

**DEVELOPMENT OF REGIONAL IMPACT
(DRI# 2474)
TRAFFIC STUDY
FOR
CHEROKEE 75 CORPORATE PARK

CHEROKEE COUNTY, GEORGIA**

Prepared for:

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EXECUTIVE SUMMARY

Traffic impacts were evaluated for the added traffic from the proposed corporate park development located on the northwest corner of the intersection SR 92 (Alabama Rd) @ James Dupree Lane in Cherokee County, Georgia. The development consists of:

- 1,201,500 sf of Industrial Park Space

The development proposes full access driveways on SR 92 (Alabama Rd) and Old Alabama Rd. Existing and future operations after completion of the project were analyzed at the intersections of:

- SR 92 (Alabama Road) @ I-75 Northbound Ramps
- SR 92 (Alabama Road) @ I-75 Southbound Ramps
- SR 92 (Alabama Road) @ Northpoint Parkway
- SR 92 (Alabama Road) @ Hunt Road
- SR 92 (Alabama Road) @ Old Alabama Road
- SR 92 (Alabama Road) @ Woodstock Road

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

System Recommendations and Improvements

Improvements that are identified as system improvements address deficiencies that are found the study network for the “No-Build” conditions, without the addition of traffic from the proposed development. There are a few areas within the study network where queuing is exceeding the available storage in the Existing and/or No-Build conditions. These areas are outlined below:

- The eastbound left turn queue on Northpoint Parkway (approaching SR 92) is currently exceeding storage of the left turn bay. Unfortunately proximity of the adjacent access points prohibits extension of the turn bays.
- Queues exceed the storage for the northbound left turn on SR 92 (approaching Northpoint Parkway) by 100+ ft in the peak period. A potential existing system improvement could be to extend into the median.

Because operations would not be impacted beyond an acceptable level-of-service (“D” or better by local standards), system improvements to reduce delays for the “No-Build” conditions have not been identified.

Site Access Configuration

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

- Site Driveway #1 @ SR 92 (Alabama Rd)
 - This driveway consists of two entering and two exiting lanes.
 - The intersection is controlled by an actuated traffic signal with a permissive+protected phase for the eastbound left turn movement.
 - Entering left turn movements will be made from the dedicated eastbound left turn bay.

- Entering right turn movements will be made from the dedicated deceleration lane on the westbound approach.
- Site Driveway #2 @ Old Alabama Rd
 - This driveway will consist of one entering and one exiting lanes.
 - The intersection will be unsignalized with a STOP control on the westbound approach.
 - Entering left turn movements will be made from the southbound through lane on Old Alabama Rd. No left turn lane is proposed.
 - Entering right turn movements will be made from the northbound through lane on Old Alabama Rd. No deceleration lane is proposed.

Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. The added site traffic through the intersection of SR 92 @ Woodstock Rd is anticipated to increase queues in the westbound left turn bay beyond the current storage. As the storage is only exceeded by 1-2 vehicle lengths, it is recommended that timing adjustments be made as necessary based on observations after build-out.

It should be noted that no adjustments to timing were made between No-Build and Build analysis for the results in Table 6 and 7.

Because operations would not be impacted beyond the projected “No-Build” conditions, mitigation improvements have not been identified outside of the recommended configuration for the site access points.

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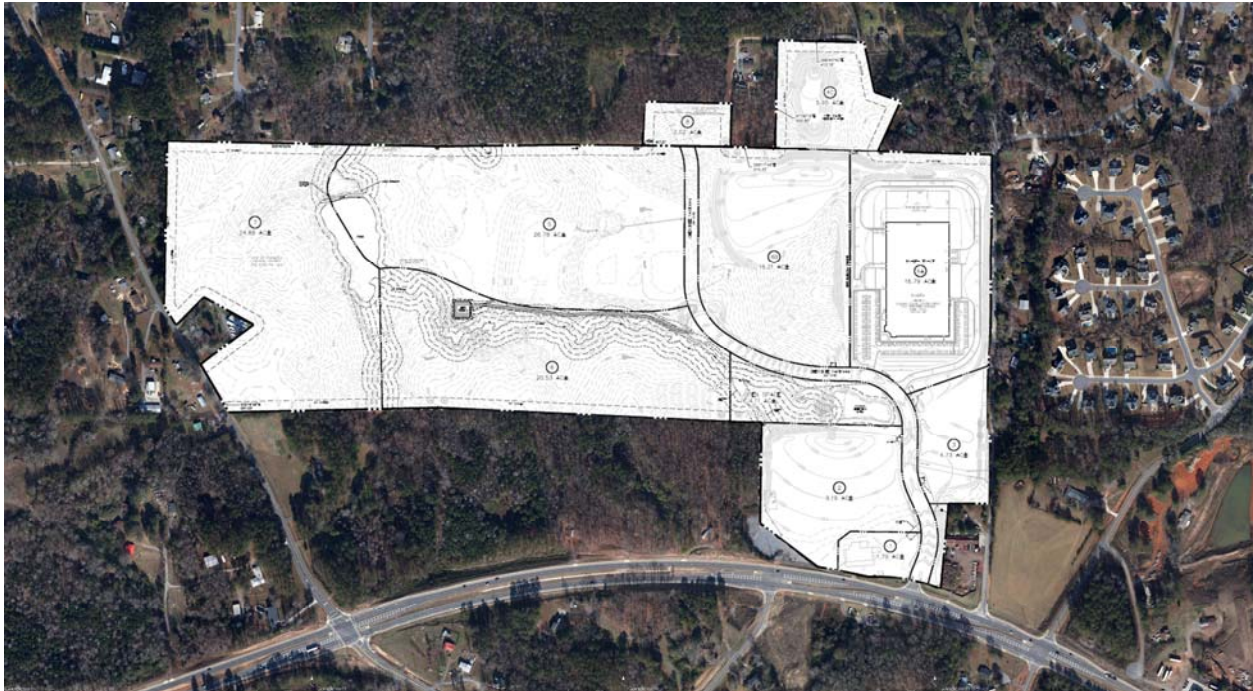
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INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the development located on the northwest corner of the intersection SR 92 (Alabama Rd) @ James Dupree Lane in Cherokee County, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development. The proposed development consists of:

- 1,201,500 sf of Industrial Park Space



The development proposes access at the following locations:

- Site Driveway 1 @ SR 92 (Alabama Rd)
- Site Driveway 2 @ Old Alabama Rd

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

- SR 92 (Alabama Road) @ I-75 Northbound Ramps
- SR 92 (Alabama Road) @ I-75 Southbound Ramps
- SR 92 (Alabama Road) @ Northpoint Parkway
- SR 92 (Alabama Road) @ Hunt Road
- SR 92 (Alabama Road) @ Old Alabama Road
- SR 92 (Alabama Road) @ Woodstock Road

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

STUDY NETWORK DETERMINATION

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

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

- SR 92 (Alabama Road) @ I-75 Northbound Ramps
- SR 92 (Alabama Road) @ I-75 Southbound Ramps
- SR 92 (Alabama Road) @ Northpoint Parkway
- SR 92 (Alabama Road) @ Hunt Road
- SR 92 (Alabama Road) @ Old Alabama Road
- SR 92 (Alabama Road) @ Woodstock Road

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

Existing Roadway Facilities

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

SR 92 (Alabama Rd)

SR 92 (Alabama Rd) is an east-west, four-lane, divided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 0570072) indicate that the daily traffic volume on SR 92 (Alabama Rd) is 15,910 vehicles per day west of Woodstock Rd.

Interstate 75

Interstate 75 is a north-south, six-lane, divided roadway with a posted speed limit of 65 mph in the vicinity of the site. GDOT traffic counts (Station ID 0570150) indicate that the daily traffic volume on Interstate 75 is 93,970 vehicles per day south of SR 92 (Alabama Rd).

Northpoint Parkway

Northpoint Parkway is an east-west, two-lane, divided roadway with a posted speed limit of 35 mph in the vicinity of the site.

Hunt Road

Hunt Rd is an east-west, two-lane, divided roadway with a posted speed limit of 35 mph in the vicinity of the site.

Old Alabama Road

Old Alabama Rd is a north-south two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site. GDOT traffic counts (Station ID 0578033) indicate that the daily traffic volume on Old Alabama Rd is 2,080 vehicles per day north of SR 92 (Alabama Rd).

Woodstock Road

Woodstock Rd is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 076800) indicate that the daily traffic volume on Woodstock Rd is 4,930 vehicles per day south of SR 92 (Alabama Rd).

Existing Bicycle and Pedestrian Facilities

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

Nearby local or regional trails

There is no trail located near the study area.

Bicycle paths or sidewalks

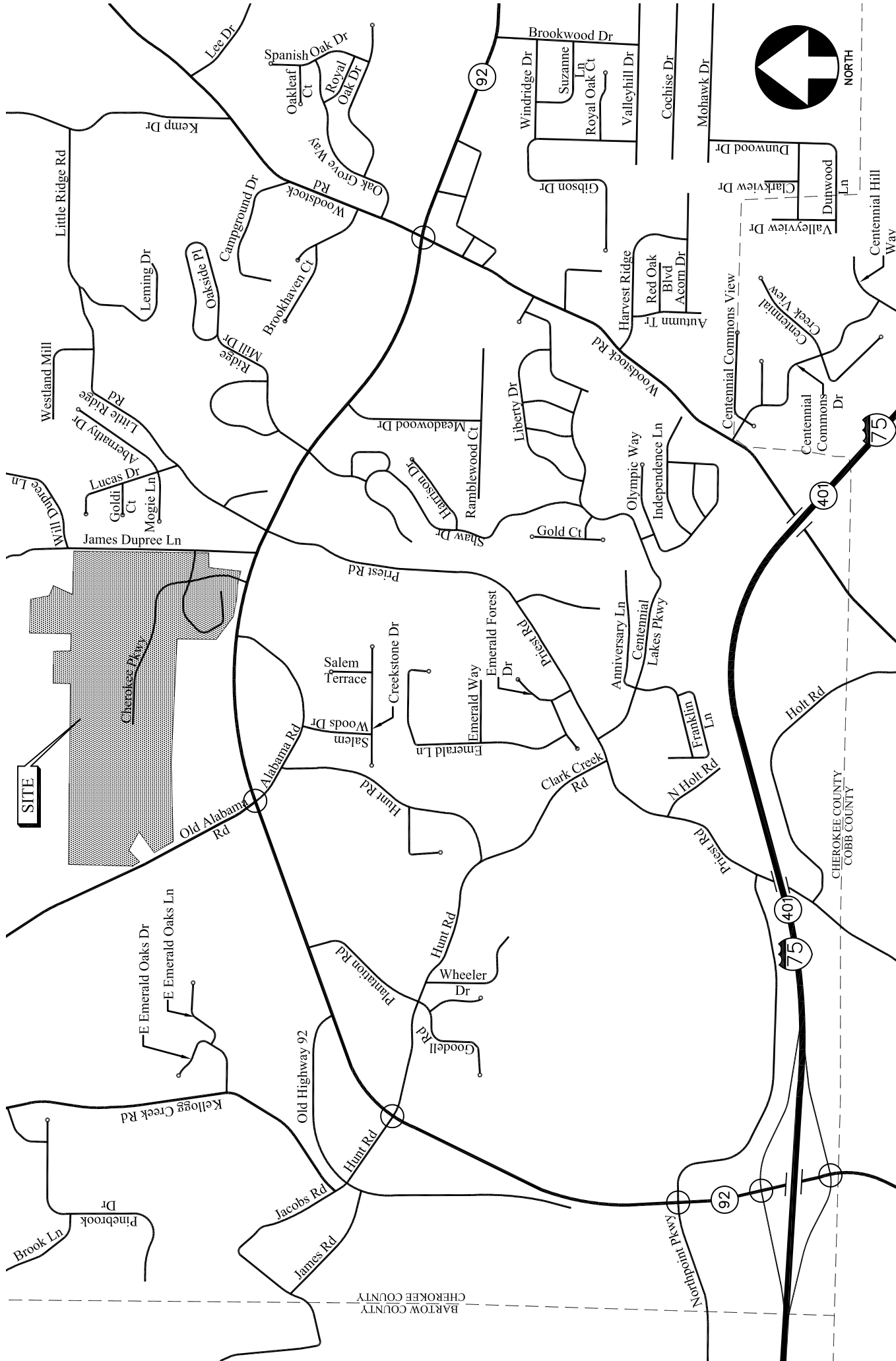
Sidewalks and pedestrian facilities are present along the following roadways in the study network:

- SR 92 (Alabama Rd): both side of the road, between I-75 and Woodstock Rd.
- Woodstock Rd: East side of the road, between SR 92 (Alabama Rd) and Sable Ridge Dr.

Bike paths are not present in the study area.

Existing Transit Facilities

There is no public transit service near the site.



LOCATION MAP AND STUDY INTERSECTIONS

FIGURE 1

STUDY METHODOLOGY

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

Unsignalized Intersections

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

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

TABLE 1 — LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS	
Level-of-service	Average Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: 2000 Highway Capacity Manual

Signalized Intersections

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

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

TABLE 2 — LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS	
Level-of-service	Average Control Delay (sec)
A	≤ 10
B	$> 10 \text{ and } \leq 20$
C	$> 20 \text{ and } \leq 35$
D	$> 35 \text{ and } \leq 55$
E	$> 55 \text{ and } \leq 80$
F	> 80

Source: 2000 Highway Capacity Manual

EXISTING TRAFFIC ANALYSIS

Existing traffic counts and intersection geometric data were obtained at the intersections at the study intersections of:

- SR 92 (Alabama Road) @ I-75 Northbound Ramps
- SR 92 (Alabama Road) @ I-75 Southbound Ramps
- SR 92 (Alabama Road) @ Northpoint Parkway
- SR 92 (Alabama Road) @ Hunt Road
- SR 92 (Alabama Road) @ Old Alabama Road
- SR 92 (Alabama Road) @ Woodstock Road

Turning movement counts were collected on Tuesday, February 10, 2015. All turning movement counts were recorded during the AM and PM peak hours between 7:00am to 9:00am and 4:00pm to 6:00pm, respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.

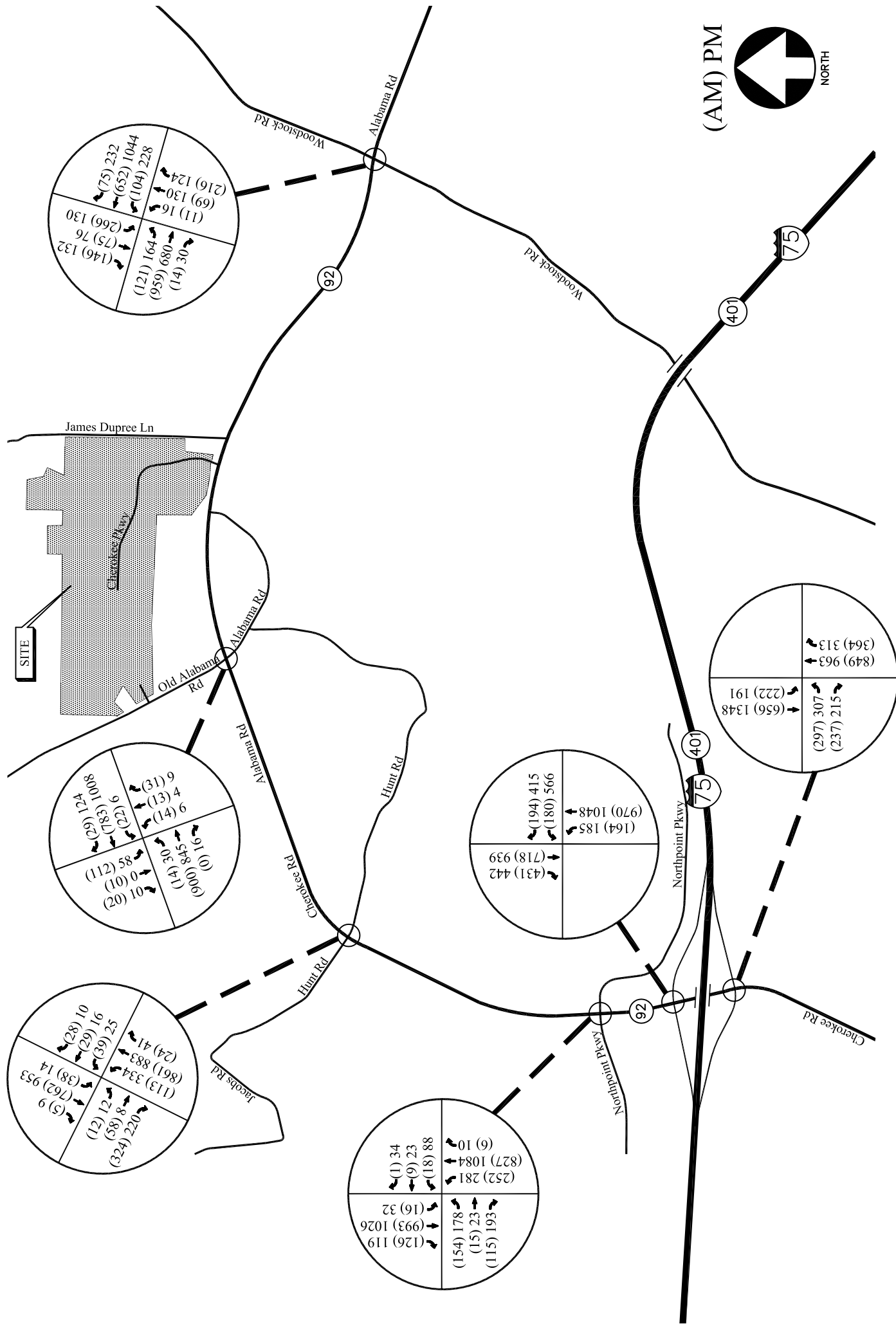
Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology. In addition, a queue length analysis was also performed. The results of the analyses are shown in Tables 3. The existing traffic control and lane geometry for the intersections are shown in Figure 3.

TABLE 3 — EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
			LOS (Delay)	v/c ratio	LOS (Delay)	v/c ratio
1	<u>SR 92 @ I-75 Southbound Ramps</u> -Eastbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>B (16.0)</u> C (21.7) B (17.6) B (10.5)	0.58	<u>B (15.6)</u> C (24.0) B (17.8) B (10.5)	0.69
2	<u>SR 92 @ I-75 Northbound Ramps</u> -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>B (16.0)</u> C (22.5) A (9.4) B (20.0)	0.53	<u>C (24.5)</u> C (24.3) B (18.3) C (30.2)	0.71
3	<u>SR 92 @ Northpoint Parkway</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>C (23.1)</u> D (38.6) C (32.1) C (23.5) B (18.4)	0.9	<u>C (24.2)</u> D (36.8) C (32.1) C (22.5) B (19.8)	0.91
4	<u>SR 92 @ Hunt Road</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>C (22.5)</u> D (43.4) D (38.9) B (13.5) B (15.4)	0.55	<u>B (19.0)</u> D (44.7) D (35.8) B (15.0) B (14.9)	0.82
5	<u>SR 92 @ Old Alabama Road</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>C (22.8)</u> C (20.2) B (17.2) D (51.5) D (49.0)	0.5	<u>B (14.1)</u> B (10.6) B (13.6) D (53.9) D (48.7)	0.53
6	<u>SR 92 @ Woodstock Road</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	Signalized	<u>C (34.7)</u> C (30.2) C (25.6) D (48.5) D (49.1)	0.61	<u>C (34.4)</u> C (28.7) C (31.1) D (47.2) D (50.8)	0.74

The results of existing traffic operations analysis indicates that all the study intersections are operating at an acceptable level-of-service (“D” or better by local standards) in both the AM and PM peak hours.

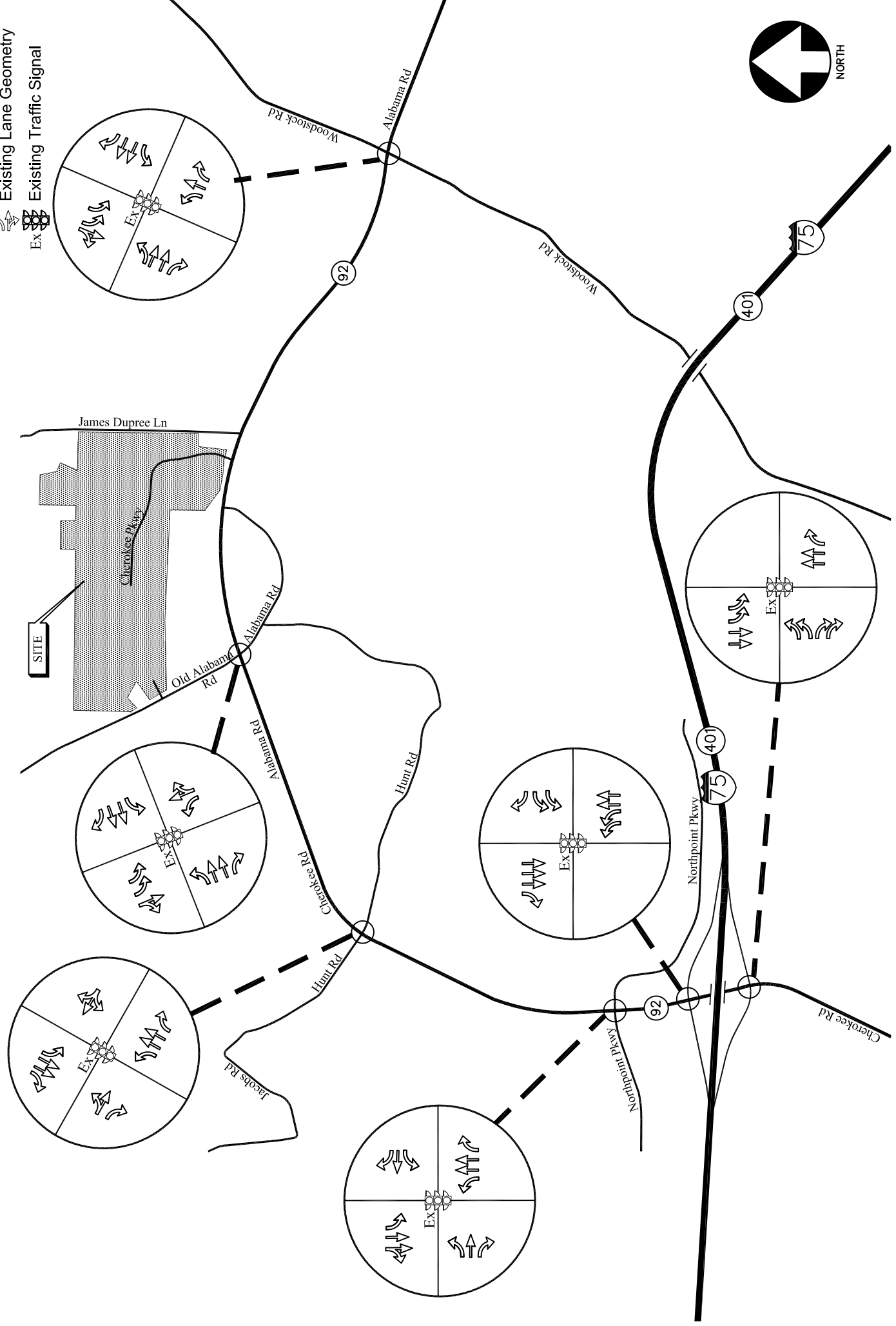


EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 2

LEGEND

- Ex (RDP) Existing Signed Approach
- Existing Lane Geometry
- Ex Existing Traffic Signal



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

PROJECT DESCRIPTION

The proposed site is located on the northwest corner of the intersection SR 92 (Alabama Rd) @ James Dupree Lane in Cherokee County, Georgia. The development consists of:

- 1,201,500 sf of Industrial Park Space

The development proposes access at the following locations:

- Site Driveway 1 @ SR 92 (Alabama Rd)
- Site Driveway 2 @ Old Alabama Rd

Site Plan

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

Planned Bicycle and Pedestrian Facilities

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

- The development plan includes proposed sidewalks on the west side of Cherokee Parkway.

Planned Transit Facilities

There is no public transit service near the site.

Consistency with Adopted Comprehensive Plan

The following is an explanation as to how the proposed DRI relates to the local government's Comprehensive Plan in particular the transportation and capital improvements element, and any transportation improvements listed in the Short-Term Work Program(s) within the vicinity of the DRI. Cherokee County is currently in the process of drafting its recommendations and prioritizations for its comprehensive transportation plan. The current timeline projects that the plan will be submitted to the County in Summer 2015. As it stands, no proposed projects affect or are located within the study area.

Project Phasing

A phasing schedule shall be provided for any proposed DRIs involving multiple phases. The phasing schedule shall include the types and amounts of land uses to be developed and should be identified by phase, the site location of each land use by phase, the amenities to be developed with each phase, and all transportation elements. The transportation elements shall focus upon infrastructure in place, access to the development, and internal mobility during each phase analyzed. This project has been evaluated for the complete build-out of the development in 2020.

Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 9th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Uses: *130 Industrial Park*. The calculated total trip generation for the proposed development is shown in Table 4.

TABLE 4 – TRIP GENERATION								
Land Use	Size	AM Peak Hour			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 130 – Industrial Park	1,201,500	552	121	673	203	765	968	6,674

Trip Distribution

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

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CHEROKEE 75
CORPORATE PARK
LAND LOTS 1032, 1033,
1056-1058 & 1105
21ST DISTRICT, 2ND SECTION
CHEROKEE COUNTY, GEORGIA

HEROKEE | **ECONOMIC**
OFFICE OF **DEVELOPMENT**

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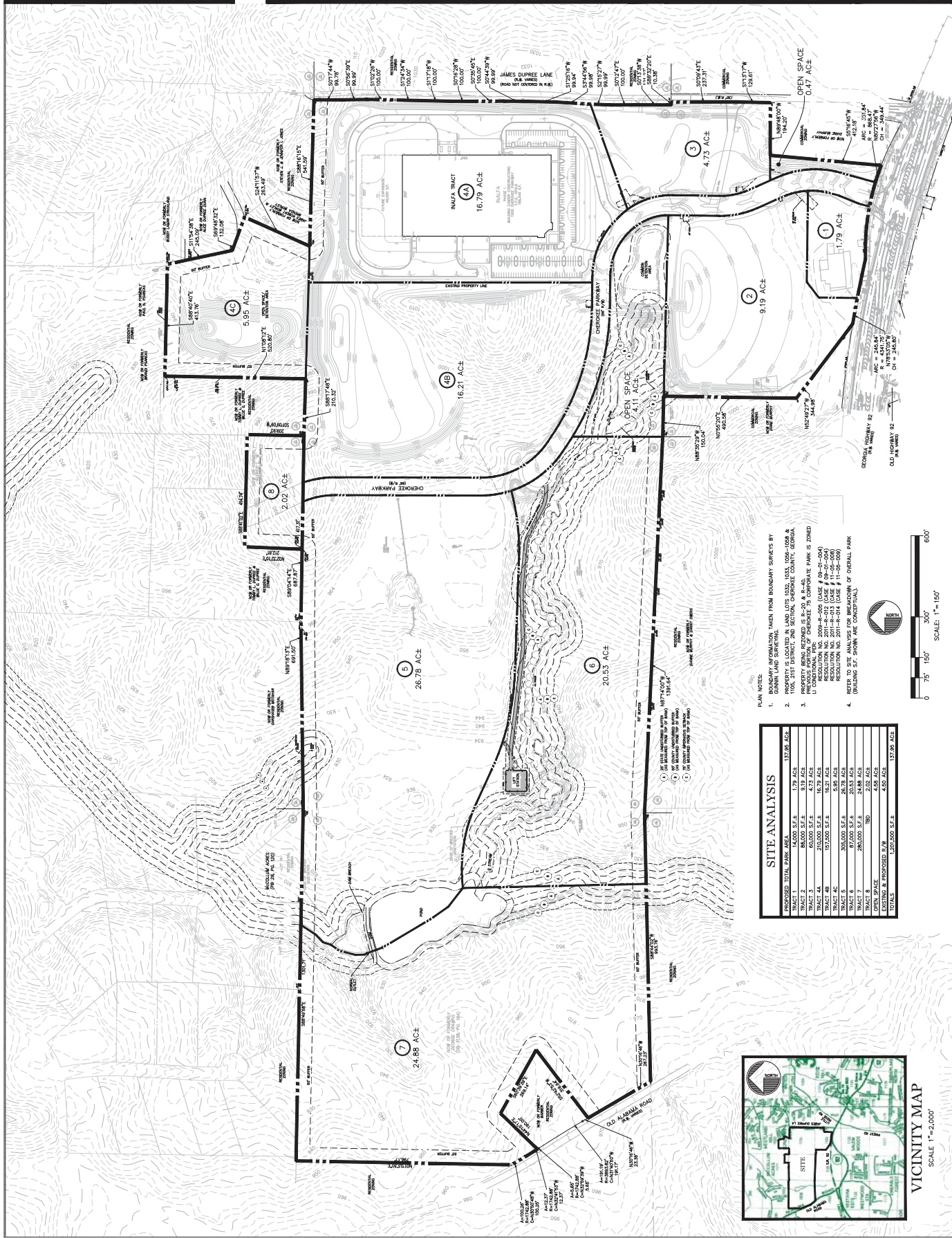
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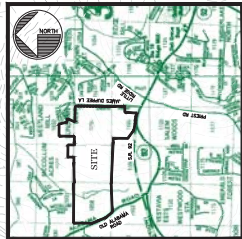
CONCEPT PLAN

CP.21

SHEET NO.



SITE ANALYSIS			137.99 AC.
TRACTED TOTAL PLANT AREA			
TRACT 1	14,000 S.F.	1.79 AC.	
TRACT 2	86,000 S.F.	9.13 AC.	
TRACT 3	60,000 S.F.	4.71 AC.	
TRACT 4	270,000 S.F.	18.78 AC.	
TRACT 5	173,500 S.F.	12.68 AC.	
TRACT 6	305,000 S.F.	28.78 AC.	
TRACT 7	87,000 S.F.	20.03 AC.	
TRACT 8	286,000 S.F.	24.88 AC.	
TRACT 9	180	2.03 AC.	
TRACT 10	180	2.03 AC.	
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TRACT 97	180	2.03 AC.	
TRACT 98	180	2.03 AC.	
TRACT 99	180	2.03 AC.	
TRACT 100	180	2.03 AC.	
TOTALS			137.99 AC.



FUTURE TRAFFIC ANALYSIS

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

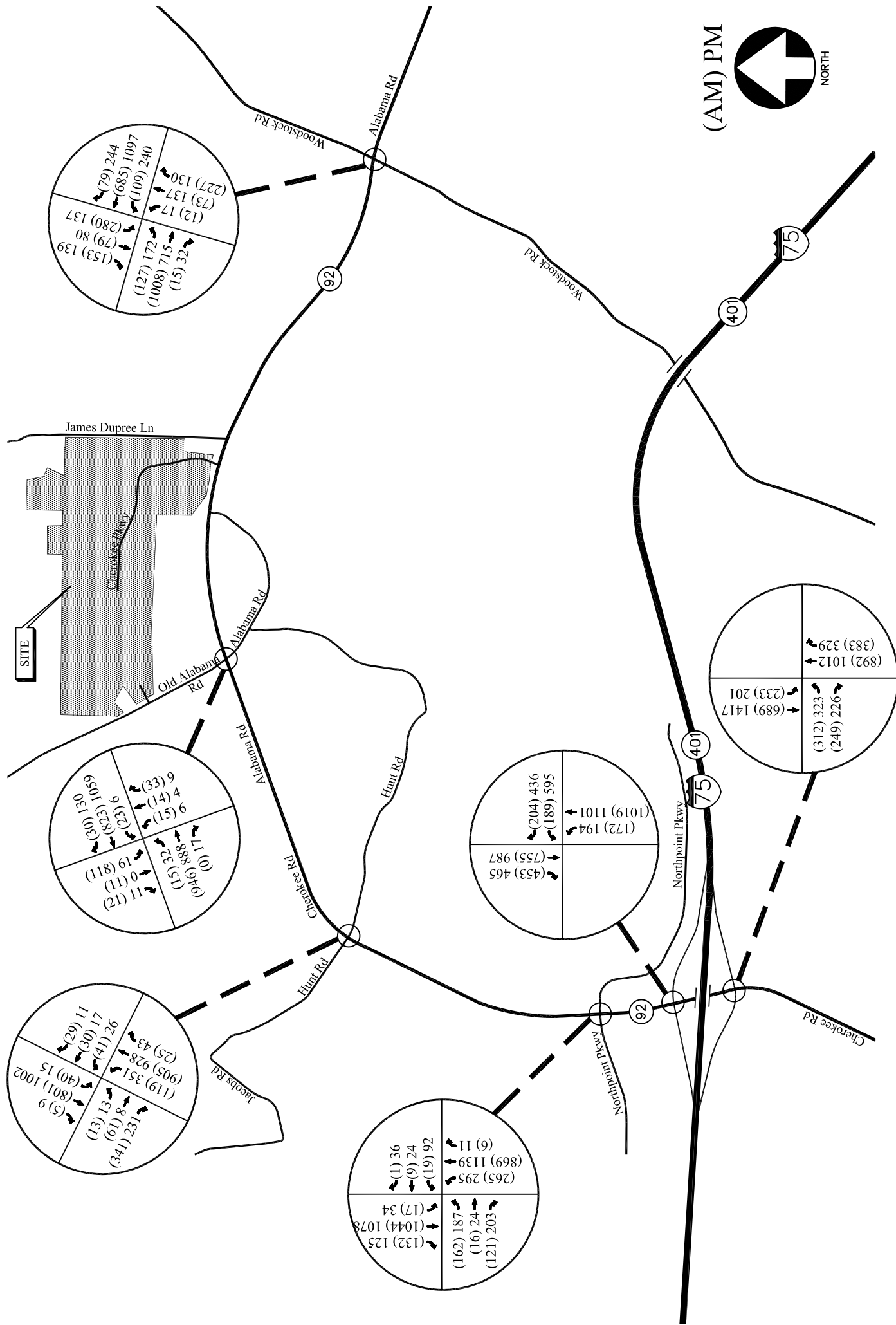
Improvements that are identified as “System Improvements” address deficiencies that are found within the road network for the “No-Build” conditions, without the addition of traffic from the proposed development. Improvements that are identified as “Site Mitigation Improvements” address site added impacts that are in addition to those caused by the background traffic. The results of the analysis are shown in Table 6.

Background Traffic Description

The “No-Build” (or background conditions) provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. No annual growth rate has been applied for turning movement volumes to or from private driveways or residential streets. The Future “No-Build” volumes consist of the existing traffic volumes (Figure 2) plus increases for annual growth of through traffic.

Annual Growth Rate

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



FUTURE (NO-BUILD) PEAK HOUR VOLUMES

FIGURE 6

Site Access Configuration

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

- Site Driveway #1 @ SR 92 (Alabama Rd)
 - This driveway consists of two entering and two exiting lanes.
 - The intersection is controlled by an actuated traffic signal with a permissive+protected phase for the eastbound left turn movement.
 - Entering left turn movements will be made from the dedicated eastbound left turn bay.
 - Entering right turn movements will be made from the dedicated deceleration lane on the westbound approach.
- Site Driveway #2 @ Old Alabama Rd
 - This driveway will consist of one entering and one exiting lanes.
 - The intersection will be unsignalized with a STOP control on the westbound approach.
 - Entering left turn movements will be made from the southbound through lane on Old Alabama Rd. No left turn lane is proposed.
 - Entering right turn movements will be made from the northbound through lane on Old Alabama Rd. No deceleration lane is proposed.

Left Turn Lane Analyses – AASHTO Standards

M.D. Harmelink utilized a probabilistic model to establish left turn lane warrants for two-lane and four-lane highways at unsignalized T-intersections. These warrants are the basis for AASHTO guidelines for justifying a left-turn lane at an unsignalized intersection. The warrants developed are in the form of sets of different volume combinations, specifically, the advancing volume, the percentage of left-turns in the advancing volume, and the opposing volume. These warrants are based on maximum allowable probabilities that one or more through vehicles are present in the queue formed by the left-turning vehicles that is waiting for a suitable gap. The warrants, as summarized by AASHTO, were developed for the approach speeds of 40, 50 and 60 mph and left turn volumes that are 5%, 10%, 20%, and 30% of the advancing stream.

TABLE 5 – AASHTO THRESHOLDS (EXHIBIT 9-75, PG 685), 40 MPH				
Opposing Volumes	Advancing Volumes (by left turn %)			
	5%	10.0%	20.0%	30.0%
100	720	515	390	340
200	640	470	350	305
400	510	380	275	245
600	410	305	225	200
800	330	240	180	160

An interpolation of the thresholds is needed for other volumes and percentages that are not in the AASHTO table and when percentages that are much smaller than the 5% condition (such as the site

driveway). A graphic of the peak hour turning movements for the site, as they relate to the AASHTO criteria are provided in Figure 7.

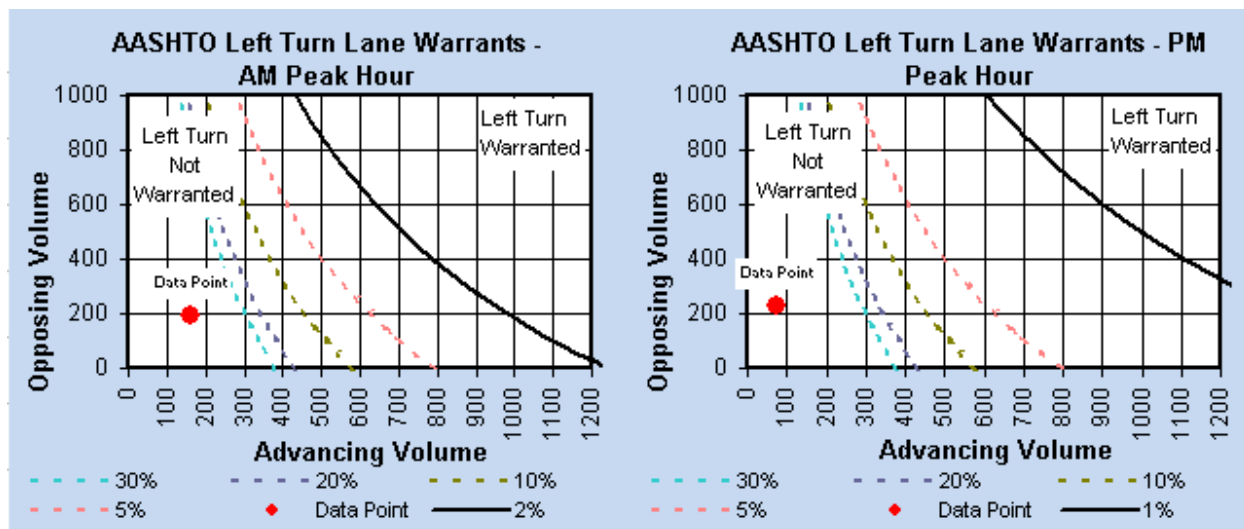


Figure 7 – AASHTO Left Turn Lane Guidelines: Site Driveway 2 @ Old Alabama Rd

The results of the analysis show that the probability of one or more vehicles queuing behind a waiting left-turn vehicle is below the 2% probability criterion. This remains the case for left turn volumes as high as 30% of the advancing traffic. Furthermore, the delay for a shared left / through lane approach is anticipated to be very low with a level-of-service “A”. Therefore, unless stopping sight distance (250 feet for 35 mph) is obstructed on the southbound approach, a left turn lane is not warranted per AASHTO criteria at Site Driveway #2.

Right Turn Lane Analyses

The low volumes and speeds on the roadway (Old Alabama Road has 2,080 vehicles per day and a posted speed limit of 35 mph) would lessen the need for deceleration outside of the through lane. Unless stopping sight distance (250 feet for 35 mph) is obstructed on the northbound approach, a right turn lane should not be required on the Old Alabama Road at Site Driveway 2. Operationally, the HCM analysis does not show a significant decrease in delays from the deceleration lane.

Intersection Operations Analysis (Background and Future)

The “Build” or development conditions include the estimated background traffic from the “No-Build” conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future traffic volumes (Figure 8) were used to evaluate the “Build” condition, which includes the projected site traffic. The results of the “No-Build” and “Build” operations analyses with the assumed site access configuration are shown in Tables 6 and 7a-7b.

TABLE 6 – FUTURE INTERSECTION OPERATIONS

Intersection		No-Build: LOS (Delay)		Build: LOS (Delay)	
		AM Peak	PM Peak	AM Peak	PM Peak
1	<u>I-75 SB Off-Ramp @ SR 92</u>	<u>B (16.5)</u>	<u>B (16.6)</u>	<u>B (19.3)</u>	<u>C (20.1)</u>
	Eastbound Approach	C (22.9)	C (24.6)	C (25.5)	C (30.9)
	Northbound Approach	B (17.9)	B (19.3)	C (20.7)	C (23.2)
	Southbound Approach	B (10.8)	B (11.2)	B (13.1)	B (13.9)
2	<u>I-75 NB On-Ramp @ SR 92</u>	<u>B (16.5)</u>	<u>C (25.9)</u>	<u>C (22.4)</u>	<u>C (30.0)</u>
	Westbound Approach	C (23.3)	C (25.6)	C (24.9)	C (30.6)
	Northbound Approach	A (10.0)	B (20.0)	B (16.9)	C (22.8)
	Southbound Approach	C (20.3)	C (31.3)	C (26.8)	C (34.8)
3	<u>Northpoint Pkwy @ SR 92</u>	<u>C (28.6)</u>	<u>C (28.8)</u>	<u>C (30.5)</u>	<u>D (41.8)</u>
	Eastbound Approach	D (38.4)	D (37.1)	D (38.4)	D (37.3)
	Westbound Approach	C (31.7)	C (31.8)	C (31.7)	C (31.8)
	Northbound Approach	D (35.4)	C (32.0)	D (37.4)	D (40.9)
	Southbound Approach	B (19.8)	C (21.3)	C (21.1)	D (45.1)
4	<u>Hunt Rd @ SR 92</u>	<u>C (23.6)</u>	<u>C (23.9)</u>	<u>C (24.6)</u>	<u>D (47.4)</u>
	Eastbound Approach	D (43.7)	D (46.1)	D (44.0)	D (46.9)
	Westbound Approach	D (37.1)	D (35.4)	D (36.3)	C (34.8)
	Northbound Approach	B (15.0)	C (23.7)	B (18.6)	E (71.9)
	Southbound Approach	B (17.2)	B (16.0)	B (18.5)	C (22.7)
5	<u>SR 92 @ Old Alabama Rd</u>	<u>C (23.2)</u>	<u>B (14.4)</u>	<u>C (26.3)</u>	<u>C (23.1)</u>
	Eastbound Approach	C (20.7)	B (10.8)	C (24.0)	B (15.1)
	Westbound Approach	B (17.6)	B (13.9)	C (21.8)	C (23.6)
	Northbound Approach	D (51.8)	D (53.9)	D (52.1)	D (52.9)
	Southbound Approach	D (49.1)	D (48.8)	D (49.5)	D (46.3)
6	<u>SR 92 @ Woodstock Rd</u>	<u>D (36.3)</u>	<u>D (37.1)</u>	<u>D (37.3)</u>	<u>D (46.2)</u>
	Eastbound Approach	C (32.4)	C (32.8)	C (32.0)	D (45.8)
	Westbound Approach	C (27.0)	C (33.6)	C (28.3)	D (42.7)
	Northbound Approach	D (49.3)	D (47.8)	D (51.2)	D (48.3)
	Southbound Approach	D (50.3)	D (52.2)	D (54.2)	E (59.1)
7	<u>SR 92 @ Site Driveway 1</u>			<u>A (8.8)</u>	<u>C (20.6)</u>
	Eastbound Approach	-	-	A (4.4)	A (9.5)
	Westbound Approach	-	-	B (11.3)	C (20.6)
	Southbound Approach	-	-	D (43.8)	D (42.5)
8	<u>Old Alabama Rd @ Site Driveway 2</u>				
	-Westbound Approach	-	-	B (10.6)	B (12.4)
	-Southbound Through/Left	-	-	A (0.2)	A (0.1)

TABLE 7A — FUTURE INTERSECTION 95TH PERCENTILE QUEUES

Intersection		Available Storage	No-Build: feet		Build: feet	
			AM Peak	PM Peak	AM Peak	PM Peak
1	<u>I-75 SB Off-Ramp @ SR 92</u>					
	Eastbound Left	520'	119	131	185	187
	Eastbound Right	520'	28	65	27	82
	Northbound Through	-	256	320	314	417
	Northbound Right	-	49	52	53	62
	Southbound Left	1240'	97	91	125	201
	Southbound Through	-	107	283	141	343
2	<u>I-75 NB On-Ramp @ SR 92</u>					
	Westbound Left	590'	60	222	64	245
	Westbound Right	590'	116	348	261	497
	Northbound Left	1060'	63	110	87	117
	Northbound Through	-	206	378	406	406
	Southbound Through	-	156	286	215	367
	Southbound Right	-	28	80	22	96
3	<u>Northpoint Pkwy @ SR 92</u>					
	Eastbound Left	85'	156	173	156	173
	Eastbound Through	-	24	30	24	30
	Eastbound Right	-	38	46	38	55
	Westbound Left	225'	25	86	25	86
	Westbound Through	-	14	29	14	29
	Westbound Right	-	1	16	1	17
	Northbound Left	235'	304	342	326	371
	Northbound Through	-	182	295	281	344
	Northbound Right	-	4	5	4	5
	Southbound Left	305'	18	37	19	38
	Southbound Through/Right	-	450	472	510	825
4	<u>Hunt Rd @ SR 92</u>					
	Eastbound Through/Left	-	58	28	57	28
	Eastbound Right	-	198	109	207	123
	Westbound Through/Left/Right	-	60	53	60	53
	Northbound Left	350'	75	319	77	479
	Northbound Through	-	335	264	517	318
	Northbound Right	-	15	24	18	26
	Southbound Left	400'	26	10	26	11
	Southbound Through	-	328	324	370	623
	Southbound Right	-	7	10	8	11
5	<u>SR 92 @ Old Alabama Rd</u>					
	Eastbound Left	415'	10	20	44	36
	Eastbound Through	-	369	295	512	343
	Eastbound Right	-	0	8	0	9
	Westbound Left	310'	15	5	15	6
	Westbound Through	-	309	378	345	590
	Westbound Right	-	12	25	15	46
	Northbound Left	130'	31	18	32	18
	Northbound Through/Right	-	16	13	16	13
	Southbound Left	460'	76	45	89	89
	Southbound Through/Right	-	16	0	9	0

TABLE 7B — FUTURE INTERSECTION 95TH PERCENTILE QUEUES

Intersection		Available Storage	No-Build: feet		Build: feet	
			AM Peak	PM Peak	AM Peak	PM Peak
6	<u>SR 92 @ Woodstock Rd</u>					
	Eastbound Left	305'	94	170	98	277
	Eastbound Through	-	524	337	552	481
	Eastbound Right	-	22	13	27	28
	Westbound Left	305'	83	175	83	333
	Westbound Through	-	331	565	435	623
	Westbound Right	-	14	97	26	105
	Northbound Left	245'	31	36	72	48
	Northbound Through	-	106	184	106	184
	Northbound Right	-	98	37	99	37
	Southbound Left	250'	178	97	179	97
	Southbound Through/Right	-	205	280	233	323
7	<u>SR 92 @ Site Driveway 1</u>					
	Eastbound Left	300'	-	-	63	52
	Eastbound Through	-	-	-	156	284
	Westbound Through	-	-	-	284	510
	Westbound Right	-	-	-	38	33
	Southbound Left	-	-	-	59	260
8	<u>Old Alabama Rd @ Site Driveway 2</u>					
	Westbound Left/Right	-	-	-	4	32
	Northbound Through/Right	-	-	-	0	0
	Southbound Through/Left	-	-	-	0	0

System Recommendations and Improvements

Improvements that are identified as system improvements address deficiencies that are found the study network for the “No-Build” conditions, without the addition of traffic from the proposed development. There are a few areas within the study network where queuing is exceeding the available storage in the Existing and/or No-Build conditions. These areas are outlined below:

- The eastbound left turn queue on Northpoint Parkway (approaching SR 92) is currently exceeding storage of the left turn bay. Unfortunately proximity of the adjacent access points prohibits extension of the turn bays.
- Queues exceed the storage for the northbound left turn on SR 92 (approaching Northpoint Parkway) by 100+ ft in the peak period. A potential existing system improvement could be to extend into the median.

Because operations would not be impacted beyond an acceptable level-of-service (“D” or better by local standards), system improvements to reduce delays for the “No-Build” conditions have not been identified.

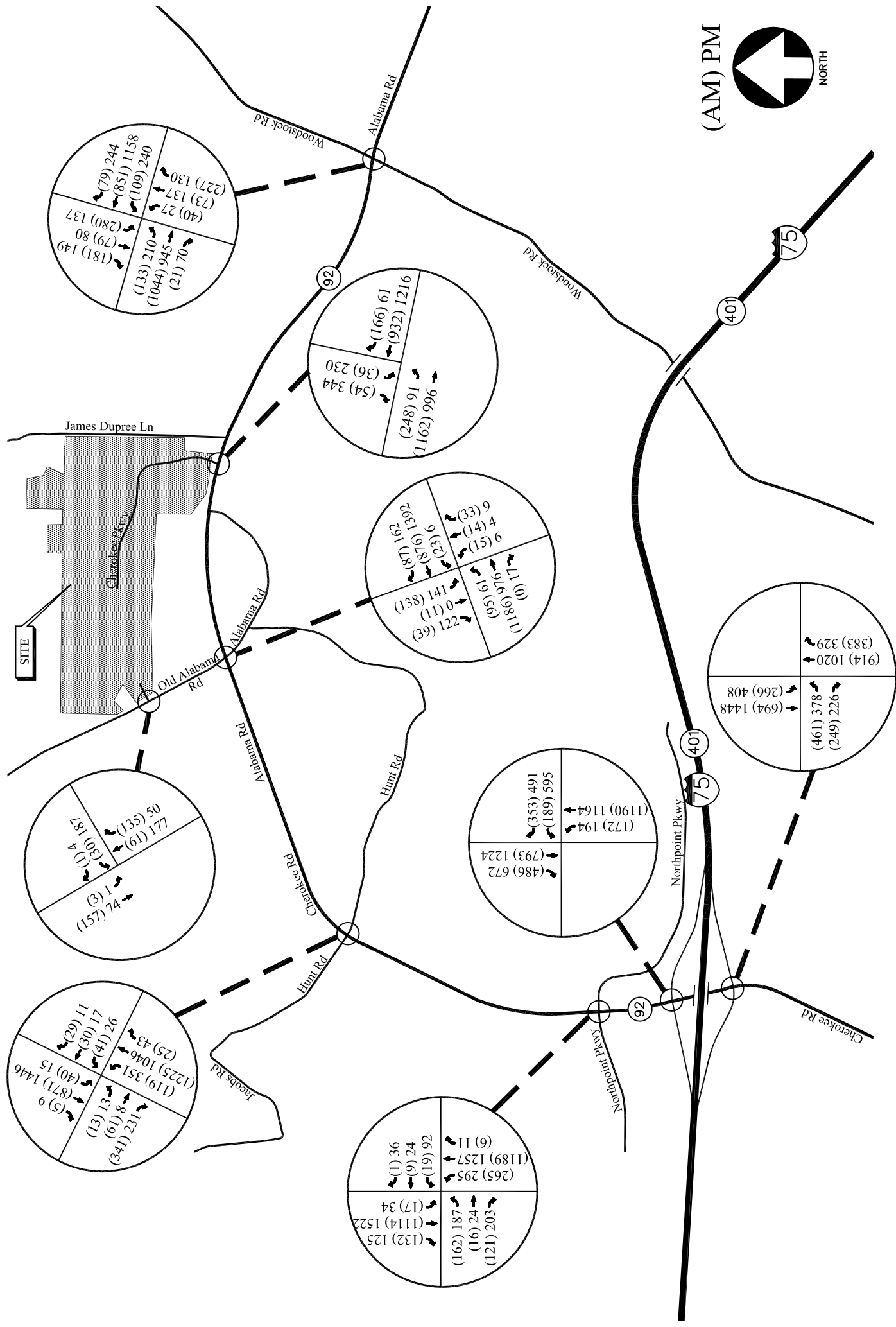
Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. The added site traffic through the intersection of SR 92 @ Woodstock Rd is anticipated to increase queues in the westbound left turn bay beyond the current storage. As the storage is only exceeded by 1-2 vehicle lengths, it is recommended that timing adjustments be made as necessary based on observations after build-out.

It should be noted that no adjustments to timing were made between No-Build and Build analysis for the results in Table 6 and 7.

Because operations would not be impacted beyond the projected “No-Build” conditions, mitigation improvements have not been identified outside of the recommended configuration for the site access points.

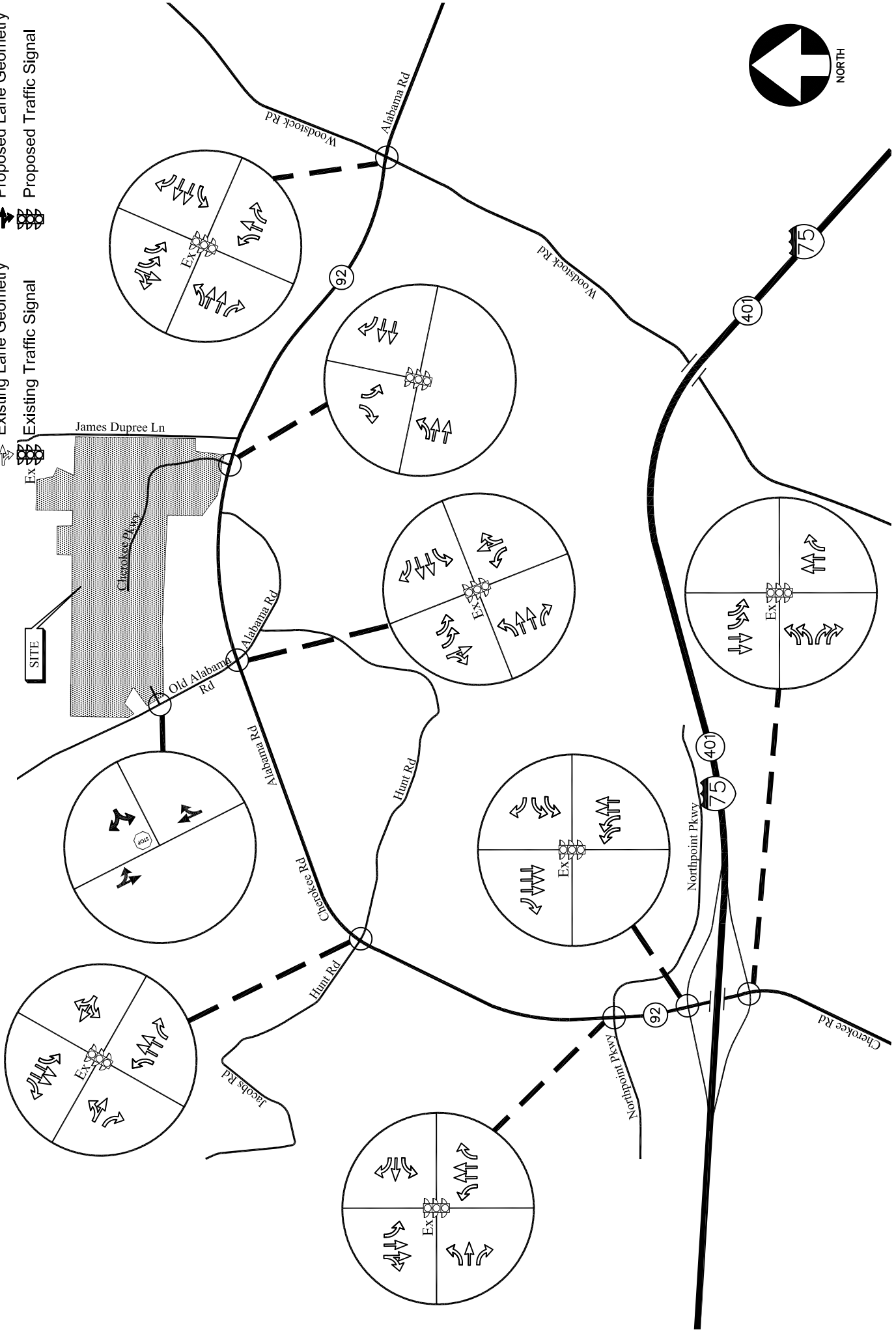
Recommendations on traffic control and lane geometry are shown graphically in Figure 9.



FUTURE (BUILD) PEAK HOUR VOLUMES

LEGEND

- Existing Signed Approach
- Existing Lane Geometry
- Existing Traffic Signal
- Proposed Signed Approach
- Proposed Lane Geometry
- Proposed Traffic Signal



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the proposed corporate park development located on the northwest corner of the intersection SR 92 (Alabama Rd) @ James Dupree Lane in Cherokee County, Georgia. The development consists of:

- 1,201,500 sf of Industrial Park Space

The development proposes full access driveways on SR 92 (Alabama Rd) and Old Alabama Rd. Existing and future operations after completion of the project were analyzed at the intersections of:

- SR 92 (Alabama Road) @ I-75 Northbound Ramps
- SR 92 (Alabama Road) @ I-75 Southbound Ramps
- SR 92 (Alabama Road) @ Northpoint Parkway
- SR 92 (Alabama Road) @ Hunt Road
- SR 92 (Alabama Road) @ Old Alabama Road
- SR 92 (Alabama Road) @ Woodstock Road

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

System Recommendations and Improvements

Improvements that are identified as system improvements address deficiencies that are found the study network for the “No-Build” conditions, without the addition of traffic from the proposed development. There are a few areas within the study network where queuing is exceeding the available storage in the Existing and/or No-Build conditions. These areas are outlined below:

- The eastbound left turn queue on Northpoint Parkway (approaching SR 92) is currently exceeding storage of the left turn bay. Unfortunately proximity of the adjacent access points prohibits extension of the turn bays.
- Queues exceed the storage for the northbound left turn on SR 92 (approaching Northpoint Parkway) by 100+ ft in the peak period. A potential existing system improvement could be to extend into the median.

Because operations would not be impacted beyond an acceptable level-of-service (“D” or better by local standards), system improvements to reduce delays for the “No-Build” conditions have not been identified.

Site Access Configuration

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

- Site Driveway #1 @ SR 92 (Alabama Rd)
 - This driveway consists of two entering and two exiting lanes.
 - The intersection is controlled by an actuated traffic signal with a permissive+protected phase for the eastbound left turn movement.
 - Entering left turn movements will be made from the dedicated eastbound left turn bay.

- Entering right turn movements will be made from the dedicated deceleration lane on the westbound approach.
- Site Driveway #2 @ Old Alabama Rd
 - This driveway will consist of one entering and one exiting lanes.
 - The intersection will be unsignalized with a STOP control on the westbound approach.
 - Entering left turn movements will be made from the southbound through lane on Old Alabama Rd. No left turn lane is proposed.
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Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. The added site traffic through the intersection of SR 92 @ Woodstock Rd is anticipated to increase queues in the westbound left turn bay beyond the current storage. As the storage is only exceeded by 1-2 vehicle lengths, it is recommended that timing adjustments be made as necessary based on observations after build-out.

It should be noted that no adjustments to timing were made between No-Build and Build analysis for the results in Table 6 and 7.

Because operations would not be impacted beyond the projected “No-Build” conditions, mitigation improvements have not been identified outside of the recommended configuration for the site access points.

Appendix

Existing Intersection Traffic Counts	2
GRTA Notice of Decision	3
Linear Regression of Daily Traffic	4
Fact Sheets for Planned and Programmed Improvements	5
Existing Intersection Analysis	6
Future “No-Build” Intersection Analysis	7
Future “Build” Intersections Analysis	8
Traffic Volume Worksheets	9

Existing Intersection Traffic Counts

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TMC Data
SR92 @ I-75 SB Off-Ramp
7-9am | 4-6pm

File Name : 36440001
Site Code : 36440001
Start Date : 2/10/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					I-75 SB Off-Ramp Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	206	103	0	309	54	143	0	0	197	70	0	43	0	113	0	0	0	0	0	619
07:15 AM	0	217	88	0	305	63	156	0	0	219	72	0	61	0	133	0	0	0	0	0	657
07:30 AM	0	212	89	0	301	57	187	0	0	244	76	0	70	0	146	0	0	0	0	0	691
07:45 AM	0	214	84	0	298	48	170	0	0	218	79	1	63	0	143	0	0	0	0	0	659
Total	0	849	364	0	1213	222	656	0	0	878	297	1	237	0	535	0	0	0	0	0	2626
08:00 AM	0	206	85	0	291	45	128	0	0	173	89	0	41	0	130	0	0	0	0	0	594
08:15 AM	0	194	82	0	276	50	169	0	0	219	69	0	50	0	119	0	0	0	0	0	614
08:30 AM	0	183	74	0	257	52	147	0	0	199	63	0	23	0	86	0	0	0	0	0	542
08:45 AM	0	180	71	0	251	56	152	0	0	208	68	1	19	0	88	0	0	0	0	0	547
Total	0	763	312	0	1075	203	596	0	0	799	289	1	133	0	423	0	0	0	0	0	2297
*** BREAK ***																					
04:00 PM	0	182	65	0	247	57	291	0	0	348	66	0	26	0	92	0	0	0	0	0	687
04:15 PM	0	184	68	0	252	52	293	0	0	345	69	0	38	0	107	0	0	0	0	0	704
04:30 PM	0	192	74	0	266	46	279	0	0	325	81	0	39	0	120	0	0	0	0	0	711
04:45 PM	0	196	75	0	271	57	325	0	0	382	83	2	34	0	119	0	0	0	0	0	772
Total	0	754	282	0	1036	212	1188	0	0	1400	299	2	137	0	438	0	0	0	0	0	2874
05:00 PM	0	214	78	0	292	46	310	0	0	356	69	0	43	0	112	0	0	0	0	0	760
05:15 PM	0	244	82	0	326	44	342	0	0	386	82	0	48	0	130	0	0	0	0	0	842
05:30 PM	0	249	75	0	324	51	351	0	0	402	80	0	50	0	130	0	0	0	0	0	856
05:45 PM	0	256	78	0	334	50	345	0	0	395	76	0	74	0	150	0	0	0	0	0	879
Total	0	963	313	0	1276	191	1348	0	0	1539	307	0	215	0	522	0	0	0	0	0	3337
Grand Total	0	3329	1271	0	4600	828	3788	0	0	4616	1192	4	722	0	1918	0	0	0	0	0	11134
Apprch %	0	72.4	27.6	0		17.9	82.1	0	0		62.1	0.2	37.6	0		0	0	0	0		
Total %	0	29.9	11.4	0	41.3	7.4	34	0	0	41.5	10.7	0	6.5	0	17.2	0	0	0	0	0	

Reliable Traffic Data Services, LLC

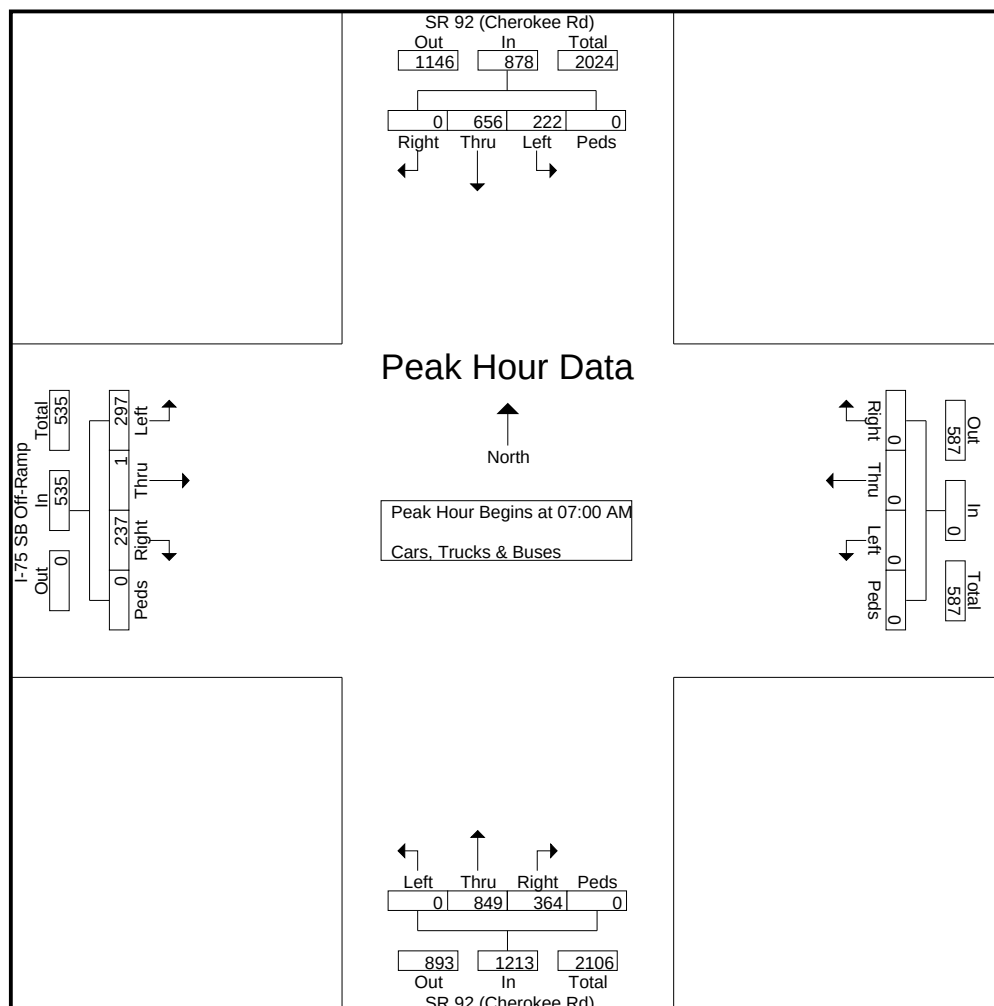
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TMC Data
SR92 @ I-75 SB Off-Ramp

7-9am I 4-6pm

File Name : 36440001
Site Code : 36440001
Start Date : 2/10/2015
Page No : 2

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					I-75 SB Off-Ramp Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	206	103	0	309	54	143	0	0	197	70	0	43	0	113	0	0	0	0	0	619
07:15 AM	0	217	88	0	305	63	156	0	0	219	72	0	61	0	133	0	0	0	0	0	657
07:30 AM	0	212	89	0	301	57	187	0	0	244	76	0	70	0	146	0	0	0	0	0	691
07:45 AM	0	214	84	0	298	48	170	0	0	218	79	1	63	0	143	0	0	0	0	0	659
Total Volume	0	849	364	0	1213	222	656	0	0	878	297	1	237	0	535	0	0	0	0	0	2626
% App. Total	0	70	30	0		25.3	74.7	0	0		55.5	0.2	44.3	0		0	0	0	0		
PHF	.000	.978	.883	.000	.981	.881	.877	.000	.000	.900	.940	.250	.846	.000	.916	.000	.000	.000	.000	.000	.950



Reliable Traffic Data Services, LLC

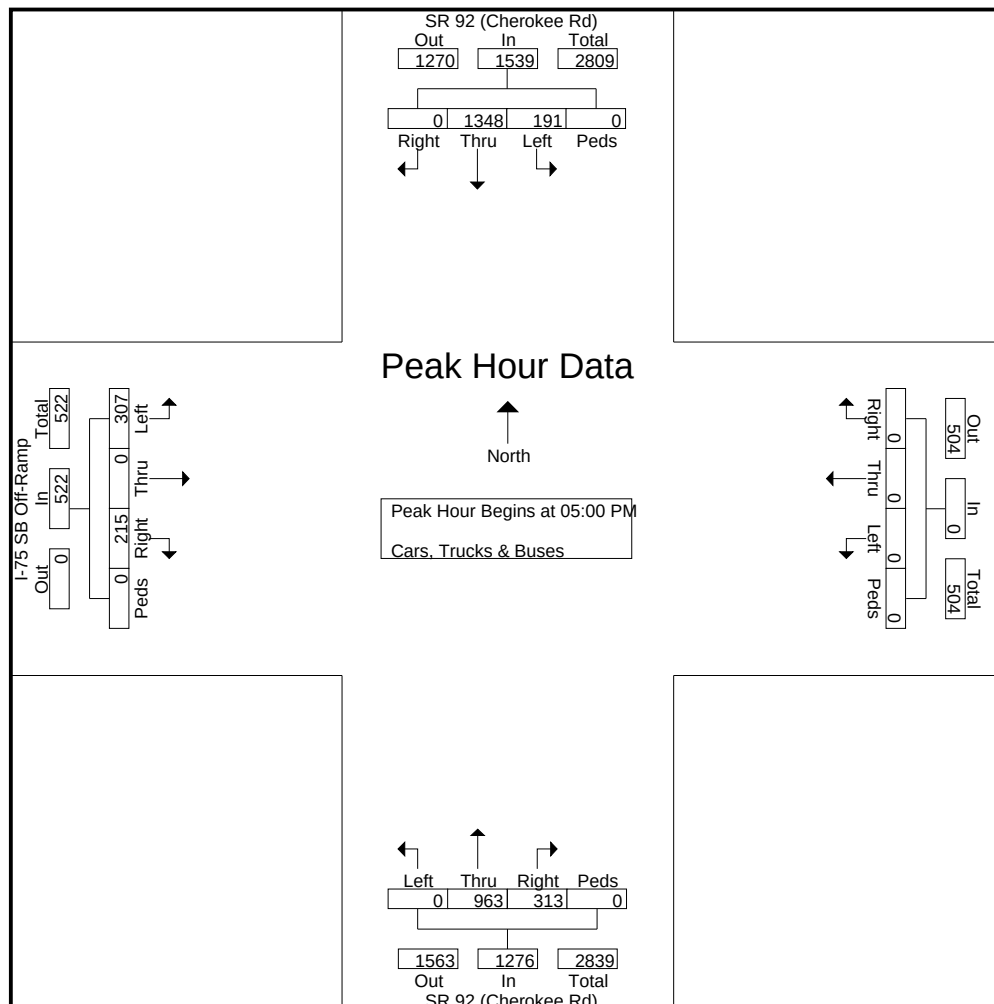
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Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	214	78	0	292	46	310	0	0	356	69	0	43	0	112	0	0	0	0	0	760
05:15 PM	0	244	82	0	326	44	342	0	0	386	82	0	48	0	130	0	0	0	0	0	842
05:30 PM	0	249	75	0	324	51	351	0	0	402	80	0	50	0	130	0	0	0	0	0	856
05:45 PM	0	256	78	0	334	50	345	0	0	395	76	0	74	0	150	0	0	0	0	0	879
Total Volume	0	963	313	0	1276	191	1348	0	0	1539	307	0	215	0	522	0	0	0	0	0	3337
% App. Total	0	75.5	24.5	0		12.4	87.6	0	0		58.8	0	41.2	0		0	0	0	0		
PHF	.000	.940	.954	.000	.955	.936	.960	.000	.000	.957	.936	.000	.726	.000	.870	.000	.000	.000	.000	.000	.949



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TMC Data
SR92 @ I-75 NB Off-Ramp
7-9am | 4-6pm

File Name : 36440002
Site Code : 36440002
Start Date : 2/10/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Eastbound					I-75 NB Off-Ramp Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	36	203	0	0	239	0	163	103	0	266	0	0	0	0	0	34	0	41	0	75	580
07:15 AM	48	224	0	0	272	0	167	100	0	267	0	0	0	0	0	29	0	39	0	68	607
07:30 AM	53	248	0	0	301	0	184	140	0	324	0	0	0	0	0	54	0	49	0	103	728
07:45 AM	42	254	0	0	296	0	192	113	0	305	0	0	0	0	0	42	0	49	0	91	692
Total	179	929	0	0	1108	0	706	456	0	1162	0	0	0	0	0	159	0	178	0	337	2607
08:00 AM	37	236	0	0	273	0	176	96	0	272	0	0	0	0	0	37	0	41	0	78	623
08:15 AM	32	232	0	0	264	0	166	82	0	248	0	0	0	0	0	47	0	55	0	102	614
08:30 AM	28	205	0	0	233	0	154	73	0	227	0	0	0	0	0	49	0	43	0	92	552
08:45 AM	33	207	0	0	240	0	148	83	0	231	0	0	0	0	0	48	0	42	0	90	561
Total	130	880	0	0	1010	0	644	334	0	978	0	0	0	0	0	181	0	181	0	362	2350
*** BREAK ***																					
04:00 PM	35	194	0	0	229	0	241	102	0	343	0	0	0	0	0	117	0	79	0	196	768
04:15 PM	38	205	0	0	243	0	208	104	0	312	0	0	0	0	0	123	0	97	0	220	775
04:30 PM	42	232	0	0	274	0	213	94	0	307	0	0	0	0	0	125	1	95	0	221	802
04:45 PM	45	224	0	0	269	0	227	117	0	344	0	0	0	0	0	122	0	102	0	224	837
Total	160	855	0	0	1015	0	889	417	0	1306	0	0	0	0	0	487	1	373	0	861	3182
05:00 PM	43	244	0	0	287	0	216	104	0	320	0	0	0	0	0	152	0	104	0	256	863
05:15 PM	51	266	0	0	317	0	243	117	0	360	0	0	0	0	0	155	0	109	0	264	941
05:30 PM	47	267	0	0	314	0	246	112	0	358	0	0	0	0	0	134	1	104	0	239	911
05:45 PM	44	271	0	0	315	0	234	109	0	343	0	0	0	0	0	125	0	98	0	223	881
Total	185	1048	0	0	1233	0	939	442	0	1381	0	0	0	0	0	566	1	415	0	982	3596
Grand Total	654	3712	0	0	4366	0	3178	1649	0	4827	0	0	0	0	0	1393	2	1147	0	2542	11735
Apprch %	15	85	0	0		0	65.8	34.2	0		0	0	0	0		54.8	0.1	45.1	0		
Total %	5.6	31.6	0	0	37.2	0	27.1	14.1	0	41.1	0	0	0	0	0	11.9	0	9.8	0	21.7	

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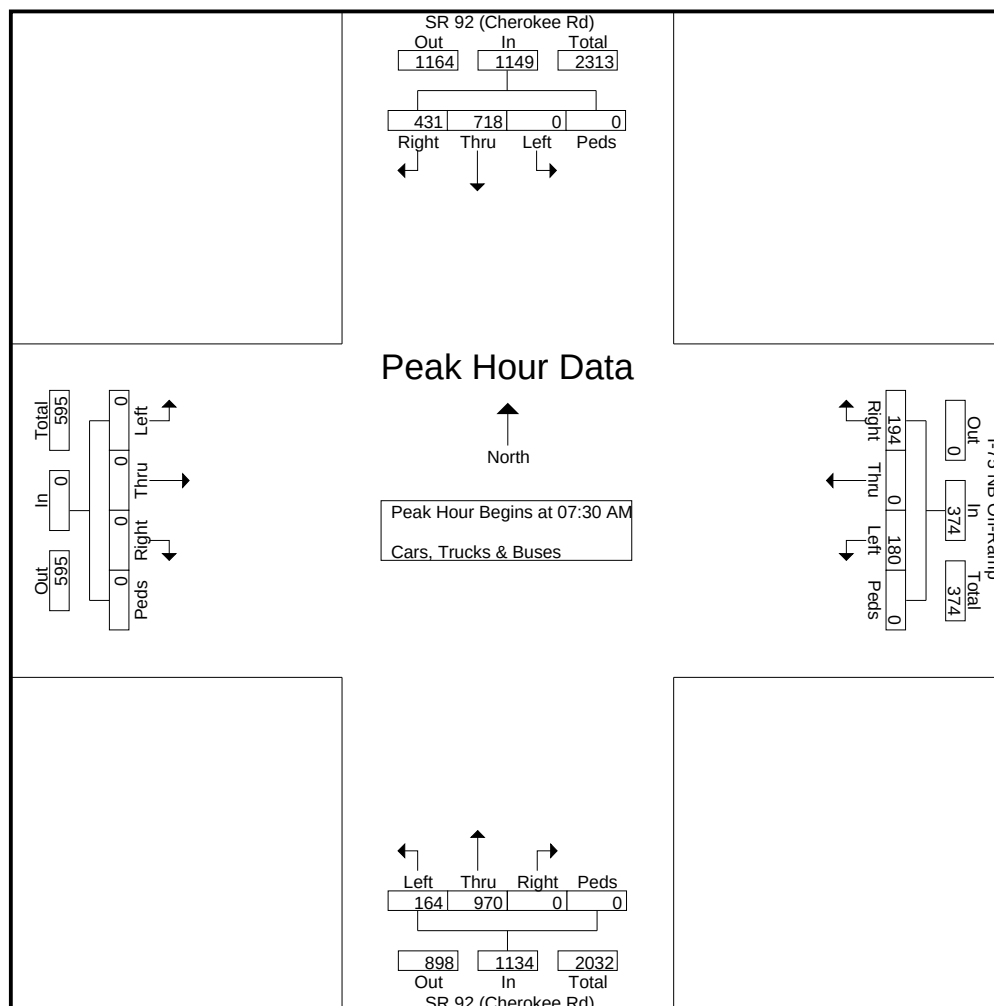
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TMC Data
SR92 @ I-75 NB Off-Ramp

7-9am | 4-6pm

File Name : 36440002
Site Code : 36440002
Start Date : 2/10/2015
Page No : 2

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Eastbound					I-75 NB Off-Ramp Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	53	248	0	0	301	0	184	140	0	324	0	0	0	0	0	54	0	49	0	103	728
07:45 AM	42	254	0	0	296	0	192	113	0	305	0	0	0	0	0	42	0	49	0	91	692
08:00 AM	37	236	0	0	273	0	176	96	0	272	0	0	0	0	0	37	0	41	0	78	623
08:15 AM	32	232	0	0	264	0	166	82	0	248	0	0	0	0	0	47	0	55	0	102	614
Total Volume	164	970	0	0	1134	0	718	431	0	1149	0	0	0	0	0	180	0	194	0	374	2657
% App. Total	14.5	85.5	0	0		0	62.5	37.5	0		0	0	0	0	0	48.1	0	51.9	0		
PHF	.774	.955	.000	.000	.942	.000	.935	.770	.000	.887	.000	.000	.000	.000	.000	.833	.000	.882	.000	.908	.912



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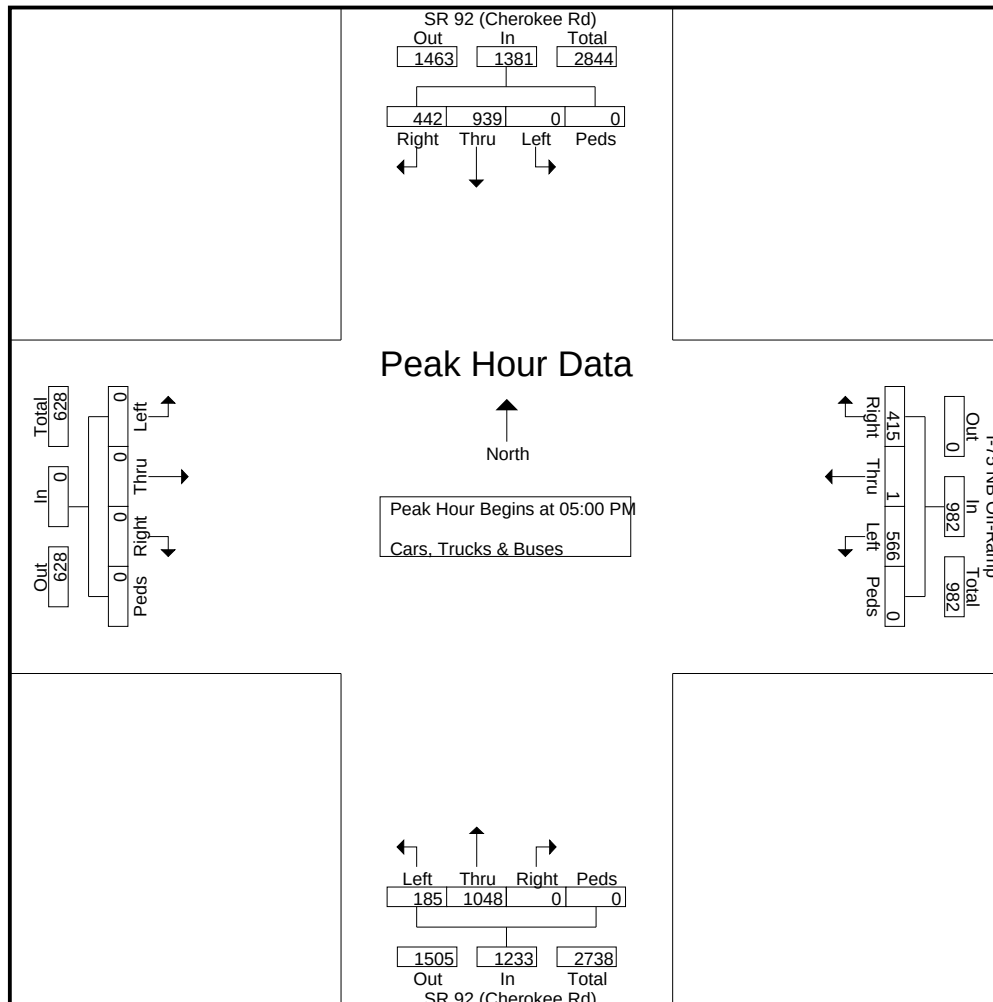
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TMC Data
SR92 @ I-75 NB Off-Ramp

7-9am | 4-6pm

File Name : 36440002
Site Code : 36440002
Start Date : 2/10/2015
Page No : 3

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Eastbound					I-75 NB Off-Ramp Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	43	244	0	0	287	0	216	104	0	320	0	0	0	0	0	152	0	104	0	256	863
05:15 PM	51	266	0	0	317	0	243	117	0	360	0	0	0	0	0	155	0	109	0	264	941
05:30 PM	47	267	0	0	314	0	246	112	0	358	0	0	0	0	0	134	1	104	0	239	911
05:45 PM	44	271	0	0	315	0	234	109	0	343	0	0	0	0	0	125	0	98	0	223	881
Total Volume	185	1048	0	0	1233	0	939	442	0	1381	0	0	0	0	0	566	1	415	0	982	3596
% App. Total	15	85	0	0		0	68	32	0		0	0	0	0		57.6	0.1	42.3	0		
PHF	.907	.967	.000	.000	.972	.000	.954	.944	.000	.959	.000	.000	.000	.000	.000	.913	.250	.952	.000	.930	.955



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TMC Data
SR92 @ Northpoint Pkwy
7-9am | 4-6pm

File Name : 36440003
Site Code : 36440003
Start Date : 2/10/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Northpoint Pkwy Eastbound					Northpoint Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	47	202	0	0	249	6	187	17	0	210	33	5	31	0	69	9	5	1	0	15	543
07:15 AM	49	205	2	0	256	6	238	24	0	268	45	4	34	0	83	4	1	1	0	6	613
07:30 AM	60	217	1	0	278	1	278	28	0	307	35	3	28	0	66	3	2	0	0	5	656
07:45 AM	69	206	1	0	276	5	250	39	0	294	43	4	29	0	76	7	2	0	0	9	655
Total	225	830	4	0	1059	18	953	108	0	1079	156	16	122	0	294	23	10	2	0	35	2467
08:00 AM	74	199	2	0	275	4	227	35	0	266	31	4	24	0	59	4	4	0	0	8	608
08:15 AM	59	193	3	0	255	0	198	32	0	230	32	9	25	0	66	3	1	0	0	4	555
08:30 AM	53	178	2	0	233	2	187	34	0	223	26	2	27	0	55	6	1	1	0	8	519
08:45 AM	63	154	0	0	217	3	177	43	0	223	32	5	26	0	63	4	4	1	0	9	512
Total	249	724	7	0	980	9	789	144	0	942	121	20	102	0	243	17	10	2	0	29	2194
*** BREAK ***																					
04:00 PM	58	212	1	0	271	2	214	24	0	240	52	7	74	0	133	21	4	7	0	32	676
04:15 PM	62	233	2	0	297	2	229	21	0	252	57	2	47	0	106	18	5	4	0	27	682
04:30 PM	64	225	1	0	290	7	236	19	0	262	45	6	56	0	107	17	6	9	0	32	691
04:45 PM	67	218	2	0	287	5	258	34	0	297	41	4	55	0	100	18	4	9	0	31	715
Total	251	888	6	0	1145	16	937	98	0	1051	195	19	232	0	446	74	19	29	0	122	2764
05:00 PM	65	245	0	0	310	10	243	26	0	279	44	4	68	0	116	29	5	12	0	46	751
05:15 PM	70	292	3	0	365	6	272	28	0	306	48	7	45	0	100	19	6	5	0	30	801
05:30 PM	72	284	4	0	360	8	263	35	0	306	34	5	42	0	81	15	4	8	0	27	774
05:45 PM	74	263	3	0	340	8	248	30	0	286	52	7	38	0	97	25	8	9	0	42	765
Total	281	1084	10	0	1375	32	1026	119	0	1177	178	23	193	0	394	88	23	34	0	145	3091
Grand Total	1006	3526	27	0	4559	75	3705	469	0	4249	650	78	649	0	1377	202	62	67	0	331	10516
Apprch %	22.1	77.3	0.6	0		1.8	87.2	11	0		47.2	5.7	47.1	0		61	18.7	20.2	0		
Total %	9.6	33.5	0.3	0	43.4	0.7	35.2	4.5	0	40.4	6.2	0.7	6.2	0	13.1	1.9	0.6	0.6	0	3.1	

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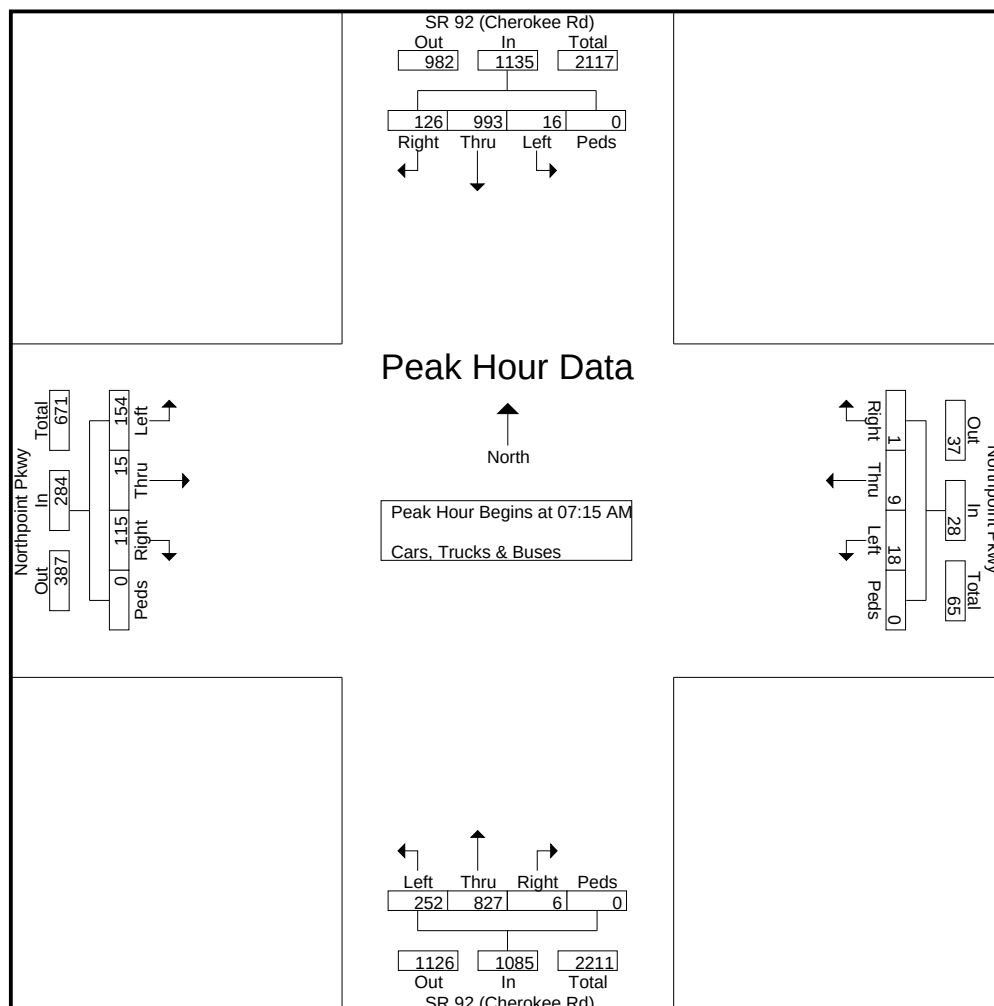
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TMC Data
SR92 @ Northpoint Pkwy

7-9am I 4-6pm

File Name : 36440003
Site Code : 36440003
Start Date : 2/10/2015
Page No : 2

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Northpoint Pkwy Eastbound					Northpoint Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	49	205	2	0	256	6	238	24	0	268	45	4	34	0	83	4	1	1	0	6	613
07:30 AM	60	217	1	0	278	1	278	28	0	307	35	3	28	0	66	3	2	0	0	5	656
07:45 AM	69	206	1	0	276	5	250	39	0	294	43	4	29	0	76	7	2	0	0	9	655
08:00 AM	74	199	2	0	275	4	227	35	0	266	31	4	24	0	59	4	4	0	0	8	608
Total Volume	252	827	6	0	1085	16	993	126	0	1135	154	15	115	0	284	18	9	1	0	28	2532
% App. Total	23.2	76.2	0.6	0		1.4	87.5	11.1	0		54.2	5.3	40.5	0		64.3	32.1	3.6	0		
PHF	.851	.953	.750	.000	.976	.667	.893	.808	.000	.924	.856	.938	.846	.000	.855	.643	.563	.250	.000	.778	.965



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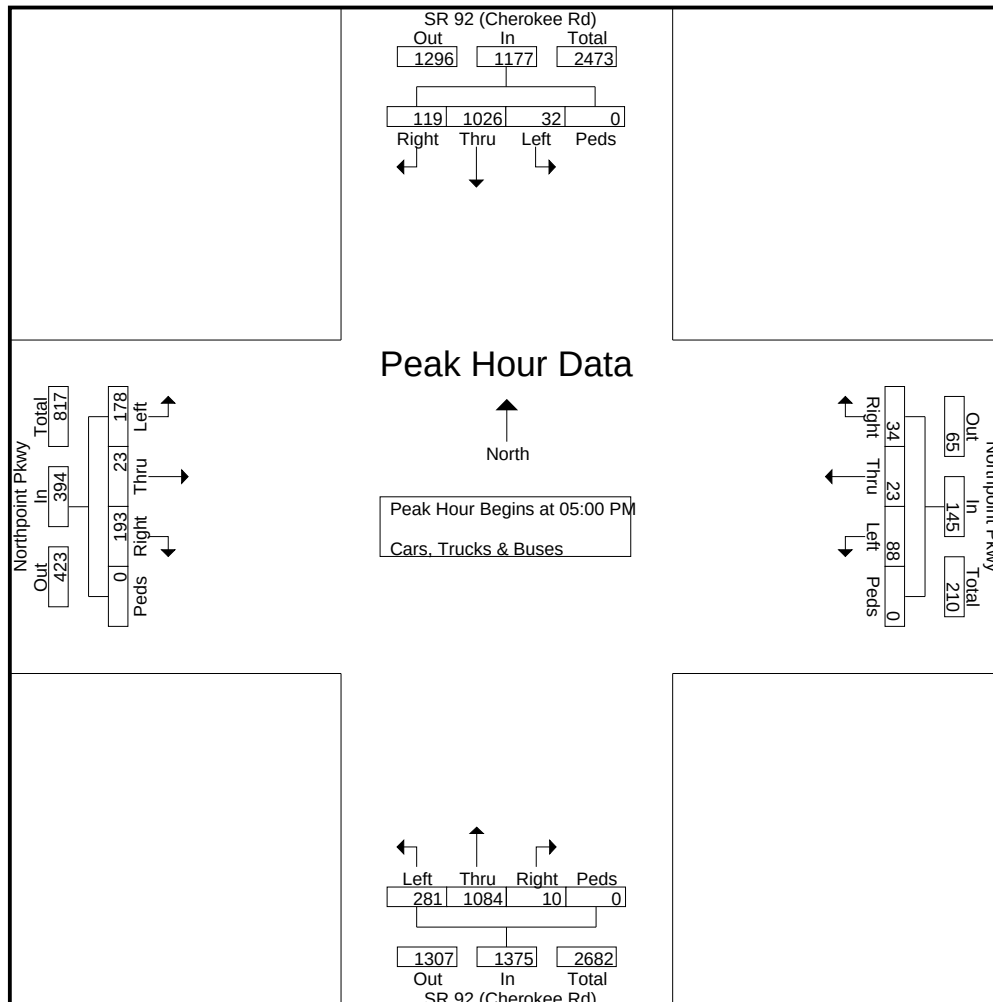
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TMC Data
SR92 @ Northpoint Pkwy

7-9am | 4-6pm

File Name : 36440003
Site Code : 36440003
Start Date : 2/10/2015
Page No : 3

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Northpoint Pkwy Eastbound					Northpoint Pkwy Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	65	245	0	0	310	10	243	26	0	279	44	4	68	0	116	29	5	12	0	46	751
05:15 PM	70	292	3	0	365	6	272	28	0	306	48	7	45	0	100	19	6	5	0	30	801
05:30 PM	72	284	4	0	360	8	263	35	0	306	34	5	42	0	81	15	4	8	0	27	774
05:45 PM	74	263	3	0	340	8	248	30	0	286	52	7	38	0	97	25	8	9	0	42	765
Total Volume	281	1084	10	0	1375	32	1026	119	0	1177	178	23	193	0	394	88	23	34	0	145	3091
% App. Total	20.4	78.8	0.7	0		2.7	87.2	10.1	0		45.2	5.8	49	0		60.7	15.9	23.4	0		
PHF	.949	.928	.625	.000	.942	.800	.943	.850	.000	.962	.856	.821	.710	.000	.849	.759	.719	.708	.000	.788	.965



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TMC Data
SR92 @ Hunt Rd

7-9am I 4-6pm

File Name : 36440004
Site Code : 36440004
Start Date : 2/10/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Hunt Rd Eastbound					Hunt Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	14	156	8	0	178	6	154	0	0	160	2	4	59	0	65	10	3	3	0	16	419
07:15 AM	19	221	12	0	252	9	178	1	0	188	4	12	61	0	77	12	4	2	0	18	535
07:30 AM	32	216	5	0	253	21	198	2	0	221	3	43	82	0	128	15	18	8	0	41	643
07:45 AM	33	211	3	0	247	5	204	2	0	211	3	1	107	0	111	11	6	17	0	34	603
Total	98	804	28	0	930	41	734	5	0	780	12	60	309	0	381	48	31	30	0	109	2200
08:00 AM	29	213	4	0	246	3	182	0	0	185	2	2	74	0	78	1	1	1	0	3	512
08:15 AM	24	208	3	0	235	5	173	1	0	179	3	1	67	0	71	8	0	1	0	9	494
08:30 AM	22	202	2	0	226	4	164	2	0	170	0	0	59	0	59	2	1	1	0	4	459
08:45 AM	28	173	2	0	203	6	155	3	0	164	4	2	70	0	76	5	1	3	0	9	452
Total	103	796	11	0	910	18	674	6	0	698	9	5	270	0	284	16	3	6	0	25	1917
*** BREAK ***																					
04:00 PM	46	167	6	0	219	5	178	2	0	185	0	2	39	0	41	3	3	2	0	8	453
04:15 PM	78	192	9	0	279	4	206	1	0	211	3	2	40	0	45	6	4	1	0	11	546
04:30 PM	73	196	10	0	279	2	212	2	0	216	2	5	52	0	59	6	6	2	0	14	568
04:45 PM	70	208	14	0	292	4	234	3	0	241	1	2	46	0	49	4	3	4	0	11	593
Total	267	763	39	0	1069	15	830	8	0	853	6	11	177	0	194	19	16	9	0	44	2160
05:00 PM	73	216	13	0	302	4	232	2	0	238	4	1	42	0	47	7	4	2	0	13	600
05:15 PM	101	227	10	0	338	5	238	2	0	245	3	1	58	0	62	6	3	3	0	12	657
05:30 PM	68	224	9	0	301	2	243	3	0	248	4	3	76	0	83	5	5	2	0	12	644
05:45 PM	92	216	9	0	317	3	240	2	0	245	1	3	44	0	48	7	4	3	0	14	624
Total	334	883	41	0	1258	14	953	9	0	976	12	8	220	0	240	25	16	10	0	51	2525
Grand Total	802	3246	119	0	4167	88	3191	28	0	3307	39	84	976	0	1099	108	66	55	0	229	8802
Apprch %	19.2	77.9	2.9	0		2.7	96.5	0.8	0		3.5	7.6	88.8	0		47.2	28.8	24	0		
Total %	9.1	36.9	1.4	0	47.3	1	36.3	0.3	0	37.6	0.4	1	11.1	0	12.5	1.2	0.7	0.6	0	2.6	

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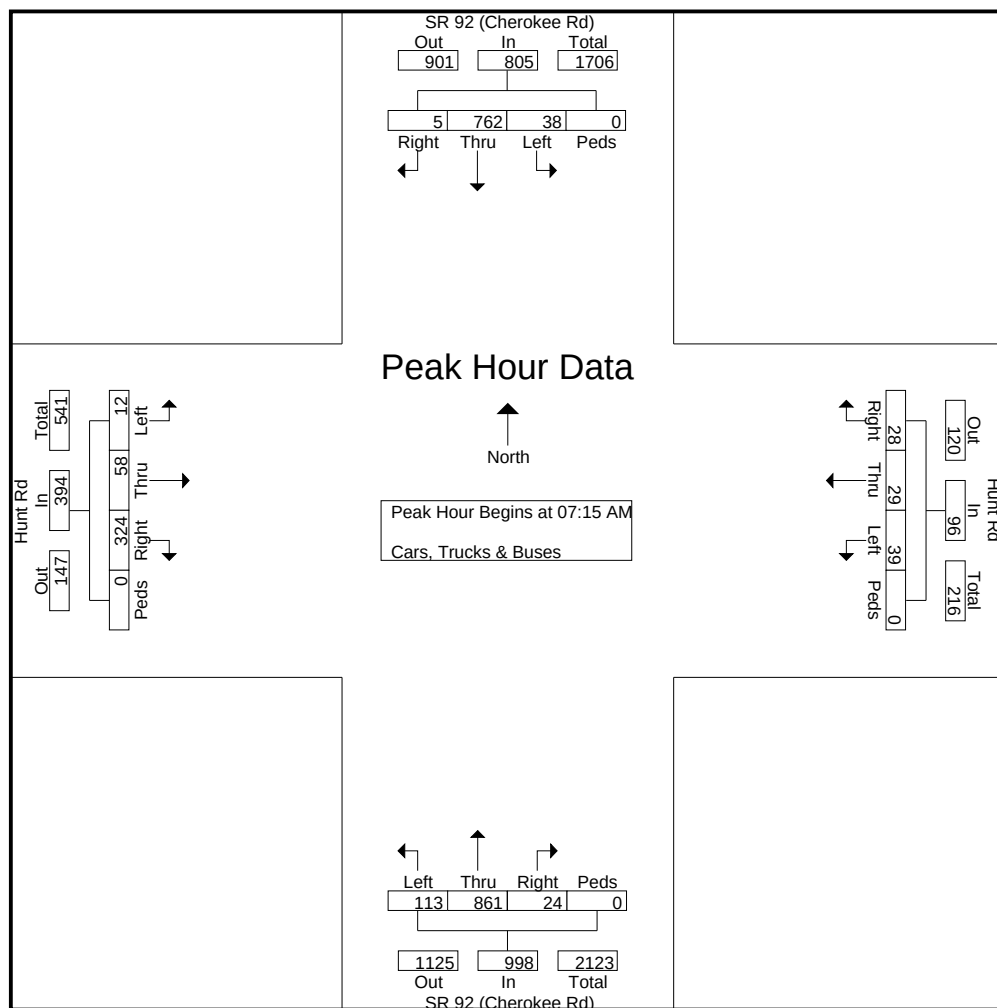
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TMC Data
SR92 @ Hunt Rd

7-9am I 4-6pm

File Name : 36440004
Site Code : 36440004
Start Date : 2/10/2015
Page No : 2

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Hunt Rd Eastbound					Hunt Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	19	221	12	0	252	9	178	1	0	188	4	12	61	0	77	12	4	2	0	18	535
07:30 AM	32	216	5	0	253	21	198	2	0	221	3	43	82	0	128	15	18	8	0	41	643
07:45 AM	33	211	3	0	247	5	204	2	0	211	3	1	107	0	111	11	6	17	0	34	603
08:00 AM	29	213	4	0	246	3	182	0	0	185	2	2	74	0	78	1	1	1	0	3	512
Total Volume	113	861	24	0	998	38	762	5	0	805	12	58	324	0	394	39	29	28	0	96	2293
% App. Total	11.3	86.3	2.4	0		4.7	94.7	0.6	0		3	14.7	82.2	0		40.6	30.2	29.2	0		
PHF	.856	.974	.500	.000	.986	.452	.934	.625	.000	.911	.750	.337	.757	.000	.770	.650	.403	.412	.000	.585	.892



Reliable Traffic Data Services, LLC

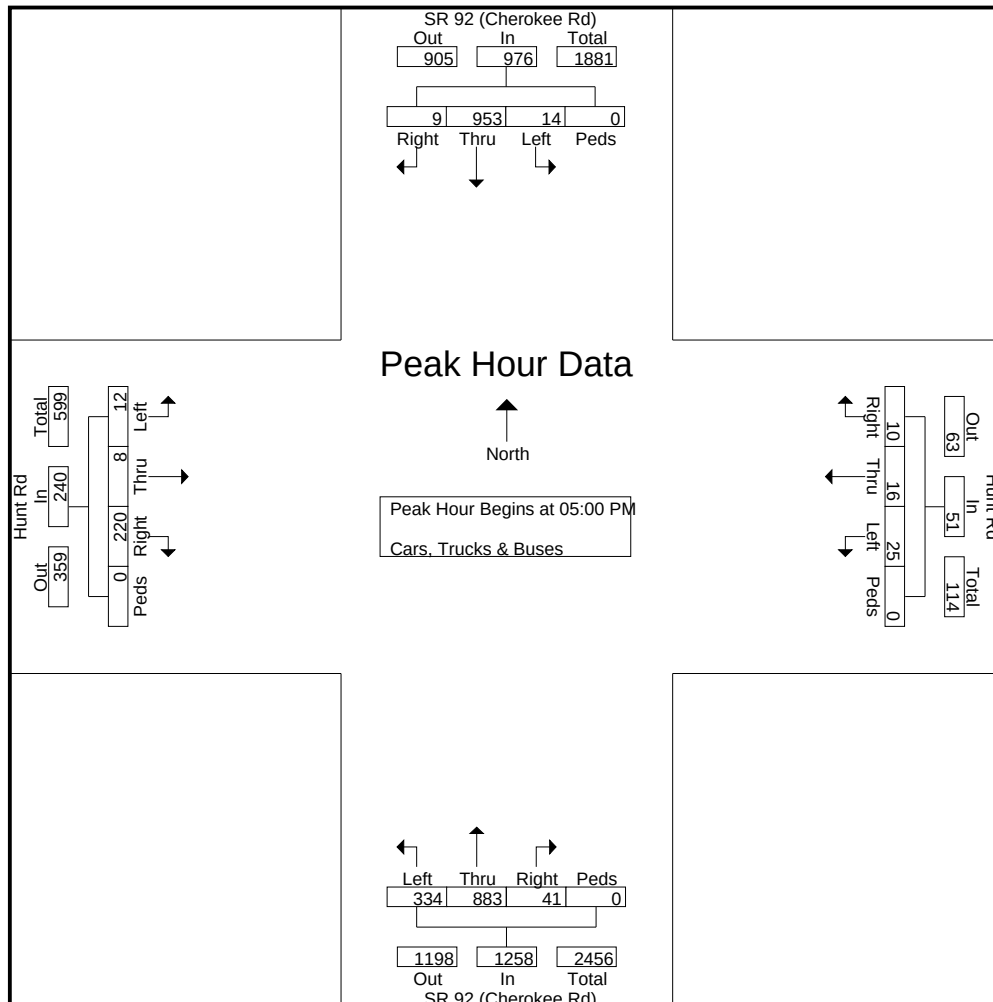
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TMC Data
SR92 @ Hunt Rd

7-9am | 4-6pm

File Name : 36440004
Site Code : 36440004
Start Date : 2/10/2015
Page No : 3

	SR 92 (Cherokee Rd) Northbound					SR 92 (Cherokee Rd) Southbound					Hunt Rd Eastbound					Hunt Rd Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	73	216	13	0	302	4	232	2	0	238	4	1	42	0	47	7	4	2	0	13	600
05:15 PM	101	227	10	0	338	5	238	2	0	245	3	1	58	0	62	6	3	3	0	12	657
05:30 PM	68	224	9	0	301	2	243	3	0	248	4	3	76	0	83	5	5	2	0	12	644
05:45 PM	92	216	9	0	317	3	240	2	0	245	1	3	44	0	48	7	4	3	0	14	624
Total Volume	334	883	41	0	1258	14	953	9	0	976	12	8	220	0	240	25	16	10	0	51	2525
% App. Total	26.6	70.2	3.3	0		1.4	97.6	0.9	0		5	3.3	91.7	0		49	31.4	19.6	0		
PHF	.827	.972	.788	.000	.930	.700	.980	.750	.000	.984	.750	.667	.724	.000	.723	.893	.800	.833	.000	.911	.961



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TMC Data
SR92 @ Old Alabama Rd
7-9am | 4-6pm

File Name : 36440005
Site Code : 36440005
Start Date : 2/10/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Old Alabama Rd Northbound					Old Alabama Rd Southbound					SR 92 (Alabama Rd) Eastbound					SR 92 (Alabama Rd) Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	2	1	5	0	8	30	2	1	0	33	1	163	2	0	166	13	161	4	0	178	385
07:15 AM	5	1	13	0	19	36	3	7	0	46	2	253	0	0	255	11	193	4	0	208	528
07:30 AM	2	5	9	0	16	24	6	6	0	36	2	183	0	0	185	8	207	6	0	221	458
07:45 AM	5	7	9	0	21	31	1	5	0	37	1	256	0	0	257	2	218	9	0	229	544
Total	14	14	36	0	64	121	12	19	0	152	6	855	2	0	863	34	779	23	0	836	1915
08:00 AM	2	0	0	0	2	21	0	2	0	23	9	208	0	0	217	1	165	10	0	176	418
08:15 AM	0	0	2	0	2	23	1	1	0	25	2	223	2	0	227	1	165	14	0	180	434
08:30 AM	2	1	2	0	5	20	0	3	0	23	4	180	2	0	186	1	160	7	0	168	382
08:45 AM	2	0	1	0	3	28	2	2	0	32	6	197	1	0	204	1	177	3	0	181	420
Total	6	1	5	0	12	92	3	8	0	103	21	808	5	0	834	4	667	34	0	705	1654
*** BREAK ***																					
04:00 PM	1	2	4	0	7	14	1	3	0	18	5	163	2	0	170	0	192	20	0	212	407
04:15 PM	2	2	6	0	10	11	1	5	0	17	5	176	5	0	186	1	207	26	0	234	447
04:30 PM	3	1	2	0	6	18	2	9	0	29	9	187	0	0	196	0	220	21	0	241	472
04:45 PM	1	2	5	0	8	11	0	2	0	13	14	189	4	0	207	0	231	24	0	255	483
Total	7	7	17	0	31	54	4	19	0	77	33	715	11	0	759	1	850	91	0	942	1809
05:00 PM	2	1	2	0	5	15	0	3	0	18	9	192	4	0	205	1	254	26	0	281	509
05:15 PM	1	0	2	0	3	15	0	1	0	16	8	221	7	0	236	3	265	29	0	297	552
05:30 PM	1	1	1	0	3	17	0	3	0	20	8	219	4	0	231	1	253	31	0	285	539
05:45 PM	2	2	4	0	8	11	0	3	0	14	5	213	1	0	219	1	236	38	0	275	516
Total	6	4	9	0	19	58	0	10	0	68	30	845	16	0	891	6	1008	124	0	1138	2116
Grand Total	33	26	67	0	126	325	19	56	0	400	90	3223	34	0	3347	45	3304	272	0	3621	7494
Apprch %	26.2	20.6	53.2	0		81.2	4.8	14	0		2.7	96.3	1	0		1.2	91.2	7.5	0		
Total %	0.4	0.3	0.9	0	1.7	4.3	0.3	0.7	0	5.3	1.2	43	0.5	0	44.7	0.6	44.1	3.6	0	48.3	

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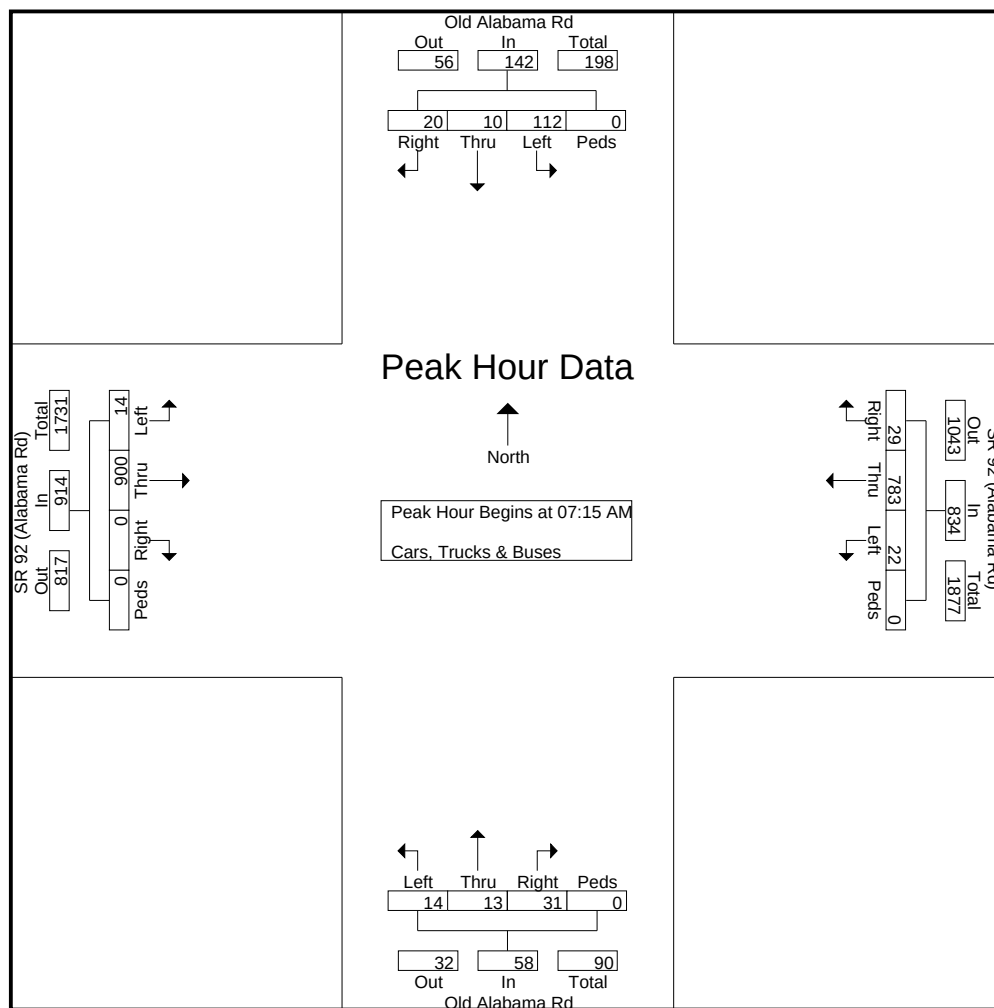
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TMC Data
SR92 @ Old Alabama Rd

7-9am I 4-6pm

File Name : 36440005
Site Code : 36440005
Start Date : 2/10/2015
Page No : 2

	Old Alabama Rd Northbound					Old Alabama Rd Southbound					SR 92 (Alabama Rd) Eastbound					SR 92 (Alabama Rd) Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	5	1	13	0	19	36	3	7	0	46	2	253	0	0	255	11	193	4	0	208	528
07:30 AM	2	5	9	0	16	24	6	6	0	36	2	183	0	0	185	8	207	6	0	221	458
07:45 AM	5	7	9	0	21	31	1	5	0	37	1	256	0	0	257	2	218	9	0	229	544
08:00 AM	2	0	0	0	2	21	0	2	0	23	9	208	0	0	217	1	165	10	0	176	418
Total Volume	14	13	31	0	58	112	10	20	0	142	14	900	0	0	914	22	783	29	0	834	1948
% App. Total	24.1	22.4	53.4	0		78.9	7	14.1	0		1.5	98.5	0	0		2.6	93.9	3.5	0		
PHF	.700	.464	.596	.000	.690	.778	.417	.714	.000	.772	.389	.879	.000	.000	.889	.500	.898	.725	.000	.910	.895



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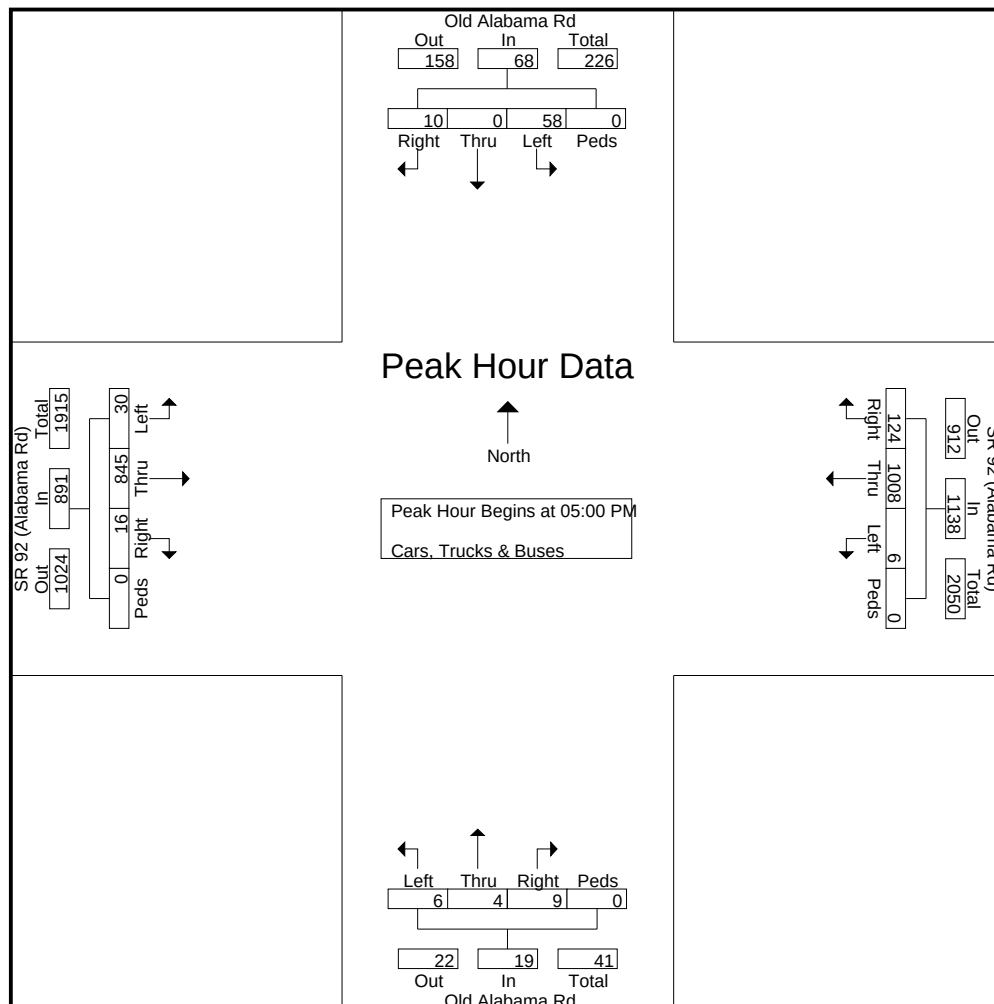
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TMC Data
SR92 @ Old Alabama Rd

7-9am | 4-6pm

File Name : 36440005
Site Code : 36440005
Start Date : 2/10/2015
Page No : 3

	Old Alabama Rd Northbound					Old Alabama Rd Southbound					SR 92 (Alabama Rd) Eastbound					SR 92 (Alabama Rd) Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	1	2	0	5	15	0	3	0	18	9	192	4	0	205	1	254	26	0	281	509
05:15 PM	1	0	2	0	3	15	0	1	0	16	8	221	7	0	236	3	265	29	0	297	552
05:30 PM	1	1	1	0	3	17	0	3	0	20	8	219	4	0	231	1	253	31	0	285	539
05:45 PM	2	2	4	0	8	11	0	3	0	14	5	213	1	0	219	1	236	38	0	275	516
Total Volume	6	4	9	0	19	58	0	10	0	68	30	845	16	0	891	6	1008	124	0	1138	2116
% App. Total	31.6	21.1	47.4	0		85.3	0	14.7	0		3.4	94.8	1.8	0		0.5	88.6	10.9	0		
PHF	.750	.500	.563	.000	.594	.853	.000	.833	.000	.850	.833	.956	.571	.000	.944	.500	.951	.816	.000	.958	.958



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TMC Data
SR92 @ Woodstock Rd
7-9am | 4-6pm

File Name : 36440006
Site Code : 36440006
Start Date : 2/10/2015
Page No : 1

Groups Printed- Cars, Trucks & Buses

	Woodstock Rd Northbound					Woodstock Rd Southbound					SR 92 (Alabama Rd) Eastbound					SR 92 (Alabama Rd) Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	9	39	0	52	51	20	44	0	115	17	206	6	0	229	21	143	32	0	196	592
07:15 AM	3	12	42	0	57	75	14	34	0	123	27	243	3	0	273	22	177	28	0	227	680
07:30 AM	4	20	53	0	77	85	20	41	0	146	32	252	3	0	287	23	174	18	0	215	725
07:45 AM	2	26	65	0	93	58	25	37	0	120	30	246	4	0	280	26	163	18	0	207	700
Total	13	67	199	0	279	269	79	156	0	504	106	947	16	0	1069	92	657	96	0	845	2697
08:00 AM	2	11	56	0	69	48	16	34	0	98	32	218	4	0	254	33	138	11	0	182	603
08:15 AM	1	10	50	0	61	47	16	24	0	87	29	213	2	0	244	29	139	20	0	188	580
08:30 AM	0	12	43	0	55	28	19	23	0	70	23	205	6	0	234	29	151	12	0	192	551
08:45 AM	0	20	31	0	51	32	14	31	0	77	23	195	1	0	219	26	138	11	0	175	522
Total	3	53	180	0	236	155	65	112	0	332	107	831	13	0	951	117	566	54	0	737	2256
*** BREAK ***																					
04:00 PM	2	25	22	0	49	20	23	25	0	68	43	137	3	0	183	49	208	32	0	289	589
04:15 PM	0	19	20	0	39	23	22	27	0	72	40	148	2	0	190	44	226	58	0	328	629
04:30 PM	5	26	36	0	67	31	16	28	0	75	39	145	3	0	187	46	204	32	0	282	611
04:45 PM	5	26	30	0	61	28	13	26	0	67	31	137	4	0	172	51	225	55	0	331	631
Total	12	96	108	0	216	102	74	106	0	282	153	567	12	0	732	190	863	177	0	1230	2460
05:00 PM	5	28	24	0	57	37	19	20	0	76	28	166	3	0	197	43	230	48	0	321	651
05:15 PM	7	38	21	0	66	29	21	53	0	103	54	178	18	0	250	57	277	75	0	409	828
05:30 PM	3	35	39	0	77	35	14	30	0	79	48	132	6	0	186	63	274	47	0	384	726
05:45 PM	1	29	40	0	70	29	22	29	0	80	34	204	3	0	241	65	263	62	0	390	781
Total	16	130	124	0	270	130	76	132	0	338	164	680	30	0	874	228	1044	232	0	1504	2986
Grand Total	44	346	611	0	1001	656	294	506	0	1456	530	3025	71	0	3626	627	3130	559	0	4316	10399
Apprch %	4.4	34.6	61	0		45.1	20.2	34.8	0		14.6	83.4	2	0		14.5	72.5	13	0		
Total %	0.4	3.3	5.9	0	9.6	6.3	2.8	4.9	0	14	5.1	29.1	0.7	0	34.9	6	30.1	5.4	0	41.5	

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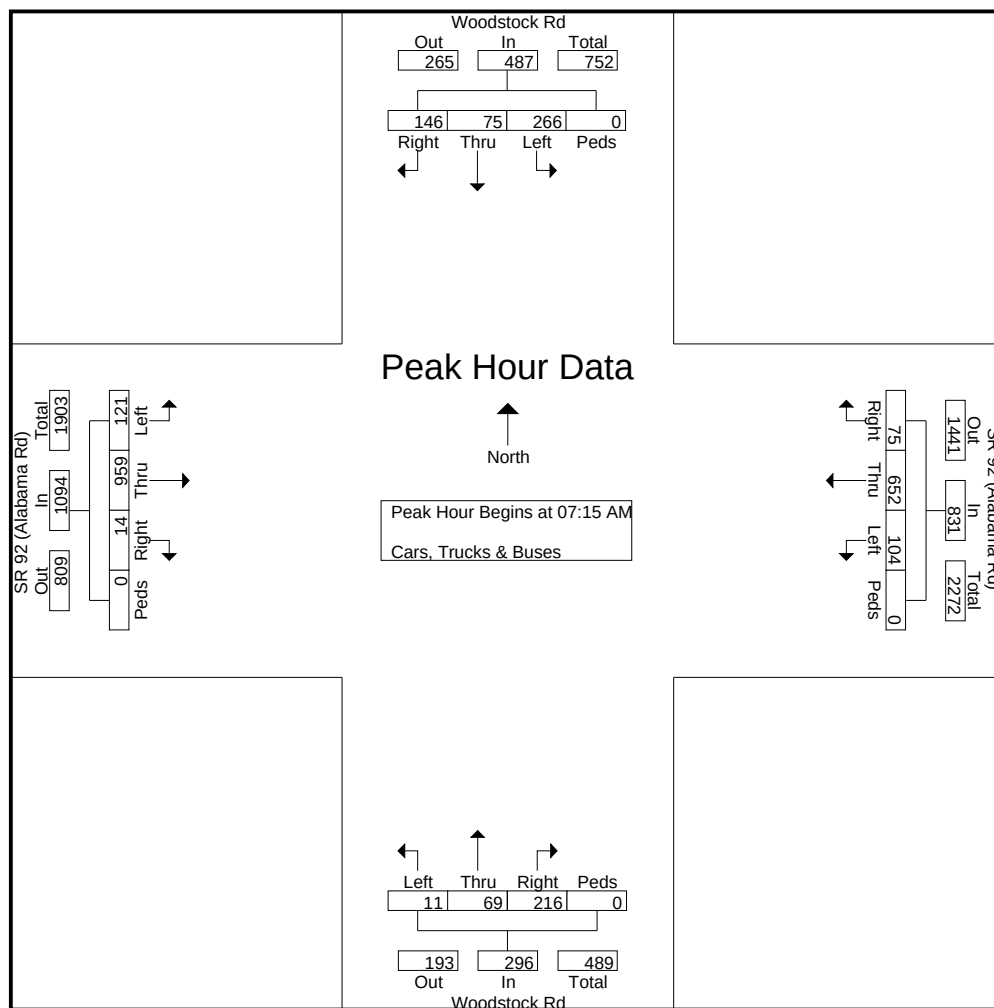
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TMC Data
SR92 @ Woodstock Rd

7-9am I 4-6pm

File Name : 36440006
Site Code : 36440006
Start Date : 2/10/2015
Page No : 2

	Woodstock Rd Northbound					Woodstock Rd Southbound					SR 92 (Alabama Rd) Eastbound					SR 92 (Alabama Rd) Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	12	42	0	57	75	14	34	0	123	27	243	3	0	273	22	177	28	0	227	680
07:30 AM	4	20	53	0	77	85	20	41	0	146	32	252	3	0	287	23	174	18	0	215	725
07:45 AM	2	26	65	0	93	58	25	37	0	120	30	246	4	0	280	26	163	18	0	207	700
08:00 AM	2	11	56	0	69	48	16	34	0	98	32	218	4	0	254	33	138	11	0	182	603
Total Volume	11	69	216	0	296	266	75	146	0	487	121	959	14	0	1094	104	652	75	0	831	2708
% App. Total	3.7	23.3	73	0		54.6	15.4	30	0		11.1	87.7	1.3	0		12.5	78.5	9	0		
PHF	.688	.663	.831	.000	.796	.782	.750	.890	.000	.834	.945	.951	.875	.000	.953	.788	.921	.670	.000	.915	.934



Reliable Traffic Data Services, LLC

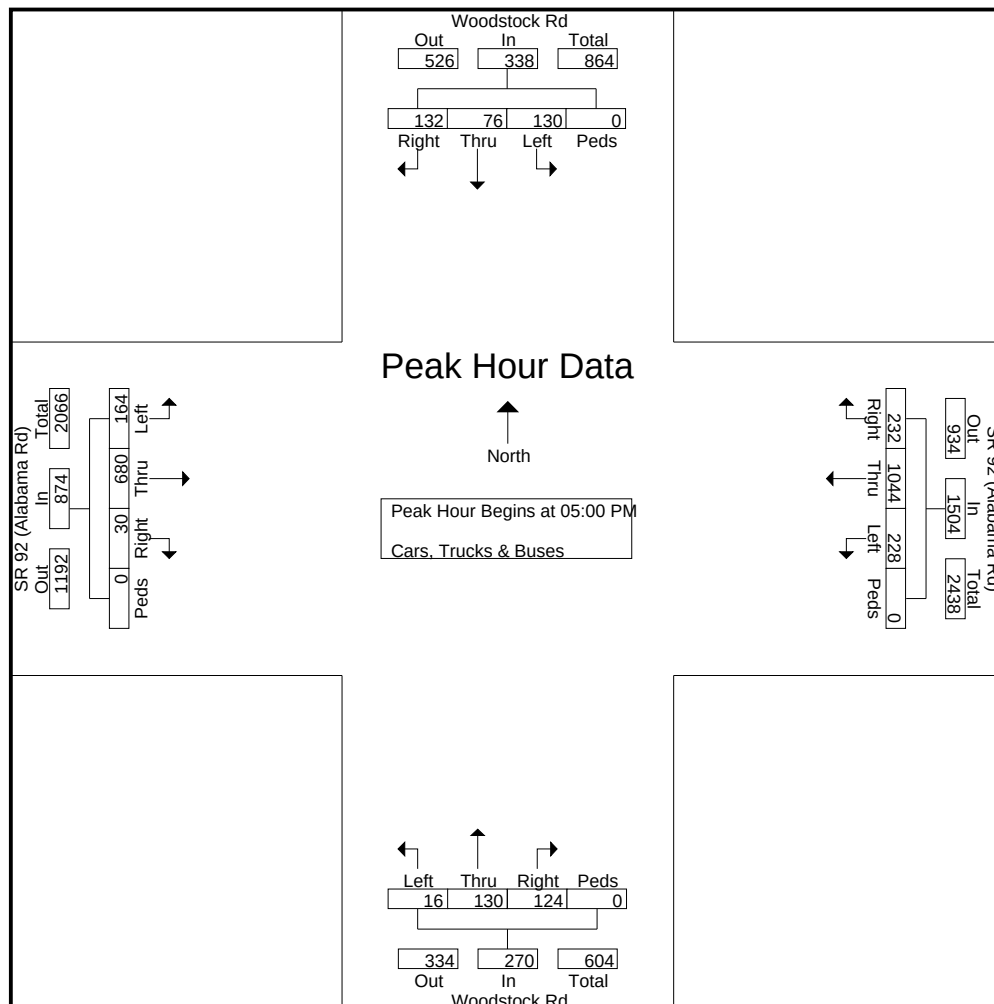
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TMC Data
SR92 @ Woodstock Rd

7-9am | 4-6pm

File Name : 36440006
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Start Date : 2/10/2015
Page No : 3

	Woodstock Rd Northbound					Woodstock Rd Southbound					SR 92 (Alabama Rd) Eastbound					SR 92 (Alabama Rd) Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	5	28	24	0	57	37	19	20	0	76	28	166	3	0	197	43	230	48	0	321	651
05:15 PM	7	38	21	0	66	29	21	53	0	103	54	178	18	0	250	57	277	75	0	409	828
05:30 PM	3	35	39	0	77	35	14	30	0	79	48	132	6	0	186	63	274	47	0	384	726
05:45 PM	1	29	40	0	70	29	22	29	0	80	34	204	3	0	241	65	263	62	0	390	781
Total Volume	16	130	124	0	270	130	76	132	0	338	164	680	30	0	874	228	1044	232	0	1504	2986
% App. Total	5.9	48.1	45.9	0		38.5	22.5	39.1	0		18.8	77.8	3.4	0		15.2	69.4	15.4	0		
PHF	.571	.855	.775	.000	.877	.878	.864	.623	.000	.820	.759	.833	.417	.000	.874	.877	.942	.773	.000	.919	.902





3644

(SR 92)
Chardice Rd
(45 mph)

Hunt Rd
(35 mph)

Northpoint Pkwy
(35 mph)

I-75
SB Off-Ramp

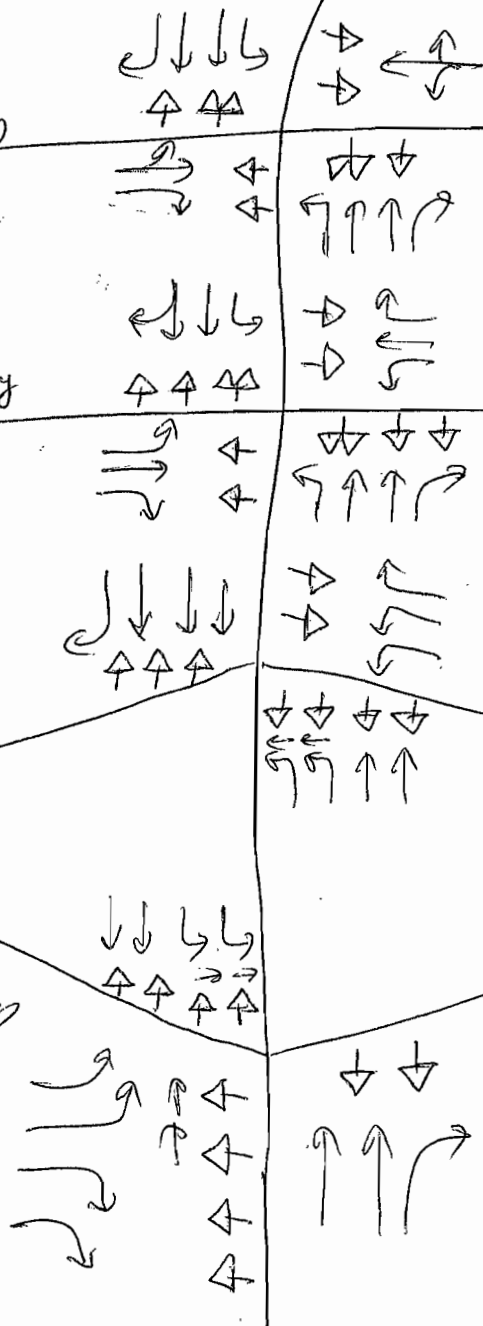
④

③

②

I-75 NB Off-Ramp

①





3644

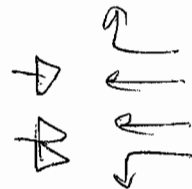
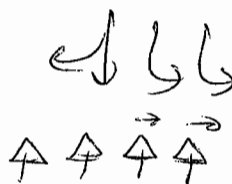
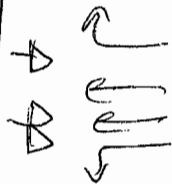
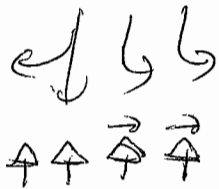
Old Alabama Rd
(35 mph)

⑤

Woodstock Rd
(45 mph)

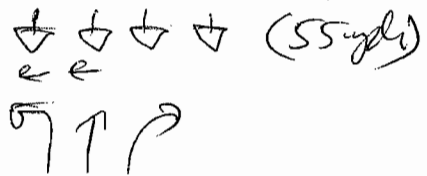
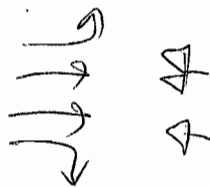
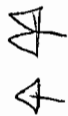
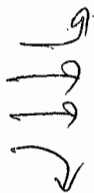
⑥

SR 92



Alabama Rd

Alabama Rd



(55 mph)

GRTA Notice of Decision



LETTER OF UNDERSTANDING

February 17, 2015

Misti Martin
Cherokee Office of Economic Development
3605 Marietta Highway
Canton, Georgia 30114

RE: Cherokee 75 Corporate Park DRI

Dear Ms. Martin:

The purpose of this letter is to document the discussions during the Pre-Review and Methodology Meeting held at ARC's office on February 2, 2015 and DCA Initial Information Form filed on February 12, 2015 regarding **Cherokee 75 Corporate Park DRI**. Some of the following items were discussed in this meeting and should assist you and your consultant team in preparing the DRI Review Package.

PROJECT OVERVIEW

- The project is located in unincorporated Cherokee County. The proposed development is located on the northwest corner of the intersection of Alabama Road/SR 92 and James Dupree Lane.
- The DRI trigger for this development is a land disturbance permit.
- The proposed development is a total size of 1,201,500 square feet consisting of eight tracts of industrial park space.
- The projected build out for this DRI is 2020.
- The applicant is applying for approval under GRTA's non-expedited review process.

STUDY NETWORK

1. SR 92/Alabama Road at I-75 Northbound Ramps
2. SR 92/Alabama Road at I-75 Southbound Ramps
3. SR 92/Alabama Road at Northpoint Parkway
4. SR 92/Alabama Road at Hunt Road
5. SR 92/Alabama Road at Old Alabama Road
6. SR 92/Alabama Road at Cherokee Parkway (site driveway)
7. SR 92/Alabama Road at Woodstock Road
8. All site driveways

METHODOLOGY

- All intersections identified as within the study network shall be analyzed during the AM and PM peak hours for (1) existing conditions, (2) future "no-build" conditions [may not be applicable for the site driveways], and (3) future "build" conditions. This DRI shall be reviewed in one phase to be completed by 2020.
- Capacity analysis shall be based on turning movement counts collected not more than 12-months prior to the date of the actual DRI submittal to GRTA. As appropriate, pedestrian counts and heavy

vehicle counts shall be collected with vehicle counts and considered within the capacity analysis. Turning movement counts shall be collected while local schools are in session and ordinarily not between the week of Thanksgiving and the second week of January or any week of a major holiday.

- A 1.0% background traffic growth rate shall be used for all roadways.
- The level of service standard for all analyses shall be LOS D.
- No trip reductions are allowed due to single industrial use.
- Default values should not be assumed in the traffic modeling. Existing conditions shall be taken into account.
- The applicant shall research TIP, STIP, RTP, and GDOT's construction work program, as well as any local government plans (SPLOST, CIP, etc.), to determine the open-to-traffic date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. This information shall be included within the traffic analysis.

ADDITIONAL INFORMATION

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

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

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

DRI REVIEW PACKAGE CHECKLIST

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

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

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

DRI REVIEW PACKAGE SUBMITTAL

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

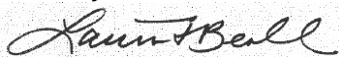
- Provide one (1) paper copy of all materials:
 - Transportation analysis
 - Site Plan
- Provide one (1) CD-ROM with electronic versions of all submittal documents:
 - Provide a PDF of each document
 - Provide the native format for each document
 - .dwg is the preferred CAD format (AutoCAD)
 - .doc is the preferred word processing format (Word)
 - .xls is the preferred spreadsheet format (Excel)
 - .sy6 or .sy7 is the preferred capacity analysis format (Synchro)

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

GDOT DISTRICT 6	CHEROKEE CO PLANNING	ATLANTA REGIONAL COMMISSION
Carla Ham P.O. Box 10 Cartersville, GA 30120-0010	Margaret Stallings 1130 Bluffs Pkwy Canton, GA 30114	Jon Tuley 40 Courtland Street, NE Atlanta, Georgia 30303

We encourage your consultant team to verify the items covered in this letter prior to compiling the submittal materials. If you have any questions, please feel free to contact me directly at 404-463-3068 (lbeall@grta.org).

Sincerely,



Laura F. Beall, AICP
Program Manager

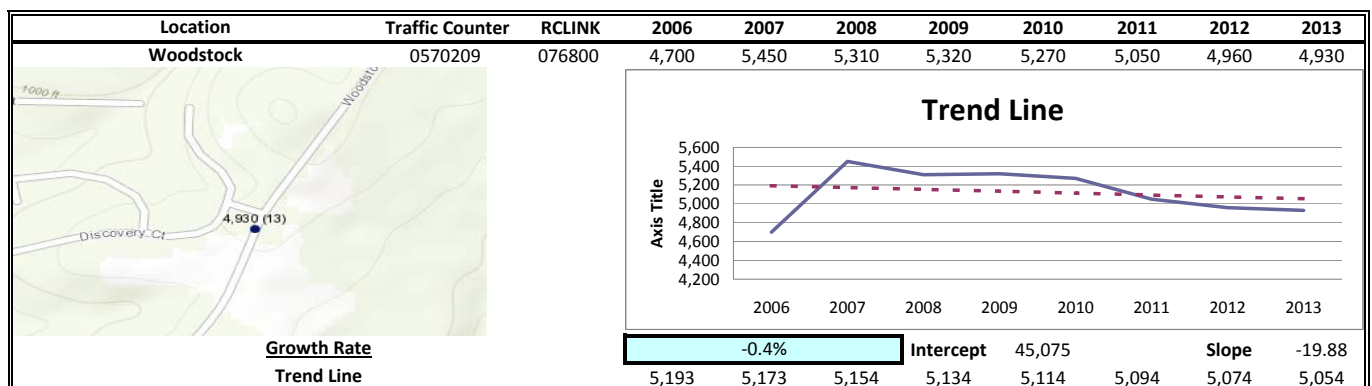
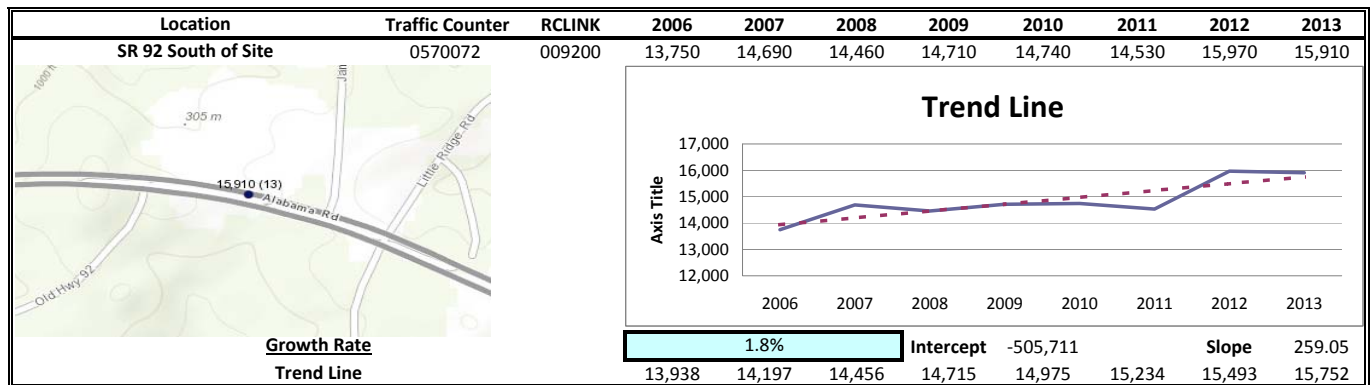
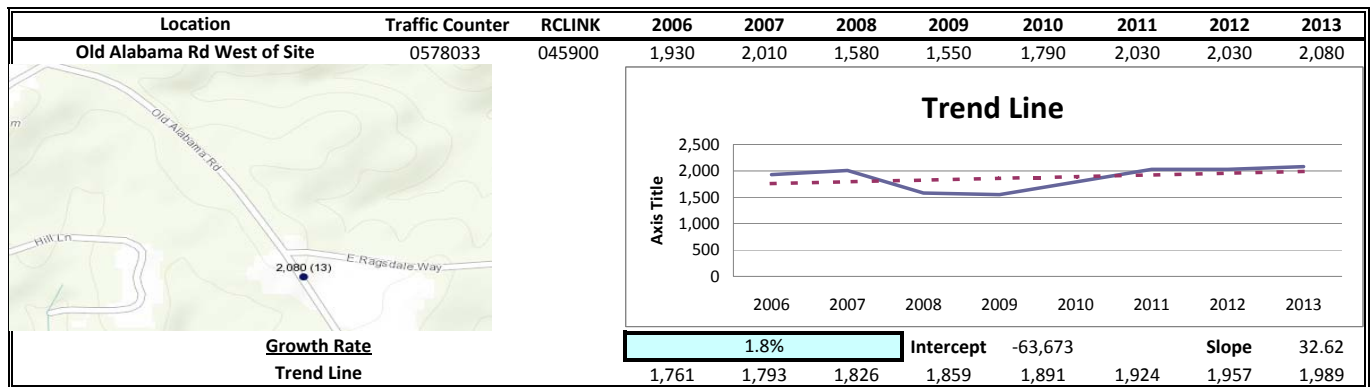
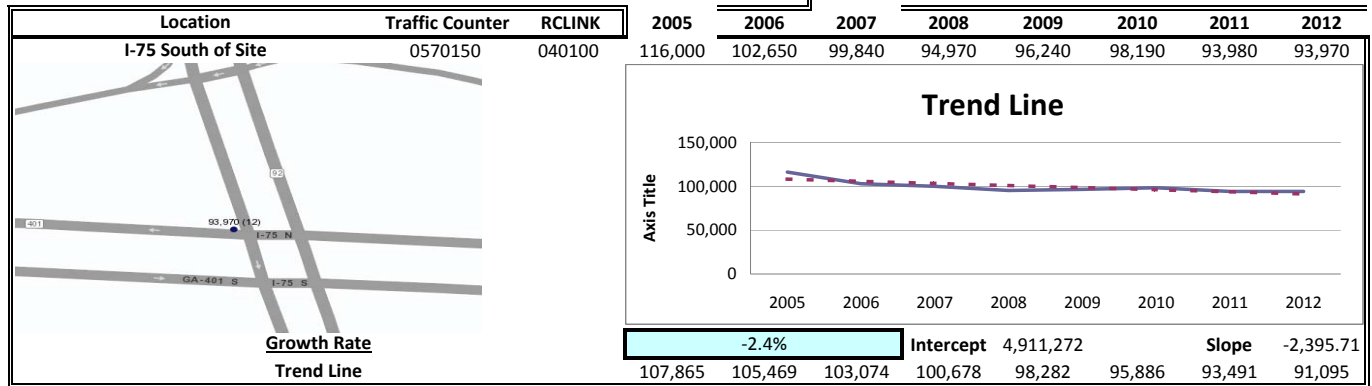
cc:

Jon West, DCA
Jon Tuley, ARC
Carla Ham, GDOT District 6
Christine Dobbs, City of Acworth

Cherokee Co Planning, Margaret Stallings
Cherokee Co Engineering, Brett Buchanan
Heath Tippens, Cherokee Office of Economic Development
Geoff Warr, A & R Engineering Inc.
Sotir Christopher, Christopher Planning & Engineering

Linear Regression of Daily Traffic

Location	Growth Rate	Station ID	Route	2005	2006	2007	2008	2009	2010	2011	2012
I-75 South of Site	-2.4%	0570150	040100	116,000	102,650	99,840	94,970	96,240	98,190	93,980	93,970
Location	Growth Rate	Station ID	Route	2006	2007	2008	2009	2010	2011	2012	2013
I Alabama Rd West of Site	1.8%	0578033	045900	1,930	2,010	1,580	1,550	1,790	2,030	2,030	2,080
SR 92 South of Site	1.8%	0570072	009200	13,750	14,690	14,460	14,710	14,740	14,530	15,970	15,910
Woodstock	-0.4%	0570209	076800	4,700	5,450	5,310	5,320	5,270	5,050	4,960	4,930



Existing Intersection Analysis

Queues

Existing AM

1: I-75 SB Off-Ramp & SR 92

3/13/2015



Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰↰	↰↰	↰	↰↰	↰↰
Volume (vph)	297	237	849	364	222	656
Lane Group Flow (vph)	316	279	866	414	252	745
Turn Type	Prot	custom		Perm	Prot	
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	12.0	12.0	6.0	12.0
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	22.0
Total Split (s)	31.0	31.0	66.0	66.0	36.0	66.0
Total Split (%)	23.3%	23.3%	49.6%	49.6%	27.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.49	0.37	0.68	0.50	0.46	0.34
Control Delay	26.5	5.3	20.5	4.1	27.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	5.3	20.5	4.1	27.8	6.3
Queue Length 50th (ft)	52	0	135	0	41	57
Queue Length 95th (ft)	107	27	231	48	87	97
Internal Link Dist (ft)			1456			818
Turn Bay Length (ft)	255	230				
Base Capacity (vph)	1412	1310	3316	1509	1694	3539
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	0.22	0.21	0.26	0.27	0.15	0.21

Intersection Summary

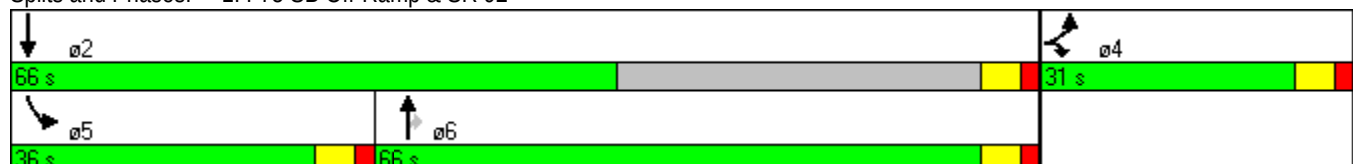
Cycle Length: 133

Actuated Cycle Length: 61.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-75 SB Off-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

Existing AM

1: I-75 SB Off-Ramp & SR 92

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	297	0	237	0	0	0	0	849	364	222	656	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		0.88					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		2787					3539	1583	3433	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					3539	1583	3433	3539	
Peak-hour factor, PHF	0.94	0.25	0.85	0.92	0.92	0.92	0.92	0.98	0.88	0.88	0.88	0.92
Adj. Flow (vph)	316	0	279	0	0	0	0	866	414	252	745	0
RTOR Reduction (vph)	0	0	226	0	0	0	0	0	265	0	0	0
Lane Group Flow (vph)	316	0	53	0	0	0	0	866	149	252	745	0
Turn Type	Prot		custom						Perm		Prot	
Protected Phases	4		4					6		5	2	
Permitted Phases								6				
Actuated Green, G (s)	11.7		11.7					22.2	22.2	9.8	38.0	
Effective Green, g (s)	11.7		11.7					22.2	22.2	9.8	38.0	
Actuated g/C Ratio	0.19		0.19					0.36	0.36	0.16	0.62	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0		2.0					6.0	6.0	2.0	5.0	
Lane Grp Cap (vph)	651		528					1273	570	545	2180	
v/s Ratio Prot	c0.09		0.02					c0.24		0.07	c0.21	
v/s Ratio Perm								0.09				
v/c Ratio	0.49		0.10					0.68	0.26	0.46	0.34	
Uniform Delay, d1	22.3		20.7					16.7	14.0	23.6	5.8	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2		0.0					2.3	0.7	0.2	0.2	
Delay (s)	22.5		20.7					19.0	14.6	23.8	6.0	
Level of Service	C		C					B	B	C	A	
Approach Delay (s)		21.7			0.0			17.6			10.5	
Approach LOS		C			A			B			B	
Intersection Summary												
HCM Average Control Delay			16.0									
HCM Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			61.7									
Intersection Capacity Utilization			61.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

Existing AM

2: I-75 NB On-Ramp & SR 92

3/13/2015



Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↰	↰	↰↰	↰↰	↰↰↰	↰
Volume (vph)	180	194	164	970	718	431
Lane Group Flow (vph)	217	220	213	1021	764	560
Turn Type	Prot	custom	Prot			Perm
Protected Phases	8	8	1	6	2	
Permitted Phases						2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	12.0	12.0	12.0
Minimum Split (s)	21.0	21.0	21.0	22.0	22.0	22.0
Total Split (s)	50.0	50.0	21.0	46.0	46.0	46.0
Total Split (%)	42.7%	42.7%	17.9%	39.3%	39.3%	39.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	None	None	None	Min	Min	Min
v/c Ratio	0.29	0.54	0.26	0.47	0.54	0.67
Control Delay	22.2	19.5	22.7	8.3	21.7	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	19.5	22.7	8.3	21.7	6.6
Queue Length 50th (ft)	37	48	35	93	89	0
Queue Length 95th (ft)	57	102	58	183	143	29
Internal Link Dist (ft)				818	960	
Turn Bay Length (ft)	285					
Base Capacity (vph)	2444	1150	814	3298	3217	1207
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	0.09	0.19	0.26	0.31	0.24	0.46

Intersection Summary

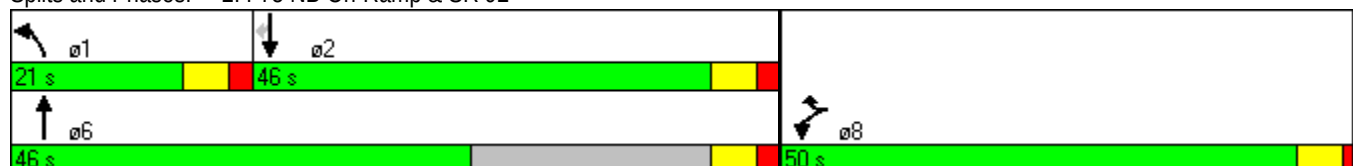
Cycle Length: 117

Actuated Cycle Length: 64

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: I-75 NB On-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

2: I-75 NB On-Ramp & SR 92

Existing AM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	180	0	194	164	970	0	0	718	431
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				0.97		1.00	0.97	0.95			0.91	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3433		1583	3433	3539			5085	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3433		1583	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.92	0.88	0.77	0.95	0.92	0.92	0.94	0.77
Adj. Flow (vph)	0	0	0	217	0	220	213	1021	0	0	764	560
RTOR Reduction (vph)	0	0	0	0	0	63	0	0	0	0	0	405
Lane Group Flow (vph)	0	0	0	217	0	157	213	1021	0	0	764	155
Turn Type				Prot		custom	Prot					Perm
Protected Phases				8		8	1	6			2	
Permitted Phases												2
Actuated Green, G (s)				13.9		13.9	15.2	38.9			17.7	17.7
Effective Green, g (s)				13.9		13.9	15.2	38.9			17.7	17.7
Actuated g/C Ratio				0.22		0.22	0.24	0.61			0.28	0.28
Clearance Time (s)				5.0		5.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				5.0		5.0	2.0	5.0			5.0	5.0
Lane Grp Cap (vph)				748		345	818	2158			1411	439
v/s Ratio Prot				0.06		c0.10	0.06	c0.29			c0.15	
v/s Ratio Perm												0.10
v/c Ratio				0.29		0.45	0.26	0.47			0.54	0.35
Uniform Delay, d1				20.8		21.7	19.7	6.8			19.6	18.5
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.5		2.0	0.1	0.3			0.8	1.0
Delay (s)				21.3		23.6	19.8	7.2			20.3	19.5
Level of Service				C		C	B	A			C	B
Approach Delay (s)		0.0			22.5			9.4			20.0	
Approach LOS		A			C			A			B	
Intersection Summary												
HCM Average Control Delay			16.0			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			63.8			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			61.7%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Northpoint Pkwy & SR 92

Existing AM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	154	15	115	18	9	1	252	827	6	16	993
Lane Group Flow (vph)	179	16	135	28	16	4	296	871	8	24	1272
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm	
Protected Phases		8			4		1	6			2
Permitted Phases	8		8	4		4	6		6	2	
Detector Phase	8	8	8	4	4	4	1	6	6	2	2
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	15.0	15.0	15.0	15.0
Minimum Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	14.0	29.0	29.0	29.0	29.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	61.0	61.0	46.0	46.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.8%	64.2%	64.2%	48.4%	48.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.70	0.05	0.33	0.11	0.05	0.01	1.00	0.36	0.01	0.07	0.69
Control Delay	49.8	28.9	7.7	30.4	28.9	18.0	72.2	7.2	3.8	14.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	28.9	7.7	30.4	28.9	18.0	72.2	7.2	3.8	14.0	19.6
Queue Length 50th (ft)	102	8	0	14	8	0	~96	100	0	7	278
Queue Length 95th (ft)	150	23	38	24	15	1	#258	167	4	17	409
Internal Link Dist (ft)		1463			2848			960			3675
Turn Bay Length (ft)	90			220		220	235			320	
Base Capacity (vph)	410	549	562	410	549	469	296	2438	1093	322	1855
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.03	0.24	0.07	0.03	0.01	1.00	0.36	0.01	0.07	0.69
Intersection Summary											
Cycle Length: 95											
Actuated Cycle Length: 95											
Offset: 10 (11%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
~ Volume exceeds capacity, queue is theoretically infinite.											
Queue shown is maximum after two cycles.											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											

Splits and Phases: 3: Northpoint Pkwy & SR 92



HCM Signalized Intersection Capacity Analysis

3: Northpoint Pkwy & SR 92

Existing AM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	154	15	115	18	9	1	252	827	6	16	993	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3474	
Flt Permitted	0.75	1.00	1.00	0.75	1.00	1.00	0.12	1.00	1.00	0.33	1.00	
Satd. Flow (perm)	1392	1863	1583	1392	1863	1583	216	3539	1583	607	3474	
Peak-hour factor, PHF	0.86	0.94	0.85	0.64	0.56	0.25	0.85	0.95	0.75	0.67	0.89	0.81
Adj. Flow (vph)	179	16	135	28	16	4	296	871	8	24	1116	156
RTOR Reduction (vph)	0	0	110	0	0	3	0	0	2	0	9	0
Lane Group Flow (vph)	179	16	25	28	16	1	296	871	6	24	1263	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm		
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4		4	6		6	2		
Actuated Green, G (s)	17.6	17.6	17.6	17.6	17.6	17.6	65.4	65.4	65.4	50.4	50.4	
Effective Green, g (s)	17.6	17.6	17.6	17.6	17.6	17.6	65.4	65.4	65.4	50.4	50.4	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.69	0.69	0.69	0.53	0.53	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	258	345	293	258	345	293	296	2436	1090	322	1843	
v/s Ratio Prot		0.01			0.01		c0.09	0.25			0.36	
v/s Ratio Perm	c0.13		0.02	0.02		0.00	c0.59		0.00	0.04		
v/c Ratio	0.69	0.05	0.09	0.11	0.05	0.00	1.00	0.36	0.01	0.07	0.69	
Uniform Delay, d1	36.2	31.8	32.0	32.2	31.8	31.5	21.7	6.1	4.6	10.9	16.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.8	0.1	0.1	0.2	0.1	0.0	52.3	0.4	0.0	0.4	2.1	
Delay (s)	44.0	31.9	32.2	32.4	31.9	31.5	74.0	6.5	4.6	11.4	18.5	
Level of Service	D	C	C	C	C	C	E	A	A	B	B	
Approach Delay (s)		38.6			32.1			23.5			18.4	
Approach LOS		D			C			C			B	
Intersection Summary												
HCM Average Control Delay			23.1		HCM Level of Service					C		
HCM Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			95.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			75.6%		ICU Level of Service					D		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
4: Hunt Rd & SR 92

Existing AM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	12	58	324	39	29	113	861	24	38	762	5
Lane Group Flow (vph)	0	187	426	0	200	131	888	48	84	819	8
Turn Type	Perm		Perm	Perm		pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8	1	6		5	2	
Permitted Phases	4		4	8		6		6	2		2
Detector Phase	4	4	4	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	18.0	57.0	57.0	13.0	52.0	52.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
v/c Ratio		0.47	0.85		0.64	0.31	0.46	0.05	0.22	0.46	0.01
Control Delay		36.1	34.4		39.2	10.1	16.4	9.3	9.9	18.4	12.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		36.1	34.4		39.2	10.1	16.4	9.3	9.9	18.4	12.6
Queue Length 50th (ft)		102	140		100	27	173	7	17	160	1
Queue Length 95th (ft)		55	176		58	67	296	13	23	293	7
Internal Link Dist (ft)		1089			2278		3675			4253	
Turn Bay Length (ft)			110			390		80	425		110
Base Capacity (vph)		828	836		625	480	1951	883	392	1785	801
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.23	0.51		0.32	0.27	0.46	0.05	0.21	0.46	0.01

Intersection Summary

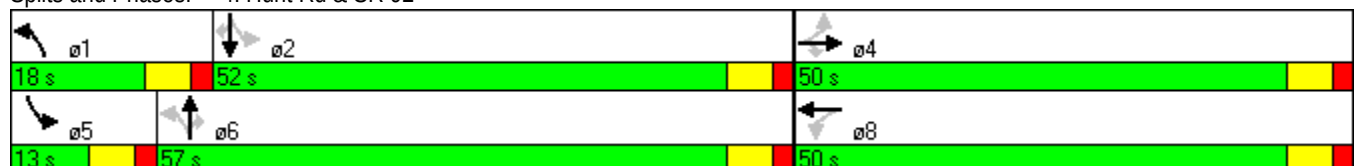
Cycle Length: 120

Actuated Cycle Length: 96.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Hunt Rd & SR 92



HCM Signalized Intersection Capacity Analysis

4: Hunt Rd & SR 92

Existing AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	58	324	39	29	28	113	861	24	38	762	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1855	1583		1751		1770	3539	1583	1770	3539	1583
Flt Permitted		0.97	1.00		0.75		0.26	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)		1800	1583		1329		493	3539	1583	519	3539	1583
Peak-hour factor, PHF	0.75	0.34	0.76	0.65	0.40	0.41	0.86	0.97	0.50	0.45	0.93	0.62
Adj. Flow (vph)	16	171	426	60	72	68	131	888	48	84	819	8
RTOR Reduction (vph)	0	0	156	0	19	0	0	0	10	0	0	2
Lane Group Flow (vph)	0	187	270	0	181	0	131	888	38	84	819	6
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		21.3	21.3		21.3		61.7	53.3	53.3	55.5	50.2	50.2
Effective Green, g (s)		21.3	21.3		21.3		61.7	53.3	53.3	55.5	50.2	50.2
Actuated g/C Ratio		0.22	0.22		0.22		0.63	0.54	0.54	0.57	0.51	0.51
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		392	344		289		420	1927	862	362	1815	812
v/s Ratio Prot							c0.03	c0.25		0.01	0.23	
v/s Ratio Perm		0.10	c0.17		0.14		0.17		0.02	0.12		0.00
v/c Ratio		0.48	0.79		0.63		0.31	0.46	0.04	0.23	0.45	0.01
Uniform Delay, d1		33.4	36.1		34.7		8.2	13.6	10.4	9.9	15.1	11.7
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	11.2		4.2		0.4	0.8	0.1	0.3	0.8	0.0
Delay (s)		34.4	47.4		38.9		8.6	14.4	10.5	10.2	15.9	11.7
Level of Service		C	D		D		A	B	B	B	B	B
Approach Delay (s)		43.4			38.9			13.5			15.4	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay		22.5					HCM Level of Service		C			
HCM Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		97.9					Sum of lost time (s)		18.0			
Intersection Capacity Utilization		61.5%					ICU Level of Service		B			
Analysis Period (min)		15										
c Critical Lane Group												

Queues
5: SR 92 & Old Alabama Rd

Existing AM
3/13/2015



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	14	900	22	783	29	14	13	112	10
Lane Group Flow (vph)	36	1023	44	870	40	20	80	144	52
Turn Type	pm+pt		pm+pt		Perm	Prot		Prot	
Protected Phases	1	6	5	2		3	8	7	4
Permitted Phases	6		2		2				
Detector Phase	1	6	5	2	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	10.0	15.0	10.0	15.0	15.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.5	30.0	16.5	33.0	33.0	17.0	48.0	16.5	46.0
Total Split (s)	18.5	62.0	18.5	62.0	62.0	19.0	19.0	18.5	19.0
Total Split (%)	15.6%	52.3%	15.6%	52.3%	52.3%	16.0%	16.0%	15.6%	16.0%
Yellow Time (s)	4.5	5.0	4.5	5.0	5.0	5.0	5.0	4.5	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.5	7.0	6.5	7.0	7.0	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Max	None	Max	Max	None	None	None	None
v/c Ratio	0.08	0.54	0.12	0.43	0.04	0.12	0.39	0.42	0.18
Control Delay	8.6	20.3	9.0	17.1	5.1	50.1	27.1	52.0	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	20.3	9.0	17.1	5.1	50.1	27.1	52.0	26.8
Queue Length 50th (ft)	9	268	11	215	0	14	19	51	14
Queue Length 95th (ft)	9	345	14	291	12	31	16	73	15
Internal Link Dist (ft)		4253		7563			348		1850
Turn Bay Length (ft)	425		310		240	130		230	
Base Capacity (vph)	458	1900	384	2005	914	195	239	378	305
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.54	0.11	0.43	0.04	0.10	0.33	0.38	0.17

Intersection Summary

Cycle Length: 118.5

Actuated Cycle Length: 109.5

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: SR 92 & Old Alabama Rd

ø1	ø2	ø3	ø4
18.5 s	62 s	19 s	19 s
ø5	ø6	ø7	ø8
18.5 s	62 s	18.5 s	19 s

HCM Signalized Intersection Capacity Analysis

5: SR 92 & Old Alabama Rd

Existing AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	900	0	22	783	29	14	13	31	112	10	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Flt Protected	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	0.92	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3539	1583	1770	1681		3433	1712	
Satd. Flow (perm)	509	3539		362	3539	1583	1770	1681		3433	1712	
Peak-hour factor, PHF	0.39	0.88	0.92	0.50	0.90	0.72	0.70	0.46	0.60	0.78	0.42	0.71
Adj. Flow (vph)	36	1023	0	44	870	40	20	28	52	144	24	28
RTOR Reduction (vph)	0	0	0	0	0	19	0	47	0	0	24	0
Lane Group Flow (vph)	36	1023	0	44	870	21	20	33	0	144	28	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	65.9	60.1		69.7	62.0	62.0	3.8	10.9		10.8	17.4	
Effective Green, g (s)	65.9	60.1		69.7	62.0	62.0	3.8	10.9		10.8	17.4	
Actuated g/C Ratio	0.57	0.52		0.60	0.53	0.53	0.03	0.09		0.09	0.15	
Clearance Time (s)	6.5	7.0		6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	5.1		3.0	5.1	5.1	3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	351	1826		310	1883	842	58	157		318	256	
v/s Ratio Prot	0.01	c0.29		c0.01	0.25		0.01	c0.02		c0.04	c0.02	
v/s Ratio Perm	0.05			0.08		0.01						
v/c Ratio	0.10	0.56		0.14	0.46	0.03	0.34	0.21		0.45	0.11	
Uniform Delay, d1	11.6	19.2		11.3	16.9	12.9	55.1	48.8		50.1	42.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.2		0.2	0.8	0.1	3.6	0.9		1.0	0.3	
Delay (s)	11.8	20.4		11.5	17.7	13.0	58.7	49.7		51.1	43.1	
Level of Service	B	C		B	B	B	E	D		D	D	
Approach Delay (s)		20.2			17.2			51.5			49.0	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM Average Control Delay			22.8			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			116.5			Sum of lost time (s)			34.0			
Intersection Capacity Utilization			46.4%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: SR 92 & Woodstock Rd

Existing AM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	121	959	14	104	652	75	11	69	216	266	75
Lane Group Flow (vph)	129	1009	16	132	709	112	16	105	260	341	264
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot	
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2			8		
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	8.0	8.0	4.0	8.0
Minimum Split (s)	10.5	34.0	34.0	10.5	36.0	36.0	10.5	49.0	49.0	11.0	49.0
Total Split (s)	21.5	57.0	57.0	21.5	57.0	57.0	18.5	32.0	32.0	27.0	32.0
Total Split (%)	15.6%	41.5%	41.5%	15.6%	41.5%	41.5%	13.5%	23.3%	23.3%	19.6%	23.3%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.34	0.67	0.02	0.48	0.47	0.15	0.16	0.50	0.68	0.71	0.54
Control Delay	15.5	31.0	17.1	19.1	26.3	4.9	59.5	58.8	18.6	57.6	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	31.0	17.1	19.1	26.3	4.9	59.5	58.8	18.6	57.6	34.8
Queue Length 50th (ft)	43	315	4	44	197	0	12	76	19	127	124
Queue Length 95th (ft)	86	467	20	75	298	12	29	100	79	164	192
Internal Link Dist (ft)		7563			1244			2383			1543
Turn Bay Length (ft)	310		115	300		210	240		145	405	
Base Capacity (vph)	463	1514	681	351	1523	745	182	398	522	587	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.67	0.02	0.38	0.47	0.15	0.09	0.26	0.50	0.58	0.49

Intersection Summary

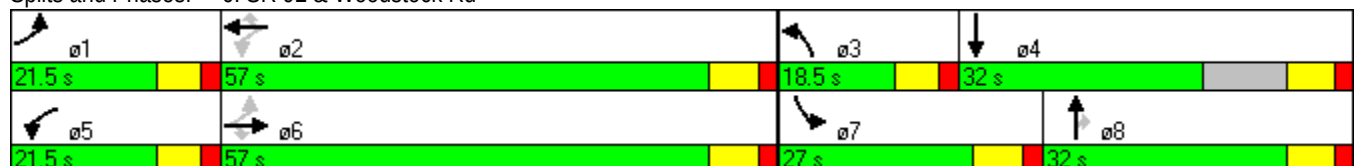
Cycle Length: 137.5

Actuated Cycle Length: 117.6

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 92 & Woodstock Rd



HCM Signalized Intersection Capacity Analysis

6: SR 92 & Woodstock Rd

Existing AM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	121	959	14	104	652	75	11	69	216	266	75	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1689	
Flt Permitted	0.30	1.00	1.00	0.15	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	552	3539	1583	287	3539	1583	1770	1863	1583	3433	1689	
Peak-hour factor, PHF	0.94	0.95	0.88	0.79	0.92	0.67	0.69	0.66	0.83	0.78	0.75	0.89
Adj. Flow (vph)	129	1009	16	132	709	112	16	105	260	341	100	164
RTOR Reduction (vph)	0	0	4	0	0	65	0	0	200	0	42	0
Lane Group Flow (vph)	129	1009	12	132	709	47	16	105	60	341	222	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot	Perm		Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			
Actuated Green, G (s)	60.0	50.3	50.3	60.6	50.6	50.6	2.9	17.3	17.3	16.5	31.4	
Effective Green, g (s)	60.0	50.3	50.3	60.6	50.6	50.6	2.9	17.3	17.3	16.5	31.4	
Actuated g/C Ratio	0.49	0.41	0.41	0.50	0.42	0.42	0.02	0.14	0.14	0.14	0.26	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	370	1464	655	265	1473	659	42	265	225	466	436	
v/s Ratio Prot	0.03	c0.29		c0.04	0.20		0.01	0.06		c0.10	c0.13	
v/s Ratio Perm	0.14		0.01	0.21		0.03			0.04			
v/c Ratio	0.35	0.69	0.02	0.50	0.48	0.07	0.38	0.40	0.27	0.73	0.51	
Uniform Delay, d1	17.5	29.2	21.1	19.5	25.9	21.4	58.5	47.4	46.5	50.4	38.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.6	2.7	0.1	1.5	1.1	0.2	5.7	1.3	0.9	5.8	1.3	
Delay (s)	18.0	31.9	21.1	20.9	27.0	21.6	64.2	48.7	47.4	56.3	39.8	
Level of Service	B	C	C	C	C	C	E	D	D	E	D	
Approach Delay (s)		30.2			25.6			48.5			49.1	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay			34.7			HCM Level of Service			C			
HCM Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			121.6			Sum of lost time (s)			20.5			
Intersection Capacity Utilization			65.0%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues

Existing PM

1: I-75 SB Off-Ramp & SR 92

3/13/2015



Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰↰	↰↰	↰	↰↰	↰↰
Volume (vph)	307	215	963	313	191	1348
Lane Group Flow (vph)	327	295	1024	329	203	1404
Turn Type	Prot	custom		Perm	Prot	
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	12.0	12.0	6.0	12.0
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	22.0
Total Split (s)	31.0	31.0	66.0	66.0	36.0	66.0
Total Split (%)	23.3%	23.3%	49.6%	49.6%	27.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.51	0.46	0.73	0.40	0.43	0.63
Control Delay	28.6	15.9	20.8	3.4	30.6	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	15.9	20.8	3.4	30.6	9.1
Queue Length 50th (ft)	59	28	172	0	37	150
Queue Length 95th (ft)	119	53	287	46	82	251
Internal Link Dist (ft)			1456			818
Turn Bay Length (ft)	255	230				
Base Capacity (vph)	1324	1163	3186	1458	1588	3539
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	0.25	0.25	0.32	0.23	0.13	0.40

Intersection Summary

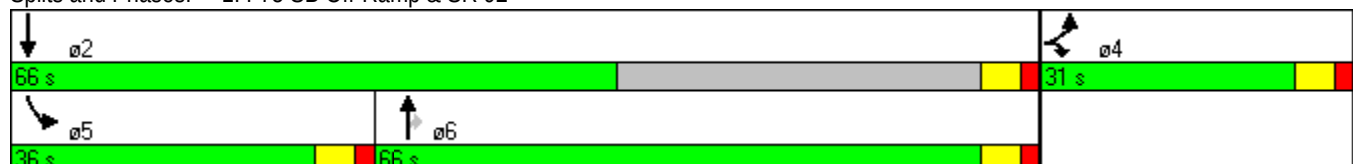
Cycle Length: 133

Actuated Cycle Length: 66.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-75 SB Off-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

Existing PM

1: I-75 SB Off-Ramp & SR 92

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	0	215	0	0	0	0	963	313	191	1348	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		0.88					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		2787					3539	1583	3433	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					3539	1583	3433	3539	
Peak-hour factor, PHF	0.94	0.92	0.73	0.92	0.92	0.92	0.92	0.94	0.95	0.94	0.96	0.92
Adj. Flow (vph)	327	0	295	0	0	0	0	1024	329	203	1404	0
RTOR Reduction (vph)	0	0	117	0	0	0	0	0	197	0	0	0
Lane Group Flow (vph)	327	0	178	0	0	0	0	1024	132	203	1404	0
Turn Type	Prot		custom						Perm		Prot	
Protected Phases	4		4					6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	12.3		12.3					26.5	26.5	9.2	41.7	
Effective Green, g (s)	12.3		12.3					26.5	26.5	9.2	41.7	
Actuated g/C Ratio	0.19		0.19					0.40	0.40	0.14	0.63	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0		2.0					6.0	6.0	2.0	5.0	
Lane Grp Cap (vph)	640		519					1421	636	479	2236	
v/s Ratio Prot	c0.10		0.06					c0.29		0.06	c0.40	
v/s Ratio Perm									0.08			
v/c Ratio	0.51		0.34					0.72	0.21	0.42	0.63	
Uniform Delay, d1	24.1		23.3					16.6	12.9	26.0	7.4	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3		0.1					2.6	0.5	0.2	0.8	
Delay (s)	24.4		23.5					19.2	13.4	26.2	8.2	
Level of Service	C		C					B	B	C	A	
Approach Delay (s)		24.0			0.0			17.8			10.5	
Approach LOS		C			A			B			B	
Intersection Summary												
HCM Average Control Delay			15.6									
HCM Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			66.0									
Intersection Capacity Utilization			70.2%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

Existing PM

2: I-75 NB On-Ramp & SR 92

3/13/2015

						
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	566	415	185	1048	939	442
Lane Group Flow (vph)	622	437	203	1080	988	470
Turn Type	Prot	custom	Prot			Perm
Protected Phases	8	8	1	6	2	
Permitted Phases						2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	12.0	12.0	12.0
Minimum Split (s)	21.0	21.0	21.0	22.0	22.0	22.0
Total Split (s)	50.0	50.0	21.0	46.0	46.0	46.0
Total Split (%)	42.7%	42.7%	17.9%	39.3%	39.3%	39.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	None	None	None	Min	Min	Min
v/c Ratio	0.50	0.71	0.33	0.60	0.75	0.62
Control Delay	22.8	26.5	36.5	18.2	34.5	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	26.5	36.5	18.2	34.5	6.9
Queue Length 50th (ft)	130	165	50	211	181	0
Queue Length 95th (ft)	201	304	103	355	271	80
Internal Link Dist (ft)				818	960	
Turn Bay Length (ft)	285					
Base Capacity (vph)	1828	875	609	2555	2407	997
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	0.34	0.50	0.33	0.42	0.41	0.47

Intersection Summary

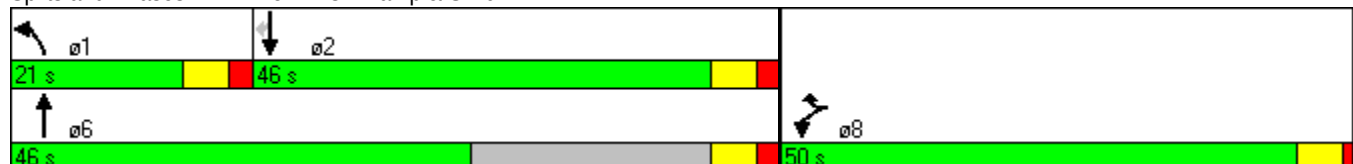
Cycle Length: 117

Actuated Cycle Length: 86.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: I-75 NB On-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

2: I-75 NB On-Ramp & SR 92

Existing PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	566	0	415	185	1048	0	0	939	442
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				0.97		1.00	0.97	0.95			0.91	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3433		1583	3433	3539			5085	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3433		1583	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.25	0.95	0.91	0.97	0.92	0.92	0.95	0.94
Adj. Flow (vph)	0	0	0	622	0	437	203	1080	0	0	988	470
RTOR Reduction (vph)	0	0	0	0	0	44	0	0	0	0	0	347
Lane Group Flow (vph)	0	0	0	622	0	393	203	1080	0	0	988	123
Turn Type				Prot		custom	Prot					Perm
Protected Phases				8		8	1	6			2	
Permitted Phases												2
Actuated Green, G (s)				31.5		31.5	15.4	44.0			22.6	22.6
Effective Green, g (s)				31.5		31.5	15.4	44.0			22.6	22.6
Actuated g/C Ratio				0.36		0.36	0.18	0.51			0.26	0.26
Clearance Time (s)				5.0		5.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				5.0		5.0	2.0	5.0			5.0	5.0
Lane Grp Cap (vph)				1250		576	611	1800			1329	414
v/s Ratio Prot				0.18		c0.25	0.06	c0.31			c0.19	
v/s Ratio Perm												0.08
v/c Ratio				0.50		0.68	0.33	0.60			0.74	0.30
Uniform Delay, d1				21.4		23.3	31.1	15.0			29.3	25.6
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.7		4.3	0.1	0.8			2.8	0.8
Delay (s)				22.0		27.5	31.2	15.8			32.1	26.4
Level of Service				C		C	C	B			C	C
Approach Delay (s)		0.0			24.3			18.3			30.2	
Approach LOS		A			C			B			C	
Intersection Summary												
HCM Average Control Delay			24.5			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			86.5			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			70.2%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Northpoint Pkwy & SR 92

Existing PM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	178	23	193	88	23	34	281	1084	10	32	1026
Lane Group Flow (vph)	207	28	272	116	32	48	296	1166	16	40	1231
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm	
Protected Phases		8			4		1	6			2
Permitted Phases	8		8	4		4	6		6	2	
Detector Phase	8	8	8	4	4	4	1	6	6	2	2
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	15.0	15.0	15.0	15.0
Minimum Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	14.0	29.0	29.0	29.0	29.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	61.0	61.0	46.0	46.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.8%	64.2%	64.2%	48.4%	48.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.72	0.07	0.53	0.40	0.08	0.13	1.01	0.50	0.02	0.17	0.69
Control Delay	48.9	27.6	10.6	35.1	27.8	8.7	76.5	9.7	3.7	17.8	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	27.6	10.6	35.1	27.8	8.7	76.5	9.7	3.7	17.8	21.4
Queue Length 50th (ft)	117	14	22	61	16	0	~102	163	0	12	278
Queue Length 95th (ft)	166	30	38	83	28	16	#296	274	5	35	426
Internal Link Dist (ft)		1463			2848			960			3675
Turn Bay Length (ft)	90			220		220	235			320	
Base Capacity (vph)	404	549	627	406	549	500	292	2355	1059	230	1775
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.05	0.43	0.29	0.06	0.10	1.01	0.50	0.02	0.17	0.69
Intersection Summary											
Cycle Length: 95											
Actuated Cycle Length: 95											
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
~ Volume exceeds capacity, queue is theoretically infinite.											
Queue shown is maximum after two cycles.											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											

Splits and Phases: 3: Northpoint Pkwy & SR 92



HCM Signalized Intersection Capacity Analysis

3: Northpoint Pkwy & SR 92

Existing PM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	178	23	193	88	23	34	281	1084	10	32	1026	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3479	
Flt Permitted	0.74	1.00	1.00	0.74	1.00	1.00	0.12	1.00	1.00	0.24	1.00	
Satd. Flow (perm)	1372	1863	1583	1377	1863	1583	218	3539	1583	452	3479	
Peak-hour factor, PHF	0.86	0.82	0.71	0.76	0.72	0.71	0.95	0.93	0.62	0.80	0.94	0.85
Adj. Flow (vph)	207	28	272	116	32	48	296	1166	16	40	1091	140
RTOR Reduction (vph)	0	0	180	0	0	38	0	0	5	0	9	0
Lane Group Flow (vph)	207	28	92	116	32	10	296	1166	11	40	1222	0
Turn Type	Perm		Perm	Perm	Perm		pm+pt	Perm		Perm		
Protected Phases	8				4		1	6			2	
Permitted Phases	8		8	4			4	6		6	2	
Actuated Green, G (s)	19.8	19.8	19.8	19.8	19.8	19.8	63.2	63.2	63.2	48.2	48.2	
Effective Green, g (s)	19.8	19.8	19.8	19.8	19.8	19.8	63.2	63.2	63.2	48.2	48.2	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.67	0.67	0.67	0.51	0.51	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	286	388	330	287	388	330	292	2354	1053	229	1765	
v/s Ratio Prot	0.02				0.02		c0.10	0.33		0.35		
v/s Ratio Perm	c0.15		0.06	0.08			0.01	c0.58	0.01	0.09		
v/c Ratio	0.72	0.07	0.28	0.40	0.08	0.03	1.01	0.50	0.01	0.17	0.69	
Uniform Delay, d1	35.1	30.2	31.6	32.5	30.3	30.0	21.6	7.9	5.4	12.6	17.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.8	0.1	0.5	0.9	0.1	0.0	56.2	0.7	0.0	1.7	2.3	
Delay (s)	43.8	30.3	32.1	33.4	30.4	30.0	77.8	8.7	5.4	14.3	20.0	
Level of Service	D	C	C	C	C	C	E	A	A	B	C	
Approach Delay (s)	36.8				32.1		22.5		19.8			
Approach LOS	D				C		C		B			
Intersection Summary												
HCM Average Control Delay			24.2		HCM Level of Service				C			
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			95.0		Sum of lost time (s)				12.0			
Intersection Capacity Utilization			79.2%		ICU Level of Service				D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
4: Hunt Rd & SR 92

Existing PM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	12	8	220	25	16	334	883	41	14	953	9
Lane Group Flow (vph)	0	28	306	0	60	402	910	52	20	972	12
Turn Type	Perm		Perm	Perm		pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8	1	6		5	2	
Permitted Phases	4		4	8		6		6	2		2
Detector Phase	4	4	4	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	18.0	57.0	57.0	13.0	52.0	52.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
v/c Ratio		0.12	0.79		0.25	0.88	0.39	0.05	0.05	0.53	0.01
Control Delay		32.6	30.3		29.6	33.3	9.5	6.2	6.2	16.9	10.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		32.6	30.3		29.6	33.3	9.5	6.2	6.2	16.9	10.1
Queue Length 50th (ft)		14	70		24	82	87	4	3	184	2
Queue Length 95th (ft)		27	97		51	#253	237	22	9	293	10
Internal Link Dist (ft)		1089			2278		3675			4253	
Turn Bay Length (ft)			110			390		80	425		110
Base Capacity (vph)		756	866		759	456	2347	1058	438	1817	816
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.04	0.35		0.08	0.88	0.39	0.05	0.05	0.53	0.01

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 90

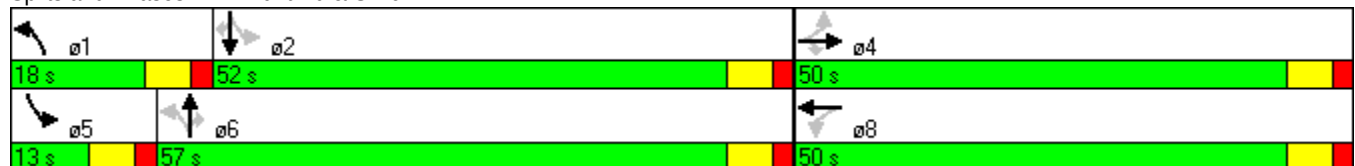
Natural Cycle: 70

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Hunt Rd & SR 92



HCM Signalized Intersection Capacity Analysis

4: Hunt Rd & SR 92

Existing PM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	8	220	25	16	10	334	883	41	14	953	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1811	1583		1771		1770	3539	1583	1770	3539	1583
Flt Permitted		0.83	1.00		0.85		0.20	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)		1538	1583		1534		379	3539	1583	584	3539	1583
Peak-hour factor, PHF	0.75	0.67	0.72	0.89	0.80	0.83	0.83	0.97	0.79	0.70	0.98	0.75
Adj. Flow (vph)	16	12	306	28	20	12	402	910	52	20	972	12
RTOR Reduction (vph)	0	0	149	0	10	0	0	0	9	0	0	3
Lane Group Flow (vph)	0	28	157	0	50	0	402	910	43	20	972	9
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		13.7	13.7		13.7		68.0	59.7	59.7	52.3	50.0	50.0
Effective Green, g (s)		13.7	13.7		13.7		68.0	59.7	59.7	52.3	50.0	50.0
Actuated g/C Ratio		0.15	0.15		0.15		0.73	0.64	0.64	0.56	0.53	0.53
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		225	231		224		453	2255	1009	355	1888	845
v/s Ratio Prot							c0.11	0.26		0.00	0.27	
v/s Ratio Perm		0.02	c0.10		0.03		c0.53		0.03	0.03		0.01
v/c Ratio		0.12	0.68		0.22		0.89	0.40	0.04	0.06	0.51	0.01
Uniform Delay, d1		34.8	37.9		35.3		11.6	8.3	6.3	9.3	14.1	10.3
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	7.7		0.5		18.5	0.5	0.1	0.1	1.0	0.0
Delay (s)		35.0	45.6		35.8		30.1	8.8	6.4	9.3	15.1	10.3
Level of Service		D	D		D		C	A	A	A	B	B
Approach Delay (s)		44.7			35.8			15.0			14.9	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay			19.0				HCM Level of Service			B		
HCM Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			93.7				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			69.3%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
5: SR 92 & Old Alabama Rd

Existing PM
3/13/2015

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	30	845	16	6	1008	124	6	4	58	0
Lane Group Flow (vph)	36	880	28	12	1061	151	8	24	68	12
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Prot	
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2				
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.5	30.0	30.0	16.5	33.0	33.0	17.0	48.0	16.5	46.0
Total Split (s)	18.5	62.0	62.0	18.5	62.0	62.0	19.0	19.0	18.5	19.0
Total Split (%)	15.6%	52.3%	52.3%	15.6%	52.3%	52.3%	16.0%	16.0%	15.6%	16.0%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	4.5	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
v/c Ratio	0.09	0.34	0.02	0.02	0.45	0.14	0.04	0.13	0.19	0.02
Control Delay	6.7	9.5	5.6	6.8	14.4	2.9	46.3	27.9	46.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	9.5	5.6	6.8	14.4	2.9	46.3	27.9	46.0	0.1
Queue Length 50th (ft)	5	76	1	1	191	0	4	4	19	0
Queue Length 95th (ft)	19	277	8	5	353	25	18	13	44	0
Internal Link Dist (ft)		4253			7586			348		1850
Turn Bay Length (ft)	425		145	310		240	130		230	
Base Capacity (vph)	449	2563	1153	557	2336	1096	221	231	428	536
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.34	0.02	0.02	0.45	0.14	0.04	0.10	0.16	0.02

Intersection Summary

Cycle Length: 118.5

Actuated Cycle Length: 98.2

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: SR 92 & Old Alabama Rd

					
18.5 s	62 s	19 s	19 s	18.5 s	19 s
					
18.5 s	62 s	18.5 s	19 s		

HCM Signalized Intersection Capacity Analysis

5: SR 92 & Old Alabama Rd

Existing PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	845	16	6	1008	124	6	4	9	58	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.85	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1676		3433	1583	
Satd. Flow (perm)	377	3539	1583	570	3539	1583	1770	1676		3433	1583	
Peak-hour factor, PHF	0.83	0.96	0.57	0.50	0.95	0.82	0.75	0.50	0.56	0.85	0.92	0.83
Adj. Flow (vph)	36	880	28	12	1061	151	8	8	16	68	0	12
RTOR Reduction (vph)	0	0	9	0	0	62	0	15	0	0	11	0
Lane Group Flow (vph)	36	880	19	12	1061	89	8	9	0	68	1	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	74.9	69.3	69.3	67.1	65.4	65.4	1.7	4.8		7.9	10.5	
Effective Green, g (s)	74.9	69.3	69.3	67.1	65.4	65.4	1.7	4.8		7.9	10.5	
Actuated g/C Ratio	0.68	0.63	0.63	0.61	0.59	0.59	0.02	0.04		0.07	0.09	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	5.1	5.1	3.0	5.1	5.1	3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	326	2215	991	364	2091	935	27	73		245	150	
v/s Ratio Prot	c0.01	c0.25		0.00	c0.30		0.00	c0.01		c0.02	c0.00	
v/s Ratio Perm	0.07		0.01	0.02		0.06						
v/c Ratio	0.11	0.40	0.02	0.03	0.51	0.10	0.30	0.12		0.28	0.01	
Uniform Delay, d1	7.4	10.3	7.8	8.7	13.2	9.8	53.9	50.9		48.7	45.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.5	0.0	0.0	0.9	0.2	6.1	1.0		0.6	0.0	
Delay (s)	7.5	10.8	7.9	8.7	14.1	10.0	60.0	51.9		49.3	45.4	
Level of Service	A	B	A	A	B	B	E	D		D	D	
Approach Delay (s)		10.6			13.6			53.9			48.7	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM Average Control Delay			14.1			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			110.7			Sum of lost time (s)			41.0			
Intersection Capacity Utilization			47.9%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: SR 92 & Woodstock Rd

Existing PM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	164	680	30	228	1044	232	16	130	124	130	76
Lane Group Flow (vph)	216	819	71	259	1111	301	28	153	159	148	301
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot	
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2			8		
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	8.0	8.0	4.0	8.0
Minimum Split (s)	10.5	34.0	34.0	10.5	36.0	36.0	10.5	49.0	49.0	11.0	49.0
Total Split (s)	21.5	57.0	57.0	21.5	57.0	57.0	18.5	32.0	32.0	27.0	32.0
Total Split (%)	15.6%	41.5%	41.5%	15.6%	41.5%	41.5%	13.5%	23.3%	23.3%	19.6%	23.3%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.72	0.54	0.10	0.66	0.75	0.38	0.25	0.58	0.44	0.49	0.70
Control Delay	36.2	28.6	13.2	21.7	34.2	10.4	61.2	57.1	11.0	58.5	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	28.6	13.2	21.7	34.2	10.4	61.2	57.1	11.0	58.5	42.0
Queue Length 50th (ft)	87	257	16	93	391	50	22	113	0	58	168
Queue Length 95th (ft)	140	312	11	153	518	85	34	176	37	93	261
Internal Link Dist (ft)		7586			1244			2383			1543
Turn Bay Length (ft)	310		115	300		210	240		145	405	
Base Capacity (vph)	315	1503	694	415	1491	782	179	392	459	579	530
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.54	0.10	0.62	0.75	0.38	0.16	0.39	0.35	0.26	0.57

Intersection Summary

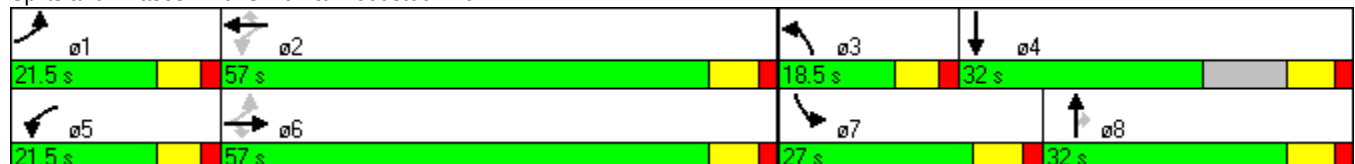
Cycle Length: 137.5

Actuated Cycle Length: 119.3

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 92 & Woodstock Rd



HCM Signalized Intersection Capacity Analysis

6: SR 92 & Woodstock Rd

Existing PM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	680	30	228	1044	232	16	130	124	130	76	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1665	
Flt Permitted	0.11	1.00	1.00	0.24	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	214	3539	1583	448	3539	1583	1770	1863	1583	3433	1665	
Peak-hour factor, PHF	0.76	0.83	0.42	0.88	0.94	0.77	0.57	0.85	0.78	0.88	0.86	0.62
Adj. Flow (vph)	216	819	71	259	1111	301	28	153	159	148	88	213
RTOR Reduction (vph)	0	0	22	0	0	117	0	0	133	0	66	0
Lane Group Flow (vph)	216	819	49	259	1111	184	28	153	26	148	235	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot	Perm		Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			
Actuated Green, G (s)	64.6	50.7	50.7	63.6	50.2	50.2	4.9	19.9	19.9	10.5	26.0	
Effective Green, g (s)	64.6	50.7	50.7	63.6	50.2	50.2	4.9	19.9	19.9	10.5	26.0	
Actuated g/C Ratio	0.53	0.42	0.42	0.52	0.41	0.41	0.04	0.16	0.16	0.09	0.21	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	291	1471	658	379	1456	651	71	304	258	295	355	
v/s Ratio Prot	c0.08	0.23		0.08	c0.31		0.02	0.08		c0.04	c0.14	
v/s Ratio Perm	0.31		0.03	0.28		0.12			0.02			
v/c Ratio	0.74	0.56	0.07	0.68	0.76	0.28	0.39	0.50	0.10	0.50	0.66	
Uniform Delay, d1	21.6	27.1	21.5	17.9	30.8	23.9	57.1	46.5	43.4	53.3	44.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.8	1.5	0.2	5.0	3.8	1.1	3.6	1.8	0.2	1.3	5.0	
Delay (s)	31.4	28.6	21.7	22.9	34.6	25.0	60.7	48.3	43.7	54.6	49.0	
Level of Service	C	C	C	C	C	C	E	D	D	D	D	
Approach Delay (s)		28.7			31.1			47.2			50.8	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay			34.4				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			122.0				Sum of lost time (s)			27.5		
Intersection Capacity Utilization			75.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Future “No-Build” Intersection Analysis

Queues

1: I-75 SB Off-Ramp & SR 92

Future No-Build AM

3/13/2015



Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰↰	↕↕	↰	↰↰	↕↕
Volume (vph)	312	249	892	383	233	689
Lane Group Flow (vph)	332	293	910	435	265	783
Turn Type	Prot	custom		Perm	Prot	
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	12.0	12.0	6.0	12.0
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	22.0
Total Split (s)	31.0	31.0	66.0	66.0	36.0	66.0
Total Split (%)	23.3%	23.3%	49.6%	49.6%	27.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.52	0.39	0.70	0.51	0.49	0.35
Control Delay	28.1	5.4	21.0	4.1	29.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	5.4	21.0	4.1	29.4	6.4
Queue Length 50th (ft)	59	0	151	0	47	64
Queue Length 95th (ft)	119	28	256	49	97	107
Internal Link Dist (ft)			1456			818
Turn Bay Length (ft)	255	230				
Base Capacity (vph)	1352	1275	3221	1480	1622	3539
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	0.25	0.23	0.28	0.29	0.16	0.22

Intersection Summary

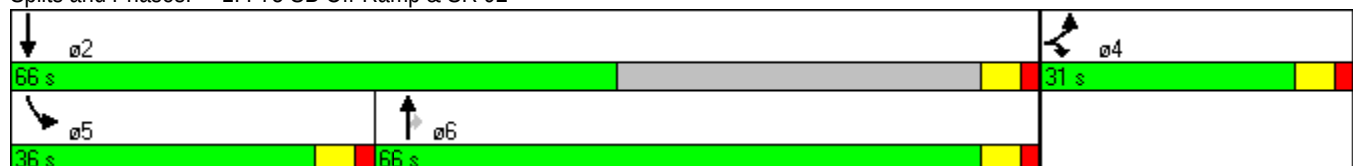
Cycle Length: 133

Actuated Cycle Length: 65

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-75 SB Off-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

1: I-75 SB Off-Ramp & SR 92

Future No-Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	312	0	249	0	0	0	0	892	383	233	689	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		0.88					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		2787					3539	1583	3433	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					3539	1583	3433	3539	
Peak-hour factor, PHF	0.94	0.25	0.85	0.92	0.92	0.92	0.92	0.98	0.88	0.88	0.88	0.92
Adj. Flow (vph)	332	0	293	0	0	0	0	910	435	265	783	0
RTOR Reduction (vph)	0	0	238	0	0	0	0	0	272	0	0	0
Lane Group Flow (vph)	332	0	55	0	0	0	0	910	163	265	783	0
Turn Type	Prot		custom						Perm		Prot	
Protected Phases	4		4					6		5	2	
Permitted Phases								6				
Actuated Green, G (s)	12.2		12.2					24.2	24.2	10.3	40.5	
Effective Green, g (s)	12.2		12.2					24.2	24.2	10.3	40.5	
Actuated g/C Ratio	0.19		0.19					0.37	0.37	0.16	0.63	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0		2.0					6.0	6.0	2.0	5.0	
Lane Grp Cap (vph)	647		526					1324	592	547	2215	
v/s Ratio Prot	c0.10		0.02					c0.26		c0.08	0.22	
v/s Ratio Perm								0.10				
v/c Ratio	0.51		0.11					0.69	0.27	0.48	0.35	
Uniform Delay, d1	23.6		21.7					17.1	14.1	24.8	5.8	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3		0.0					2.3	0.7	0.2	0.2	
Delay (s)	23.9		21.8					19.3	14.8	25.0	6.0	
Level of Service	C		C					B	B	C	A	
Approach Delay (s)		22.9			0.0			17.9			10.8	
Approach LOS		C			A			B			B	
Intersection Summary												
HCM Average Control Delay			16.5									
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			64.7									
Intersection Capacity Utilization			63.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues
2: I-75 NB On-Ramp & SR 92

Future No-Build AM

3/13/2015

						
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	189	204	172	1019	755	453
Lane Group Flow (vph)	228	232	223	1073	803	588
Turn Type	Prot	custom	Prot			Perm
Protected Phases	8	8	1	6	2	
Permitted Phases						2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	12.0	12.0	12.0
Minimum Split (s)	21.0	21.0	21.0	22.0	22.0	22.0
Total Split (s)	50.0	50.0	21.0	46.0	46.0	46.0
Total Split (%)	42.7%	42.7%	17.9%	39.3%	39.3%	39.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	None	None	None	Min	Min	Min
v/c Ratio	0.30	0.57	0.28	0.50	0.55	0.67
Control Delay	22.7	21.9	24.5	8.9	21.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	21.9	24.5	8.9	21.9	6.5
Queue Length 50th (ft)	41	59	40	112	99	0
Queue Length 95th (ft)	60	116	63	206	156	28
Internal Link Dist (ft)				818	960	
Turn Bay Length (ft)	285					
Base Capacity (vph)	2351	1106	784	3199	3096	1194
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	0.10	0.21	0.28	0.34	0.26	0.49

Intersection Summary

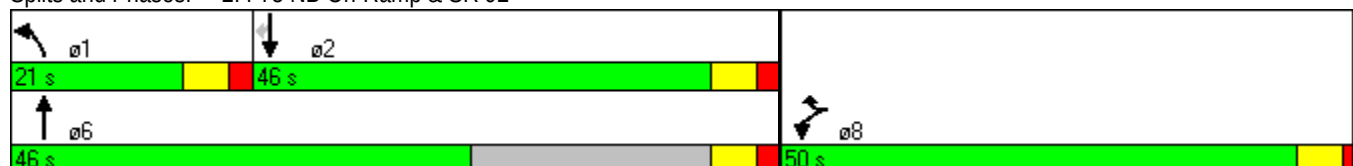
Cycle Length: 117

Actuated Cycle Length: 66.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: I-75 NB On-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

2: I-75 NB On-Ramp & SR 92

Future No-Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	189	0	204	172	1019	0	0	755	453
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				0.97		1.00	0.97	0.95			0.91	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3433		1583	3433	3539			5085	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3433		1583	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.92	0.88	0.77	0.95	0.92	0.92	0.94	0.77
Adj. Flow (vph)	0	0	0	228	0	232	223	1073	0	0	803	588
RTOR Reduction (vph)	0	0	0	0	0	54	0	0	0	0	0	417
Lane Group Flow (vph)	0	0	0	228	0	178	223	1073	0	0	803	171
Turn Type				Prot		custom	Prot					Perm
Protected Phases				8		8	1	6			2	
Permitted Phases												2
Actuated Green, G (s)				15.0		15.0	15.2	40.6			19.4	19.4
Effective Green, g (s)				15.0		15.0	15.2	40.6			19.4	19.4
Actuated g/C Ratio				0.23		0.23	0.23	0.61			0.29	0.29
Clearance Time (s)				5.0		5.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				5.0		5.0	2.0	5.0			5.0	5.0
Lane Grp Cap (vph)				773		357	784	2157			1481	461
v/s Ratio Prot				0.07		c0.11	0.06	c0.30			0.16	
v/s Ratio Perm												0.11
v/c Ratio				0.29		0.50	0.28	0.50			0.54	0.37
Uniform Delay, d1				21.4		22.5	21.2	7.3			19.9	18.8
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.4		2.3	0.1	0.4			0.7	1.1
Delay (s)				21.9		24.8	21.3	7.7			20.6	19.8
Level of Service				C		C	C	A			C	B
Approach Delay (s)		0.0			23.3			10.0			20.3	
Approach LOS		A			C			B			C	
Intersection Summary												
HCM Average Control Delay			16.5			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			66.6			Sum of lost time (s)			11.0			
Intersection Capacity Utilization			63.0%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Northpoint Pkwy & SR 92

Future No-Build AM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	162	16	121	19	9	1	265	869	6	17	1044
Lane Group Flow (vph)	188	17	142	30	16	4	312	915	8	25	1336
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm	
Protected Phases		8			4		1	6			2
Permitted Phases	8		8	4		4	6		6	2	
Detector Phase	8	8	8	4	4	4	1	6	6	2	2
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	15.0	15.0	15.0	15.0
Minimum Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	14.0	29.0	29.0	29.0	29.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	61.0	61.0	46.0	46.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.8%	64.2%	64.2%	48.4%	48.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.71	0.05	0.34	0.11	0.04	0.01	1.13	0.38	0.01	0.08	0.73
Control Delay	49.7	28.5	7.4	30.0	28.4	17.0	117.7	7.7	4.0	14.5	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	28.5	7.4	30.0	28.4	17.0	117.7	7.7	4.0	14.5	21.2
Queue Length 50th (ft)	107	8	0	15	8	0	~151	109	0	7	305
Queue Length 95th (ft)	156	24	38	25	14	1	#304	182	4	18	450
Internal Link Dist (ft)		1463			2848			960			3675
Turn Bay Length (ft)	90			220		220	235			320	
Base Capacity (vph)	410	549	567	410	549	469	275	2415	1083	305	1833
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.03	0.25	0.07	0.03	0.01	1.13	0.38	0.01	0.08	0.73
Intersection Summary											
Cycle Length: 95											
Actuated Cycle Length: 95											
Offset: 10 (11%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
~ Volume exceeds capacity, queue is theoretically infinite.											
Queue shown is maximum after two cycles.											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											

Splits and Phases: 3: Northpoint Pkwy & SR 92



HCM Signalized Intersection Capacity Analysis

3: Northpoint Pkwy & SR 92

Future No-Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	16	121	19	9	1	265	869	6	17	1044	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3474	
Flt Permitted	0.75	1.00	1.00	0.75	1.00	1.00	0.10	1.00	1.00	0.31	1.00	
Satd. Flow (perm)	1392	1863	1583	1390	1863	1583	183	3539	1583	581	3474	
Peak-hour factor, PHF	0.86	0.94	0.85	0.64	0.56	0.25	0.85	0.95	0.75	0.67	0.89	0.81
Adj. Flow (vph)	188	17	142	30	16	4	312	915	8	25	1173	163
RTOR Reduction (vph)	0	0	115	0	0	3	0	0	3	0	10	0
Lane Group Flow (vph)	188	17	27	30	16	1	312	915	5	25	1326	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm		
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4		4	6		6	2		
Actuated Green, G (s)	18.2	18.2	18.2	18.2	18.2	18.2	64.8	64.8	64.8	49.8	49.8	
Effective Green, g (s)	18.2	18.2	18.2	18.2	18.2	18.2	64.8	64.8	64.8	49.8	49.8	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.68	0.68	0.68	0.52	0.52	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	267	357	303	266	357	303	275	2414	1080	305	1821	
v/s Ratio Prot		0.01			0.01		c0.11	0.26			0.38	
v/s Ratio Perm	c0.14		0.02	0.02		0.00	c0.66		0.00	0.04		
v/c Ratio	0.70	0.05	0.09	0.11	0.04	0.00	1.13	0.38	0.01	0.08	0.73	
Uniform Delay, d1	35.9	31.3	31.6	31.7	31.3	31.1	24.2	6.5	4.8	11.2	17.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	0.1	0.1	0.2	0.1	0.0	95.5	0.5	0.0	0.5	2.6	
Delay (s)	44.0	31.4	31.7	31.9	31.4	31.1	119.7	6.9	4.8	11.8	20.0	
Level of Service	D	C	C	C	C	C	F	A	A	B	B	
Approach Delay (s)		38.4			31.7			35.4			19.8	
Approach LOS		D			C			D			B	
Intersection Summary												
HCM Average Control Delay			28.6		HCM Level of Service					C		
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			95.0		Sum of lost time (s)					12.0		
Intersection Capacity Utilization			78.4%		ICU Level of Service					D		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
4: Hunt Rd & SR 92

Future No-Build AM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	13	61	341	41	30	119	905	25	40	801	5
Lane Group Flow (vph)	0	196	449	0	209	138	933	50	89	861	8
Turn Type	Perm		Perm	Perm		pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8	1	6		5	2	
Permitted Phases	4		4	8		6		6	2		2
Detector Phase	4	4	4	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	18.0	57.0	57.0	13.0	52.0	52.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
v/c Ratio		0.45	0.86		0.61	0.36	0.49	0.06	0.25	0.50	0.01
Control Delay		34.9	36.2		37.2	11.6	18.1	10.5	11.3	20.4	13.4
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		34.9	36.2		37.2	11.6	18.1	10.5	11.3	20.4	13.4
Queue Length 50th (ft)		107	164		105	31	196	8	19	182	1
Queue Length 95th (ft)		58	198		60	75	335	15	26	328	7
Internal Link Dist (ft)		1089			2278		3675			4253	
Turn Bay Length (ft)			110			390		80	425		110
Base Capacity (vph)		804	815		613	443	1901	861	359	1730	776
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.24	0.55		0.34	0.31	0.49	0.06	0.25	0.50	0.01

Intersection Summary

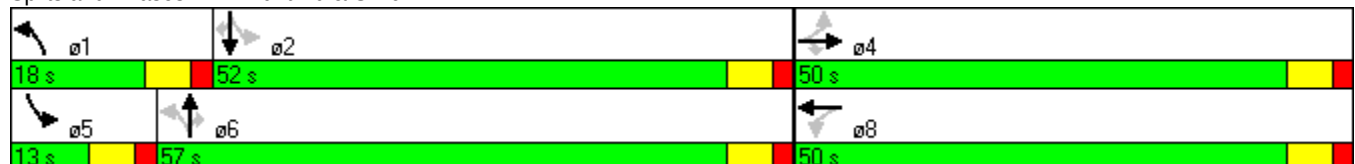
Cycle Length: 120

Actuated Cycle Length: 99.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Hunt Rd & SR 92



HCM Signalized Intersection Capacity Analysis

4: Hunt Rd & SR 92

Future No-Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	61	341	41	30	29	119	905	25	40	801	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1855	1583		1751		1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.75		0.24	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)		1793	1583		1338		447	3539	1583	476	3539	1583
Peak-hour factor, PHF	0.75	0.34	0.76	0.65	0.40	0.41	0.86	0.97	0.50	0.45	0.93	0.62
Adj. Flow (vph)	17	179	449	63	75	71	138	933	50	89	861	8
RTOR Reduction (vph)	0	0	146	0	18	0	0	0	10	0	0	3
Lane Group Flow (vph)	0	196	303	0	191	0	138	933	40	89	861	5
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		23.9	23.9		23.9		62.1	53.4	53.4	55.3	50.0	50.0
Effective Green, g (s)		23.9	23.9		23.9		62.1	53.4	53.4	55.3	50.0	50.0
Actuated g/C Ratio		0.24	0.24		0.24		0.62	0.53	0.53	0.55	0.50	0.50
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		426	376		318		390	1879	840	330	1759	787
v/s Ratio Prot							c0.03	c0.26		0.01	0.24	
v/s Ratio Perm		0.11	c0.19		0.14		0.19		0.03	0.13		0.00
v/c Ratio		0.46	0.81		0.60		0.35	0.50	0.05	0.27	0.49	0.01
Uniform Delay, d1		32.8	36.2		34.1		9.3	15.0	11.4	11.1	16.8	12.8
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8	12.0		3.0		0.6	0.9	0.1	0.4	1.0	0.0
Delay (s)		33.6	48.1		37.1		9.9	16.0	11.5	11.6	17.8	12.8
Level of Service		C	D		D		A	B	B	B	B	B
Approach Delay (s)		43.7			37.1			15.0			17.2	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay		23.6					HCM Level of Service		C			
HCM Volume to Capacity ratio		0.59										
Actuated Cycle Length (s)		100.6					Sum of lost time (s)		18.0			
Intersection Capacity Utilization		63.9%					ICU Level of Service		B			
Analysis Period (min)		15										
c Critical Lane Group												

Queues
5: SR 92 & Old Alabama Rd

Future No-Build AM

3/13/2015



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	15	946	23	823	30	15	14	118	11
Lane Group Flow (vph)	38	1075	46	914	42	21	85	151	56
Turn Type	pm+pt		pm+pt		Perm	Prot		Prot	
Protected Phases	1	6	5	2		3	8	7	4
Permitted Phases	6		2		2				
Detector Phase	1	6	5	2	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	10.0	15.0	10.0	15.0	15.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.5	30.0	16.5	33.0	33.0	17.0	48.0	16.5	46.0
Total Split (s)	18.5	62.0	18.5	62.0	62.0	19.0	19.0	18.5	19.0
Total Split (%)	15.6%	52.3%	15.6%	52.3%	52.3%	16.0%	16.0%	15.6%	16.0%
Yellow Time (s)	4.5	5.0	4.5	5.0	5.0	5.0	5.0	4.5	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.5	7.0	6.5	7.0	7.0	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Max	None	Max	Max	None	None	None	None
v/c Ratio	0.09	0.57	0.14	0.46	0.05	0.13	0.40	0.44	0.19
Control Delay	8.7	21.0	9.2	17.6	5.0	50.4	27.4	52.2	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	21.0	9.2	17.6	5.0	50.4	27.4	52.2	26.7
Queue Length 50th (ft)	9	290	11	231	0	14	21	54	15
Queue Length 95th (ft)	10	369	15	309	12	31	16	76	16
Internal Link Dist (ft)		4253		7603			348		1850
Turn Bay Length (ft)	425		310		240	130		230	
Base Capacity (vph)	440	1898	367	2002	914	195	241	378	308
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.57	0.13	0.46	0.05	0.11	0.35	0.40	0.18

Intersection Summary

Cycle Length: 118.5

Actuated Cycle Length: 109.7

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: SR 92 & Old Alabama Rd

ø1	ø2	ø3	ø4
18.5 s	62 s	19 s	19 s
ø5	ø6	ø7	ø8
18.5 s	62 s	18.5 s	19 s

HCM Signalized Intersection Capacity Analysis

5: SR 92 & Old Alabama Rd

Future No-Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	946	0	23	823	30	15	14	33	118	11	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Flt Protected	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	0.92	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3539	1583	1770	1682		3433	1713	
Satd. Flow (perm)	475	3539		329	3539	1583	1770	1682		3433	1713	
Peak-hour factor, PHF	0.39	0.88	0.92	0.50	0.90	0.72	0.70	0.46	0.60	0.78	0.42	0.71
Adj. Flow (vph)	38	1075	0	46	914	42	21	30	55	151	26	30
RTOR Reduction (vph)	0	0	0	0	0	20	0	50	0	0	26	0
Lane Group Flow (vph)	38	1075	0	46	914	22	21	35	0	151	30	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	66.0	60.2		69.8	62.1	62.1	3.8	10.9		10.9	17.5	
Effective Green, g (s)	66.0	60.2		69.8	62.1	62.1	3.8	10.9		10.9	17.5	
Actuated g/C Ratio	0.57	0.52		0.60	0.53	0.53	0.03	0.09		0.09	0.15	
Clearance Time (s)	6.5	7.0		6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	5.1		3.0	5.1	5.1	3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	333	1826		292	1883	842	58	157		321	257	
v/s Ratio Prot	0.01	c0.30		c0.01	0.26		0.01	c0.02		c0.04	0.02	
v/s Ratio Perm	0.06			0.08		0.01						
v/c Ratio	0.11	0.59		0.16	0.49	0.03	0.36	0.22		0.47	0.12	
Uniform Delay, d1	11.8	19.6		11.7	17.2	13.0	55.3	49.0		50.2	42.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.4		0.3	0.9	0.1	3.8	1.0		1.1	0.3	
Delay (s)	12.0	21.0		12.0	18.1	13.0	59.1	50.0		51.3	43.2	
Level of Service	B	C		B	B	B	E	D		D	D	
Approach Delay (s)		20.7			17.6			51.8			49.1	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM Average Control Delay			23.2			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			116.7			Sum of lost time (s)			27.0			
Intersection Capacity Utilization			47.8%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: SR 92 & Woodstock Rd

Future No-Build AM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	127	1008	15	109	685	79	12	73	227	280	79
Lane Group Flow (vph)	135	1061	17	138	745	118	17	111	273	359	277
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot	
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2			8		
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	8.0	8.0	4.0	8.0
Minimum Split (s)	10.5	34.0	34.0	10.5	36.0	36.0	10.5	49.0	49.0	11.0	49.0
Total Split (s)	21.5	57.0	57.0	21.5	57.0	57.0	18.5	32.0	32.0	27.0	32.0
Total Split (%)	15.6%	41.5%	41.5%	15.6%	41.5%	41.5%	13.5%	23.3%	23.3%	19.6%	23.3%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.37	0.71	0.03	0.53	0.50	0.16	0.17	0.51	0.71	0.73	0.55
Control Delay	16.6	33.4	18.1	21.7	27.8	5.3	61.1	58.7	21.5	59.5	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	33.4	18.1	21.7	27.8	5.3	61.1	58.7	21.5	59.5	35.4
Queue Length 50th (ft)	46	347	4	48	215	1	13	81	32	136	133
Queue Length 95th (ft)	94	524	22	83	331	14	31	106	98	178	205
Internal Link Dist (ft)		7603			1244			2383			1543
Turn Bay Length (ft)	310		115	300		210	240		145	405	
Base Capacity (vph)	440	1491	671	327	1504	740	179	392	513	578	533
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.71	0.03	0.42	0.50	0.16	0.09	0.28	0.53	0.62	0.52

Intersection Summary

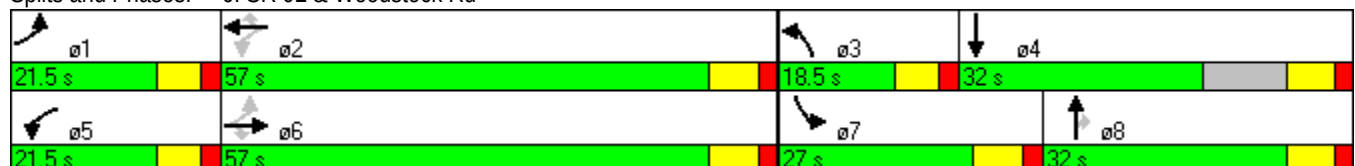
Cycle Length: 137.5

Actuated Cycle Length: 119.5

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 92 & Woodstock Rd



HCM Signalized Intersection Capacity Analysis

6: SR 92 & Woodstock Rd

Future No-Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	127	1008	15	109	685	79	12	73	227	280	79	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1689	
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	512	3539	1583	243	3539	1583	1770	1863	1583	3433	1689	
Peak-hour factor, PHF	0.94	0.95	0.88	0.79	0.92	0.67	0.69	0.66	0.83	0.78	0.75	0.89
Adj. Flow (vph)	135	1061	17	138	745	118	17	111	273	359	105	172
RTOR Reduction (vph)	0	0	4	0	0	68	0	0	194	0	42	0
Lane Group Flow (vph)	135	1061	13	138	745	50	17	111	79	359	235	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot	Perm		Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			
Actuated Green, G (s)	60.4	50.4	50.4	61.2	50.8	50.8	3.0	18.2	18.2	17.0	32.7	
Effective Green, g (s)	60.4	50.4	50.4	61.2	50.8	50.8	3.0	18.2	18.2	17.0	32.7	
Actuated g/C Ratio	0.49	0.41	0.41	0.50	0.41	0.41	0.02	0.15	0.15	0.14	0.26	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	352	1444	646	249	1456	651	43	275	233	473	447	
v/s Ratio Prot	0.03	c0.30		c0.05	0.21		0.01	0.06		c0.10	c0.14	
v/s Ratio Perm	0.16		0.01	0.23		0.03			0.05			
v/c Ratio	0.38	0.73	0.02	0.55	0.51	0.08	0.40	0.40	0.34	0.76	0.53	
Uniform Delay, d1	18.3	30.9	21.8	20.9	27.1	22.1	59.4	47.7	47.2	51.3	38.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	3.4	0.1	2.7	1.3	0.2	5.9	1.3	1.2	6.9	1.5	
Delay (s)	19.0	34.3	21.9	23.6	28.4	22.3	65.3	49.1	48.4	58.2	40.2	
Level of Service	B	C	C	C	C	C	E	D	D	E	D	
Approach Delay (s)		32.4			27.0			49.3			50.3	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay			36.3	HCM Level of Service			D					
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			123.5	Sum of lost time (s)			20.5					
Intersection Capacity Utilization			67.4%	ICU Level of Service			C					
Analysis Period (min)			15									
c Critical Lane Group												

Queues

1: I-75 SB Off-Ramp & SR 92

Future No-Build PM

3/13/2015



Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰↰	↕↕	↰	↰↰	↕↕
Volume (vph)	323	226	1012	329	201	1417
Lane Group Flow (vph)	344	310	1077	346	214	1476
Turn Type	Prot	custom		Perm	Prot	
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	12.0	12.0	6.0	12.0
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	22.0
Total Split (s)	31.0	31.0	66.0	66.0	36.0	66.0
Total Split (%)	23.3%	23.3%	49.6%	49.6%	27.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.52	0.49	0.77	0.42	0.44	0.66
Control Delay	29.8	18.7	22.6	3.9	32.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	18.7	22.6	3.9	32.0	9.8
Queue Length 50th (ft)	66	37	194	4	42	173
Queue Length 95th (ft)	131	65	320	52	91	283
Internal Link Dist (ft)			1456			818
Turn Bay Length (ft)	255	230				
Base Capacity (vph)	1300	1133	3095	1426	1560	3539
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	0.26	0.27	0.35	0.24	0.14	0.42

Intersection Summary

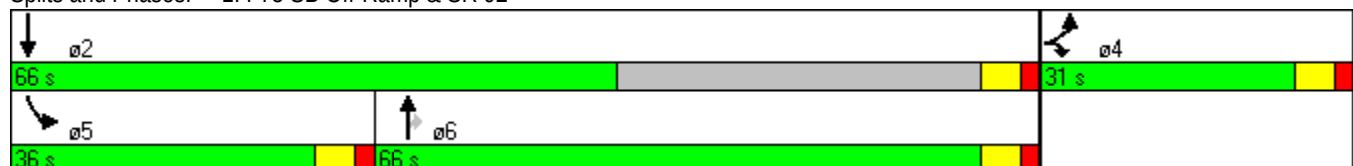
Cycle Length: 133

Actuated Cycle Length: 68.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-75 SB Off-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

1: I-75 SB Off-Ramp & SR 92

Future No-Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	323	0	226	0	0	0	0	1012	329	201	1417	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		0.88					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		2787					3539	1583	3433	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					3539	1583	3433	3539	
Peak-hour factor, PHF	0.94	0.92	0.73	0.92	0.92	0.92	0.92	0.94	0.95	0.94	0.96	0.92
Adj. Flow (vph)	344	0	310	0	0	0	0	1077	346	214	1476	0
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	199	0	0	0
Lane Group Flow (vph)	344	0	208	0	0	0	0	1077	147	214	1476	0
Turn Type	Prot		custom						Perm		Prot	
Protected Phases	4		4					6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	13.1		13.1					27.1	27.1	9.8	42.9	
Effective Green, g (s)	13.1		13.1					27.1	27.1	9.8	42.9	
Actuated g/C Ratio	0.19		0.19					0.40	0.40	0.14	0.63	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0		2.0					6.0	6.0	2.0	5.0	
Lane Grp Cap (vph)	661		537					1410	631	495	2233	
v/s Ratio Prot	c0.10		0.07					c0.30		0.06	c0.42	
v/s Ratio Perm									0.09			
v/c Ratio	0.52		0.39					0.76	0.23	0.43	0.66	
Uniform Delay, d1	24.6		24.0					17.7	13.6	26.6	7.9	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3		0.2					3.3	0.5	0.2	1.0	
Delay (s)	25.0		24.1					20.9	14.1	26.8	8.9	
Level of Service	C		C					C	B	C	A	
Approach Delay (s)		24.6			0.0			19.3			11.2	
Approach LOS		C			A			B			B	
Intersection Summary												
HCM Average Control Delay			16.6									
HCM Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			68.0									
Intersection Capacity Utilization			72.4%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2: I-75 NB On-Ramp & SR 92

Future No-Build PM

3/13/2015

						
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	595	436	194	1101	987	465
Lane Group Flow (vph)	654	459	213	1135	1039	495
Turn Type	Prot	custom	Prot			Perm
Protected Phases	8	8	1	6	2	
Permitted Phases						2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	12.0	12.0	12.0
Minimum Split (s)	21.0	21.0	21.0	22.0	22.0	22.0
Total Split (s)	50.0	50.0	21.0	46.0	46.0	46.0
Total Split (%)	42.7%	42.7%	17.9%	39.3%	39.3%	39.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	None	None	None	Min	Min	Min
v/c Ratio	0.51	0.73	0.37	0.64	0.76	0.63
Control Delay	23.7	29.2	39.3	19.8	35.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	29.2	39.3	19.8	35.5	6.7
Queue Length 50th (ft)	144	192	57	248	204	0
Queue Length 95th (ft)	222	348	110	378	286	80
Internal Link Dist (ft)				818	960	
Turn Bay Length (ft)	285					
Base Capacity (vph)	1726	825	575	2411	2272	981
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	0.38	0.56	0.37	0.47	0.46	0.50

Intersection Summary

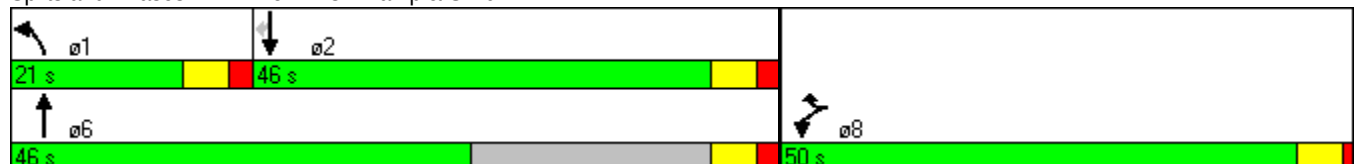
Cycle Length: 117

Actuated Cycle Length: 91.7

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: I-75 NB On-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

2: I-75 NB On-Ramp & SR 92

Future No-Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	595	0	436	194	1101	0	0	987	465
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				0.97		1.00	0.97	0.95			0.91	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3433		1583	3433	3539			5085	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3433		1583	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.25	0.95	0.91	0.97	0.92	0.92	0.95	0.94
Adj. Flow (vph)	0	0	0	654	0	459	213	1135	0	0	1039	495
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0	0	360
Lane Group Flow (vph)	0	0	0	654	0	422	213	1135	0	0	1039	135
Turn Type				Prot		custom	Prot					Perm
Protected Phases				8		8	1	6			2	
Permitted Phases												2
Actuated Green, G (s)				34.1		34.1	15.4	46.3			24.9	24.9
Effective Green, g (s)				34.1		34.1	15.4	46.3			24.9	24.9
Actuated g/C Ratio				0.37		0.37	0.17	0.51			0.27	0.27
Clearance Time (s)				5.0		5.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				5.0		5.0	2.0	5.0			5.0	5.0
Lane Grp Cap (vph)				1281		591	578	1793			1385	431
v/s Ratio Prot				0.19		c0.27	0.06	c0.32			c0.20	
v/s Ratio Perm												0.09
v/c Ratio				0.51		0.71	0.37	0.63			0.75	0.31
Uniform Delay, d1				22.2		24.5	33.7	16.4			30.4	26.4
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.7		5.0	0.1	1.0			2.8	0.9
Delay (s)				22.9		29.5	33.8	17.4			33.2	27.3
Level of Service				C		C	C	B			C	C
Approach Delay (s)		0.0			25.6			20.0			31.3	
Approach LOS		A			C			C			C	
Intersection Summary												
HCM Average Control Delay			25.9			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			91.4			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			72.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Northpoint Pkwy & SR 92

Future No-Build PM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	187	24	203	92	24	36	295	1139	11	34	1078
Lane Group Flow (vph)	217	29	286	121	33	51	311	1225	18	42	1294
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm	
Protected Phases		8			4		1	6			2
Permitted Phases	8		8	4		4	6		6	2	
Detector Phase	8	8	8	4	4	4	1	6	6	2	2
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	15.0	15.0	15.0	15.0
Minimum Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	14.0	29.0	29.0	29.0	29.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	61.0	61.0	46.0	46.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.8%	64.2%	64.2%	48.4%	48.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.74	0.07	0.56	0.41	0.08	0.13	1.14	0.52	0.02	0.20	0.74
Control Delay	49.4	27.3	12.0	34.9	27.5	8.4	121.9	10.3	3.6	18.8	23.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	27.3	12.0	34.9	27.5	8.4	121.9	10.3	3.6	18.8	23.0
Queue Length 50th (ft)	123	14	31	63	16	0	~154	180	0	13	306
Queue Length 95th (ft)	173	30	46	86	29	16	#342	295	5	37	#472
Internal Link Dist (ft)		1463			2848			960			3675
Turn Bay Length (ft)	90			220		220	235			320	
Base Capacity (vph)	404	549	624	405	549	503	272	2336	1051	215	1756
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.05	0.46	0.30	0.06	0.10	1.14	0.52	0.02	0.20	0.74
Intersection Summary											
Cycle Length: 95											
Actuated Cycle Length: 95											
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green											
Natural Cycle: 90											
Control Type: Actuated-Coordinated											
~ Volume exceeds capacity, queue is theoretically infinite.											
Queue shown is maximum after two cycles.											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											

Splits and Phases: 3: Northpoint Pkwy & SR 92



HCM Signalized Intersection Capacity Analysis

3: Northpoint Pkwy & SR 92

Future No-Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	187	24	203	92	24	36	295	1139	11	34	1078	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	0.98
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3479	3479
Satd. Flow (perm)	1370	1863	1583	1375	1863	1583	185	3539	1583	426	3479	3479
Peak-hour factor, PHF	0.86	0.82	0.71	0.76	0.72	0.71	0.95	0.93	0.62	0.80	0.94	0.85
Adj. Flow (vph)	217	29	286	121	33	51	311	1225	18	42	1147	147
RTOR Reduction (vph)	0	0	175	0	0	40	0	0	6	0	9	0
Lane Group Flow (vph)	217	29	111	121	33	11	311	1225	12	42	1285	0
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm		
Protected Phases		8			4		1	6			2	
Permitted Phases	8		8	4		4	6		6	2		
Actuated Green, G (s)	20.3	20.3	20.3	20.3	20.3	20.3	62.7	62.7	62.7	47.7	47.7	
Effective Green, g (s)	20.3	20.3	20.3	20.3	20.3	20.3	62.7	62.7	62.7	47.7	47.7	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.66	0.66	0.50	0.50	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	293	398	338	294	398	338	272	2336	1045	214	1747	
v/s Ratio Prot		0.02			0.02		c0.11	0.35			0.37	
v/s Ratio Perm	c0.16		0.07	0.09		0.01	c0.65		0.01	0.10		
v/c Ratio	0.74	0.07	0.33	0.41	0.08	0.03	1.14	0.52	0.01	0.20	0.74	
Uniform Delay, d1	34.9	29.8	31.6	32.2	29.9	29.6	24.1	8.4	5.5	13.1	18.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.7	0.1	0.6	0.9	0.1	0.0	98.9	0.8	0.0	2.0	2.8	
Delay (s)	44.5	29.9	32.1	33.1	30.0	29.6	123.0	9.2	5.6	15.1	21.5	
Level of Service	D	C	C	C	C	C	F	A	A	B	C	
Approach Delay (s)		37.1			31.8			32.0			21.3	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM Average Control Delay			28.8				HCM Level of Service			C		
HCM Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			95.0				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			82.2%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
4: Hunt Rd & SR 92

Future No-Build PM

3/13/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations												
Volume (vph)	13	8	231	26	17	351	928	43	15	1002	9	
Lane Group Flow (vph)	0	29	321	0	63	423	957	54	21	1022	12	
Turn Type	Perm		Perm	Perm		pm+pt		Perm	pm+pt		Perm	
Protected Phases		4			8	1	6		5	2		
Permitted Phases	4		4	8		6		6	2		2	
Detector Phase	4	4	4	8	8	1	6	6	5	2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0	
Total Split (s)	50.0	50.0	50.0	50.0	50.0	18.0	57.0	57.0	13.0	52.0	52.0	
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag	
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max	
v/c Ratio		0.11	0.80		0.24	0.99	0.41	0.05	0.05	0.57	0.01	
Control Delay		32.0	31.7		29.1	56.3	10.4	6.8	6.7	18.2	10.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		32.0	31.7		29.1	56.3	10.4	6.8	6.7	18.2	10.6	
Queue Length 50th (ft)		14	83		26	119	100	5	3	204	2	
Queue Length 95th (ft)		28	109		53	#319	264	24	10	324	10	
Internal Link Dist (ft)		1089			2278		3675			4253		
Turn Bay Length (ft)			110			390		80	425		110	
Base Capacity (vph)		744	854		753	429	2311	1042	418	1790	803	
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0	
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0	
Storage Cap Reductn		0	0		0	0	0	0	0	0	0	
Reduced v/c Ratio		0.04	0.38		0.08	0.99	0.41	0.05	0.05	0.57	0.01	

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 91.4

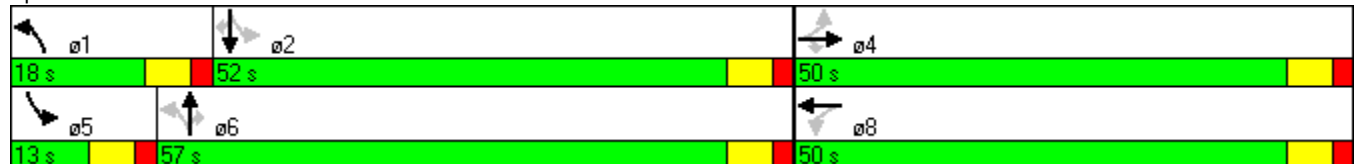
Natural Cycle: 75

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Hunt Rd & SR 92



HCM Signalized Intersection Capacity Analysis

4: Hunt Rd & SR 92

Future No-Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	8	231	26	17	11	351	928	43	15	1002	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1810	1583		1770		1770	3539	1583	1770	3539	1583
Flt Permitted		0.83	1.00		0.85		0.18	1.00	1.00	0.30	1.00	1.00
Satd. Flow (perm)		1538	1583		1543		343	3539	1583	557	3539	1583
Peak-hour factor, PHF	0.75	0.67	0.72	0.89	0.80	0.83	0.83	0.97	0.79	0.70	0.98	0.75
Adj. Flow (vph)	17	12	321	29	21	13	423	957	54	21	1022	12
RTOR Reduction (vph)	0	0	143	0	10	0	0	0	9	0	0	3
Lane Group Flow (vph)	0	29	178	0	53	0	423	957	45	21	1022	9
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		15.0	15.0		15.0		68.1	59.7	59.7	52.4	50.0	50.0
Effective Green, g (s)		15.0	15.0		15.0		68.1	59.7	59.7	52.4	50.0	50.0
Actuated g/C Ratio		0.16	0.16		0.16		0.72	0.63	0.63	0.55	0.53	0.53
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		243	250		243		427	2222	994	338	1861	832
v/s Ratio Prot							c0.13	0.27		0.00	0.29	
v/s Ratio Perm		0.02	c0.11		0.03		c0.58		0.03	0.03		0.01
v/c Ratio		0.12	0.71		0.22		0.99	0.43	0.05	0.06	0.55	0.01
Uniform Delay, d1		34.4	38.0		34.9		16.9	9.0	6.8	9.7	15.0	10.8
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	9.2		0.5		40.9	0.6	0.1	0.1	1.2	0.0
Delay (s)		34.6	47.2		35.4		57.8	9.6	6.9	9.8	16.2	10.8
Level of Service		C	D		D		E	A	A	A	B	B
Approach Delay (s)		46.1			35.4			23.7			16.0	
Approach LOS		D			D			C			B	
Intersection Summary												
HCM Average Control Delay			23.9				HCM Level of Service			C		
HCM Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			95.1				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			71.8%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
5: SR 92 & Old Alabama Rd

Future No-Build PM

3/13/2015

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	32	888	17	6	1059	130	6	4	61	0
Lane Group Flow (vph)	39	925	30	12	1115	159	8	24	72	13
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Prot	
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2				
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.5	30.0	30.0	16.5	33.0	33.0	17.0	48.0	16.5	46.0
Total Split (s)	18.5	62.0	62.0	18.5	62.0	62.0	19.0	19.0	18.5	19.0
Total Split (%)	15.6%	52.3%	52.3%	15.6%	52.3%	52.3%	16.0%	16.0%	15.6%	16.0%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	4.5	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
v/c Ratio	0.10	0.36	0.03	0.02	0.48	0.14	0.04	0.13	0.20	0.03
Control Delay	6.8	9.7	5.6	6.8	14.7	2.9	46.3	27.9	46.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	9.7	5.6	6.8	14.7	2.9	46.3	27.9	46.1	0.1
Queue Length 50th (ft)	5	82	1	1	205	0	4	4	20	0
Queue Length 95th (ft)	20	295	8	5	378	25	18	13	45	0
Internal Link Dist (ft)		4253			7586			348		1850
Turn Bay Length (ft)	425		145	310		240	130		230	
Base Capacity (vph)	431	2563	1153	537	2336	1099	221	231	428	532
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.36	0.03	0.02	0.48	0.14	0.04	0.10	0.17	0.02

Intersection Summary

Cycle Length: 118.5

Actuated Cycle Length: 98.2

Natural Cycle: 125

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: SR 92 & Old Alabama Rd

			
ø1	ø2	ø3	ø4
18.5 s	62 s	19 s	19 s
			
ø5	ø6	ø7	ø8
18.5 s	62 s	18.5 s	19 s

HCM Signalized Intersection Capacity Analysis

5: SR 92 & Old Alabama Rd

Future No-Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	888	17	6	1059	130	6	4	9	61	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.85	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1676		3433	1583	
Satd. Flow (perm)	347	3539	1583	536	3539	1583	1770	1676		3433	1583	
Peak-hour factor, PHF	0.83	0.96	0.57	0.50	0.95	0.82	0.75	0.50	0.56	0.85	0.92	0.83
Adj. Flow (vph)	39	925	30	12	1115	159	8	8	16	72	0	13
RTOR Reduction (vph)	0	0	9	0	0	65	0	15	0	0	12	0
Lane Group Flow (vph)	39	925	21	12	1115	94	8	9	0	72	1	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	74.9	69.3	69.3	67.1	65.4	65.4	1.7	4.8		7.9	10.5	
Effective Green, g (s)	74.9	69.3	69.3	67.1	65.4	65.4	1.7	4.8		7.9	10.5	
Actuated g/C Ratio	0.68	0.63	0.63	0.61	0.59	0.59	0.02	0.04		0.07	0.09	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	5.1	5.1	3.0	5.1	5.1	3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	307	2215	991	344	2091	935	27	73		245	150	
v/s Ratio Prot	c0.01	c0.26		0.00	c0.32		0.00	c0.01		c0.02	c0.00	
v/s Ratio Perm	0.08		0.01	0.02		0.06						
v/c Ratio	0.13	0.42	0.02	0.03	0.53	0.10	0.30	0.12		0.29	0.01	
Uniform Delay, d1	7.7	10.5	7.8	8.7	13.5	9.9	53.9	50.9		48.8	45.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.6	0.0	0.0	1.0	0.2	6.1	1.0		0.7	0.0	
Delay (s)	7.8	11.1	7.9	8.8	14.5	10.1	60.0	51.9		49.4	45.4	
Level of Service	A	B	A	A	B	B	E	D		D	D	
Approach Delay (s)		10.8			13.9			53.9			48.8	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM Average Control Delay			14.4			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			110.7			Sum of lost time (s)			41.0			
Intersection Capacity Utilization			49.3%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: SR 92 & Woodstock Rd

Future No-Build PM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	172	715	32	240	1097	244	17	137	130	137	80
Lane Group Flow (vph)	226	861	76	273	1167	317	30	161	167	156	317
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot	
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2			8		
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	8.0	8.0	4.0	8.0
Minimum Split (s)	10.5	34.0	34.0	10.5	36.0	36.0	10.5	49.0	49.0	11.0	49.0
Total Split (s)	21.5	57.0	57.0	21.5	57.0	57.0	18.5	32.0	32.0	27.0	32.0
Total Split (%)	15.6%	41.5%	41.5%	15.6%	41.5%	41.5%	13.5%	23.3%	23.3%	19.6%	23.3%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.80	0.58	0.11	0.73	0.79	0.41	0.27	0.59	0.45	0.50	0.73
Control Delay	48.6	30.1	13.8	26.2	36.6	11.4	61.9	57.9	10.7	59.1	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.6	30.1	13.8	26.2	36.6	11.4	61.9	57.9	10.7	59.1	44.2
Queue Length 50th (ft)	115	281	18	102	431	59	23	119	0	62	183
Queue Length 95th (ft)	170	337	13	#175	565	97	36	184	37	97	280
Internal Link Dist (ft)		7586			1244			2383			1543
Turn Bay Length (ft)	310		115	300		210	240		145	405	
Base Capacity (vph)	294	1480	685	390	1473	776	177	388	462	572	524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.58	0.11	0.70	0.79	0.41	0.17	0.41	0.36	0.27	0.60

Intersection Summary

Cycle Length: 137.5

Actuated Cycle Length: 120.6

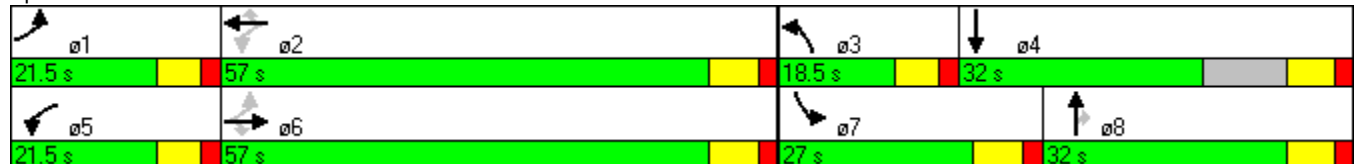
Natural Cycle: 130

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 6: SR 92 & Woodstock Rd



HCM Signalized Intersection Capacity Analysis

6: SR 92 & Woodstock Rd

Future No-Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	715	32	240	1097	244	17	137	130	137	80	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1665	
Flt Permitted	0.09	1.00	1.00	0.22	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	174	3539	1583	402	3539	1583	1770	1863	1583	3433	1665	
Peak-hour factor, PHF	0.76	0.83	0.42	0.88	0.94	0.77	0.57	0.85	0.78	0.88	0.86	0.62
Adj. Flow (vph)	226	861	76	273	1167	317	30	161	167	156	93	224
RTOR Reduction (vph)	0	0	23	0	0	119	0	0	139	0	65	0
Lane Group Flow (vph)	226	861	53	273	1167	198	30	161	28	156	252	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot	Perm		Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			
Actuated Green, G (s)	64.7	50.4	50.4	64.3	50.2	50.2	5.0	20.3	20.3	10.9	26.7	
Effective Green, g (s)	64.7	50.4	50.4	64.3	50.2	50.2	5.0	20.3	20.3	10.9	26.7	
Actuated g/C Ratio	0.53	0.41	0.41	0.52	0.41	0.41	0.04	0.16	0.16	0.09	0.22	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	277	1448	648	366	1442	645	72	307	261	304	361	
v/s Ratio Prot	c0.09	0.24		0.09	0.33		0.02	0.09		c0.05	c0.15	
v/s Ratio Perm	c0.33		0.03	0.30		0.13			0.02			
v/c Ratio	0.82	0.59	0.08	0.75	0.81	0.31	0.42	0.52	0.11	0.51	0.70	
Uniform Delay, d1	29.6	28.4	22.3	18.8	32.3	24.7	57.7	47.0	43.7	53.6	44.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.7	1.8	0.2	8.0	5.0	1.2	3.9	2.1	0.2	1.5	6.2	
Delay (s)	46.3	30.2	22.5	26.9	37.3	26.0	61.5	49.1	44.0	55.1	50.8	
Level of Service	D	C	C	C	D	C	E	D	D	E	D	
Approach Delay (s)		32.8			33.6			47.8			52.2	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay			37.1			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			123.2			Sum of lost time (s)			20.5			
Intersection Capacity Utilization			78.4%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Future “Build” Intersections Analysis

Queues

Future Build AM

3/13/2015

1: I-75 SB Off-Ramp & SR 92



Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰	↰↰	↰↰	↰	↰↰	↰↰
Volume (vph)	461	249	914	383	266	694
Lane Group Flow (vph)	490	293	933	435	302	789
Turn Type	Prot	custom		Perm	Prot	
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	12.0	12.0	6.0	12.0
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	22.0
Total Split (s)	31.0	31.0	66.0	66.0	36.0	66.0
Total Split (%)	23.3%	23.3%	49.6%	49.6%	27.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.65	0.35	0.72	0.51	0.54	0.36
Control Delay	31.6	4.9	24.5	4.4	34.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	4.9	24.5	4.4	34.0	7.9
Queue Length 50th (ft)	102	0	183	0	63	80
Queue Length 95th (ft)	185	27	314	53	125	141
Internal Link Dist (ft)			1456			818
Turn Bay Length (ft)	255	230				
Base Capacity (vph)	1211	1173	2950	1392	1453	3539
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	0.40	0.25	0.32	0.31	0.21	0.22

Intersection Summary

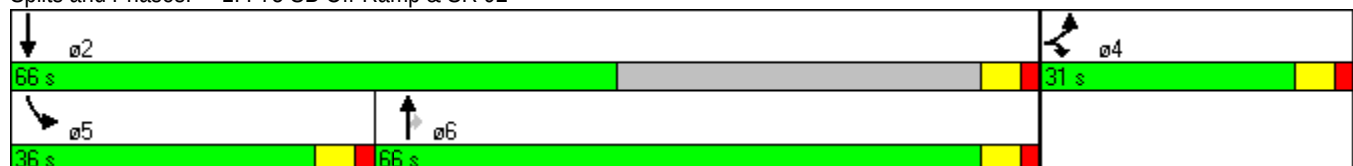
Cycle Length: 133

Actuated Cycle Length: 73.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-75 SB Off-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

1: I-75 SB Off-Ramp & SR 92

Future Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	461	0	249	0	0	0	0	914	383	266	694	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		0.88					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		2787					3539	1583	3433	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					3539	1583	3433	3539	
Peak-hour factor, PHF	0.94	0.25	0.85	0.92	0.92	0.92	0.92	0.98	0.88	0.88	0.88	0.92
Adj. Flow (vph)	490	0	293	0	0	0	0	933	435	302	789	0
RTOR Reduction (vph)	0	0	228	0	0	0	0	0	274	0	0	0
Lane Group Flow (vph)	490	0	65	0	0	0	0	933	161	302	789	0
Turn Type	Prot		custom						Perm		Prot	
Protected Phases	4		4					6		5	2	
Permitted Phases								6				
Actuated Green, G (s)	16.1		16.1					26.9	26.9	11.9	44.8	
Effective Green, g (s)	16.1		16.1					26.9	26.9	11.9	44.8	
Actuated g/C Ratio	0.22		0.22					0.37	0.37	0.16	0.61	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0		2.0					6.0	6.0	2.0	5.0	
Lane Grp Cap (vph)	758		616					1306	584	560	2175	
v/s Ratio Prot	c0.14		0.02					c0.26		c0.09	0.22	
v/s Ratio Perm								0.10				
v/c Ratio	0.65		0.11					0.71	0.27	0.54	0.36	
Uniform Delay, d1	25.8		22.7					19.7	16.2	28.0	7.0	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4		0.0					2.7	0.7	0.5	0.2	
Delay (s)	27.2		22.7					22.4	16.9	28.5	7.2	
Level of Service	C		C					C	B	C	A	
Approach Delay (s)		25.5			0.0			20.7			13.1	
Approach LOS		C			A			C			B	
Intersection Summary												
HCM Average Control Delay			19.3									
HCM Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			72.9									
Intersection Capacity Utilization			65.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

2: I-75 NB On-Ramp & SR 92

Future Build AM

3/13/2015

						
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	189	353	172	1190	793	486
Lane Group Flow (vph)	228	401	223	1253	844	631
Turn Type	Prot	custom	Prot			Perm
Protected Phases	8	8	1	6	2	
Permitted Phases						2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	12.0	12.0	12.0
Minimum Split (s)	21.0	21.0	21.0	22.0	22.0	22.0
Total Split (s)	50.0	50.0	21.0	46.0	46.0	46.0
Total Split (%)	42.7%	42.7%	17.9%	39.3%	39.3%	39.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	None	None	None	Min	Min	Min
v/c Ratio	0.20	0.72	0.34	0.67	0.65	0.72
Control Delay	19.0	28.5	32.3	17.6	30.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	28.5	32.3	17.6	30.0	7.9
Queue Length 50th (ft)	38	143	46	220	133	0
Queue Length 95th (ft)	64	261	87	406	215	22
Internal Link Dist (ft)				818	960	
Turn Bay Length (ft)	285					
Base Capacity (vph)	1985	933	661	2773	2613	1120
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	0.11	0.43	0.34	0.45	0.32	0.56

Intersection Summary

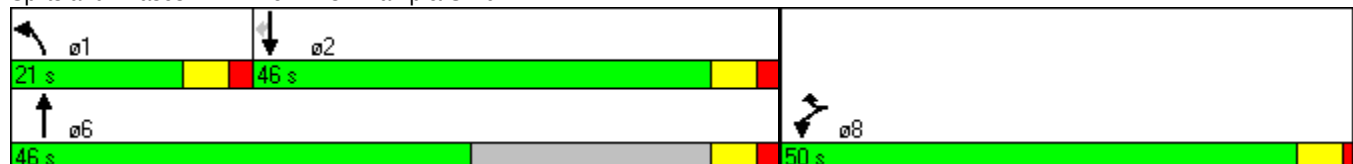
Cycle Length: 117

Actuated Cycle Length: 79.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: I-75 NB On-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

2: I-75 NB On-Ramp & SR 92

Future Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	189	0	353	172	1190	0	0	793	486
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				0.97		1.00	0.97	0.95			0.91	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3433		1583	3433	3539			5085	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3433		1583	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.92	0.88	0.77	0.95	0.92	0.92	0.94	0.77
Adj. Flow (vph)	0	0	0	228	0	401	223	1253	0	0	844	631
RTOR Reduction (vph)	0	0	0	0	0	29	0	0	0	0	0	468
Lane Group Flow (vph)	0	0	0	228	0	372	223	1253	0	0	844	163
Turn Type				Prot		custom	Prot					Perm
Protected Phases				8		8	1	6			2	
Permitted Phases												2
Actuated Green, G (s)				26.5		26.5	15.3	41.8			20.5	20.5
Effective Green, g (s)				26.5		26.5	15.3	41.8			20.5	20.5
Actuated g/C Ratio				0.33		0.33	0.19	0.53			0.26	0.26
Clearance Time (s)				5.0		5.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				5.0		5.0	2.0	5.0			5.0	5.0
Lane Grp Cap (vph)				1147		529	662	1865			1315	409
v/s Ratio Prot				0.07		c0.24	0.06	c0.35			0.17	
v/s Ratio Perm												0.10
v/c Ratio				0.20		0.70	0.34	0.67			0.64	0.40
Uniform Delay, d1				18.8		23.0	27.6	13.7			26.1	24.3
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		5.3	0.1	1.3			1.5	1.3
Delay (s)				19.0		28.3	27.7	15.0			27.6	25.6
Level of Service				B		C	C	B			C	C
Approach Delay (s)		0.0			24.9			16.9			26.8	
Approach LOS		A			C			B			C	
Intersection Summary												
HCM Average Control Delay			22.4			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			79.3			Sum of lost time (s)			11.0			
Intersection Capacity Utilization			65.1%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Northpoint Pkwy & SR 92

Future Build AM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	162	16	121	19	9	1	265	1189	6	17	1114
Lane Group Flow (vph)	188	17	142	30	16	4	312	1252	8	25	1415
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm	
Protected Phases		8			4		1	6			2
Permitted Phases	8		8	4		4	6		6	2	
Detector Phase	8	8	8	4	4	4	1	6	6	2	2
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	15.0	15.0	15.0	15.0
Minimum Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	14.0	29.0	29.0	29.0	29.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	61.0	61.0	46.0	46.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.8%	64.2%	64.2%	48.4%	48.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.71	0.05	0.34	0.11	0.04	0.01	1.22	0.52	0.01	0.11	0.77
Control Delay	49.7	28.5	7.4	30.0	28.4	17.0	151.7	9.1	4.0	15.6	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	28.5	7.4	30.0	28.4	17.0	151.7	9.1	4.0	15.6	22.8
Queue Length 50th (ft)	107	8	0	15	8	0	~175	172	0	7	336
Queue Length 95th (ft)	156	24	38	25	14	1	#326	281	4	19	#510
Internal Link Dist (ft)		1463			2848			960			3675
Turn Bay Length (ft)	90			220		220	235			320	
Base Capacity (vph)	410	549	567	410	549	469	256	2415	1083	218	1834
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.03	0.25	0.07	0.03	0.01	1.22	0.52	0.01	0.11	0.77
Intersection Summary											
Cycle Length: 95											
Actuated Cycle Length: 95											
Offset: 10 (11%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green											
Natural Cycle: 100											
Control Type: Actuated-Coordinated											
~ Volume exceeds capacity, queue is theoretically infinite.											
Queue shown is maximum after two cycles.											
# 95th percentile volume exceeds capacity, queue may be longer.											
Queue shown is maximum after two cycles.											

Splits and Phases: 3: Northpoint Pkwy & SR 92



HCM Signalized Intersection Capacity Analysis

3: Northpoint Pkwy & SR 92

Future Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	16	121	19	9	1	265	1189	6	17	1114	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3478	
Flt Permitted	0.75	1.00	1.00	0.75	1.00	1.00	0.08	1.00	1.00	0.22	1.00	
Satd. Flow (perm)	1392	1863	1583	1390	1863	1583	151	3539	1583	415	3478	
Peak-hour factor, PHF	0.86	0.94	0.85	0.64	0.56	0.25	0.85	0.95	0.75	0.67	0.89	0.81
Adj. Flow (vph)	188	17	142	30	16	4	312	1252	8	25	1252	163
RTOR Reduction (vph)	0	0	115	0	0	3	0	0	3	0	9	0
Lane Group Flow (vph)	188	17	27	30	16	1	312	1252	5	25	1406	0
Turn Type	Perm		Perm	Perm	Perm		pm+pt	Perm		Perm		
Protected Phases	8				4		1	6			2	
Permitted Phases	8		8	4			4	6		6	2	
Actuated Green, G (s)	18.2	18.2	18.2	18.2	18.2	18.2	64.8	64.8	64.8	49.8	49.8	
Effective Green, g (s)	18.2	18.2	18.2	18.2	18.2	18.2	64.8	64.8	64.8	49.8	49.8	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.68	0.68	0.68	0.52	0.52	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	267	357	303	266	357	303	256	2414	1080	218	1823	
v/s Ratio Prot	0.01				0.01		c0.12	0.35			0.40	
v/s Ratio Perm	c0.14		0.02	0.02			0.00	c0.72		0.00	0.06	
v/c Ratio	0.70	0.05	0.09	0.11	0.04	0.00	1.22	0.52	0.01	0.11	0.77	
Uniform Delay, d1	35.9	31.3	31.6	31.7	31.3	31.1	26.9	7.4	4.8	11.4	18.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.2	0.1	0.1	0.2	0.1	0.0	128.5	0.8	0.0	1.1	3.2	
Delay (s)	44.0	31.4	31.7	31.9	31.4	31.1	155.3	8.2	4.8	12.5	21.3	
Level of Service	D	C	C	C	C	C	F	A	A	B	C	
Approach Delay (s)	38.4				31.7		37.4				21.1	
Approach LOS	D				C		D				C	
Intersection Summary												
HCM Average Control Delay			30.5		HCM Level of Service				C			
HCM Volume to Capacity ratio			1.06									
Actuated Cycle Length (s)			95.0		Sum of lost time (s)				12.0			
Intersection Capacity Utilization			80.3%		ICU Level of Service				D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
4: Hunt Rd & SR 92

Future Build AM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	13	61	341	41	30	119	1225	25	40	871	5
Lane Group Flow (vph)	0	196	449	0	209	138	1263	50	89	937	8
Turn Type	Perm		Perm	Perm		pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8	1	6		5	2	
Permitted Phases	4		4	8		6		6	2		2
Detector Phase	4	4	4	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	18.0	57.0	57.0	13.0	52.0	52.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
v/c Ratio		0.44	0.86		0.59	0.39	0.67	0.06	0.36	0.55	0.01
Control Delay		34.5	37.2		36.0	12.6	22.2	12.2	14.3	21.6	14.6
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		34.5	37.2		36.0	12.6	22.2	12.2	14.3	21.6	14.6
Queue Length 50th (ft)		107	173		105	31	310	10	20	208	1
Queue Length 95th (ft)		57	207		60	77	517	18	26	370	8
Internal Link Dist (ft)		1089			2278		3675			4253	
Turn Bay Length (ft)			110			390		80	425		110
Base Capacity (vph)		796	803		615	411	1885	851	250	1715	769
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.25	0.56		0.34	0.34	0.67	0.06	0.36	0.55	0.01

Intersection Summary

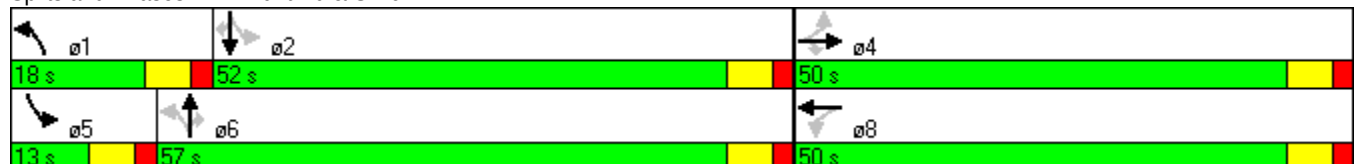
Cycle Length: 120

Actuated Cycle Length: 100.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Hunt Rd & SR 92



HCM Signalized Intersection Capacity Analysis

4: Hunt Rd & SR 92

Future Build AM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	61	341	41	30	29	119	1225	25	40	871	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00		0.99		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1855	1583		1751		1770	3539	1583	1770	3539	1583
Flt Permitted		0.96	1.00		0.76		0.21	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)		1791	1583		1355		389	3539	1583	256	3539	1583
Peak-hour factor, PHF	0.75	0.34	0.76	0.65	0.40	0.41	0.86	0.97	0.50	0.45	0.93	0.62
Adj. Flow (vph)	17	179	449	63	75	71	138	1263	50	89	937	8
RTOR Reduction (vph)	0	0	135	0	18	0	0	0	8	0	0	2
Lane Group Flow (vph)	0	196	314	0	191	0	138	1263	42	89	937	6
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		24.7	24.7		24.7		62.2	53.4	53.4	55.4	50.0	50.0
Effective Green, g (s)		24.7	24.7		24.7		62.2	53.4	53.4	55.4	50.0	50.0
Actuated g/C Ratio		0.24	0.24		0.24		0.61	0.53	0.53	0.55	0.49	0.49
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		436	385		330		358	1862	833	220	1743	780
v/s Ratio Prot							c0.03	c0.36		0.02	0.26	
v/s Ratio Perm		0.11	c0.20		0.14		0.20		0.03	0.20		0.00
v/c Ratio		0.45	0.81		0.58		0.39	0.68	0.05	0.40	0.54	0.01
Uniform Delay, d1		32.6	36.2		33.8		10.1	17.7	11.7	13.2	17.8	13.1
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	12.4		2.5		0.7	2.0	0.1	1.2	1.2	0.0
Delay (s)		33.4	48.7		36.3		10.8	19.7	11.8	14.5	19.0	13.1
Level of Service		C	D		D		B	B	B	B	B	B
Approach Delay (s)		44.0			36.3			18.6			18.5	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay		24.6		HCM Level of Service				C				
HCM Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		101.5		Sum of lost time (s)				18.0				
Intersection Capacity Utilization		65.8%		ICU Level of Service				C				
Analysis Period (min)		15										
c Critical Lane Group												

Queues
5: SR 92 & Old Alabama Rd

Future Build AM
3/13/2015

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Volume (vph)	95	1186	23	876	87	15	14	138	11
Lane Group Flow (vph)	244	1348	46	973	121	21	85	177	81
Turn Type	pm+pt		pm+pt		Perm	Prot		Prot	
Protected Phases	1	6	5	2		3	8	7	4
Permitted Phases	6		2		2				
Detector Phase	1	6	5	2	2	3	8	7	4
Switch Phase									
Minimum Initial (s)	10.0	15.0	10.0	15.0	15.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.5	30.0	16.5	33.0	33.0	17.0	48.0	16.5	46.0
Total Split (s)	18.5	62.0	18.5	62.0	62.0	19.0	19.0	18.5	19.0
Total Split (%)	15.6%	52.3%	15.6%	52.3%	52.3%	16.0%	16.0%	15.6%	16.0%
Yellow Time (s)	4.5	5.0	4.5	5.0	5.0	5.0	5.0	4.5	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	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	0.0
Total Lost Time (s)	6.5	7.0	6.5	7.0	7.0	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	Max	None	Max	Max	None	None	None	None
v/c Ratio	0.66	0.70	0.18	0.55	0.14	0.13	0.41	0.51	0.26
Control Delay	18.9	24.3	10.0	22.2	3.6	51.5	28.0	54.7	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	24.3	10.0	22.2	3.6	51.5	28.0	54.7	21.6
Queue Length 50th (ft)	70	416	12	266	0	15	21	65	15
Queue Length 95th (ft)	44	512	15	345	15	32	16	89	9
Internal Link Dist (ft)		4253		2739			348		1215
Turn Bay Length (ft)	425		310		240	130		230	
Base Capacity (vph)	379	1918	293	1755	846	191	238	371	320
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.70	0.16	0.55	0.14	0.11	0.36	0.48	0.25

Intersection Summary

Cycle Length: 118.5

Actuated Cycle Length: 111.6

Natural Cycle: 135

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: SR 92 & Old Alabama Rd

					
ø1	ø2	ø3	ø4	ø5	ø6
18.5 s	62 s	19 s	19 s	18.5 s	19 s
					
ø1	ø2	ø3	ø4	ø5	ø6
18.5 s	62 s	18.5 s	19 s		

HCM Signalized Intersection Capacity Analysis

5: SR 92 & Old Alabama Rd

Future Build AM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	95	1186	0	23	876	87	15	14	33	138	11	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Flt Protected	1.00	1.00		1.00	1.00	0.85	1.00	0.90		1.00	0.90	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539		1770	3539	1583	1770	1682		3433	1673	
Satd. Flow (perm)	362	3539		202	3539	1583	1770	1682		3433	1673	
Peak-hour factor, PHF	0.39	0.88	0.92	0.50	0.90	0.72	0.70	0.46	0.60	0.78	0.42	0.71
Adj. Flow (vph)	244	1348	0	46	973	121	21	30	55	177	26	55
RTOR Reduction (vph)	0	0	0	0	0	62	0	50	0	0	47	0
Lane Group Flow (vph)	244	1348	0	46	973	59	21	35	0	177	34	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	71.8	60.5		64.6	56.9	56.9	3.8	10.9		11.2	17.8	
Effective Green, g (s)	71.8	60.5		64.6	56.9	56.9	3.8	10.9		11.2	17.8	
Actuated g/C Ratio	0.61	0.52		0.55	0.49	0.49	0.03	0.09		0.10	0.15	
Clearance Time (s)	6.5	7.0		6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	5.1		3.0	5.1	5.1	3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	357	1825		214	1717	768	57	156		328	254	
v/s Ratio Prot	c0.07	c0.38		0.01	0.27		0.01	c0.02		c0.05	0.02	
v/s Ratio Perm	0.35			0.10		0.04						
v/c Ratio	0.68	0.74		0.21	0.57	0.08	0.37	0.23		0.54	0.14	
Uniform Delay, d1	13.5	22.2		15.5	21.4	16.1	55.6	49.3		50.6	43.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.3	2.7		0.5	1.4	0.2	4.0	1.0		1.7	0.3	
Delay (s)	18.8	24.9		16.0	22.8	16.3	59.6	50.3		52.3	43.4	
Level of Service	B	C		B	C	B	E	D		D	D	
Approach Delay (s)		24.0			21.8			52.1			49.5	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay			26.3			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			117.3			Sum of lost time (s)			27.0			
Intersection Capacity Utilization			68.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: SR 92 & Woodstock Rd

Future Build AM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	133	1044	21	109	851	79	40	73	227	280	79
Lane Group Flow (vph)	141	1099	24	138	925	118	58	111	273	359	308
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot	
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2			8		
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	8.0	8.0	4.0	8.0
Minimum Split (s)	10.5	34.0	34.0	10.5	36.0	36.0	10.5	49.0	49.0	11.0	49.0
Total Split (s)	21.5	57.0	57.0	21.5	57.0	57.0	18.5	32.0	32.0	27.0	32.0
Total Split (%)	15.6%	41.5%	41.5%	15.6%	41.5%	41.5%	13.5%	23.3%	23.3%	19.6%	23.3%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.46	0.74	0.04	0.55	0.62	0.16	0.43	0.50	0.70	0.74	0.75
Control Delay	19.1	34.8	17.4	23.4	30.8	8.1	65.5	58.1	21.5	60.1	48.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	34.8	17.4	23.4	30.8	8.1	65.5	58.1	21.5	60.1	48.1
Queue Length 50th (ft)	51	378	6	49	296	11	44	82	34	139	183
Queue Length 95th (ft)	98	552	27	83	435	26	72	106	99	179	233
Internal Link Dist (ft)		4756			1244			2383			1543
Turn Bay Length (ft)	310		115	300		210	240		145	405	
Base Capacity (vph)	374	1483	669	318	1494	723	178	390	510	575	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.74	0.04	0.43	0.62	0.16	0.33	0.28	0.54	0.62	0.59

Intersection Summary

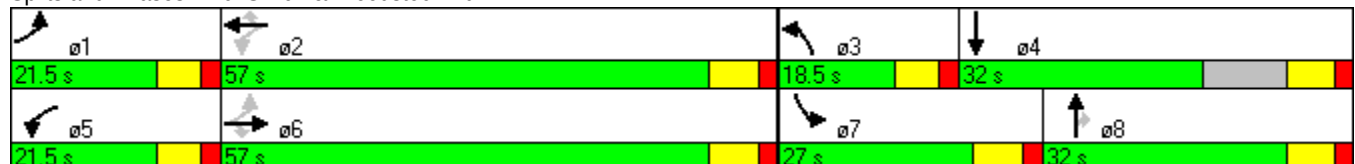
Cycle Length: 137.5

Actuated Cycle Length: 120.3

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

Splits and Phases: 6: SR 92 & Woodstock Rd



HCM Signalized Intersection Capacity Analysis

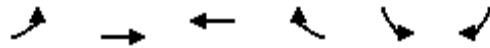
6: SR 92 & Woodstock Rd

Future Build AM
3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	133	1044	21	109	851	79	40	73	227	280	79	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1679	
Flt Permitted	0.19	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	360	3539	1583	226	3539	1583	1770	1863	1583	3433	1679	
Peak-hour factor, PHF	0.94	0.95	0.88	0.79	0.92	0.67	0.69	0.66	0.83	0.78	0.75	0.89
Adj. Flow (vph)	141	1099	24	138	925	118	58	111	273	359	105	203
RTOR Reduction (vph)	0	0	6	0	0	55	0	0	196	0	53	0
Lane Group Flow (vph)	141	1099	18	138	925	63	58	111	77	359	255	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot	Perm		Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			
Actuated Green, G (s)	60.7	50.4	50.4	61.5	50.8	50.8	7.8	15.9	15.9	17.1	25.7	
Effective Green, g (s)	60.7	50.4	50.4	61.5	50.8	50.8	7.8	15.9	15.9	17.1	25.7	
Actuated g/C Ratio	0.50	0.41	0.41	0.51	0.42	0.42	0.06	0.13	0.13	0.14	0.21	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	299	1467	656	250	1478	661	114	244	207	483	355	
v/s Ratio Prot	0.04	c0.31		c0.05	0.26		0.03	0.06		c0.10	c0.15	
v/s Ratio Perm	0.20		0.01	0.23		0.04			0.05			
v/c Ratio	0.47	0.75	0.03	0.55	0.63	0.10	0.51	0.45	0.37	0.74	0.72	
Uniform Delay, d1	18.5	30.2	21.1	20.3	27.9	21.5	55.0	48.8	48.3	50.1	44.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	3.6	0.1	2.6	2.0	0.3	3.5	1.8	1.5	6.1	7.3	
Delay (s)	19.7	33.8	21.2	23.0	29.9	21.8	58.6	50.7	49.8	56.3	51.9	
Level of Service	B	C	C	C	C	C	E	D	D	E	D	
Approach Delay (s)		32.0			28.3			51.2			54.2	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM Average Control Delay	37.3			HCM Level of Service			D					
HCM Volume to Capacity ratio	0.75											
Actuated Cycle Length (s)	121.6			Sum of lost time (s)			27.5					
Intersection Capacity Utilization	76.0%			ICU Level of Service			D					
Analysis Period (min)	15											
c Critical Lane Group												

Queues
7: SR 92 & Site Drwy

Future Build AM
3/13/2015

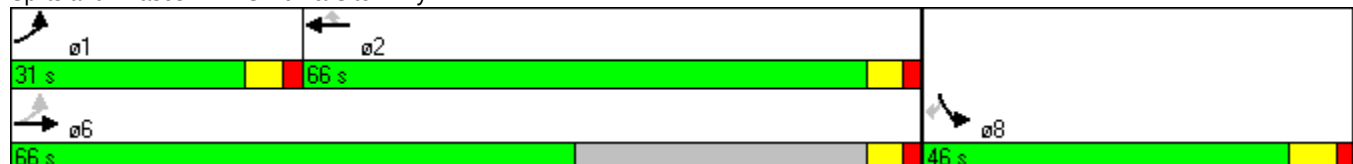


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	248	1162	932	166	36	54
Lane Group Flow (vph)	270	1223	1024	180	39	59
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		8	
Permitted Phases	6			2		8
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	16.0	22.0	22.0	22.0	23.0	23.0
Total Split (s)	31.0	66.0	66.0	66.0	46.0	46.0
Total Split (%)	21.7%	46.2%	46.2%	46.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	7.0	7.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	Max	Max	Max	None	None
v/c Ratio	0.55	0.42	0.47	0.17	0.21	0.27
Control Delay	7.5	4.0	12.6	2.9	46.3	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	4.0	12.6	2.9	46.3	15.4
Queue Length 50th (ft)	38	116	178	5	23	0
Queue Length 95th (ft)	63	156	284	38	59	40
Internal Link Dist (ft)		2739	4756		946	
Turn Bay Length (ft)	310			250		
Base Capacity (vph)	664	3219	2179	1035	702	663
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	0.41	0.38	0.47	0.17	0.06	0.09

Intersection Summary

Cycle Length: 143
Actuated Cycle Length: 99
Natural Cycle: 65
Control Type: Semi Act-Uncoord

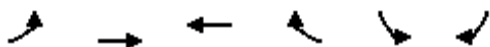
Splits and Phases: 7: SR 92 & Site Drwy



HCM Signalized Intersection Capacity Analysis

7: SR 92 & Site Drwy

Future Build AM
3/13/2015



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	248	1162	932	166	36	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.21	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	390	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.95	0.91	0.92	0.92	0.92
Adj. Flow (vph)	270	1223	1024	180	39	59
RTOR Reduction (vph)	0	0	0	63	0	54
Lane Group Flow (vph)	270	1223	1024	117	39	5
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		8	
Permitted Phases	6			2		8
Actuated Green, G (s)	79.6	79.6	61.0	61.0	8.0	8.0
Effective Green, g (s)	79.6	79.6	61.0	61.0	8.0	8.0
Actuated g/C Ratio	0.79	0.79	0.61	0.61	0.08	0.08
Clearance Time (s)	6.0	6.0	6.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	5.0	5.0	5.0	4.0	4.0
Lane Grp Cap (vph)	481	2800	2146	960	141	126
v/s Ratio Prot	c0.07	0.35	0.29		c0.02	
v/s Ratio Perm	c0.37			0.07		0.00
v/c Ratio	0.56	0.44	0.48	0.12	0.28	0.04
Uniform Delay, d1	5.5	3.3	11.0	8.4	43.6	42.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.5	0.8	0.3	1.5	0.2
Delay (s)	7.0	3.8	11.7	8.7	45.0	42.9
Level of Service	A	A	B	A	D	D
Approach Delay (s)		4.4	11.3		43.8	
Approach LOS		A	B		D	
Intersection Summary						
HCM Average Control Delay			8.8	HCM Level of Service		A
HCM Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			100.6	Sum of lost time (s)		13.0
Intersection Capacity Utilization			63.7%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis 8: Old Alabama Rd &

Future Build AM
3/13/2015

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	1	61	135	3	157
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	1	66	147	3	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			1295			
pX, platoon unblocked						
vC, conflicting volume	317	140			213	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	317	140			213	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	675	908			1357	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	34	213	174			
Volume Left	33	0	3			
Volume Right	1	147	0			
cSH	680	1700	1357			
Volume to Capacity	0.05	0.13	0.00			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	10.6	0.0	0.2			
Lane LOS	B		A			
Approach Delay (s)	10.6	0.0	0.2			
Approach LOS	B					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			21.5%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

Future Build PM

3/13/2015

1: I-75 SB Off-Ramp & SR 92



Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	378	226	1020	329	408	1448
Lane Group Flow (vph)	402	310	1085	346	434	1508
Turn Type	Prot	custom		Perm	Prot	
Protected Phases	4	4	6		5	2
Permitted Phases				6		
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	12.0	12.0	6.0	12.0
Minimum Split (s)	22.0	22.0	22.0	22.0	12.0	22.0
Total Split (s)	31.0	31.0	66.0	66.0	36.0	66.0
Total Split (%)	23.3%	23.3%	49.6%	49.6%	27.1%	49.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	Min	Min	None	Min
v/c Ratio	0.63	0.50	0.79	0.42	0.65	0.65
Control Delay	37.6	23.0	27.5	4.5	37.4	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	23.0	27.5	4.5	37.4	9.8
Queue Length 50th (ft)	96	48	244	5	104	201
Queue Length 95th (ft)	187	82	417	62	201	343
Internal Link Dist (ft)			1456			818
Turn Bay Length (ft)	255	230				
Base Capacity (vph)	1092	967	2685	1280	1311	3433
Starvation Cap Reductn	0	0	0	0	0	65
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.32	0.40	0.27	0.33	0.45

Intersection Summary

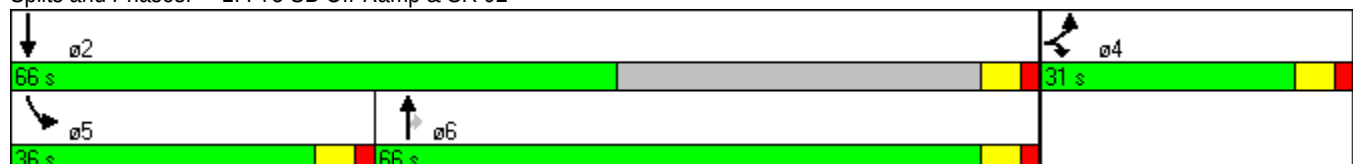
Cycle Length: 133

Actuated Cycle Length: 82.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: I-75 SB Off-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

Future Build PM

1: I-75 SB Off-Ramp & SR 92

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	378	0	226	0	0	0	0	1020	329	408	1448	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97		0.88					0.95	1.00	0.97	0.95	
Frt	1.00		0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433		2787					3539	1583	3433	3539	
Flt Permitted	0.95		1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433		2787					3539	1583	3433	3539	
Peak-hour factor, PHF	0.94	0.92	0.73	0.92	0.92	0.92	0.92	0.94	0.95	0.94	0.96	0.92
Adj. Flow (vph)	402	0	310	0	0	0	0	1085	346	434	1508	0
RTOR Reduction (vph)	0	0	96	0	0	0	0	0	199	0	0	0
Lane Group Flow (vph)	402	0	214	0	0	0	0	1085	147	434	1508	0
Turn Type	Prot		custom						Perm		Prot	
Protected Phases	4		4					6		5	2	
Permitted Phases									6			
Actuated Green, G (s)	15.4		15.4					32.4	32.4	16.2	54.6	
Effective Green, g (s)	15.4		15.4					32.4	32.4	16.2	54.6	
Actuated g/C Ratio	0.19		0.19					0.40	0.40	0.20	0.67	
Clearance Time (s)	6.0		6.0					6.0	6.0	6.0	6.0	
Vehicle Extension (s)	2.0		2.0					6.0	6.0	2.0	5.0	
Lane Grp Cap (vph)	645		523					1398	625	678	2356	
v/s Ratio Prot	c0.12		0.08					c0.31		0.13	c0.43	
v/s Ratio Perm									0.09			
v/c Ratio	0.62		0.41					0.78	0.24	0.64	0.64	
Uniform Delay, d1	30.6		29.3					21.6	16.5	30.2	8.0	
Progression Factor	1.00		1.00					1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4		0.2					3.5	0.5	1.6	0.8	
Delay (s)	32.0		29.5					25.1	17.1	31.8	8.8	
Level of Service	C		C					C	B	C	A	
Approach Delay (s)		30.9			0.0			23.2			13.9	
Approach LOS		C			A			C			B	
Intersection Summary												
HCM Average Control Delay			20.1									
HCM Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			82.0									
Intersection Capacity Utilization			85.3%									
Analysis Period (min)			15									
c Critical Lane Group												



Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations	↰↰	↰	↰↰	↰↰	↰↰↰	↰
Volume (vph)	595	491	194	1164	1224	672
Lane Group Flow (vph)	654	517	213	1200	1288	715
Turn Type	Prot	custom	Prot			Perm
Protected Phases	8	8	1	6	2	
Permitted Phases						2
Detector Phase	8	8	1	6	2	2
Switch Phase						
Minimum Initial (s)	10.0	10.0	15.0	12.0	12.0	12.0
Minimum Split (s)	21.0	21.0	21.0	22.0	22.0	22.0
Total Split (s)	50.0	50.0	21.0	46.0	46.0	46.0
Total Split (%)	42.7%	42.7%	17.9%	39.3%	39.3%	39.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	5.0	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Recall Mode	None	None	None	Min	Min	Min
v/c Ratio	0.50	0.82	0.42	0.66	0.83	0.73
Control Delay	26.6	38.6	46.1	21.5	39.1	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	38.6	46.1	21.5	39.1	7.1
Queue Length 50th (ft)	171	283	72	332	311	0
Queue Length 95th (ft)	245	#497	117	406	367	96
Internal Link Dist (ft)				818	960	
Turn Bay Length (ft)	285					
Base Capacity (vph)	1522	730	507	2127	2004	1057
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	0.43	0.71	0.42	0.56	0.64	0.68

Intersection Summary

Cycle Length: 117

Actuated Cycle Length: 103.7

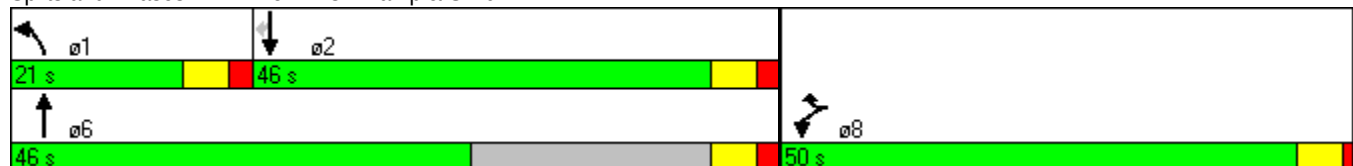
Natural Cycle: 80

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 2: I-75 NB On-Ramp & SR 92



HCM Signalized Intersection Capacity Analysis

2: I-75 NB On-Ramp & SR 92

Future Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	595	0	491	194	1164	0	0	1224	672
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				0.97		1.00	0.97	0.95			0.91	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3433		1583	3433	3539			5085	1583
Flt Permitted				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				3433		1583	3433	3539			5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.91	0.25	0.95	0.91	0.97	0.92	0.92	0.95	0.94
Adj. Flow (vph)	0	0	0	654	0	517	213	1200	0	0	1288	715
RTOR Reduction (vph)	0	0	0	0	0	31	0	0	0	0	0	495
Lane Group Flow (vph)	0	0	0	654	0	486	213	1200	0	0	1288	220
Turn Type				Prot		custom	Prot					Perm
Protected Phases				8		8	1	6			2	
Permitted Phases												2
Actuated Green, G (s)				39.3		39.3	15.3	53.1			31.8	31.8
Effective Green, g (s)				39.3		39.3	15.3	53.1			31.8	31.8
Actuated g/C Ratio				0.38		0.38	0.15	0.51			0.31	0.31
Clearance Time (s)				5.0		5.0	6.0	6.0			6.0	6.0
Vehicle Extension (s)				5.0		5.0	2.0	5.0			5.0	5.0
Lane Grp Cap (vph)				1305		602	508	1817			1564	487
v/s Ratio Prot				0.19		c0.31	0.06	c0.34			c0.25	
v/s Ratio Perm												0.14
v/c Ratio				0.50		0.81	0.42	0.66			0.82	0.45
Uniform Delay, d1				24.5		28.7	40.0	18.5			33.2	28.8
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.6		8.9	0.2	1.2			4.1	1.4
Delay (s)				25.2		37.5	40.2	19.7			37.3	30.2
Level of Service				C		D	D	B			D	C
Approach Delay (s)		0.0			30.6			22.8			34.8	
Approach LOS		A			C			C			C	
Intersection Summary												
HCM Average Control Delay			30.0			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			103.4			Sum of lost time (s)			17.0			
Intersection Capacity Utilization			85.3%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
3: Northpoint Pkwy & SR 92

Future Build PM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	187	24	203	92	24	36	295	1257	11	34	1522
Lane Group Flow (vph)	217	29	286	121	33	51	311	1352	18	42	1766
Turn Type	Perm		Perm	Perm		Perm	pm+pt		Perm	Perm	
Protected Phases		8			4		1	6			2
Permitted Phases	8		8	4		4	6		6	2	
Detector Phase	8	8	8	4	4	4	1	6	6	2	2
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	8.0	15.0	15.0	15.0	15.0
Minimum Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	14.0	29.0	29.0	29.0	29.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	15.0	61.0	61.0	46.0	46.0
Total Split (%)	35.8%	35.8%	35.8%	35.8%	35.8%	35.8%	15.8%	64.2%	64.2%	48.4%	48.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead			Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.74	0.07	0.57	0.41	0.08	0.14	1.26	0.58	0.02	0.22	1.00
Control Delay	49.4	27.3	14.1	34.9	27.5	9.7	172.5	11.1	3.6	20.0	47.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	27.3	14.1	34.9	27.5	9.7	172.5	11.1	3.6	20.0	47.6
Queue Length 50th (ft)	123	14	41	63	16	2	~189	211	0	14	~542
Queue Length 95th (ft)	173	30	55	86	29	17	#371	344	5	38	#825
Internal Link Dist (ft)		1463			2848			960			3675
Turn Bay Length (ft)	90			220		220	235			320	
Base Capacity (vph)	404	549	611	405	549	500	246	2336	1051	188	1762
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.05	0.47	0.30	0.06	0.10	1.26	0.58	0.02	0.22	1.00

Intersection Summary

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green

Natural Cycle: 130

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Northpoint Pkwy & SR 92



HCM Signalized Intersection Capacity Analysis

3: Northpoint Pkwy & SR 92

Future Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	187	24	203	92	24	36	295	1257	11	34	1522	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3539	1583	1770	3495	
Flt Permitted	0.74	1.00	1.00	0.74	1.00	1.00	0.07	1.00	1.00	0.20	1.00	
Satd. Flow (perm)	1370	1863	1583	1375	1863	1583	139	3539	1583	374	3495	
Peak-hour factor, PHF	0.86	0.82	0.71	0.76	0.72	0.71	0.95	0.93	0.62	0.80	0.94	0.85
Adj. Flow (vph)	217	29	286	121	33	51	311	1352	18	42	1619	147
RTOR Reduction (vph)	0	0	161	0	0	37	0	0	6	0	6	0
Lane Group Flow (vph)	217	29	125	121	33	14	311	1352	12	42	1760	0
Turn Type	Perm		Perm	Perm	Perm		pm+pt	Perm		Perm		
Protected Phases	8				4		1	6			2	
Permitted Phases	8		8	4			4	6		6	2	
Actuated Green, G (s)	20.3	20.3	20.3	20.3	20.3	20.3	62.7	62.7	62.7	47.7	47.7	
Effective Green, g (s)	20.3	20.3	20.3	20.3	20.3	20.3	62.7	62.7	62.7	47.7	47.7	
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.21	0.66	0.66	0.66	0.50	0.50	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	4.0	5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)	293	398	338	294	398	338	246	2336	1045	188	1755	
v/s Ratio Prot	0.02				0.02		c0.12	0.38			0.50	
v/s Ratio Perm	c0.16		0.08	0.09		0.01	c0.72		0.01	0.11		
v/c Ratio	0.74	0.07	0.37	0.41	0.08	0.04	1.26	0.58	0.01	0.22	1.00	
Uniform Delay, d1	34.9	29.8	31.9	32.2	29.9	29.6	30.6	8.9	5.5	13.3	23.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.7	0.1	0.7	0.9	0.1	0.1	147.2	1.1	0.0	2.7	22.2	
Delay (s)	44.5	29.9	32.6	33.1	30.0	29.7	177.8	9.9	5.6	16.0	45.8	
Level of Service	D	C	C	C	C	C	F	A	A	B	D	
Approach Delay (s)	37.3				31.8			40.9			45.1	
Approach LOS	D				C			D			D	
Intersection Summary												
HCM Average Control Delay			41.8		HCM Level of Service			D				
HCM Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			95.0		Sum of lost time (s)			12.0				
Intersection Capacity Utilization			94.4%		ICU Level of Service			F				
Analysis Period (min)			15									
c Critical Lane Group												

Queues
4: Hunt Rd & SR 92

Future Build PM
3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	13	8	231	26	17	351	1046	43	15	1446	9
Lane Group Flow (vph)	0	29	321	0	63	423	1078	54	21	1476	12
Turn Type	Perm		Perm	Perm		pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8	1	6		5	2	
Permitted Phases	4		4	8		6		6	2		2
Detector Phase	4	4	4	8	8	1	6	6	5	2	2
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0	22.0	10.0	22.0	22.0	10.0	22.0	22.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	18.0	57.0	57.0	13.0	52.0	52.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	Max	Max	None	Max	Max
v/c Ratio		0.11	0.80		0.22	1.39	0.47	0.05	0.06	0.84	0.02
Control Delay		31.4	34.2		28.4	220.1	11.6	7.3	7.1	26.6	12.1
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		31.4	34.2		28.4	220.1	11.6	7.3	7.1	26.6	12.1
Queue Length 50th (ft)		14	97		26	~287	125	5	3	372	2
Queue Length 95th (ft)		28	123		53	#479	318	26	11	#623	11
Internal Link Dist (ft)		1089			2278		3675			4253	
Turn Bay Length (ft)			110			390		80	425		110
Base Capacity (vph)		739	833		747	304	2279	1027	375	1764	791
Starvation Cap Reductn		0	0		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0	0
Reduced v/c Ratio		0.04	0.39		0.08	1.39	0.47	0.05	0.06	0.84	0.02

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 92.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

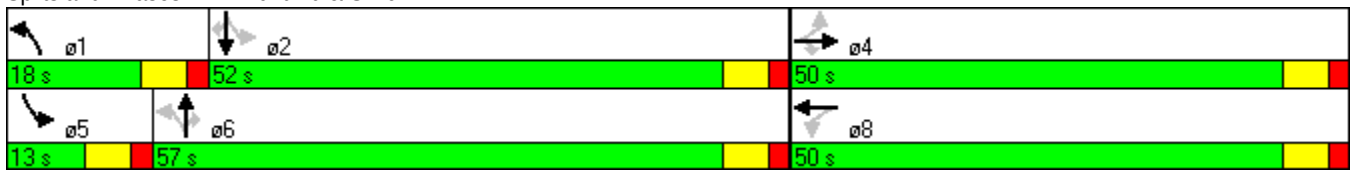
~ Volume exceeds capacity, queue is theoretically infinite.

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: 4: Hunt Rd & SR 92



HCM Signalized Intersection Capacity Analysis

4: Hunt Rd & SR 92

Future Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	8	231	26	17	11	351	1046	43	15	1446	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95	1.00	1.00	0.95	1.00
Frt		1.00	0.85		0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97	1.00		0.98		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1810	1583		1770		1770	3539	1583	1770	3539	1583
Flt Permitted		0.83	1.00		0.86		0.07	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)		1550	1583		1551		133	3539	1583	482	3539	1583
Peak-hour factor, PHF	0.75	0.67	0.72	0.89	0.80	0.83	0.83	0.97	0.79	0.70	0.98	0.75
Adj. Flow (vph)	17	12	321	29	21	13	423	1078	54	21	1476	12
RTOR Reduction (vph)	0	0	124	0	10	0	0	0	8	0	0	2
Lane Group Flow (vph)	0	29	197	0	53	0	423	1078	46	21	1476	10
Turn Type	Perm		Perm	Perm			pm+pt		Perm	pm+pt		Perm
Protected Phases		4			8		1	6		5	2	
Permitted Phases	4		4	8			6		6	2		2
Actuated Green, G (s)		16.3	16.3		16.3		68.1	59.7	59.7	52.4	50.0	50.0
Effective Green, g (s)		16.3	16.3		16.3		68.1	59.7	59.7	52.4	50.0	50.0
Actuated g/C Ratio		0.17	0.17		0.17		0.71	0.62	0.62	0.54	0.52	0.52
Clearance Time (s)		6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)		262	268		262		299	2192	980	294	1836	821
v/s Ratio Prot							c0.18	0.30		0.00	0.42	
v/s Ratio Perm		0.02	c0.12		0.03		c0.82		0.03	0.04		0.01
v/c Ratio		0.11	0.74		0.20		1.41	0.49	0.05	0.07	0.80	0.01
Uniform Delay, d1		33.9	38.0		34.5		30.6	10.0	7.2	10.2	19.2	11.2
Progression Factor		1.00	1.00		1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	10.0		0.4		205.3	0.8	0.1	0.1	3.9	0.0
Delay (s)		34.1	48.0		34.8		235.9	10.8	7.3	10.3	23.0	11.3
Level of Service		C	D		C		F	B	A	B	C	B
Approach Delay (s)		46.9			34.8			71.9			22.7	
Approach LOS		D			C			E			C	
Intersection Summary												
HCM Average Control Delay			47.4				HCM Level of Service			D		
HCM Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			96.4				Sum of lost time (s)			12.0		
Intersection Capacity Utilization			84.1%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Queues
5: SR 92 & Old Alabama Rd

Future Build PM
3/13/2015

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Volume (vph)	61	976	17	6	1392	162	6	4	141	0
Lane Group Flow (vph)	73	1017	30	12	1465	198	8	24	166	147
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Prot	
Protected Phases	1	6		5	2		3	8	7	4
Permitted Phases	6		6	2		2				
Detector Phase	1	6	6	5	2	2	3	8	7	4
Switch Phase										
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	10.0	10.0	10.0
Minimum Split (s)	16.5	30.0	30.0	16.5	33.0	33.0	17.0	48.0	16.5	46.0
Total Split (s)	18.5	62.0	62.0	18.5	62.0	62.0	19.0	19.0	18.5	19.0
Total Split (%)	15.6%	52.3%	52.3%	15.6%	52.3%	52.3%	16.0%	16.0%	15.6%	16.0%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0	4.5	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None
v/c Ratio	0.29	0.45	0.03	0.03	0.76	0.21	0.05	0.13	0.44	0.28
Control Delay	12.6	12.6	6.4	8.0	24.5	5.2	48.5	28.9	49.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	12.6	6.4	8.0	24.5	5.2	48.5	28.9	49.9	1.3
Queue Length 50th (ft)	19	184	2	3	474	16	5	5	59	0
Queue Length 95th (ft)	36	343	9	6	590	46	18	13	89	0
Internal Link Dist (ft)		4253			2739			348		1211
Turn Bay Length (ft)	425		145	310		240	130		230	
Base Capacity (vph)	283	2264	1021	449	1935	935	208	220	404	545
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.45	0.03	0.03	0.76	0.21	0.04	0.11	0.41	0.27

Intersection Summary

Cycle Length: 118.5

Actuated Cycle Length: 103.6

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Splits and Phases: 5: SR 92 & Old Alabama Rd

			
ø1	ø2	ø3	ø4
18.5 s	62 s	19 s	19 s
			
ø5	ø6	ø7	ø8
18.5 s	62 s	18.5 s	19 s

HCM Signalized Intersection Capacity Analysis

5: SR 92 & Old Alabama Rd

Future Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	61	976	17	6	1392	162	6	4	9	141	0	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		0.97	1.00	
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.85	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1676		3433	1583	
Satd. Flow (perm)	137	3539	1583	459	3539	1583	1770	1676		3433	1583	
Peak-hour factor, PHF	0.83	0.96	0.57	0.50	0.95	0.82	0.75	0.50	0.56	0.85	0.92	0.83
Adj. Flow (vph)	73	1017	30	12	1465	198	8	8	16	166	0	147
RTOR Reduction (vph)	0	0	9	0	0	73	0	15	0	0	125	0
Lane Group Flow (vph)	73	1017	21	12	1465	125	8	9	0	166	22	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot			Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2						
Actuated Green, G (s)	73.9	66.3	66.3	62.3	60.5	60.5	1.8	8.0		11.3	17.0	
Effective Green, g (s)	73.9	66.3	66.3	62.3	60.5	60.5	1.8	8.0		11.3	17.0	
Actuated g/C Ratio	0.65	0.58	0.58	0.54	0.53	0.53	0.02	0.07		0.10	0.15	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	5.1	5.1	3.0	5.1	5.1	3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)	197	2051	917	271	1872	837	28	117		339	235	
v/s Ratio Prot	c0.02	c0.29		0.00	c0.41		0.00	0.01		c0.05	c0.01	
v/s Ratio Perm	0.22		0.01	0.02		0.08						
v/c Ratio	0.37	0.50	0.02	0.04	0.78	0.15	0.29	0.08		0.49	0.09	
Uniform Delay, d1	16.1	14.2	10.2	12.2	21.7	13.8	55.7	49.8		48.8	42.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.9	0.0	0.1	3.3	0.4	5.6	0.4		1.1	0.2	
Delay (s)	17.2	15.0	10.3	12.3	25.0	14.2	61.2	50.1		49.9	42.3	
Level of Service	B	B	B	B	C	B	E	D		D	D	
Approach Delay (s)		15.1			23.6			52.9			46.3	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM Average Control Delay			23.1			HCM Level of Service				C		
HCM Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			114.4			Sum of lost time (s)			27.0			
Intersection Capacity Utilization			73.0%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
6: SR 92 & Woodstock Rd

Future Build PM

3/13/2015

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	210	945	70	240	1158	244	27	137	130	137	80
Lane Group Flow (vph)	276	1139	167	273	1232	317	47	161	167	156	333
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot	
Protected Phases	1	6		5	2		3	8		7	4
Permitted Phases	6		6	2		2			8		
Detector Phase	1	6	6	5	2	2	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	8.0	8.0	4.0	8.0
Minimum Split (s)	10.5	34.0	34.0	10.5	36.0	36.0	10.5	49.0	49.0	11.0	49.0
Total Split (s)	21.5	57.0	57.0	21.5	57.0	57.0	18.5	32.0	32.0	27.0	32.0
Total Split (%)	15.6%	41.5%	41.5%	15.6%	41.5%	41.5%	13.5%	23.3%	23.3%	19.6%	23.3%
Yellow Time (s)	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	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	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None
v/c Ratio	0.99	0.79	0.24	0.93	0.85	0.42	0.38	0.56	0.43	0.51	0.82
Control Delay	88.1	37.5	16.5	67.7	40.8	12.5	64.3	55.8	10.3	60.1	52.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	88.1	37.5	16.5	67.7	40.8	12.5	64.3	55.8	10.3	60.1	52.9
Queue Length 50th (ft)	~185	428	53	157	481	68	37	119	0	63	196
Queue Length 95th (ft)	#277	481	28	#333	#623	105	48	184	37	97	#323
Internal Link Dist (ft)		4756			1244			2383			1543
Turn Bay Length (ft)	310		115	300		210	240		145	405	
Base Capacity (vph)	278	1445	684	295	1445	758	174	380	456	561	519
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.79	0.24	0.93	0.85	0.42	0.27	0.42	0.37	0.28	0.64

Intersection Summary

Cycle Length: 137.5

Actuated Cycle Length: 122.8

Natural Cycle: 140

Control Type: Actuated-Uncoordinated

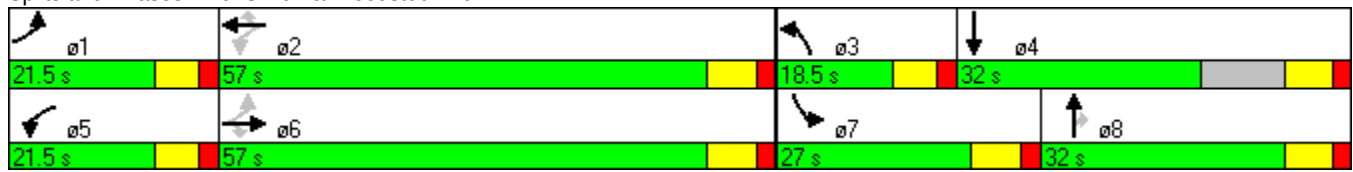
~ Volume exceeds capacity, queue is theoretically infinite.

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: 6: SR 92 & Woodstock Rd



HCM Signalized Intersection Capacity Analysis

6: SR 92 & Woodstock Rd

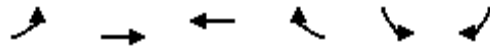
Future Build PM

3/13/2015

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	945	70	240	1158	244	27	137	130	137	80	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Flt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	3433	1661	
Flt Permitted	0.08	1.00	1.00	0.10	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	149	3539	1583	187	3539	1583	1770	1863	1583	3433	1661	
Peak-hour factor, PHF	0.76	0.83	0.42	0.88	0.94	0.77	0.57	0.85	0.78	0.88	0.86	0.62
Adj. Flow (vph)	276	1139	167	273	1232	317	47	161	167	156	93	240
RTOR Reduction (vph)	0	0	38	0	0	113	0	0	139	0	71	0
Lane Group Flow (vph)	276	1139	129	273	1232	204	47	161	28	156	262	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2			8			
Actuated Green, G (s)	65.1	50.1	50.1	65.1	50.1	50.1	7.4	20.5	20.5	10.9	24.5	
Effective Green, g (s)	65.1	50.1	50.1	65.1	50.1	50.1	7.4	20.5	20.5	10.9	24.5	
Actuated g/C Ratio	0.52	0.40	0.40	0.52	0.40	0.40	0.06	0.17	0.17	0.09	0.20	
Clearance Time (s)	6.5	7.0	7.0	6.5	7.0	7.0	6.5	7.0	7.0	7.0	7.0	
Vehicle Extension (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.0	4.0	3.0	4.0	
Lane Grp Cap (vph)	274	1430	640	290	1430	640	106	308	262	302	328	
v/s Ratio Prot	c0.12	0.32		0.11	0.35		0.03	0.09		c0.05	c0.16	
v/s Ratio Perm	c0.41		0.08	0.38		0.13			0.02			
v/c Ratio	1.01	0.80	0.20	0.94	0.86	0.32	0.44	0.52	0.11	0.52	0.80	
Uniform Delay, d1	38.2	32.5	24.0	32.9	33.8	25.3	56.3	47.3	44.0	54.0	47.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	56.2	4.7	0.7	37.3	7.0	1.3	2.9	2.1	0.2	1.5	13.3	
Delay (s)	94.5	37.2	24.7	70.2	40.8	26.6	59.3	49.4	44.2	55.5	60.7	
Level of Service	F	D	C	E	D	C	E	D	D	E	E	
Approach Delay (s)		45.8			42.7			48.3			59.1	
Approach LOS		D			D			D			E	
Intersection Summary												
HCM Average Control Delay			46.2			HCM Level of Service				D		
HCM Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			124.0			Sum of lost time (s)			27.0			
Intersection Capacity Utilization			82.8%			ICU Level of Service			E			
Analysis Period (min)			15									
c Critical Lane Group												

Queues
7: SR 92 & Site Drwy

Future Build PM
3/13/2015

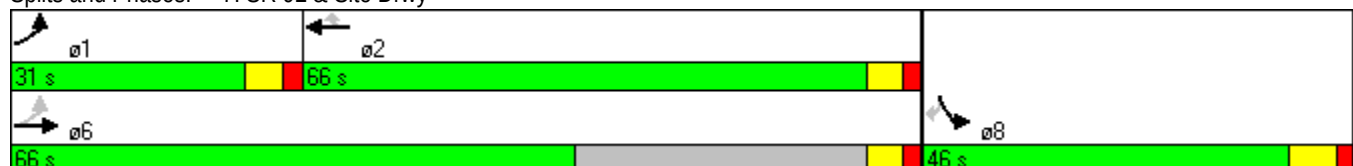


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	91	996	1216	61	230	344
Lane Group Flow (vph)	99	1145	1267	66	250	374
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		8	
Permitted Phases	6			2		8
Detector Phase	1	6	2	2	8	8
Switch Phase						
Minimum Initial (s)	10.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	16.0	22.0	22.0	22.0	23.0	23.0
Total Split (s)	31.0	66.0	66.0	66.0	46.0	46.0
Total Split (%)	21.7%	46.2%	46.2%	46.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	7.0	7.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	None	Max	Max	Max	None	None
v/c Ratio	0.34	0.48	0.67	0.08	0.69	0.63
Control Delay	10.4	10.1	22.4	6.8	51.8	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	10.1	22.4	6.8	51.8	11.6
Queue Length 50th (ft)	22	183	328	6	168	24
Queue Length 95th (ft)	52	284	510	33	260	116
Internal Link Dist (ft)		2739	4756		946	
Turn Bay Length (ft)	310			250		
Base Capacity (vph)	493	2864	1889	867	614	767
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	0.20	0.40	0.67	0.08	0.41	0.49

Intersection Summary

Cycle Length: 143
Actuated Cycle Length: 112.9
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 7: SR 92 & Site Drwy

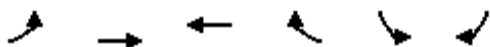


HCM Signalized Intersection Capacity Analysis

7: SR 92 & Site Drwy

Future Build PM

3/13/2015



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	91	996	1216	61	230	344
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	7.0	7.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	3539	1583	1770	1583
Flt Permitted	0.12	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	218	3539	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.87	0.96	0.92	0.92	0.92
Adj. Flow (vph)	99	1145	1267	66	250	374
RTOR Reduction (vph)	0	0	0	22	0	265
Lane Group Flow (vph)	99	1145	1267	44	250	109
Turn Type	pm+pt		Perm		Perm	
Protected Phases	1	6	2		8	
Permitted Phases	6			2		8
Actuated Green, G (s)	76.7	76.7	60.2	60.2	23.1	23.1
Effective Green, g (s)	76.7	76.7	60.2	60.2	23.1	23.1
Actuated g/C Ratio	0.68	0.68	0.53	0.53	0.20	0.20
Clearance Time (s)	6.0	6.0	6.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	5.0	5.0	5.0	4.0	4.0
Lane Grp Cap (vph)	293	2406	1889	845	362	324
v/s Ratio Prot	0.03	c0.32	c0.36		c0.14	
v/s Ratio Perm	0.20			0.03		0.07
v/c Ratio	0.34	0.48	0.67	0.05	0.69	0.34
Uniform Delay, d1	11.7	8.5	19.1	12.6	41.5	38.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.7	1.9	0.1	6.0	0.8
Delay (s)	12.4	9.2	21.0	12.7	47.6	39.2
Level of Service	B	A	C	B	D	D
Approach Delay (s)		9.5	20.6		42.5	
Approach LOS		A	C		D	
Intersection Summary						
HCM Average Control Delay			20.6		HCM Level of Service	C
HCM Volume to Capacity ratio			0.67			
Actuated Cycle Length (s)			112.8		Sum of lost time (s)	19.0
Intersection Capacity Utilization			70.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis

8: Old Alabama Rd &

Future Build PM
3/13/2015

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	187	4	177	50	1	74
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	203	4	192	54	1	80
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			1291			
pX, platoon unblocked						
vC, conflicting volume	302	220			247	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	302	220			247	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	99			100	
cM capacity (veh/h)	689	820			1319	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	208	247	82			
Volume Left	203	0	1			
Volume Right	4	54	0			
cSH	691	1700	1319			
Volume to Capacity	0.30	0.15	0.00			
Queue Length 95th (ft)	32	0	0			
Control Delay (s)	12.4	0.0	0.1			
Lane LOS	B		A			
Approach Delay (s)	12.4	0.0	0.1			
Approach LOS	B					
Intersection Summary						
Average Delay		4.8				
Intersection Capacity Utilization		29.6%		ICU Level of Service		A
Analysis Period (min)		15				

Traffic Volume Worksheets

15-015 Cherokee 75 Corporate Park DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

1.SR 92@I-75 SB Ramp

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	849	364	1213	222	656	0	878	297	0	237	534
Growth Factor (%):	1	1	1		1	1	1		1	1	1	
Base Condition:	0	892	383	1213	233	689	0	878	312	0	249	534
Total New Trips	0	22	0	22	33	5	0	38	149	0	0	149
Future Traffic Volumes:	0	914	383	1297	266	694	0	960	461	0	249	710

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	963	313	1276	191	1348	0	1539	307	0	215	522
Growth Factor (%):	1	1	1		1	1	1		1	1	1	
Base Condition:	0	1012	329	1276	201	1417	0	1539	323	0	226	522
Total New Trips	0	8	0	8	207	31	0	238	55	0	0	55
Future Traffic Volumes:	0	1020	329	1349	408	1448	0	1856	378	0	226	604

Traffic Volumes Future Conditions

2.SR 92@I-75 NB Ramp

Condition	Northbound			Southbound			Eastbound			Westbound						
	L	T	Tot	L	T	Tot	L	T	Tot	L	T	Tot				
Existing:	164	970	0	1134	0	718	431	1149	0	0	0	0	194	374		
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1		
Base Condition:	172	1019	0	1134	0	755	453	1149	0	0	0	0	189	0	204	374
Total New Trips	0	171	0	171	0	38	33	71	0	0	0	0	0	0	149	149
Future Traffic Volumes:	172	1190	0	1362	0	793	486	1279	0	0	0	0	189	0	353	542

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	185	1048	0	1233	0	939	442	1381	0	0	0	0	566	0	415	981
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	194	1101	0	1233	0	987	465	1381	0	0	0	0	595	0	436	981
Total New Trips	0	63	0	63	0	237	207	444	0	0	0	0	0	0	55	55
Future Traffic Volumes:	194	1164	0	1358	0	1224	672	1896	0	0	0	0	595	0	491	1086

15-015 Cherokee 75 Corporate Park DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

3.SR 92@Northpoint Pkwy

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	252	827	6	16	993	126	154	15	115	18	9	1
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1
Base Condition:	265	869	6	17	1044	132	162	16	121	19	9	1
Total New Trips	0	320	0	0	70	0	0	0	0	0	0	0
Future Traffic Volumes:	265	1189	6	17	1114	132	162	16	121	19	9	1

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	281	1084	10	32	1026	119	178	23	193	88	23	34
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1
Base Condition:	295	1139	11	34	1078	125	187	24	203	92	24	36
Total New Trips	0	118	0	0	444	0	0	0	0	0	0	0
Future Traffic Volumes:	295	1257	11	34	1522	125	187	24	203	92	24	36

Traffic Volumes Future Conditions

4.SR 92@Hunt Rd
A.M. Peak Hour

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	334	883	41	1258	14	953	9	976	12	8	220	240	25	16	10	51
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	351	928	43	1258	15	1002	9	976	13	8	231	240	26	17	11	51
Total New Trips	0	118	0	118	0	444	0	444	0	0	0	0	0	0	0	0
Future Traffic Volumes:	351	1046	43	1440	15	1446	9	1470	13	8	231	252	26	17	11	54

15-015 Cherokee 75 Corporate Park DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

5.OldAlabamaRd@SR 92

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	14	13	31	58	112	10	20	142	14	900	0	914
Growth Factor (%):	1	1	1		1	1	1		1	1	1	
Base Condition:	15	14	33	58	118	11	21	142	15	946	0	914
Total New Trips	0	0	0	0	20	0	18	38	80	240	0	320
Future Traffic Volumes:	15	14	33	62	138	11	39	188	95	1186	0	1281

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	6	4	9	19	58	0	10	68	30	845	16	891
Growth Factor (%):	1	1	1		1	1	1		1	1	1	
Base Condition:	6	4	9	19	61	0	11	68	32	888	17	891
Total New Trips	0	0	0	0	80	0	111	191	29	88	0	117
Future Traffic Volumes:	6	4	9	19	141	0	122	263	61	976	17	1054
									6	1008	124	1138
									1	1	1	
									6	1059	130	1138
									0	333	32	365
									6	1392	162	1560

15-015 Cherokee 75 Corporate Park DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

6.Woodstock Rd@SR 92

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	11	69	216	296	266	75	146	487	121	959	14	1094
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1
Base Condition:	12	73	227	296	280	79	153	487	127	1008	15	1094
Total New Trips	28	0	0	28	0	0	28	28	6	36	6	48
Future Traffic Volumes:	40	73	227	340	280	79	181	540	133	1044	21	1198

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing:	16	130	124	270	130	76	132	338	164	680	30	874
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1
Base Condition:	17	137	130	270	137	80	139	338	172	715	32	874
Total New Trips	10	0	0	10	0	0	10	10	38	230	38	306
Future Traffic Volumes:	27	137	130	294	137	80	149	366	210	945	70	1225

A&R Engineering
March 2015

March 2015

March 2015

7.SR 92@Site Drwy1

A.M. Peak Hour

Condition	Northbound						Southbound						Eastbound						Westbound					
	L	T	R	Tot	L	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot		
Existing:	0	0	0	0	0	0	0	0	0	0	0	1094	0	1094	0	834	0	834	0	834	0	834		
Growth Factor (%):	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Base Condition:	0	0	0	0	0	0	0	0	0	0	0	1150	0	1094	0	877	0	877	0	877	0	834		
Total New Trips	0	0	0	0	36	0	54	90	12	0	248	12	0	260	0	55	166	221	0	932	166	1098		
Future Traffic Volumes:	0	0	0	0	36	0	54	90	1162	0	248	1162	0	1410	0	932	166	1098	0	932	166	1098		

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	874	0	874	0	1138	0	1138
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
Base Condition:	0	0	0	0	0	0	0	0	0	919	0	874	0	1196	0	1138
Total New Trips	0	0	0	0	230	0	344	574	91	77	0	168	0	20	61	81
Future Traffic Volumes:	0	0	0	0	230	0	344	574	91	996	0	1087	0	1216	61	1277

15-015 Cherokee 75 Corporate Park DRI

Traffic Volumes
Future Conditions

A&R Engineering
March 2015

8.OldAlabamaRd@Site Drwy2

A.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	56	0	56	0	142	0	142	0	0	0	0
Growth Factor (%):	1	1	1		1	1	1		1	1	1	
Base Condition:	0	59	0	56	0	149	0	142	0	0	0	0
Total New Trips	0	2	135	137	3	8	0	11	0	0	0	31
Future Traffic Volumes:	0	61	135	196	3	157	0	160	0	0	0	31

P.M. Peak Hour

Condition	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	158	0	158	0	68	0	68	0	0	0	0
Growth Factor (%):	1	1	1		1	1	1		1	1	1	
Base Condition:	0	166	0	158	0	71	0	68	0	0	0	0
Total New Trips	0	11	50	61	1	3	0	4	0	0	0	191
Future Traffic Volumes:	0	177	50	227	1	74	0	75	0	0	0	191