Donut - 60%	937		-72	-70	-142	-30	-30	-60	-60	-60	-120
<b>Subtotal</b>			<b>-134</b>	<b>-131</b>	<b>-265</b>	<b>-156</b>	<b>-154</b>	<b>-310</b>	<b>-193</b>	<b>-187</b>	<b>-380</b>
<b>Total Primary (New) Trips</b>			<b>148</b>	<b>135</b>	<b>283</b>	<b>281</b>	<b>258</b>	<b>539</b>	<b>290</b>	<b>289</b>	<b>579</b>

<sup>1</sup> The proposed fast food restaurant and the specialty retail are uses that would not be open during the AM peak period. Therefore, there would be no AM peak hour trips associated with these uses.

Table 6 shows that the total site generated trips from the proposed development were estimated to be 548 trips during the AM, 849 trips during the PM and 959 trips during the Saturday midday peak periods. A trip end is equal to one entering trip or one exiting trip. Utilizing the individual pass-by rates for those uses that pass-by credit applies, results in approximately 49% of the AM and 35–40% of the total trips during each of the weekday PM and Saturday peak hour being pass-by trips. As indicated in Table 6, the proposed project could generate approximately 283 net new vehicle trips during the weekday AM peak hour, 539 net new trips during the weekday PM peak hour and 579 net new trips during the Saturday midday peak hour; assuming 100% of the traffic is by vehicle with no credit applied for transit use or for trips associated with the interaction between the onsite proposed uses. Thus, this is a conservative analysis of the traffic operations to the study area.

CDTA bus stops are proposed internal to the site and with the construction of the internal roadway that provides access between Mt. Hope Drive and the signal on Southern Boulevard, CDTA will revise their route to permit travel in both directions. While the development is expected to generate significant new transit ridership as noted by CDTA, given the limited ITE data for the above uses, the trip generation estimates were not reduced to account for the potential transit use.

## B. SITE TRIP DISTRIBUTION

The existing weekday AM, weekday PM and Saturday peak hour traffic volumes to / from the project area intersections were used as the basis for developing the arrival / departure percentages, which were used for assigning the primary and pass-by trips to each site driveway.

This distribution for new primary trips is as follows:

- To/From the South on US Route 9W: 45%
- To/From the West on I-87: 22%
- To/From the East on I-787: 25%
- To/From the North on US Route 9W: 7%
- To/From the East on Mt. Hope Drive: 1%

The net new trips were added to the roadway network based on the trip distribution pattern noted above which best matches existing overall travel patterns. The trip distribution percentages for the primary (new) trips is shown in Figure 3 in Appendix B. The distribution of pass-by trips is also based on the existing traffic patterns. However, as the pass-by trips are more dependent on the customer's ultimate direction of travel, separate pass-by trip distributions were used. Figure 4 in Appendix B shows the pass-by trip distributions percentages for the weekday AM peak hour, weekday PM peak hour and Saturday peak hour. The turning movement assignments of the net new site traffic to the study area roadways for the weekday AM, weekday PM, and Saturday peak hours are shown in Figure 5 in Appendix B, respectively. The pass-by trip assignments for the weekday AM, weekday PM, and Saturday peak hours are shown in Figure 6 in Appendix B.

## C. FUTURE BUILD VOLUMES

The site generated traffic was combined with the 2019 No-Build volumes to represent the estimated future volume conditions for the site. The 2019 Build volumes are shown in Figure 7 in Appendix B for the weekday AM, weekday PM, and Saturday peak hours.

## 5.0 TRAFFIC OPERATIONS ANALYSIS

The operating conditions of transportation facilities are evaluated based on the relationship of existing or projected traffic volumes to the theoretical capacity of the highway. Various factors affect highway capacity, including traffic volume, speed, roadway geometry, grade, number and width of travel lanes and intersection control. The current standards for evaluating capacity and operating conditions are contained in the Highway Capacity Manual (HCM 2010), published by the Transportation Research Board (TRB). The procedures describe operating conditions in terms of Level of Service (LOS). In general, LOS "A" represents the best operating conditions and LOS "F" represents the worst.

To determine existing traffic operating conditions, a capacity analysis was performed using SYNCHRO 10, and in accordance with the TRB HCM 2000 for signalized intersections, since the HCM 2010 does not support operations for the phasing and lane assignment of the signalized intersections, and the HCM 2010 for the unsignalized intersections.

### A. LEVEL OF SERVICE CRITERIA

The HCM methodology for unsignalized intersections generally assumes that major street traffic is not affected by minor street flows. Left turns from the major street are assumed to be affected by opposing, or oncoming, major street flow. Minor street traffic is affected by all conflicting movements. The HCM methodology expresses the quality of flow at unsignalized intersections in terms of Levels of Service (LOS) based on the amount of delay that a driver experiences. This relationship differs somewhat from the criteria used for signalized intersections, primarily because drivers expect different levels of performance from the two different kinds of transportation facilities. For unsignalized intersections, LOS range from A, with minimal delay (ten seconds or less per vehicle), to F, which represents long delays (50 seconds or greater per vehicle). A LOS of E or better is generally considered acceptable for unsignalized movements during peak periods. A LOS F represents poor operating conditions at any intersection. Table 7 below summarizes the HCM LOS for signalized and unsignalized intersections.

Table 7 HCM Intersection LOS

LOS	Control Delay per Vehicle (seconds)	
	Signalized Intersection	Unsignalized Intersections
A	10 or less	10 or less
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
E	>55-80	>35-50
F	greater than 80	greater than 50

### B. CAPACITY ANALYSIS RESULTS

Capacity analyses were performed for the 2017 Existing, 2019 No-Build and 2019 Build conditions. Summaries of these analyses are shown in Tables 8, 9, and 10 for the weekday AM, PM and Saturday midday peak hours, respectively. The capacity analysis worksheets are included in Appendix D.



Table 8 Level of Service Summary – AM Peak Hour

Intersection / Street	Approach <sup>1</sup>	Lane Group <sup>2</sup>	2017 Existing		2019 No-Build		2019 Build		2019 Build with Mitigation	
			LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>
<b>Signalized Intersections</b>										
<b>Southern Boulevard &amp; Existing Site Access 1 / NYS Police &amp; Thruway Authority</b>										
NYS Police & Thruway Authority	EB	LT / TH	D	40.9	D	40.9	C	29.3	D	42.9
		RT	D	37.6	D	37.6	C	27.4	D	40.5
		Overall Approach	D	40.9	D	40.9	C	29.3	D	42.8
Existing Site Access	WB	LT / TH / RT <sup>4</sup>	A	0.0	A	0.0	D	37.5	D	46.1
		RT	-	-	-	-	-	-	D	43.2
		Overall Approach	A	0.0	A	0.0	D	37.5	D	44.4
Southern Boulevard	NB	LT	A	2.2	A	2.2	A	5.4	A	6.9
		TH, TH / RT	A	8.0	A	8.3	C	29.8	D	35.3
		Overall Approach	A	8.0	A	8.2	C	29.7	D	35.1
	SB	LT	A	0.0	A	0.0	F	120.2	C	34.2
		TH, TH / RT	A	3.0	A	3.0	A	7.3	A	4.8
		Overall Approach	A	3.0	A	3.0	B	17.4	A	7.4
Overall Intersection			A	6.9	A	7.1	C	26.8	C	28.1
<b>Southern Boulevard &amp; I-87 Off-Ramps</b>										
I-87 Off-Ramp	EB	LT	F	105.6	F	109.1	F	113.9	NA	
		RT	A	0.4	A	0.4	A	0.4		
		Overall Approach	E	66.3	E	68.5	E	69.0		
Southern Boulevard	NB	TH, TH	B	14.5	B	14.6	B	14.6		
	SB	TH, TH	A	0.6	A	0.6	A	0.5		
Overall Intersection			C	30.0	C	30.8	C	30.7		
<b>Southern Boulevard &amp; I-87 On-Ramp</b>										
Southern Boulevard	NB	LT / TH, TH	A	7.4	A	7.8	A	9.3	NA	
	SB	TH, TH / RT	D	36.0	D	36.2	D	36.6		
Overall Intersection			B	19.1	B	19.4	C	20.6		
<b>Non-Signalized Intersections</b>										
<b>Southern Boulevard &amp; Mt Hope Drive</b>										
Mt. Hope Drive	WB	LT / RT	E	39.0	E	40.3	F	122.6	NA	
Southern Boulevard	SB	LT	C	23.1	C	23.5	D	29.5		
<b>Mt. Hope Drive &amp; Sunoco / Site Access 2</b>										
Mt. Hope Drive	EB	LT	A	7.3	A	7.3	A	7.3	NA	
	WB	LT	A	0.0	A	0.0	A	7.4		
Site Access	NB	LT / TH / RT	A	0.0	A	0.0	A	9.7		
Sunoco Driveway	SB	LT / TH / RT	A	8.7	A	8.7	A	8.9		
<b>Mt. Hope Drive &amp; Site Access 3</b>										
Mt. Hope Drive	WB	LT					A	7.3	NA	
Site Access	NB	LT / RT					A	9.2		

<sup>1</sup> EB= eastbound, WB = westbound, NB= northbound, SB = southbound

<sup>2</sup> LT = Left-turn, TH = Through, RT = Right-turn

<sup>3</sup> Delay = seconds/vehicle (s/veh)

<sup>4</sup> For the Build condition, the lane group is shared LT / TH

Table 9 Level of Service Summary – PM Peak Hour

Intersection / Street	Approach <sup>1</sup>	Lane Group <sup>2</sup>	2017 Existing		2019 No-Build		2019 Build		2019 Build with Mitigation	
			LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>
<b>Signalized Intersections</b>										
<b>Southern Boulevard &amp; Existing Site Access 1 / NYS Police &amp; Thruway Authority</b>										
NYS Police & Thruway Authority	EB	LT / TH	C	34.5	C	34.5	C	27.4	C	26.1
		RT	C	30.8	C	30.8	C	25.6	C	23.9
		Overall Approach	C	33.9	C	34.0	C	27.1	C	25.7
Existing Site Access	WB	LT / TH / RT <sup>4</sup>	A	0.0	A	0.0	D	50.1	C	33.0
		RT	-	-	-	-	-	-	C	24.5
		Overall Approach	A	0.0	A	0.0	D	50.1	C	29.6
Southern Boulevard	NB	LT	A	2.3	A	2.3	A	7.3	B	12.9
		TH, TH / RT	A	3.7	A	3.7	B	11.9	C	23.8
		Overall Approach	A	3.7	A	3.7	B	11.9	C	23.8
	SB	LT	A	0.0	A	0.0	E	63.0	B	17.0
		TH, TH / RT	A	4.8	A	4.9	B	14.7	B	11.7
		Overall Approach	A	4.8	A	4.9	B	19.6	B	12.2
Overall Intersection			A	5.0	A	5.1	C	20.1	B	18.5
<b>Southern Boulevard &amp; I-87 Off-Ramps</b>										
I-87 Off-Ramp	EB	LT	E	56.8	E	56.9	E	55.9	NA	
		RT	A	0.5	A	0.5	A	0.6		
		Overall Approach	B	17.5	B	17.6	B	15.9		
Southern Boulevard	NB	TH, TH	A	6.4	A	6.4	A	7.1		
	SB	TH, TH	A	0.3	A	0.3	A	0.2		
Overall Intersection			A	6.3	A	6.3	A	6.1		
<b>Southern Boulevard &amp; I-87 On-Ramp</b>										
Southern Boulevard	NB	LT / TH, TH	A	4.3	A	4.4	A	5.7	NA	
	SB	TH, TH / RT	D	45.8	D	47.9	E	64.6		
Overall Intersection			C	32.6	C	34.1	D	45.4		
<b>Non-Signalized Intersections</b>										
<b>Southern Boulevard &amp; Mt Hope Drive</b>										
Mt. Hope Drive	WB	LT / RT	D	31.0	D	32.5	C	17.7	NA	
Southern Boulevard	SB	LT	B	13.0	B	13.0	C	15.6		
<b>Mt. Hope Drive &amp; Sunoco / Site Access 2</b>										
Mt. Hope Drive	EB	LT	A	7.3	A	7.3	A	7.4	NA	
	WB	LT	A	0.0	A	0.0	A	7.4		
Site Access	NB	LT / TH / RT	A	0.0	A	0.0	B	10.3		
Site Access	SB	LT / TH / RT	A	8.8	A	8.8	A	9.2		
<b>Mt. Hope Drive &amp; Site Access 3</b>										
Mt. Hope Drive	WB	LT					A	7.3	NA	
Site Access	NB	LT / RT					A	9.4		

<sup>1</sup> EB= eastbound, WB = westbound, NB= northbound, SB = southbound

<sup>2</sup> LT = Left-turn, TH = Through, RT = Right-turn

<sup>3</sup> Delay = seconds/vehicle (s/veh)

<sup>4</sup> For the Build condition, the lane group is shared LT / TH

Table 10 Level of Service Summary – Saturday Peak Hour

Intersection / Street	Approach <sup>1</sup>	Lane Group <sup>2</sup>	2017 Existing		2019 No-Build		2019 Build		2019 Build with Mitigation	
			LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>	LOS	Delay <sup>3</sup>
<b>Signalized Intersections</b>										
<b>Southern Boulevard &amp; Existing Site Access 1 / NYS Police &amp; Thruway Authority</b>										
NYS Police & Thruway Authority	EB	LT / TH	C	27.7	C	27.9	C	21.5	C	23.0
		RT	-	-	-	-	-	-	-	-
		Overall Approach	C	27.7	C	27.9	C	21.5	C	23.0
Existing Site Access	WB	LT / TH / RT <sup>4</sup>	A	0.0	A	0.0	D	42.2	C	30.6
		RT	-	-	-	-	-	-	C	23.8
		Overall Approach	A	0.0	A	0.0	D	42.2	C	27.4
Southern Boulevard	NB	LT	A	1.4	A	1.4	A	7.9	B	12.9
		TH, TH / RT	A	2.3	A	2.3	B	12.5	C	22.4
		Overall Approach	A	2.3	A	2.3	B	12.5	C	22.3
	SB	LT	A	0.0	A	0.0	D	48.5	B	13.9
		TH, TH / RT	A	2.0	A	2.0	B	10.4	A	7.5
		Overall Approach	A	2.0	A	2.0	B	17.1	A	8.6
Overall Intersection			A	2.2	A	2.2	B	19.0	B	17.8
<b>Southern Boulevard &amp; I-87 Off-Ramps</b>										
I-87 Off-Ramp	EB	LT	D	43.2	D	43.7	D	50.0	NA	
		RT	A	0.2	A	0.2	A	0.3		
		Overall Approach	B	19.2	B	19.5	B	19.2		
Southern Boulevard	NB	TH, TH	A	6.1	A	6.2	A	6.4		
	SB	TH, TH	A	0.3	A	0.3	A	0.3		
Overall Intersection			A	6.8	A	6.9	A	7.0		
<b>Southern Boulevard &amp; I-87 On-Ramp</b>										
Southern Boulevard	NB	LT / TH, TH	A	2.4	A	2.7	A	3.8	NA	
	SB	TH, TH / RT	B	19.9	C	20.2	C	21.6		
Overall Intersection			B	11.6	B	11.8	B	13.1		
<b>Non-Signalized Intersections</b>										
<b>Southern Boulevard &amp; Mt Hope Drive</b>										
Mt. Hope Drive	WB	LT / RT	C	18.0	C	18.1	D	26.2	NA	
Southern Boulevard	SB	LT	B	10.6	B	10.6	B	12.0		
<b>Mt. Hope Drive &amp; Sunoco / Site Access 2</b>										
Mt. Hope Drive	EB	LT	A	7.3	A	7.3	A	7.4	NA	
	WB	LT	A	0.0	A	0.0	A	7.4		
Site Access	NB	LT / TH / RT	A	0.0	A	0.0	B	10.4		
Site Access	SB	LT / TH / RT	A	8.7	A	8.7	A	9.1		
<b>Mt. Hope Drive &amp; Site Access 3</b>										
Mt. Hope Drive	WB	LT					A	7.3	NA	
Site Access	NB	LT / RT					A	9.5		

<sup>1</sup> EB= eastbound, WB = westbound, NB= northbound, SB = southbound

<sup>2</sup> LT = Left-turn, TH = Through, RT = Right-turn

<sup>3</sup> Delay = seconds/vehicle (s/veh)

<sup>4</sup> For the Build condition, the lane group is shared LT / TH

The greatest impact of the project is to the Southern Boulevard & Existing Site Access / NYS Police & Thruway Authority intersection as the majority of the primary (new) trips and all of the pass-by trips will pass through this intersection.

#### *Southern Boulevard & Existing Site Access / NYS Police & Thruway Authority*

The capacity analysis shows that this intersection has an overall LOS A during the Existing weekday AM, weekday PM and Saturday midday peak hours with all movements operating at LOS D or better and will continue to operate at the same overall and individual lane group LOS during the No-Build condition as in the Existing conditions for each peak hour.

The analysis shows that the overall operations of this intersection will operate at LOS C during the Build weekday AM and PM peak hour and LOS B during the Saturday peak hour. All movements will operate at LOS D or better except for the southbound left turn movement which shows a LOS F during the weekday AM and LOS E during the weekday PM peak hour.

The Build volumes were reviewed and it was determined that the southbound left turn movement, which has an exclusive left turn lane, should also have permitted/protected phasing. In addition, the westbound site access approach should provide a shared left/through lane and an exclusive right turn lane. With these improvements, the intersection will operate at overall LOS C during the weekday AM peak hour and LOS B during the weekday PM and Saturday peak hours, with all movements operating at LOS D or better.

#### *Southern Boulevard & I-87 Off-Ramps*

The capacity analysis shows that this intersection has an overall LOS C during the Existing weekday AM peak hour and a LOS A during the Existing weekday PM and Saturday peak hours. All movements operate at LOS B or better except for the eastbound left turn movement which operates at LOS F during the weekday AM peak hour, LOS E during the weekday PM peak hour and LOS D during the Saturday peak hour.

The analysis shows the same overall and lane group movement LOS operations during the peak hours for the No-Build and Build conditions as in the Existing conditions. The analysis indicates that the eastbound left turn movement is currently experiencing significant delay unrelated to the project. While there will be increases in delay between the No-Build and Build conditions, the project is not adding traffic to the eastbound left turn movement and the overall intersection operations for the Build condition is consistent with standard engineering practice of maintaining an overall LOS D or better during the peak periods. Therefore, no mitigation is necessary to accommodate the traffic from the proposed project.

#### *Southern Boulevard & I-87 On-Ramp*

The capacity analysis shows that this intersection has an overall LOS B during the Existing weekday AM and Saturday peak hours and a LOS C during the Existing weekday PM peak hour with all movements operating at LOS D or better. The analysis shows the same overall and lane group LOS operations during the peak hours for the No-Build conditions as in the Existing conditions except for the southbound approach during the Saturday peak hour which shows a LOS C in the No-Build condition (LOS B in Existing).

The analysis shows for the Build condition, that this intersection will have an overall LOS D or better. While there will be increases in delay between the No-Build and Build conditions with the southbound lane group experiencing the greatest amount of delay during the weekday PM peak hour, the overall intersection operations for the Build condition is consistent with standard engineering practice of

maintaining a LOS D or better during the peak periods. Given the acceptable overall LOS and operations at this intersection, no mitigation is necessary to accommodate the traffic from the proposed project.

*Southern Boulevard & Mt. Hope Drive*

The capacity analysis shows that the westbound left turn movement operates at LOS E and the southbound left turn movement operates at LOS C during the AM peak hour. For the PM and Saturday peak hours, these two movements operate at LOS D or better. The No-Build condition analysis shows the same LOS as the Existing conditions during each of the peak hours.

The analysis shows that for the Build condition, the movements at this intersection will experience additional delay such that the westbound left turn movement shows a LOS F during the weekday AM peak hour. While there will be increases in delay between the No-Build and Build conditions, there are no geometric and/or operational improvements necessary to accommodate the traffic conditions. The traffic volumes are not at the level to meet the warranting criteria for a traffic signal and the existing width and radius of Mt. Hope Drive permits a right turning vehicle to be accommodated at the same time as a left turning vehicle. In addition, the main site access via the signalized intersection and the RTI/RTO access provide alternate ways of travel to access Southern Boulevard. Therefore, there are no improvements to this intersection that are necessary to accommodate the traffic from this project.

*Mt. Hope Drive & Sunoco / Site Access 2*

The capacity analysis shows that the all movements at this intersection operate at LOS A during the Existing and No-Build conditions for each of the peak hours. The Build analysis shows that all movement at this intersection will continue to operate at LOS A except the northbound approach which shows LOS B during the weekday PM and Saturday peak hours. Given the acceptable LOS and operations at this intersection, no mitigation is necessary to accommodate the traffic from the proposed project.

*Mt. Hope Drive & Sunoco / Site Access 3*

The Build analysis shows that the Mt. Hope Drive westbound left turn movement and the Site Access northbound left turn movement will operate at LOS A during each of the peak hours. Given the acceptable LOS and operations at this intersection, no mitigation is necessary to accommodate the traffic from the proposed project.

## 6.0 SUMMARY AND CONCLUSION

The proposed project consists of the redevelopment of the site at 351 Southern Boulevard in Albany, NY from the former Howard Johnson's restaurant and hotel to a multi-use recreational, retail and commercial development. The proposed project consists a 47,283 s.f. gym/ health club, a 15,600 s.f., 105 room Hotel, a 4,608 s.f. convenience store with drive thru and 12 fueling stations and a 4,418 s.f. car wash, two drive thru restaurants (3,520 s.f. and 2,344 s.f.), and two retail uses (7,387 s.f and 7,002 s.f.). Three full accesses are proposed; one on US Route 9W (Southern Boulevard) at the existing site access with the NYS Police /Thruway Authority, and two on Mt. Hope Drive, and one proposed right turn in/ right turn out only drive on US Route 9W (Southern Boulevard).

Sidewalks are proposed along both of the Southern Boulevard and Mt. Hope Drive frontages and internal to the site to facilitate pedestrian movements.

Capital District Transportation Authority (CDTA) currently operates a route east on Mt. Hope Drive but they cannot circulate in both directions due to the difficulties of turning left onto Southern Boulevard without the signal. The project includes a circulation plan and access between Mt. Hope Drive to the signalized access on Southern Boulevard that will allow CDTA to modify their existing route to serve Mt. Hope Drive and Southern Boulevard in both directions. The project also includes bus stops with shelters to enhance transit use.

Existing site traffic was counted at four intersections along Southern Boulevard on Saturday, September 9, 2017 during the midday peak period (11 AM–1 PM), and on Wednesday, September 20, 2017 during the AM peak period (7-9 AM) and the PM peak period (3-6 PM). The traffic counts were recorded in 15-minute increments and were all classified as either passenger cars, medium or heavy trucks. Pedestrian and bicycle counts were also recorded at the intersections concurrently with the vehicle counts. The traffic volume data shows that there was minimal pedestrian and bicyclist traffic during the peak periods.

An accident analysis was conducted for this study. Accident data was obtained from NYSDOT for the period from January 1, 2014 to August 31, 2017 for Southern Boulevard from Kenwood Road to the McCarty Avenue & OGS Parking lot. The accident data revealed that while there were a total of 99 accidents for this period, the study area is below the statewide average rate for similar facilities. The predominate accident type (intersection and link) for all of the corridor accidents was rear-end accidents. A high occurrence of rear end accidents typically correlates to traffic congestion where vehicles are in stop and go traffic and/or reaching the end of forming queues. Contributing factors of failing to yield right-of-way, traffic control disregarded, driver inattention and following too closely were identified.

The Southern Boulevard & Existing Site Access 1 / NYS Police & Thruway Authority and the Southern Boulevard & Mt. Hope Drive intersections will experience the greatest volume of traffic from this proposed project. The accident data revealed that 9% of the total corridor accidents occurred at the Southern Boulevard & Existing Site Access 1 / NYS Police & Thruway Authority; all of which were rear-end non-reportable accidents. Two occurred in the north direction, 2 occurred in the south direction and 1 occurred in the west direction. Five (5%) percent of the total accidents occurred at the Southern Boulevard / Mt. Hope Dr. intersection; two of which were left-turn accidents and 1 was a right turn accident.

The project has an estimated time of completion (ETC) of 2019. Therefore, the 2019 No-Build conditions were developed by applying a 0.5% annual growth rate to the 2017 Existing weekday AM and PM peak

hours and the Saturday midday peak hour volumes. There are no other planned and/or proposed projects in the study area, therefore, no additional background traffic was added to the No-Build conditions.

Using the ITE *Trip Generation Manual*, 9<sup>th</sup> Edition, it is estimated that the project could generate 548 trips during the AM peak hour, 849 trips during the PM peak hour, and 959 trips during the Saturday midday peak hour. These include primary and pass-by trips. Utilizing the individual pass-by rates for those uses that pass-by credit applies, results in approximately 49% of the AM and 35–40% of the total trips during each of the weekday PM and Saturday peak hour being pass-by trips. As indicated in Table 6, the proposed project could generate approximately 283 net new vehicle trips during the weekday AM peak hour, 539 net new trips during the weekday PM peak hour and 579 net new trips during the Saturday midday peak hour; assuming 100% of the traffic is by vehicle with no credit applied for transit use or for trips associated with the interaction between the onsite proposed uses. Thus, this study is a conservative analysis of the traffic operations to the study area.

The existing weekday AM, weekday PM and Saturday peak period traffic volumes to / from the study area intersections were used as the basis for developing the arrival / departure percentages, which were used for assigning the primary and pass-by trips to each site driveway. This distribution for new primary trips was 55% to/from the north, which includes distribution to /from the east and west on I-87 and I-787, and 45% to/from the south. The distribution of pass-by trips, which is also based on the existing traffic patterns, are more dependent on the customer's ultimate direction of travel. As a result, separate pass-by trip distributions were used for the weekday AM, weekday PM and Saturday peak hours. The 2019 Build network includes traffic associated with background growth as well as the traffic from this project.

Capacity analyses were performed for the Existing, No-Build and Build conditions using SYNCHRO 10 and the HCM 2000 methodologies for the signalized intersections and the HCM 2010 methodology for the unsignalized intersections. Analyses were run for the Existing, No-Build and Build conditions for each of the weekday AM, weekday PM and Saturday peak hours.

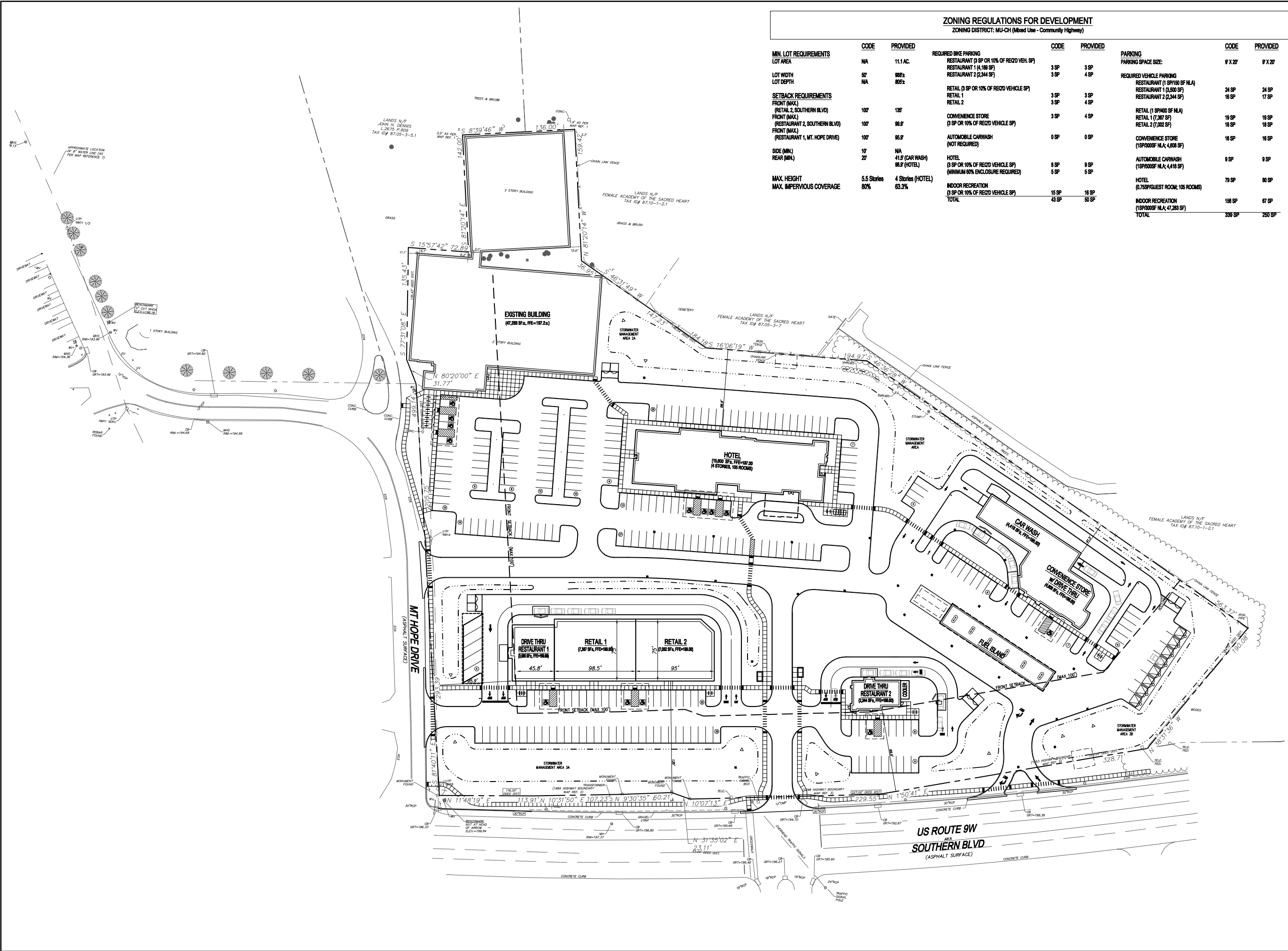
The greatest impact of the project is to the Southern Boulevard & Existing Site Access / NYS Police & Thruway Authority intersection as the majority of the primary (new) trips and all of the pass-by trips will pass through this intersection. The capacity analysis shows that the southbound left turn movement will operate with long delays and poor levels of service without improvements. Therefore, to mitigate the impacts associated with this project, it is recommended that permitted / protected phasing be provided for the southbound left turn movement and that the westbound approach provide two exiting lanes; a shared left/through lane and an exclusive right turn lane.

While there will be increases in delay between the No-Build and Build conditions to the other study area intersections, the project is consistent with standard engineering practice of maintaining an overall LOS D or better during the peak periods. Therefore, no additional mitigation is necessary to accommodate the traffic from the proposed project.

# Appendix A

Concept Site Plan





**ZONING REGULATIONS FOR DEVELOPMENT**  
 ZONING DISTRICT: MU-CH (Mixed Use - Community Highway)

MIN. LOT REQUIREMENTS	CODE	PROVIDED	REQUIRED BIKE PARKING	CODE	PROVIDED	PARKING	CODE	PROVIDED
LOT AREA	N/A	11.1 AC.	RESTAURANT (3 SP OR 10% OF REQ'D VEH. SP)	3 SP	3 SP	PARKING SPACE SIZE:	9' X 20'	9' X 20'
LOT WIDTH	57'	805%	RESTAURANT 1 (4,160 SF)	3 SP	4 SP	REQUIRED VEHICLE PARKING		
LOT DEPTH	N/A	805%	RESTAURANT 2 (2,344 SF)	3 SP	4 SP	RESTAURANT 1 (5,910 SF N/A)	24 SP	24 SP
<b>SETBACK REQUIREMENTS</b>			RETAIL (3 SP OR 10% OF REQ'D VEHICLE SP)	3 SP	3 SP	RESTAURANT 2 (2,344 SF)	16 SP	17 SP
FRONT (MAX.)	100'	135'	RETAIL 1	3 SP	4 SP	RETAIL (1 SP/400 SF N/A)	19 SP	19 SP
FRONT (MAX.) (RETAIL 2, SOUTHERN BLVD)	100'	98.5'	RETAIL 2	3 SP	4 SP	RETAIL 1 (7,283 SF)	18 SP	18 SP
FRONT (MAX.) (RESTAURANT 2, SOUTHERN BLVD)	100'	98.5'	CONVENIENCE STORE (3 SP OR 10% OF REQ'D VEHICLE SP)	3 SP	4 SP	RESTAURANT 2 (2,344 SF)	16 SP	17 SP
FRONT (MAX.) (RESTAURANT 1, MT. HOPE DRIVE)	100'	95.5'	AUTOMOBILE CARWASH (NOT REQUIRED)	0 SP	0 SP	RETAIL (1 SP/400 SF N/A)	19 SP	19 SP
SIDE (MIN.)	10'	N/A	HOTEL (3 SP OR 10% OF REQ'D VEHICLE SP) (MINIMUM 60% ENCLOSURE REQUIRED)	8 SP	9 SP	RETAIL 2 (7,283 SF)	18 SP	18 SP
REAR (MIN.)	20'	41.8' (CAR WASH) 98.8' (HOTEL)	INDOOR RECREATION (3 SP OR 10% OF REQ'D VEHICLE SP)	5 SP	5 SP	CONVENIENCE STORE (1SP/200SF N/A; 4,408 SF)	16 SP	16 SP
<b>MAX. HEIGHT</b>	5.5 Stories	4 Stories (HOTEL)	TOTAL	43 SP	50 SP	AUTOMOBILE CARWASH (1SP/200SF N/A; 4,416 SF)	9 SP	9 SP
<b>MAX. IMPERVIOUS COVERAGE</b>	80%	63.3%				HOTEL (0.75SP/GUEST ROOM; 105 ROOMS)	78 SP	80 SP
						INDOOR RECREATION (1SP/200SF N/A; 4,728 SF)	158 SP	67 SP
						<b>TOTAL</b>	<b>395 SP</b>	<b>250 SP</b>

CHA  
 11 Wilmore Circle, PO Box 8289 Albany, NY 12208-0289  
 Main: (518) 485-4800 www.chacompanies.com

Scale in feet  
 0 50 100

**DIAMOND RETAIL DEVELOPMENT, LLC**  
 18 COMPUTER DRIVE E.  
 ALBANY, NY 12205

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR, TO ALTER OR REVISION ANY MAP, PLAN, SPECIFICATION, CONTRACT, AGREEMENT, OR INSTRUMENT OF SERVICE, OR ANY INSTRUMENT OF SERVICE, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION ALTERED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

**PROPOSED COMMERCIAL REDEVELOPMENT**  
 351 SOUTHERN BOULEVARD  
 ALBANY, NY 12202  
 ALBANY COUNTY

No.	Submitted / Revision	Appr'd By	Date

**OVERALL SITE PLAN**

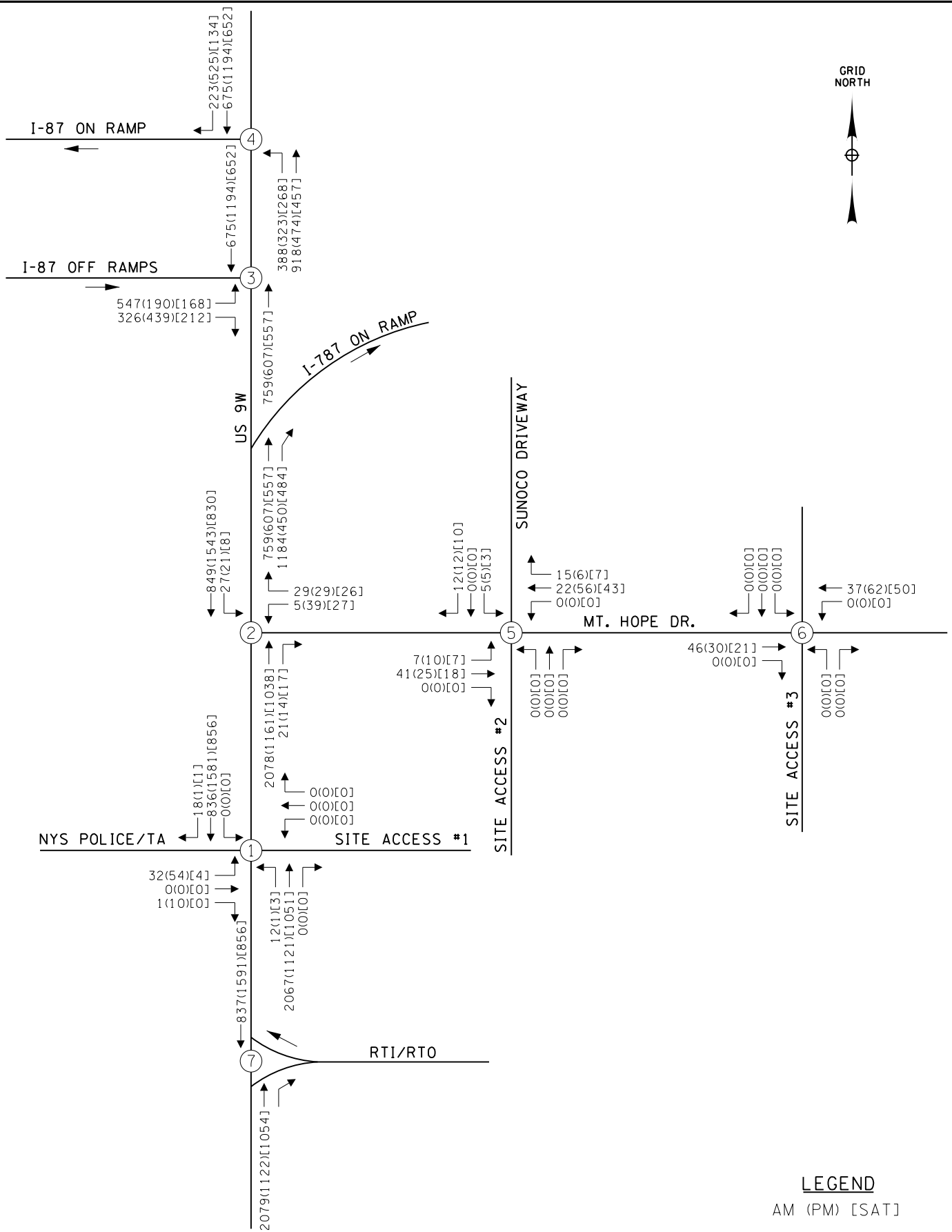
Designed By:	Drawn By:	Checked By:
PBY	KMD	TPS
Issue Date:	Project No:	Scale:
10/04/17	31452	AS SHOWN

Drawing No.:  
**C-200**

# Appendix B

## Traffic Volume Figures

FILE NAME = v:\projects\ony\k4\31452\cadd\\_MSTN\31452.tr.f.Fig.01.dgn  
 DATE/TIME = 10/16/2017  
 USER = 597



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 Albany, NY 12205-0269  
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**EXISTING PEAK HOUR  
 TRAFFIC VOLUMES**

351 SOUTHERN BOULEVARD  
 ALBANY, NEW YORK

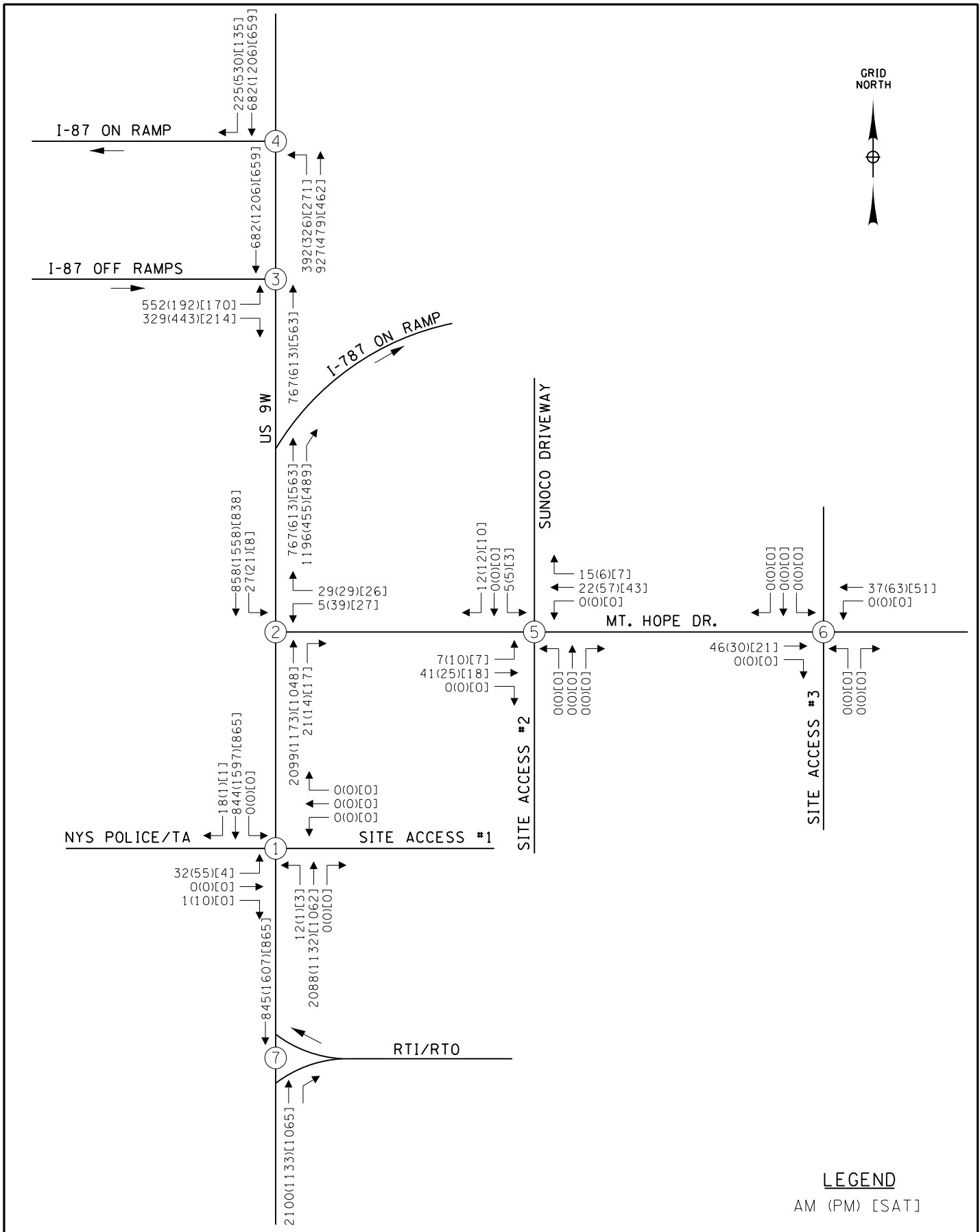
FIGURE

**1**

DATE: 10/17

Drawing Copyright © 2017

FILE NAME = v:\projects\ony\k4\31452\cadd\MSTN\31452.tr.f.Fig.02.dgn  
 DATE/TIME = 10/16/2017  
 USER = 597



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**NO-BUILD PEAK HOUR  
 TRAFFIC VOLUMES**

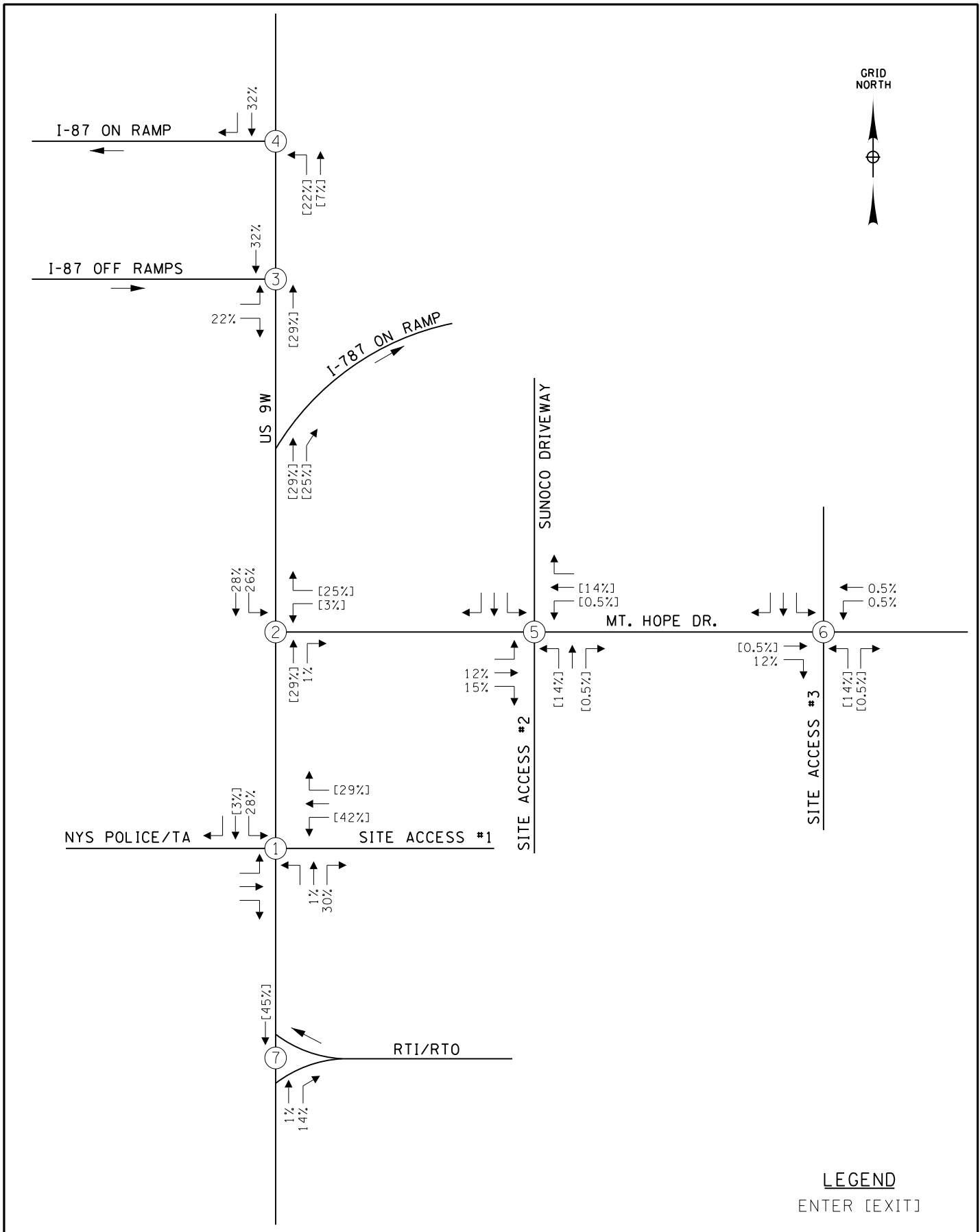
351 SOUTHERN BOULEVARD  
 ALBANY, NEW YORK

FIGURE  
**2**

DATE: 10/17

Drawing Copyright © 2017

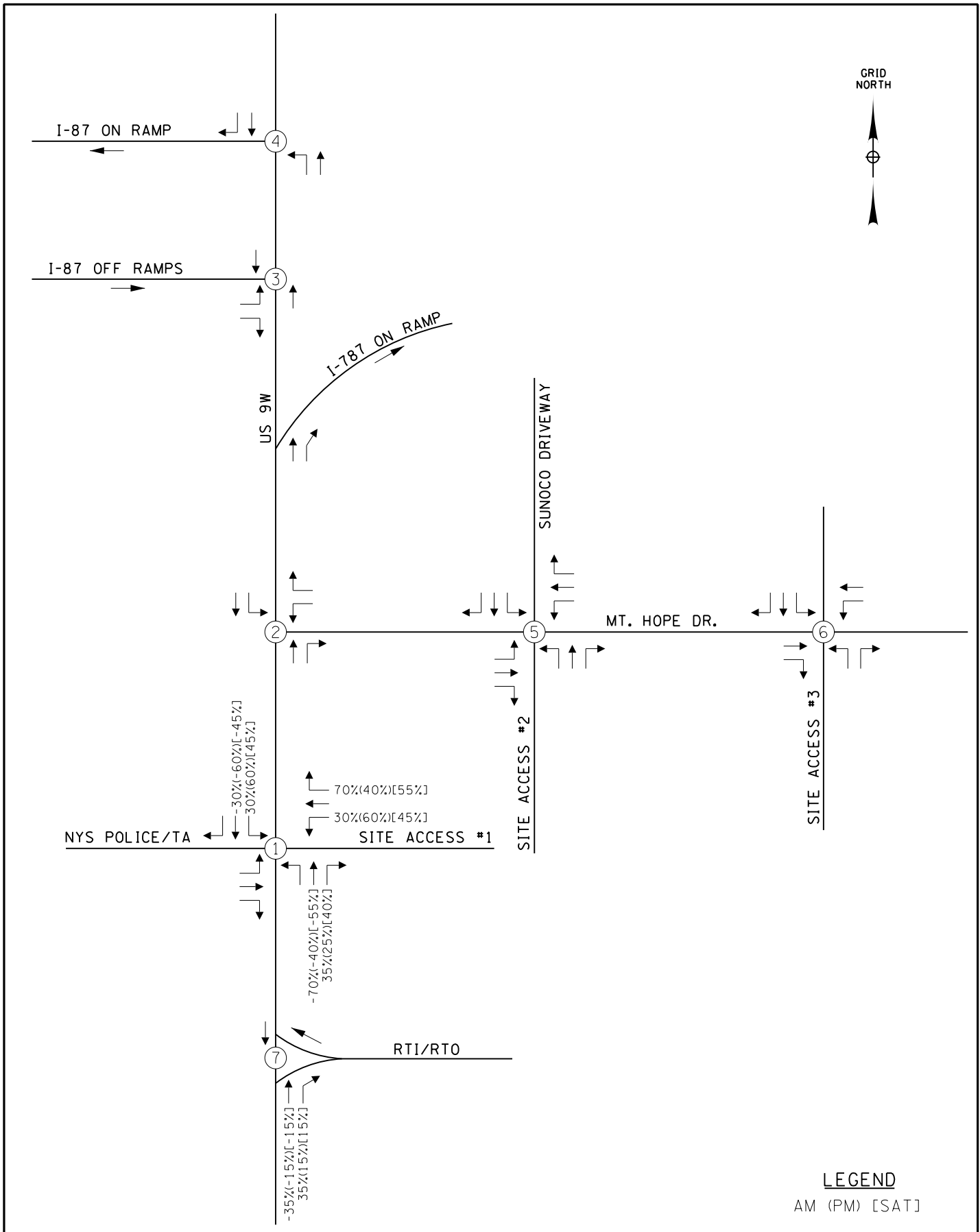
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 DATE/TIME = 10/16/2017  
 USER = 597



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FILE NAME = v:\projects\ony\k4\31452\cadd\MSTN\31452.tr.f.Fig.04.dgn  
 DATE/TIME = 10/16/2017  
 USER = 597



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**TRIP DISTRIBUTION PERCENTAGES  
 PASS-BY TRIPS**

351 SOUTHERN BOULEVARD  
 ALBANY, NEW YORK

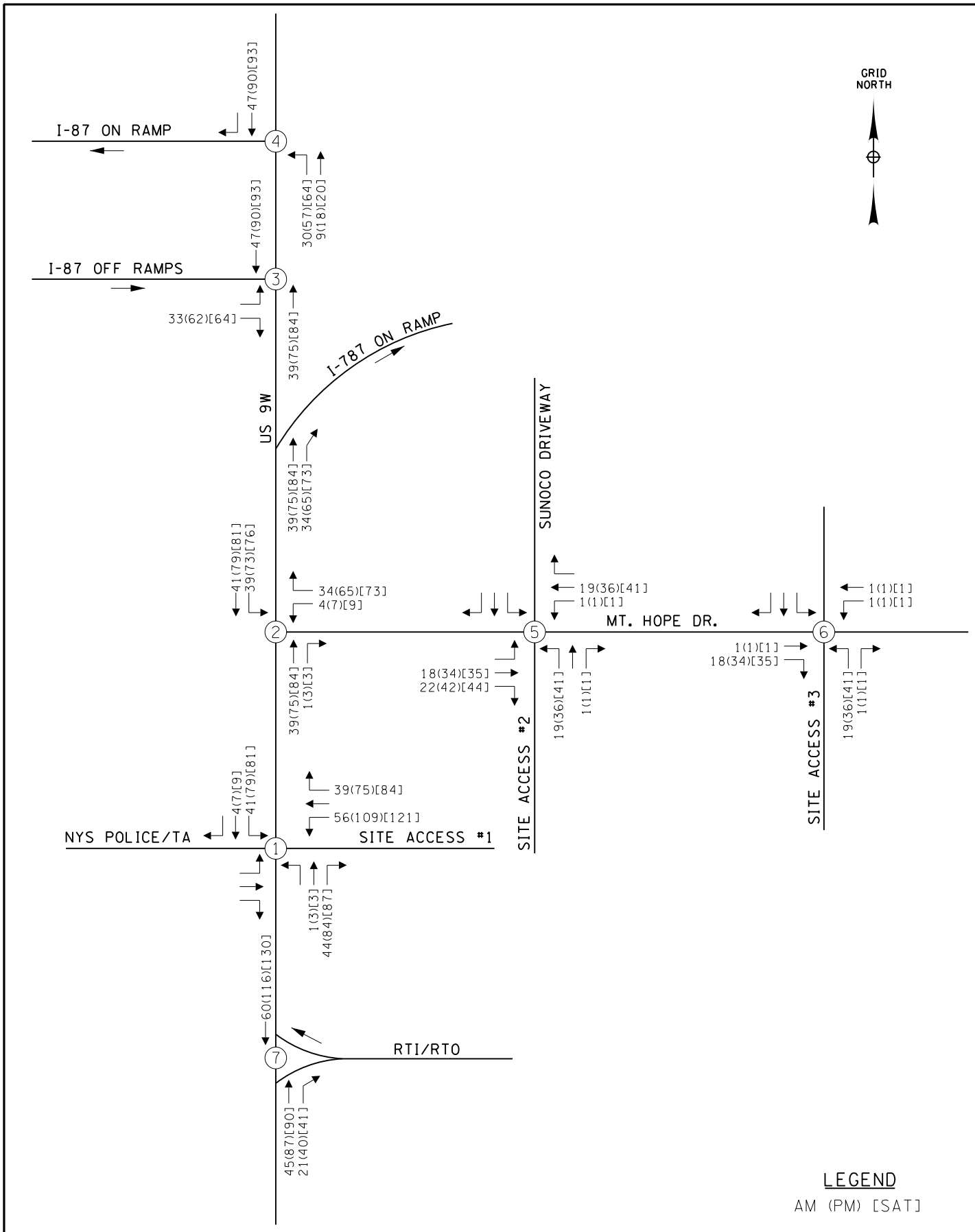
FIGURE

**4**

DATE: 10/17

Drawing Copyright © 2017

FILE NAME = v:\projects\ony\k4\31452\cadd\MSTN\31452.tr.f.Fig.05.dgn  
 DATE/TIME = 10/16/2017  
 USER = 597



LEGEND  
 AM (PM) [SAT]



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 Albany, NY 12205-0269  
 518.453.4500 - www.chacompanies.com

SITE GENERATED TRAFFIC VOLUMES  
 PRIMARY TRIPS

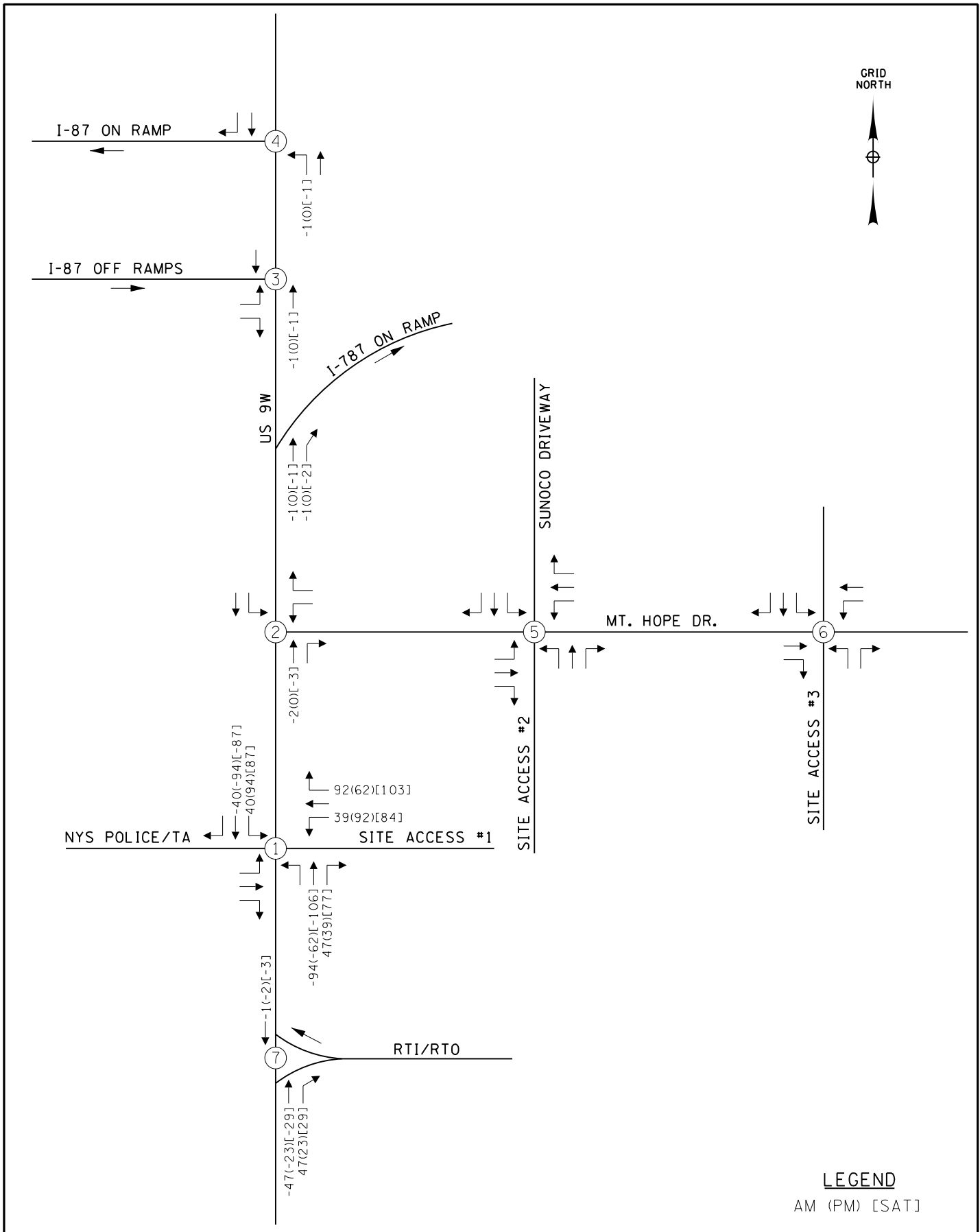
351 SOUTHERN BOULEVARD  
 ALBANY, NEW YORK

FIGURE  
**5**

DATE: 10/17

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FILE NAME = v:\projects\ony\k4\31452\cadd\MSTN\31452.tr.f.Fig.06.dgn  
 DATE/TIME = 10/16/2017  
 USER = 597



LEGEND  
 AM (PM) [SAT]



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SITE GENERATED TRAFFIC VOLUMES  
 PASS-BY TRIPS

351 SOUTHERN BOULEVARD  
 ALBANY, NEW YORK

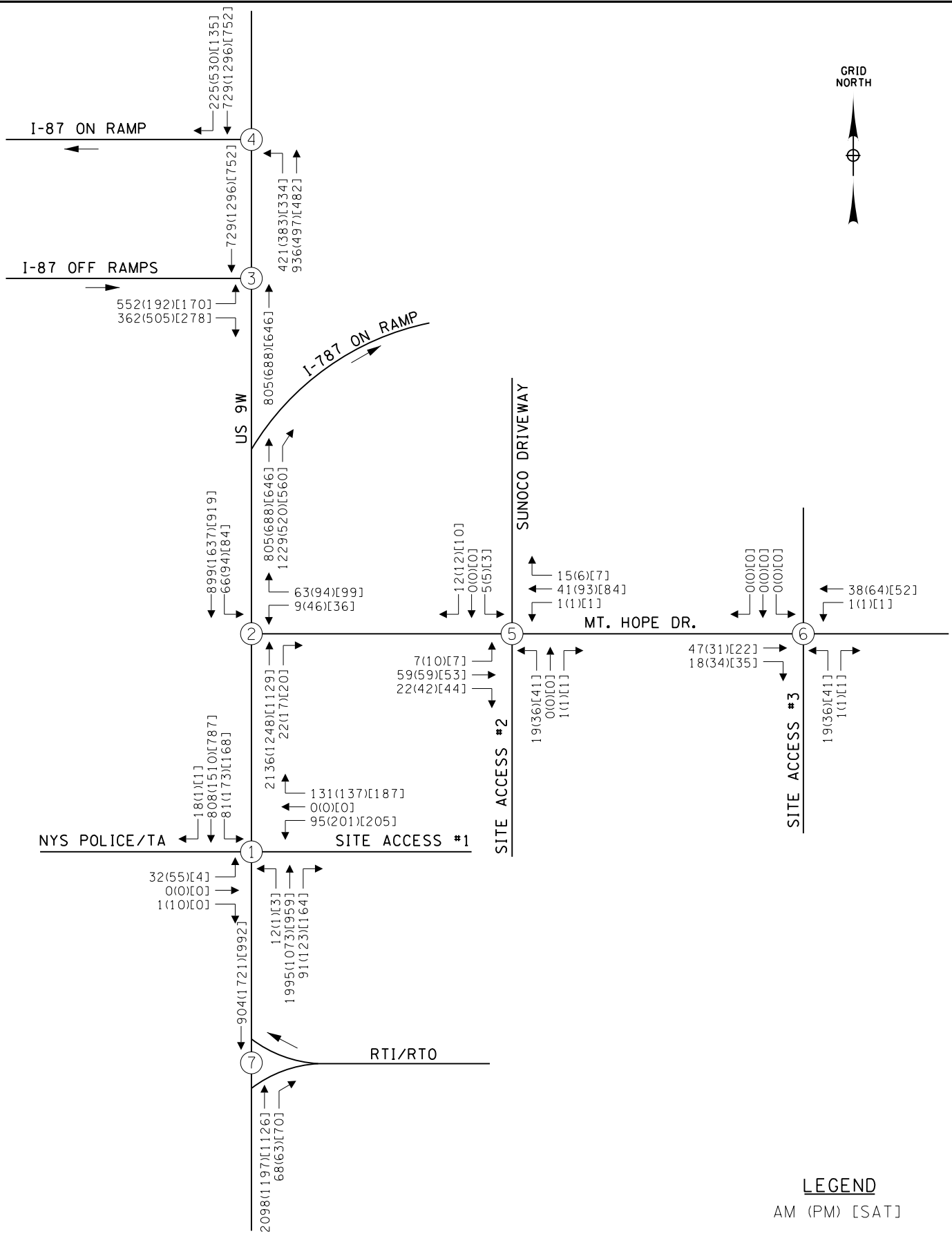
FIGURE  
**6**

DATE: 10/17

Drawing Copyright © 2017



FILE NAME = V:\Projects\ANY\K4\31452\CADD\MSTN\31452-tr-f-Fig.07.dgn  
 DATE/TIME = 10/16/2017  
 USER = 597



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**BUILD PEAK HOUR  
 TRAFFIC VOLUMES**

351 SOUTHERN BOULEVARD  
 ALBANY, NEW YORK

FIGURE  
**7**

DATE: 10/17

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# Appendix C

## Traffic Volume Data

<b>TOTALS TURNING MOVEMENT COUNT - SUMMARY</b>																					
Intersection of: <b>US 9W Southern Boulevard</b> and: <b>Existing Site Access/NYS Police &amp; Thruway Authority</b> Location: <b>Albany County, NY</b>										Counted by: <b>VCU</b> Date: <b>September 20, 2017</b> Weather: <b>Warm/Mostly Cloudy</b> Entered by: <b>JB</b>					Wednesday Star Rating: <b>3</b>						
TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	166	3	0	169	0	371	0	0	371	0	0	0	0	0	5	0	0	0	5	545
7:15 - 7:30	0	179	6	0	185	4	508	0	0	512	0	0	0	0	0	6	0	0	0	6	703
7:30 - 7:45	0	200	4	0	204	5	565	0	0	570	0	0	0	0	0	10	0	1	0	11	785
7:45 - 8:00	0	179	4	1	183	2	547	0	0	549	0	0	0	0	0	9	0	0	0	9	741
8:00 - 8:15	0	222	6	0	228	0	478	0	0	478	0	0	0	0	0	7	0	0	0	7	713
8:15 - 8:30	0	231	4	0	235	5	477	0	0	482	0	0	0	0	0	6	0	0	0	6	723
8:30 - 8:45	0	179	2	0	181	1	438	0	0	439	0	0	0	0	0	4	0	1	0	5	625
8:45 - 9:00	0	159	4	0	163	1	389	0	0	390	0	0	0	0	0	4	0	1	0	5	558
<b>2 Hr Totals</b>	0	1515	33	1	1548	18	3773	0	0	3791	0	0	0	0	0	51	0	3	0	54	5393
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	724	17	1	741	11	1991	0	0	2002	0	0	0	0	0	30	0	1	0	31	2774
7:15 - 8:15	0	780	20	1	800	11	2098	0	0	2109	0	0	0	0	0	32	0	1	0	33	2942
7:30 - 8:30	0	832	18	1	850	12	2067	0	0	2079	0	0	0	0	0	32	0	1	0	33	2962
7:45 - 8:45	0	811	16	1	827	8	1940	0	0	1948	0	0	0	0	0	26	0	1	0	27	2802
8:00 - 9:00	0	791	16	0	807	7	1782	0	0	1789	0	0	0	0	0	21	0	2	0	23	2619
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	832	18	1	850	12	2067	0	0	2079	0	0	0	0	0	32	0	1	0	33	2962
<b>PM</b>																					
3:00 - 3:15	0	268	0	0	268	0	244	0	0	244	0	0	0	0	0	41	0	7	7	48	560
3:15 - 3:30	0	278	0	0	278	1	254	0	0	255	0	0	0	0	0	19	0	2	1	21	554
3:30 - 3:45	0	319	3	0	322	1	295	0	0	296	0	0	0	0	0	64	0	3	1	67	685
3:45 - 4:00	0	372	0	0	372	0	244	0	0	244	0	0	0	0	0	34	0	1	1	35	651
4:00 - 4:15	0	339	2	0	341	0	269	0	0	269	0	0	0	0	0	48	0	5	4	53	663
4:15 - 4:30	0	413	1	0	414	1	249	0	0	250	0	0	0	0	0	22	0	2	2	24	688
4:30 - 4:45	0	369	1	0	370	1	321	0	0	322	0	0	0	0	0	24	0	7	3	31	723
4:45 - 5:00	0	390	0	0	390	0	270	0	0	270	0	0	0	0	0	10	0	0	0	10	670
5:00 - 5:15	0	421	0	0	421	0	286	0	0	286	0	0	0	0	0	21	0	2	2	23	730
5:15 - 5:30	0	408	0	0	408	0	282	0	0	282	0	0	0	0	0	1	0	1	1	2	692
5:30 - 5:45	0	405	0	0	405	1	278	0	0	279	0	0	0	0	0	4	0	1	1	5	689
5:45 - 6:00	0	377	0	0	377	0	239	0	0	239	0	0	0	0	0	9	0	1	0	10	626
<b>3 Hr Totals</b>	0	4359	7	0	4366	5	3231	0	0	3236	0	0	0	0	0	297	0	32	23	329	7931
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	1237	3	0	1240	2	1037	0	0	1039	0	0	0	0	0	158	0	13	10	171	2450
3:15 - 4:15	0	1308	5	0	1313	2	1062	0	0	1064	0	0	0	0	0	165	0	11	7	176	2553
3:30 - 4:30	0	1443	6	0	1449	2	1057	0	0	1059	0	0	0	0	0	168	0	11	8	179	2687
3:45 - 4:45	0	1493	4	0	1497	2	1083	0	0	1085	0	0	0	0	0	128	0	15	10	143	2725
4:00 - 5:00	0	1511	4	0	1515	2	1109	0	0	1111	0	0	0	0	0	104	0	14	9	118	2744
4:15 - 5:15	0	1593	2	0	1595	2	1126	0	0	1128	0	0	0	0	0	77	0	11	7	88	2811
4:30 - 5:30	0	1588	1	0	1589	1	1159	0	0	1160	0	0	0	0	0	56	0	10	6	66	2815
4:45 - 5:45	0	1624	0	0	1624	1	1116	0	0	1117	0	0	0	0	0	36	0	4	4	40	2781
5:00 - 6:00	0	1611	0	0	1611	1	1085	0	0	1086	0	0	0	0	0	35	0	5	4	40	2737
<b>PEAK HOUR</b>																					
<b>4:30 - 5:30</b>	0	1588	1	0	1589	1	1159	0	0	1160	0	0	0	0	0	56	0	10	6	66	2815

Approach / Intersection	0.90	0.91	-	0.75	0.94
	0.94	0.90	-	0.53	0.96
AM%HV	- 11.1%	5.6%	0.0%	5.2%	-
PM%HV	- 3.5%	0.0%	0.0%	3.8%	-
				21.9%	- 0.0%
				0.0%	- 0.0%

Intersection %HV 7.0% AM  
3.6% PM

**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard

Counted by: VCU

Wednesday

and: Existing Site Access/NYS Police & Thruway Authority

Date: September 20, 2017

Weather: Warm/Mostly Cloudy

Location: Albany County, NY

Entered by: JB

Star Rating: 3




TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	153	3	0	156	0	357	0	0	357	0	0	0	0	0	5	0	0	0	5	518
7:15 - 7:30	0	159	5	0	164	4	484	0	0	488	0	0	0	0	0	2	0	0	0	2	654
7:30 - 7:45	0	181	4	0	185	5	532	0	0	537	0	0	0	0	0	7	0	1	0	8	730
7:45 - 8:00	0	158	4	1	162	2	526	0	0	528	0	0	0	0	0	9	0	0	0	9	699
8:00 - 8:15	0	196	5	0	201	0	450	0	0	450	0	0	0	0	0	4	0	0	0	4	655
8:15 - 8:30	0	205	4	0	209	5	451	0	0	456	0	0	0	0	0	5	0	0	0	5	670
8:30 - 8:45	0	156	2	0	158	1	416	0	0	417	0	0	0	0	0	4	0	1	0	5	580
8:45 - 9:00	0	130	3	0	133	1	361	0	0	362	0	0	0	0	0	3	0	1	0	4	499
<b>2 Hr Totals</b>	0	1338	30	1	1368	18	3577	0	0	3595	0	0	0	0	0	39	0	3	0	42	5005
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	651	16	1	667	11	1899	0	0	1910	0	0	0	0	0	23	0	1	0	24	2601
7:15 - 8:15	0	694	18	1	712	11	1992	0	0	2003	0	0	0	0	0	22	0	1	0	23	2738
7:30 - 8:30	0	740	17	1	757	12	1959	0	0	1971	0	0	0	0	0	25	0	1	0	26	2754
7:45 - 8:45	0	715	15	1	730	8	1843	0	0	1851	0	0	0	0	0	22	0	1	0	23	2604
8:00 - 9:00	0	687	14	0	701	7	1678	0	0	1685	0	0	0	0	0	16	0	2	0	18	2404
<b>PEAK HOUR</b>	0	740	17	1	757	12	1959	0	0	1971	0	0	0	0	0	25	0	1	0	26	2754
<b>PM</b>																					
3:00 - 3:15	0	251	0	0	251	0	225	0	0	225	0	0	0	0	0	41	0	7	7	0	476
3:15 - 3:30	0	263	0	0	263	1	241	0	0	242	0	0	0	0	0	19	0	2	1	0	505
3:30 - 3:45	0	309	3	0	312	1	281	0	0	282	0	0	0	0	0	62	0	3	1	0	594
3:45 - 4:00	0	346	0	0	346	0	227	0	0	227	0	0	0	0	0	34	0	1	1	0	573
4:00 - 4:15	0	325	2	0	327	0	256	0	0	256	0	0	0	0	0	48	0	5	4	0	583
4:15 - 4:30	0	403	1	0	404	0	234	0	0	234	0	0	0	0	0	22	0	2	2	0	638
4:30 - 4:45	0	351	1	0	352	1	299	0	0	300	0	0	0	0	0	24	0	7	3	0	652
4:45 - 5:00	0	381	0	0	381	0	264	0	0	264	0	0	0	0	0	10	0	0	0	0	645
5:00 - 5:15	0	403	0	0	403	0	276	0	0	276	0	0	0	0	0	21	0	2	2	0	679
5:15 - 5:30	0	397	0	0	397	0	276	0	0	276	0	0	0	0	0	1	0	1	1	0	673
5:30 - 5:45	0	394	0	0	394	1	268	0	0	269	0	0	0	0	0	4	0	1	1	0	663
5:45 - 6:00	0	361	0	0	361	0	230	0	0	230	0	0	0	0	0	9	0	1	0	0	591
<b>3 Hr Totals</b>	0	4184	7	0	4191	4	3077	0	0	3081	0	0	0	0	0	295	0	32	23	0	7272
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	1169	3	0	1172	2	974	0	0	976	0	0	0	0	0	156	0	13	10	169	2317
3:15 - 4:15	0	1243	5	0	1248	2	1005	0	0	1007	0	0	0	0	0	163	0	11	7	174	2429
3:30 - 4:30	0	1383	6	0	1389	1	998	0	0	999	0	0	0	0	0	166	0	11	8	177	2565
3:45 - 4:45	0	1425	4	0	1429	1	1016	0	0	1017	0	0	0	0	0	128	0	15	10	143	2589
4:00 - 5:00	0	1460	4	0	1464	1	1053	0	0	1054	0	0	0	0	0	104	0	14	9	118	2636
4:15 - 5:15	0	1538	2	0	1540	1	1073	0	0	1074	0	0	0	0	0	77	0	11	7	88	2702
4:30 - 5:30	0	1532	1	0	1533	1	1115	0	0	1116	0	0	0	0	0	56	0	10	6	66	2715
4:45 - 5:45	0	1575	0	0	1575	1	1084	0	0	1085	0	0	0	0	0	36	0	4	4	40	2700
5:00 - 6:00	0	1555	0	0	1555	1	1050	0	0	1051	0	0	0	0	0	35	0	5	4	40	2646
<b>PEAK HOUR</b>	0	1555	0	0	1555	1	1050	0	0	1051	0	0	0	0	0	35	0	5	4	40	2646
<b>4:30 - 5:30</b>	0	1532	1	0	1533	1	1115	0	0	1116	0	0	0	0	0	56	0	10	6	66	2715

**MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Existing Site Access/NYS Police & Thruway Authority  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Entered by: JB

Wednesday  
 Weather: Warm/Mostly Cloudy  
 Star Rating: 3



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	5	0	0	5	0	11	0	0	11	0	0	0	0	0	0	0	0	0	0	16
7:15 - 7:30	0	9	1	0	10	0	12	0	0	12	0	0	0	0	0	4	0	0	0	4	26
7:30 - 7:45	0	8	0	0	8	0	21	0	0	21	0	0	0	0	0	3	0	0	0	3	32
7:45 - 8:00	0	8	0	0	8	0	18	0	0	18	0	0	0	0	0	0	0	0	0	0	26
8:00 - 8:15	0	19	1	0	20	0	12	0	0	12	0	0	0	0	0	3	0	0	0	3	35
8:15 - 8:30	0	17	0	0	17	0	11	0	0	11	0	0	0	0	0	1	0	0	0	1	29
8:30 - 8:45	0	12	0	0	12	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	24
8:45 - 9:00	0	18	1	0	19	0	11	0	0	11	0	0	0	0	0	1	0	0	0	1	31
<b>2 Hr Totals</b>	0	96	3	0	99	0	108	0	0	108	0	0	0	0	0	12	0	0	0	12	219
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	30	1	0	31	0	62	0	0	62	0	0	0	0	0	7	0	0	0	7	100
7:15 - 8:15	0	44	2	0	46	0	63	0	0	63	0	0	0	0	0	10	0	0	0	10	119
7:30 - 8:30	0	52	1	0	53	0	62	0	0	62	0	0	0	0	0	7	0	0	0	7	122
7:45 - 8:45	0	56	1	0	57	0	53	0	0	53	0	0	0	0	0	4	0	0	0	4	114
8:00 - 9:00	0	66	2	0	68	0	46	0	0	46	0	0	0	0	0	5	0	0	0	5	119
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	52	1	0	53	0	62	0	0	62	0	0	0	0	0	7	0	0	0	7	122
<b>PM</b>																					
3:00 - 3:15	0	12	0	0	12	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	19
3:15 - 3:30	0	7	0	0	7	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	14
3:30 - 3:45	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	2	0	0	0	2	13
3:45 - 4:00	0	10	0	0	10	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	22
4:00 - 4:15	0	8	0	0	8	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	12
4:15 - 4:30	0	4	0	0	4	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	11
4:30 - 4:45	0	11	0	0	11	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	23
4:45 - 5:00	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	11
5:00 - 5:15	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	11
5:15 - 5:30	0	5	0	0	5	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	7
5:30 - 5:45	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
5:45 - 6:00	0	9	0	0	9	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	14
<b>3 Hr Totals</b>	0	91	0	0	91	1	72	0	0	73	0	0	0	0	0	2	0	0	0	2	166
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	36	0	0	36	0	30	0	0	30	0	0	0	0	0	2	0	0	0	2	68
3:15 - 4:15	0	32	0	0	32	0	27	0	0	27	0	0	0	0	0	2	0	0	0	2	61
3:30 - 4:30	0	29	0	0	29	1	26	0	0	27	0	0	0	0	0	2	0	0	0	2	58
3:45 - 4:45	0	33	0	0	33	1	34	0	0	35	0	0	0	0	0	0	0	0	0	0	68
4:00 - 5:00	0	29	0	0	29	1	27	0	0	28	0	0	0	0	0	0	0	0	0	0	57
4:15 - 5:15	0	28	0	0	28	1	27	0	0	28	0	0	0	0	0	0	0	0	0	0	56
4:30 - 5:30	0	29	0	0	29	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	52
4:45 - 5:45	0	23	0	0	23	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	38
5:00 - 6:00	0	26	0	0	26	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	41
<b>PEAK HOUR</b>																					
<b>4:30 - 5:30</b>	0	29	0	0	29	0	23	0	0	23	0	0	0	0	0	0	0	0	0	0	52


<b>HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY</b>																					
Intersection of: US 9W Southern Boulevard and: Existing Site Access/NYS Police & Thruway Authority Location: Albany County, NY										Counted by: VCU Date: September 20, 2017 Weather: Warm/Mostly Cloudy Entered by: JB					Wednesday Star Rating: 3						
TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	8	0	0	8	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	11
7:15 - 7:30	0	11	0	0	11	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	23
7:30 - 7:45	0	11	0	0	11	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	23
7:45 - 8:00	0	13	0	0	13	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	16
8:00 - 8:15	0	7	0	0	7	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	23
8:15 - 8:30	0	9	0	0	9	0	15	0	0	15	0	0	0	0	0	0	0	0	0	0	24
8:30 - 8:45	0	11	0	0	11	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	21
8:45 - 9:00	0	11	0	0	11	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	28
<b>2 Hr Totals</b>	0	81	0	0	81	0	88	0	0	88	0	0	0	0	0	0	0	0	0	0	169
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	43	0	0	43	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	73
7:15 - 8:15	0	42	0	0	42	0	43	0	0	43	0	0	0	0	0	0	0	0	0	0	85
7:30 - 8:30	0	40	0	0	40	0	46	0	0	46	0	0	0	0	0	0	0	0	0	0	86
7:45 - 8:45	0	40	0	0	40	0	44	0	0	44	0	0	0	0	0	0	0	0	0	0	84
8:00 - 9:00	0	38	0	0	38	0	58	0	0	58	0	0	0	0	0	0	0	0	0	0	96
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	40	0	0	40	0	46	0	0	46	0	0	0	0	0	0	0	0	0	0	86
<b>PM</b>																					
3:00 - 3:15	0	5	0	0	5	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	17
3:15 - 3:30	0	8	0	0	8	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	14
3:30 - 3:45	0	3	0	0	3	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	13
3:45 - 4:00	0	16	0	0	16	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	21
4:00 - 4:15	0	6	0	0	6	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	15
4:15 - 4:30	0	6	0	0	6	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	15
4:30 - 4:45	0	7	0	0	7	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	17
4:45 - 5:00	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
5:00 - 5:15	0	11	0	0	11	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	17
5:15 - 5:30	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	10
5:30 - 5:45	0	6	0	0	6	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	12
5:45 - 6:00	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	11
<b>3 Hr Totals</b>	0	84	0	0	84	0	82	0	0	82	0	0	0	0	0	0	0	0	0	0	166
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	32	0	0	32	0	33	0	0	33	0	0	0	0	0	0	0	0	0	0	65
3:15 - 4:15	0	33	0	0	33	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	63
3:30 - 4:30	0	31	0	0	31	0	33	0	0	33	0	0	0	0	0	0	0	0	0	0	64
3:45 - 4:45	0	35	0	0	35	0	33	0	0	33	0	0	0	0	0	0	0	0	0	0	68
4:00 - 5:00	0	22	0	0	22	0	29	0	0	29	0	0	0	0	0	0	0	0	0	0	51
4:15 - 5:15	0	27	0	0	27	0	26	0	0	26	0	0	0	0	0	0	0	0	0	0	53
4:30 - 5:30	0	27	0	0	27	0	21	0	0	21	0	0	0	0	0	0	0	0	0	0	48
4:45 - 5:45	0	26	0	0	26	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	43
5:00 - 6:00	0	30	0	0	30	0	20	0	0	20	0	0	0	0	0	0	0	0	0	0	50
<b>PEAK HOUR</b>																					
<b>4:30 - 5:30</b>	0	27	0	0	27	0	21	0	0	21	0	0	0	0	0	0	0	0	0	0	48

**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Existing Site Access/NYS Police & Thruway Authority  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Entered by: JB

Wednesday  
 Weather: Warm/Mostly Cloudy  
 Star Rating: 3



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>2 Hr Totals</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 - 8:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 - 8:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 - 9:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>PM</b>																					
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 - 3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 - 3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 - 4:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 - 4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 - 5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>3 Hr Totals</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 - 4:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 - 4:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 - 5:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 - 5:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 - 5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 - 5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HOUR</b>																					
<b>4:30 - 5:30</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Existing Site Access/NYS Police & Thruway Authority  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 3



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	1	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	1	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	1	0	1	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	1	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	1	0	0	0

	EAST LEG Existing Site Access		WEST LEG NYS Police & Thruway Authority	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	1	0
8:00 - 8:15	0	0	1	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	2	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	2	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	2	0	0	0



**TOTALS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: Southern Boulevard  
 and: Existing Site Access/NYS Police & Thruway Authority  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday

Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	186	0	0	186	0	246	0	0	246	0	0	0	0	0	0	0	0	0	0	432
11:15 - 11:30	0	182	0	0	182	0	263	0	0	263	0	0	0	0	0	0	0	0	0	0	445
11:30 - 11:45	0	209	0	0	209	1	262	0	0	263	0	0	0	0	0	0	0	0	0	0	472
11:45 - 12:00	1	214	0	0	215	2	253	0	0	255	0	0	0	0	0	1	0	0	0	1	471
12:00 - 12:15	0	208	0	0	208	0	268	0	0	268	0	0	0	0	0	1	0	0	0	1	477
12:15 - 12:30	0	219	0	0	219	0	270	0	0	270	0	0	0	0	0	2	0	0	0	2	491
12:30 - 12:45	0	178	0	0	178	0	269	0	0	269	0	0	0	0	0	0	0	1	1	1	448
12:45 - 1:00	0	195	0	0	195	1	254	0	0	255	0	0	0	0	0	0	0	1	1	1	451
<b>2 Hr Totals</b>	1	1591	0	0	1592	4	2085	0	0	2089	0	0	0	0	0	4	0	2	2	6	3687
<b>1 Hr Totals</b>																					
11:00 - 12:00	1	791	0	0	792	3	1024	0	0	1027	0	0	0	0	0	1	0	0	0	1	1820
11:15 - 12:15	1	813	0	0	814	3	1046	0	0	1049	0	0	0	0	0	2	0	0	0	2	1865
11:30 - 12:30	1	850	0	0	851	3	1053	0	0	1056	0	0	0	0	0	4	0	0	0	4	1911
11:45 - 12:45	1	819	0	0	820	2	1060	0	0	1062	0	0	0	0	0	4	0	1	1	5	1887
12:00 - 1:00	0	800	0	0	800	1	1061	0	0	1062	0	0	0	0	0	3	0	2	2	5	1867
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	1	850	0	0	851	3	1053	0	0	1056	0	0	0	0	0	4	0	0	0	4	1911

Approach PHF 0.97 0.98 - 0.50 0.97  
 Intersection PHF

Sat%HV 0.0% 2.1% - 0.0% 3.4% - - - 0.0% - -  
 Intersection %HV Sat 2.8%

**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: Southern Boulevard

and: Existing Site Access/NYS Police & Thruway Authority

Location: Albany County, NY

Counted by: VCU

Date: September 9, 2017

Weather: Cool/Mostly Cloudy


Entered by: JB

Saturday

Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	180	0	0	180	0	237	0	0	237	0	0	0	0	0	0	0	0	0	0	417
11:15 - 11:30	0	175	0	0	175	0	252	0	0	252	0	0	0	0	0	0	0	0	0	0	427
11:30 - 11:45	0	201	0	0	201	1	257	0	0	258	0	0	0	0	0	0	0	0	0	0	459
11:45 - 12:00	1	208	0	0	209	2	243	0	0	245	0	0	0	0	0	1	0	0	0	1	455
12:00 - 12:15	0	207	0	0	207	0	260	0	0	260	0	0	0	0	0	1	0	0	0	1	468
12:15 - 12:30	0	216	0	0	216	0	257	0	0	257	0	0	0	0	0	2	0	0	0	2	475
12:30 - 12:45	0	170	0	0	170	0	262	0	0	262	0	0	0	0	0	0	0	1	1	1	433
12:45 - 1:00	0	189	0	0	189	1	251	0	0	252	0	0	0	0	0	0	0	1	1	1	442
<b>2 Hr Totals</b>	1	1546	0	0	1547	4	2019	0	0	2023	0	0	0	0	0	4	0	2	2	6	3576
<b>1 Hr Totals</b>																					
11:00 - 12:00	1	764	0	0	765	3	989	0	0	992	0	0	0	0	0	1	0	0	0	1	1758
11:15 - 12:15	1	791	0	0	792	3	1012	0	0	1015	0	0	0	0	0	2	0	0	0	2	1809
11:30 - 12:30	1	832	0	0	833	3	1017	0	0	1020	0	0	0	0	0	4	0	0	0	4	1857
11:45 - 12:45	1	801	0	0	802	2	1022	0	0	1024	0	0	0	0	0	4	0	1	1	5	1831
12:00 - 1:00	0	782	0	0	782	1	1030	0	0	1031	0	0	0	0	0	3	0	2	2	5	1818
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	1	832	0	0	833	3	1017	0	0	1020	0	0	0	0	0	4	0	0	0	4	1857

<b>MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY</b>																					
Intersection of: Southern Boulevard and: Existing Site Access/NYS Police & Thruway Authority Location: Albany County, NY										Counted by: VCU Date: September 9, 2017 Weather: Cool/Mostly Cloudy Entered by: JB					Saturday Star Rating: 5						
TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	8
11:15 - 11:30	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
11:30 - 11:45	0	4	0	0	4	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	7
11:45 - 12:00	0	4	0	0	4	0	7	0	0	7	0	0	0	0	0	0	0	0	0	0	11
12:00 - 12:15	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
12:15 - 12:30	0	1	0	0	1	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	10
12:30 - 12:45	0	5	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	9
12:45 - 1:00	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
<b>2 Hr Totals</b>	0	22	0	0	22	0	35	0	0	35	0	0	0	0	0	0	0	0	0	0	57
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	14	0	0	14	0	16	0	0	16	0	0	0	0	0	0	0	0	0	0	30
11:15 - 12:15	0	10	0	0	10	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	27
11:30 - 12:30	0	9	0	0	9	0	24	0	0	24	0	0	0	0	0	0	0	0	0	0	33
11:45 - 12:45	0	10	0	0	10	0	25	0	0	25	0	0	0	0	0	0	0	0	0	0	35
12:00 - 1:00	0	8	0	0	8	0	19	0	0	19	0	0	0	0	0	0	0	0	0	0	27
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	9	0	0	9	0	24	0	0	24	0	0	0	0	0	0	0	0	0	0	33

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Counted by: VCU  
 Date: September 9, 2017  
 Saturday  
 Star Rating: 5  
 Intersection of: Southern Boulevard  
 and: Existing Site Access/NYS Police & Thruway Authority  
 Weather: Cool/Mostly Cloudy  
 Location: Albany County, NY  
 Entered by: JB



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	2	0	0	2	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	7
11:15 - 11:30	0	5	0	0	5	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	14
11:30 - 11:45	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
11:45 - 12:00	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
12:00 - 12:15	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
12:15 - 12:30	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	6
12:30 - 12:45	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
12:45 - 1:00	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
<b>2 Hr Totals</b>	0	23	0	0	23	0	31	0	0	31	0	0	0	0	0	0	0	0	0	0	54
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	13	0	0	13	0	19	0	0	19	0	0	0	0	0	0	0	0	0	0	32
11:15 - 12:15	0	12	0	0	12	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	29
11:30 - 12:30	0	9	0	0	9	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	21
11:45 - 12:45	0	8	0	0	8	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	21
12:00 - 1:00	0	10	0	0	10	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	22
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	9	0	0	9	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	21

**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: Southern Boulevard

and: Existing Site Access/NYS Police & Thruway Authority

Location: Albany County, NY

Counted by: VCU

Date: September 9, 2017

Weather: Cool/Mostly Cloudy

Entered by: JB

Saturday

Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Existing Site Access					TRAFFIC FROM WEST on: NYS Police & Thruway Authority					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>2 Hr Totals</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 - 12:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 - 12:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Counted by: VCU  
 Date: September 9, 2017  
 Saturday  
 Weather: Cool/Mostly Cloudy  
 Star Rating: 5  
 Entered by: JB



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15	0	0	0	0
11:15 - 11:30	0	0	0	0
11:30 - 11:45	0	0	0	0
11:45 - 12:00	0	0	0	0
12:00 - 12:15	0	0	0	0
12:15 - 12:30	0	0	0	0
12:30 - 12:45	0	0	0	0
12:45 - 1:00	0	0	0	0
<b>2 Hr Totals</b>				
11:00 - 12:00	0	0	0	0
11:15 - 12:15	0	0	0	0
11:30 - 12:30	0	0	0	0
11:45 - 12:45	0	0	0	0
12:00 - 1:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
TIME	EAST LEG Existing Site Access		WEST LEG NYS Police & Thruway Authority	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15	0	0	0	0
11:15 - 11:30	0	0	0	0
11:30 - 11:45	0	0	0	0
11:45 - 12:00	0	0	0	0
12:00 - 12:15	0	0	0	0
12:15 - 12:30	0	0	0	0
12:30 - 12:45	0	0	0	0
12:45 - 1:00	0	0	0	0
<b>2 Hr Totals</b>				
11:00 - 12:00	0	0	0	0
11:15 - 12:15	0	0	0	0
11:30 - 12:30	0	0	0	0
11:45 - 12:45	0	0	0	0
12:00 - 1:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0

**TOTALS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	7	165	0	0	172	0	380	3	0	383	0	0	8	0	8	0	0	0	0	0	563
7:15 - 7:30	11	167	0	0	178	0	486	4	0	490	1	0	5	0	6	0	0	0	0	0	674
7:30 - 7:45	8	203	0	0	211	0	562	6	0	568	3	0	7	0	10	0	0	0	0	0	789
7:45 - 8:00	3	198	0	0	201	0	570	8	0	578	0	0	5	0	5	0	0	0	0	0	784
8:00 - 8:15	9	214	0	0	223	0	471	2	0	473	0	0	7	0	7	0	0	0	0	0	703
8:15 - 8:30	7	237	0	0	244	0	474	5	0	479	2	0	10	0	12	0	0	0	0	0	735
8:30 - 8:45	8	186	0	0	194	0	430	2	0	432	1	0	5	0	6	0	0	0	0	0	632
8:45 - 9:00	6	173	0	0	179	0	411	4	0	415	2	0	9	0	11	0	0	0	0	0	605
<b>2 Hr Totals</b>	59	1543	0	0	1602	0	3784	34	0	3818	9	0	56	0	65	0	0	0	0	0	5485
<b>1 Hr Totals</b>																					
7:00 - 8:00	29	733	0	0	762	0	1998	21	0	2019	4	0	25	0	29	0	0	0	0	0	2810
7:15 - 8:15	31	782	0	0	813	0	2089	20	0	2109	4	0	24	0	28	0	0	0	0	0	2950
7:30 - 8:30	27	852	0	0	879	0	2077	21	0	2098	5	0	29	0	34	0	0	0	0	0	3011
7:45 - 8:45	27	835	0	0	862	0	1945	17	0	1962	3	0	27	0	30	0	0	0	0	0	2854
8:00 - 9:00	30	810	0	0	840	0	1786	13	0	1799	5	0	31	0	36	0	0	0	0	0	2675
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	27	852	0	0	879	0	2077	21	0	2098	5	0	29	0	34	0	0	0	0	0	3011
<b>PM</b>																					
3:00 - 3:15	6	252	0	0	258	0	256	5	0	261	6	0	12	0	18	0	0	0	0	0	537
3:15 - 3:30	11	287	0	0	298	0	281	12	0	293	3	0	9	0	12	0	0	0	0	0	603
3:30 - 3:45	4	306	0	0	310	0	353	4	0	357	14	0	19	0	33	0	0	0	0	0	700
3:45 - 4:00	10	366	0	0	376	0	275	6	0	281	3	0	17	0	20	0	0	0	0	0	677
4:00 - 4:15	5	327	0	0	332	0	308	2	0	310	10	0	8	0	18	0	0	0	0	0	660
4:15 - 4:30	3	399	0	0	402	0	255	6	0	261	7	0	7	0	14	0	0	0	0	0	677
4:30 - 4:45	5	354	0	0	359	0	307	1	0	308	14	0	8	0	22	0	0	0	0	0	689
4:45 - 5:00	9	386	0	0	395	0	288	5	0	293	7	0	4	0	11	0	0	0	0	0	699
5:00 - 5:15	4	397	0	0	401	0	271	2	0	273	11	0	10	0	21	0	0	0	0	0	695
5:15 - 5:30	1	381	0	0	382	0	259	5	0	264	14	0	12	0	26	0	0	0	0	0	672
5:30 - 5:45	9	398	0	0	407	0	248	9	0	257	14	0	7	0	21	0	0	0	0	0	685
5:45 - 6:00	8	383	0	0	391	0	236	6	0	242	11	0	6	0	17	0	0	0	0	0	650
<b>3 Hr Totals</b>	75	4236	0	0	4311	0	3337	63	0	3400	114	0	119	0	233	0	0	0	0	0	7944
<b>1 Hr Totals</b>																					
3:00 - 4:00	31	1211	0	0	1242	0	1165	27	0	1192	26	0	57	0	83	0	0	0	0	0	2517
3:15 - 4:15	30	1286	0	0	1316	0	1217	24	0	1241	30	0	53	0	83	0	0	0	0	0	2640
3:30 - 4:30	22	1398	0	0	1420	0	1191	18	0	1209	34	0	51	0	85	0	0	0	0	0	2714
3:45 - 4:45	23	1446	0	0	1469	0	1145	15	0	1160	34	0	40	0	74	0	0	0	0	0	2703
4:00 - 5:00	22	1466	0	0	1488	0	1158	14	0	1172	38	0	27	0	65	0	0	0	0	0	2725
4:15 - 5:15	21	1536	0	0	1557	0	1121	14	0	1135	39	0	29	0	68	0	0	0	0	0	2760
4:30 - 5:30	19	1518	0	0	1537	0	1125	13	0	1138	46	0	34	0	80	0	0	0	0	0	2755
4:45 - 5:45	23	1562	0	0	1585	0	1066	21	0	1087	46	0	33	0	79	0	0	0	0	0	2751
5:00 - 6:00	22	1559	0	0	1581	0	1014	22	0	1036	50	0	35	0	85	0	0	0	0	0	2702
<b>PEAK HOUR</b>																					
<b>4:15 - 5:15</b>	21	1536	0	0	1557	0	1121	14	0	1135	39	0	29	0	68	0	0	0	0	0	2760

Approach / Intersection	0.90	0.91	0.71	-	0.95
	0.97	0.92	0.77	-	0.99
AM%HV	3.7%	10.8%	-	-	5.1%
PM%HV	23.8%	3.5%	-	-	4.1%
					14.3%
					28.6%
					0.0%
					2.6%
					3.4%
					0.0%

Intersection %HV 6.7% AM  
3.9% PM

**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY


Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	5	150	0	0	155	0	368	2	0	370	0	0	7	0	7					0	532
7:15 - 7:30	11	148	0	0	159	0	461	2	0	463	1	0	5	0	6					0	628
7:30 - 7:45	8	183	0	0	191	0	534	5	0	539	3	0	6	0	9					0	739
7:45 - 8:00	2	175	0	0	177	0	547	7	0	554	0	0	5	0	5					0	736
8:00 - 8:15	9	190	0	0	199	0	443	2	0	445	0	0	7	0	7					0	651
8:15 - 8:30	7	212	0	0	219	0	447	4	0	451	2	0	10	0	12					0	682
8:30 - 8:45	7	158	0	0	165	0	400	2	0	402	0	0	5	0	5					0	572
8:45 - 9:00	6	143	0	0	149	0	382	3	0	385	2	0	9	0	11					0	545
<b>2 Hr Totals</b>	55	1359	0	0	1414	0	3582	27	0	3609	8	0	54	0	62	0	0	0	0	0	5085
<b>1 Hr Totals</b>																					
7:00 - 8:00	26	656	0	0	682	0	1910	16	0	1926	4	0	23	0	27	0	0	0	0	0	2635
7:15 - 8:15	30	696	0	0	726	0	1985	16	0	2001	4	0	23	0	27	0	0	0	0	0	2754
7:30 - 8:30	26	760	0	0	786	0	1971	18	0	1989	5	0	28	0	33	0	0	0	0	0	2808
7:45 - 8:45	25	735	0	0	760	0	1837	15	0	1852	2	0	27	0	29	0	0	0	0	0	2641
8:00 - 9:00	29	703	0	0	732	0	1672	11	0	1683	4	0	31	0	35	0	0	0	0	0	2450
<b>PEAK HOUR</b>	26	760	0	0	786	0	1971	18	0	1989	5	0	28	0	33	0	0	0	0	0	2808
<b>PM</b>																					
3:00 - 3:15	6	236	0	0	242	0	242	5	0	247	6	0	10	0	16					0	505
3:15 - 3:30	7	269	0	0	276	0	263	10	0	273	3	0	9	0	12					0	561
3:30 - 3:45	4	294	0	0	298	0	339	4	0	343	14	0	19	0	33					0	674
3:45 - 4:00	10	340	0	0	350	0	256	5	0	261	3	0	16	0	19					0	630
4:00 - 4:15	2	314	0	0	316	0	300	2	0	302	10	0	8	0	18					0	636
4:15 - 4:30	3	391	0	0	394	0	239	5	0	244	7	0	7	0	14					0	652
4:30 - 4:45	2	335	0	0	337	0	289	0	0	289	14	0	8	0	22					0	648
4:45 - 5:00	7	377	0	0	384	0	285	4	0	289	7	0	4	0	11					0	684
5:00 - 5:15	4	380	0	0	384	0	262	1	0	263	10	0	10	0	20					0	667
5:15 - 5:30	1	371	0	0	372	0	249	5	0	254	13	0	12	0	25					0	651
5:30 - 5:45	8	389	0	0	397	0	242	7	0	249	13	0	7	0	20					0	666
5:45 - 6:00	6	368	0	0	374	0	226	5	0	231	11	0	6	0	17					0	622
<b>3 Hr Totals</b>	60	4064	0	0	4124	0	3192	53	0	3245	111	0	116	0	227	0	0	0	0	0	7596
<b>1 Hr Totals</b>																					
3:00 - 4:00	27	1139	0	0	1166	0	1100	24	0	1124	26	0	54	0	80	0	0	0	0	0	2370
3:15 - 4:15	23	1217	0	0	1240	0	1158	21	0	1179	30	0	52	0	82	0	0	0	0	0	2501
3:30 - 4:30	19	1339	0	0	1358	0	1134	16	0	1150	34	0	50	0	84	0	0	0	0	0	2592
3:45 - 4:45	17	1380	0	0	1397	0	1084	12	0	1096	34	0	39	0	73	0	0	0	0	0	2566
4:00 - 5:00	14	1417	0	0	1431	0	1113	11	0	1124	38	0	27	0	65	0	0	0	0	0	2620
4:15 - 5:15	16	1483	0	0	1499	0	1075	10	0	1085	38	0	29	0	67	0	0	0	0	0	2651
4:30 - 5:30	14	1463	0	0	1477	0	1085	10	0	1095	44	0	34	0	78	0	0	0	0	0	2650
4:45 - 5:45	20	1517	0	0	1537	0	1038	17	0	1055	43	0	33	0	76	0	0	0	0	0	2668
5:00 - 6:00	19	1508	0	0	1527	0	979	18	0	997	47	0	35	0	82	0	0	0	0	0	2606
<b>PEAK HOUR</b>	16	1483	0	0	1499	0	1075	10	0	1085	38	0	29	0	67	0	0	0	0	0	2651



<b>MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY</b>																						
Intersection of: US 9W Southern Boulevard and: Mount Hope Drive Location: Albany County, NY										Counted by: VCU Date: September 20, 2017 Weather: Warm/Mostly Cloudy Entered by: JB			Wednesday Star Rating: 5		TOTAL N + S + E + W							
TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:						
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN		TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																						
7:00 - 7:15	2	7	0	0	9	0	9	1	0	10	0	0	0	0	0						0	19
7:15 - 7:30	0	9	0	0	9	0	15	2	0	17	0	0	0	0	0						0	26
7:30 - 7:45	0	8	0	0	8	0	21	1	0	22	0	0	1	0	1						0	31
7:45 - 8:00	1	10	0	0	11	0	16	1	0	17	0	0	0	0	0						0	28
8:00 - 8:15	0	18	0	0	18	0	14	0	0	14	0	0	0	0	0						0	32
8:15 - 8:30	0	15	0	0	15	0	15	1	0	16	0	0	0	0	0						0	31
8:30 - 8:45	1	17	0	0	18	0	16	0	0	16	1	0	0	0	1						0	35
8:45 - 9:00	0	19	0	0	19	0	13	0	0	13	0	0	0	0	0						0	32
<b>2 Hr Totals</b>	4	103	0	0	107	0	119	6	0	125	1	0	1	0	2	0	0	0	0	0	0	234
<b>1 Hr Totals</b>																						
7:00 - 8:00	3	34	0	0	37	0	61	5	0	66	0	0	1	0	1	0	0	0	0	0	0	104
7:15 - 8:15	1	45	0	0	46	0	66	4	0	70	0	0	1	0	1	0	0	0	0	0	0	117
7:30 - 8:30	1	51	0	0	52	0	66	3	0	69	0	0	1	0	1	0	0	0	0	0	0	122
7:45 - 8:45	2	60	0	0	62	0	61	2	0	63	1	0	0	0	1	0	0	0	0	0	0	126
8:00 - 9:00	1	69	0	0	70	0	58	1	0	59	1	0	0	0	1	0	0	0	0	0	0	130
<b>PEAK HOUR</b>																						
<b>7:30 - 8:30</b>	1	51	0	0	52	0	66	3	0	69	0	0	1	0	1	0	0	0	0	0	0	122
<b>PM</b>																						
3:00 - 3:15	0	11	0	0	11	0	7	0	0	7	0	0	2	0	2						0	20
3:15 - 3:30	4	10	0	0	14	0	7	2	0	9	0	0	0	0	0						0	23
3:30 - 3:45	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0						0	15
3:45 - 4:00	0	12	0	0	12	0	11	1	0	12	0	0	1	0	1						0	25
4:00 - 4:15	3	8	0	0	11	0	1	0	0	1	0	0	0	0	0						0	12
4:15 - 4:30	0	4	0	0	4	0	5	1	0	6	0	0	0	0	0						0	10
4:30 - 4:45	3	11	0	0	14	0	7	1	0	8	0	0	0	0	0						0	22
4:45 - 5:00	2	6	0	0	8	0	3	1	0	4	0	0	0	0	0						0	12
5:00 - 5:15	0	6	0	0	6	0	2	1	0	3	0	0	0	0	0						0	9
5:15 - 5:30	0	3	0	0	3	0	6	0	0	6	1	0	0	0	1						0	10
5:30 - 5:45	1	3	0	0	4	0	1	2	0	3	1	0	0	0	1						0	8
5:45 - 6:00	2	9	0	0	11	0	6	1	0	7	0	0	0	0	0						0	18
<b>3 Hr Totals</b>	15	92	0	0	107	0	62	10	0	72	2	0	3	0	5	0	0	0	0	0	0	184
<b>1 Hr Totals</b>																						
3:00 - 4:00	4	42	0	0	46	0	31	3	0	34	0	0	3	0	3	0	0	0	0	0	0	83
3:15 - 4:15	7	39	0	0	46	0	25	3	0	28	0	0	1	0	1	0	0	0	0	0	0	75
3:30 - 4:30	3	33	0	0	36	0	23	2	0	25	0	0	1	0	1	0	0	0	0	0	0	62
3:45 - 4:45	6	35	0	0	41	0	24	3	0	27	0	0	1	0	1	0	0	0	0	0	0	69
4:00 - 5:00	8	29	0	0	37	0	16	3	0	19	0	0	0	0	0	0	0	0	0	0	0	56
4:15 - 5:15	5	27	0	0	32	0	17	4	0	21	0	0	0	0	0	0	0	0	0	0	0	53
4:30 - 5:30	5	26	0	0	31	0	18	3	0	21	1	0	0	0	1	0	0	0	0	0	0	53
4:45 - 5:45	3	18	0	0	21	0	12	4	0	16	2	0	0	0	2	0	0	0	0	0	0	39
5:00 - 6:00	3	21	0	0	24	0	15	4	0	19	2	0	0	0	2	0	0	0	0	0	0	45
<b>PEAK HOUR</b>																						
<b>4:15 - 5:15</b>	5	27	0	0	32	0	17	4	0	21	0	0	0	0	0	0	0	0	0	0	0	53

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W	
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL		
<b>AM</b>																						
7:00 - 7:15	0	8	0	0	8	0	3	0	0	3	0	0	1	0	1						0	12
7:15 - 7:30	0	10	0	0	10	0	10	0	0	10	0	0	0	0	0						0	20
7:30 - 7:45	0	12	0	0	12	0	7	0	0	7	0	0	0	0	0						0	19
7:45 - 8:00	0	13	0	0	13	0	7	0	0	7	0	0	0	0	0						0	20
8:00 - 8:15	0	6	0	0	6	0	14	0	0	14	0	0	0	0	0						0	20
8:15 - 8:30	0	10	0	0	10	0	12	0	0	12	0	0	0	0	0						0	22
8:30 - 8:45	0	11	0	0	11	0	14	0	0	14	0	0	0	0	0						0	25
8:45 - 9:00	0	11	0	0	11	0	16	1	0	17	0	0	0	0	0						0	28
<b>2 Hr Totals</b>	0	81	0	0	81	0	83	1	0	84	0	0	1	0	1	0	0	0	0	0	0	166
<b>1 Hr Totals</b>																						
7:00 - 8:00	0	43	0	0	43	0	27	0	0	27	0	0	1	0	1	0	0	0	0	0	0	71
7:15 - 8:15	0	41	0	0	41	0	38	0	0	38	0	0	0	0	0	0	0	0	0	0	0	79
7:30 - 8:30	0	41	0	0	41	0	40	0	0	40	0	0	0	0	0	0	0	0	0	0	0	81
7:45 - 8:45	0	40	0	0	40	0	47	0	0	47	0	0	0	0	0	0	0	0	0	0	0	87
8:00 - 9:00	0	38	0	0	38	0	56	1	0	57	0	0	0	0	0	0	0	0	0	0	0	95
<b>PEAK HOUR</b>																						
<b>7:30 - 8:30</b>	0	41	0	0	41	0	40	0	0	40	0	0	0	0	0	0	0	0	0	0	0	81
<b>PM</b>																						
3:00 - 3:15	0	5	0	0	5	0	7	0	0	7	0	0	0	0	0						0	12
3:15 - 3:30	0	8	0	0	8	0	11	0	0	11	0	0	0	0	0						0	19
3:30 - 3:45	0	3	0	0	3	0	8	0	0	8	0	0	0	0	0						0	11
3:45 - 4:00	0	14	0	0	14	0	8	0	0	8	0	0	0	0	0						0	22
4:00 - 4:15	0	5	0	0	5	0	7	0	0	7	0	0	0	0	0						0	12
4:15 - 4:30	0	4	0	0	4	0	11	0	0	11	0	0	0	0	0						0	15
4:30 - 4:45	0	8	0	0	8	0	11	0	0	11	0	0	0	0	0						0	19
4:45 - 5:00	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0						0	3
5:00 - 5:15	0	11	0	0	11	0	7	0	0	7	1	0	0	0	1						0	19
5:15 - 5:30	0	7	0	0	7	0	4	0	0	4	0	0	0	0	0						0	11
5:30 - 5:45	0	6	0	0	6	0	5	0	0	5	0	0	0	0	0						0	11
5:45 - 6:00	0	6	0	0	6	0	4	0	0	4	0	0	0	0	0						0	10
<b>3 Hr Totals</b>	0	80	0	0	80	0	83	0	0	83	1	0	0	0	1	0	0	0	0	0	0	164
<b>1 Hr Totals</b>																						
3:00 - 4:00	0	30	0	0	30	0	34	0	0	34	0	0	0	0	0	0	0	0	0	0	0	64
3:15 - 4:15	0	30	0	0	30	0	34	0	0	34	0	0	0	0	0	0	0	0	0	0	0	64
3:30 - 4:30	0	26	0	0	26	0	34	0	0	34	0	0	0	0	0	0	0	0	0	0	0	60
3:45 - 4:45	0	31	0	0	31	0	37	0	0	37	0	0	0	0	0	0	0	0	0	0	0	68
4:00 - 5:00	0	20	0	0	20	0	29	0	0	29	0	0	0	0	0	0	0	0	0	0	0	49
4:15 - 5:15	0	26	0	0	26	0	29	0	0	29	1	0	0	0	1	0	0	0	0	0	0	56
4:30 - 5:30	0	29	0	0	29	0	22	0	0	22	1	0	0	0	1	0	0	0	0	0	0	52
4:45 - 5:45	0	27	0	0	27	0	16	0	0	16	1	0	0	0	1	0	0	0	0	0	0	44
5:00 - 6:00	0	30	0	0	30	0	20	0	0	20	1	0	0	0	1	0	0	0	0	0	0	51
<b>PEAK HOUR</b>																						
<b>4:15 - 5:15</b>	0	26	0	0	26	0	29	0	0	29	1	0	0	0	1	0	0	0	0	0	0	56

**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W	
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL		
<b>AM</b>																						
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
8:00 - 8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0						0	1
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
<b>2 Hr Totals</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>1 Hr Totals</b>																						
7:00 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 - 8:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 - 8:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 - 9:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>PEAK HOUR</b>																						
<b>7:30 - 8:30</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>PM</b>																						
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
3:15 - 3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
3:30 - 3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
4:15 - 4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
4:30 - 4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1						0	1
5:15 - 5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
5:30 - 5:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0						0	1
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
<b>3 Hr Totals</b>	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
<b>1 Hr Totals</b>																						
3:00 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 - 4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 - 4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 - 5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 - 5:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
4:30 - 5:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
4:45 - 5:45	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
5:00 - 6:00	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
<b>PEAK HOUR</b>																						
<b>4:15 - 5:15</b>	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	0	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	0	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0

	EAST LEG Mount Hope Drive		WEST LEG	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	0	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	0	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0

**TOTALS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	7	168	0	0	175	0	252	3	0	255	5	0	3	0	8					0	438
11:15 - 11:30	1	179	0	0	180	0	252	3	0	255	0	0	7	0	7					0	442
11:30 - 11:45	4	211	0	0	215	0	264	2	0	266	5	0	7	0	12					0	493
11:45 - 12:00	2	211	0	1	213	0	257	5	0	262	8	0	10	0	18					0	493
12:00 - 12:15	0	198	0	0	198	0	258	5	0	263	3	0	5	0	8					0	469
12:15 - 12:30	2	216	0	0	218	0	257	5	0	262	11	0	4	0	15					0	495
12:30 - 12:45	3	176	0	0	179	0	256	5	0	261	4	0	4	0	8					0	448
12:45 - 1:00	2	192	0	0	194	0	260	4	0	264	1	0	8	0	9					0	467
<b>2 Hr Totals</b>	21	1551	0	1	1572	0	2056	32	0	2088	37	0	48	0	85	0	0	0	0	0	3745
<b>1 Hr Totals</b>																					
11:00 - 12:00	14	769	0	1	783	0	1025	13	0	1038	18	0	27	0	45					0	1866
11:15 - 12:15	7	799	0	1	806	0	1031	15	0	1046	16	0	29	0	45					0	1897
11:30 - 12:30	8	836	0	1	844	0	1036	17	0	1053	27	0	26	0	53					0	1950
11:45 - 12:45	7	801	0	1	808	0	1028	20	0	1048	26	0	23	0	49					0	1905
12:00 - 1:00	7	782	0	0	789	0	1031	19	0	1050	19	0	21	0	40	0	0	0	0	0	1879
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	8	836	0	1	844	0	1036	17	0	1053	27	0	26	0	53					0	1950

Approach PHF 0.97 0.99 0.74 - 0.98  
 Intersection PHF

Sat%HV 0.0% 2.3% - - 3.1% 11.8% 3.7% - 0.0% - - -

Intersection %HV Sat 2.8%

**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	7	163	0	0	170	0	244	2	0	246	5	0	3	0	8					0	424
11:15 - 11:30	1	170	0	0	171	0	241	3	0	244	0	0	6	0	6					0	421
11:30 - 11:45	4	204	0	0	208	0	260	2	0	262	4	0	7	0	11					0	481
11:45 - 12:00	2	204	0	1	206	0	248	4	0	252	8	0	10	0	18					0	476
12:00 - 12:15	0	196	0	0	196	0	250	5	0	255	3	0	5	0	8					0	459
12:15 - 12:30	2	213	0	0	215	0	246	4	0	250	11	0	4	0	15					0	480
12:30 - 12:45	3	168	0	0	171	0	248	5	0	253	4	0	4	0	8					0	432
12:45 - 1:00	2	187	0	0	189	0	257	4	0	261	0	0	8	0	8					0	458
<b>2 Hr Totals</b>	21	1505	0	1	1526	0	1994	29	0	2023	35	0	47	0	82	0	0	0	0	0	3631
<b>1 Hr Totals</b>																					
11:00 - 12:00	14	741	0	1	755	0	993	11	0	1004	17	0	26	0	43					0	1802
11:15 - 12:15	7	774	0	1	781	0	999	14	0	1013	15	0	28	0	43					0	1837
11:30 - 12:30	8	817	0	1	825	0	1004	15	0	1019	26	0	26	0	52					0	1896
11:45 - 12:45	7	781	0	1	788	0	992	18	0	1010	26	0	23	0	49					0	1847
12:00 - 1:00	7	764	0	0	771	0	1001	18	0	1019	18	0	21	0	39	0	0	0	0	0	1829
<b>PEAK HOUR</b>																					
11:30 - 12:30	8	817	0	1	825	0	1004	15	0	1019	26	0	26	0	52					0	1896

**MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W	
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL		
<b>AM</b>																						
11:00 - 11:15	0	3	0	0	3	0	4	1	0	5	0	0	0	0	0						0	8
11:15 - 11:30	0	3	0	0	3	0	2	0	0	2	0	0	1	0	1						0	6
11:30 - 11:45	0	2	0	0	2	0	3	0	0	3	1	0	0	0	1						0	6
11:45 - 12:00	0	5	0	0	5	0	5	1	0	6	0	0	0	0	0						0	11
12:00 - 12:15	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0						0	6
12:15 - 12:30	0	1	0	0	1	0	7	1	0	8	0	0	0	0	0						0	9
12:30 - 12:45	0	5	0	0	5	0	5	0	0	5	0	0	0	0	0						0	10
12:45 - 1:00	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1						0	3
<b>2 Hr Totals</b>	0	21	0	0	21	0	32	3	0	35	2	0	1	0	3	0	0	0	0	0	0	59
<b>1 Hr Totals</b>																						
11:00 - 12:00	0	13	0	0	13	0	14	2	0	16	1	0	1	0	2						0	31
11:15 - 12:15	0	11	0	0	11	0	15	1	0	16	1	0	1	0	2						0	29
11:30 - 12:30	0	9	0	0	9	0	20	2	0	22	1	0	0	0	1						0	32
11:45 - 12:45	0	12	0	0	12	0	22	2	0	24	0	0	0	0	0						0	36
12:00 - 1:00	0	8	0	0	8	0	18	1	0	19	1	0	0	0	1	0	0	0	0	0	0	28
<b>PEAK HOUR</b>																						
<b>11:30 - 12:30</b>	0	9	0	0	9	0	20	2	0	22	1	0	0	0	1						0	32

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0					0	6
11:15 - 11:30	0	6	0	0	6	0	9	0	0	9	0	0	0	0	0					0	15
11:30 - 11:45	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0					0	6
11:45 - 12:00	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0					0	6
12:00 - 12:15	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0					0	4
12:15 - 12:30	0	2	0	0	2	0	4	0	0	4	0	0	0	0	0					0	6
12:30 - 12:45	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0					0	6
12:45 - 1:00	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0					0	6
<b>2 Hr Totals</b>	0	25	0	0	25	0	30	0	0	30	0	0	0	0	0	0	0	0	0	0	55
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	15	0	0	15	0	18	0	0	18	0	0	0	0	0					0	33
11:15 - 12:15	0	14	0	0	14	0	17	0	0	17	0	0	0	0	0					0	31
11:30 - 12:30	0	10	0	0	10	0	12	0	0	12	0	0	0	0	0					0	22
11:45 - 12:45	0	8	0	0	8	0	14	0	0	14	0	0	0	0	0					0	22
12:00 - 1:00	0	10	0	0	10	0	12	0	0	12	0	0	0	0	0	0	0	0	0	0	22
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	10	0	0	10	0	12	0	0	12	0	0	0	0	0					0	22



**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on: Mount Hope Drive					TRAFFIC FROM WEST on:					TOTAL N + S + E + W	
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL		
<b>AM</b>																						
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
12:45 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
<b>2 Hr Totals</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>1 Hr Totals</b>																						
11:00 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
11:15 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
11:30 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
11:45 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0
12:00 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HOUR</b>																						
<b>11:30 - 12:30</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						0	0

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulecard  
 and: Mount Hope Drive  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15	0	0	0	0
11:15 - 11:30	0	0	0	0
11:30 - 11:45	0	0	0	0
11:45 - 12:00	0	0	0	0
12:00 - 12:15	0	0	0	0
12:15 - 12:30	0	0	0	0
12:30 - 12:45	0	0	0	0
12:45 - 1:00	0	0	0	0
<b>2 Hr Totals</b>				
11:00 - 12:00	0	0	0	0
11:15 - 12:15	0	0	0	0
11:30 - 12:30	0	0	0	0
11:45 - 12:45	0	0	0	0
12:00 - 1:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
TIME	EAST LEG MOUNT HOPE DRIVE		WEST LEG	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15	0	0		
11:15 - 11:30	0	0		
11:30 - 11:45	0	0		
11:45 - 12:00	0	0		
12:00 - 12:15	0	0		
12:15 - 12:30	0	0		
12:30 - 12:45	0	0		
12:45 - 1:00	0	0		
<b>2 Hr Totals</b>				
11:00 - 12:00	0	0		
11:15 - 12:15	0	0		
11:30 - 12:30	0	0		
11:45 - 12:45	0	0		
12:00 - 1:00	0	0		
<b>TOTALS</b>	0	0		

**TOTALS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
and: I-87 Off-Ramps  
Location: Albany County, NY

Counted by: VCU  
Date: September 20, 2017  
Weather: Warm/Mostly Cloudy  
Entered by: JB

Wednesday  
Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	128	0	0	128	0	180	0	0	180	0	0	0	0	0	97	0	71	0	168	476
7:15 - 7:30	0	136	0	0	136	0	163	0	0	163	0	0	0	0	0	125	0	72	0	197	496
7:30 - 7:45	0	172	0	0	172	0	229	0	0	229	0	0	0	0	0	120	0	72	0	192	593
7:45 - 8:00	0	159	0	0	159	0	214	0	0	214	0	0	0	0	0	148	0	70	0	218	591
8:00 - 8:15	0	167	0	0	167	0	148	0	0	148	0	0	0	0	0	132	0	87	0	219	534
8:15 - 8:30	0	185	0	0	185	0	163	0	0	163	0	0	0	0	0	143	0	97	0	240	588
8:30 - 8:45	0	137	0	0	137	0	147	0	0	147	0	0	0	0	0	132	0	77	0	209	493
8:45 - 9:00	0	117	0	0	117	0	128	0	0	128	0	0	0	0	0	133	0	77	0	210	455
<b>2 Hr Totals</b>	0	1201	0	0	1201	0	1372	0	0	1372	0	0	0	0	0	1030	0	623	0	1653	4226
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	595	0	0	595	0	786	0	0	786	0	0	0	0	0	490	0	285	0	775	2156
7:15 - 8:15	0	634	0	0	634	0	754	0	0	754	0	0	0	0	0	525	0	301	0	826	2214
7:30 - 8:30	0	683	0	0	683	0	754	0	0	754	0	0	0	0	0	543	0	326	0	869	2306
7:45 - 8:45	0	648	0	0	648	0	672	0	0	672	0	0	0	0	0	555	0	331	0	886	2206
8:00 - 9:00	0	606	0	0	606	0	586	0	0	586	0	0	0	0	0	540	0	338	0	878	2070
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	683	0	0	683	0	754	0	0	754	0	0	0	0	0	543	0	326	0	869	2306
<b>PM</b>																					
3:00 - 3:15	0	183	0	0	183	0	133	0	0	133	0	0	0	0	0	39	0	82	0	121	437
3:15 - 3:30	0	224	0	0	224	0	128	0	0	128	0	0	0	0	0	60	0	81	0	141	493
3:30 - 3:45	0	253	0	0	253	0	163	0	0	163	0	0	0	0	0	52	0	60	0	112	528
3:45 - 4:00	0	284	0	0	284	0	146	0	0	146	0	0	0	0	0	44	0	100	0	144	574
4:00 - 4:15	0	277	0	0	277	0	152	0	0	152	0	0	0	0	0	38	0	71	0	109	538
4:15 - 4:30	0	303	0	0	303	0	135	0	0	135	0	0	0	0	0	36	0	94	0	130	568
4:30 - 4:45	0	280	0	0	280	0	151	0	0	151	0	0	0	0	0	44	0	85	0	129	560
4:45 - 5:00	0	297	0	0	297	0	160	0	0	160	0	0	0	0	0	43	0	115	0	158	615
5:00 - 5:15	0	314	0	0	314	0	168	0	0	168	0	0	0	0	0	37	0	111	0	148	630
5:15 - 5:30	0	273	0	0	273	0	142	0	0	142	0	0	0	0	0	51	0	110	0	161	576
5:30 - 5:45	0	304	0	0	304	0	138	0	0	138	0	0	0	0	0	59	0	103	0	162	604
5:45 - 6:00	0	300	0	0	300	0	122	0	0	122	0	0	0	0	0	37	0	106	0	143	565
<b>3 Hr Totals</b>	0	3292	0	0	3292	0	1738	0	0	1738	0	0	0	0	0	540	0	1118	0	1658	6688
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	944	0	0	944	0	570	0	0	570	0	0	0	0	0	195	0	323	0	518	2032
3:15 - 4:15	0	1038	0	0	1038	0	589	0	0	589	0	0	0	0	0	194	0	312	0	506	2133
3:30 - 4:30	0	1117	0	0	1117	0	596	0	0	596	0	0	0	0	0	170	0	325	0	495	2208
3:45 - 4:45	0	1144	0	0	1144	0	584	0	0	584	0	0	0	0	0	162	0	350	0	512	2240
4:00 - 5:00	0	1157	0	0	1157	0	598	0	0	598	0	0	0	0	0	161	0	365	0	526	2281
4:15 - 5:15	0	1194	0	0	1194	0	614	0	0	614	0	0	0	0	0	160	0	405	0	565	2373
4:30 - 5:30	0	1164	0	0	1164	0	621	0	0	621	0	0	0	0	0	175	0	421	0	596	2381
4:45 - 5:45	0	1188	0	0	1188	0	608	0	0	608	0	0	0	0	0	190	0	439	0	629	2425
5:00 - 6:00	0	1191	0	0	1191	0	570	0	0	570	0	0	0	0	0	184	0	430	0	614	2375
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	1188	0	0	1188	0	608	0	0	608	0	0	0	0	0	190	0	439	0	629	2425

Approach /					0.92	0.82	-		0.91	0.97	AM
Intersection					0.95	0.90	-		0.97	0.96	PM
AM%HV	-	8.5%	-	-	6.6%	-	-	-	0.9%	-	11.7%
PM%HV	-	1.5%	-	-	2.8%	-	-	-	0.0%	-	7.3%

Intersection %HV

6.5% AM  
2.8% PM

**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	119	0	0	119	0	173	0	0	173					0	92	0	63	0	155	447
7:15 - 7:30	0	124	0	0	124	0	153	0	0	153					0	124	0	67	0	191	468
7:30 - 7:45	0	161	0	0	161	0	215	0	0	215					0	118	0	62	0	180	556
7:45 - 8:00	0	145	0	0	145	0	202	0	0	202					0	147	0	59	0	206	553
8:00 - 8:15	0	152	0	0	152	0	136	0	0	136					0	132	0	78	0	210	498
8:15 - 8:30	0	167	0	0	167	0	151	0	0	151					0	141	0	89	0	230	548
8:30 - 8:45	0	124	0	0	124	0	134	0	0	134					0	130	0	63	0	193	451
8:45 - 9:00	0	100	0	0	100	0	108	0	0	108					0	130	0	66	0	196	404
<b>2 Hr Totals</b>	0	1092	0	0	1092	0	1272	0	0	1272	0	0	0	0	0	1014	0	547	0	1561	3925
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	549	0	0	549	0	743	0	0	743	0	0	0	0	0	481	0	251	0	732	2024
7:15 - 8:15	0	582	0	0	582	0	706	0	0	706	0	0	0	0	0	521	0	266	0	787	2075
7:30 - 8:30	0	625	0	0	625	0	704	0	0	704	0	0	0	0	0	538	0	288	0	826	2155
7:45 - 8:45	0	588	0	0	588	0	623	0	0	623	0	0	0	0	0	550	0	289	0	839	2050
8:00 - 9:00	0	543	0	0	543	0	529	0	0	529	0	0	0	0	0	533	0	296	0	829	1901
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	625	0	0	625	0	704	0	0	704	0	0	0	0	0	538	0	288	0	826	2155
<b>PM</b>																					
3:00 - 3:15	0	174	0	0	174	0	126	0	0	126					0	37	0	72	0	109	409
3:15 - 3:30	0	210	0	0	210	0	119	0	0	119					0	60	0	73	0	133	462
3:30 - 3:45	0	242	0	0	242	0	157	0	0	157					0	49	0	57	0	106	505
3:45 - 4:00	0	271	0	0	271	0	137	0	0	137					0	44	0	86	0	130	538
4:00 - 4:15	0	265	0	0	265	0	148	0	0	148					0	38	0	65	0	103	516
4:15 - 4:30	0	299	0	0	299	0	124	0	0	124					0	36	0	89	0	125	548
4:30 - 4:45	0	265	0	0	265	0	143	0	0	143					0	43	0	79	0	122	530
4:45 - 5:00	0	292	0	0	292	0	158	0	0	158					0	43	0	109	0	152	602
5:00 - 5:15	0	311	0	0	311	0	162	0	0	162					0	37	0	95	0	132	605
5:15 - 5:30	0	268	0	0	268	0	139	0	0	139					0	51	0	104	0	155	562
5:30 - 5:45	0	299	0	0	299	0	132	0	0	132					0	59	0	99	0	158	589
5:45 - 6:00	0	291	0	0	291	0	116	0	0	116					0	36	0	98	0	134	541
<b>3 Hr Totals</b>	0	3187	0	0	3187	0	1661	0	0	1661	0	0	0	0	0	533	0	1026	0	1559	6407
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	897	0	0	897	0	539	0	0	539	0	0	0	0	0	190	0	288	0	478	1914
3:15 - 4:15	0	988	0	0	988	0	561	0	0	561	0	0	0	0	0	191	0	281	0	472	2021
3:30 - 4:30	0	1077	0	0	1077	0	566	0	0	566	0	0	0	0	0	167	0	297	0	464	2107
3:45 - 4:45	0	1100	0	0	1100	0	552	0	0	552	0	0	0	0	0	161	0	319	0	480	2132
4:00 - 5:00	0	1121	0	0	1121	0	573	0	0	573	0	0	0	0	0	160	0	342	0	502	2196
4:15 - 5:15	0	1167	0	0	1167	0	587	0	0	587	0	0	0	0	0	159	0	372	0	531	2285
4:30 - 5:30	0	1136	0	0	1136	0	602	0	0	602	0	0	0	0	0	174	0	387	0	561	2299
4:45 - 5:45	0	1170	0	0	1170	0	591	0	0	591	0	0	0	0	0	190	0	407	0	597	2358
5:00 - 6:00	0	1169	0	0	1169	0	549	0	0	549	0	0	0	0	0	183	0	396	0	579	2297
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	1170	0	0	1170	0	591	0	0	591	0	0	0	0	0	190	0	407	0	597	2358

**MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	5	0	0	5	0	5	0	0	5					0	5	0	5	0	10	20
7:15 - 7:30	0	8	0	0	8	0	6	0	0	6					0	0	0	0	0	0	14
7:30 - 7:45	0	7	0	0	7	0	10	0	0	10					0	2	0	2	0	4	21
7:45 - 8:00	0	11	0	0	11	0	7	0	0	7					0	1	0	1	0	2	20
8:00 - 8:15	0	12	0	0	12	0	4	0	0	4					0	0	0	4	0	4	20
8:15 - 8:30	0	16	0	0	16	0	5	0	0	5					0	1	0	1	0	2	23
8:30 - 8:45	0	11	0	0	11	0	7	0	0	7					0	2	0	4	0	6	24
8:45 - 9:00	0	14	0	0	14	0	6	0	0	6					0	2	0	3	0	5	25
<b>2 Hr Totals</b>	0	84	0	0	84	0	50	0	0	50	0	0	0	0	0	13	0	20	0	33	167
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	31	0	0	31	0	28	0	0	28	0	0	0	0	0	8	0	8	0	16	75
7:15 - 8:15	0	38	0	0	38	0	27	0	0	27	0	0	0	0	0	3	0	7	0	10	75
7:30 - 8:30	0	46	0	0	46	0	26	0	0	26	0	0	0	0	0	4	0	8	0	12	84
7:45 - 8:45	0	50	0	0	50	0	23	0	0	23	0	0	0	0	0	4	0	10	0	14	87
8:00 - 9:00	0	53	0	0	53	0	22	0	0	22	0	0	0	0	0	5	0	12	0	17	92
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	46	0	0	46	0	26	0	0	26	0	0	0	0	0	4	0	8	0	12	84
<b>PM</b>																					
3:00 - 3:15	0	9	0	0	9	0	4	0	0	4					0	1	0	4	0	5	18
3:15 - 3:30	0	12	0	0	12	0	3	0	0	3					0	0	0	2	0	2	17
3:30 - 3:45	0	10	0	0	10	0	2	0	0	2					0	2	0	1	0	3	15
3:45 - 4:00	0	9	0	0	9	0	6	0	0	6					0	0	0	2	0	2	17
4:00 - 4:15	0	11	0	0	11	0	1	0	0	1					0	0	0	1	0	1	13
4:15 - 4:30	0	2	0	0	2	0	2	0	0	2					0	0	0	3	0	3	7
4:30 - 4:45	0	10	0	0	10	0	2	0	0	2					0	1	0	5	0	6	18
4:45 - 5:00	0	5	0	0	5	0	2	0	0	2					0	0	0	3	0	3	10
5:00 - 5:15	0	3	0	0	3	0	0	0	0	0					0	0	0	4	0	4	7
5:15 - 5:30	0	1	0	0	1	0	2	0	0	2					0	0	0	3	0	3	6
5:30 - 5:45	0	3	0	0	3	0	1	0	0	1					0	0	0	1	0	1	5
5:45 - 6:00	0	6	0	0	6	0	2	0	0	2					0	0	0	5	0	5	13
<b>3 Hr Totals</b>	0	81	0	0	81	0	27	0	0	27	0	0	0	0	0	4	0	34	0	38	146
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	40	0	0	40	0	15	0	0	15	0	0	0	0	0	3	0	9	0	12	67
3:15 - 4:15	0	42	0	0	42	0	12	0	0	12	0	0	0	0	0	2	0	6	0	8	62
3:30 - 4:30	0	32	0	0	32	0	11	0	0	11	0	0	0	0	0	2	0	7	0	9	52
3:45 - 4:45	0	32	0	0	32	0	11	0	0	11	0	0	0	0	0	1	0	11	0	12	55
4:00 - 5:00	0	28	0	0	28	0	7	0	0	7	0	0	0	0	0	1	0	12	0	13	48
4:15 - 5:15	0	20	0	0	20	0	6	0	0	6	0	0	0	0	0	1	0	15	0	16	42
4:30 - 5:30	0	19	0	0	19	0	6	0	0	6	0	0	0	0	0	1	0	15	0	16	41
4:45 - 5:45	0	12	0	0	12	0	5	0	0	5	0	0	0	0	0	0	0	11	0	11	28
5:00 - 6:00	0	13	0	0	13	0	5	0	0	5	0	0	0	0	0	0	0	13	0	13	31
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	12	0	0	12	0	5	0	0	5	0	0	0	0	0	0	0	11	0	11	28

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	4	0	0	4	0	2	0	0	2					0	0	0	3	0	3	9
7:15 - 7:30	0	4	0	0	4	0	4	0	0	4					0	1	0	5	0	6	14
7:30 - 7:45	0	4	0	0	4	0	4	0	0	4					0	0	0	8	0	8	16
7:45 - 8:00	0	3	0	0	3	0	5	0	0	5					0	0	0	10	0	10	18
8:00 - 8:15	0	3	0	0	3	0	8	0	0	8					0	0	0	5	0	5	16
8:15 - 8:30	0	2	0	0	2	0	7	0	0	7					0	1	0	7	0	8	17
8:30 - 8:45	0	2	0	0	2	0	6	0	0	6					0	0	0	10	0	10	18
8:45 - 9:00	0	3	0	0	3	0	14	0	0	14					0	1	0	8	0	9	26
<b>2 Hr Totals</b>	0	25	0	0	25	0	50	0	0	50	0	0	0	0	0	3	0	56	0	59	134
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	15	0	0	15	0	15	0	0	15	0	0	0	0	0	1	0	26	0	27	57
7:15 - 8:15	0	14	0	0	14	0	21	0	0	21	0	0	0	0	0	1	0	28	0	29	64
7:30 - 8:30	0	12	0	0	12	0	24	0	0	24	0	0	0	0	0	1	0	30	0	31	67
7:45 - 8:45	0	10	0	0	10	0	26	0	0	26	0	0	0	0	0	1	0	32	0	33	69
8:00 - 9:00	0	10	0	0	10	0	35	0	0	35	0	0	0	0	0	2	0	30	0	32	77
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	12	0	0	12	0	24	0	0	24	0	0	0	0	0	1	0	30	0	31	67
<b>PM</b>																					
3:00 - 3:15	0	0	0	0	0	0	3	0	0	3					0	1	0	6	0	7	10
3:15 - 3:30	0	2	0	0	2	0	6	0	0	6					0	0	0	6	0	6	14
3:30 - 3:45	0	1	0	0	1	0	4	0	0	4					0	1	0	2	0	3	8
3:45 - 4:00	0	4	0	0	4	0	3	0	0	3					0	0	0	12	0	12	19
4:00 - 4:15	0	1	0	0	1	0	3	0	0	3					0	0	0	5	0	5	9
4:15 - 4:30	0	2	0	0	2	0	9	0	0	9					0	0	0	2	0	2	13
4:30 - 4:45	0	5	0	0	5	0	6	0	0	6					0	0	0	1	0	1	12
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0					0	0	0	3	0	3	3
5:00 - 5:15	0	0	0	0	0	0	6	0	0	6					0	0	0	12	0	12	18
5:15 - 5:30	0	4	0	0	4	0	1	0	0	1					0	0	0	3	0	3	8
5:30 - 5:45	0	2	0	0	2	0	5	0	0	5					0	0	0	3	0	3	10
5:45 - 6:00	0	3	0	0	3	0	4	0	0	4					0	1	0	3	0	4	11
<b>3 Hr Totals</b>	0	24	0	0	24	0	50	0	0	50	0	0	0	0	0	3	0	58	0	61	135
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	7	0	0	7	0	16	0	0	16	0	0	0	0	0	2	0	26	0	28	51
3:15 - 4:15	0	8	0	0	8	0	16	0	0	16	0	0	0	0	0	1	0	25	0	26	50
3:30 - 4:30	0	8	0	0	8	0	19	0	0	19	0	0	0	0	0	1	0	21	0	22	49
3:45 - 4:45	0	12	0	0	12	0	21	0	0	21	0	0	0	0	0	0	0	20	0	20	53
4:00 - 5:00	0	8	0	0	8	0	18	0	0	18	0	0	0	0	0	0	0	11	0	11	37
4:15 - 5:15	0	7	0	0	7	0	21	0	0	21	0	0	0	0	0	0	0	18	0	18	46
4:30 - 5:30	0	9	0	0	9	0	13	0	0	13	0	0	0	0	0	0	0	19	0	19	41
4:45 - 5:45	0	6	0	0	6	0	12	0	0	12	0	0	0	0	0	0	0	21	0	21	39
5:00 - 6:00	0	9	0	0	9	0	16	0	0	16	0	0	0	0	0	1	0	21	0	22	47
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	6	0	0	6	0	12	0	0	12	0	0	0	0	0	0	0	21	0	21	39

**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
<b>2 Hr Totals</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PM</b>																					
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
3:15 - 3:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
3:30 - 3:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
4:15 - 4:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
4:30 - 4:45	0	1	0	0	1	0	0	0	0	0					0	0	0	0	0	0	1
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
5:00 - 5:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
5:15 - 5:30	0	0	0	0	0	0	1	0	0	1					0	0	0	1	0	1	2
5:30 - 5:45	0	1	0	0	1	0	0	0	0	0					0	0	0	0	0	0	1
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
<b>3 Hr Totals</b>	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	4
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 - 4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 - 4:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 - 5:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 - 5:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 - 5:30	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3
4:45 - 5:45	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3
5:00 - 6:00	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	0	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	0	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0

	EAST LEG		WEST LEG I-87 Off-Ramps	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	0	1
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	0	1
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	0	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0



**TOTALS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 4



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	150	0	0	150	0	121	0	0	121					0	34	0	34	0	68	339
11:15 - 11:30	0	153	0	0	153	0	135	0	0	135					0	44	0	33	0	77	365
11:30 - 11:45	0	157	0	0	157	0	151	0	0	151					0	40	0	58	0	98	406
11:45 - 12:00	0	149	0	0	149	0	125	0	0	125					0	42	0	65	0	107	381
12:00 - 12:15	0	174	0	0	174	0	133	0	0	133					0	36	0	43	0	79	386
12:15 - 12:30	0	173	0	0	173	0	148	0	0	148					0	50	0	46	0	96	417
12:30 - 12:45	0	137	0	0	137	0	134	0	0	134					0	40	0	51	0	91	362
12:45 - 1:00	0	143	0	0	143	0	136	0	1	136					0	42	0	55	0	97	376
<b>2 Hr Totals</b>	0	1236	0	0	1236	0	1083	0	1	1083	0	0	0	0	0	328	0	385	0	713	3032
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	609	0	0	609	0	532	0	0	532					0	160	0	190	0	350	1491
11:15 - 12:15	0	633	0	0	633	0	544	0	0	544					0	162	0	199	0	361	1538
11:30 - 12:30	0	653	0	0	653	0	557	0	0	557					0	168	0	212	0	380	1590
11:45 - 12:45	0	633	0	0	633	0	540	0	0	540					0	168	0	205	0	373	1546
12:00 - 1:00	0	627	0	0	627	0	551	0	1	551	0	0	0	0	0	168	0	195	0	363	1541
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	653	0	0	653	0	557	0	0	557					0	168	0	212	0	380	1590

Approach PHF 0.94 0.92 - 0.89 0.95  
 Intersection PHF

Sat%HV - 0.8% - - 2.7% - - - 1.8% - 6.6%

Intersection %HV Sat 2.3%

**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 4



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	146	0	0	146	0	117	0	0	117					0	34	0	32	0	66	329
11:15 - 11:30	0	151	0	0	151	0	130	0	0	130					0	44	0	27	0	71	352
11:30 - 11:45	0	153	0	0	153	0	149	0	0	149					0	39	0	54	0	93	395
11:45 - 12:00	0	148	0	0	148	0	120	0	0	120					0	42	0	59	0	101	369
12:00 - 12:15	0	174	0	0	174	0	129	0	0	129					0	35	0	42	0	77	380
12:15 - 12:30	0	173	0	0	173	0	144	0	0	144					0	49	0	43	0	92	409
12:30 - 12:45	0	135	0	0	135	0	129	0	0	129					0	39	0	45	0	84	348
12:45 - 1:00	0	140	0	0	140	0	134	0	1	134					0	42	0	53	0	95	369
<b>2 Hr Totals</b>	0	1220	0	0	1220	0	1052	0	1	1052	0	0	0	0	0	324	0	355	0	679	2951
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	598	0	0	598	0	516	0	0	516					0	159	0	172	0	331	1445
11:15 - 12:15	0	626	0	0	626	0	528	0	0	528					0	160	0	182	0	342	1496
11:30 - 12:30	0	648	0	0	648	0	542	0	0	542					0	165	0	198	0	363	1553
11:45 - 12:45	0	630	0	0	630	0	522	0	0	522					0	165	0	189	0	354	1506
12:00 - 1:00	0	622	0	0	622	0	536	0	1	536	0	0	0	0	0	165	0	183	0	348	1506
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	648	0	0	648	0	542	0	0	542					0	165	0	198	0	363	1553

**MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 4



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	4	0	0	4	0	1	0	0	1					0	0	0	0	0	0	5
11:15 - 11:30	0	0	0	0	0	0	1	0	0	1					0	0	0	2	0	2	3
11:30 - 11:45	0	2	0	0	2	0	1	0	0	1					0	1	0	1	0	2	5
11:45 - 12:00	0	1	0	0	1	0	2	0	0	2					0	0	0	4	0	4	7
12:00 - 12:15	0	0	0	0	0	0	2	0	0	2					0	1	0	0	0	1	3
12:15 - 12:30	0	0	0	0	0	0	2	0	0	2					0	1	0	1	0	2	4
12:30 - 12:45	0	2	0	0	2	0	4	0	0	4					0	0	0	3	0	3	9
12:45 - 1:00	0	1	0	0	1	0	0	0	0	0					0	0	0	0	0	0	1
<b>2 Hr Totals</b>	0	10	0	0	10	0	13	0	0	13	0	0	0	0	0	3	0	11	0	14	37
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	7	0	0	7	0	5	0	0	5					0	1	0	7	0	8	20
11:15 - 12:15	0	3	0	0	3	0	6	0	0	6					0	2	0	7	0	9	18
11:30 - 12:30	0	3	0	0	3	0	7	0	0	7					0	3	0	6	0	9	19
11:45 - 12:45	0	3	0	0	3	0	10	0	0	10					0	2	0	8	0	10	23
12:00 - 1:00	0	3	0	0	3	0	8	0	0	8	0	0	0	0	0	2	0	4	0	6	17
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	3	0	0	3	0	7	0	0	7					0	3	0	6	0	9	19

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 4



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	0	0	0	0	0	3	0	0	3					0	0	0	2	0	2	5
11:15 - 11:30	0	2	0	0	2	0	4	0	0	4					0	0	0	4	0	4	10
11:30 - 11:45	0	2	0	0	2	0	1	0	0	1					0	0	0	3	0	3	6
11:45 - 12:00	0	0	0	0	0	0	3	0	0	3					0	0	0	2	0	2	5
12:00 - 12:15	0	0	0	0	0	0	2	0	0	2					0	0	0	1	0	1	3
12:15 - 12:30	0	0	0	0	0	0	2	0	0	2					0	0	0	2	0	2	4
12:30 - 12:45	0	0	0	0	0	0	1	0	0	1					0	1	0	3	0	4	5
12:45 - 1:00	0	2	0	0	2	0	2	0	0	2					0	0	0	2	0	2	6
<b>2 Hr Totals</b>	0	6	0	0	6	0	18	0	0	18	0	0	0	0	0	1	0	19	0	20	44
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	4	0	0	4	0	11	0	0	11					0	0	0	11	0	11	26
11:15 - 12:15	0	4	0	0	4	0	10	0	0	10					0	0	0	10	0	10	24
11:30 - 12:30	0	2	0	0	2	0	8	0	0	8					0	0	0	8	0	8	18
11:45 - 12:45	0	0	0	0	0	0	8	0	0	8					0	1	0	8	0	9	17
12:00 - 1:00	0	2	0	0	2	0	7	0	0	7	0	0	0	0	0	1	0	8	0	9	18
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	2	0	0	2	0	8	0	0	8					0	0	0	8	0	8	18

**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 4



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 Off-Ramps					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:45 - 1:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
<b>2 Hr Totals</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:15 - 12:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:30 - 12:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:45 - 12:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:00 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 Off-Ramps  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 4



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15	0	0	0	0
11:15 - 11:30	0	0	0	0
11:30 - 11:45	0	0	0	0
11:45 - 12:00	0	0	0	0
12:00 - 12:15	0	0	0	0
12:15 - 12:30	0	0	0	0
12:30 - 12:45	0	0	0	0
12:45 - 1:00	0	0	0	0
<b>2 Hr Totals</b>				
11:00 - 12:00	0	0	0	0
11:15 - 12:15	0	0	0	0
11:30 - 12:30	0	0	0	0
11:45 - 12:45	0	0	0	0
12:00 - 1:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
TIME	EAST LEG		WEST LEG I-87 Off-Ramps	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15			0	0
11:15 - 11:30			0	0
11:30 - 11:45			0	0
11:45 - 12:00			0	0
12:00 - 12:15			0	0
12:15 - 12:30			0	0
12:30 - 12:45			0	0
12:45 - 1:00			0	0
<b>2 Hr Totals</b>				
11:00 - 12:00			0	0
11:15 - 12:15			0	0
11:30 - 12:30			0	0
11:45 - 12:45			0	0
12:00 - 1:00			0	0
<b>TOTALS</b>			0	0



**CARS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	114	38	0	152	91	182	0	0	273					0	0	0	0	0	0	425
7:15 - 7:30	0	142	52	0	194	70	212	0	0	282					0	0	0	0	0	0	476
7:30 - 7:45	0	152	56	0	208	104	239	0	0	343					0	0	0	0	0	0	551
7:45 - 8:00	0	126	63	0	189	103	246	0	0	349					0	0	0	0	0	0	538
8:00 - 8:15	0	167	51	0	218	76	188	0	0	264					0	0	0	0	0	0	482
8:15 - 8:30	0	159	49	0	208	65	239	0	0	304					0	0	0	0	0	0	512
8:30 - 8:45	0	120	35	0	155	64	202	0	0	266					0	0	0	0	0	0	421
8:45 - 9:00	0	91	34	0	125	50	169	0	0	219					0	0	0	0	0	0	344
<b>2 Hr Totals</b>	0	1071	378	0	1449	623	1677	0	0	2300	0	0	0	0	0	0	0	0	0	0	3749
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	534	209	0	743	368	879	0	0	1247	0	0	0	0	0	0	0	0	0	0	1990
7:15 - 8:15	0	587	222	0	809	353	885	0	0	1238	0	0	0	0	0	0	0	0	0	0	2047
7:30 - 8:30	0	604	219	0	823	348	912	0	0	1260	0	0	0	0	0	0	0	0	0	0	2083
7:45 - 8:45	0	572	198	0	770	308	875	0	0	1183	0	0	0	0	0	0	0	0	0	0	1953
8:00 - 9:00	0	537	169	0	706	255	798	0	0	1053	0	0	0	0	0	0	0	0	0	0	1759
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	604	219	0	823	348	912	0	0	1260	0	0	0	0	0	0	0	0	0	0	2083
<b>PM</b>																					
3:00 - 3:15	0	184	56	0	240	69	97	0	0	166					0	0	0	0	0	0	406
3:15 - 3:30	0	201	67	0	268	54	124	0	0	178					0	0	0	0	0	0	446
3:30 - 3:45	0	250	102	0	352	104	111	0	0	215					0	0	0	0	0	0	567
3:45 - 4:00	0	272	116	0	388	73	101	0	0	174					0	0	0	0	0	0	562
4:00 - 4:15	0	261	126	0	387	93	97	0	0	190					0	0	0	0	0	0	577
4:15 - 4:30	0	308	113	0	421	82	80	0	0	162					0	0	0	0	0	0	583
4:30 - 4:45	0	265	119	0	384	98	94	0	0	192					0	0	0	0	0	0	576
4:45 - 5:00	0	284	155	0	439	82	121	0	0	203					0	0	0	0	0	0	642
5:00 - 5:15	0	313	126	0	439	77	113	0	0	190					0	0	0	0	0	0	629
5:15 - 5:30	0	281	142	0	423	77	121	0	0	198					0	0	0	0	0	0	621
5:30 - 5:45	0	300	102	0	402	73	117	0	0	190					0	0	0	0	0	0	592
5:45 - 6:00	0	274	81	0	355	55	106	0	0	161					0	0	0	0	0	0	516
<b>3 Hr Totals</b>	0	3193	1305	0	4498	937	1282	0	0	2219	0	0	0	0	0	0	0	0	0	0	6717
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	907	341	0	1248	300	433	0	0	733	0	0	0	0	0	0	0	0	0	0	1981
3:15 - 4:15	0	984	411	0	1395	324	433	0	0	757	0	0	0	0	0	0	0	0	0	0	2152
3:30 - 4:30	0	1091	457	0	1548	352	389	0	0	741	0	0	0	0	0	0	0	0	0	0	2289
3:45 - 4:45	0	1106	474	0	1580	346	372	0	0	718	0	0	0	0	0	0	0	0	0	0	2298
4:00 - 5:00	0	1118	513	0	1631	355	392	0	0	747	0	0	0	0	0	0	0	0	0	0	2378
4:15 - 5:15	0	1170	513	0	1683	339	408	0	0	747	0	0	0	0	0	0	0	0	0	0	2430
4:30 - 5:30	0	1143	542	0	1685	334	449	0	0	783	0	0	0	0	0	0	0	0	0	0	2468
4:45 - 5:45	0	1178	525	0	1703	309	472	0	0	781	0	0	0	0	0	0	0	0	0	0	2484
5:00 - 6:00	0	1168	451	0	1619	282	457	0	0	739	0	0	0	0	0	0	0	0	0	0	2358
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	1178	525	0	1703	309	472	0	0	781	0	0	0	0	0	0	0	0	0	0	2484



**MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	4	1	0	5	2	4	0	0	6					0	0	0	0	0	0	11
7:15 - 7:30	0	8	0	0	8	5	2	0	0	7					0	0	0	0	0	0	15
7:30 - 7:45	0	7	0	0	7	7	4	0	0	11					0	0	0	0	0	0	18
7:45 - 8:00	0	10	3	0	13	4	2	0	0	6					0	0	0	0	0	0	19
8:00 - 8:15	0	16	0	0	16	3	2	0	0	5					0	0	0	0	0	0	21
8:15 - 8:30	0	18	0	0	18	3	2	0	0	5					0	0	0	0	0	0	23
8:30 - 8:45	0	8	1	0	9	3	8	0	0	11					0	0	0	0	0	0	20
8:45 - 9:00	0	18	1	0	19	6	3	0	0	9					0	0	0	0	0	0	28
<b>2 Hr Totals</b>	0	89	6	0	95	33	27	0	0	60	0	0	0	0	0	0	0	0	0	0	155
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	29	4	0	33	18	12	0	0	30	0	0	0	0	0	0	0	0	0	0	63
7:15 - 8:15	0	41	3	0	44	19	10	0	0	29	0	0	0	0	0	0	0	0	0	0	73
7:30 - 8:30	0	51	3	0	54	17	10	0	0	27	0	0	0	0	0	0	0	0	0	0	81
7:45 - 8:45	0	52	4	0	56	13	14	0	0	27	0	0	0	0	0	0	0	0	0	0	83
8:00 - 9:00	0	60	2	0	62	15	15	0	0	30	0	0	0	0	0	0	0	0	0	0	92
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	51	3	0	54	17	10	0	0	27	0	0	0	0	0	0	0	0	0	0	81
<b>PM</b>																					
3:00 - 3:15	0	12	2	0	14	1	2	0	0	3					0	0	0	0	0	0	17
3:15 - 3:30	0	10	3	0	13	2	1	0	0	3					0	0	0	0	0	0	16
3:30 - 3:45	0	6	1	0	7	1	3	0	0	4					0	0	0	0	0	0	11
3:45 - 4:00	0	10	0	0	10	4	2	0	0	6					0	0	0	0	0	0	16
4:00 - 4:15	0	11	0	0	11	2	0	0	0	2					0	0	0	0	0	0	13
4:15 - 4:30	0	5	2	0	7	1	1	0	0	2					0	0	0	0	0	0	9
4:30 - 4:45	0	7	0	0	7	1	2	0	0	3					0	0	0	0	0	0	10
4:45 - 5:00	0	5	0	0	5	1	0	0	0	1					0	0	0	0	0	0	6
5:00 - 5:15	0	4	0	0	4	0	0	0	0	0					0	0	0	0	0	0	4
5:15 - 5:30	0	1	0	0	1	1	0	0	0	1					0	0	0	0	0	0	2
5:30 - 5:45	0	5	0	0	5	0	1	0	0	1					0	0	0	0	0	0	6
5:45 - 6:00	0	3	0	0	3	0	2	0	0	2					0	0	0	0	0	0	5
<b>3 Hr Totals</b>	0	79	8	0	87	14	14	0	0	28	0	0	0	0	0	0	0	0	0	0	115
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	38	6	0	44	8	8	0	0	16	0	0	0	0	0	0	0	0	0	0	60
3:15 - 4:15	0	37	4	0	41	9	6	0	0	15	0	0	0	0	0	0	0	0	0	0	56
3:30 - 4:30	0	32	3	0	35	8	6	0	0	14	0	0	0	0	0	0	0	0	0	0	49
3:45 - 4:45	0	33	2	0	35	8	5	0	0	13	0	0	0	0	0	0	0	0	0	0	48
4:00 - 5:00	0	28	2	0	30	5	3	0	0	8	0	0	0	0	0	0	0	0	0	0	38
4:15 - 5:15	0	21	2	0	23	3	3	0	0	6	0	0	0	0	0	0	0	0	0	0	29
4:30 - 5:30	0	17	0	0	17	3	2	0	0	5	0	0	0	0	0	0	0	0	0	0	22
4:45 - 5:45	0	15	0	0	15	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	18
5:00 - 6:00	0	13	0	0	13	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	17
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	15	0	0	15	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	18

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	4	1	0	5	1	1	0	0	2					0	0	0	0	0	0	7
7:15 - 7:30	0	5	0	0	5	5	0	0	0	5					0	0	0	0	0	0	10
7:30 - 7:45	0	3	1	0	4	4	0	0	0	4					0	0	0	0	0	0	8
7:45 - 8:00	0	3	0	0	3	6	1	0	0	7					0	0	0	0	0	0	10
8:00 - 8:15	0	3	0	0	3	8	0	0	0	8					0	0	0	0	0	0	11
8:15 - 8:30	0	3	0	0	3	7	1	0	0	8					0	0	0	0	0	0	11
8:30 - 8:45	0	1	0	0	1	8	0	0	0	8					0	0	0	0	0	0	9
8:45 - 9:00	0	3	0	0	3	14	2	0	0	16					0	0	0	0	0	0	19
<b>2 Hr Totals</b>	0	25	2	0	27	53	5	0	0	58	0	0	0	0	0	0	0	0	0	0	85
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	15	2	0	17	16	2	0	0	18	0	0	0	0	0	0	0	0	0	0	35
7:15 - 8:15	0	14	1	0	15	23	1	0	0	24	0	0	0	0	0	0	0	0	0	0	39
7:30 - 8:30	0	12	1	0	13	25	2	0	0	27	0	0	0	0	0	0	0	0	0	0	40
7:45 - 8:45	0	10	0	0	10	29	2	0	0	31	0	0	0	0	0	0	0	0	0	0	41
8:00 - 9:00	0	10	0	0	10	37	3	0	0	40	0	0	0	0	0	0	0	0	0	0	50
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	12	1	0	13	25	2	0	0	27	0	0	0	0	0	0	0	0	0	0	40
<b>PM</b>																					
3:00 - 3:15	0	0	0	0	0	5	0	0	0	5					0	0	0	0	0	0	5
3:15 - 3:30	0	2	0	0	2	7	0	0	0	7					0	0	0	0	0	0	9
3:30 - 3:45	0	1	0	0	1	4	0	0	0	4					0	0	0	0	0	0	5
3:45 - 4:00	0	4	1	0	5	3	0	0	0	3					0	0	0	0	0	0	8
4:00 - 4:15	0	0	0	0	0	4	0	0	0	4					0	0	0	0	0	0	4
4:15 - 4:30	0	4	0	0	4	8	0	0	0	8					0	0	0	0	0	0	12
4:30 - 4:45	0	3	0	0	3	6	0	0	0	6					0	0	0	0	0	0	9
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
5:00 - 5:15	0	1	0	0	1	6	0	0	0	6					0	0	0	0	0	0	7
5:15 - 5:30	0	3	0	0	3	1	0	0	0	1					0	0	0	0	0	0	4
5:30 - 5:45	0	2	0	0	2	5	0	0	0	5					0	0	0	0	0	0	7
5:45 - 6:00	0	3	0	0	3	4	1	0	0	5					0	0	0	0	0	0	8
<b>3 Hr Totals</b>	0	23	1	0	24	53	1	0	0	54	0	0	0	0	0	0	0	0	0	0	78
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	7	1	0	8	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	27
3:15 - 4:15	0	7	1	0	8	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	26
3:30 - 4:30	0	9	1	0	10	19	0	0	0	19	0	0	0	0	0	0	0	0	0	0	29
3:45 - 4:45	0	11	1	0	12	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	33
4:00 - 5:00	0	7	0	0	7	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	25
4:15 - 5:15	0	8	0	0	8	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0	28
4:30 - 5:30	0	7	0	0	7	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	20
4:45 - 5:45	0	6	0	0	6	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	18
5:00 - 6:00	0	9	0	0	9	16	1	0	0	17	0	0	0	0	0	0	0	0	0	0	26
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	6	0	0	6	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	18

**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
7:15 - 7:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:00 - 8:15	0	1	0	0	1	0	0	0	0	0					0	0	0	0	0	0	1
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
<b>2 Hr Totals</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>1 Hr Totals</b>																					
7:00 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 8:15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 - 8:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 - 8:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 - 9:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>PEAK HOUR</b>																					
<b>7:30 - 8:30</b>	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>PM</b>																					
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
3:15 - 3:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
3:30 - 3:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
4:15 - 4:30	0	1	0	0	1	0	0	0	0	0					0	0	0	0	0	0	1
4:30 - 4:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
4:45 - 5:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
5:00 - 5:15	0	0	0	0	0	0	1	0	0	1					0	0	0	0	0	0	1
5:15 - 5:30	0	0	0	0	0	0	1	0	0	1					0	0	0	0	0	0	1
5:30 - 5:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
<b>3 Hr Totals</b>	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
<b>1 Hr Totals</b>																					
3:00 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 - 4:30	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 - 4:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 - 5:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 - 5:15	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:30 - 5:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 - 5:45	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:00 - 6:00	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
<b>PEAK HOUR</b>																					
<b>4:45 - 5:45</b>	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY


Counted by: VCU  
 Date: September 20, 2017  
 Weather: Warm/Mostly Cloudy  
 Entered by: JB

Wednesday  
 Star Rating: 5



TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	0	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	0	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
	EAST LEG		WEST LEG I-87 On-Ramp	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
7:00 - 7:15	0	0	0	0
7:15 - 7:30	0	0	0	0
7:30 - 7:45	0	0	0	0
7:45 - 8:00	0	0	0	0
8:00 - 8:15	0	0	0	0
8:15 - 8:30	0	0	0	0
8:30 - 8:45	0	0	0	0
8:45 - 9:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
<b>PM</b>				
3:00 - 3:15	0	0	0	0
3:15 - 3:30	0	0	0	0
3:30 - 3:45	0	0	0	0
3:45 - 4:00	0	0	0	0
4:00 - 4:15	0	0	0	0
4:15 - 4:30	0	0	0	0
4:30 - 4:45	0	0	0	0
4:45 - 5:00	0	0	0	0
5:00 - 5:15	0	0	0	0
5:15 - 5:30	0	0	0	0
5:30 - 5:45	0	0	0	0
5:45 - 6:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0



<b>CARS TURNING MOVEMENT COUNT - SUMMARY</b>																					
Intersection of: US 9W Southern Boulevard and: I-87 On-Ramp Location: Albany County, NY										Counted by: VCU Date: September 9, 2017 Weather: Cool/Mostly Cloudy Entered by: JB					Saturday Star Rating: 5						
TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	152	41	12	193	64	86	0	0	150					0	0	0	0	0	0	343
11:15 - 11:30	0	152	41	7	193	65	116	0	0	181					0	0	0	0	0	0	374
11:30 - 11:45	0	155	43	3	198	60	126	0	0	186					0	0	0	0	0	0	384
11:45 - 12:00	0	151	25	7	176	51	100	0	0	151					0	0	0	0	0	0	327
12:00 - 12:15	0	167	35	10	202	68	113	0	0	181					0	0	0	0	0	0	383
12:15 - 12:30	0	172	30	0	202	74	112	0	0	186					0	0	0	0	0	0	388
12:30 - 12:45	0	136	37	3	173	63	106	0	0	169					0	0	0	0	0	0	342
12:45 - 1:00	0	140	44	9	184	59	117	0	0	176					0	0	0	0	0	0	360
<b>2 Hr Totals</b>	0	1225	296	51	1521	504	876	0	0	1380	0	0	0	0	0	0	0	0	0	0	2901
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	610	150	29	760	240	428	0	0	668					0	0	0	0	0	0	1428
11:15 - 12:15	0	625	144	27	769	244	455	0	0	699					0	0	0	0	0	0	1468
11:30 - 12:30	0	645	133	20	778	253	451	0	0	704					0	0	0	0	0	0	1482
11:45 - 12:45	0	626	127	20	753	256	431	0	0	687					0	0	0	0	0	0	1440
12:00 - 1:00	0	615	146	22	761	264	448	0	0	712	0	0	0	0	0	0	0	0	0	0	1473
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	645	133	20	778	253	451	0	0	704					0	0	0	0	0	0	1482

**MEDIUM TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	4	0	0	4	1	0	0	0	1					0	0	0	0	0	0	5
11:15 - 11:30	0	0	0	0	0	1	0	0	0	1					0	0	0	0	0	0	1
11:30 - 11:45	0	2	0	0	2	1	1	0	0	2					0	0	0	0	0	0	4
11:45 - 12:00	0	1	0	0	1	3	0	0	0	3					0	0	0	0	0	0	4
12:00 - 12:15	0	0	1	1	1	1	3	0	0	4					0	0	0	0	0	0	5
12:15 - 12:30	0	0	0	0	0	1	1	0	0	2					0	0	0	0	0	0	2
12:30 - 12:45	0	2	0	0	2	3	0	0	0	3					0	0	0	0	0	0	5
12:45 - 1:00	0	1	0	0	1	0	0	0	0	0					0	0	0	0	0	0	1
<b>2 Hr Totals</b>	0	10	1	1	11	11	5	0	0	16	0	0	0	0	0	0	0	0	0	0	27
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	7	0	0	7	6	1	0	0	7					0	0	0	0	0	0	14
11:15 - 12:15	0	3	1	1	4	6	4	0	0	10					0	0	0	0	0	0	14
11:30 - 12:30	0	3	1	1	4	6	5	0	0	11					0	0	0	0	0	0	15
11:45 - 12:45	0	3	1	1	4	8	4	0	0	12					0	0	0	0	0	0	16
12:00 - 1:00	0	3	1	1	4	5	4	0	0	9	0	0	0	0	0	0	0	0	0	0	13
<b>PEAK HOUR</b>																					
11:30 - 12:30	0	3	1	1	4	6	5	0	0	11					0	0	0	0	0	0	15

**HEAVY TRUCKS TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	0	0	0	0	3	0	0	0	3					0	0	0	0	0	0	3
11:15 - 11:30	0	1	0	0	1	4	0	0	0	4					0	0	0	0	0	0	5
11:30 - 11:45	0	2	0	0	2	1	0	0	0	1					0	0	0	0	0	0	3
11:45 - 12:00	0	0	0	0	0	4	0	0	0	4					0	0	0	0	0	0	4
12:00 - 12:15	0	0	0	0	0	2	0	0	0	2					0	0	0	0	0	0	2
12:15 - 12:30	0	0	0	0	0	2	0	0	0	2					0	0	0	0	0	0	2
12:30 - 12:45	0	0	0	0	0	2	1	0	0	3					0	0	0	0	0	0	3
12:45 - 1:00	0	2	0	0	2	3	0	0	0	3					0	0	0	0	0	0	5
<b>2 Hr Totals</b>	0	5	0	0	5	21	1	0	0	22	0	0	0	0	0	0	0	0	0	0	27
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	3	0	0	3	12	0	0	0	12					0	0	0	0	0	0	15
11:15 - 12:15	0	3	0	0	3	11	0	0	0	11					0	0	0	0	0	0	14
11:30 - 12:30	0	2	0	0	2	9	0	0	0	9					0	0	0	0	0	0	11
11:45 - 12:45	0	0	0	0	0	10	1	0	0	11					0	0	0	0	0	0	11
12:00 - 1:00	0	2	0	0	2	9	1	0	0	10	0	0	0	0	0	0	0	0	0	0	12
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	2	0	0	2	9	0	0	0	9					0	0	0	0	0	0	11



**BICYCLES TURNING MOVEMENT COUNT - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5



TIME	TRAFFIC FROM NORTH on: US 9W Southern Boulevard					TRAFFIC FROM SOUTH on: US 9W Southern Boulevard					TRAFFIC FROM EAST on:					TRAFFIC FROM WEST on: I-87 On-Ramp					TOTAL N + S + E + W
	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	UTURN	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	LEFT	THRU	RIGHT	RTOR	TOTAL	
<b>AM</b>																					
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:45 - 1:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
<b>2 Hr Totals</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>1 Hr Totals</b>																					
11:00 - 12:00	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:15 - 12:15	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:30 - 12:30	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
11:45 - 12:45	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0
12:00 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PEAK HOUR</b>																					
<b>11:30 - 12:30</b>	0	0	0	0	0	0	0	0	0	0					0	0	0	0	0	0	0

**PEDESTRIAN AND BICYCLE OBSERVATIONS - SUMMARY**

Intersection of: US 9W Southern Boulevard  
 and: I-87 On-Ramp  
 Location: Albany County, NY

Counted by: VCU  
 Date: September 9, 2017  
 Weather: Cool/Mostly Cloudy  
 Entered by: JB

Saturday  
 Star Rating: 5

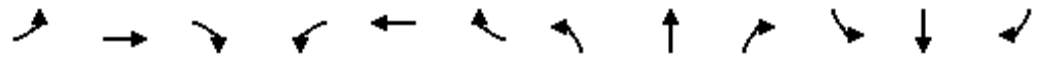


TIME	NORTH LEG US 9W Southern Boulevard		SOUTH LEG US 9W Southern Boulevard	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15	0	0	0	0
11:15 - 11:30	0	0	0	0
11:30 - 11:45	0	0	0	0
11:45 - 12:00	0	0	0	0
12:00 - 12:15	0	0	0	0
12:15 - 12:30	0	0	0	0
12:30 - 12:45	0	0	0	0
12:45 - 1:00	0	0	0	0
<b>2 Hr Totals</b>				
11:00 - 12:00	0	0	0	0
11:15 - 12:15	0	0	0	0
11:30 - 12:30	0	0	0	0
11:45 - 12:45	0	0	0	0
12:00 - 1:00	0	0	0	0
<b>TOTALS</b>	0	0	0	0
TIME	EAST LEG		WEST LEG I-87 On-Ramp	
	Pedestrians	Bicycles	Pedestrians	Bicycles
<b>AM</b>				
11:00 - 11:15			0	0
11:15 - 11:30			0	0
11:30 - 11:45			0	0
11:45 - 12:00			0	0
12:00 - 12:15			0	0
12:15 - 12:30			0	0
12:30 - 12:45			0	0
12:45 - 1:00			0	0
<b>2 Hr Totals</b>				
11:00 - 12:00			0	0
11:15 - 12:15			0	0
11:30 - 12:30			0	0
11:45 - 12:45			0	0
12:00 - 1:00			0	0
<b>TOTALS</b>			0	0

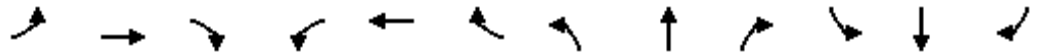
# Appendix D

## Capacity Analysis Worksheets





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕		↖	↕	
Traffic Volume (vph)	32	0	1	0	0	0	12	2067	0	0	836	18
Future Volume (vph)	32	0	1	0	0	0	12	2067	0	0	836	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850								0.997	
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1480	1615	0	1900	0	1805	3438	0	1900	3246	0
Flt Permitted		0.757					0.309					
Satd. Flow (perm)	0	1179	1615	0	1900	0	587	3438	0	1900	3246	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33									4
Link Speed (mph)		30			30			30				30
Link Distance (ft)		185			106			255				450
Travel Time (s)		4.2			2.4			5.8				10.2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Adj. Flow (vph)	34	0	1	0	0	0	13	2199	0	0	889	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	1	0	0	0	13	2199	0	0	908	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1				5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		15.2	15.2				74.5	74.5			74.5	
Actuated g/C Ratio		0.17	0.17				0.84	0.84			0.84	
v/c Ratio		0.17	0.00				0.03	0.77			0.33	
Control Delay		35.9	0.0				4.0	10.0			3.9	
Queue Delay		0.0	0.0				0.0	0.0			0.0	
Total Delay		35.9	0.0				4.0	10.0			3.9	
LOS		D	A				A	B			A	
Approach Delay		34.9						10.0			3.9	
Approach LOS		C						B			A	
Queue Length 50th (ft)		19	0				2	447			91	
Queue Length 95th (ft)		42	0				7	#630			122	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200					
Base Capacity (vph)		400	570				490	2873			2713	
Starvation Cap Reductn		0	0				0	0			0	
Spillback Cap Reductn		0	0				0	0			0	
Storage Cap Reductn		0	0				0	0			0	
Reduced v/c Ratio		0.09	0.00				0.03	0.77			0.33	

Intersection Summary

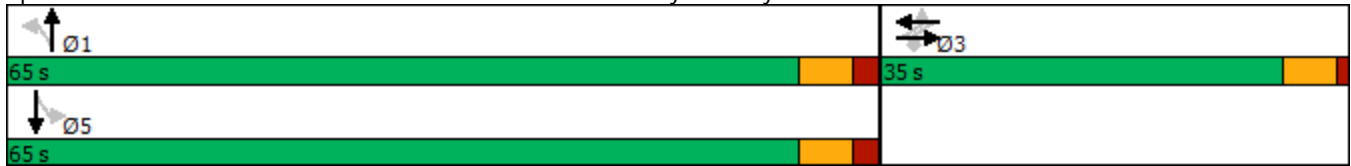
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 89.2  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 8.5  
 Intersection Capacity Utilization 78.8%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service D

# 95th percentile volume exceeds capacity, queue may be longer.

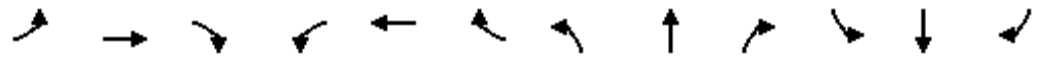
Queue shown is maximum after two cycles.

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

Existing AM  
 10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		↕	↗		↔		↖	↕↔		↖	↕↔			
Traffic Volume (vph)	32	0	1	0	0	0	12	2067	0	0	836	18		
Future Volume (vph)	32	0	1	0	0	0	12	2067	0	0	836	18		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		5.0	5.0				6.0	6.0			6.0			
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95			
Frt		1.00	0.85				1.00	1.00			1.00			
Flt Protected		0.95	1.00				0.95	1.00			1.00			
Satd. Flow (prot)		1480	1615				1805	3438			3245			
Flt Permitted		0.76	1.00				0.31	1.00			1.00			
Satd. Flow (perm)		1179	1615				588	3438			3245			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94		
Adj. Flow (vph)	34	0	1	0	0	0	13	2199	0	0	889	19		
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	0	0	1	0		
Lane Group Flow (vph)	0	34	0	0	0	0	13	2199	0	0	907	0		
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%		
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA			
Protected Phases		3			3			1			5			
Permitted Phases	3		3	3			1			5				
Actuated Green, G (s)		8.5	8.5				71.9	71.9			71.9			
Effective Green, g (s)		8.5	8.5				71.9	71.9			71.9			
Actuated g/C Ratio		0.09	0.09				0.79	0.79			0.79			
Clearance Time (s)		5.0	5.0				6.0	6.0			6.0			
Vehicle Extension (s)		4.0	4.0				5.0	5.0			4.0			
Lane Grp Cap (vph)		109	150				462	2704			2552			
v/s Ratio Prot								c0.64			0.28			
v/s Ratio Perm		c0.03	0.00				0.02							
v/c Ratio		0.31	0.00				0.03	0.81			0.36			
Uniform Delay, d1		38.7	37.6				2.1	5.8			2.9			
Progression Factor		1.00	1.00				1.00	1.00			1.00			
Incremental Delay, d2		2.2	0.0				0.1	2.2			0.1			
Delay (s)		40.9	37.6				2.2	8.0			3.0			
Level of Service		D	D				A	A			A			
Approach Delay (s)		40.9			0.0			8.0			3.0			
Approach LOS		D			A			A			A			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			6.9									HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio			0.76											
Actuated Cycle Length (s)			91.4								11.0			
Intersection Capacity Utilization			78.8%										ICU Level of Service	D
Analysis Period (min)			15											
c Critical Lane Group														



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	29	2078	21	27	849
Future Volume (vph)	5	29	2078	21	27	849
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.884		0.999			
Flt Protected	0.993					0.998
Satd. Flow (prot)	1612	0	3432	0	0	3252
Flt Permitted	0.993					0.998
Satd. Flow (perm)	1612	0	3432	0	0	3252
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	4%	5%	14%	4%	11%
Adj. Flow (vph)	5	31	2187	22	28	894
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	2209	0	0	922
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	68.1%		ICU Level of Service C			
Analysis Period (min)	15					



**Intersection**

Int Delay, s/veh 0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	5	29	2078	21	27	849
Future Vol, veh/h	5	29	2078	21	27	849
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	5	14	4	11
Mvmt Flow	5	31	2187	22	28	894

**Major/Minor**

	Minor1	Major1	Major2		
Conflicting Flow All	2701	1105	0	0	2209
Stage 1	2198	-	-	-	-
Stage 2	503	-	-	-	-
Critical Hdwy	6.8	6.98	-	-	4.18
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.34	-	-	2.24
Pot Cap-1 Maneuver	18	202	-	-	227
Stage 1	72	-	-	-	-
Stage 2	578	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	14	202	-	-	227
Mov Cap-2 Maneuver	51	-	-	-	-
Stage 1	54	-	-	-	-
Stage 2	578	-	-	-	-

**Approach**

	WB	NB	SB
HCM Control Delay, s	39	0	0.7
HCM LOS	E		

**Minor Lane/Major Mvmt**

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	141	227
HCM Lane V/C Ratio	-	-	0.254	0.125
HCM Control Delay (s)	-	-	39	23.1
HCM Lane LOS	-	-	E	C
HCM 95th %tile Q(veh)	-	-	1	0.4

Lanes, Volumes, Timings  
 3: I-87 Off-Ramp & Southern Boulevard

Existing AM  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	547	326	0	759	675	0			
Future Volume (vph)	547	326	0	759	675	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1787	1442	0	3374	3312	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1787	1442	0	3374	3312	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		139							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%			
Adj. Flow (vph)	564	336	0	782	696	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	564	336	0	782	696	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag						Lead		
Lead-Lag Optimize?	Yes						Yes		
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	50.1	164.5		104.3	104.3				
Actuated g/C Ratio	0.30	1.00		0.63	0.63				
v/c Ratio	1.04	0.23		0.37	0.33				
Control Delay	102.9	0.4		14.8	0.8				
Queue Delay	0.0	0.0		0.0	0.5				
Total Delay	102.9	0.4		14.8	1.2				
LOS	F	A		B	A				
Approach Delay	64.6			14.8	1.2				
Approach LOS	E			B	A				
Queue Length 50th (ft)	~695	0		201	5				
Queue Length 95th (ft)	#939	0		240	5				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	544	1442		2140	2101				
Starvation Cap Reductn	0	0		0	882				
Spillback Cap Reductn	0	0		62	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	1.04	0.23		0.38	0.57				

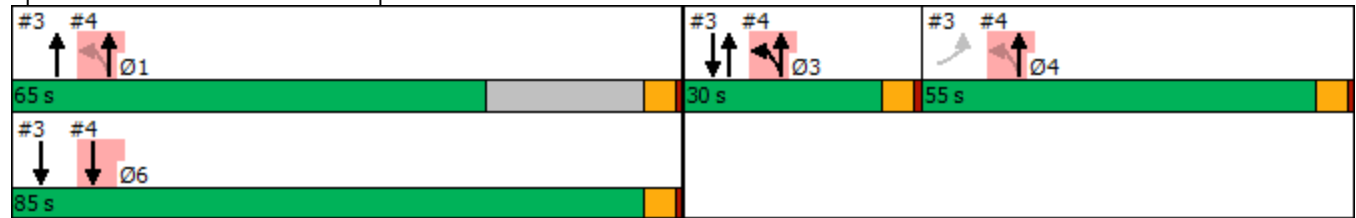
**Intersection Summary**

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 164.5  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 29.7  
 Intersection Capacity Utilization 59.6%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service B

~ 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: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Existing AM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	547	326	0	759	675	0
Future Volume (vph)	547	326	0	759	675	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1787	1442		3374	3312	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1787	1442		3374	3312	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	564	336	0	782	696	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	564	336	0	782	696	0
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	50.1	164.5		104.4	104.4	
Effective Green, g (s)	50.1	164.5		104.4	104.4	
Actuated g/C Ratio	0.30	1.00		0.63	0.63	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	544	1442		2141	2101	
v/s Ratio Prot				0.23	0.21	
v/s Ratio Perm	0.32	0.23				
v/c Ratio	1.04	0.23		0.37	0.33	
Uniform Delay, d1	57.2	0.0		14.3	13.9	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	48.4	0.4		0.2	0.2	
Delay (s)	105.6	0.4		14.5	0.6	
Level of Service	F	A		B	A	
Approach Delay (s)	66.3			14.5	0.6	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	164.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
 4: Southern Boulevard & I-87 On-Ramp

Existing AM  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	388	918	675	223		
Future Volume (vph)	0	0	388	918	675	223		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.963			
Flt Protected				0.985				
Satd. Flow (prot)	0	0	0	3420	3219	0		
Flt Permitted				0.567				
Satd. Flow (perm)	0	0	0	1969	3219	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					36			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%		
Adj. Flow (vph)	0	0	408	966	711	235		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	1374	946	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

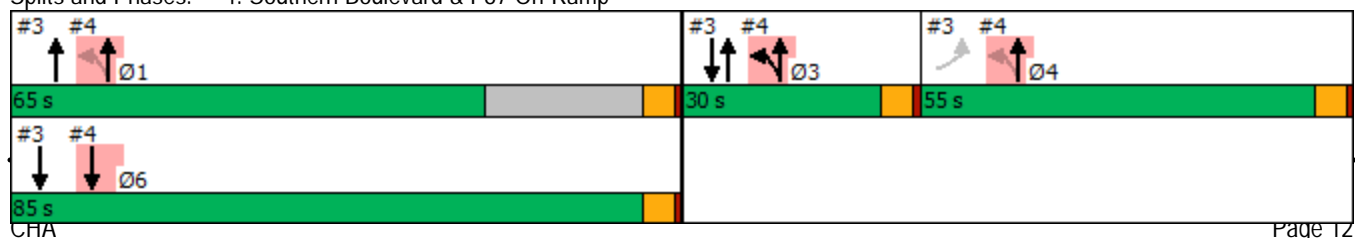


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				154.5	74.3			
Actuated g/C Ratio				0.94	0.45			
v/c Ratio				0.66	0.64			
Control Delay				4.6	35.4			
Queue Delay				0.2	0.0			
Total Delay				4.8	35.4			
LOS				A	D			
Approach Delay				4.8	35.4			
Approach LOS				A	D			
Queue Length 50th (ft)				101	394			
Queue Length 95th (ft)				m82	468			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2095	1587			
Starvation Cap Reductn				185	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.72	0.60			

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 164.5  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 17.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 70.8%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



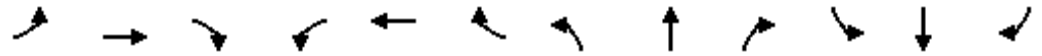
HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

Existing AM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	388	918	675	223
Future Volume (vph)	0	0	388	918	675	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.96	
Flt Protected				0.99	1.00	
Satd. Flow (prot)				3421	3218	
Flt Permitted				0.57	1.00	
Satd. Flow (perm)				1967	3218	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	408	966	711	235
RTOR Reduction (vph)	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	1374	926	0
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				154.5	74.3	
Effective Green, g (s)				154.5	74.3	
Actuated g/C Ratio				0.94	0.45	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2069	1453	
v/s Ratio Prot				c0.10	0.29	
v/s Ratio Perm				c0.52		
v/c Ratio				0.66	0.64	
Uniform Delay, d1				0.8	34.7	
Progression Factor				8.12	1.00	
Incremental Delay, d2				0.8	1.3	
Delay (s)				7.4	36.0	
Level of Service				A	D	
Approach Delay (s)	0.0			7.4	36.0	
Approach LOS	A			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			19.1	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			164.5	Sum of lost time (s)		15.0
Intersection Capacity Utilization			70.8%	ICU Level of Service		C
Analysis Period (min)			15			
c Critical Lane Group						





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	41	0	0	22	15	0	0	0	5	0	12
Future Volume (vph)	7	41	0	0	22	15	0	0	0	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.945						0.905	
Fl <sub>t</sub> Protected		0.993									0.985	
Satd. Flow (prot)	0	1766	0	0	1764	0	0	1863	0	0	1694	0
Fl <sub>t</sub> Permitted		0.993									0.985	
Satd. Flow (perm)	0	1766	0	0	1764	0	0	1863	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			99			65	
Travel Time (s)		3.4			4.4			2.3			1.5	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.85	0.92	0.85
Heavy Vehicles (%)	0%	8%	2%	2%	3%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	8	48	0	0	26	18	0	0	0	6	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	44	0	0	0	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.1%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	41	0	0	22	15	0	0	0	5	0	12
Future Vol, veh/h	7	41	0	0	22	15	0	0	0	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	0	8	2	2	3	0	2	2	2	0	2	0
Mvmt Flow	8	48	0	0	26	18	0	0	0	6	0	14

















Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	44	0	0	48
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1577	-	-	1559
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1577	-	-	1559
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1577	-	-	1559	-	-	991
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.02
HCM Control Delay (s)	0	7.3	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings  
6: Site Access 3 & Mt. Hope Drive

Existing AM  
10/18/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	46	0	0	37	0	0	0	0	0	0	0
Future Volume (vph)	0	46	0	0	37	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1759	0	0	1845	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1759	0	0	1845	0	0	1900	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	0	54	0	0	44	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	44	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	6.7%						ICU Level of Service A					
Analysis Period (min)	15											

**Intersection**

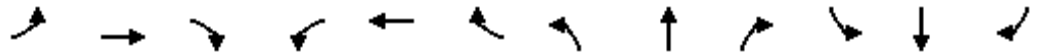
Int Delay, s/veh 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	46	0	0	37	0	0	0	0	0	0	0
Future Vol, veh/h	0	46	0	0	37	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	3	0	0	0	0	0	0	2
Mvmt Flow	0	54	0	0	44	0	0	0	0	0	0	0

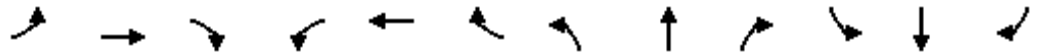
Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	-	0	0	54	0	0	98	98	54	98	98	44
Stage 1	-	-	-	-	-	-	54	54	-	44	44	-
Stage 2	-	-	-	-	-	-	44	44	-	54	54	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	0	-	-	1564	-	0	889	796	1019	889	796	1026
Stage 1	0	-	-	-	-	0	963	854	-	975	862	-
Stage 2	0	-	-	-	-	0	975	862	-	963	854	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1564	-	-	889	796	1019	889	796	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	889	796	-	889	796	-
Stage 1	-	-	-	-	-	-	963	854	-	975	862	-
Stage 2	-	-	-	-	-	-	975	862	-	963	854	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	1564	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	54	0	10	0	0	0	1	1121	0	0	1581	1
Future Volume (vph)	54	0	10	0	0	0	1	1121	0	0	1581	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850									
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1805	1615	0	1900	0	1805	3471	0	1900	3471	0
Flt Permitted		0.757					0.120					
Satd. Flow (perm)	0	1438	1615	0	1900	0	228	3471	0	1900	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33									
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		185			106			255			450	
Travel Time (s)		4.2			2.4			5.8			10.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Adj. Flow (vph)	56	0	10	0	0	0	1	1168	0	0	1647	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	10	0	0	0	1	1168	0	0	1648	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		16.2	16.2				60.8	60.8			60.8	
Actuated g/C Ratio		0.22	0.22				0.82	0.82			0.82	
v/c Ratio		0.18	0.03				0.01	0.41			0.58	
Control Delay		31.8	1.4				4.0	4.7			6.3	
Queue Delay		0.0	0.0				0.0	0.0			0.0	
Total Delay		31.8	1.4				4.0	4.7			6.3	
LOS		C	A				A	A			A	
Approach Delay		27.2						4.7			6.3	
Approach LOS		C						A			A	
Queue Length 50th (ft)		30	0				0	128			230	
Queue Length 95th (ft)		59	3				2	167			298	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200					
Base Capacity (vph)		629	725				187	2857			2857	
Starvation Cap Reductn		0	0				0	0			0	
Spillback Cap Reductn		0	0				0	0			0	
Storage Cap Reductn		0	0				0	0			0	
Reduced v/c Ratio		0.09	0.01				0.01	0.41			0.58	

Intersection Summary

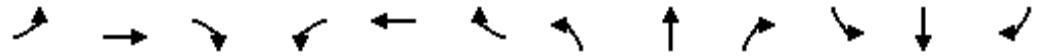
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	73.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	6.1
Intersection Capacity Utilization:	65.4%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	C

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

Existing PM  
 10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↔		↖	↕↔		↖	↕↔	
Traffic Volume (vph)	54	0	10	0	0	0	1	1121	0	0	1581	1
Future Volume (vph)	54	0	10	0	0	0	1	1121	0	0	1581	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frt		1.00	0.85				1.00	1.00			1.00	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	1615				1805	3471			3471	
Flt Permitted		0.76	1.00				0.12	1.00			1.00	
Satd. Flow (perm)		1439	1615				228	3471			3471	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	56	0	10	0	0	0	1	1168	0	0	1647	1
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	56	1	0	0	0	1	1168	0	0	1648	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		7.5	7.5				57.3	57.3			57.3	
Effective Green, g (s)		7.5	7.5				57.3	57.3			57.3	
Actuated g/C Ratio		0.10	0.10				0.76	0.76			0.76	
Clearance Time (s)		5.0	5.0				6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0				5.0	5.0			4.0	
Lane Grp Cap (vph)		142	159				172	2623			2623	
v/s Ratio Prot								0.34			c0.47	
v/s Ratio Perm		c0.04	0.00				0.00					
v/c Ratio		0.39	0.01				0.01	0.45			0.63	
Uniform Delay, d1		32.0	30.8				2.3	3.4			4.3	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.5	0.0				0.0	0.3			0.5	
Delay (s)		34.5	30.8				2.3	3.7			4.8	
Level of Service		C	C				A	A			A	
Approach Delay (s)		33.9			0.0			3.7			4.8	
Approach LOS		C			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			5.0									A
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			75.8							11.0		
Intersection Capacity Utilization			65.4%									C
Analysis Period (min)			15									
c Critical Lane Group												





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	29	1161	14	21	1543
Future Volume (vph)	39	29	1161	14	21	1543
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.942		0.998			
Flt Protected	0.972					0.999
Satd. Flow (prot)	1710	0	3454	0	0	3459
Flt Permitted	0.972					0.999
Satd. Flow (perm)	1710	0	3454	0	0	3459
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	0%	4%	29%	24%	4%
Adj. Flow (vph)	39	29	1173	14	21	1559
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	1187	0	0	1580
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	68.1%		ICU Level of Service C			
Analysis Period (min)	15					

**Intersection**

Int Delay, s/veh	0.9					
<b>Movement</b>	<b>WBL</b>	<b>WBR</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	39	29	1161	14	21	1543
Future Vol, veh/h	39	29	1161	14	21	1543
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	0	4	29	24	4
Mvmt Flow	39	29	1173	14	21	1559

<b>Major/Minor</b>	<b>Minor1</b>	<b>Major1</b>	<b>Major2</b>			
Conflicting Flow All	2002	594	0	0	1187	0
Stage 1	1180	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Critical Hdwy	6.86	6.9	-	-	4.58	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.3	-	-	2.44	-
Pot Cap-1 Maneuver	51	453	-	-	474	-
Stage 1	252	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 34	453	-	-	474	-
Mov Cap-2 Maneuver	147	-	-	-	-	-
Stage 1	169	-	-	-	-	-
Stage 2	390	-	-	-	-	-

<b>Approach</b>	<b>WB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	31	0	0.2
HCM LOS	D		

<b>Minor Lane/Major Mvmt</b>	<b>NBT</b>	<b>NBRWBLn1</b>	<b>SBL</b>	<b>SBT</b>
Capacity (veh/h)	-	-	206	474
HCM Lane V/C Ratio	-	-	0.333	0.045
HCM Control Delay (s)	-	-	31	13
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	1.4	0.1

**Notes**  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 3: I-87 Off-Ramp & Southern Boulevard

Existing PM  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	190	439	0	607	1194	0			
Future Volume (vph)	190	439	0	607	1194	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1805	1509	0	3505	3539	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1805	1509	0	3505	3539	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		409							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.97			
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%			
Adj. Flow (vph)	198	457	0	632	1244	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	198	457	0	632	1244	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



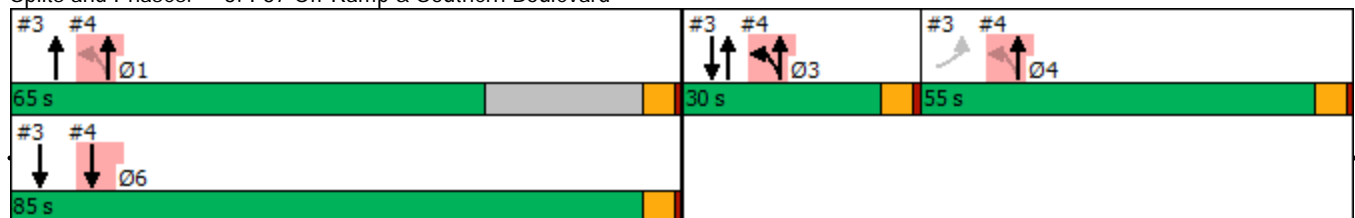
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag						Lead		
Lead-Lag Optimize?	Yes						Yes		
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	29.2	149.4		110.2	110.2				
Actuated g/C Ratio	0.20	1.00		0.74	0.74				
v/c Ratio	0.56	0.30		0.24	0.48				
Control Delay	60.2	0.5		7.2	0.4				
Queue Delay	0.0	0.0		0.0	1.7				
Total Delay	60.2	0.5		7.2	2.1				
LOS	E	A		A	A				
Approach Delay	18.6			7.2	2.1				
Approach LOS	B			A	A				
Queue Length 50th (ft)	176	0		91	6				
Queue Length 95th (ft)	258	0		158	m9				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	605	1509		2587	2613				
Starvation Cap Reductn	0	0		0	1129				
Spillback Cap Reductn	0	0		0	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.33	0.30		0.24	0.84				

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 149.4  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 7.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 51.9%  
 ICU Level of Service A  
 Analysis Period (min) 15

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

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Existing PM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗		↑↑	↑↑	
Traffic Volume (vph)	190	439	0	607	1194	0
Future Volume (vph)	190	439	0	607	1194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1509		3505	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1509		3505	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.97
Adj. Flow (vph)	198	457	0	632	1244	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	198	457	0	632	1244	0
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	29.2	149.4		110.2	110.2	
Effective Green, g (s)	29.2	149.4		110.2	110.2	
Actuated g/C Ratio	0.20	1.00		0.74	0.74	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	352	1509		2585	2610	
v/s Ratio Prot				0.18	c0.35	
v/s Ratio Perm	c0.11	0.30				
v/c Ratio	0.56	0.30		0.24	0.48	
Uniform Delay, d1	54.3	0.0		6.3	7.9	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	2.5	0.5		0.1	0.1	
Delay (s)	56.8	0.5		6.4	0.3	
Level of Service	E	A		A	A	
Approach Delay (s)	17.5			6.4	0.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	149.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
4: Southern Boulevard & I-87 On-Ramp

Existing PM  
10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	323	474	1194	525		
Future Volume (vph)	0	0	323	474	1194	525		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Flt					0.954			
Flt Protected				0.980				
Satd. Flow (prot)	0	0	0	3481	3397	0		
Flt Permitted				0.490				
Satd. Flow (perm)	0	0	0	1741	3397	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					55			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%		
Adj. Flow (vph)	0	0	333	489	1231	541		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	822	1772	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

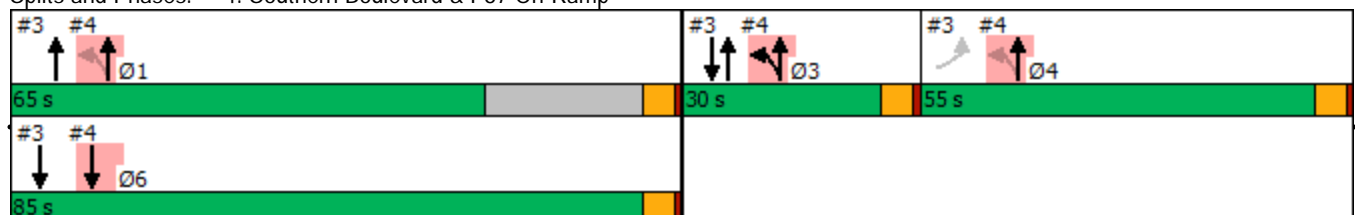


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				139.4	80.2			
Actuated g/C Ratio				0.93	0.54			
v/c Ratio				0.43	0.96			
Control Delay				2.6	45.7			
Queue Delay				0.1	0.0			
Total Delay				2.7	45.7			
LOS				A	D			
Approach Delay				2.7	45.7			
Approach LOS				A	D			
Queue Length 50th (ft)				31	817			
Queue Length 95th (ft)				81	#1182			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				1917	1849			
Starvation Cap Reductn				268	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.50	0.96			

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 149.4  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 32.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 80.6%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



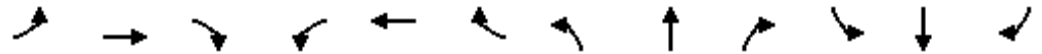
HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

Existing PM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	323	474	1194	525
Future Volume (vph)	0	0	323	474	1194	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.95	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3482	3397	
Flt Permitted				0.49	1.00	
Satd. Flow (perm)				1741	3397	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	333	489	1231	541
RTOR Reduction (vph)	0	0	0	0	25	0
Lane Group Flow (vph)	0	0	0	822	1747	0
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				139.4	80.2	
Effective Green, g (s)				139.4	80.2	
Actuated g/C Ratio				0.93	0.54	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				1915	1823	
v/s Ratio Prot				c0.07	c0.51	
v/s Ratio Perm				c0.33		
v/c Ratio				0.43	0.96	
Uniform Delay, d1				0.6	33.0	
Progression Factor				7.15	1.00	
Incremental Delay, d2				0.3	12.8	
Delay (s)				4.3	45.8	
Level of Service				A	D	
Approach Delay (s)	0.0			4.3	45.8	
Approach LOS	A			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			32.6	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			149.4	Sum of lost time (s)		15.0
Intersection Capacity Utilization			80.6%	ICU Level of Service		D
Analysis Period (min)			15			
c Critical Lane Group						





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	25	0	0	56	6	0	0	0	5	0	12
Future Volume (vph)	10	25	0	0	56	6	0	0	0	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.986						0.902	
Flt Protected		0.986									0.986	
Satd. Flow (prot)	0	1581	0	0	1840	0	0	1863	0	0	1690	0
Flt Permitted		0.986									0.986	
Satd. Flow (perm)	0	1581	0	0	1840	0	0	1863	0	0	1690	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			101			65	
Travel Time (s)		3.4			4.4			2.3			1.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	26%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	11	27	0	0	61	7	0	0	0	5	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	68	0	0	0	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.5%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

















Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	25	0	0	56	6	0	0	0	5	0	12
Future Vol, veh/h	10	25	0	0	56	6	0	0	0	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	26	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	11	27	0	0	61	7	0	0	0	5	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	68	0	0	27
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1546	-	-	1587
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1587
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1546	-	-	1587	-	-	959
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.019
HCM Control Delay (s)	0	7.3	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

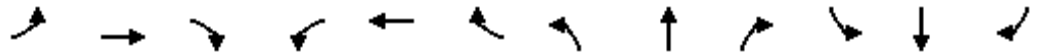
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	0	0	62	0	0	0	0	0	0	0
Future Volume (vph)	0	30	0	0	62	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1508	0	0	1863	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1508	0	0	1863	0	0	1900	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	26%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	33	0	0	67	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	67	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	6.7%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	30	0	0	62	0	0	0	0	0	0	0
Future Vol, veh/h	0	30	0	0	62	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	26	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	33	0	0	67	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	33	0	0	100	100	33	100	100	67
Stage 1	-	-	-	-	-	-	33	33	-	67	67	-
Stage 2	-	-	-	-	-	-	67	67	-	33	33	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1592	-	0	886	794	1046	886	794	1002
Stage 1	0	-	-	-	-	0	988	872	-	948	843	-
Stage 2	0	-	-	-	-	0	948	843	-	988	872	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1592	-	-	886	794	1046	886	794	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	886	794	-	886	794	-
Stage 1	-	-	-	-	-	-	988	872	-	948	843	-
Stage 2	-	-	-	-	-	-	948	843	-	988	872	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	1592	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	4	0	0	0	0	0	3	1051	0	0	856	1
Future Volume (vph)	4	0	0	0	0	0	3	1051	0	0	856	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt												
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1805	1900	0	1900	0	1805	3471	0	1900	3539	0
Flt Permitted							0.322					
Satd. Flow (perm)	0	1900	1900	0	1900	0	612	3471	0	1900	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		185			106			255			450	
Travel Time (s)		4.2			2.4			5.8			10.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	0	0	0	0	3	1084	0	0	882	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	0	3	1084	0	0	883	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		16.3					50.4	50.4			50.4	
Actuated g/C Ratio		0.30					0.94	0.94			0.94	
v/c Ratio		0.01					0.01	0.33			0.26	
Control Delay		22.2					2.0	1.9			1.6	
Queue Delay		0.0					0.0	0.0			0.0	
Total Delay		22.2					2.0	1.9			1.6	
LOS		C					A	A			A	
Approach Delay		22.3						1.9			1.6	
Approach LOS		C						A			A	
Queue Length 50th (ft)		1					0	0			0	
Queue Length 95th (ft)		11					3	148			112	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200					
Base Capacity (vph)		1155					576	3269			3333	
Starvation Cap Reductn		0					0	0			0	
Spillback Cap Reductn		0					0	0			0	
Storage Cap Reductn		0					0	0			0	
Reduced v/c Ratio		0.00					0.01	0.33			0.26	

Intersection Summary






















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	53.5
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	1.8
Intersection Capacity Utilization:	50.7%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

Existing SAT  
 10/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	0	0	0	0	3	1051	0	0	856	1
Future Volume (vph)	4	0	0	0	0	0	3	1051	0	0	856	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0					6.0	6.0			6.0	
Lane Util. Factor		1.00					1.00	0.95			0.95	
Frt		1.00					1.00	1.00			1.00	
Flt Protected		0.95					0.95	1.00			1.00	
Satd. Flow (prot)		1805					1805	3471			3539	
Flt Permitted		1.00					0.32	1.00			1.00	
Satd. Flow (perm)		1900					612	3471			3539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	0	0	0	0	0	3	1084	0	0	882	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	0	0	3	1084	0	0	883	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		1.8					44.6	44.6			44.6	
Effective Green, g (s)		1.8					44.6	44.6			44.6	
Actuated g/C Ratio		0.03					0.78	0.78			0.78	
Clearance Time (s)		5.0					6.0	6.0			6.0	
Vehicle Extension (s)		4.0					5.0	5.0			4.0	
Lane Grp Cap (vph)		59					475	2696			2749	
v/s Ratio Prot								c0.31			0.25	
v/s Ratio Perm		c0.00					0.00					
v/c Ratio		0.07					0.01	0.40			0.32	
Uniform Delay, d1		27.0					1.4	2.1			1.9	
Progression Factor		1.00					1.00	1.00			1.00	
Incremental Delay, d2		0.7					0.0	0.2			0.1	
Delay (s)		27.7					1.4	2.3			2.0	
Level of Service		C					A	A			A	
Approach Delay (s)		27.7			0.0			2.3			2.0	
Approach LOS		C			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			2.2				HCM 2000 Level of Service			A		
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			57.4				Sum of lost time (s)		11.0			
Intersection Capacity Utilization			50.7%				ICU Level of Service			A		
Analysis Period (min)			15									
c	Critical Lane Group											





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	26	1038	17	8	830
Future Volume (vph)	27	26	1038	17	8	830
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.934		0.998			
Flt Protected	0.975					
Satd. Flow (prot)	1696	0	3493	0	0	3540
Flt Permitted	0.975					
Satd. Flow (perm)	1696	0	3493	0	0	3540
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	3%	12%	0%	2%
Adj. Flow (vph)	28	27	1059	17	8	847
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	1076	0	0	855
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.2%		ICU Level of Service A			
Analysis Period (min)	15					

**Intersection**

Int Delay, s/veh	0.5					
<b>Movement</b>	<b>WBL</b>	<b>WBR</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	27	26	1038	17	8	830
Future Vol, veh/h	27	26	1038	17	8	830
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	3	12	0	2
Mvmt Flow	28	27	1059	17	8	847

<b>Major/Minor</b>	<b>Minor1</b>	<b>Major1</b>	<b>Major2</b>		
Conflicting Flow All	1508	538	0	0	1076
Stage 1	1068	-	-	-	-
Stage 2	440	-	-	-	-
Critical Hdwy	6.88	6.9	-	-	4.1
Critical Hdwy Stg 1	5.88	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-
Follow-up Hdwy	3.54	3.3	-	-	2.2
Pot Cap-1 Maneuver	109	493	-	-	656
Stage 1	287	-	-	-	-
Stage 2	611	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	106	493	-	-	656
Mov Cap-2 Maneuver	252	-	-	-	-
Stage 1	280	-	-	-	-
Stage 2	611	-	-	-	-

<b>Approach</b>	<b>WB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	18	0	0.1
HCM LOS	C		

<b>Minor Lane/Major Mvmt</b>	<b>NBT</b>	<b>NBRWBLn1</b>	<b>SBL</b>	<b>SBT</b>
Capacity (veh/h)	-	-	331	656
HCM Lane V/C Ratio	-	-	0.163	0.012
HCM Control Delay (s)	-	-	18	10.6
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.6	0

Lanes, Volumes, Timings  
 3: I-87 Off-Ramp & Southern Boulevard

Existing SAT  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	168	212	0	557	652	0			
Future Volume (vph)	168	212	0	557	652	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1770	1509	0	3505	3574	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1770	1509	0	3505	3574	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		223							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%			
Adj. Flow (vph)	177	223	0	586	686	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	177	223	0	586	686	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									

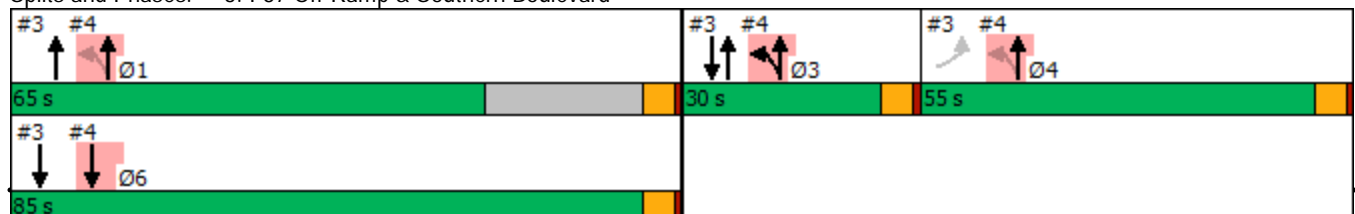


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effect Green (s)	24.4	119.9		84.9	84.9				
Actuated g/C Ratio	0.20	1.00		0.71	0.71				
v/c Ratio	0.49	0.15		0.24	0.27				
Control Delay	50.5	0.2		6.7	0.4				
Queue Delay	0.0	0.0		0.0	0.1				
Total Delay	50.5	0.2		6.7	0.5				
LOS	D	A		A	A				
Approach Delay	22.5			6.7	0.5				
Approach LOS	C			A	A				
Queue Length 50th (ft)	122	0		72	2				
Queue Length 95th (ft)	235	0		131	3				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	783	1509		2791	2846				
Starvation Cap Reductn	0	0		0	994				
Spillback Cap Reductn	0	0		0	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.23	0.15		0.21	0.37				

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	119.9
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	7.9
Intersection LOS:	A
Intersection Capacity Utilization:	35.7%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Existing SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	168	212	0	557	652	0
Future Volume (vph)	168	212	0	557	652	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1509		3505	3574	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1509		3505	3574	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	223	0	586	686	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	177	223	0	586	686	0
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	24.4	119.0		84.6	84.6	
Effective Green, g (s)	24.4	119.0		84.6	84.6	
Actuated g/C Ratio	0.21	1.00		0.71	0.71	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	362	1509		2491	2540	
v/s Ratio Prot				0.17	c0.19	
v/s Ratio Perm	c0.10	0.15				
v/c Ratio	0.49	0.15		0.24	0.27	
Uniform Delay, d1	41.8	0.0		6.0	6.2	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	1.4	0.2		0.1	0.1	
Delay (s)	43.2	0.2		6.1	0.3	
Level of Service	D	A		A	A	
Approach Delay (s)	19.2			6.1	0.3	
Approach LOS	B			A	A	

**Intersection Summary**

HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
 4: Southern Boulevard & I-87 On-Ramp

Existing SAT  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	268	457	652	134		
Future Volume (vph)	0	0	268	457	652	134		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.974			
Flt Protected				0.982				
Satd. Flow (prot)	0	0	0	3447	3481	0		
Flt Permitted				0.574				
Satd. Flow (perm)	0	0	0	2015	3481	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					19			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%		
Adj. Flow (vph)	0	0	279	476	679	140		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	755	819	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

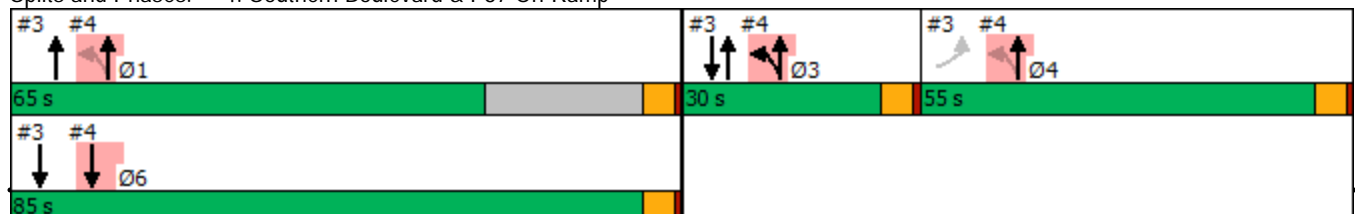


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				109.3	59.3			
Actuated g/C Ratio				0.91	0.49			
v/c Ratio				0.36	0.47			
Control Delay				1.6	21.0			
Queue Delay				0.1	0.0			
Total Delay				1.7	21.0			
LOS				A	C			
Approach Delay				1.7	21.0			
Approach LOS				A	C			
Queue Length 50th (ft)				7	206			
Queue Length 95th (ft)				43	327			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2289	2471			
Starvation Cap Reductn				480	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.42	0.33			

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	119.9
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	11.8
Intersection LOS:	B
Intersection Capacity Utilization:	51.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



















HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

Existing SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	268	457	652	134
Future Volume (vph)	0	0	268	457	652	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.97	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3446	3483	
Flt Permitted				0.57	1.00	
Satd. Flow (perm)				2014	3483	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	279	476	679	140
RTOR Reduction (vph)	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	755	809	0
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				109.0	59.3	
Effective Green, g (s)				109.0	59.3	
Actuated g/C Ratio				0.92	0.50	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2089	1735	
v/s Ratio Prot				c0.06	c0.23	
v/s Ratio Perm				c0.27		
v/c Ratio				0.36	0.47	
Uniform Delay, d1				0.6	19.5	
Progression Factor				3.77	1.00	
Incremental Delay, d2				0.2	0.4	
Delay (s)				2.6	19.9	
Level of Service				A	B	
Approach Delay (s)	0.0			2.6	19.9	
Approach LOS	A			A	B	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			11.6	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			119.0	Sum of lost time (s)		15.0
Intersection Capacity Utilization			51.0%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						



												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	18	0	0	43	7	0	0	0	3	0	10
Future Volume (vph)	7	18	0	0	43	7	0	0	0	3	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>						0.981						0.897
Fl <sub>t</sub> Protected	0.986										0.988	
Satd. Flow (prot)	0	1772	0	0	1832	0	0	1863	0	0	1684	0
Fl <sub>t</sub> Permitted	0.986										0.988	
Satd. Flow (perm)	0	1772	0	0	1832	0	0	1863	0	0	1684	0
Link Speed (mph)					30					30		
Link Distance (ft)					150					194		
Travel Time (s)					3.4					4.4		
Peak Hour Factor	0.78	0.78	0.92	0.92	0.78	0.78	0.92	0.92	0.92	0.78	0.92	0.78
Heavy Vehicles (%)	0%	8%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	9	23	0	0	55	9	0	0	0	4	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	64	0	0	0	0	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0				0				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Free				Free				Stop		Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.1%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	18	0	0	43	7	0	0	0	3	0	10
Future Vol, veh/h	7	18	0	0	43	7	0	0	0	3	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	92	92	78	78	92	92	92	78	92	78
Heavy Vehicles, %	0	8	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	9	23	0	0	55	9	0	0	0	4	0	13

















Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	64	0	0	23
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1551	-	-	1592
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1592
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1551	-	-	1592	-	-	978
HCM Lane V/C Ratio	-	0.006	-	-	-	-	-	0.017
HCM Control Delay (s)	0	7.3	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings  
6: Site Access 3 & Mt. Hope Drive

Existing SAT  
10/18/2017






















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	21	0	0	50	0	0	0	0	0	0	0
Future Volume (vph)	0	21	0	0	50	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1759	0	0	1863	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1759	0	0	1863	0	0	1900	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	8%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	27	0	0	64	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	64	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	6.7%						ICU Level of Service A					
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	21	0	0	50	0	0	0	0	0	0	0
Future Vol, veh/h	0	21	0	0	50	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	8	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	27	0	0	64	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	27	0	0	91	91	27	91	91	64
Stage 1	-	-	-	-	-	-	27	27	-	64	64	-
Stage 2	-	-	-	-	-	-	64	64	-	27	27	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1600	-	0	898	803	1054	898	803	1006
Stage 1	0	-	-	-	-	0	996	877	-	952	846	-
Stage 2	0	-	-	-	-	0	952	846	-	996	877	-
Platoon blocked, %		-	-	-		-						
Mov Cap-1 Maneuver	-	-	-	1600	-	-	898	803	1054	898	803	1006
Mov Cap-2 Maneuver	-	-	-	-	-	-	898	803	-	898	803	-
Stage 1	-	-	-	-	-	-	996	877	-	952	846	-
Stage 2	-	-	-	-	-	-	952	846	-	996	877	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	1600	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	0	-	-

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	0	1	0	0	0	12	2088	0	0	844	18
Future Volume (vph)	32	0	1	0	0	0	12	2088	0	0	844	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850									0.997
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1480	1615	0	1900	0	1805	3438	0	1900	3246	0
Flt Permitted		0.757					0.306					
Satd. Flow (perm)	0	1179	1615	0	1900	0	581	3438	0	1900	3246	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33									4
Link Speed (mph)		30			30			30				30
Link Distance (ft)		185			106			255				450
Travel Time (s)		4.2			2.4			5.8				10.2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Adj. Flow (vph)	34	0	1	0	0	0	13	2221	0	0	898	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	1	0	0	0	13	2221	0	0	917	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1				5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0			0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0			5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		15.2	15.2				74.5	74.5			74.5	
Actuated g/C Ratio		0.17	0.17				0.84	0.84			0.84	
v/c Ratio		0.17	0.00				0.03	0.77			0.34	
Control Delay		35.9	0.0				4.0	10.3			3.9	
Queue Delay		0.0	0.0				0.0	0.0			0.0	
Total Delay		35.9	0.0				4.0	10.3			3.9	
LOS		D	A				A	B			A	
Approach Delay		34.9						10.3			3.9	
Approach LOS		C						B			A	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 89.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 8.7

Intersection LOS: A

Intersection Capacity Utilization 79.4%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

No-Build AM  
 10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕		↖	↕	
Traffic Volume (vph)	32	0	1	0	0	0	12	2088	0	0	844	18
Future Volume (vph)	32	0	1	0	0	0	12	2088	0	0	844	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frt		1.00	0.85				1.00	1.00			1.00	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1480	1615				1805	3438			3245	
Flt Permitted		0.76	1.00				0.31	1.00			1.00	
Satd. Flow (perm)		1179	1615				582	3438			3245	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	34	0	1	0	0	0	13	2221	0	0	898	19
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	34	0	0	0	0	13	2221	0	0	916	0
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		8.5	8.5				71.9	71.9			71.9	
Effective Green, g (s)		8.5	8.5				71.9	71.9			71.9	
Actuated g/C Ratio		0.09	0.09				0.79	0.79			0.79	
Clearance Time (s)		5.0	5.0				6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0				5.0	5.0			4.0	
Lane Grp Cap (vph)		109	150				457	2704			2552	
v/s Ratio Prot								c0.65			0.28	
v/s Ratio Perm		c0.03	0.00				0.02					
v/c Ratio		0.31	0.00				0.03	0.82			0.36	
Uniform Delay, d1		38.7	37.6				2.1	5.9			2.9	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.2	0.0				0.1	2.4			0.1	
Delay (s)		40.9	37.6				2.2	8.3			3.0	
Level of Service		D	D				A	A			A	
Approach Delay (s)		40.9			0.0			8.2			3.0	
Approach LOS		D			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			7.1									A
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			91.4							11.0		
Intersection Capacity Utilization			79.4%									D
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	29	2099	21	27	858
Future Volume (vph)	5	29	2099	21	27	858
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.884		0.999			
Flt Protected	0.993					0.998
Satd. Flow (prot)	1612	0	3432	0	0	3252
Flt Permitted	0.993					0.998
Satd. Flow (perm)	1612	0	3432	0	0	3252
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	4%	5%	14%	4%	11%
Adj. Flow (vph)	5	31	2209	22	28	903
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	2231	0	0	931
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	68.7%		ICU Level of Service C			
Analysis Period (min)	15					



Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	5	29	2099	21	27	858
Future Vol, veh/h	5	29	2099	21	27	858
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	5	14	4	11
Mvmt Flow	5	31	2209	22	28	903

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2728	1116	0	0	2231	0
Stage 1	2220	-	-	-	-	-
Stage 2	508	-	-	-	-	-
Critical Hdwy	6.8	6.98	-	-	4.18	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.34	-	-	2.24	-
Pot Cap-1 Maneuver	17	199	-	-	223	-
Stage 1	70	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	13	199	-	-	223	-
Mov Cap-2 Maneuver	49	-	-	-	-	-
Stage 1	52	-	-	-	-	-
Stage 2	575	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.3	0	0.7
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	137	223
HCM Lane V/C Ratio	-	-	0.261	0.127
HCM Control Delay (s)	-	-	40.3	23.5
HCM Lane LOS	-	-	E	C
HCM 95th %tile Q(veh)	-	-	1	0.4

Lanes, Volumes, Timings  
 3: I-87 Off-Ramp & Southern Boulevard

No-Build AM  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	552	329	0	767	682	0			
Future Volume (vph)	552	329	0	767	682	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1787	1442	0	3374	3312	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1787	1442	0	3374	3312	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		139							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%			
Adj. Flow (vph)	569	339	0	791	703	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	569	339	0	791	703	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									

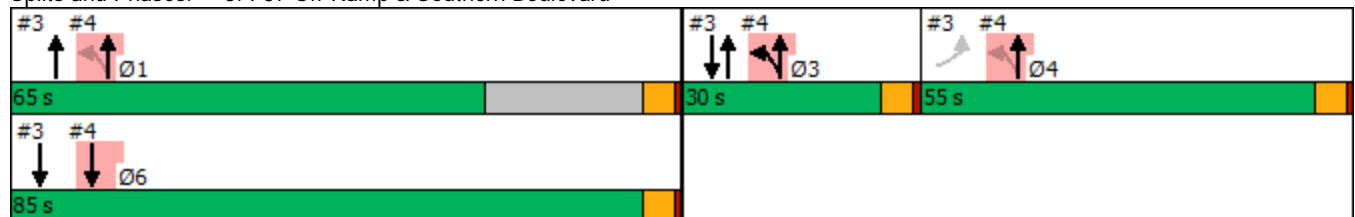


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effect Green (s)	50.1	164.8		104.6	104.6				
Actuated g/C Ratio	0.30	1.00		0.63	0.63				
v/c Ratio	1.05	0.24		0.37	0.33				
Control Delay	105.9	0.4		14.8	0.8				
Queue Delay	0.0	0.0		0.0	0.5				
Total Delay	105.9	0.4		14.8	1.2				
LOS	F	A		B	A				
Approach Delay	66.5			14.8	1.2				
Approach LOS	E			B	A				

**Intersection Summary**

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	164.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	30.4
Intersection LOS:	C
Intersection Capacity Utilization:	60.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

No-Build AM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	552	329	0	767	682	0
Future Volume (vph)	552	329	0	767	682	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1787	1442		3374	3312	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1787	1442		3374	3312	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	569	339	0	791	703	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	569	339	0	791	703	0
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	50.1	164.7		104.6	104.6	
Effective Green, g (s)	50.1	164.7		104.6	104.6	
Actuated g/C Ratio	0.30	1.00		0.64	0.64	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	543	1442		2142	2103	
v/s Ratio Prot				c0.23	0.21	
v/s Ratio Perm	c0.32	0.24				
v/c Ratio	1.05	0.24		0.37	0.33	
Uniform Delay, d1	57.3	0.0		14.3	13.9	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	51.8	0.4		0.2	0.2	
Delay (s)	109.1	0.4		14.6	0.6	
Level of Service	F	A		B	A	
Approach Delay (s)	68.5			14.6	0.6	
Approach LOS	E			B	A	

**Intersection Summary**

HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	164.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings  
4: Southern Boulevard & I-87 On-Ramp

No-Build AM  
10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	392	927	682	225		
Future Volume (vph)	0	0	392	927	682	225		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.963			
Flt Protected				0.985				
Satd. Flow (prot)	0	0	0	3420	3218	0		
Flt Permitted				0.565				
Satd. Flow (perm)	0	0	0	1962	3218	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					36			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%		
Adj. Flow (vph)	0	0	413	976	718	237		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	1389	955	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

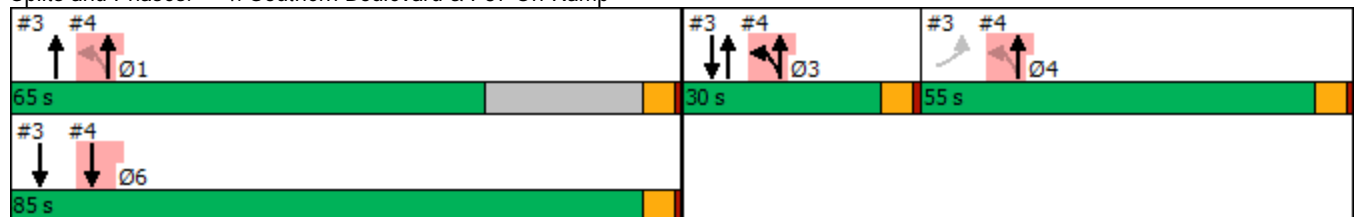


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				154.8	74.6			
Actuated g/C Ratio				0.94	0.45			
v/c Ratio				0.67	0.65			
Control Delay				4.8	35.6			
Queue Delay				0.2	0.0			
Total Delay				5.1	35.6			
LOS				A	D			
Approach Delay				5.1	35.6			
Approach LOS				A	D			

**Intersection Summary**

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	164.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	17.5
Intersection LOS:	B
Intersection Capacity Utilization:	71.4%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp

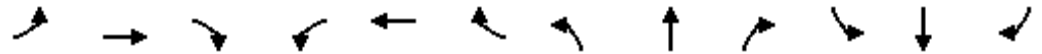


HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

No-Build AM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	392	927	682	225
Future Volume (vph)	0	0	392	927	682	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.96	
Flt Protected				0.99	1.00	
Satd. Flow (prot)				3421	3218	
Flt Permitted				0.56	1.00	
Satd. Flow (perm)				1961	3218	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	413	976	718	237
RTOR Reduction (vph)	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	1389	935	0
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				154.7	74.5	
Effective Green, g (s)				154.7	74.5	
Actuated g/C Ratio				0.94	0.45	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2064	1455	
v/s Ratio Prot				c0.10	0.29	
v/s Ratio Perm				c0.53		
v/c Ratio				0.67	0.64	
Uniform Delay, d1				0.8	34.8	
Progression Factor				8.40	1.00	
Incremental Delay, d2				0.9	1.3	
Delay (s)				7.8	36.2	
Level of Service				A	D	
Approach Delay (s)	0.0			7.8	36.2	
Approach LOS	A			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			19.4	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.70			
Actuated Cycle Length (s)			164.7	Sum of lost time (s)		15.0
Intersection Capacity Utilization			71.4%	ICU Level of Service		C
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	41	0	0	22	15	0	0	0	5	0	12
Future Volume (vph)	7	41	0	0	22	15	0	0	0	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.945							0.905
Fl <sub>t</sub> Protected		0.993										0.985
Satd. Flow (prot)	0	1766	0	0	1764	0	0	1863	0	0	1694	0
Fl <sub>t</sub> Permitted		0.993										0.985
Satd. Flow (perm)	0	1766	0	0	1764	0	0	1863	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			99			65	
Travel Time (s)		3.4			4.4			2.3			1.5	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.85	0.92	0.85
Heavy Vehicles (%)	0%	8%	2%	2%	3%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	8	48	0	0	26	18	0	0	0	6	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	44	0	0	0	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.1%
Analysis Period (min)	15
	ICU Level of Service A



















Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	41	0	0	22	15	0	0	0	5	0	12
Future Vol, veh/h	7	41	0	0	22	15	0	0	0	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	0	8	2	2	3	0	2	2	2	0	2	0
Mvmt Flow	8	48	0	0	26	18	0	0	0	6	0	14

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	44	0	0	48	0	0	106	108	48	99	99	35
Stage 1	-	-	-	-	-	-	64	64	-	35	35	-
Stage 2	-	-	-	-	-	-	42	44	-	64	64	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1577	-	-	1559	-	-	873	782	1021	888	791	1044
Stage 1	-	-	-	-	-	-	947	842	-	986	866	-
Stage 2	-	-	-	-	-	-	972	858	-	952	842	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1577	-	-	1559	-	-	858	778	1021	884	787	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	858	778	-	884	787	-
Stage 1	-	-	-	-	-	-	942	838	-	981	866	-
Stage 2	-	-	-	-	-	-	959	858	-	947	838	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1577	-	-	1559	-	-	991
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	0.02
HCM Control Delay (s)	0	7.3	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

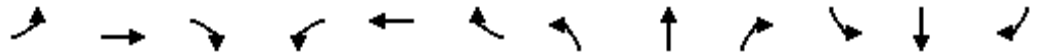
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	46	0	0	37	0	0	0	0	0	0	0
Future Volume (vph)	0	46	0	0	37	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1759	0	0	1845	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1759	0	0	1845	0	0	1900	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	0	54	0	0	44	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	44	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	6.7%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	46	0	0	37	0	0	0	0	0	0	0
Future Vol, veh/h	0	46	0	0	37	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	3	0	0	0	0	0	0	2
Mvmt Flow	0	54	0	0	44	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	54	0	0	98	98	54	98	98	44
Stage 1	-	-	-	-	-	-	54	54	-	44	44	-
Stage 2	-	-	-	-	-	-	44	44	-	54	54	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	0	-	-	1564	-	0	889	796	1019	889	796	1026
Stage 1	0	-	-	-	-	0	963	854	-	975	862	-
Stage 2	0	-	-	-	-	0	975	862	-	963	854	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1564	-	-	889	796	1019	889	796	1026
Mov Cap-2 Maneuver	-	-	-	-	-	-	889	796	-	889	796	-
Stage 1	-	-	-	-	-	-	963	854	-	975	862	-
Stage 2	-	-	-	-	-	-	975	862	-	963	854	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	1564	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	55	0	10	0	0	0	1	1132	0	0	1597	1
Future Volume (vph)	55	0	10	0	0	0	1	1132	0	0	1597	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850									
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1805	1615	0	1900	0	1805	3471	0	1900	3471	0
Flt Permitted		0.757					0.117					
Satd. Flow (perm)	0	1438	1615	0	1900	0	222	3471	0	1900	3471	0
Right Turn on Red			Yes				Yes			Yes		Yes
Satd. Flow (RTOR)			33									
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		185			106			255			450	
Travel Time (s)		4.2			2.4			5.8			10.2	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Adj. Flow (vph)	57	0	10	0	0	0	1	1179	0	0	1664	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	10	0	0	0	1	1179	0	0	1665	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		16.1	16.1				60.8	60.8			60.8	
Actuated g/C Ratio		0.22	0.22				0.82	0.82			0.82	
v/c Ratio		0.18	0.03				0.01	0.41			0.58	
Control Delay		31.8	1.4				4.0	4.7			6.4	
Queue Delay		0.0	0.0				0.0	0.0			0.0	
Total Delay		31.8	1.4				4.0	4.7			6.4	
LOS		C	A				A	A			A	
Approach Delay		27.2						4.7			6.4	
Approach LOS		C						A			A	
Queue Length 50th (ft)		31	0				0	130			234	
Queue Length 95th (ft)		60	3				2	170			304	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200					
Base Capacity (vph)		625	721				183	2856			2856	
Starvation Cap Reductn		0	0				0	0			0	
Spillback Cap Reductn		0	0				0	0			0	
Storage Cap Reductn		0	0				0	0			0	
Reduced v/c Ratio		0.09	0.01				0.01	0.41			0.58	

Intersection Summary






















Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	73.9
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	6.2
Intersection Capacity Utilization	65.8%
Analysis Period (min)	15
Intersection LOS:	A
ICU Level of Service	C

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

No-Build PM  
 10/18/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	0	10	0	0	0	1	1132	0	0	1597	1
Future Volume (vph)	55	0	10	0	0	0	1	1132	0	0	1597	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0				6.0	6.0			6.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			0.95	
Frt		1.00	0.85				1.00	1.00			1.00	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	1615				1805	3471			3471	
Flt Permitted		0.76	1.00				0.12	1.00			1.00	
Satd. Flow (perm)		1439	1615				222	3471			3471	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	57	0	10	0	0	0	1	1179	0	0	1664	1
RTOR Reduction (vph)	0	0	9	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	57	1	0	0	0	1	1179	0	0	1665	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1		5		5
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		7.6	7.6				57.4	57.4			57.4	
Effective Green, g (s)		7.6	7.6				57.4	57.4			57.4	
Actuated g/C Ratio		0.10	0.10				0.76	0.76			0.76	
Clearance Time (s)		5.0	5.0				6.0	6.0			6.0	
Vehicle Extension (s)		4.0	4.0				5.0	5.0			4.0	
Lane Grp Cap (vph)		143	161				167	2621			2621	
v/s Ratio Prot								0.34			c0.48	
v/s Ratio Perm		c0.04	0.00				0.00					
v/c Ratio		0.40	0.01				0.01	0.45			0.64	
Uniform Delay, d1		32.1	30.8				2.3	3.4			4.4	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		2.5	0.0				0.0	0.3			0.6	
Delay (s)		34.5	30.8				2.3	3.7			4.9	
Level of Service		C	C				A	A			A	
Approach Delay (s)		34.0			0.0			3.7			4.9	
Approach LOS		C			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			5.1								HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			76.0							11.0		
Intersection Capacity Utilization			65.8%								ICU Level of Service	C
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	29	1173	14	21	1558
Future Volume (vph)	39	29	1173	14	21	1558
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.942		0.998			
Flt Protected	0.972					0.999
Satd. Flow (prot)	1710	0	3455	0	0	3459
Flt Permitted	0.972					0.999
Satd. Flow (perm)	1710	0	3455	0	0	3459
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	0%	4%	29%	24%	4%
Adj. Flow (vph)	39	29	1185	14	21	1574
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	1199	0	0	1595
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	68.5%		ICU Level of Service C			
Analysis Period (min)	15					



Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	39	29	1173	14	21	1558
Future Vol, veh/h	39	29	1173	14	21	1558
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	0	4	29	24	4
Mvmt Flow	39	29	1185	14	21	1574

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2021	600	0	0	1199
Stage 1	1192	-	-	-	-
Stage 2	829	-	-	-	-
Critical Hdwy	6.86	6.9	-	-	4.58
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.53	3.3	-	-	2.44
Pot Cap-1 Maneuver	50	449	-	-	469
Stage 1	248	-	-	-	-
Stage 2	386	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 32	449	-	-	469
Mov Cap-2 Maneuver	140	-	-	-	-
Stage 1	160	-	-	-	-
Stage 2	386	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.5	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	198	469
HCM Lane V/C Ratio	-	-	0.347	0.045
HCM Control Delay (s)	-	-	32.5	13
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	1.5	0.1

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 3: I-87 Off-Ramp & Southern Boulevard

No-Build PM  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	192	443	0	613	1206	0			
Future Volume (vph)	192	443	0	613	1206	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>	0.850								
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1805	1509	0	3505	3539	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1805	1509	0	3505	3539	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		408							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.97			
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%			
Adj. Flow (vph)	200	461	0	639	1256	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	200	461	0	639	1256	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									

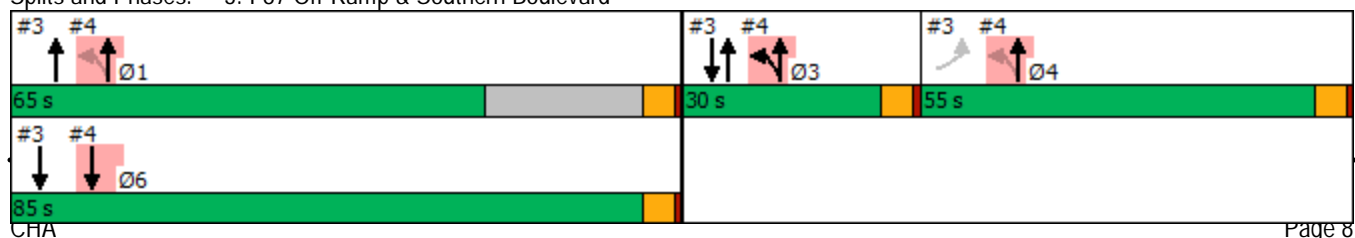


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	29.4	149.7		110.3	110.3				
Actuated g/C Ratio	0.20	1.00		0.74	0.74				
v/c Ratio	0.57	0.31		0.25	0.48				
Control Delay	60.3	0.5		7.3	0.4				
Queue Delay	0.0	0.0		0.0	1.8				
Total Delay	60.3	0.5		7.3	2.2				
LOS	E	A		A	A				
Approach Delay	18.6			7.3	2.2				
Approach LOS	B			A	A				
Queue Length 50th (ft)	178	0		93	6				
Queue Length 95th (ft)	261	0		161	m9				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	604	1509		2582	2607				
Starvation Cap Reductn	0	0		0	1128				
Spillback Cap Reductn	0	0		0	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.33	0.31		0.25	0.85				

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 149.7  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 7.7  
 Intersection LOS: A  
 Intersection Capacity Utilization 52.3%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

No-Build PM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↕	↕	
Traffic Volume (vph)	192	443	0	613	1206	0
Future Volume (vph)	192	443	0	613	1206	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1509		3505	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1509		3505	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.97
Adj. Flow (vph)	200	461	0	639	1256	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	200	461	0	639	1256	0
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	29.3	149.6		110.3	110.3	
Effective Green, g (s)	29.3	149.6		110.3	110.3	
Actuated g/C Ratio	0.20	1.00		0.74	0.74	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	353	1509		2584	2609	
v/s Ratio Prot				0.18	c0.35	
v/s Ratio Perm	c0.11	0.31				
v/c Ratio	0.57	0.31		0.25	0.48	
Uniform Delay, d1	54.4	0.0		6.3	8.0	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	2.5	0.5		0.1	0.1	
Delay (s)	56.9	0.5		6.4	0.3	
Level of Service	E	A		A	A	
Approach Delay (s)	17.6			6.4	0.3	
Approach LOS	B			A	A	

**Intersection Summary**

HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	149.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	326	479	1206	530		
Future Volume (vph)	0	0	326	479	1206	530		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.954			
Flt Protected				0.980				
Satd. Flow (prot)	0	0	0	3481	3397	0		
Flt Permitted				0.490				
Satd. Flow (perm)	0	0	0	1741	3397	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					55			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%		
Adj. Flow (vph)	0	0	336	494	1243	546		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	830	1789	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

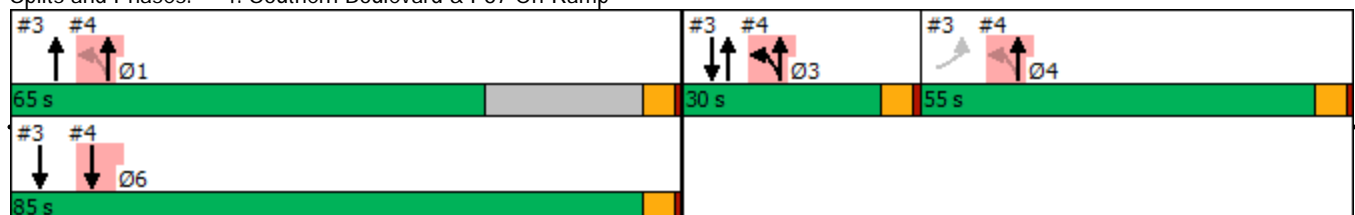


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				139.7	80.2			
Actuated g/C Ratio				0.93	0.54			
v/c Ratio				0.43	0.97			
Control Delay				2.7	47.8			
Queue Delay				0.1	0.0			
Total Delay				2.8	47.8			
LOS				A	D			
Approach Delay				2.8	47.8			
Approach LOS				A	D			
Queue Length 50th (ft)				33	837			
Queue Length 95th (ft)				82	#1204			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				1915	1846			
Starvation Cap Reductn				258	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.50	0.97			

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 149.7  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 33.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 81.3%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp

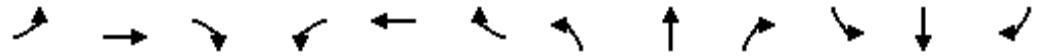


HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

No-Build PM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	326	479	1206	530
Future Volume (vph)	0	0	326	479	1206	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.95	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3482	3398	
Flt Permitted				0.49	1.00	
Satd. Flow (perm)				1742	3398	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	336	494	1243	546
RTOR Reduction (vph)	0	0	0	0	26	0
Lane Group Flow (vph)	0	0	0	830	1763	0
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				139.6	80.2	
Effective Green, g (s)				139.6	80.2	
Actuated g/C Ratio				0.93	0.54	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				1917	1821	
v/s Ratio Prot				c0.07	c0.52	
v/s Ratio Perm				c0.33		
v/c Ratio				0.43	0.97	
Uniform Delay, d1				0.6	33.5	
Progression Factor				7.27	1.00	
Incremental Delay, d2				0.3	14.4	
Delay (s)				4.4	47.9	
Level of Service				A	D	
Approach Delay (s)	0.0			4.4	47.9	
Approach LOS	A			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			34.1	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.76			
Actuated Cycle Length (s)			149.6	Sum of lost time (s)		15.0
Intersection Capacity Utilization			81.3%	ICU Level of Service		D
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	25	0	0	57	6	0	0	0	5	0	12
Future Volume (vph)	10	25	0	0	57	6	0	0	0	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.986						0.902	
Flt Protected		0.986									0.986	
Satd. Flow (prot)	0	1581	0	0	1840	0	0	1863	0	0	1690	0
Flt Permitted		0.986									0.986	
Satd. Flow (perm)	0	1581	0	0	1840	0	0	1863	0	0	1690	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			101			65	
Travel Time (s)		3.4			4.4			2.3			1.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	26%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	11	27	0	0	62	7	0	0	0	5	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	69	0	0	0	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.5%
ICU Level of Service	A
Analysis Period (min)	15



















Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	25	0	0	57	6	0	0	0	5	0	12
Future Vol, veh/h	10	25	0	0	57	6	0	0	0	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	26	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	11	27	0	0	62	7	0	0	0	5	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	27	0	0	121	118	27	115	115	66
Stage 1	-	-	-	-	-	-	49	49	-	66	66	-
Stage 2	-	-	-	-	-	-	72	69	-	49	49	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1545	-	-	1587	-	-	854	772	1048	867	775	1003
Stage 1	-	-	-	-	-	-	964	854	-	950	840	-
Stage 2	-	-	-	-	-	-	938	837	-	969	854	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1545	-	-	1587	-	-	839	767	1048	863	770	1003
Mov Cap-2 Maneuver	-	-	-	-	-	-	839	767	-	863	770	-
Stage 1	-	-	-	-	-	-	957	848	-	943	840	-
Stage 2	-	-	-	-	-	-	926	837	-	962	848	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	8.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1545	-	-	1587	-	-	957
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.019
HCM Control Delay (s)	0	7.3	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

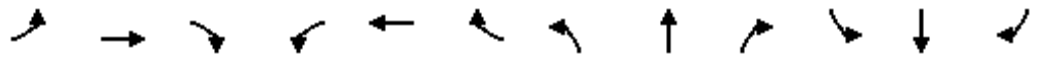
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	30	0	0	63	0	0	0	0	0	0	0
Future Volume (vph)	0	30	0	0	63	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1508	0	0	1863	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1508	0	0	1863	0	0	1900	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	26%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	33	0	0	68	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	33	0	0	68	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	6.7%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	30	0	0	63	0	0	0	0	0	0	0
Future Vol, veh/h	0	30	0	0	63	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	26	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	33	0	0	68	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	33	0	0	101	101	33	101	101	68
Stage 1	-	-	-	-	-	-	33	33	-	68	68	-
Stage 2	-	-	-	-	-	-	68	68	-	33	33	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1592	-	0	885	793	1046	885	793	1001
Stage 1	0	-	-	-	-	0	988	872	-	947	842	-
Stage 2	0	-	-	-	-	0	947	842	-	988	872	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1592	-	-	885	793	1046	885	793	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	885	793	-	885	793	-
Stage 1	-	-	-	-	-	-	988	872	-	947	842	-
Stage 2	-	-	-	-	-	-	947	842	-	988	872	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	1592	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕		↖	↕	
Traffic Volume (vph)	4	0	0	0	0	0	3	1062	0	0	865	1
Future Volume (vph)	4	0	0	0	0	0	3	1062	0	0	865	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt												
Flt Protected		0.950					0.950					
Satd. Flow (prot)	0	1805	1900	0	1900	0	1805	3471	0	1900	3539	0
Flt Permitted							0.319					
Satd. Flow (perm)	0	1900	1900	0	1900	0	606	3471	0	1900	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		185			106			255			450	
Travel Time (s)		4.2			2.4			5.8			10.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	0	0	0	0	3	1095	0	0	892	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	0	0	3	1095	0	0	893	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	

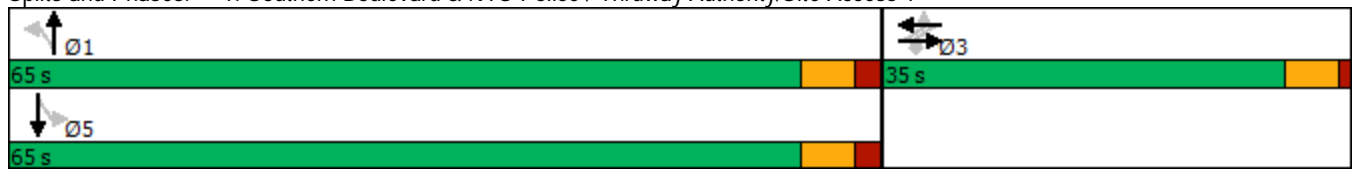























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		16.3					50.9	50.9			50.9	
Actuated g/C Ratio		0.30					0.94	0.94			0.94	
v/c Ratio		0.01					0.01	0.33			0.27	
Control Delay		22.8					2.0	1.8			1.6	
Queue Delay		0.0					0.0	0.0			0.0	
Total Delay		22.8					2.0	1.8			1.6	
LOS		C					A	A			A	
Approach Delay		22.8						1.8			1.6	
Approach LOS		C						A			A	
Queue Length 50th (ft)		1					0	0			0	
Queue Length 95th (ft)		11					3	151			114	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200					
Base Capacity (vph)		1148					571	3272			3336	
Starvation Cap Reductn		0					0	0			0	
Spillback Cap Reductn		0					0	0			0	
Storage Cap Reductn		0					0	0			0	
Reduced v/c Ratio		0.00					0.01	0.33			0.27	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	54
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	1.8
Intersection LOS:	A
Intersection Capacity Utilization:	51.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	0	0	0	0	3	1062	0	0	865	1
Future Volume (vph)	4	0	0	0	0	0	3	1062	0	0	865	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						6.0	6.0			6.0
Lane Util. Factor		1.00					1.00	0.95				0.95
Frt		1.00					1.00	1.00				1.00
Flt Protected		0.95					0.95	1.00				1.00
Satd. Flow (prot)		1805					1805	3471				3539
Flt Permitted		1.00					0.32	1.00				1.00
Satd. Flow (perm)		1900					606	3471				3539
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	0	0	0	0	0	3	1095	0	0	892	1
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	0	0	3	1095	0	0	893	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA	Perm				Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		1.8					45.1	45.1			45.1	
Effective Green, g (s)		1.8					45.1	45.1			45.1	
Actuated g/C Ratio		0.03					0.78	0.78			0.78	
Clearance Time (s)		5.0					6.0	6.0			6.0	
Vehicle Extension (s)		4.0					5.0	5.0			4.0	
Lane Grp Cap (vph)		59					472	2703			2756	
v/s Ratio Prot								c0.32			0.25	
v/s Ratio Perm		c0.00						0.00				
v/c Ratio		0.07					0.01	0.41			0.32	
Uniform Delay, d1		27.2					1.4	2.1			1.9	
Progression Factor		1.00					1.00	1.00			1.00	
Incremental Delay, d2		0.7					0.0	0.2			0.1	
Delay (s)		27.9					1.4	2.3			2.0	
Level of Service		C					A	A			A	
Approach Delay (s)		27.9			0.0			2.3			2.0	
Approach LOS		C			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			2.2				HCM 2000 Level of Service				A	
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			57.9				Sum of lost time (s)		11.0			
Intersection Capacity Utilization			51.0%				ICU Level of Service				A	
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	26	1048	17	8	838
Future Volume (vph)	27	26	1048	17	8	838
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.934		0.998			
Flt Protected	0.975					
Satd. Flow (prot)	1696	0	3493	0	0	3540
Flt Permitted	0.975					
Satd. Flow (perm)	1696	0	3493	0	0	3540
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	3%	12%	0%	2%
Adj. Flow (vph)	28	27	1069	17	8	855
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	0	1086	0	0	863
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	39.5%		ICU Level of Service A			
Analysis Period (min)	15					



Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	27	26	1048	17	8	838
Future Vol, veh/h	27	26	1048	17	8	838
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	3	12	0	2
Mvmt Flow	28	27	1069	17	8	855

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1522	543	0	0	1086
Stage 1	1078	-	-	-	-
Stage 2	444	-	-	-	-
Critical Hdwy	6.88	6.9	-	-	4.1
Critical Hdwy Stg 1	5.88	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-
Follow-up Hdwy	3.54	3.3	-	-	2.2
Pot Cap-1 Maneuver	107	489	-	-	650
Stage 1	284	-	-	-	-
Stage 2	608	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	105	489	-	-	650
Mov Cap-2 Maneuver	249	-	-	-	-
Stage 1	277	-	-	-	-
Stage 2	608	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	328	650
HCM Lane V/C Ratio	-	-	0.165	0.013
HCM Control Delay (s)	-	-	18.1	10.6
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.6	0

Lanes, Volumes, Timings  
 3: I-87 Off-Ramp & Southern Boulevard

No-Build SAT  
 10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	170	214	0	563	659	0			
Future Volume (vph)	170	214	0	563	659	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1770	1509	0	3505	3574	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1770	1509	0	3505	3574	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		225							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%			
Adj. Flow (vph)	179	225	0	593	694	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	179	225	0	593	694	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									

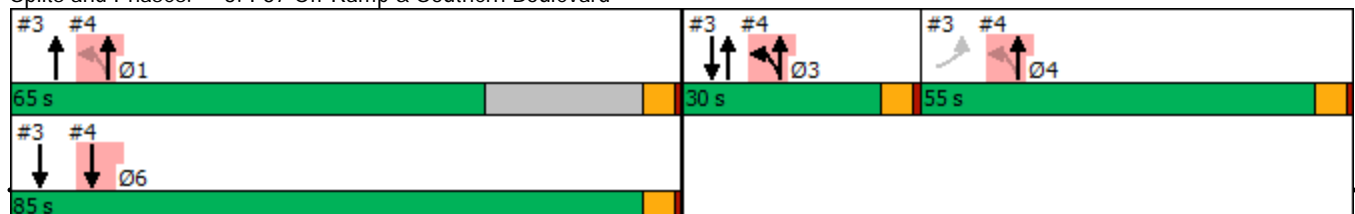


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effect Green (s)	25.0	121.8		86.2	86.2				
Actuated g/C Ratio	0.21	1.00		0.71	0.71				
v/c Ratio	0.49	0.15		0.24	0.27				
Control Delay	50.9	0.2		6.9	0.4				
Queue Delay	0.0	0.0		0.0	0.1				
Total Delay	50.9	0.2		6.9	0.6				
LOS	D	A		A	A				
Approach Delay	22.7			6.9	0.6				
Approach LOS	C			A	A				
Queue Length 50th (ft)	125	0		74	2				
Queue Length 95th (ft)	237	0		137	3				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	772	1509		2760	2814				
Starvation Cap Reductn	0	0		0	979				
Spillback Cap Reductn	0	0		0	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.23	0.15		0.21	0.38				

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	121.8
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	8.1
Intersection LOS:	A
Intersection Capacity Utilization:	36.0%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

No-Build SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	214	0	563	659	0
Future Volume (vph)	170	214	0	563	659	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1509		3505	3574	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1509		3505	3574	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	225	0	593	694	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	179	225	0	593	694	0
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	25.0	120.9		85.9	85.9	
Effective Green, g (s)	25.0	120.9		85.9	85.9	
Actuated g/C Ratio	0.21	1.00		0.71	0.71	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	366	1509		2490	2539	
v/s Ratio Prot				0.17	c0.19	
v/s Ratio Perm	c0.10	0.15				
v/c Ratio	0.49	0.15		0.24	0.27	
Uniform Delay, d1	42.3	0.0		6.1	6.3	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	1.4	0.2		0.1	0.1	
Delay (s)	43.7	0.2		6.2	0.3	
Level of Service	D	A		A	A	
Approach Delay (s)	19.5			6.2	0.3	
Approach LOS	B			A	A	

**Intersection Summary**

HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	120.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	271	462	659	135		
Future Volume (vph)	0	0	271	462	659	135		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.974			
Flt Protected				0.982				
Satd. Flow (prot)	0	0	0	3447	3481	0		
Flt Permitted				0.572				
Satd. Flow (perm)	0	0	0	2008	3481	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					19			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%		
Adj. Flow (vph)	0	0	282	481	686	141		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	763	827	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

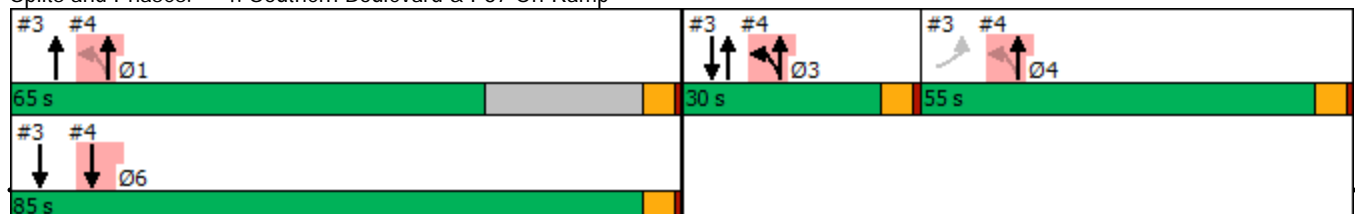


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				111.2	60.4			
Actuated g/C Ratio				0.91	0.50			
v/c Ratio				0.37	0.48			
Control Delay				1.7	21.3			
Queue Delay				0.1	0.0			
Total Delay				1.8	21.3			
LOS				A	C			
Approach Delay				1.8	21.3			
Approach LOS				A	C			
Queue Length 50th (ft)				10	210			
Queue Length 95th (ft)				46	337			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2273	2436			
Starvation Cap Reductn				465	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.42	0.34			

Intersection Summary

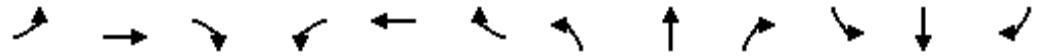
Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	121.8
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	11.9
Intersection LOS:	B
Intersection Capacity Utilization	51.5%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	271	462	659	135
Future Volume (vph)	0	0	271	462	659	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.97	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3446	3483	
Flt Permitted				0.57	1.00	
Satd. Flow (perm)				2008	3483	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	282	481	686	141
RTOR Reduction (vph)	0	0	0	0	10	0
Lane Group Flow (vph)	0	0	0	763	817	0
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				110.9	60.4	
Effective Green, g (s)				110.9	60.4	
Actuated g/C Ratio				0.92	0.50	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2085	1740	
v/s Ratio Prot				c0.06	c0.23	
v/s Ratio Perm				c0.27		
v/c Ratio				0.37	0.47	
Uniform Delay, d1				0.6	19.8	
Progression Factor				3.95	1.00	
Incremental Delay, d2				0.2	0.4	
Delay (s)				2.7	20.2	
Level of Service				A	C	
Approach Delay (s)	0.0			2.7	20.2	
Approach LOS	A			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			11.8	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			120.9	Sum of lost time (s)		15.0
Intersection Capacity Utilization			51.5%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	18	0	0	43	7	0	0	0	3	0	10
Future Volume (vph)	7	18	0	0	43	7	0	0	0	3	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.981							0.897
Fl <sub>t</sub> Protected		0.986										0.988
Satd. Flow (prot)	0	1772	0	0	1832	0	0	1863	0	0	1684	0
Fl <sub>t</sub> Permitted		0.986										0.988
Satd. Flow (perm)	0	1772	0	0	1832	0	0	1863	0	0	1684	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			77			65	
Travel Time (s)		3.4			4.4			1.8			1.5	
Peak Hour Factor	0.78	0.78	0.92	0.92	0.78	0.78	0.92	0.92	0.92	0.78	0.92	0.78
Heavy Vehicles (%)	0%	8%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	9	23	0	0	55	9	0	0	0	4	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	64	0	0	0	0	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.1%
Analysis Period (min)	15
	ICU Level of Service A



**Intersection**

















Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	18	0	0	43	7	0	0	0	3	0	10
Future Vol, veh/h	7	18	0	0	43	7	0	0	0	3	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	92	92	78	78	92	92	92	78	92	78
Heavy Vehicles, %	0	8	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	9	23	0	0	55	9	0	0	0	4	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	64	0	0	23
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1551	-	-	1592
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1592
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	8.7
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1551	-	-	1592	-	-	978
HCM Lane V/C Ratio	-	0.006	-	-	-	-	-	0.017
HCM Control Delay (s)	0	7.3	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	21	0	0	51	0	0	0	0	0	0	0
Future Volume (vph)	0	21	0	0	51	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1759	0	0	1863	0	0	1900	0	0	1900	0
Flt Permitted												
Satd. Flow (perm)	0	1759	0	0	1863	0	0	1900	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	8%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	27	0	0	65	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	65	0	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	21	0	0	51	0	0	0	0	0	0	0
Future Vol, veh/h	0	21	0	0	51	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	8	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	27	0	0	65	0	0	0	0	0	0	0

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	-	0	0	27	0	0	92	92	27	92	92	65
Stage 1	-	-	-	-	-	-	27	27	-	65	65	-
Stage 2	-	-	-	-	-	-	65	65	-	27	27	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1600	-	0	897	802	1054	897	802	1005
Stage 1	0	-	-	-	-	0	996	877	-	951	845	-
Stage 2	0	-	-	-	-	0	951	845	-	996	877	-
Platoon blocked, %		-	-	-								
Mov Cap-1 Maneuver	-	-	-	1600	-	-	897	802	1054	897	802	1005
Mov Cap-2 Maneuver	-	-	-	-	-	-	897	802	-	897	802	-
Stage 1	-	-	-	-	-	-	996	877	-	951	845	-
Stage 2	-	-	-	-	-	-	951	845	-	996	877	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	-	1600	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	-	-	-	0	-	-

Lanes, Volumes, Timings

1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

10/18/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Future Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.922			0.993			0.997	
Flt Protected		0.950			0.979		0.950			0.950		
Satd. Flow (prot)	0	1480	1615	0	1715	0	1805	3421	0	1805	3246	0
Flt Permitted		0.530			0.848		0.298			0.068		
Satd. Flow (perm)	0	825	1615	0	1486	0	566	3421	0	129	3246	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33		33			8			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		185			106			255			450	
Travel Time (s)		4.2			2.4			5.8			10.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Adj. Flow (vph)	34	0	1	101	0	139	13	2122	97	86	860	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	1	0	240	0	13	2219	0	86	879	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		19.6	19.6		19.6		59.2	59.2		59.2	59.2	
Actuated g/C Ratio		0.22	0.22		0.22		0.66	0.66		0.66	0.66	
v/c Ratio		0.19	0.00		0.69		0.03	0.98		1.01	0.41	
Control Delay		30.6	0.0		38.2		7.3	32.1		129.0	8.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		30.6	0.0		38.2		7.3	32.1		129.0	8.4	
LOS		C	A		D		A	C		F	A	
Approach Delay		29.7			38.2			31.9			19.2	
Approach LOS		C			D			C			B	
Queue Length 50th (ft)		16	0		108		2	538		42	102	
Queue Length 95th (ft)		41	0		186		11	#963		#112	190	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200			200		
Base Capacity (vph)		276	563		520		372	2258		85	2141	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.12	0.00		0.46		0.03	0.98		1.01	0.41	

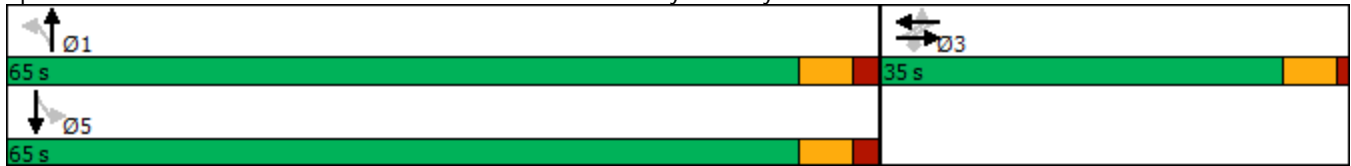
Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 89.8  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 28.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 96.5%  
 ICU Level of Service F  
 Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

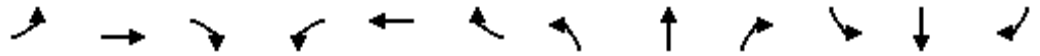
Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis

1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Future Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.92		1.00	0.99		1.00	1.00	
Flt Protected		0.95	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1480	1615		1715		1805	3423		1805	3245	
Flt Permitted		0.53	1.00		0.85		0.30	1.00		0.07	1.00	
Satd. Flow (perm)		825	1615		1485		566	3423		128	3245	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	34	0	1	101	0	139	13	2122	97	86	860	19
RTOR Reduction (vph)	0	0	1	0	26	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	34	0	0	214	0	13	2216	0	86	878	0
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		19.6	19.6		19.6		59.2	59.2		59.2	59.2	
Effective Green, g (s)		19.6	19.6		19.6		59.2	59.2		59.2	59.2	
Actuated g/C Ratio		0.22	0.22		0.22		0.66	0.66		0.66	0.66	
Clearance Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0	4.0		4.0		5.0	5.0		4.0	4.0	
Lane Grp Cap (vph)		180	352		324		373	2256		84	2139	
v/s Ratio Prot								0.65			0.27	
v/s Ratio Perm		0.04	0.00		0.14		0.02			0.67		
v/c Ratio		0.19	0.00		0.66		0.03	0.98		1.02	0.41	
Uniform Delay, d1		28.6	27.4		32.1		5.3	14.8		15.3	7.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0		5.5		0.1	15.0		104.9	0.2	
Delay (s)		29.3	27.4		37.5		5.4	29.8		120.2	7.3	
Level of Service		C	C		D		A	C		F	A	
Approach Delay (s)		29.3			37.5			29.7			17.4	
Approach LOS		C			D			C			B	

Intersection Summary		
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.93	
Actuated Cycle Length (s)	89.8	Sum of lost time (s) 11.0
Intersection Capacity Utilization	96.5%	ICU Level of Service F
Analysis Period (min)	15	
c Critical Lane Group		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	63	2136	22	66	899
Future Volume (vph)	9	63	2136	22	66	899
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.881		0.998			
Flt Protected	0.994					0.997
Satd. Flow (prot)	1607	0	3428	0	0	3256
Flt Permitted	0.994					0.997
Satd. Flow (perm)	1607	0	3428	0	0	3256
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	4%	5%	14%	4%	11%
Adj. Flow (vph)	9	66	2248	23	69	946
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	2271	0	0	1015
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	86.0%		ICU Level of Service E			
Analysis Period (min)	15					



**Intersection**

Int Delay, s/veh 3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	9	63	2136	22	66	899
Future Vol, veh/h	9	63	2136	22	66	899
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	5	14	4	11
Mvmt Flow	9	66	2248	23	69	946

**Major/Minor**

	Minor1	Major1	Major2		
Conflicting Flow All	2871	1136	0	0	2271
Stage 1	2260	-	-	-	-
Stage 2	611	-	-	-	-
Critical Hdwy	6.8	6.98	-	-	4.18
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.34	-	-	2.24
Pot Cap-1 Maneuver	14	193	-	-	215
Stage 1	67	-	-	-	-
Stage 2	510	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 5	193	-	-	215
Mov Cap-2 Maneuver	21	-	-	-	-
Stage 1	22	-	-	-	-
Stage 2	510	-	-	-	-

**Approach**

	WB	NB	SB
HCM Control Delay, s	122.6	0	2
HCM LOS	F		

**Minor Lane/Major Mvmt**

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	95	215
HCM Lane V/C Ratio	-	-	0.798	0.323
HCM Control Delay (s)	-	-	122.6	29.5
HCM Lane LOS	-	-	F	D
HCM 95th %tile Q(veh)	-	-	4.3	1.3

**Notes**

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings

3: I-87 Off-Ramp & Southern Boulevard

10/18/2017



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	552	362	0	805	729	0			
Future Volume (vph)	552	362	0	805	729	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1787	1442	0	3374	3312	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1787	1442	0	3374	3312	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		153							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%			
Adj. Flow (vph)	569	373	0	830	752	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	569	373	0	830	752	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag						Lead		
Lead-Lag Optimize?	Yes						Yes		
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	50.1	166.7		106.6	106.6				
Actuated g/C Ratio	0.30	1.00		0.64	0.64				
v/c Ratio	1.06	0.26		0.38	0.36				
Control Delay	110.5	0.4		14.9	0.7				
Queue Delay	0.0	0.0		0.0	0.5				
Total Delay	110.5	0.4		14.9	1.2				
LOS	F	A		B	A				
Approach Delay	66.9			14.9	1.2				
Approach LOS	E			B	A				
Queue Length 50th (ft)	~706	0		217	5				
Queue Length 95th (ft)	#951	0		258	4				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	536	1442		2158	2118				
Starvation Cap Reductn	0	0		0	863				
Spillback Cap Reductn	0	0		112	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	1.06	0.26		0.41	0.60				

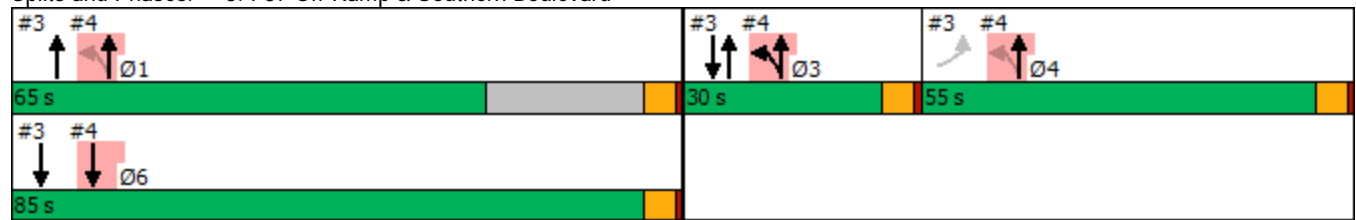
**Intersection Summary**

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 166.7  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 30.2  
 Intersection Capacity Utilization 61.2%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service B

~ 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: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↕	↕	
Traffic Volume (vph)	552	362	0	805	729	0
Future Volume (vph)	552	362	0	805	729	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1787	1442		3374	3312	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1787	1442		3374	3312	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	569	373	0	830	752	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	569	373	0	830	752	0
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	50.1	166.7		106.6	106.6	
Effective Green, g (s)	50.1	166.7		106.6	106.6	
Actuated g/C Ratio	0.30	1.00		0.64	0.64	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	537	1442		2157	2117	
v/s Ratio Prot				c0.25	0.23	
v/s Ratio Perm	c0.32	0.26				
v/c Ratio	1.06	0.26		0.38	0.36	
Uniform Delay, d1	58.3	0.0		14.4	14.0	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	55.6	0.4		0.2	0.2	
Delay (s)	113.9	0.4		14.6	0.5	
Level of Service	F	A		B	A	
Approach Delay (s)	69.0			14.6	0.5	
Approach LOS	E			B	A	

**Intersection Summary**

HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	166.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	421	936	729	225		
Future Volume (vph)	0	0	421	936	729	225		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Fr <sub>t</sub>					0.965			
Fl <sub>t</sub> Protected				0.985				
Satd. Flow (prot)	0	0	0	3416	3222	0		
Fl <sub>t</sub> Permitted				0.553				
Satd. Flow (perm)	0	0	0	1918	3222	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					33			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%		
Adj. Flow (vph)	0	0	443	985	767	237		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	1428	1004	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								



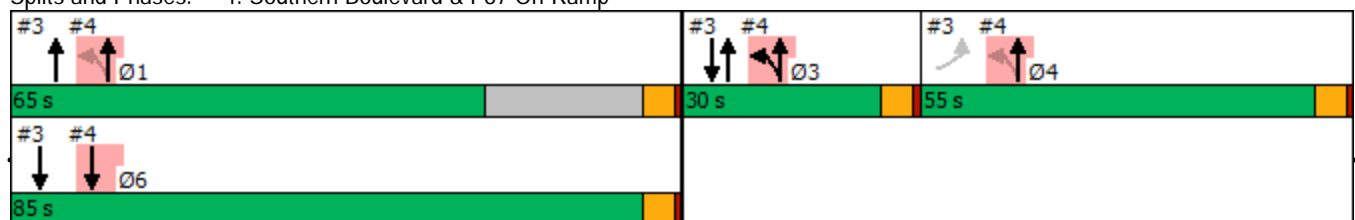
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				156.7	76.6			
Actuated g/C Ratio				0.94	0.46			
v/c Ratio				0.70	0.67			
Control Delay				5.9	36.4			
Queue Delay				0.3	0.0			
Total Delay				6.2	36.4			
LOS				A	D			
Approach Delay				6.2	36.4			
Approach LOS				A	D			
Queue Length 50th (ft)				116	432			
Queue Length 95th (ft)				m96	510			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2040	1565			
Starvation Cap Reductn				159	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.76	0.64			

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 166.7  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 18.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 73.8%  
 ICU Level of Service D  
 Analysis Period (min) 15

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

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



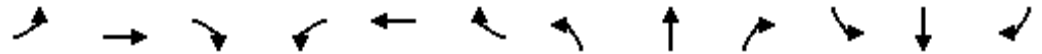
HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	421	936	729	225
Future Volume (vph)	0	0	421	936	729	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.96	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3415	3221	
Flt Permitted				0.55	1.00	
Satd. Flow (perm)				1918	3221	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	443	985	767	237
RTOR Reduction (vph)	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	1428	986	0
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				156.7	76.6	
Effective Green, g (s)				156.7	76.6	
Actuated g/C Ratio				0.94	0.46	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2027	1480	
v/s Ratio Prot				c0.11	0.31	
v/s Ratio Perm				c0.56		
v/c Ratio				0.70	0.67	
Uniform Delay, d1				0.9	35.1	
Progression Factor				9.21	1.00	
Incremental Delay, d2				1.1	1.5	
Delay (s)				9.3	36.6	
Level of Service				A	D	
Approach Delay (s)	0.0			9.3	36.6	
Approach LOS	A			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.6	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			166.7	Sum of lost time (s)		15.0
Intersection Capacity Utilization			73.8%	ICU Level of Service		D
Analysis Period (min)			15			
c Critical Lane Group						





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	59	22	1	41	15	19	0	1	5	0	12
Future Volume (vph)	7	59	22	1	41	15	19	0	1	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.964			0.994			0.905	
Flt Protected		0.996			0.999			0.954			0.985	
Satd. Flow (prot)	0	1729	0	0	1791	0	0	1766	0	0	1694	0
Flt Permitted		0.996			0.999			0.954			0.985	
Satd. Flow (perm)	0	1729	0	0	1791	0	0	1766	0	0	1694	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			99			65	
Travel Time (s)		3.4			4.4			2.3			1.5	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.85	0.85	0.92	0.92	0.92	0.85	0.92	0.85
Heavy Vehicles (%)	0%	8%	2%	2%	3%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	8	69	24	1	48	18	21	0	1	6	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	101	0	0	67	0	0	22	0	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	18.5%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	59	22	1	41	15	19	0	1	5	0	12
Future Vol, veh/h	7	59	22	1	41	15	19	0	1	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	92	92	85	85	92	92	92	85	92	85
Heavy Vehicles, %	0	8	2	2	3	0	2	2	2	0	2	0
Mvmt Flow	8	69	24	1	48	18	21	0	1	6	0	14

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	66	0	0	93
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1549	-	-	1501
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1549	-	-	1501
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

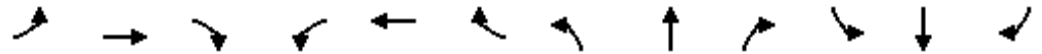
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	9.7	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	796	1549	-	-	1501	-	-	944
HCM Lane V/C Ratio	0.027	0.005	-	-	0.001	-	-	0.021
HCM Control Delay (s)	9.7	7.3	0	-	7.4	0	-	8.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Lanes, Volumes, Timings

6: Site Access 3 & Mt. Hope Drive

10/18/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶			↷			↕			↕	
Traffic Volume (vph)	0	47	18	1	38	0	19	0	1	0	0	0
Future Volume (vph)	0	47	18	1	38	0	19	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.963						0.994				
Fl <sub>t</sub> Protected					0.999			0.954				
Satd. Flow (prot)	0	1730	0	0	1844	0	0	1802	0	0	1900	0
Fl <sub>t</sub> Permitted					0.999			0.954				
Satd. Flow (perm)	0	1730	0	0	1844	0	0	1802	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	8%	0%	0%	3%	0%	0%	0%	0%	0%	0%	2%
Adj. Flow (vph)	0	55	21	1	45	0	22	0	1	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	76	0	0	46	0	0	23	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	47	18	1	38	0	19	0	1	0	0	0
Future Vol, veh/h	0	47	18	1	38	0	19	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	3	0	0	0	0	0	0	2
Mvmt Flow	0	55	21	1	45	0	22	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	76	0	0	113	113	66	113	123	45
Stage 1	-	-	-	-	-	-	66	66	-	47	47	-
Stage 2	-	-	-	-	-	-	47	47	-	66	76	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.318
Pot Cap-1 Maneuver	0	-	-	1536	-	0	869	781	1003	869	771	1025
Stage 1	0	-	-	-	-	0	950	844	-	972	860	-
Stage 2	0	-	-	-	-	0	972	860	-	950	836	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1536	-	-	868	780	1003	867	770	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	868	780	-	867	770	-
Stage 1	-	-	-	-	-	-	950	844	-	972	859	-
Stage 2	-	-	-	-	-	-	971	859	-	949	836	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.2			9.2			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	874	-	-	1536	-	-
HCM Lane V/C Ratio	0.027	-	-	0.001	-	-
HCM Control Delay (s)	9.2	-	-	7.3	0	0
HCM Lane LOS	A	-	-	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↔		↖	↕		↗	↕	
Traffic Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Future Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850		0.945			0.985				
Flt Protected		0.950			0.971		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1743	0	1805	3433	0	1805	3471	0
Flt Permitted		0.575			0.785		0.091			0.166		
Satd. Flow (perm)	0	1092	1615	0	1409	0	173	3433	0	315	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			33		35			21				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		185			106			255				450
Travel Time (s)		4.2			2.4			5.8				10.2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Adj. Flow (vph)	57	0	10	209	0	143	1	1118	128	180	1573	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	10	0	352	0	1	1246	0	180	1574	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3			3			1				5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		26.2	26.2		26.2		59.1	59.1		59.1	59.1	
Actuated g/C Ratio		0.27	0.27		0.27		0.61	0.61		0.61	0.61	
v/c Ratio		0.19	0.02		0.86		0.01	0.59		0.93	0.74	
Control Delay		28.2	0.5		51.1		9.0	13.1		73.4	16.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		28.2	0.5		51.1		9.0	13.1		73.4	16.7	
LOS		C	A		D		A	B		E	B	
Approach Delay		24.0			51.1			13.1			22.5	
Approach LOS		C			D			B			C	
Queue Length 50th (ft)		27	0		186		0	245		102	368	
Queue Length 95th (ft)		59	2		#330		3	310		#251	462	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200			200		
Base Capacity (vph)		340	526		463		106	2114		193	2128	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.17	0.02		0.76		0.01	0.59		0.93	0.74	

**Intersection Summary**

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	96.4
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	22.0
Intersection LOS:	C
Intersection Capacity Utilization:	98.8%
ICU Level of Service:	F
Analysis Period (min):	15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

Build PM  
 10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↗	↕↗		↗	↕↗	
Traffic Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Future Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.95		1.00	0.98		1.00	1.00	
Flt Protected		0.95	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615		1744		1805	3431		1805	3471	
Flt Permitted		0.57	1.00		0.78		0.09	1.00		0.17	1.00	
Satd. Flow (perm)		1092	1615		1409		172	3431		315	3471	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	57	0	10	209	0	143	1	1118	128	180	1573	1
RTOR Reduction (vph)	0	0	7	0	25	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	57	3	0	327	0	1	1238	0	180	1574	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		26.3	26.3		26.3		59.2	59.2		59.2	59.2	
Effective Green, g (s)		26.3	26.3		26.3		59.2	59.2		59.2	59.2	
Actuated g/C Ratio		0.27	0.27		0.27		0.61	0.61		0.61	0.61	
Clearance Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0	4.0		4.0		5.0	5.0		4.0	4.0	
Lane Grp Cap (vph)		297	440		384		105	2104		193	2129	
v/s Ratio Prot								0.36			0.45	
v/s Ratio Perm		0.05	0.00		c0.23		0.01			c0.57		
v/c Ratio		0.19	0.01		0.85		0.01	0.59		0.93	0.74	
Uniform Delay, d1		26.9	25.6		33.2		7.3	11.3		16.8	13.2	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4	0.0		16.8		0.1	0.7		46.2	1.5	
Delay (s)		27.4	25.6		50.1		7.3	11.9		63.0	14.7	
Level of Service		C	C		D		A	B		E	B	
Approach Delay (s)		27.1			50.1			11.9			19.6	
Approach LOS		C			D			B			B	

Intersection Summary		
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.91	
Actuated Cycle Length (s)	96.5	Sum of lost time (s) 11.0
Intersection Capacity Utilization	98.8%	ICU Level of Service F
Analysis Period (min)	15	
c Critical Lane Group		





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	94	1248	17	94	1637
Future Volume (vph)	46	94	1248	17	94	1637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.909		0.998			
Flt Protected	0.984					0.997
Satd. Flow (prot)	1683	0	3453	0	0	3425
Flt Permitted	0.984					0.997
Satd. Flow (perm)	1683	0	3453	0	0	3425
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	0%	4%	29%	24%	4%
Adj. Flow (vph)	46	95	1261	17	95	1654
Shared Lane Traffic (%)						
Lane Group Flow (vph)	141	0	1278	0	0	1749
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	101.3%		ICU Level of Service G			
Analysis Period (min)	15					

**Intersection**

Int Delay, s/veh 1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	46	94	1248	17	94	1637
Future Vol, veh/h	46	94	1248	17	94	1637
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	0	4	29	24	4
Mvmt Flow	46	95	1261	17	95	1654

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	2287	639	0
Stage 1	1270	-	-
Stage 2	1017	-	-
Critical Hdwy	6.86	6.9	-
Critical Hdwy Stg 1	5.86	-	-
Critical Hdwy Stg 2	5.86	-	-
Follow-up Hdwy	3.53	3.3	-
Pot Cap-1 Maneuver	~ 33	424	-
Stage 1	226	-	-
Stage 2	308	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	0	424	-
Mov Cap-2 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	308	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	434
HCM Lane V/C Ratio	-	-	0.334	0.219
HCM Control Delay (s)	-	-	17.7	15.6
HCM Lane LOS	-	-	C	C
HCM 95th %tile Q(veh)	-	-	1.4	0.8

**Notes**  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	192	505	0	688	1296	0			
Future Volume (vph)	192	505	0	688	1296	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1805	1509	0	3505	3539	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1805	1509	0	3505	3539	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		397							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.97			
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%			
Adj. Flow (vph)	200	526	0	717	1350	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	200	526	0	717	1350	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



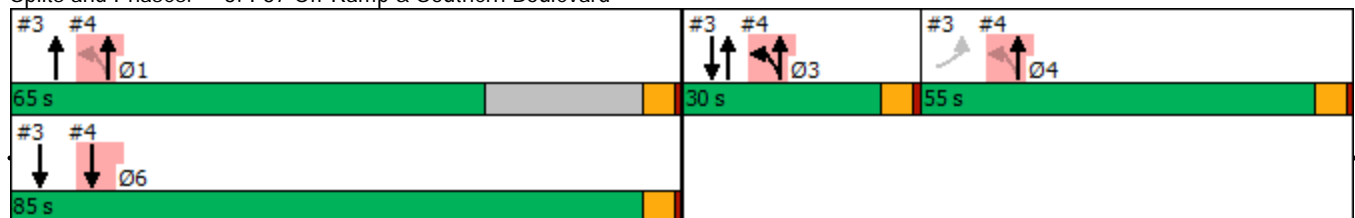
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	30.9	151.3		110.3	110.3				
Actuated g/C Ratio	0.20	1.00		0.73	0.73				
v/c Ratio	0.54	0.35		0.28	0.52				
Control Delay	59.0	0.6		8.0	0.3				
Queue Delay	0.0	0.0		0.0	2.9				
Total Delay	59.0	0.6		8.0	3.2				
LOS	E	A		A	A				
Approach Delay	16.7			8.0	3.2				
Approach LOS	B			A	A				
Queue Length 50th (ft)	178	0		114	6				
Queue Length 95th (ft)	260	0		192	m9				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	598	1509		2556	2581				
Starvation Cap Reductn	0	0		0	1086				
Spillback Cap Reductn	0	0		21	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.33	0.35		0.28	0.90				

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 151.3  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 8.0  
 Intersection LOS: A  
 Intersection Capacity Utilization 54.8%  
 ICU Level of Service A  
 Analysis Period (min) 15

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

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Build PM  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	192	505	0	688	1296	0
Future Volume (vph)	192	505	0	688	1296	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1509		3505	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1509		3505	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.97
Adj. Flow (vph)	200	526	0	717	1350	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	200	526	0	717	1350	0
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	30.9	151.2		110.3	110.3	
Effective Green, g (s)	30.9	151.2		110.3	110.3	
Actuated g/C Ratio	0.20	1.00		0.73	0.73	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	368	1509		2556	2581	
v/s Ratio Prot				0.20	c0.38	
v/s Ratio Perm	c0.11	0.35				
v/c Ratio	0.54	0.35		0.28	0.52	
Uniform Delay, d1	53.8	0.0		7.0	8.9	
Progression Factor	1.00	1.00		1.00	0.02	
Incremental Delay, d2	2.1	0.6		0.1	0.0	
Delay (s)	55.9	0.6		7.1	0.2	
Level of Service	E	A		A	A	
Approach Delay (s)	15.9			7.1	0.2	
Approach LOS	B			A	A	

**Intersection Summary**

HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	151.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	383	497	1296	530		
Future Volume (vph)	0	0	383	497	1296	530		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.956			
Flt Protected				0.979				
Satd. Flow (prot)	0	0	0	3474	3403	0		
Flt Permitted				0.494				
Satd. Flow (perm)	0	0	0	1753	3403	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					49			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%		
Adj. Flow (vph)	0	0	395	512	1336	546		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	907	1882	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

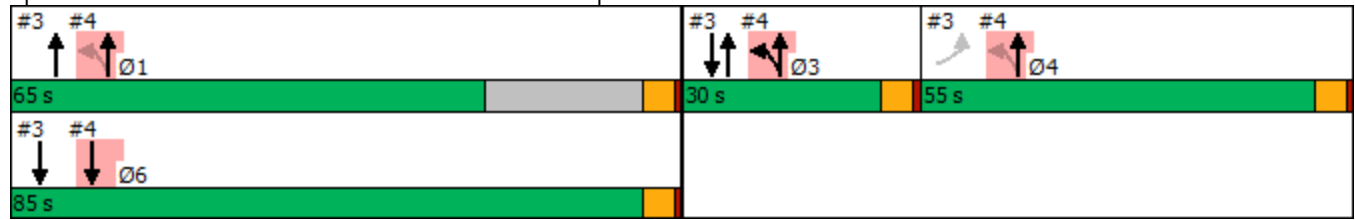


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				141.3	80.3			
Actuated g/C Ratio				0.93	0.53			
v/c Ratio				0.87dl	1.03			
Control Delay				3.4	63.3			
Queue Delay				0.1	0.0			
Total Delay				3.5	63.3			
LOS				A	E			
Approach Delay				3.5	63.3			
Approach LOS				A	E			
Queue Length 50th (ft)				55	~1025			
Queue Length 95th (ft)				102	#1339			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				1922	1828			
Starvation Cap Reductn				226	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.53	1.03			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 151.3  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 43.8      Intersection LOS: D  
 Intersection Capacity Utilization 86.0%      ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp





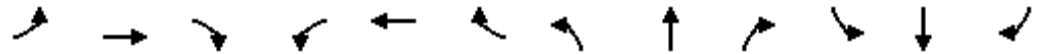


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	383	497	1296	530
Future Volume (vph)	0	0	383	497	1296	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.96	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3473	3405	
Flt Permitted				0.49	1.00	
Satd. Flow (perm)				1752	3405	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	395	512	1336	546
RTOR Reduction (vph)	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	907	1859	0
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				141.2	80.2	
Effective Green, g (s)				141.2	80.2	
Actuated g/C Ratio				0.93	0.53	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				1921	1806	
v/s Ratio Prot				c0.08	c0.55	
v/s Ratio Perm				c0.36		
v/c Ratio				0.87dl	1.03	
Uniform Delay, d1				0.6	35.5	
Progression Factor				8.94	1.00	
Incremental Delay, d2				0.4	29.1	
Delay (s)				5.7	64.6	
Level of Service				A	E	
Approach Delay (s)	0.0			5.7	64.6	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	151.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	59	42	1	93	6	36	0	1	5	0	12
Future Volume (vph)	10	59	42	1	93	6	36	0	1	5	0	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949			0.991			0.997			0.902	
Flt Protected		0.995						0.954			0.986	
Satd. Flow (prot)	0	1567	0	0	1848	0	0	1772	0	0	1690	0
Flt Permitted		0.995						0.954			0.986	
Satd. Flow (perm)	0	1567	0	0	1848	0	0	1772	0	0	1690	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			101			65	
Travel Time (s)		3.4			4.4			2.3			1.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	26%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	11	64	46	1	101	7	39	0	1	5	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	109	0	0	40	0	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.8%
ICU Level of Service	A
Analysis Period (min)	15

**Intersection**

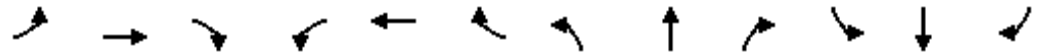
Int Delay, s/veh 2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	59	42	1	93	6	36	0	1	5	0	12
Future Vol, veh/h	10	59	42	1	93	6	36	0	1	5	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	26	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	11	64	46	1	101	7	39	0	1	5	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	108	0	0	110
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1495	-	-	1480
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %		-	-	-
Mov Cap-1 Maneuver	1495	-	-	1480
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	10.3	9.2
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	724	1495	-	-	1480	-	-	879
HCM Lane V/C Ratio	0.056	0.007	-	-	0.001	-	-	0.021
HCM Control Delay (s)	10.3	7.4	0	-	7.4	0	-	9.2
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻			↻	
Traffic Volume (vph)	0	31	34	1	64	0	36	0	1	0	0	0
Future Volume (vph)	0	31	34	1	64	0	36	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.930						0.997				
Fl <sub>t</sub> Protected					0.999			0.954				
Satd. Flow (prot)	0	1571	0	0	1861	0	0	1807	0	0	1900	0
Fl <sub>t</sub> Permitted					0.999			0.954				
Satd. Flow (perm)	0	1571	0	0	1861	0	0	1807	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	26%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	34	37	1	70	0	39	0	1	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	71	0	0	40	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	14.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	31	34	1	64	0	36	0	1	0	0	0
Future Vol, veh/h	0	31	34	1	64	0	36	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	26	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	34	37	1	70	0	39	0	1	0	0	0

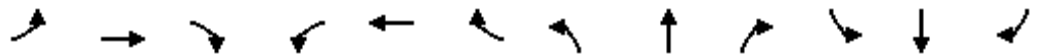
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	71	0	0	125	125	53	125	143	70
Stage 1	-	-	-	-	-	-	53	53	-	72	72	-
Stage 2	-	-	-	-	-	-	72	72	-	53	71	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1542	-	0	854	769	1020	854	752	998
Stage 1	0	-	-	-	-	0	965	855	-	943	839	-
Stage 2	0	-	-	-	-	0	943	839	-	965	840	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1542	-	-	853	768	1020	852	751	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	853	768	-	852	751	-
Stage 1	-	-	-	-	-	-	965	855	-	943	838	-
Stage 2	-	-	-	-	-	-	942	838	-	964	840	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			9.4			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	857	-	-	1542	-	-
HCM Lane V/C Ratio	0.047	-	-	0.001	-	-
HCM Control Delay (s)	9.4	-	-	7.3	0	0
HCM Lane LOS	A	-	-	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕		↖	↕↔		↖	↕↔	
Traffic Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Future Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.936			0.978				
Flt Protected		0.950			0.975		0.950			0.950		
Satd. Flow (prot)	0	1805	1900	0	1734	0	1805	3414	0	1805	3539	0
Flt Permitted		0.525			0.834		0.307			0.182		
Satd. Flow (perm)	0	998	1900	0	1483	0	583	3414	0	346	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					47			34				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		185			106			255				450
Travel Time (s)		4.2			2.4			5.8				10.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	0	211	0	193	3	989	169	173	811	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	404	0	3	1158	0	173	812	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3			3			1				5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3			1			5		
Detector Phase	3	3	3	3	3		1	1		5	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0		20.0	20.0		20.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0		26.0	26.0		26.0	26.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		65.0	65.0		65.0	65.0	
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%		65.0%	65.0%		65.0%	65.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		59.0	59.0		59.0	59.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		4.0	4.0	
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0							
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0							
Pedestrian Calls (#/hr)	0	0	0	0	0							
Act Effct Green (s)		26.0			26.0		50.1	50.1		50.1	50.1	
Actuated g/C Ratio		0.30			0.30		0.57	0.57		0.57	0.57	
v/c Ratio		0.01			0.86		0.01	0.59		0.88	0.40	
Control Delay		25.0			46.3		8.7	13.2		60.1	11.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		25.0			46.3		8.7	13.2		60.1	11.2	
LOS		C			D		A	B		E	B	
Approach Delay		25.0			46.3			13.2			19.8	
Approach LOS		C			D			B			B	
Queue Length 50th (ft)		2			216		1	216		84	134	
Queue Length 95th (ft)		10			#383		5	275		#228	174	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200			200		
Base Capacity (vph)		361			566		404	2379		240	2456	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.01			0.71		0.01	0.49		0.72	0.33	

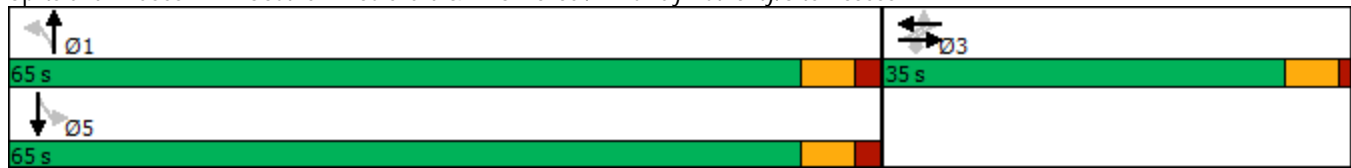
Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 87.7  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 21.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 92.1%  
 ICU Level of Service F  
 Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1





HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

Build SAT  
 10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↔		↖	↕↔		↖	↕↔	
Traffic Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Future Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frt		1.00			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.95			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1732		1805	3414		1805	3539	
Flt Permitted		0.52			0.83		0.31	1.00		0.18	1.00	
Satd. Flow (perm)		997			1483		584	3414		345	3539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	0	0	211	0	193	3	989	169	173	811	1
RTOR Reduction (vph)	0	0	0	0	33	0	0	14	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	371	0	3	1144	0	173	812	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		3			3			1			5	
Permitted Phases	3		3	3			1			5		
Actuated Green, G (s)		26.0			26.0		50.1	50.1		50.1	50.1	
Effective Green, g (s)		26.0			26.0		50.1	50.1		50.1	50.1	
Actuated g/C Ratio		0.30			0.30		0.58	0.58		0.58	0.58	
Clearance Time (s)		5.0			5.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0		5.0	5.0		4.0	4.0	
Lane Grp Cap (vph)		297			442		335	1963		198	2035	
v/s Ratio Prot								0.33			0.23	
v/s Ratio Perm		0.00			c0.25		0.01			c0.50		
v/c Ratio		0.01			0.84		0.01	0.58		0.87	0.40	
Uniform Delay, d1		21.5			28.6		7.9	11.8		15.8	10.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			13.6		0.0	0.7		32.7	0.2	
Delay (s)		21.5			42.2		7.9	12.5		48.5	10.4	
Level of Service		C			D		A	B		D	B	
Approach Delay (s)		21.5			42.2			12.5			17.1	
Approach LOS		C			D			B			B	

Intersection Summary

HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	87.1	Sum of lost time (s)	11.0
Intersection Capacity Utilization	92.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	99	1129	20	84	919
Future Volume (vph)	36	99	1129	20	84	919
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.901		0.997			
Flt Protected	0.987					0.996
Satd. Flow (prot)	1672	0	3489	0	0	3531
Flt Permitted	0.987					0.996
Satd. Flow (perm)	1672	0	3489	0	0	3531
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	3%	12%	0%	2%
Adj. Flow (vph)	37	101	1152	20	86	938
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	1172	0	0	1024
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.8%		ICU Level of Service D			
Analysis Period (min)	15					

**Intersection**

Int Delay, s/veh 2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	36	99	1129	20	84	919
Future Vol, veh/h	36	99	1129	20	84	919
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	3	12	0	2
Mvmt Flow	37	101	1152	20	86	938

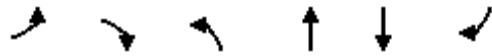
Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1803	586	0
Stage 1	1162	-	-
Stage 2	641	-	-
Critical Hdwy	6.88	6.9	4.1
Critical Hdwy Stg 1	5.88	-	-
Critical Hdwy Stg 2	5.88	-	-
Follow-up Hdwy	3.54	3.3	2.2
Pot Cap-1 Maneuver	69	459	603
Stage 1	256	-	-
Stage 2	481	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	48	459	603
Mov Cap-2 Maneuver	159	-	-
Stage 1	180	-	-
Stage 2	481	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.2	0	1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	305	603
HCM Lane V/C Ratio	-	-	0.452	0.142
HCM Control Delay (s)	-	-	26.2	12
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	2.2	0.5



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	170	278	0	646	752	0			
Future Volume (vph)	170	278	0	646	752	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1770	1509	0	3505	3574	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1770	1509	0	3505	3574	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		293							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%			
Adj. Flow (vph)	179	293	0	680	792	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	179	293	0	680	792	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									

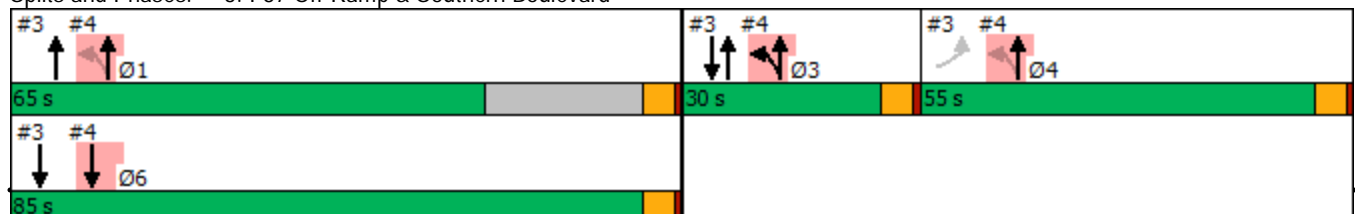


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	27.1	136.5		99.1	99.1				
Actuated g/C Ratio	0.20	1.00		0.73	0.73				
v/c Ratio	0.51	0.19		0.27	0.31				
Control Delay	55.9	0.3		7.2	0.4				
Queue Delay	0.0	0.0		0.0	0.2				
Total Delay	55.9	0.3		7.2	0.6				
LOS	E	A		A	A				
Approach Delay	21.4			7.2	0.6				
Approach LOS	C			A	A				
Queue Length 50th (ft)	158	0		96	2				
Queue Length 95th (ft)	236	0		166	3				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	670	1509		2621	2672				
Starvation Cap Reductn	0	0		0	905				
Spillback Cap Reductn	0	0		0	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.27	0.19		0.26	0.45				

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	136.5
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	38.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Build SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	170	278	0	646	752	0
Future Volume (vph)	170	278	0	646	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1509		3505	3574	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1509		3505	3574	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	293	0	680	792	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	179	293	0	680	792	0
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	27.1	135.9		98.8	98.8	
Effective Green, g (s)	27.1	135.9		98.8	98.8	
Actuated g/C Ratio	0.20	1.00		0.73	0.73	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	352	1509		2548	2598	
v/s Ratio Prot				0.19	c0.22	
v/s Ratio Perm	c0.10	0.19				
v/c Ratio	0.51	0.19		0.27	0.30	
Uniform Delay, d1	48.5	0.0		6.3	6.5	
Progression Factor	1.00	1.00		1.00	0.02	
Incremental Delay, d2	1.6	0.3		0.1	0.1	
Delay (s)	50.0	0.3		6.4	0.3	
Level of Service	D	A		A	A	
Approach Delay (s)	19.2			6.4	0.3	
Approach LOS	B			A	A	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	135.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	334	482	752	135		
Future Volume (vph)	0	0	334	482	752	135		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.977			
Flt Protected				0.980				
Satd. Flow (prot)	0	0	0	3433	3492	0		
Flt Permitted				0.546				
Satd. Flow (perm)	0	0	0	1913	3492	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					16			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%		
Adj. Flow (vph)	0	0	348	502	783	141		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	850	924	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

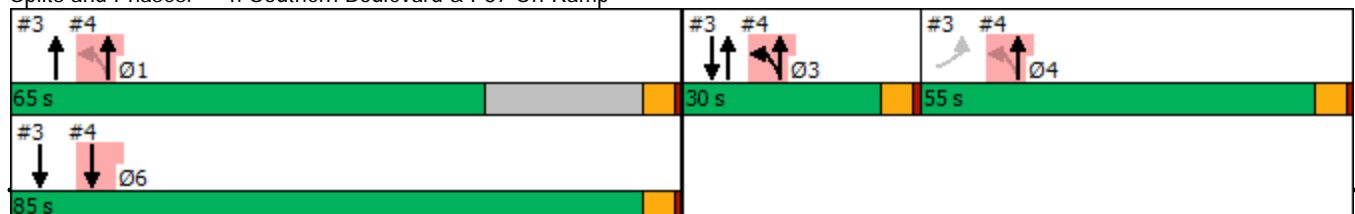


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				126.2	70.8			
Actuated g/C Ratio				0.92	0.52			
v/c Ratio				0.42	0.51			
Control Delay				2.3	22.9			
Queue Delay				0.1	0.0			
Total Delay				2.4	22.9			
LOS				A	C			
Approach Delay				2.4	22.9			
Approach LOS				A	C			
Queue Length 50th (ft)				31	275			
Queue Length 95th (ft)				75	398			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2117	2122			
Starvation Cap Reductn				304	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.47	0.44			

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	136.5
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	13.1
Intersection LOS:	B
Intersection Capacity Utilization	56.5%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



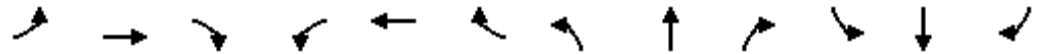


HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

Build SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	334	482	752	135
Future Volume (vph)	0	0	334	482	752	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.98	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3433	3492	
Flt Permitted				0.55	1.00	
Satd. Flow (perm)				1913	3492	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	348	502	783	141
RTOR Reduction (vph)	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	850	916	0
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				125.9	70.8	
Effective Green, g (s)				125.9	70.8	
Actuated g/C Ratio				0.93	0.52	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2029	1819	
v/s Ratio Prot				c0.07	c0.26	
v/s Ratio Perm				c0.32		
v/c Ratio				0.42	0.50	
Uniform Delay, d1				0.6	21.1	
Progression Factor				5.91	1.00	
Incremental Delay, d2				0.3	0.5	
Delay (s)				3.8	21.6	
Level of Service				A	C	
Approach Delay (s)	0.0			3.8	21.6	
Approach LOS	A			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			13.1	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			135.9	Sum of lost time (s)		15.0
Intersection Capacity Utilization			56.5%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	53	44	1	84	7	41	0	1	3	0	10
Future Volume (vph)	7	53	44	1	84	7	41	0	1	3	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.948			0.990			0.997			0.897	
Flt Protected		0.996						0.953			0.988	
Satd. Flow (prot)	0	1707	0	0	1847	0	0	1770	0	0	1684	0
Flt Permitted		0.996						0.953			0.988	
Satd. Flow (perm)	0	1707	0	0	1847	0	0	1770	0	0	1684	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		150			194			77			65	
Travel Time (s)		3.4			4.4			1.8			1.5	
Peak Hour Factor	0.78	0.78	0.92	0.92	0.78	0.78	0.92	0.92	0.92	0.78	0.92	0.78
Heavy Vehicles (%)	0%	8%	2%	2%	2%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	9	68	48	1	108	9	45	0	1	4	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	125	0	0	118	0	0	46	0	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

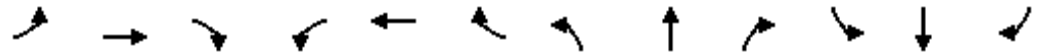
Int Delay, s/veh 2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	53	44	1	84	7	41	0	1	3	0	10
Future Vol, veh/h	7	53	44	1	84	7	41	0	1	3	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	92	92	78	78	92	92	92	78	92	78
Heavy Vehicles, %	0	8	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	9	68	48	1	108	9	45	0	1	4	0	13

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	117	0	0	116
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.218
Pot Cap-1 Maneuver	1484	-	-	1473
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %		-	-	-
Mov Cap-1 Maneuver	1484	-	-	1473
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	10.4	9.1
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	714	1484	-	-	1473	-	-	885
HCM Lane V/C Ratio	0.064	0.006	-	-	0.001	-	-	0.019
HCM Control Delay (s)	10.4	7.4	0	-	7.4	0	-	9.1
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻			↻	
Traffic Volume (vph)	0	22	35	1	52	0	41	0	1	0	0	0
Future Volume (vph)	0	22	35	1	52	0	41	0	1	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.917						0.997				
Flt Protected					0.999			0.953				
Satd. Flow (prot)	0	1690	0	0	1861	0	0	1805	0	0	1900	0
Flt Permitted					0.999			0.953				
Satd. Flow (perm)	0	1690	0	0	1861	0	0	1805	0	0	1900	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		194			295			88			119	
Travel Time (s)		4.4			6.7			2.0			2.7	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	8%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	28	45	1	67	0	53	0	1	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	73	0	0	68	0	0	54	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.5%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

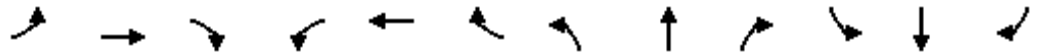
Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	22	35	1	52	0	41	0	1	0	0	0
Future Vol, veh/h	0	22	35	1	52	0	41	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	8	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	0	28	45	1	67	0	53	0	1	0	0	0

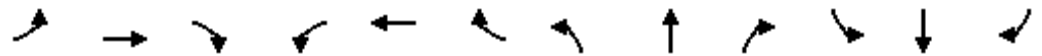
Major/Minor	Major1	Major2	Minor1	Minor2								
Conflicting Flow All	-	0	0	73	0	0	120	120	51	120	142	67
Stage 1	-	-	-	-	-	-	51	51	-	69	69	-
Stage 2	-	-	-	-	-	-	69	69	-	51	73	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	0	-	-	1540	-	0	860	774	1023	860	753	1002
Stage 1	0	-	-	-	-	0	967	856	-	946	841	-
Stage 2	0	-	-	-	-	0	946	841	-	967	838	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1540	-	-	859	773	1023	858	752	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	859	773	-	858	752	-
Stage 1	-	-	-	-	-	-	967	856	-	946	840	-
Stage 2	-	-	-	-	-	-	945	840	-	966	838	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	9.5	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	862	-	-	1540	-	-
HCM Lane V/C Ratio	0.062	-	-	0.001	-	-
HCM Control Delay (s)	9.5	-	-	7.3	0	0
HCM Lane LOS	A	-	-	A	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↗	↕		↗	↕	
Traffic Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Future Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.993			0.997	
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1480	1615	0	1805	1615	1805	3421	0	1805	3246	0
Flt Permitted		0.665			0.735		0.323			0.051		
Satd. Flow (perm)	0	1036	1615	0	1396	1615	614	3421	0	97	3246	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			82			82		7			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		185			106			255			450	
Travel Time (s)		4.2			2.4			5.8			10.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Adj. Flow (vph)	34	0	1	101	0	139	13	2122	97	86	860	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	34	1	0	101	139	13	2219	0	86	879	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		3			3			1		2	5	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3		3	1			5		
Detector Phase	3	3	3	3	3	3	1	1		2	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	20.0	20.0		5.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	26.0	26.0		11.0	26.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	79.0	79.0		11.0	90.0	
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	65.8%	65.8%		9.2%	75.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	73.0	73.0		5.0	84.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0		3.0	4.0	
Recall Mode	None	None	None	None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0						
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0						
Pedestrian Calls (#/hr)	0	0	0	0	0	0						
Act Effct Green (s)		16.5	16.5		16.5	16.5	73.0	73.0		84.0	84.0	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.65	0.65		0.75	0.75	
v/c Ratio		0.22	0.00		0.49	0.45	0.03	0.99		0.58	0.36	
Control Delay		45.5	0.0		52.2	23.9	7.8	36.4		27.8	5.3	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		45.5	0.0		52.2	23.9	7.8	36.4		27.8	5.3	
LOS		D	A		D	C	A	D		C	A	
Approach Delay		44.2			35.8			36.3			7.3	
Approach LOS		D			D			D			A	
Queue Length 50th (ft)		22	0		67	37	3	714		13	87	
Queue Length 95th (ft)		52	0		123	96	11	#1076		#75	145	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200			200		
Base Capacity (vph)		232	425		313	425	401	2242		149	2446	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.15	0.00		0.32	0.33	0.03	0.99		0.58	0.36	

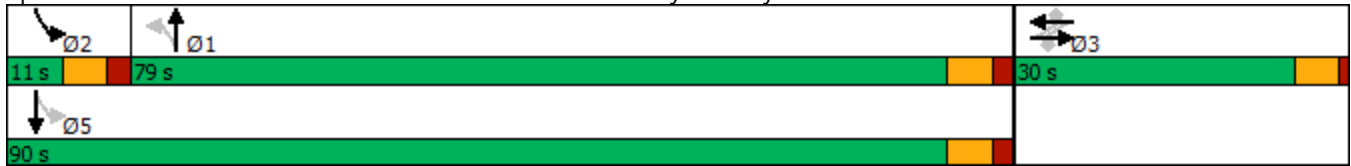
Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	111.5
Natural Cycle:	120
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	28.3
Intersection LOS:	C
Intersection Capacity Utilization:	96.4%
ICU Level of Service:	F
Analysis Period (min):	15

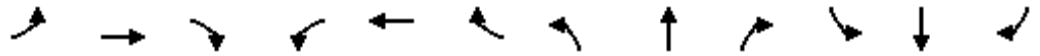
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕↗		↗	↕↗	
Traffic Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Future Volume (vph)	32	0	1	95	0	131	12	1995	91	81	808	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1480	1615		1805	1615	1805	3423		1805	3245	
Flt Permitted		0.66	1.00		0.73	1.00	0.32	1.00		0.05	1.00	
Satd. Flow (perm)		1035	1615		1396	1615	614	3423		96	3245	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	34	0	1	101	0	139	13	2122	97	86	860	19
RTOR Reduction (vph)	0	0	1	0	0	70	0	2	0	0	1	0
Lane Group Flow (vph)	0	34	0	0	101	69	13	2217	0	86	878	0
Heavy Vehicles (%)	22%	0%	0%	0%	0%	0%	0%	5%	0%	0%	11%	6%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		3			3			1		2	5	
Permitted Phases	3		3	3		3	1			5		
Actuated Green, G (s)		16.5	16.5		16.5	16.5	73.0	73.0		84.0	84.0	
Effective Green, g (s)		16.5	16.5		16.5	16.5	73.0	73.0		84.0	84.0	
Actuated g/C Ratio		0.15	0.15		0.15	0.15	0.65	0.65		0.75	0.75	
Clearance Time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0	4.0		4.0	4.0	5.0	5.0		3.0	4.0	
Lane Grp Cap (vph)		153	238		206	238	401	2241		148	2444	
v/s Ratio Prot								c0.65		0.03	c0.27	
v/s Ratio Perm		0.03	0.00		c0.07	0.04	0.02			0.41		
v/c Ratio		0.22	0.00		0.49	0.29	0.03	0.99		0.58	0.36	
Uniform Delay, d1		41.8	40.5		43.6	42.3	6.8	18.9		28.5	4.6	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.0	0.0		2.5	0.9	0.1	16.4		5.7	0.1	
Delay (s)		42.9	40.5		46.1	43.2	6.9	35.3		34.2	4.8	
Level of Service		D	D		D	D	A	D		C	A	
Approach Delay (s)		42.8			44.4			35.1			7.4	
Approach LOS		D			D			D			A	

Intersection Summary		
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.88	C
Actuated Cycle Length (s)	111.5	Sum of lost time (s)
Intersection Capacity Utilization	96.4%	17.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		F



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	63	2136	22	66	899
Future Volume (vph)	9	63	2136	22	66	899
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.881		0.998			
Flt Protected	0.994					0.997
Satd. Flow (prot)	1607	0	3428	0	0	3256
Flt Permitted	0.994					0.997
Satd. Flow (perm)	1607	0	3428	0	0	3256
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	4%	5%	14%	4%	11%
Adj. Flow (vph)	9	66	2248	23	69	946
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	2271	0	0	1015
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	86.0%		ICU Level of Service E			
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	9	63	2136	22	66	899
Future Vol, veh/h	9	63	2136	22	66	899
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	4	5	14	4	11
Mvmt Flow	9	66	2248	23	69	946

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2871	1136	0	0	2271	0
Stage 1	2260	-	-	-	-	-
Stage 2	611	-	-	-	-	-
Critical Hdwy	6.8	6.98	-	-	4.18	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.34	-	-	2.24	-
Pot Cap-1 Maneuver	14	193	-	-	215	-
Stage 1	67	-	-	-	-	-
Stage 2	510	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 5	193	-	-	215	-
Mov Cap-2 Maneuver	21	-	-	-	-	-
Stage 1	22	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	122.6	0	2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	95	215
HCM Lane V/C Ratio	-	-	0.798	0.323
HCM Control Delay (s)	-	-	122.6	29.5
HCM Lane LOS	-	-	F	D
HCM 95th %tile Q(veh)	-	-	4.3	1.3

Notes  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	552	362	0	805	729	0			
Future Volume (vph)	552	362	0	805	729	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1787	1442	0	3374	3312	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1787	1442	0	3374	3312	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		153							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97			
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%			
Adj. Flow (vph)	569	373	0	830	752	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	569	373	0	830	752	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag						Lead		
Lead-Lag Optimize?	Yes						Yes		
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	50.1	166.7		106.6	106.6				
Actuated g/C Ratio	0.30	1.00		0.64	0.64				
v/c Ratio	1.06	0.26		0.38	0.36				
Control Delay	110.5	0.4		14.9	0.7				
Queue Delay	0.0	0.0		0.0	0.5				
Total Delay	110.5	0.4		14.9	1.2				
LOS	F	A		B	A				
Approach Delay	66.9			14.9	1.2				
Approach LOS	E			B	A				
Queue Length 50th (ft)	~706	0		217	5				
Queue Length 95th (ft)	#951	0		258	4				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	536	1442		2158	2118				
Starvation Cap Reductn	0	0		0	863				
Spillback Cap Reductn	0	0		112	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	1.06	0.26		0.41	0.60				

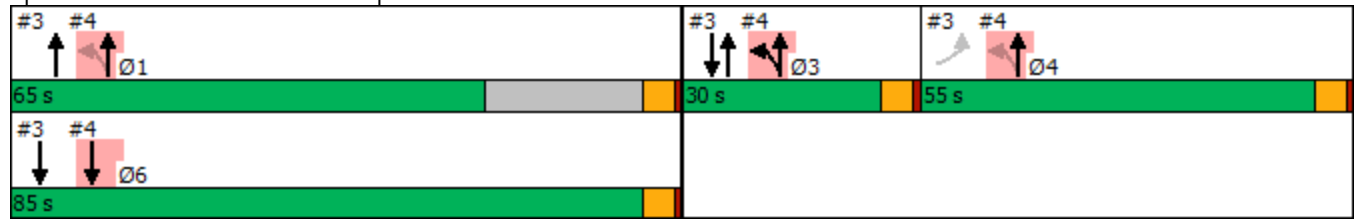
**Intersection Summary**

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 166.7  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 30.2  
 Intersection Capacity Utilization 61.2%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service B

~ 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: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Build AM with Mitigation  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↕	↕	
Traffic Volume (vph)	552	362	0	805	729	0
Future Volume (vph)	552	362	0	805	729	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1787	1442		3374	3312	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1787	1442		3374	3312	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	569	373	0	830	752	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	569	373	0	830	752	0
Heavy Vehicles (%)	1%	12%	0%	7%	9%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	50.1	166.7		106.6	106.6	
Effective Green, g (s)	50.1	166.7		106.6	106.6	
Actuated g/C Ratio	0.30	1.00		0.64	0.64	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	537	1442		2157	2117	
v/s Ratio Prot				c0.25	0.23	
v/s Ratio Perm	c0.32	0.26				
v/c Ratio	1.06	0.26		0.38	0.36	
Uniform Delay, d1	58.3	0.0		14.4	14.0	
Progression Factor	1.00	1.00		1.00	0.03	
Incremental Delay, d2	55.6	0.4		0.2	0.2	
Delay (s)	113.9	0.4		14.6	0.5	
Level of Service	F	A		B	A	
Approach Delay (s)	69.0			14.6	0.5	
Approach LOS	E			B	A	

**Intersection Summary**

HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	166.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	421	936	729	225		
Future Volume (vph)	0	0	421	936	729	225		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.965			
Flt Protected				0.985				
Satd. Flow (prot)	0	0	0	3416	3222	0		
Flt Permitted				0.553				
Satd. Flow (perm)	0	0	0	1918	3222	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					33			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%		
Adj. Flow (vph)	0	0	443	985	767	237		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	1428	1004	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								



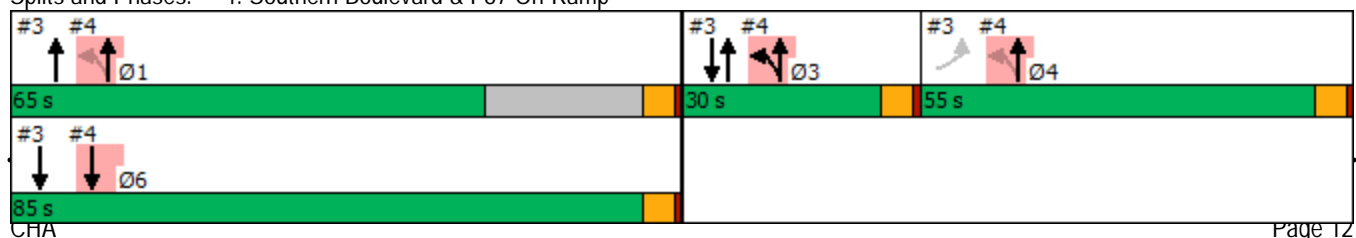


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				156.7	76.6			
Actuated g/C Ratio				0.94	0.46			
v/c Ratio				0.70	0.67			
Control Delay				5.9	36.4			
Queue Delay				0.3	0.0			
Total Delay				6.2	36.4			
LOS				A	D			
Approach Delay				6.2	36.4			
Approach LOS				A	D			
Queue Length 50th (ft)				116	432			
Queue Length 95th (ft)				m96	510			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2040	1565			
Starvation Cap Reductn				159	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.76	0.64			

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 166.7  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.06  
 Intersection Signal Delay: 18.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 73.8%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

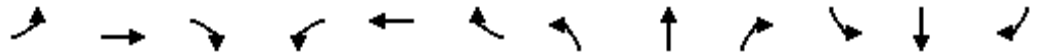
Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



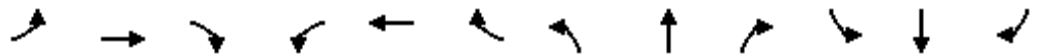


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↕↕	↕↕	
Traffic Volume (vph)	0	0	421	936	729	225
Future Volume (vph)	0	0	421	936	729	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.96	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3415	3221	
Flt Permitted				0.55	1.00	
Satd. Flow (perm)				1918	3221	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	443	985	767	237
RTOR Reduction (vph)	0	0	0	0	18	0
Lane Group Flow (vph)	0	0	0	1428	986	0
Heavy Vehicles (%)	0%	0%	11%	1%	10%	2%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				156.7	76.6	
Effective Green, g (s)				156.7	76.6	
Actuated g/C Ratio				0.94	0.46	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2027	1480	
v/s Ratio Prot				c0.11	0.31	
v/s Ratio Perm				c0.56		
v/c Ratio				0.70	0.67	
Uniform Delay, d1				0.9	35.1	
Progression Factor				9.21	1.00	
Incremental Delay, d2				1.1	1.5	
Delay (s)				9.3	36.6	
Level of Service				A	D	
Approach Delay (s)	0.0			9.3	36.6	
Approach LOS	A			A	D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			20.6	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			166.7	Sum of lost time (s)		15.0
Intersection Capacity Utilization			73.8%	ICU Level of Service		D
Analysis Period (min)			15			
c Critical Lane Group						





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↕		↖	↕	
Traffic Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Future Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt			0.850			0.850		0.985				
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1615	0	1805	1615	1805	3433	0	1805	3471	0
Flt Permitted		0.523			0.720		0.139			0.094		
Satd. Flow (perm)	0	994	1615	0	1368	1615	264	3433	0	179	3471	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			143		16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		185			106			255				450
Travel Time (s)		4.2			2.4			5.8				10.2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Adj. Flow (vph)	57	0	10	209	0	143	1	1118	128	180	1573	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	10	0	209	143	1	1246	0	180	1574	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		3			3			1		2		5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3		3	1			5		
Detector Phase	3	3	3	3	3	3	1	1		2	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	20.0	20.0		5.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	26.0	26.0		11.0	26.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	42.0	42.0		18.0	60.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%	46.7%	46.7%		20.0%	66.7%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	36.0	36.0		12.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0		3.0	4.0	
Recall Mode	None	None	None	None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0						
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0						
Pedestrian Calls (#/hr)	0	0	0	0	0	0						
Act Effct Green (s)		19.6	19.6		19.6	19.6	36.5	36.5		51.7	51.7	
Actuated g/C Ratio		0.24	0.24		0.24	0.24	0.44	0.44		0.63	0.63	
v/c Ratio		0.24	0.02		0.64	0.29	0.01	0.82		0.61	0.72	
Control Delay		28.6	0.1		38.5	6.4	16.0	26.5		21.7	13.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		28.6	0.1		38.5	6.4	16.0	26.5		21.7	13.5	
LOS		C	A		D	A	B	C		C	B	
Approach Delay		24.3			25.5			26.5			14.3	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)		25	0		101	0	0	277		35	258	
Queue Length 95th (ft)		57	0		173	42	3	#476		109	404	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200			200		
Base Capacity (vph)		303	569		418	593	118	1549		351	2293	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.19	0.02		0.50	0.24	0.01	0.80		0.51	0.69	

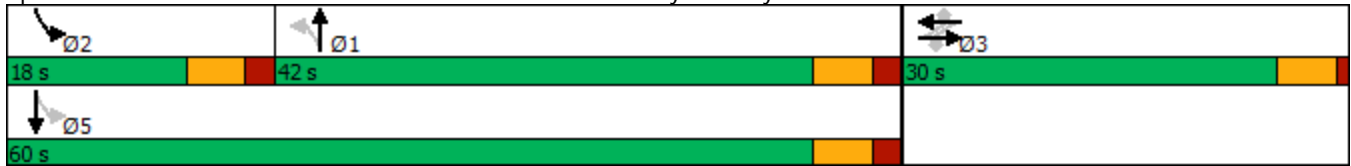
Intersection Summary

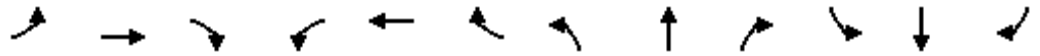
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	82.4
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	20.1
Intersection LOS:	C
Intersection Capacity Utilization:	90.4%
ICU Level of Service:	E
Analysis Period (min):	15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.











Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕↗		↗	↕↗	
Traffic Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Future Volume (vph)	55	0	10	201	0	137	1	1073	123	173	1510	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00	0.85		1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.95	1.00		0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805	1615		1805	1615	1805	3431		1805	3471	
Flt Permitted		0.52	1.00		0.72	1.00	0.14	1.00		0.09	1.00	
Satd. Flow (perm)		995	1615		1368	1615	265	3431		179	3471	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	57	0	10	209	0	143	1	1118	128	180	1573	1
RTOR Reduction (vph)	0	0	8	0	0	109	0	9	0	0	0	0
Lane Group Flow (vph)	0	57	2	0	209	34	1	1237	0	180	1574	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	4%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		3			3			1		2	5	
Permitted Phases	3		3	3		3	1			5		
Actuated Green, G (s)		19.6	19.6		19.6	19.6	36.5	36.5		51.7	51.7	
Effective Green, g (s)		19.6	19.6		19.6	19.6	36.5	36.5		51.7	51.7	
Actuated g/C Ratio		0.24	0.24		0.24	0.24	0.44	0.44		0.63	0.63	
Clearance Time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0	4.0		4.0	4.0	5.0	5.0		3.0	4.0	
Lane Grp Cap (vph)		236	384		325	384	117	1521		294	2180	
v/s Ratio Prot								c0.36		0.07	c0.45	
v/s Ratio Perm		0.06	0.00		c0.15	0.02	0.00			0.32		
v/c Ratio		0.24	0.01		0.64	0.09	0.01	0.81		0.61	0.72	
Uniform Delay, d1		25.3	23.9		28.2	24.4	12.8	19.9		13.2	10.4	
Progression Factor		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.7	0.0		4.8	0.1	0.1	3.9		3.7	1.3	
Delay (s)		26.1	23.9		33.0	24.5	12.9	23.8		17.0	11.7	
Level of Service		C	C		C	C	B	C		B	B	
Approach Delay (s)		25.7			29.6			23.8			12.2	
Approach LOS		C			C			C			B	

Intersection Summary		
HCM 2000 Control Delay	18.5	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.79	B
Actuated Cycle Length (s)	82.3	Sum of lost time (s)
Intersection Capacity Utilization	90.4%	17.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		E

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	94	1248	17	94	1637
Future Volume (vph)	46	94	1248	17	94	1637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.909		0.998			
Flt Protected	0.984					0.997
Satd. Flow (prot)	1683	0	3453	0	0	3425
Flt Permitted	0.984					0.997
Satd. Flow (perm)	1683	0	3453	0	0	3425
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	3%	0%	4%	29%	24%	4%
Adj. Flow (vph)	46	95	1261	17	95	1654
Shared Lane Traffic (%)						
Lane Group Flow (vph)	141	0	1278	0	0	1749
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	101.3%			ICU Level of Service G		
Analysis Period (min)	15					



**Intersection**

Int Delay, s/veh	1.2					
<b>Movement</b>	<b>WBL</b>	<b>WBR</b>	<b>NBT</b>	<b>NBR</b>	<b>SBL</b>	<b>SBT</b>
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	46	94	1248	17	94	1637
Future Vol, veh/h	46	94	1248	17	94	1637
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	3	0	4	29	24	4
Mvmt Flow	46	95	1261	17	95	1654

<b>Major/Minor</b>	<b>Minor1</b>	<b>Major1</b>	<b>Major2</b>			
Conflicting Flow All	2287	639	0	0	1278	0
Stage 1	1270	-	-	-	-	-
Stage 2	1017	-	-	-	-	-
Critical Hdwy	6.86	6.9	-	-	4.58	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.3	-	-	2.44	-
Pot Cap-1 Maneuver	~ 33	424	-	-	434	-
Stage 1	226	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	424	-	-	434	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	308	-	-	-	-	-

<b>Approach</b>	<b>WB</b>	<b>NB</b>	<b>SB</b>
HCM Control Delay, s	17.7	0	0.8
HCM LOS	C		

<b>Minor Lane/Major Mvmt</b>	<b>NBT</b>	<b>NBRWBLn1</b>	<b>SBL</b>	<b>SBT</b>
Capacity (veh/h)	-	-	424	434
HCM Lane V/C Ratio	-	-	0.334	0.219
HCM Control Delay (s)	-	-	17.7	15.6
HCM Lane LOS	-	-	C	C
HCM 95th %tile Q(veh)	-	-	1.4	0.8

**Notes**  
 -: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	192	505	0	688	1296	0			
Future Volume (vph)	192	505	0	688	1296	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>	0.850								
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1805	1509	0	3505	3539	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1805	1509	0	3505	3539	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		397							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.97			
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%			
Adj. Flow (vph)	200	526	0	717	1350	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	200	526	0	717	1350	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



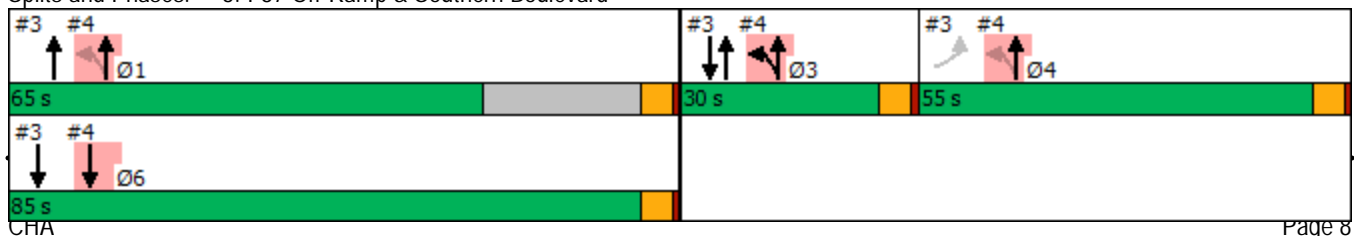
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effct Green (s)	30.9	151.3		110.3	110.3				
Actuated g/C Ratio	0.20	1.00		0.73	0.73				
v/c Ratio	0.54	0.35		0.28	0.52				
Control Delay	59.0	0.6		8.0	0.3				
Queue Delay	0.0	0.0		0.0	2.9				
Total Delay	59.0	0.6		8.0	3.2				
LOS	E	A		A	A				
Approach Delay	16.7			8.0	3.2				
Approach LOS	B			A	A				
Queue Length 50th (ft)	178	0		114	6				
Queue Length 95th (ft)	260	0		192	m9				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	598	1509		2556	2581				
Starvation Cap Reductn	0	0		0	1086				
Spillback Cap Reductn	0	0		21	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.33	0.35		0.28	0.90				

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	151.3
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.03
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization	54.8%
ICU Level of Service	A
Analysis Period (min)	15

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

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Build PM with Mitigation  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↕	↕	
Traffic Volume (vph)	192	505	0	688	1296	0
Future Volume (vph)	192	505	0	688	1296	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1509		3505	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1509		3505	3539	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.97
Adj. Flow (vph)	200	526	0	717	1350	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	200	526	0	717	1350	0
Heavy Vehicles (%)	0%	7%	0%	3%	2%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	30.9	151.2		110.3	110.3	
Effective Green, g (s)	30.9	151.2		110.3	110.3	
Actuated g/C Ratio	0.20	1.00		0.73	0.73	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	368	1509		2556	2581	
v/s Ratio Prot				0.20	c0.38	
v/s Ratio Perm	c0.11	0.35				
v/c Ratio	0.54	0.35		0.28	0.52	
Uniform Delay, d1	53.8	0.0		7.0	8.9	
Progression Factor	1.00	1.00		1.00	0.02	
Incremental Delay, d2	2.1	0.6		0.1	0.0	
Delay (s)	55.9	0.6		7.1	0.2	
Level of Service	E	A		A	A	
Approach Delay (s)	15.9			7.1	0.2	
Approach LOS	B			A	A	

**Intersection Summary**

HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	151.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	383	497	1296	530		
Future Volume (vph)	0	0	383	497	1296	530		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Fr <sub>t</sub>					0.956			
Fl <sub>t</sub> Protected				0.979				
Satd. Flow (prot)	0	0	0	3474	3403	0		
Fl <sub>t</sub> Permitted				0.494				
Satd. Flow (perm)	0	0	0	1753	3403	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					49			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%		
Adj. Flow (vph)	0	0	395	512	1336	546		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	907	1882	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

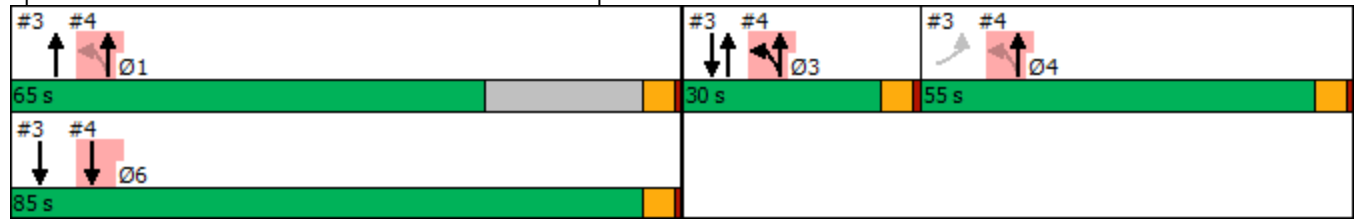


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				141.3	80.3			
Actuated g/C Ratio				0.93	0.53			
v/c Ratio				0.87dl	1.03			
Control Delay				3.4	63.3			
Queue Delay				0.1	0.0			
Total Delay				3.5	63.3			
LOS				A	E			
Approach Delay				3.5	63.3			
Approach LOS				A	E			
Queue Length 50th (ft)				55	~1025			
Queue Length 95th (ft)				102	#1339			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				1922	1828			
Starvation Cap Reductn				226	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.53	1.03			

**Intersection Summary**

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 151.3  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 43.8      Intersection LOS: D  
 Intersection Capacity Utilization 86.0%      ICU Level of Service E  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	383	497	1296	530
Future Volume (vph)	0	0	383	497	1296	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.96	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3473	3405	
Flt Permitted				0.49	1.00	
Satd. Flow (perm)				1752	3405	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	395	512	1336	546
RTOR Reduction (vph)	0	0	0	0	23	0
Lane Group Flow (vph)	0	0	0	907	1859	0
Heavy Vehicles (%)	0%	0%	4%	0%	2%	0%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				141.2	80.2	
Effective Green, g (s)				141.2	80.2	
Actuated g/C Ratio				0.93	0.53	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				1921	1806	
v/s Ratio Prot				c0.08	c0.55	
v/s Ratio Perm				c0.36		
v/c Ratio				0.87dl	1.03	
Uniform Delay, d1				0.6	35.5	
Progression Factor				8.94	1.00	
Incremental Delay, d2				0.4	29.1	
Delay (s)				5.7	64.6	
Level of Service				A	E	
Approach Delay (s)	0.0			5.7	64.6	
Approach LOS	A			A	E	

Intersection Summary			
HCM 2000 Control Delay	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	151.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

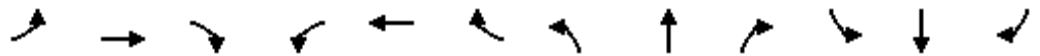
dl Defacto Left Lane. Recode with 1 though lane as a left lane.  
 c Critical Lane Group







Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕↔		↗	↕↔	
Traffic Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Future Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	200		0	200		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt						0.850		0.978				
Flt Protected		0.950			0.950		0.950			0.950		
Satd. Flow (prot)	0	1805	1900	0	1805	1615	1805	3414	0	1805	3539	0
Flt Permitted		0.527			0.755		0.345			0.104		
Satd. Flow (perm)	0	1001	1900	0	1434	1615	656	3414	0	198	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						193		25				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		185			106			255				450
Travel Time (s)		4.2			2.4			5.8				10.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Adj. Flow (vph)	4	0	0	211	0	193	3	989	169	173	811	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	211	193	3	1158	0	173	812	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane								Yes				Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94				94
Detector 2 Size(ft)		6			6			6				6
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				0.0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		3			3			1		2		5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	3		3	3		3	1			5		
Detector Phase	3	3	3	3	3	3	1	1		2	5	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	15.0	15.0	15.0	20.0	20.0		5.0	20.0	
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	26.0	26.0		11.0	26.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	41.0	41.0		19.0	60.0	
Total Split (%)	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%	45.6%	45.6%		21.1%	66.7%	
Maximum Green (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.0	35.0		13.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0	5.0		5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0	4.0	5.0	5.0		3.0	4.0	
Recall Mode	None	None	None	None	None	None	Min	Min		None	Min	
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0						
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0						
Pedestrian Calls (#/hr)	0	0	0	0	0	0						
Act Effct Green (s)		18.9			18.9	18.9	34.0	34.0		49.2	49.2	
Actuated g/C Ratio		0.24			0.24	0.24	0.43	0.43		0.62	0.62	
v/c Ratio		0.02			0.62	0.36	0.01	0.78		0.56	0.37	
Control Delay		23.8			36.2	6.2	16.0	24.8		17.7	8.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		23.8			36.2	6.2	16.0	24.8		17.7	8.3	
LOS		C			D	A	B	C		B	A	
Approach Delay		23.8			21.8			24.8			10.0	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)		2			94	0	1	238		31	90	
Queue Length 95th (ft)		10			173	49	7	#407		96	152	
Internal Link Dist (ft)		105			26			175			370	
Turn Bay Length (ft)							200			200		
Base Capacity (vph)		319			457	646	293	1537		389	2437	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.01			0.46	0.30	0.01	0.75		0.44	0.33	

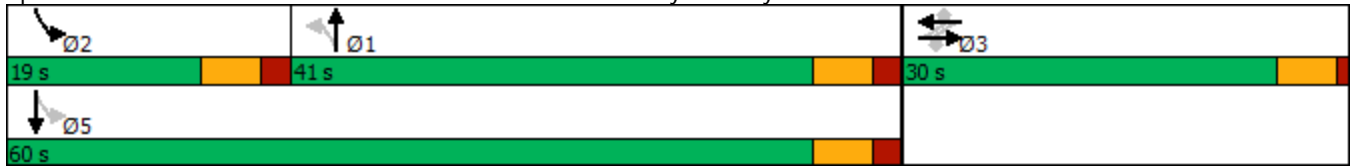
Intersection Summary

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 79.2  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 18.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 73.2%  
 ICU Level of Service D  
 Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1



HCM Signalized Intersection Capacity Analysis  
 1: Southern Boulevard & NYS Police / Thruway Authority/Site Access 1

Build SAT  
 10/18/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↗	↕↗		↗	↕↗	
Traffic Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Future Volume (vph)	4	0	0	205	0	187	3	959	164	168	787	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		1.00			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.95			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1805			1805	1615	1805	3414		1805	3539	
Flt Permitted		0.53			0.76	1.00	0.35	1.00		0.10	1.00	
Satd. Flow (perm)		1001			1435	1615	656	3414		198	3539	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	0	0	211	0	193	3	989	169	173	811	1
RTOR Reduction (vph)	0	0	0	0	0	147	0	14	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	211	46	3	1144	0	173	812	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		3			3			1		2	5	
Permitted Phases	3		3	3		3	1			5		
Actuated Green, G (s)		18.9			18.9	18.9	34.1	34.1		49.2	49.2	
Effective Green, g (s)		18.9			18.9	18.9	34.1	34.1		49.2	49.2	
Actuated g/C Ratio		0.24			0.24	0.24	0.43	0.43		0.62	0.62	
Clearance Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)		4.0			4.0	4.0	5.0	5.0		3.0	4.0	
Lane Grp Cap (vph)		239			342	385	282	1471		308	2201	
v/s Ratio Prot								c0.33		c0.06	0.23	
v/s Ratio Perm		0.00			c0.15	0.03	0.00			0.28		
v/c Ratio		0.02			0.62	0.12	0.01	0.78		0.56	0.37	
Uniform Delay, d1		23.0			26.9	23.6	12.9	19.3		11.6	7.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.0			3.8	0.2	0.0	3.1		2.3	0.1	
Delay (s)		23.0			30.6	23.8	12.9	22.4		13.9	7.5	
Level of Service		C			C	C	B	C		B	A	
Approach Delay (s)		23.0			27.4			22.3			8.6	
Approach LOS		C			C			C			A	

Intersection Summary		
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.70	B
Actuated Cycle Length (s)	79.1	Sum of lost time (s)
Intersection Capacity Utilization	73.2%	17.0
Analysis Period (min)	15	ICU Level of Service
c Critical Lane Group		D



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	99	1129	20	84	919
Future Volume (vph)	36	99	1129	20	84	919
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Frt	0.901		0.997			
Flt Protected	0.987					0.996
Satd. Flow (prot)	1672	0	3489	0	0	3531
Flt Permitted	0.987					0.996
Satd. Flow (perm)	1672	0	3489	0	0	3531
Link Speed (mph)	30		30			30
Link Distance (ft)	150		450			207
Travel Time (s)	3.4		10.2			4.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	3%	12%	0%	2%
Adj. Flow (vph)	37	101	1152	20	86	938
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	1172	0	0	1024
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane			Yes			Yes
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	77.8%		ICU Level of Service D			
Analysis Period (min)	15					

**Intersection**

Int Delay, s/veh 2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑↑			↑↑
Traffic Vol, veh/h	36	99	1129	20	84	919
Future Vol, veh/h	36	99	1129	20	84	919
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	2	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	0	3	12	0	2
Mvmt Flow	37	101	1152	20	86	938

**Major/Minor**

	Minor1	Major1	Major2		
Conflicting Flow All	1803	586	0	0	1172
Stage 1	1162	-	-	-	-
Stage 2	641	-	-	-	-
Critical Hdwy	6.88	6.9	-	-	4.1
Critical Hdwy Stg 1	5.88	-	-	-	-
Critical Hdwy Stg 2	5.88	-	-	-	-
Follow-up Hdwy	3.54	3.3	-	-	2.2
Pot Cap-1 Maneuver	69	459	-	-	603
Stage 1	256	-	-	-	-
Stage 2	481	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	48	459	-	-	603
Mov Cap-2 Maneuver	159	-	-	-	-
Stage 1	180	-	-	-	-
Stage 2	481	-	-	-	-

**Approach**

	WB	NB	SB
HCM Control Delay, s	26.2	0	1
HCM LOS	D		

**Minor Lane/Major Mvmt**

	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	305	603
HCM Lane V/C Ratio	-	-	0.452	0.142
HCM Control Delay (s)	-	-	26.2	12
HCM Lane LOS	-	-	D	B
HCM 95th %tile Q(veh)	-	-	2.2	0.5



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Lane Configurations									
Traffic Volume (vph)	170	278	0	646	752	0			
Future Volume (vph)	170	278	0	646	752	0			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00			
Fr <sub>t</sub>		0.850							
Fl <sub>t</sub> Protected	0.950								
Satd. Flow (prot)	1770	1509	0	3505	3574	0			
Fl <sub>t</sub> Permitted	0.950								
Satd. Flow (perm)	1770	1509	0	3505	3574	0			
Right Turn on Red		Yes				Yes			
Satd. Flow (RTOR)		293							
Link Speed (mph)	30			30	30				
Link Distance (ft)	533			227	227				
Travel Time (s)	12.1			5.2	5.2				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95			
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%			
Adj. Flow (vph)	179	293	0	680	792	0			
Shared Lane Traffic (%)									
Lane Group Flow (vph)	179	293	0	680	792	0			
Enter Blocked Intersection	No	No	No	No	No	No			
Lane Alignment	Left	Right	Left	Left	Left	Right			
Median Width(ft)	12			0	0				
Link Offset(ft)	0			0	0				
Crosswalk Width(ft)	16			16	16				
Two way Left Turn Lane									
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00			
Turning Speed (mph)	15	9	15			9			
Number of Detectors	1	1		2	2				
Detector Template	Left	Right		Thru	Thru				
Leading Detector (ft)	20	20		100	100				
Trailing Detector (ft)	0	0		0	0				
Detector 1 Position(ft)	0	0		0	0				
Detector 1 Size(ft)	20	20		6	6				
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				
Detector 1 Channel									
Detector 1 Extend (s)	0.0	0.0		0.0	0.0				
Detector 1 Queue (s)	0.0	0.0		0.0	0.0				
Detector 1 Delay (s)	0.0	0.0		0.0	0.0				
Detector 2 Position(ft)				94	94				
Detector 2 Size(ft)				6	6				
Detector 2 Type				Cl+Ex	Cl+Ex				
Detector 2 Channel									
Detector 2 Extend (s)				0.0	0.0				
Turn Type	Perm	Free		NA	NA				
Protected Phases				1 3	6 3		1	3	6
Permitted Phases	4	Free							
Detector Phase	4			1 3	6 3				
Switch Phase									



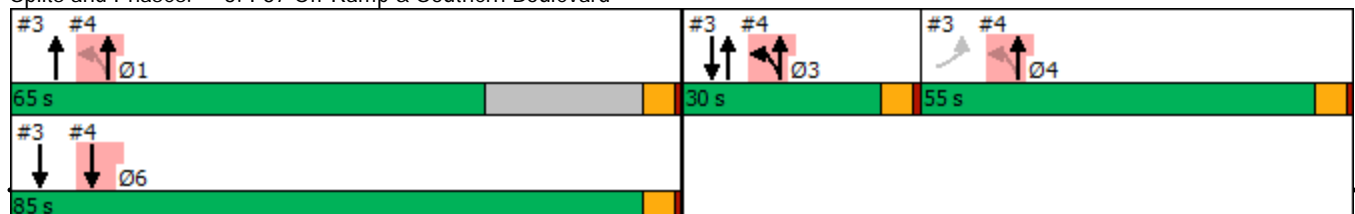


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø3	Ø6
Minimum Initial (s)	10.0						15.0	5.0	15.0
Minimum Split (s)	15.0						20.0	10.0	20.0
Total Split (s)	55.0						65.0	30.0	85.0
Total Split (%)	32.4%						38%	18%	50%
Maximum Green (s)	50.0						60.0	25.0	80.0
Yellow Time (s)	4.0						4.0	4.0	4.0
All-Red Time (s)	1.0						1.0	1.0	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.0								
Lead/Lag	Lag							Lead	
Lead-Lag Optimize?	Yes							Yes	
Vehicle Extension (s)	4.0						5.0	2.0	5.0
Recall Mode	None						Min	None	Min
Act Effect Green (s)	27.1	136.5		99.1	99.1				
Actuated g/C Ratio	0.20	1.00		0.73	0.73				
v/c Ratio	0.51	0.19		0.27	0.31				
Control Delay	55.9	0.3		7.2	0.4				
Queue Delay	0.0	0.0		0.0	0.2				
Total Delay	55.9	0.3		7.2	0.6				
LOS	E	A		A	A				
Approach Delay	21.4			7.2	0.6				
Approach LOS	C			A	A				
Queue Length 50th (ft)	158	0		96	2				
Queue Length 95th (ft)	236	0		166	3				
Internal Link Dist (ft)	453			147	147				
Turn Bay Length (ft)									
Base Capacity (vph)	670	1509		2621	2672				
Starvation Cap Reductn	0	0		0	905				
Spillback Cap Reductn	0	0		0	0				
Storage Cap Reductn	0	0		0	0				
Reduced v/c Ratio	0.27	0.19		0.26	0.45				

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	136.5
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	8.0
Intersection LOS:	A
Intersection Capacity Utilization:	38.5%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3: I-87 Off-Ramp & Southern Boulevard



HCM Signalized Intersection Capacity Analysis  
 3: I-87 Off-Ramp & Southern Boulevard

Build SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷		↶↷	↶↷	
Traffic Volume (vph)	170	278	0	646	752	0
Future Volume (vph)	170	278	0	646	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	1509		3505	3574	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	1509		3505	3574	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	293	0	680	792	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	179	293	0	680	792	0
Heavy Vehicles (%)	2%	7%	0%	3%	1%	0%
Turn Type	Perm	Free		NA	NA	
Protected Phases				1 3	6 3	
Permitted Phases	4	Free				
Actuated Green, G (s)	27.1	135.9		98.8	98.8	
Effective Green, g (s)	27.1	135.9		98.8	98.8	
Actuated g/C Ratio	0.20	1.00		0.73	0.73	
Clearance Time (s)	5.0					
Vehicle Extension (s)	4.0					
Lane Grp Cap (vph)	352	1509		2548	2598	
v/s Ratio Prot				0.19	c0.22	
v/s Ratio Perm	c0.10	0.19				
v/c Ratio	0.51	0.19		0.27	0.30	
Uniform Delay, d1	48.5	0.0		6.3	6.5	
Progression Factor	1.00	1.00		1.00	0.02	
Incremental Delay, d2	1.6	0.3		0.1	0.1	
Delay (s)	50.0	0.3		6.4	0.3	
Level of Service	D	A		A	A	
Approach Delay (s)	19.2			6.4	0.3	
Approach LOS	B			A	A	

**Intersection Summary**

HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	135.9	Sum of lost time (s)	15.0
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Lane Configurations				↑↑	↑↑			
Traffic Volume (vph)	0	0	334	482	752	135		
Future Volume (vph)	0	0	334	482	752	135		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95		
Frt					0.977			
Flt Protected				0.980				
Satd. Flow (prot)	0	0	0	3433	3492	0		
Flt Permitted				0.546				
Satd. Flow (perm)	0	0	0	1913	3492	0		
Right Turn on Red		No				Yes		
Satd. Flow (RTOR)					16			
Link Speed (mph)	30			30	30			
Link Distance (ft)	324			227	904			
Travel Time (s)	7.4			5.2	20.5			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%		
Adj. Flow (vph)	0	0	348	502	783	141		
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	0	0	850	924	0		
Enter Blocked Intersection	No	No	No	No	No	No		
Lane Alignment	Left	Right	Left	Left	Left	Right		
Median Width(ft)	0			0	0			
Link Offset(ft)	0			0	0			
Crosswalk Width(ft)	16			16	16			
Two way Left Turn Lane								
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9	15			9		
Number of Detectors			1	2	2			
Detector Template			Left	Thru	Thru			
Leading Detector (ft)			20	100	100			
Trailing Detector (ft)			0	0	0			
Detector 1 Position(ft)			0	0	0			
Detector 1 Size(ft)			20	6	6			
Detector 1 Type			Cl+Ex	Cl+Ex	Cl+Ex			
Detector 1 Channel								
Detector 1 Extend (s)			0.0	0.0	0.0			
Detector 1 Queue (s)			0.0	0.0	0.0			
Detector 1 Delay (s)			0.0	0.0	0.0			
Detector 2 Position(ft)				94	94			
Detector 2 Size(ft)				6	6			
Detector 2 Type				Cl+Ex	Cl+Ex			
Detector 2 Channel								
Detector 2 Extend (s)				0.0	0.0			
Turn Type			custom	NA	NA			
Protected Phases			3	1 3 4	6		1	4
Permitted Phases			1 4					
Detector Phase			3	1 3 4	6			
Switch Phase								

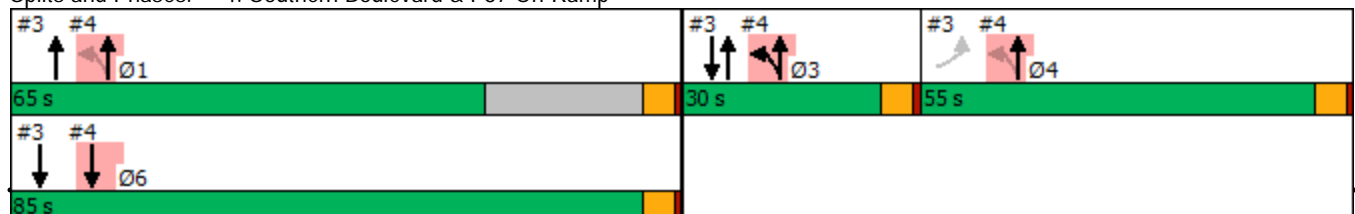


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø1	Ø4
Minimum Initial (s)			5.0		15.0		15.0	10.0
Minimum Split (s)			10.0		20.0		20.0	15.0
Total Split (s)			30.0		85.0		65.0	55.0
Total Split (%)			17.6%		50.0%		38%	32%
Maximum Green (s)			25.0		80.0		60.0	50.0
Yellow Time (s)			4.0		4.0		4.0	4.0
All-Red Time (s)			1.0		1.0		1.0	1.0
Lost Time Adjust (s)					0.0			
Total Lost Time (s)					5.0			
Lead/Lag			Lead					Lag
Lead-Lag Optimize?			Yes					Yes
Vehicle Extension (s)			2.0		5.0		5.0	4.0
Recall Mode			None		Min		Min	None
Act Effct Green (s)				126.2	70.8			
Actuated g/C Ratio				0.92	0.52			
v/c Ratio				0.42	0.51			
Control Delay				2.3	22.9			
Queue Delay				0.1	0.0			
Total Delay				2.4	22.9			
LOS				A	C			
Approach Delay				2.4	22.9			
Approach LOS				A	C			
Queue Length 50th (ft)				31	275			
Queue Length 95th (ft)				75	398			
Internal Link Dist (ft)	244			147	824			
Turn Bay Length (ft)								
Base Capacity (vph)				2117	2122			
Starvation Cap Reductn				304	0			
Spillback Cap Reductn				0	0			
Storage Cap Reductn				0	0			
Reduced v/c Ratio				0.47	0.44			

Intersection Summary

Area Type:	Other
Cycle Length:	170
Actuated Cycle Length:	136.5
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.51
Intersection Signal Delay:	13.1
Intersection LOS:	B
Intersection Capacity Utilization	56.5%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 4: Southern Boulevard & I-87 On-Ramp



HCM Signalized Intersection Capacity Analysis  
 4: Southern Boulevard & I-87 On-Ramp

Build SAT  
 10/18/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				↑↑	↑↑	
Traffic Volume (vph)	0	0	334	482	752	135
Future Volume (vph)	0	0	334	482	752	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.0	5.0	
Lane Util. Factor				0.95	0.95	
Frt				1.00	0.98	
Flt Protected				0.98	1.00	
Satd. Flow (prot)				3433	3492	
Flt Permitted				0.55	1.00	
Satd. Flow (perm)				1913	3492	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	0	348	502	783	141
RTOR Reduction (vph)	0	0	0	0	8	0
Lane Group Flow (vph)	0	0	0	850	916	0
Heavy Vehicles (%)	0%	0%	6%	1%	1%	1%
Turn Type			custom	NA	NA	
Protected Phases			3	1 3 4	6	
Permitted Phases			1 4			
Actuated Green, G (s)				125.9	70.8	
Effective Green, g (s)				125.9	70.8	
Actuated g/C Ratio				0.93	0.52	
Clearance Time (s)					5.0	
Vehicle Extension (s)					5.0	
Lane Grp Cap (vph)				2029	1819	
v/s Ratio Prot				c0.07	c0.26	
v/s Ratio Perm				c0.32		
v/c Ratio				0.42	0.50	
Uniform Delay, d1				0.6	21.1	
Progression Factor				5.91	1.00	
Incremental Delay, d2				0.3	0.5	
Delay (s)				3.8	21.6	
Level of Service				A	C	
Approach Delay (s)	0.0			3.8	21.6	
Approach LOS	A			A	C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			13.1	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			135.9	Sum of lost time (s)		15.0
Intersection Capacity Utilization			56.5%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						

