REZONING APPLICATION

AN APPLICATION TO AMEND THE OFFICIAL ZONING MAP OF GWINNETT COUNTY, GA.

APPLICANT INFORMATION	OWNER INFORMATION*
NAME: Brand Properties, LLC c/o Mahaffey Pickens Tucker, LLP	NAME: Lillian Margene Moulder Trust
ADDRESS: 1550 North Brown Road, Suite 125	ADDRESS: 1498 Scenic Highway North
CITY: Lawrenceville	CITY: Snellville
STATE: Georgia ZIP: 30043	STATE: Georgia ZIP: 30078
PHONE: 770.232.0000	PHONE: 770.232.0000

CONTACT PERSON: Shane Lanham PHONE: 770.232.0000

CONTACT'S E-MAIL: slanham@mptlawfirm.com

APPLICANT IS THE:

☐ OWNER'S AGENT ☐ PROPERTY OWNER ☒ CONTRACT PURCHASER

PRESENT ZONING DISTRICTS(S): R-100 REQUESTED ZONING DISTRICT: RM-24

LAND DISTRICT(S): 5 LAND LOT(S): 074 ACREAGE: +/- 8.93

ADDRESS OF PROPERTY: 1498 Scenic Highway

PROPOSED DEVELOPMENT: Multi-family residential community

RESIDENTIAL DEVELOPMENT	NON-RESIDENTIAL DEVELOPMENT
No. of Lots/Dwelling Units: 214	No. of Buildings/Lots: NA
Dwelling Unit Size (Sq. Ft.): varies per UDO	Total Building Sq. Ft. NA
Gross Density: +/-23.96 units per acre	Density: NA
Net Density: +/-23.96 units per acre	

PLEASE ATTACH A LETTER OF INTENT EXPLAINING WHAT IS PROPOSED

LEGAL DESCRIPTION

All that tract or parcel of land lying and being in Land Lot 74 of the 5th District of Gwinnett County, Georgia being more particularly described as follows:

Beginning at a 1/2" rebar found at the intersection of the westerly right of way of North Road (variable R/W) and the line common to land lots 73 and 74 said point being the TRUE POINT OF BEGINNING.

From said point as thus established thence; South 61 degrees 20 minutes 09 seconds West along said Land Lot line a distance of 154.84 feet to a 1/2" rebar found,

Thence, continuing said Land Lot line the same bearing and distance, South 61 degrees 20 minutes 09 seconds West a distance of 428.29 feet to an iron pin set

Thence, leaving said Land Lot line North 54 degrees 35 minutes 18 seconds West a distance of 42.34 feet to an iron pin set on the easterly right of way line of Georgia Highway 124 (aka Scenic Highway) (145' R/W per Georgia Department of Transportation Project FR-078-1(14) Dated 2-4-1988)

Thence, northerly along said easterly right of way North 14 degrees 49 minutes 13 seconds east a distance of 1471.43 feet to an iron pin set

Thence, leaving said right of way South 85 degrees 03 minutes 42 seconds East a distance of 54.94 feet to an iron pin set on the westerly right of way of North Road (variable right of way)

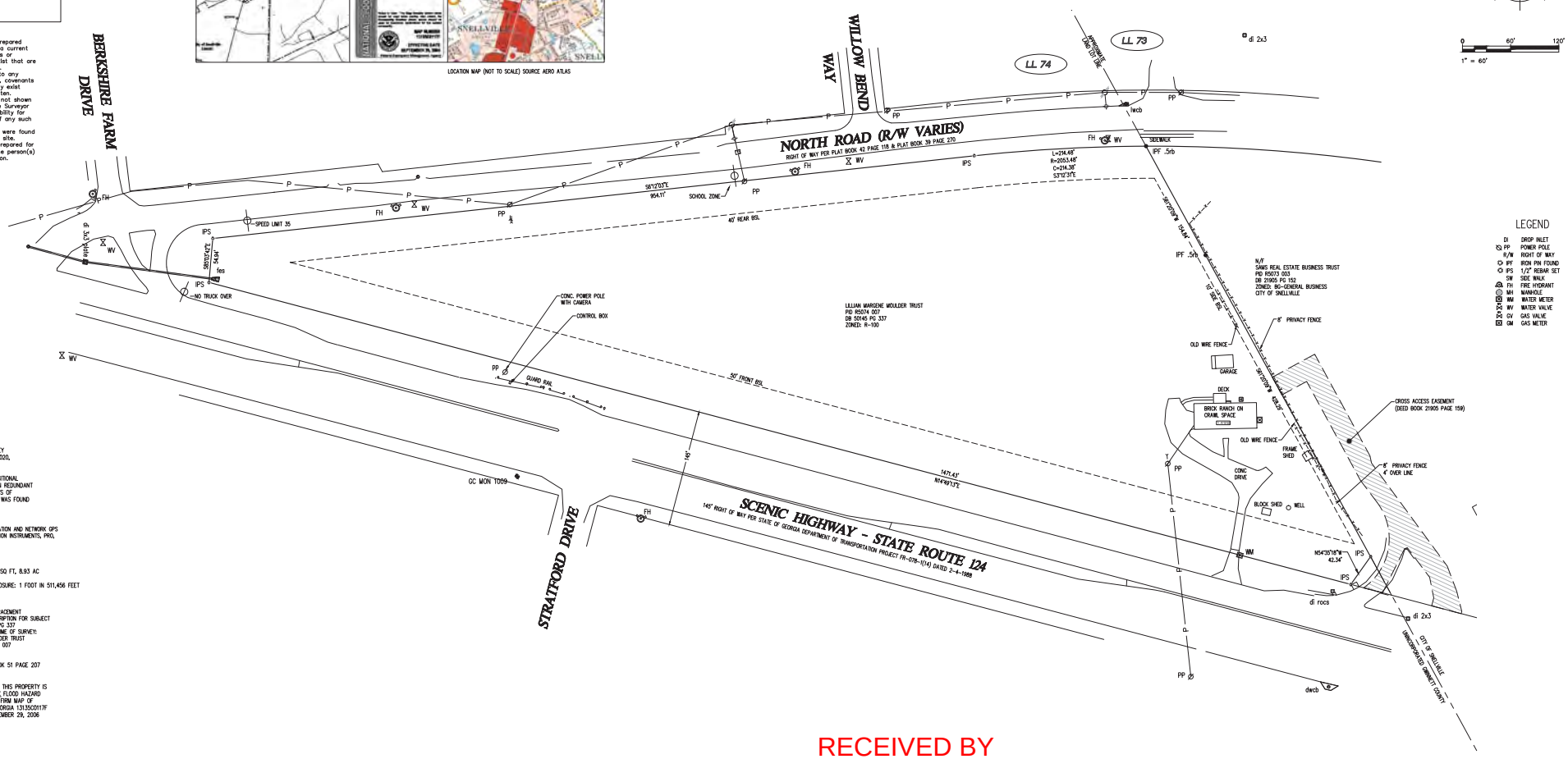
Thence southerly along said westerly right of way South 6 degrees 12 minutes 03 seconds east a distance of 954.11 feet to an iron pin set

Thence, continuing southerly along said westerly right of way following a curve to the right a distance of 214.48 feet, said curve having a radius of 2053.48 feet and being subtended by a line south 3 degrees 12 minutes 31 seconds east a distance of 214.38 feet to a 1/2" rebar found said point being the TRUE POINT OF BEGINNING.

As shown on a survey for Brand Properties by Keystone Land Surveying Dated 9-3-2020

GENERAL NOTES:
1: This Plat has been prepared without the benefit of a current title report. Easements or encumberances may exist that are not shown on this plat.
2: This plat is subject to any restrictions, easements, covenants or restrictions that may exist either written or unwritten.
3: Underground utilities not shown hereon may exist. The Surveyor does not take responsibility for absence or presence of any such utilities.
4: Geodetic monuments were found within 500 feet of this site.
5: This Plat has been prepared for the exclusive use of the person(s) or entities named hereon.

LOCATION MAP (NOT TO SCALE) SOURCE AERO ATLAS



N (GRID)
0 60' 120'
1" = 60'

LEGEND

DI		DROP INLET
PP		POWER POLE
R/W		RIGHT OF WAY
IPF		IRON PIN FOUND
IPS		1/2" REBAR SET
SW		SIDE WALK
FH		FIRE HYDRANT
MH		MANHOLE
WM		WATER METER
WV		WATER VALVE
GV		GAS VALVE
GM		GAS METER

FIELD DATA:

DATE OF FIELD SURVEY
8-28-2020, 8-30-2020,
9-2-2020

THE CALCULATED POSITIONAL TOLERANCE BASED ON REDUNDANT LINEAR MEASUREMENTS OF OBSERVED POSITIONS WAS FOUND TO BE 0.010 FEET.

EQUIPMENT:
ELECTRONIC TOTAL STATION AND NETWORK GPS
GPS RECEIVER: CHAMPION INSTRUMENTS, PRO, SN:103345B,
NETWORK: eGPSWRS

TOTAL AREA: 388,820SQ FT, 8.93 AC

CALCULATED PLAT CLOSURE: 1 FOOT IN 511,456 FEET

SURVEY DATA:

TYPE OF SURVEY: RETRACEMENT
SOURCE OF TITLE DESCRIPTION FOR SUBJECT PROPERTY: DB 50145 PG 337
PROPERTY OWNER AT TIME OF SURVEY:
LILLIAN MARGENE MOULDER TRUST
PARCEL NUMBER:R5074 007

REFERENCE: PLAT BOOK 51 PAGE 207

FLOOD HAZARD NOTE: THIS PROPERTY IS LOCATED IN A ZONE X, FLOOD HAZARD AREA AS DEFINED BY FIRM MAP OF GWINNETT COUNTY, GEORGIA 13135C0117F EFFECTIVE DATE SEPTEMBER 29, 2006

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This plat is a retracement of an existing parcel or parcels of land and does not subdivide or create a new parcel or make any changes to any real property boundaries. The recording information of the documents, maps, plat, or other instruments which created the parcel or parcels are stated hereon. RECORDATION OF THIS PLAT DOES NOT IMPLY APPROVAL OF ANY LOCAL JURISDICTION, AVAILABILITY OF PERMITS, COMPLIANCE WITH LOCAL REGULATIONS OR REQUIREMENTS, OR SUITABILITY FOR ANY USE OR PURPOSE OF THE LAND. Furthermore, the undersigned land surveyor certifies that this plat complies with the minimum technical standards for property surveys in Georgia as set for in the rules and regulations of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as set forth in O.C.G.A Section 15-6-67

REVISIONS		
Date	Description	By

KEYSTONE LAND SURVEYING, INC.
162 E. CROGAN ST.
LAWRENCEVILLE, GEORGIA
770.945.8700
www.keystonelandsurveying.com

BOUDNARY SURVEY FOR
BRAND PROPERTIES, LLC
PARCEL NUMBER R5074 007

LAND LOT 74 - 5TH DISTRICT
GWINNETT COUNTY, GEORGIA

GEORGIA REGISTERED No. 3077 LAND SURVEYOR PATRICK E. CORBETT
9-03-2020
FOR KEYSTONE LAND SURVEYING, INC.

Date:	9-3-2020
Scale:	1" = 60'
Client:	BRAND PROPERTIES, LLC
Drawn By:	PC
Sheet 1 of 1	

SITE DATA

TOTAL AREA:	**8.93 ACRES**
PROPOSED UNITS	
ONE BEDROOM:	98
TWO BEDROOM:	100
THREE BEDROOM:	16
TOTAL UNITS:	**214**
NET DENSITY:	**23.96 UNITS/ACRE**
GROSS DENSITY:	**23.96 UNITS/ACRE**

PARKING (1.5SP/UNIT): 321 MINIMUM

LEGEND

ASPHALT PAVEMENT

BUILDING

PARKING COUNT

A1 CONCEPTUAL SITE PLAN
SCALE: 1" = 60'

0 30' 60' 120' 180'

BRAND Properties

1498 SCENIC HIGHWAY
SNELLVILLE, GA 30078

09/04/2020

POND

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FILE NAME: M:\Community Development\Brand- Hwy 124 Property\Concept Plan - Option 4.dwg PLOTTED: Wednesday, September 09, 2020

REZONING APPLICANT'S RESPONSE

STANDARDS GOVERNING THE EXERCISE OF THE ZONING POWER

PURSUANT TO REQUIREMENTS OF THE UNIFIED DEVELOPMENT ORDINANCE, THE BOARD OF COMMISSIONERS FINDS THAT THE FOLLOWING STANDARDS ARE RELEVANT IN BALANCING THE INTEREST IN PROMOTING THE PUBLIC HEALTH, SAFETY, MORALITY OR GENERAL WELFARE AGAINST THE RIGHT TO THE UNRESTRICTED USE OF PROPERTY AND SHALL GOVERN THE EXERCISE OF THE ZONING POWER.

PLEASE RESPOND TO THE FOLLOWING STANDARDS IN THE SPACE PROVIDED OR USE AN ATTACHMENT AS NECESSARY:

(A) WHETHER A PROPOSED REZONING WILL PERMIT A USE THAT IS SUITABLE IN VIEW OF THE USE AND DEVELOPMENT OF ADJACENT AND NEARBY PROPERTY:

Please see attached

(B) WHETHER A PROPOSED REZONING WILL ADVERSELY AFFECT THE EXISTING USE OR USABILITY OF ADJACENT OR NEARBY PROPERTY:

Please see attached

(C) WHETHER THE PROPERTY TO BE AFFECTED BY A PROPOSED REZONING HAS REASONABLE ECONOMIC USE AS CURRENTLY ZONED:

Please see attached

(D) WHETHER THE PROPOSED REZONING WILL RESULT IN A USE WHICH WILL OR COULD CAUSE AN EXCESSIVE OR BURDENSOME USE OF EXISTING STREETS, TRANSPORTATION FACILITIES, UTILITIES, OR SCHOOLS:

Please see attached

(E) WHETHER THE PROPOSED REZONING IS IN CONFORMITY WITH THE POLICY AND INTENT OF THE LAND USE PLAN:

Please see attached

(F) WHETHER THERE ARE OTHER EXISTING OR CHANGING CONDITIONS AFFECTING THE USE AND DEVELOPMENT OF THE PROPERTY WHICH GIVE SUPPORTING GROUNDS FOR EITHER APPROVAL OR DISAPPROVAL OF THE PROPOSED REZONING:

Please see attached

REZONING APPLICANT'S RESPONSE
STANDARDS GOVERNING THE EXERCISE OF THE ZONING POWER

(A) Yes, approval of the proposed rezoning will permit a use that is suitable in view of the use and development of adjacent and nearby property. The proposed mixed-use development will complement existing land uses and development patterns. The Scenic Highway corridor is a mostly-developed mixed-use corridor.

(B) No, approval of the proposed rezoning will not adversely affect the existing use or usability of any of the nearby properties. Rather, the proposed development will complement adjacent commercial land uses by providing residential critical mass.

(C) Due to the size, location, layout and dimensions of the subject property, the Applicant submits that the property does not have reasonable economic use as currently zoned.

(D) No, approval of the proposed rezoning will not result in an excessive or burdensome use of the infrastructure systems. The Property is conveniently-located near major thoroughfares with access to utilities.

(E) Yes, approval of the proposed rezoning would be in conformity with the policy and intent of the Gwinnett County 2040 Unified Plan. The Property is within the Community Mixed-Use Character Area which encourages multifamily residential development.

(F) The Applicant submits that the mix of surrounding land uses and the Property's direct pedestrian and vehicular access to major commercial areas provide additional supporting grounds for approval of this Application.

Mahaffey Pickens Tucker, LLP
ATTORNEYS AT LAW

Matthew P. Benson
Gerald Davidson, Jr.*
Brian T. Easley
Kelly O. Faber
Christopher D. Holbrook
W. Brady Hughes

Shane M. Lanham
Austen T. Mabe
Jeffrey R. Mahaffey
Steven A. Pickens
Andrew D. Stancil
R. Lee Tucker, Jr.

*Of Counsel

LETTER OF INTENT FOR REZONING APPLICATION OF BRAND PROPERTIES, LLC

Mahaffey Pickens Tucker, LLP submits this Letter of Intent and attached rezoning application (the "Application") on behalf of Brand Properties, LLC (the "Applicant") for the purpose of requesting the rezoning of an approximately 8.93-acre tract of land located on the easterly side of Scenic Highway (State Route 124) at its intersection with North Road (the "Property"). The Property is currently zoned R-100 and is located in the Community Mixed-Use Character Area as set forth on the Gwinnett County 2040 Unified Plan (the "2040 Plan") Future Development Map.

The Applicant is proposing to rezone the Property from the R-100 zoning classification to the RM-24 zoning classification of the Gwinnett County Unified Development Ordinance (the "UDO") in order to accommodate the development of a multifamily residential community with approximately 214 units. The proposed development would provide attractive, high-end residences with various amenities including green space, courtyards, and a clubhouse building with additional recreational options such as a fitness center, pool, and outdoor patio space. Residential buildings would include internal, unconditioned corridors and attractive architectural elements to maintain the aesthetics of the Scenic Highway corridor.

The proposed community is compatible with the policies set forth in the Gwinnett County 2040 Plan which designates the Property as located within the Community Mixed-Use Character Area. Policies for this character area encourage a variety of land uses including mixed-use developments, apartments, and retail. The surrounding area already includes a wide variety of relatively intense commercial uses including the adjacent Sam's Club, a Walmart, and several restaurants and retail shops on both sides of Scenic Highway. The proposed development would complement and support these existing land uses by providing residential critical mass and a built-in customer base. The proposed development would also provide an appropriate transitional land use by stepping down from the more intense commercial uses towards less-intense single-family detached uses to the northeast across North Road. As set forth on the Gwinnett County Long Range Road Classification Map, Scenic Highway is classified as a Principal Arterial and North Road is classified as a Minor Collector. Accordingly, the Property is located at a "node" as defined in the 2040 Plan. The 2040 Plan encourages a more intense mix of uses at such nodes including "high density residential uses." In addition to being located directly on Scenic Highway, the Property is

Sugarloaf Office || 1550 North Brown Road, Suite 125, Lawrenceville, Georgia 30043
NorthPoint Office || 11175 Cicero Drive, Suite 100, Alpharetta, Georgia 30022
TELEPHONE 770 232 0000
FACSIMILE 678 518 6880
www.mptlawfirm.com

also located in close proximity to several major roadways including Ronald Reagan Parkway, Sugarloaf Parkway, Stone Mountain Highway (US Route 78), and Grayson Highway (State Route 20). Residents would be able to access major employment, shopping, and entertainment uses via these corridors.

Moreover, the proposed community is compatible with the broader housing policies set forth in the 2040 Plan. Chapter 4 of the 2040 Plan provides that there are "fundamental questions" as to "how and where [Gwinnett] will house its future residents." In addressing how housing needs and desires are continually evolving, the 2040 Plan notes that "nearly 3/4 of our housing units" are single-family detached homes built from the 1980s to the 2000s. The 2040 Plan has identified this "over-reliance on detached single-family homes" as a "major threat to our future success" and encourages a diversification of housing types across the County to address this issue. The 2040 Plan also acknowledges demonstrated shifts in housing preferences and provides that "younger people are broadly driving changes in how housing has historically been viewed." Further, "[w]hile owning a traditional suburban single-family detached home will continue to be very desirable, younger generations are looking for more types of housing product options and for flexibility that ownership is not able to provide." Additionally, nearly fifty percent of households in Gwinnett are one- or two-person households. According to the 2040 Plan, this fact alone shows that "Gwinnett needs more variety in housing types than currently exists." Therefore, in order to diversify housing types and meet existing and future demand for non-single-family detached housing, the 2040 Plan encourages multi-family developments in certain Character Areas such as the Community Mixed-Use Character Area which includes the subject Property. The proposed development fits squarely within the policies of the 2040 Plan, would create a more walkable mixed-use environment, and would enhance the vitality and aesthetics of the Scenic Highway corridor.

The Applicant and its representatives welcome the opportunity to meet with staff of the Gwinnett County Department of Planning & Development to answer any questions or to address any concerns relating to the matters set forth in this letter or in the Application filed herewith. The Applicant respectfully requests your approval of this Application.

This 4th day of September, 2020.

Respectfully Submitted,

MAHAFFEY PICKENS TUCKER, LLP

Shane M. Lanham

REZONING APPLICANT'S CERTIFICATION

THE UNDERSIGNED BELOW IS AUTHORIZED TO MAKE THIS APPLICATION. THE UNDERSIGNED IS AWARE THAT NO APPLICATION OR REAPPLICATION AFFECTING THE SAME LAND SHALL BE ACTED UPON WITHIN 12 MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS UNLESS WAIVED BY THE BOARD OF COMMISSIONERS. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION BE ACTED UPON IN LESS THAN SIX (6) MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS.

Signature of Applicant — 8/18/2020 Date

R. Brand Morgan, Manager
Type or Print Name and Title

Signature of Notary Public — 8/18/2020 Date — Notary Seal

J MICHELLE CHEEK
NOTARY PUBLIC
DEKALB COUNTY, GEORGIA
MY COMMISSION EXPIRES JULY 20, 2023

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PLANNING & DEVELOPMENT
SEPTEMBER 4, 2020
RZM2020-00034

REZONING APPLICANT'S CERTIFICATION

THE UNDERSIGNED BELOW IS AUTHORIZED TO MAKE THIS APPLICATION. THE UNDERSIGNED IS AWARE THAT NO APPLICATION OR REAPPLICATION AFFECTING THE SAME LAND SHALL BE ACTED UPON WITHIN 12 MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS UNLESS WAIVED BY THE BOARD OF COMMISSIONERS. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION BE ACTED UPON IN LESS THAN SIX (6) MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS.

Signature of Applicant — 9/4/20 Date

Shane Lanham, Attorney for the Applicant

Type or Print Name and Title

Donna L. Bowen — 9/4/20

Signature of Notary Public — Date — Notary Seal

DONNA L. BOWEN NOTARY PUBLIC GWINNETT COUNTY GEORGIA EXPIRES MARCH 31, 2021

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RZM2020-00034

REZONING PROPERTY OWNER'S CERTIFICATION

THE UNDERSIGNED BELOW, OR AS ATTACHED, IS THE OWNER OF THE PROPERTY CONSIDERED IN THIS APPLICATION. THE UNDERSIGNED IS AWARE THAT NO APPLICATION OR REAPPLICATION AFFECTING THE SAME LAND SHALL BE ACTED UPON WITHIN 12 MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS UNLESS WAIVED BY THE BOARD OF COMMISSIONERS. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION BE ACTED UPON IN LESS THAN SIX (6) MONTHS FROM THE DATE OF LAST ACTION BY THE BOARD OF COMMISSIONERS.

Dale C Wilson, Trustee — 8-19-2020

Signature of Property Owner — Date

Dale C Wilson Trustee — 8-19-2020

Type or Print Name and Title

Jackye F. Gann — 8.19.2020

Signature of Notary Public — Date

JACKYE F GANN
NOTARY PUBLIC
GWINNETT COUNTY, GEORGIA
MY COMMISSION EXPIRES MARCH 06, 2024
Notary Seal

RECEIVED BY
PLANNING & DEVELOPMENT
SEPTEMBER 4, 2020
RZM2020-00034

CONFLICT OF INTEREST CERTIFICATION FOR REZONING

The undersigned below, making application for a Rezoning, has complied with the Official Code of Georgia Section 36-67A-1, et. seq, Conflict of Interest in Zoning Actions, and has submitted or attached the required information on the forms provided.

SIGNATURE OF APPLICANT	DATE	TYPE OR PRINT NAME AND TITLE
	9/4/20	Shane M. Lanham, Attorney for Applicant
SIGNATURE OF APPLICANT'S ATTORNEY OR REPRESENTATIVE	DATE	TYPE OR PRINT NAME AND TITLE

Donna L. Bowen 9/4/20
SIGNATURE OF NOTARY PUBLIC DATE

DONNA L. BOWEN NOTARY PUBLIC GEORGIA EXPIRES MARCH 31, 2021 GWINNETT COUNTY NOTARY SEAL

DISCLOSURE OF CAMPAIGN CONTRIBUTIONS

Have you, within the two years immediately preceding the filing of this application, made campaign contributions aggregating $250.00 or more to a member of the Board of Commissioners or a member of the Gwinnett County Planning Commission?

☐ YES ☒ XX NO Mahaffey Pickens Tucker, LLP
YOUR NAME

If the answer is yes, please complete the following section:

NAME AND OFFICAL POSITION OF GOVERNMENT OFFICIAL	CONTRIBUTIONS (List all which aggregate to $250 or More)	DATE CONTRIBUTION WAS MADE (Within last two years)
NA		

Attach additional sheets if necessary to disclose or describe all contributions.

RECEIVED BY
PLANNING & DEVELOPMENT
SEPTEMBER 4, 2020
RZM2020-00034

CONFLICT OF INTEREST CERTIFICATION FOR REZONING

The undersigned below, making application for a Rezoning, has complied with the Official Code of Georgia Section 36-67A-1, et. seq, Conflict of Interest in Zoning Actions, and has submitted or attached the required information on the forms provided.

SIGNATURE OF APPLICANT	DATE	TYPE OR PRINT NAME AND TITLE
[signature]	8/18/2020	R. Brand Morgan, Manager

SIGNATURE OF APPLICANT'S ATTORNEY OR REPRESENTATIVE	DATE	TYPE OR PRINT NAME AND TITLE

SIGNATURE OF NOTARY PUBLIC	DATE	NOTARY SEAL
[signature]	8/18/2020	J MICHELLE CHEEK NOTARY PUBLIC DEKALB COUNTY, GEORGIA MY COMMISSION EXPIRES JULY 20, 2023

DISCLOSURE OF CAMPAIGN CONTRIBUTIONS

Have you, within the two years immediately preceding the filing of this application, made campaign contributions aggregating $250.00 or more to a member of the Board of Commissioners or a member of the Gwinnett County Planning Commission?

☐ YES ☒ NO — BRAND PROPERTIES, LLC (YOUR NAME)

If the answer is yes, please complete the following section:

NAME AND OFFICAL POSITION OF GOVERNMENT OFFICIAL	CONTRIBUTIONS (List all which aggregate to $250 or More)	DATE CONTRIBUTION WAS MADE (Within last two years)

Attach additional sheets if necessary to disclose or describe all contributions.

VERIFICATION OF CURRENT PAID PROPERTY TAXES FOR REZONING

THE UNDERSIGNED BELOW IS AUTHORIZED TO MAKE THIS APPLICATION. THE UNDERSIGNED CERTIFIES THAT ALL GWINNETT COUNTY PROPERTY TAXES BILLED TO DATE FOR THE PARCEL LISTED BELOW HAVE BEEN PAID IN FULL TO THE TAX COMMISSIONER OF GWINNETT COUNTY, GEORGIA. IN NO CASE SHALL AN APPLICATION OR REAPPLICATION FOR REZONING BE PROCESSED WITHOUT SUCH PROPERTY VERIFICATION.

***Note: A SEPARATE VERIFICATION FORM MUST BE COMPLETED FOR EACH TAX PARCEL INCLUDED IN THE REZONING REQUEST.**

PARCEL I.D. NUMBER: (Map Reference Number) 5 (District) - 074 (Land Lot) - 007 (Parcel)

Signature of Applicant — 9/3/2020 (Date)

Shane Lanham, Attorney for the Applicant

Type or Print Name and Title

TAX COMMISSIONERS USE ONLY

(PAYMENT OF ALL PROPERTY TAXES BILLED TO DATE FOR THE ABOVE REFERENCED PARCEL HAVE BEEN VERIFIED AS PAID CURRENT AND CONFIRMED BY THE SIGNATURE BELOW)

Ingrid Umanzor — NAME

TSA II — TITLE

9/3/2020 — DATE

JUSTIFICATION FOR REZONING

The portions of the Gwinnett County Unified Development Ordinance (the "UDO") which classify or may classify the property which is the subject of this Application (the "Property") into any less intensive zoning classification other than as requested by the Applicant, are or would be unconstitutional in that they would destroy the Applicant's property rights without first paying fair, adequate and just compensation for such rights, in violation of Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983, and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States.

The application of the UDO as applied to the subject Property, which restricts its use to the present zoning classification, is unconstitutional, illegal, null and void, constituting a taking of the Applicant's and the Owner's property in violation of the Just Compensation Clause of the Fifth Amendment and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States, Article I, Section I, Paragraph I, and Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983, and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States denying the Applicant an economically viable use of its land while not substantially advancing legitimate state interests.

The Property is presently suitable for development under the RM-24 classification as requested by the Applicant, and is not economically suitable for development under the present R-100 zoning classification of Gwinnett County. A denial of this Application would constitute an arbitrary and capricious act by the Gwinnett County Board of Commissioners without any rational basis therefore, constituting an abuse of discretion in violation of Article I, Section I, Paragraph I and Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983, and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States.

A refusal by the Gwinnett County Board of Commissioners to rezone the Property to the RM-24 classification with such conditions as agreed to by the Applicant, so as to permit the only feasible economic use of the Property, would be unconstitutional and discriminate in an arbitrary, capricious and unreasonable manner between the Applicant and owners of similarly situated

property in violation of Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983 and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States. Any rezoning of the subject Property to the RM-24 classification, subject to conditions which are different from the conditions by which the Applicant may amend its application, to the extent such different conditions would have the effect of further restricting the Applicant's and the Owner's utilization of the subject Property, would also constitute an arbitrary, capricious and discriminatory act in zoning the Property to an unconstitutional classification and would likewise violate each of the provisions of the State and Federal Constitutions set forth hereinabove.

Opponents to the request set forth in the Application, or in any amendments to the Application, have waived their rights to appeal any decision of the Gwinnett County Board of Commissioners because they lack standing, have failed to exhaust administrative remedies, and/or because they failed to assert any legal or constitutional objections.

Accordingly, the Applicant respectfully requests that the rezoning application submitted by the Applicant relative to the Property be granted and that the Property be rezoned to the zoning classification as shown on the respective application.

This 4th day of September, 2020.

Respectfully submitted,

MAHAFFEY PICKENS TUCKER, LLP

Shane M. Lanham
Attorneys for Applicant

1550 North Brown Road
Suite 125
Lawrenceville, Georgia 30043
(770) 232-0000

TRAFFIC IMPACT STUDY
FOR PROPOSED MULTIFAMILY RESIDENTIAL DEVELOPMENT AT SCENIC HIGHWAY AND NORTH ROAD

GWINNETT COUNTY, GEORGIA

Prepared for:

Brand Properties
3328 Peachtree Road, Suite 100
Atlanta, GA 30326

Prepared By:

A&R Engineering Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067
Tel: (770) 690-9255 Fax: (770) 690-9210
www.areng.com

September 4th, 2020
A & R Project # 20-108

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LIST OF TABLES

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LIST OF FIGURES

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1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed 216-unit multifamily residential development located in the southeast corner of the intersection of SR 124 (Scenic Highway) at North Road in Gwinnett County, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development.

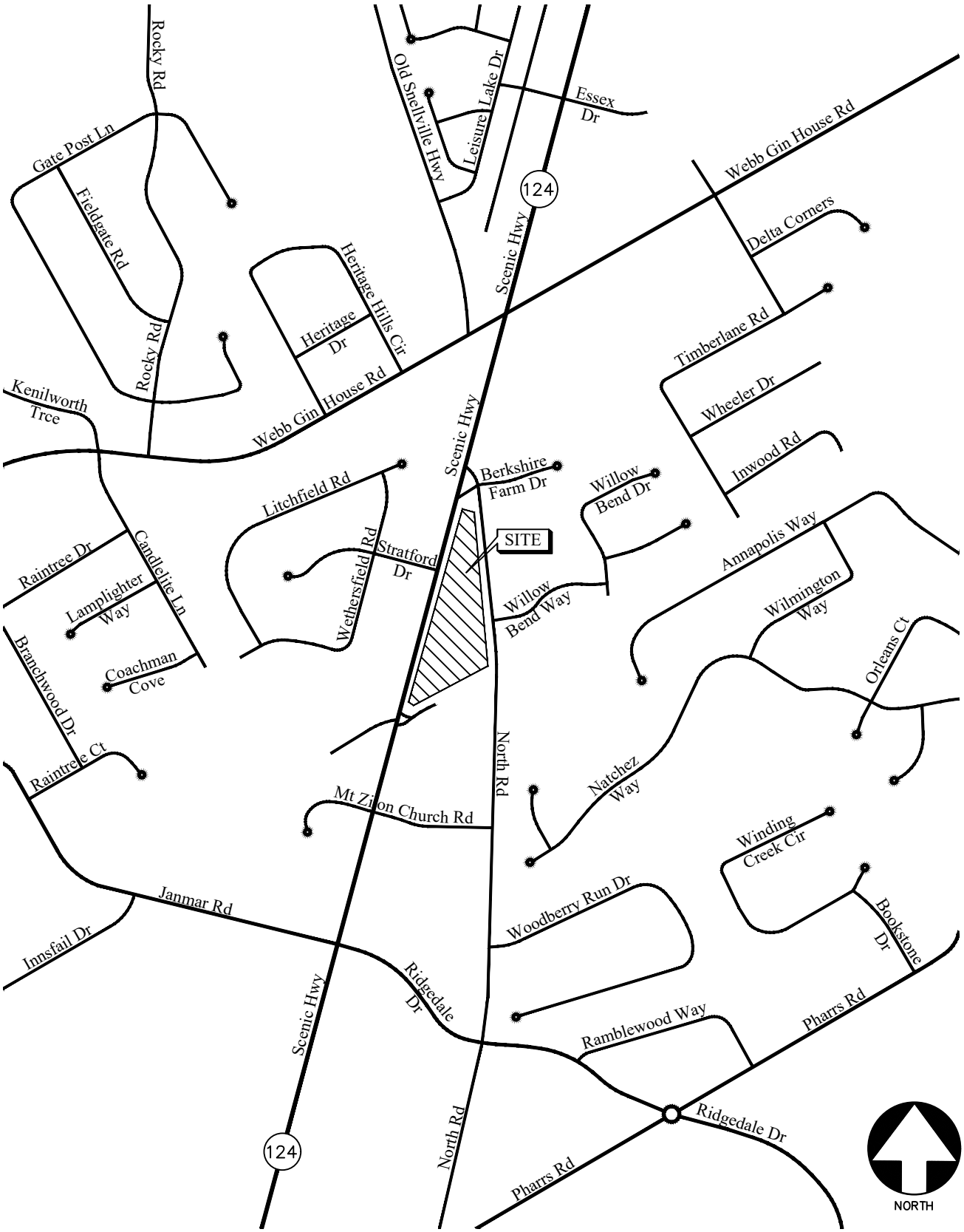
The development proposes access at the following locations:

- Driveway 1: Full-access driveway on SR 124 (Scenic Highway), aligned with Stratford Drive
- Driveway 2: Full-access driveway on North Road, aligned with Willow Bend Way

This study includes the evaluation of traffic operations for the AM and PM peak hours at the intersections of:

- SR 124 (Scenic Highway) at Stratford Drive
- SR 124 (Scenic Highway) at Mt. Zion Baptist Church Driveway / Sam's Club Driveway
- North Road at Willow Bend Way

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report. The location of the development and the surrounding roadway network is shown in Figure 1.



LOCATION MAP FIGURE 1

A&R Engineering Inc.

2.0 EXISTING FACILITIES / CONDITIONS

2.1 Roadway Facilities

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

2.1.1 SR 124 (Scenic Highway)

SR 124 (Scenic Highway) is a north-south, four-lane, median-divided roadway with a posted speed limit of 55 mph in the vicinity of the site. To the south of Mt. Zion Baptist Church Driveway / Sam's Club Driveway, SR 124 (Scenic Highway) has a posted speed limit of 45 mph. GDOT traffic counts (Station ID's 135-0189 & 135-0192) indicate that the daily traffic volume on SR 124 (Scenic Highway) in 2019 was 41,300 vehicles per day south of Janmar Road / Ridgedale Drive and 41,400 vehicles per day north of Scenic Pines Drive. GDOT classifies SR 124 (Scenic Highway) as a Principal Arterial - Other roadway. Gwinnet County classifies SR 124 (Scenic Highway) as an arterial roadway in the Long-Range Classification Map.

2.1.2 Stratford Drive

Stratford Drive is an east-west, two-lane, undivided, residential roadway with a posted speed limit of 25 mph.

2.1.3 North Road

North Road is a north-south, two-lane, undivided roadway with a posted speed limit of 35 mph (25 mph when school zone is in effect) in the vicinity of the site. Gwinnet County classifies North Road as a minor collector roadway in the Long-Range Classification Map.

2.1.4 Willow Bend Way

Willow Bend Way is an east-west, two-lane, undivided, residential roadway with a posted speed limit of 25 mph.

3.0 STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at unsignalized intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 6th edition (HCM 6). Since HCM 6 does not support U-turn movements, HCM 2000 has been used for the future signalized intersection of SR 124 (Scenic Highway) at Stratford Drive. Synchro software, which utilizes the HCM methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

3.1 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: Highway Capacity Manual

3.2 Signalized Intersections

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

composite v/c ratio for the sum of the critical lane groups within the intersection is computed. This composite v/c ratio is an indication of the overall intersection sufficiency.

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

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

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

Source: Highway Capacity Manual

4.0 EXISTING 2020 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

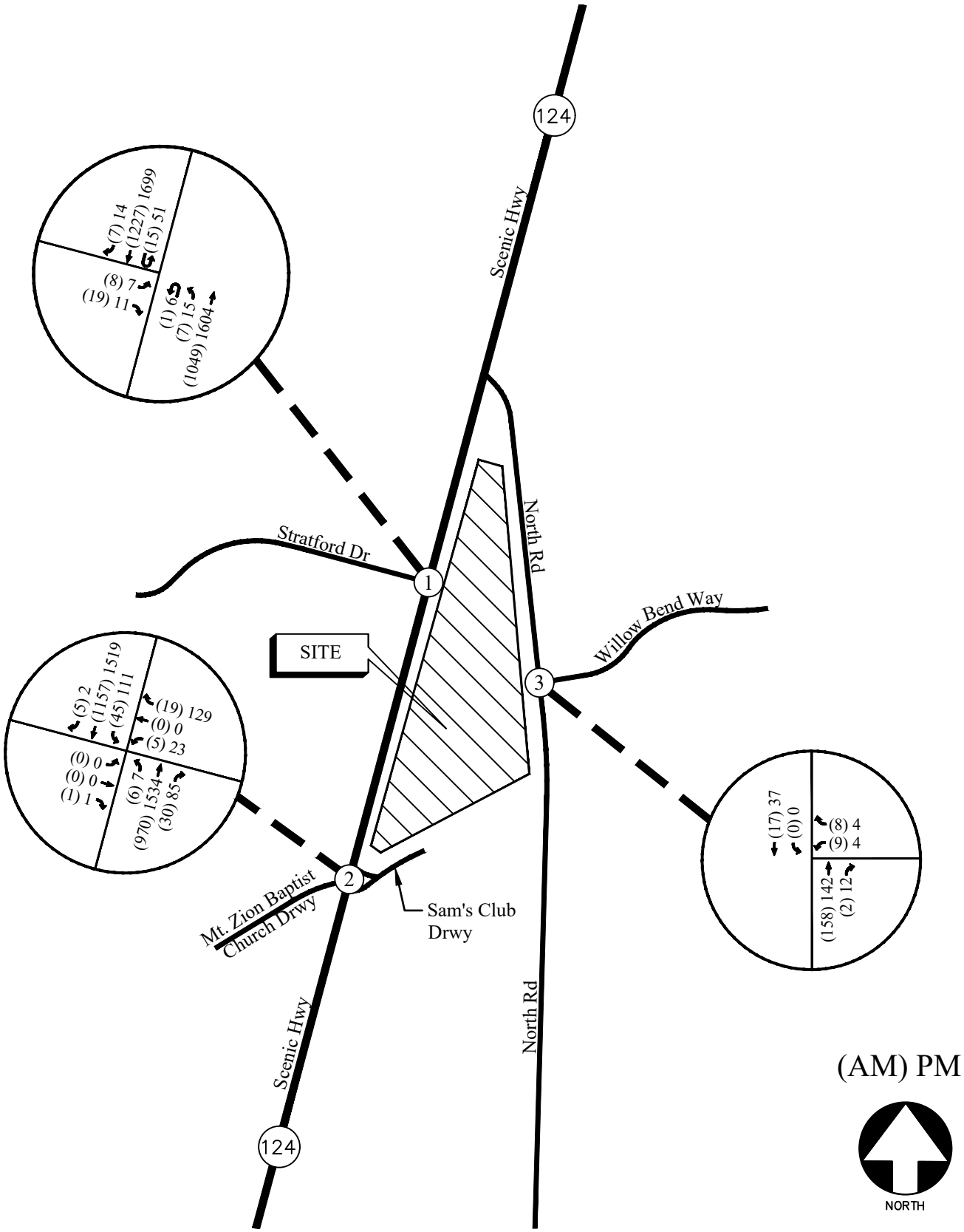
Existing traffic counts were obtained at the following study intersections:

1. SR 124 (Scenic Highway) at Stratford Drive
2. SR 124 (Scenic Highway) at Mt. Zion Baptist Church Driveway / Sam's Club Driveway
3. North Road at Willow Bend Way

Turning movement counts were collected on Tuesday, August 18, 2020 during the AM and PM peak hours between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, 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.

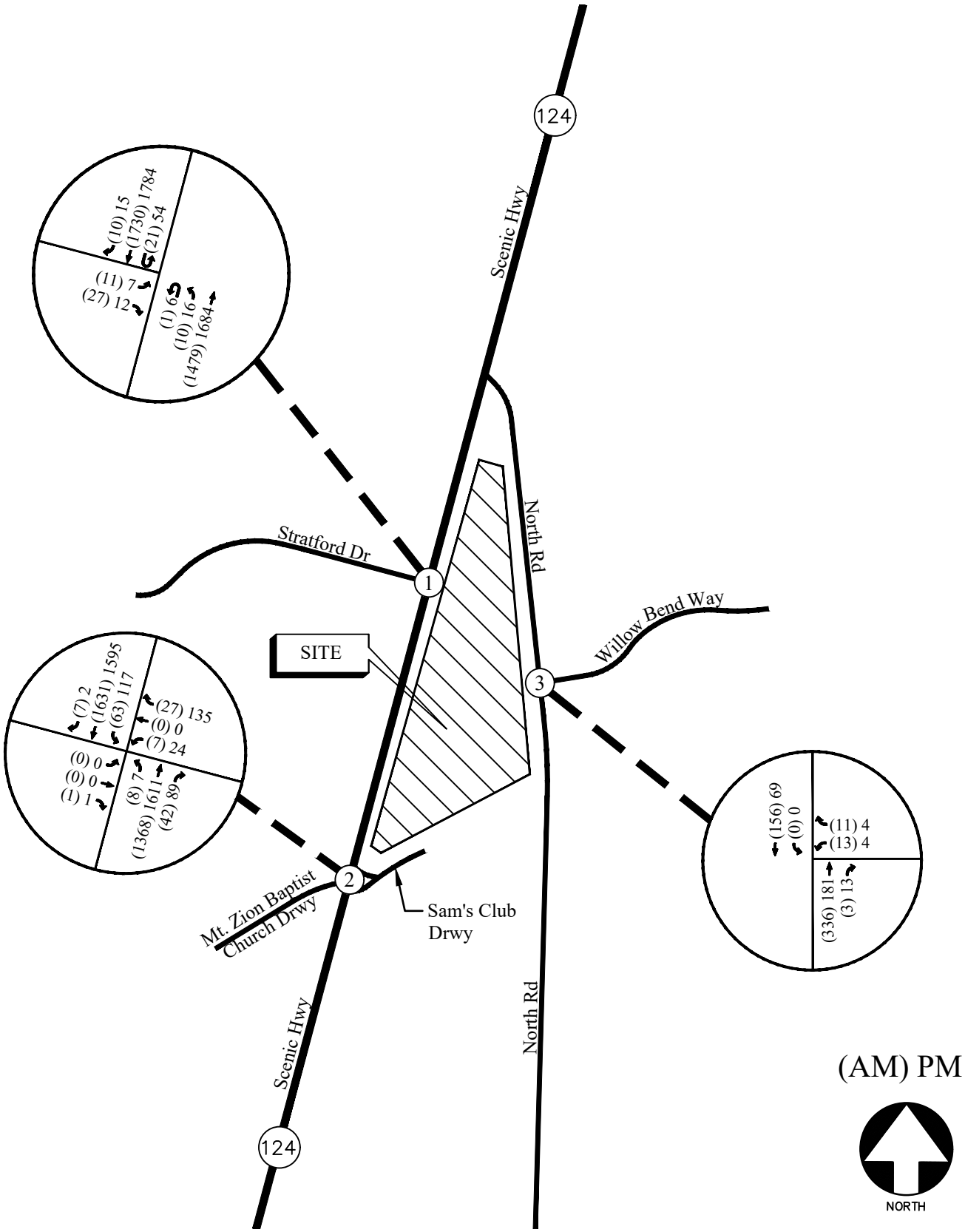
On Wednesday, September 25, 2019 GDOT collected an average daily traffic (ADT) count on SR 124 (Scenic Highway) south of Janmar Road/Ridgedale Drive. Since traffic patterns are unusual due to COVID-19 (i.e. school closures and many people working from home), a 24-hour tube count was collected at the same location on Tuesday, August 18, 2020 to provide a basis to determine the adjustment factor between normal and abnormal traffic conditions. The GDOT ADT was increased by the annual growth rate of 2% (section 6.1.1) for one year to account for background growth since 2019 before the adjustment factor was determined. A comparison of the recent ADT data and projected 2020 GDOT counts revealed that the recent ADT data were 41% lower in the AM peak hour and by 5% in the PM peak hour. Therefore, the counts in Figure 2 were increased by 41% in the AM peak hour and 5% in the PM peak hour. The adjusted existing condition peak hour volumes are shown in Figure 3.

To account for traffic generated by Pharr Elementary School on North Road during AM and PM peak hours, ITE Trip Generation (10^{th} Edition) was used to project trips generated for 745 students on adjacent streets. Trips generated by Pharr Elementary School were included in the volumes shown in Figure 3.



EXISTING WEEKDAY PEAK-HOUR VOLUMES
(UNADJUSTED)

FIGURE 2
A&R Engineering Inc.



ADJUSTED EXISTING WEEKDAY PEAK-HOUR VOLUMES FIGURE 3

A&R Engineering Inc.

4.2 Existing Traffic Operations

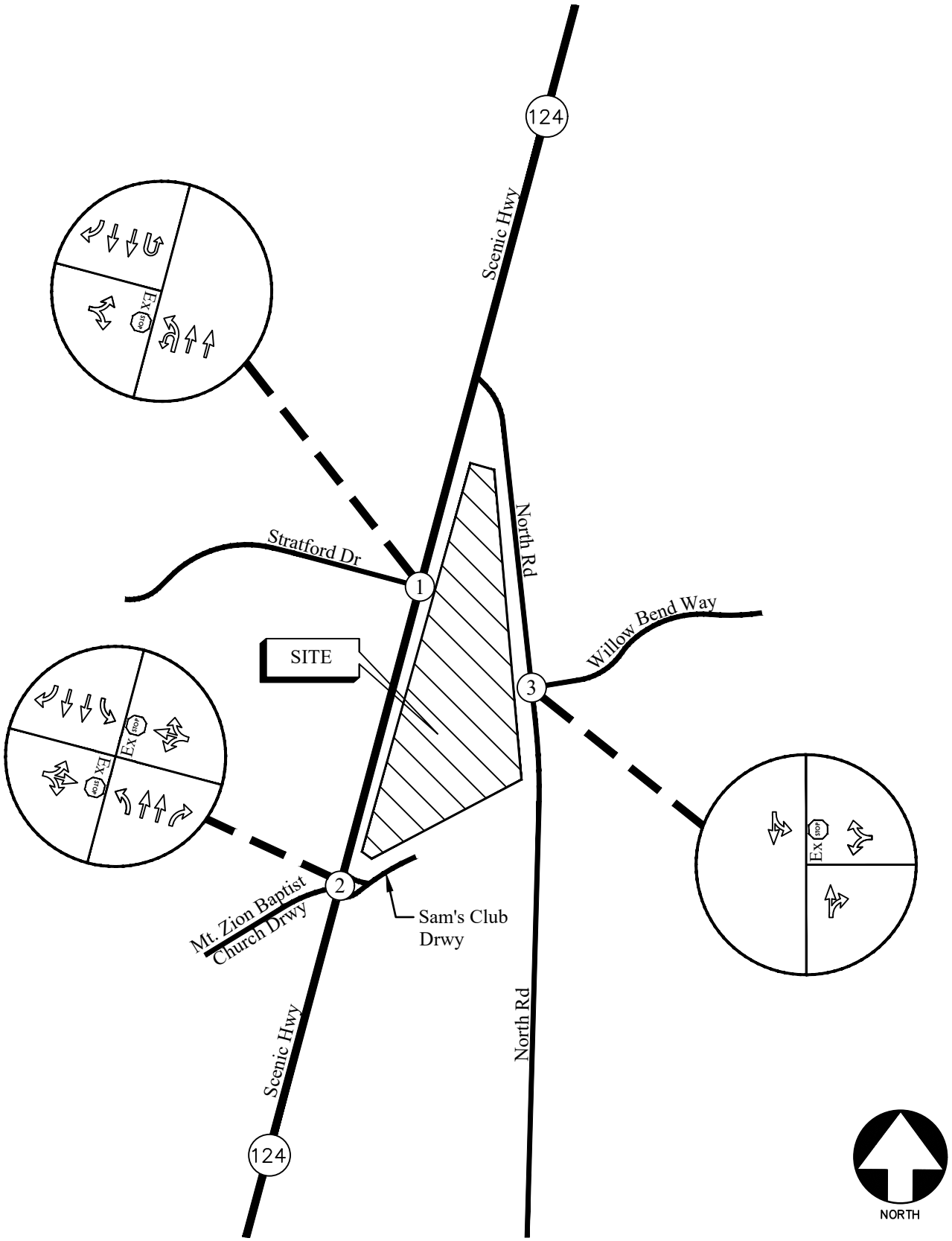
Existing 2020 traffic operations were analyzed at the study intersections in accordance with the HCM methodology using the adjusted existing volumes in Figure 3. The results of the analyses are shown in Table 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

Intersection		Traffic Control	LOS (Delay)	
			AM Peak Hour	PM Peak Hour
1	**SR 124 (Scenic Hwy) @ Stratford Dr** -Eastbound Approach -Northbound Left -Southbound U-Turn	Stop Controlled on EB Approach	F (231.4) C (19.3) D (34.2)	F (*) D (27.1) F (69.9)
2	**SR 124 (Scenic Hwy) @ Mt. Zion Baptist Church Drwy / Sam's Club Drwy** -Eastbound Approach -Westbound Approach -Northbound Left -Southbound Left	Stop Controlled on EB and WB Approaches	C (17.6) F (141.8) C (15.7) B (14.5)	C (16.5) F (*) B (14.6) C (19.0)
3	**North Rd @ Willow Bend Way** -Westbound Approach	Stop Controlled on WB Approach	B (11.7)	B (10.0)

* Delay exceeds 300 seconds

The results of existing traffic operations analysis indicate that the eastbound (Stratford Drive) approach and the southbound U-turn movements at the intersection of SR 124 (Scenic Highway) at Stratford Drive are operating at level-of-service "F" in the AM and PM peak hours. The westbound (Sam's Club Driveway) approach to the intersection of SR 124 (Scenic Highway) at Mt. Zion Baptist Church Driveway / Sam's Club Driveway is also operating at level-of-service "F" in both the AM and PM peak hours. It is not unusual for stop-controlled side streets, such as Stratford Drive and the Sam's Club Driveway to experience long delays due to the time gap that is required to turn on to a state route highway. The existing traffic control and lane geometry for the intersections are shown in Figure 4.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 4

A&R Engineering Inc.

5.0 PROPOSED DEVELOPMENT

The proposed 216-unit multifamily residential development will be located in the southeast corner of the intersection of SR 124 (Scenic Highway) at North Road in Gwinnett County, Georgia. The development proposes access at the following locations:

1. Driveway 1: Full-access driveway on SR 124 (Scenic Highway), aligning with Stratford Drive
2. Driveway 2: Full-access driveway on North Road, aligning with Willow Bend Way

An interparcel connection to the adjacent Sams Club driveway to SR 124 (Scenic Highway) is proposed. A site plan is shown in Figure 5.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 10th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Use: 221 – Multifamily Housing (Mid-Rise). 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 221 – Multifamily Housing (Mid-Rise)	216 Units	19	54	73	57	36	93	1,175

5.2 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 6.

While some traffic from Sam's Club is projected to use the propose site driveway 1 across from Stratford Drive, some of the site traffic will also use the existing Sam's Club driveway on SR 124 (Scenic Highway). We have assumed that these mutual trips will be approximately the same, hence will have no net effect.

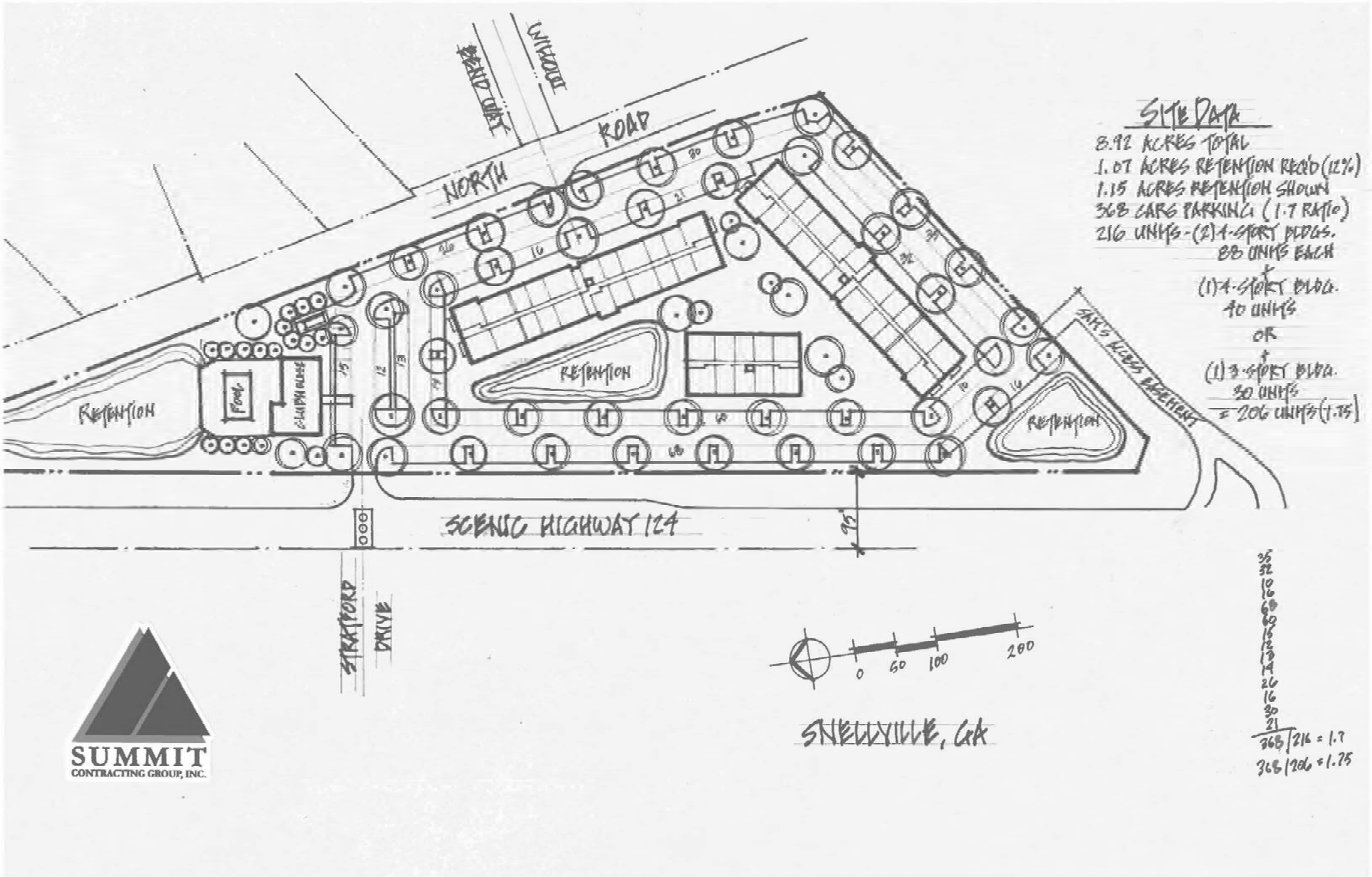
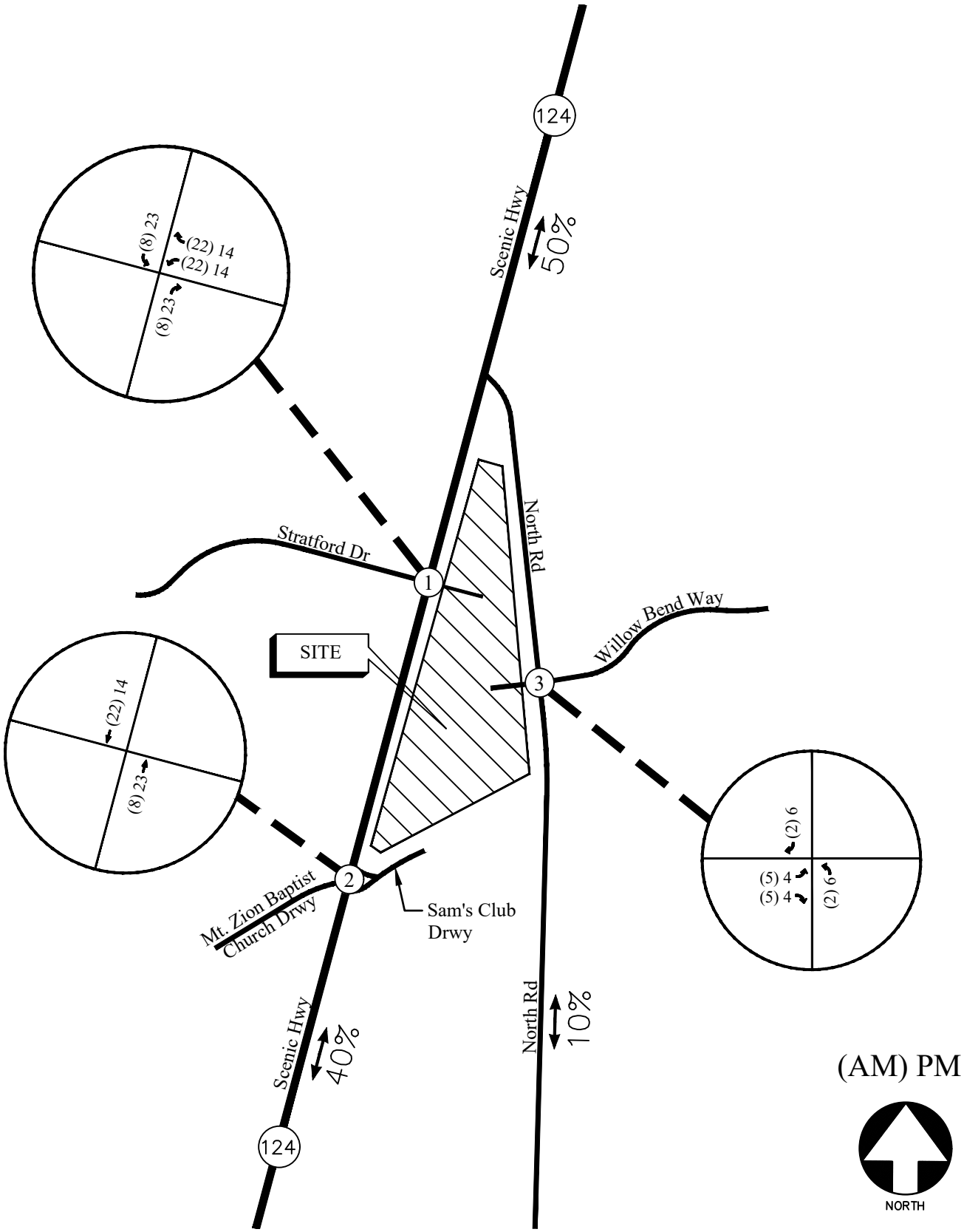


Figure 5 – Site Plan



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES

FIGURE 6

A&R Engineering Inc.

6.0 FUTURE 2022 TRAFFIC ANALYSIS

The future 2022 traffic operations are analyzed for the "Build" and "No-Build" conditions.

6.1 Future "No-Build" Conditions

The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The Future "No-Build" volumes consist of the existing traffic volumes (Figure 3) plus increases for annual growth of through traffic.

6.1.1 Annual Traffic Growth

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 three years revealed growth of approximately 2% in the area. This growth factor was applied to the existing traffic volumes between collector and arterial roadways 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 7.

6.1.2 Planned Improvement Projects

From discussions the developer, it is our understanding that there are future plans by Gwinnet County to install a traffic signal at the intersection of Stratford Drive and SR 124 (Scenic Highway). Since we are uncertain of the schedule for the traffic signal installation, the study analyzes both unsignalized (section 6.3.1 Scenario 1) and signalized (section 6.3.1 Scenario 2) scenarios for "no-build" and "build" conditions.

6.2 Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 6) were added to base traffic volumes (Figure 7) to calculate the future traffic volumes after the construction of the development. These total future "Build" traffic volumes are shown in Figure 8.

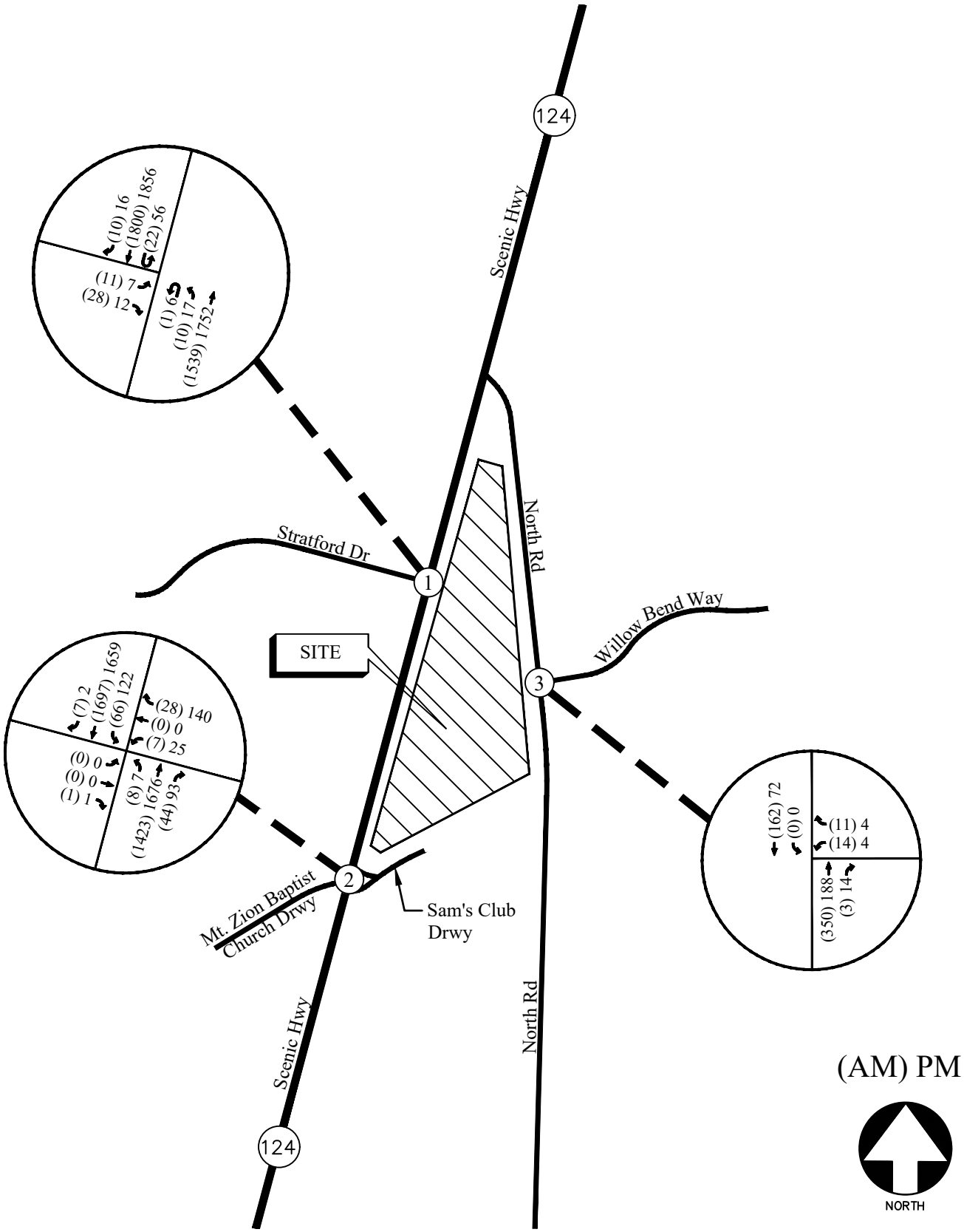
6.2.1 Site Access Configuration

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

- Driveway 1: Full-access driveway on SR 124 (Scenic Highway), aligning with Stratford Drive
- Driveway 2: Full-access driveway on North Road, aligning with Willow Bend Way

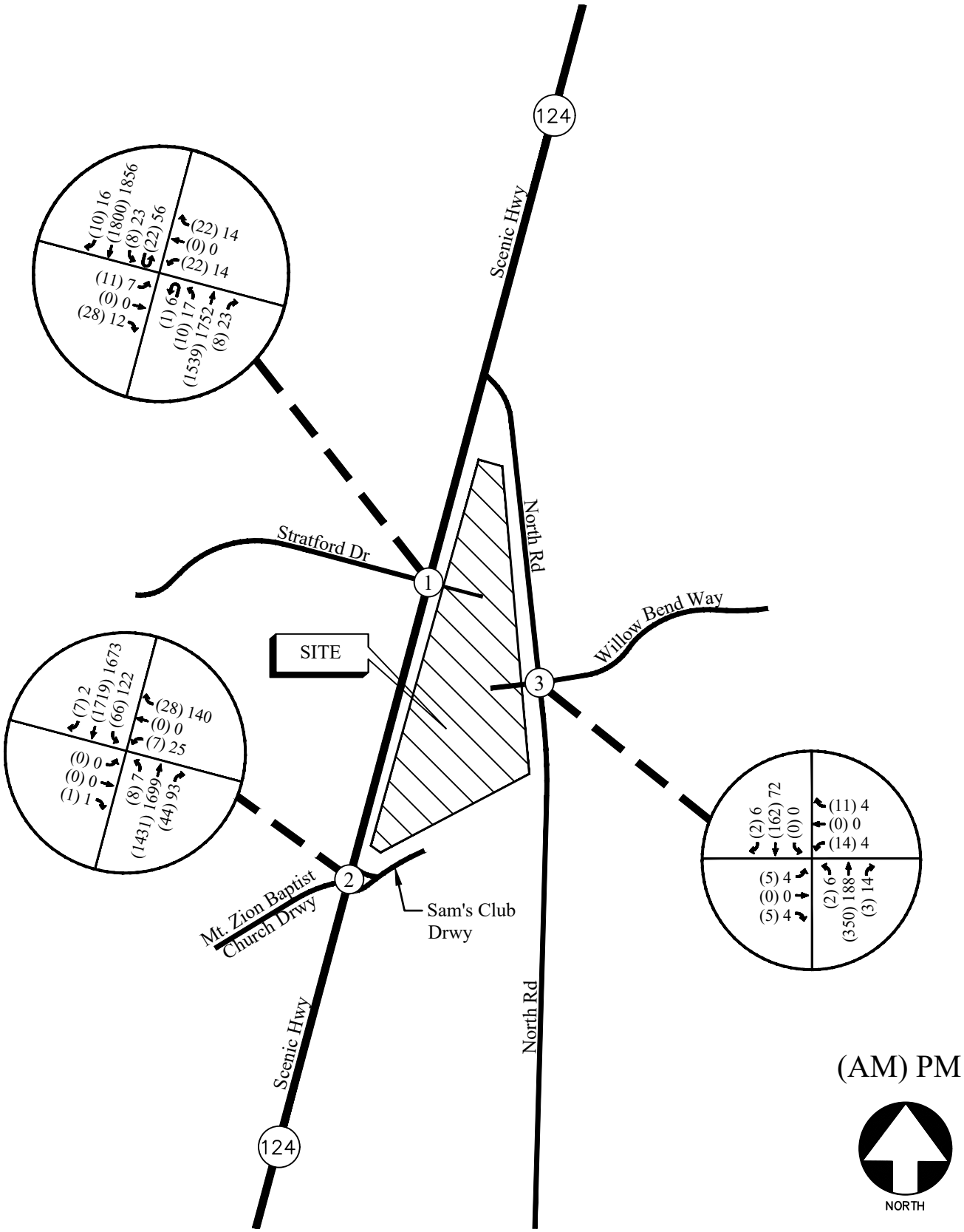
6.3 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figure 7 and Figure 8, respectively. The results of the future traffic operations with the intersection of SR 124 (Scenci Highway) and Stratford Drive/Driveway 1 as stop controlled on the side street approaches are shown below in Table 5 (Scenario 1). The results of the future traffic operations with the intersection of SR 124 (Scenic Highway) and Stratford Drive/Driveway 1 as signalized are shown below in Table 6 (Scenario 2).



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 7

A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 8

A&R Engineering Inc.

6.3.1 Future Traffic Operations: Scenario 1 (unsignalized at Stratford Drive & SR 124))

TABLE 5 – FUTURE INTERSECTION OPERATIONS

	Intersection	Future Condition: LOS (Delay)			
		NO-BUILD		BUILD	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 124 (Scenic Hwy) @ Stratford Dr / Drwy 1 (unsignalized)**				
	-Eastbound Approach	F (*)	F (*)	F (***)	F (*)
	-Westbound Approach	-	-	E (55.3)	F (*)
	-Northbound Left	C (20.6)	D (29.4)	C (20.6)	D (29.4)
	-Southbound U-Turn(no-build)/left (build)	E (38.0)	F (86.9)	E (35.1)	F (89.4)
2	**SR 124 (Scenic Hwy) @ Mt. Zion Baptist Church Drwy / Sam's Club Drwy**				
	-Eastbound Approach	C (18.3)	C (17.2)	C (18.5)	C (17.3)
	-Westbound Approach	F (228.1)	F (*)	F (228.1)	F (*)
	-Northbound Left	C (16.2)	C (15.2)	C (16.7)	C (15.3)
	-Southbound Left	C (15.2)	C (20.6)	C (15.3)	C (21.2)
3	**North Rd @ Willow Bend Way / Drwy 2**				
	-Eastbound Approach	-	-	B (11.5)	B (10.0)
	-Westbound Approach	B (11.9)	B (10.1)	B (12.6)	B (10.4)
	-Northbound Left	-	-	A (7.6)	A (7.4)

* Delay exceeds 300 seconds

Overall, the "no-build" and "build" analyses results in Table 5 indicate that all study intersections will continue to operate at acceptable levels of service, except for stop-controlled side streets. Due to the time gap required to turn left onto a multilane highway. It is not unusual for stop-controlled site-streets to have elevated delays during peak periods. Recommendations on traffic control and lane geometry are shown graphically in Figure 9.

Intersection 1: SR 124 (Scenic Highway) @ Stratford Drive

In the all conditions, the intersection of SR 124 (Scenic Highway) at Stratford Drive is operating at level-of-service "F" for the eastbound (Stratford Drive) approach and the southbound U-turn movements in the AM and/or PM peak hours. In future "build" conditions, the site driveway approach is projected to operate at a level-of-service "E" and "F" in the AM and PM peak, respectively.

Intersection 2: SR 124 (Scenic Highway) @ Mt. Zion Baptist Church Driveway / Sam's Club Driveway

The westbound (Sam's Club Driveway) approach to the intersection of SR 124 (Scenic Highway) at Mt. Zion Baptist Church Driveway / Sam's Club Driveway is projected to operate at level-of-service "F" in both the AM and PM peak hours in the future as in existing conditions. Based off of AM and PM peak hour data, the intersection does not warrant construction of a signal to improve side-street delays, no additional improvements will aid left turn vehicles.

Intersection 3: North Road @ Willow Bend Way / Driveway 2

The westbound approach (Willow Bend Way) to the intersection of North Road and Willow Bend Road/ Driveway 2 is operating at level-of-service "B" in the existing, "no-build" (addition of background traffic growth only), and "build" (addition of site generated traffic) conditions.

6.3.2 Future Traffic Operations: Scenario 2 (signalized at Stratford Drive & SR 124)

TABLE 6 – FUTURE INTERSECTION OPERATIONS

	Intersection	Future Condition: LOS (Delay)			
		NO-BUILD		BUILD	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**SR 124 (Scenic Hwy) @ Stratford Dr / Drwy 1** (signalized)**	**A (3.8)**	**A (3.9)**	**A (8.2)**	**A (6.5)**
	-Eastbound Approach	E (55.7)	D (38.5)	E (55.4)	E (57.8)
	-Westbound Approach	-	-	E (55.3)	E (56.7)
	-Northbound Approach	A (2.9)	A (3.5)	A (6.3)	A (5.4)
	-Southbound Approach	A (3.5)	A (3.9)	A (7.7)	A (6.4)
2	**SR 124 (Scenic Hwy) @ Mt. Zion Baptist Church Drwy / Sam's Club Drwy**				
	-Eastbound Approach	C (18.3)	C (17.2)	C (18.5)	C (17.3)
	-Westbound Approach	F (228.1)	F (*)	F (228.1)	F (*)
	-Northbound Left	C (16.5)	C (15.2)	C (16.7)	C (15.3)
	-Southbound Left	C (15.2)	C (20.6)	C (15.3)	C (21.2)
3	**North Rd @ Willow Bend Way / Drwy 2**				
	-Eastbound Approach	-	-	B (11.5)	B (10.0)
	-Westbound Approach	B (11.9)	B (10.1)	B (12.6)	B (10.4)
	-Northbound Left	-	-	A (7.6)	A (7.4)

**HCM 2000 used to analyze U-turn movements

With the installation of a traffic signal as a future planned improvement project by Gwinnet County, this intersection will operate at level-of-service "A" in the future in the "no-build" (addition of background traffic growth) and "build" (addition of site generated traffic) scenarios.

6.4 Auxiliary Lane Analysis

6.4.1 Driveway 1 at SR 124 (Scenic Highway) and Stratford Drive

Included below are analyses for a left-turn lane and deceleration lane for driveway 1 per GDOT standards. The analysis is based off the the average annual daily traffic (ADT) GDOT count on SR 124 (Scenic Highway) which is greater than 10,000 vehicles per day. The analyses consider the trip distribution included in Section 4.1 and illustrated in Figure 7. According to the trip distribution, the 24-hour two-way volume is 1,175 vehicles entering and exiting the site.

6.4.1.1 Left Turn Lane

For four lane roadways with AADT's greater than 10,000 vehicles and a posted speed limit of 55 mph, the daily site generated traffic left-turn movements threshold to warrant a left-turn lane is 200 left-

turning vehicles a day. The projected left-turn volumes per day for each driveway is included below in Table 7.

TABLE 7 – GDOT REQUIREMENTS FOR LEFT TURN LANES				
Intersection	Left-turn traffic (% total entering)	Left-turn Volume (veh/day)	Roadway Speed/ # lanes	GDOT Threshold (veh/day)
SR 124 (Scenic Hwy) @ Stratford Dr/ Drwy 1	40 %	**235**	55 mph / 4 lane	200

Since the projected number of left-turning vehicles exceeds the threshold of 200 left turning vehicles, left a southbound left turn lane is required at the intersection of SR 124 (Scenic Highway) and Stratford Road/Driveway 1. It is recommended to restripe the existing southbound U-turn lane to a shared U-turn/left turn lane to accommodate southbound left turn movements.

6.4.1.2 Deceleration Lane

For four lane roadways with AADT's greater than 10,000 vehicles and a posted speed limit of 55 mph, the daily site generated traffic right-turn movements threshold to warrant a deceleration lane is 50 right turning vehicles a day. The projected right-turn volumes per day for each driveway is included below in Table 8.

TABLE 8 – GDOT REQUIREMENTS FOR DECELERATION LANES				
Intersection	Right-turn traffic (% total entering)	Right-turn Volume (veh/day)	Roadway Speed/ # lanes	GDOT Threshold (veh/day)
SR 124 (Scenic Hwy) @ Stratford Dr/ Drwy 1	40 %	**235**	55 mph / 4 lane	50

Since the project number of right turning vehicles exceeds the threshold of 50 right turning vehicles, a northbound deceleration lane is warranted at the intersection of SR 124 (Scenic Highway) and Stratford Drive/Driveway 1 per GDOT standards.

6.4.2 Driveway 2 at North Road and Willow Bend Road

Included below are analyses for a left-turn lane per Gwinnet County Standards and a deceleration lane per GDOT standards for driveway 2. The analysis is based off Gwinnet County ADT counts from 2018, which show that the ADT on this portion of North Road was 4,747 in 2018. The deceleration lane analysis was based off the trip distribution included in section 4.1 and illustrated in Figure 6. According o the trip distribution, the 24-hour two-way volume is 1,175 vehicles entering and exiting the site.

6.4.2.1 Left Turn Lane

According to Gwinnet County standards, a left turn lane is required for multifamily residential developments with ADT's less than 6,000, posted speed limit of 35 mph, and more than 175 units. Since North Road has an ADT of 4,474, a posted speed limit of 35 mph, and the development includes 216

units. However, the development has a left turn lane at the proposed access on SR 124 (Scenic Drive) and the access on North Road is secondary in nature. The intersection at North Road and proposed driveway 2, across from Willow Bend Way is projected to have 2 left turns in the AM peak hour and 6 left turns in the PM peak hour. Therefore, a left turn lane is not recommended.

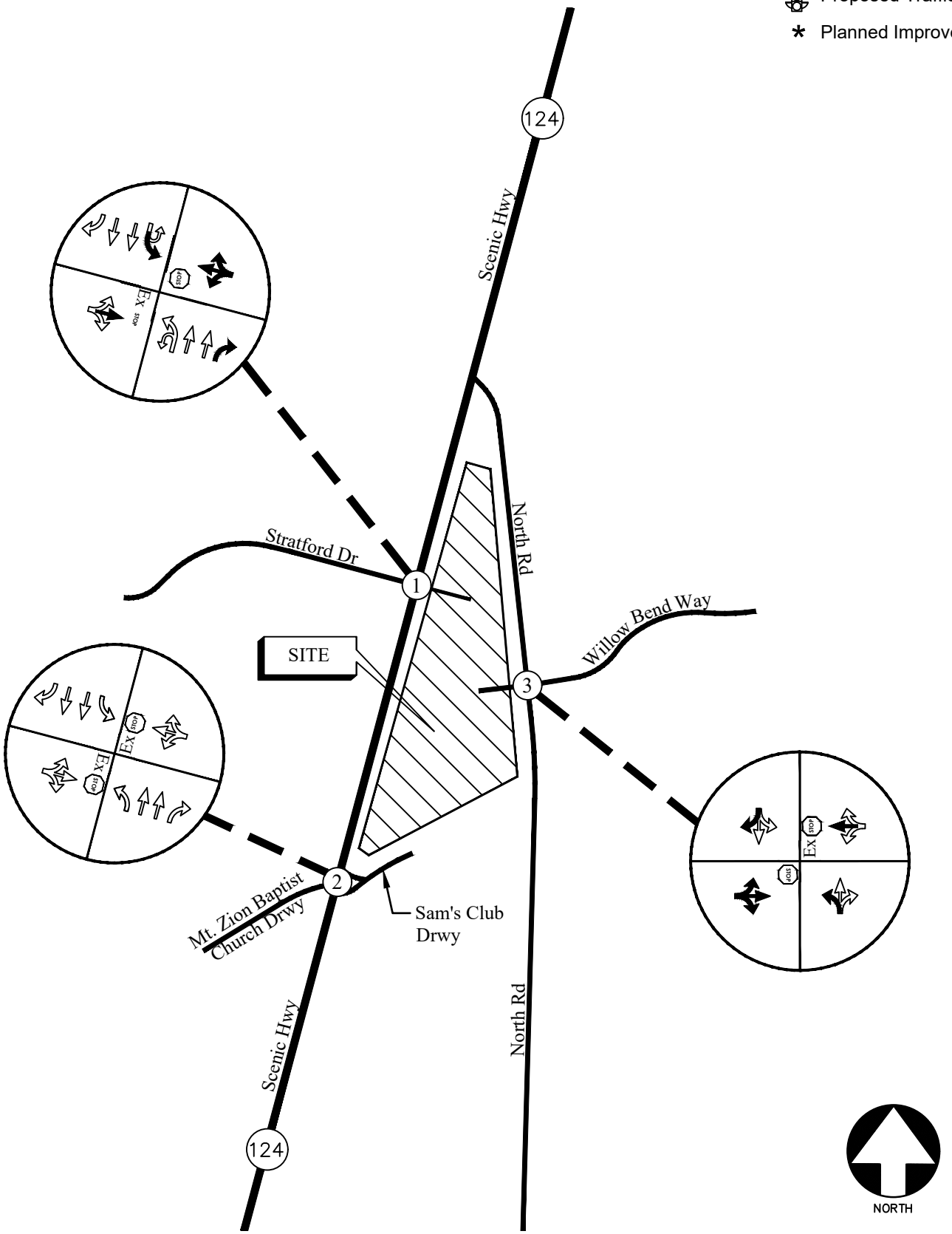
6.4.2.2 Deceleration Lane

For two lane roadways with AADT's less than 6,000 vehicles and a posted speed limit of 35 mph, the daily site generated traffic right-turn movements threshold to warrant a deceleration lane is 200 right turning vehicles a day. The projected right-turn volumes per day for each driveway is included below in Table 9.

TABLE 9 – GDOT REQUIREMENTS FOR DECELERATION LANES

Intersection	Right-turn traffic (% total entering)	Right-turn Volume (veh/day)	Roadway Speed/ # lanes	GDOT Threshold (veh/day)
North Road @ Willow Bend Way/Driveway 2	10%	**59**	35 mph / 2 lane	200

Since the project number of right turning vehicles does not exceed the threshold of 200 right turning vehicles, a southbound deceleration lane is not warranted at driveway 2 on North Road per GDOT standards.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 9

A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the proposed 216-unit multifamily residential development that will be located in the southeast corner of the intersection of SR 124 (Scenic Highway) at North Road in Gwinnett County, Georgia. The development proposes a full access driveway on SR 124 (Scenic Highway), aligning with Stratford drive and a second full access driveway on North Road, aligning with Willow Bend Way.

Based off the auxiliary lane analysis included in Section 6.4, it is recommended to re-strip the existing southbound U-turn lane to a shared U-turn and left turn lane and construct a northbound deceleration lane (GDOT warrants met) at Driveway 1 on SR 124 (Scenic Highway) across from Stratford Drive. No left turn or deceleration lanes are recommended at driveway 2 on North Road, across from Willow Bend Way.

Existing and future operations after completion of the project were analyzed at the intersections of:

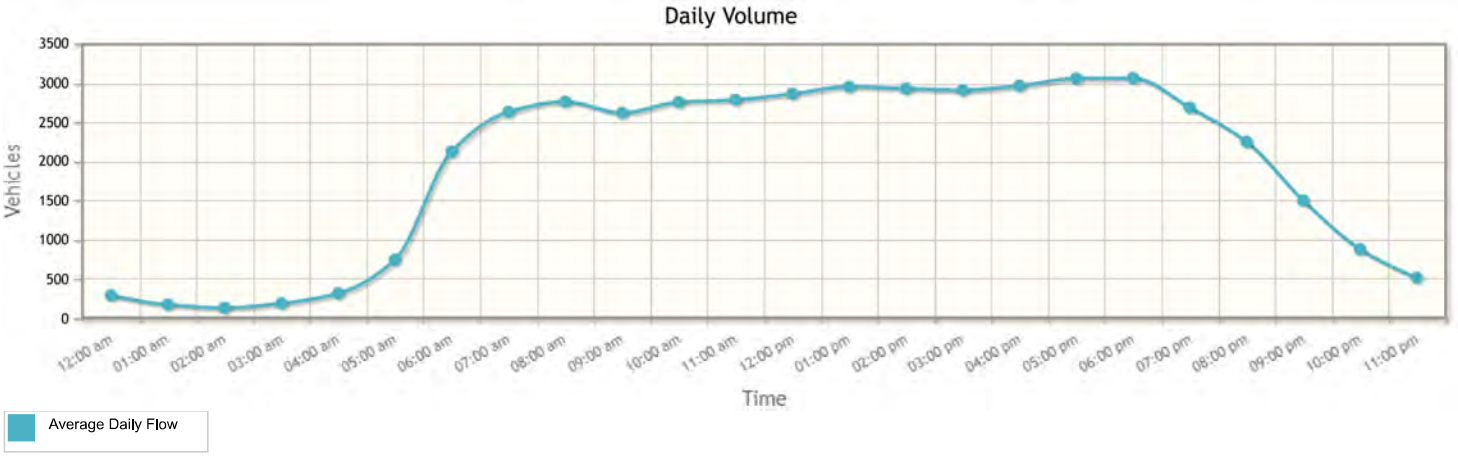
1. SR 124 (Scenic Highway) at Stratford Drive
2. SR 124 (Scenic Highway) at Mt. Zion Baptist Church Driveway / Sam's Club Driveway
3. North Rd at Willow Bend Way

The analysis included the evaluation of Future operations for "No-Build" and "Build" conditions, both of which account for increases in annual growth of through traffic analysis results show that stop-controlled side streets will continue to experience long delays due to the time gap required for turning vehicles to enter a high volume highway. The projected traffic volumes at Stratford Drive and SR 124 (Scenic Highway) during peak hours do not appear to meet signal warrants based off of AM and PM peak hour data.

Appendix

EXISTING INTERSECTION TRAFFIC COUNTS

Daily Volume Report 135-0189 Wednesday, September 25, 2019 to Friday, September 27, 2019



Site Name: 135-0189 Site ID: 0000135_0189 Description:

All Lanes Time Period: 1 hour Class: Any Exclude data: None

	Average Daily Flow
12:00 am	288
01:00 am	170
02:00 am	129
03:00 am	186
04:00 am	314
05:00 am	745
06:00 am	2130
07:00 am	2636
08:00 am	2766
09:00 am	2624
10:00 am	2760
11:00 am	2791
12:00 pm	2868
01:00 pm	2958
02:00 pm	2934
03:00 pm	2914
04:00 pm	2970
05:00 pm	3064
06:00 pm	3068
07:00 pm	2692
08:00 pm	2253
09:00 pm	1502
10:00 pm	880
11:00 pm	512
7am-7pm	34354
6am-10pm	42932
6am-12am	44324
12am-12am	46156
am Peak	11:00 am
Peak Volume	2791
Peak Factor	0.940
pm Peak	06:00 pm
Peak Volume	3068
Peak Factor	0.930

Event key: QC failure Atypical (QC) Events Special Holiday Offline
Weekends and defined holidays

Notes on data:
Averages are calculated as the simple average of values across the period.

Holidays & Events:
None

Data prepared by Drakewell US 01N - Nevada August 14, 2020 11:13:42 AM.

Version 20.08.11.091143

A & R Engineering. Inc.

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

TMC DATA
SR 124 (Seenic Hwy) @ Stratford Dr
7-9 am | 4-6 pm

File Name : 20200102
Site Code : 20200102
Start Date : 8/18/2020
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 124 (Seenic Hwy) Northbound					SR 124 (Seenic Hwy) Southbound					Stratford Dr Eastbound					Westbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	1	209	0	1	211	0	210	2	1	213	3	0	4	0	7	0	0	0	0	0	431
07:15 AM	0	253	0	0	253	0	262	0	2	264	1	0	3	0	4	0	0	0	0	0	521
07:30 AM	0	283	0	0	283	0	277	0	4	281	0	0	5	0	5	0	0	0	0	0	569
07:45 AM	2	279	0	0	281	0	321	0	4	325	2	0	5	0	7	0	0	0	0	0	613
Total	3	1024	0	1	1028	0	1070	2	11	1083	6	0	17	0	23	0	0	0	0	0	2134
08:00 AM	1	274	0	1	276	0	301	3	6	310	0	0	5	0	5	0	0	0	0	0	591
08:15 AM	2	243	0	0	245	0	291	2	4	297	4	0	7	0	11	0	0	0	0	0	553
08:30 AM	2	253	0	0	255	0	314	2	1	317	2	0	2	0	4	0	0	0	0	0	576
08:45 AM	2	303	0	0	305	0	283	2	5	290	1	0	3	0	4	0	0	0	0	0	599
Total	7	1073	0	1	1081	0	1189	9	16	1214	7	0	17	0	24	0	0	0	0	0	2319
*** BREAK ***																					
04:00 PM	7	420	0	4	431	0	388	6	5	399	0	0	7	0	7	0	0	0	0	0	837
04:15 PM	3	381	0	3	387	0	433	4	9	446	2	0	4	0	6	0	0	0	0	0	839
04:30 PM	1	319	0	0	320	0	418	3	8	429	1	0	1	0	2	0	0	0	0	0	751
04:45 PM	6	396	0	1	403	0	383	12	6	401	1	0	4	0	5	0	0	0	0	0	809
Total	17	1516	0	8	1541	0	1622	25	28	1675	4	0	16	0	20	0	0	0	0	0	3236
05:00 PM	5	378	0	0	383	0	430	5	14	449	0	0	3	0	3	0	0	0	0	0	835
05:15 PM	3	382	0	3	388	0	449	3	17	469	1	0	3	0	4	0	0	0	0	0	861
05:30 PM	3	452	0	1	456	0	408	2	13	423	3	0	1	0	4	0	0	0	0	0	883
05:45 PM	4	392	0	2	398	0	412	4	7	423	3	0	4	0	7	0	0	0	0	0	828
Total	15	1604	0	6	1625	0	1699	14	51	1764	7	0	11	0	18	0	0	0	0	0	3407
Grand Total	42	5217	0	16	5275	0	5580	50	106	5736	24	0	61	0	85	0	0	0	0	0	11096
Apprch %	0.8	98.9	0	0.3		0	97.3	0.9	1.8		28.2	0	71.8	0		0	0	0	0		
Total %	0.4	47	0	0.1	47.5	0	50.3	0.5	1	51.7	0.2	0	0.5	0	0.8	0	0	0	0	0	

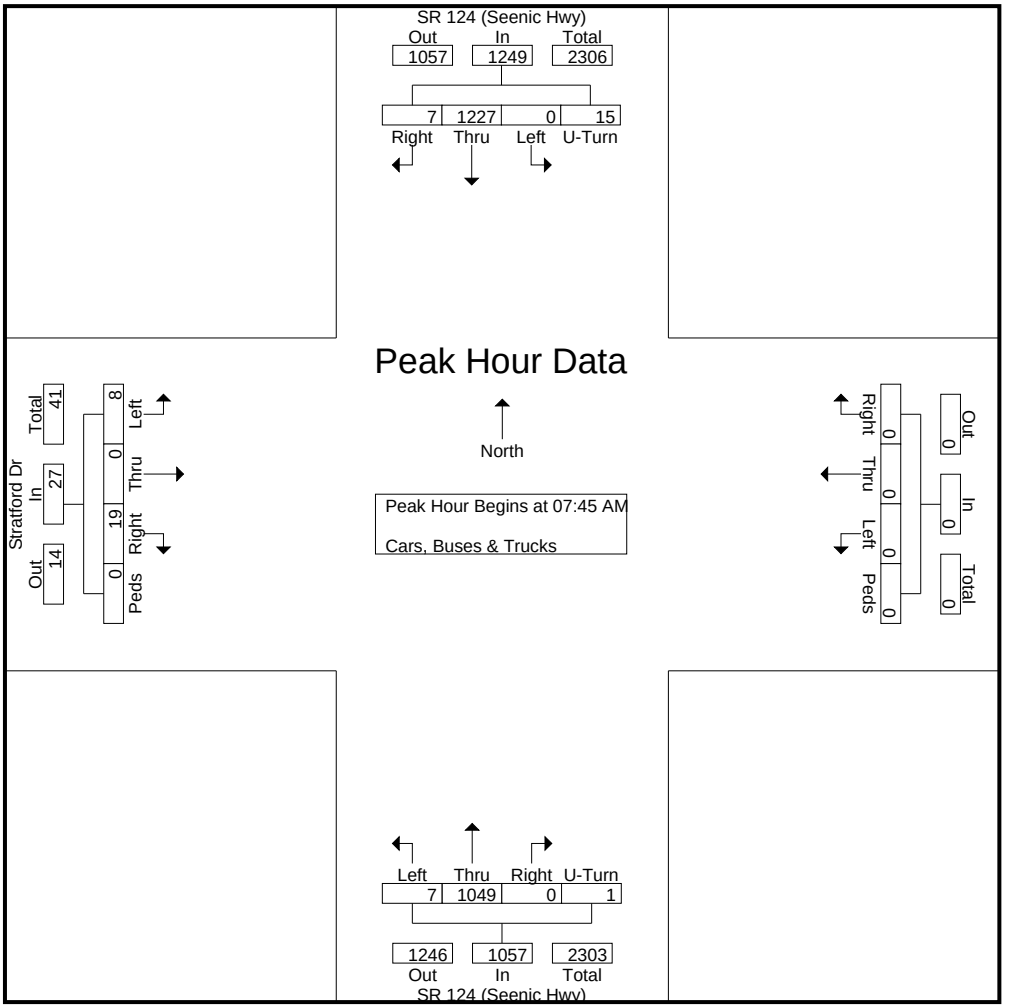
A & R Engineering. Inc.

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

TMC DATA
SR 124 (Seenic Hwy) @ Stratford Dr
7-9 am | 4-6 pm

File Name : 20200102
Site Code : 20200102
Start Date : 8/18/2020
Page No : 2

	SR 124 (Seenic Hwy) Northbound					SR 124 (Seenic Hwy) Southbound					Stratford Dr Eastbound					Westbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**2**	**279**	0	0	**281**	0	**321**	0	4	**325**	2	0	5	0	7	0	0	0	0	0	**613**
08:00 AM	1	274	0	**1**	276	0	301	**3**	**6**	310	0	0	5	0	5	0	0	0	0	0	591
08:15 AM	2	243	0	0	245	0	291	2	4	297	**4**	0	**7**	0	**11**	0	0	0	0	0	553
08:30 AM	2	253	0	0	255	0	314	2	1	317	2	0	2	0	4	0	0	0	0	0	576
Total Volume	7	1049	0	1	1057	0	1227	7	15	1249	8	0	19	0	27	0	0	0	0	0	2333
% App. Total	0.7	99.2	0	0.1		0	98.2	0.6	1.2		29.6	0	70.4	0		0	0	0	0		
PHF	.875	.940	.000	.250	.940	.000	.956	.583	.625	.961	.500	.000	.679	.000	.614	.000	.000	.000	.000	.000	.951



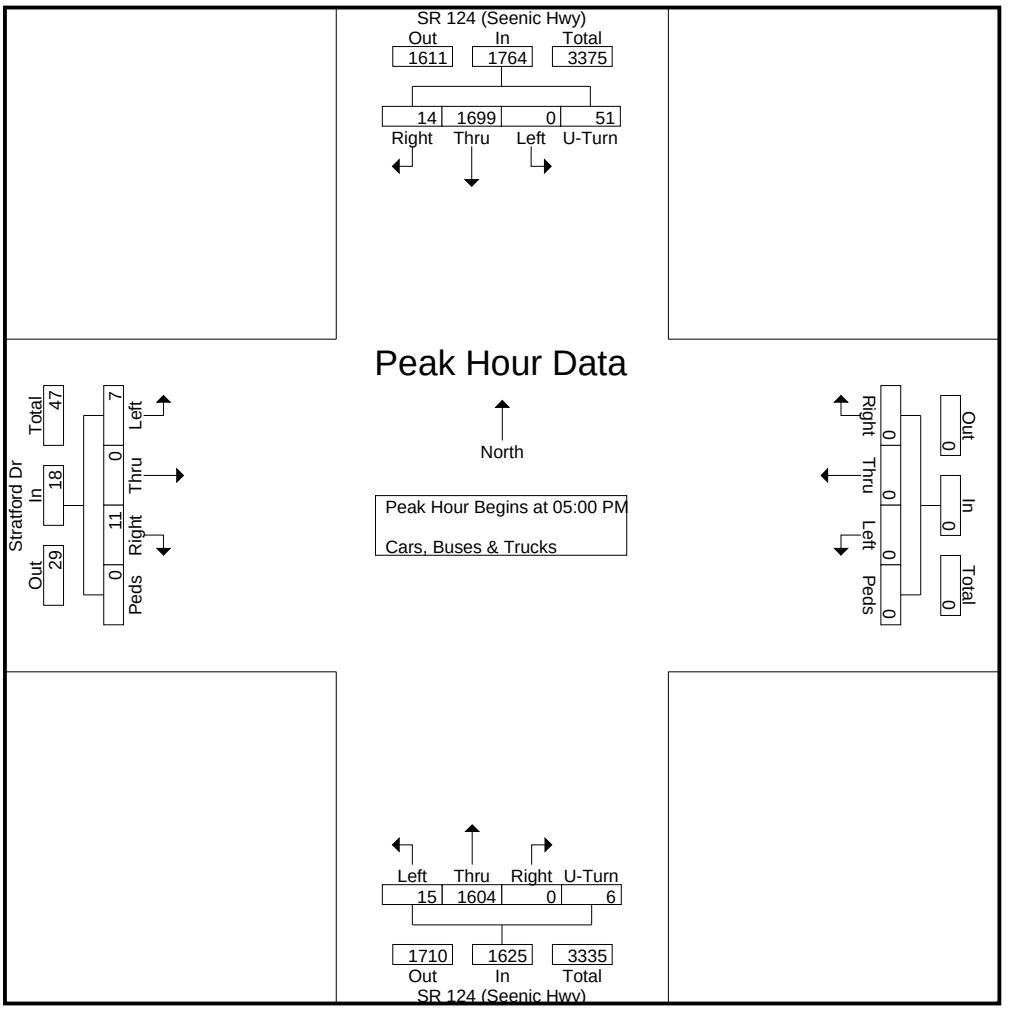
A & R Engineering. Inc.

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

TMC DATA
SR 124 (Seenic Hwy) @ Stratford Dr
7-9 am | 4-6 pm

File Name : 20200102
Site Code : 20200102
Start Date : 8/18/2020
Page No : 3

	SR 124 (Seenic Hwy) Northbound					SR 124 (Seenic Hwy) Southbound					Stratford Dr Eastbound					Westbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**5**	378	0	0	383	0	430	**5**	14	449	0	0	3	0	3	0	0	0	0	0	835
05:15 PM	3	382	0	**3**	388	0	**449**	3	**17**	**469**	1	0	3	0	4	0	0	0	0	0	861
05:30 PM	3	**452**	0	1	**456**	0	408	2	13	423	**3**	0	1	0	4	0	0	0	0	0	**883**
05:45 PM	4	392	0	2	398	0	412	4	7	423	3	0	**4**	0	**7**	0	0	0	0	0	828
Total Volume	15	1604	0	6	1625	0	1699	14	51	1764	7	0	11	0	18	0	0	0	0	0	3407
% App. Total	0.9	98.7	0	0.4		0	96.3	0.8	2.9		38.9	0	61.1	0		0	0	0	0		
PHF	.750	.887	.000	.500	.891	.000	.946	.700	.750	.940	.583	.000	.688	.000	.643	.000	.000	.000	.000	.000	.965



A & R Engineering. Inc.

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

TMC DATA
SR 124 (Scenic Hwy) @ Sam's Club Drwy
7-9 am | 4-6 pm

File Name : 20200103
Site Code : 20200103
Start Date : 8/18/2020
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 124 (Scenic Hwy) Northbound				SR 124 (Scenic Hwy) Southbound				Mount Zion Drwy Eastbound				Sam's Club Drwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	268	3	271	4	213	1	218	0	0	0	0	1	0	1	2	491
07:15 AM	0	218	3	221	1	279	0	280	0	0	0	0	1	0	7	8	509
07:30 AM	2	275	2	279	6	282	0	288	0	0	0	0	1	0	2	3	570
07:45 AM	1	260	3	264	12	309	0	321	0	0	0	0	1	0	0	1	586
Total	3	1021	11	1035	23	1083	1	1107	0	0	0	0	4	0	10	14	2156
08:00 AM	1	220	5	226	9	292	0	301	0	0	0	0	1	0	5	6	533
08:15 AM	1	227	7	235	10	258	1	269	0	0	0	0	1	0	5	6	510
08:30 AM	3	263	15	281	14	298	4	316	0	0	1	1	2	0	9	11	609
08:45 AM	3	209	4	216	10	309	6	325	0	0	0	0	1	0	6	7	548
Total	8	919	31	958	43	1157	11	1211	0	0	1	1	5	0	25	30	2200
*** BREAK ***																	
04:00 PM	1	386	24	411	28	399	0	427	0	0	0	0	6	2	28	36	874
04:15 PM	1	328	13	342	30	410	0	440	0	0	1	1	1	0	23	24	807
04:30 PM	0	314	27	341	32	339	0	371	0	0	1	1	10	0	32	42	755
04:45 PM	2	343	28	373	28	370	0	398	0	0	0	0	9	0	33	42	813
Total	4	1371	92	1467	118	1518	0	1636	0	0	2	2	26	2	116	144	3249
05:00 PM	1	385	19	405	28	374	0	402	0	0	0	0	3	0	34	37	844
05:15 PM	1	376	20	397	33	398	0	431	0	0	0	0	3	0	35	38	866
05:30 PM	3	430	18	451	22	377	2	401	0	0	1	1	8	0	27	35	888
05:45 PM	7	358	15	380	25	323	7	355	0	0	1	1	5	0	23	28	764
Total	12	1549	72	1633	108	1472	9	1589	0	0	2	2	19	0	119	138	3362
Grand Total	27	4860	206	5093	292	5230	21	5543	0	0	5	5	54	2	270	326	10967
Apprch %	0.5	95.4	4		5.3	94.4	0.4		0	0	100		16.6	0.6	82.8		
Total %	0.2	44.3	1.9	46.4	2.7	47.7	0.2	50.5	0	0	0	0	0.5	0	2.5	3	

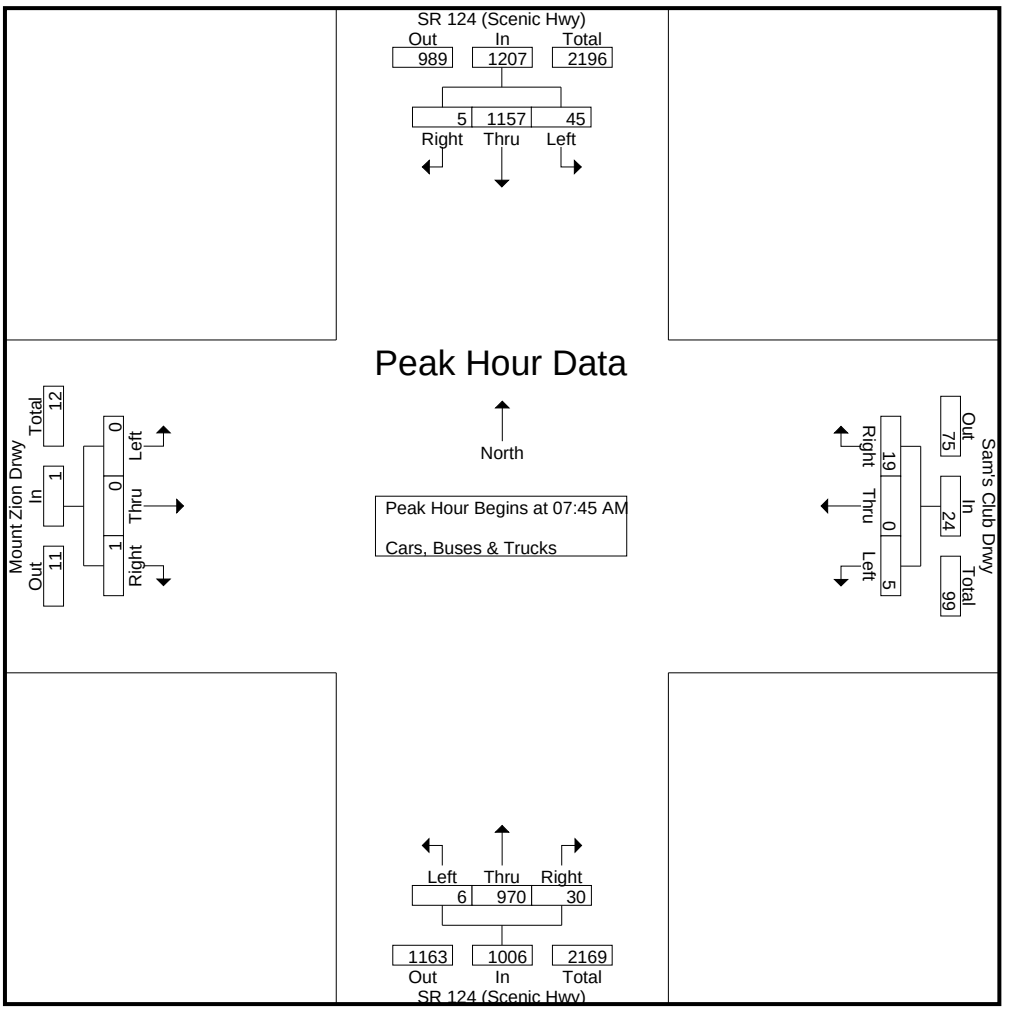
A & R Engineering. Inc.

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

TMC DATA
SR 124 (Scenic Hwy) @ Sam's Club Drwy
7-9 am | 4-6 pm

File Name : 20200103
Site Code : 20200103
Start Date : 8/18/2020

	SR 124 (Scenic Hwy) Northbound				SR 124 (Scenic Hwy) Southbound				Mount Zion Drwy Eastbound				Sam's Club Drwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	1	260	3	264	12	**309**	0	**321**	0	0	0	0	1	0	0	1	586
08:00 AM	1	220	5	226	9	292	0	301	0	0	0	0	1	0	5	6	533
08:15 AM	1	227	7	235	10	258	1	269	0	0	0	0	1	0	5	6	510
08:30 AM	**3**	**263**	**15**	**281**	**14**	298	**4**	316	0	0	**1**	**1**	**2**	0	**9**	**11**	**609**
Total Volume	6	970	30	1006	45	1157	5	1207	0	0	1	1	5	0	19	24	2238
% App. Total	0.6	96.4	3		3.7	95.9	0.4		0	0	100		20.8	0	79.2		
PHF	.500	.922	.500	.895	.804	.936	.313	.940	.000	.000	.250	.250	.625	.000	.528	.545	.919



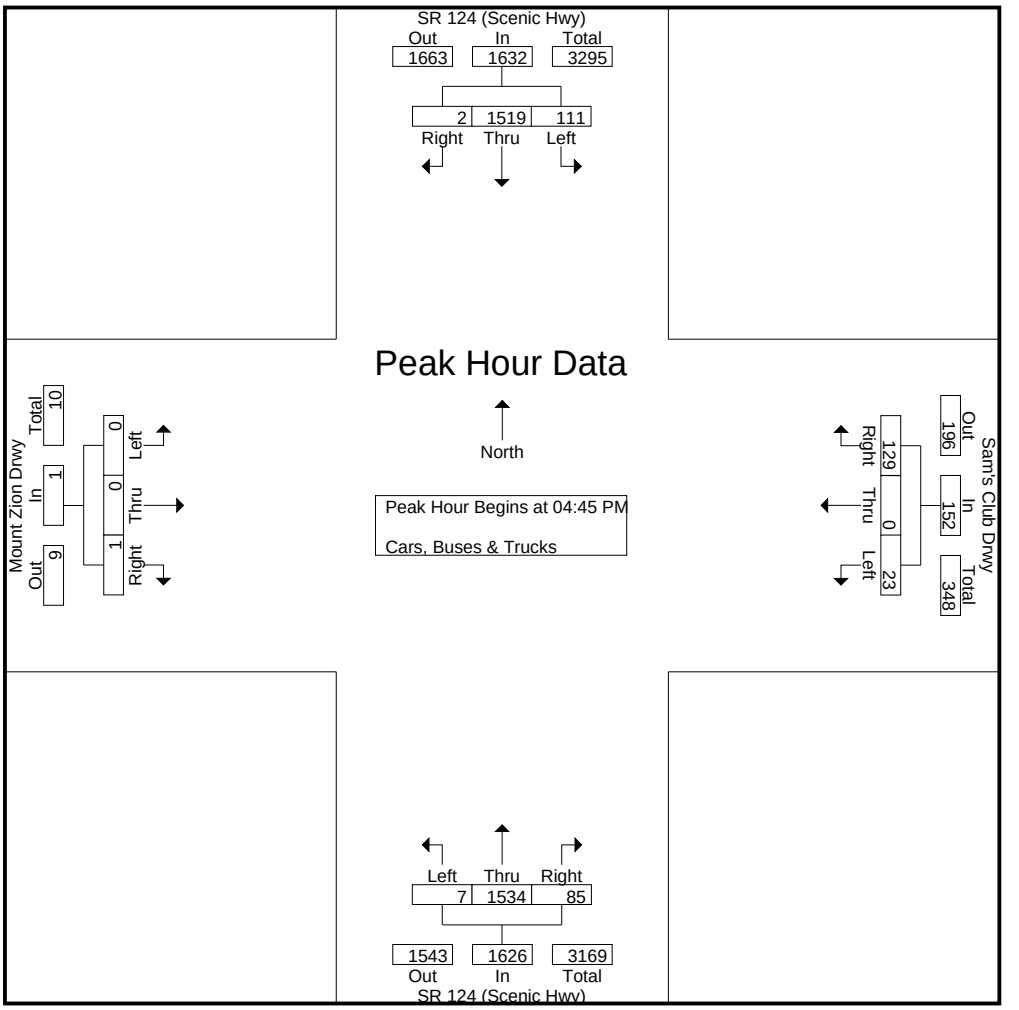
A & R Engineering. Inc.

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

TMC DATA
SR 124 (Scenic Hwy) @ Sam's Club Drwy
7-9 am | 4-6 pm

File Name : 20200103
Site Code : 20200103
Start Date : 8/18/2020
Page No : 3

	SR 124 (Scenic Hwy) Northbound				SR 124 (Scenic Hwy) Southbound				Mount Zion Drwy Eastbound				Sam's Club Drwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	343	**28**	373	28	370	0	398	0	0	0	0	**9**	0	33	**42**	813
05:00 PM	1	385	19	405	28	374	0	402	0	0	0	0	3	0	34	37	844
05:15 PM	1	376	20	397	**33**	**398**	0	**431**	0	0	0	0	3	0	**35**	38	866
05:30 PM	**3**	**430**	18	**451**	22	377	**2**	401	0	0	**1**	**1**	8	0	27	35	**888**
Total Volume	7	1534	85	1626	111	1519	2	1632	0	0	1	1	23	0	129	152	3411
% App. Total	0.4	94.3	5.2		6.8	93.1	0.1		0	0	100		15.1	0	84.9		
PHF	.583	.892	.759	.901	.841	.954	.250	.947	.000	.000	.250	.250	.639	.000	.921	.905	.960



A & R Engineering, Inc.

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

TMC DATA
North Road at Willow Bend Way
7-9 am | 4-6 pm

File Name : 20200104
Site Code : 20200104
Start Date : 8/18/2020
Page No : 1

Groups Printed- Cars, Buses & Trucks

	North Rd Northbound				North Rd Southbound				Eastbound				Willow Bend Way Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	29	0	29	1	2	0	3	0	0	0	0	1	0	1	2	34
07:15 AM	0	36	1	37	0	2	0	2	0	0	0	0	4	0	4	8	47
07:30 AM	0	47	1	48	0	3	0	3	0	0	0	0	3	0	0	3	54
07:45 AM	0	41	0	41	0	4	0	4	0	0	0	0	1	0	1	2	47
Total	0	153	2	155	1	11	0	12	0	0	0	0	9	0	6	15	182
08:00 AM	0	34	0	34	0	8	0	8	0	0	0	0	1	0	3	4	46
08:15 AM	0	23	0	23	0	4	0	4	0	0	0	0	1	0	2	3	30
08:30 AM	0	34	2	36	1	1	0	2	0	0	0	0	2	0	4	6	44
08:45 AM	0	27	1	28	0	0	0	0	0	0	0	0	0	0	1	1	29
Total	0	118	3	121	1	13	0	14	0	0	0	0	4	0	10	14	149
*** BREAK ***																	
04:00 PM	0	46	2	48	0	11	0	11	0	0	0	0	4	0	1	5	64
04:15 PM	0	40	3	43	0	9	0	9	0	0	0	0	0	0	1	1	53
04:30 PM	0	31	5	36	0	8	0	8	0	0	0	0	0	0	0	0	44
04:45 PM	0	25	2	27	0	9	0	9	0	0	0	0	0	0	2	2	38
Total	0	142	12	154	0	37	0	37	0	0	0	0	4	0	4	8	199
05:00 PM	0	30	2	32	2	6	0	8	0	0	0	0	0	0	2	2	42
05:15 PM	0	39	2	41	3	16	0	19	0	0	0	0	0	0	2	2	62
05:30 PM	0	34	2	36	4	8	0	12	0	0	0	0	0	0	0	0	48
05:45 PM	0	22	2	24	2	9	0	11	0	0	0	0	2	0	1	3	38
Total	0	125	8	133	11	39	0	50	0	0	0	0	2	0	5	7	190
Grand Total	0	538	25	563	13	100	0	113	0	0	0	0	19	0	25	44	720
Apprch %	0	95.6	4.4		11.5	88.5	0		0	0	0		43.2	0	56.8		
Total %	0	74.7	3.5	78.2	1.8	13.9	0	15.7	0	0	0	0	2.6	0	3.5	6.1	

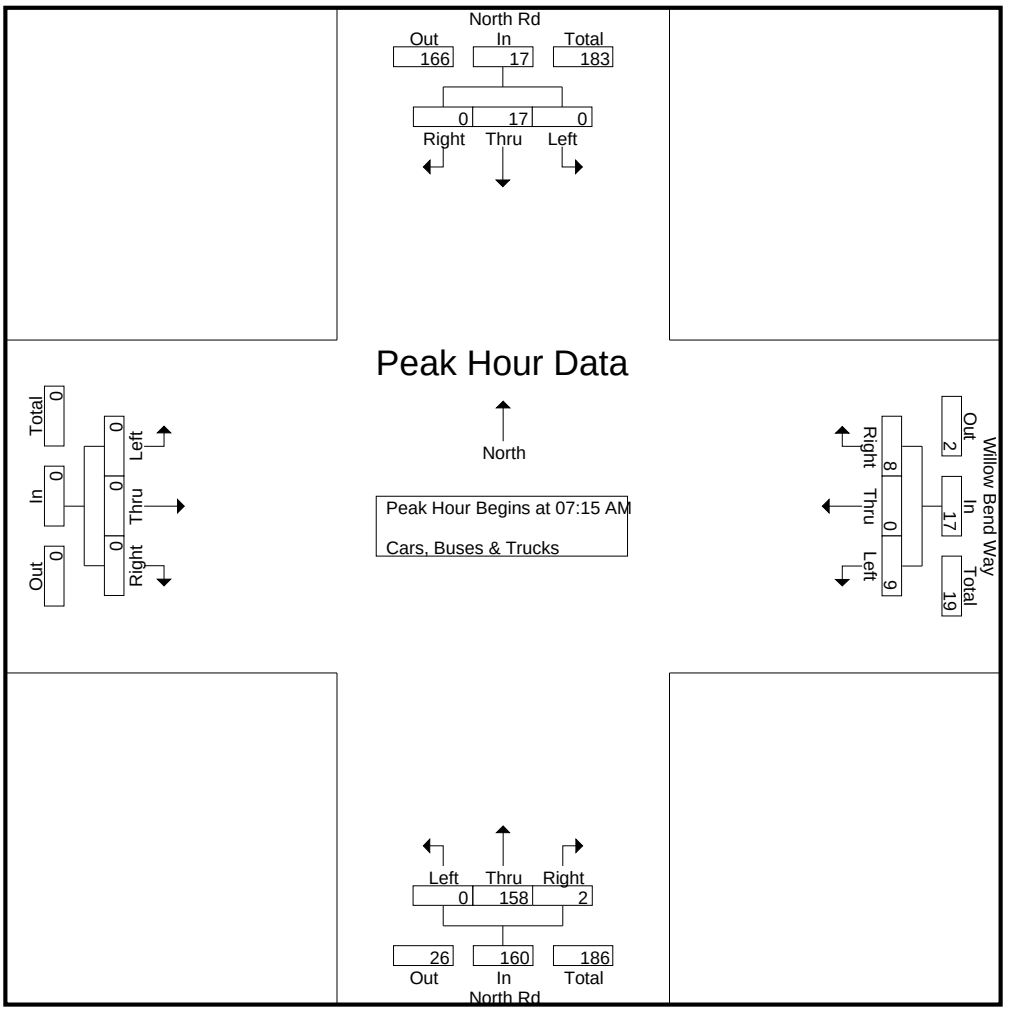
A & R Engineering, Inc.

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

TMC DATA
North Road at Willow Bend Way
7-9 am | 4-6 pm

File Name : 20200104
Site Code : 20200104
Start Date : 8/18/2020
Page No : 2

	North Rd Northbound				North Rd Southbound				Eastbound				Willow Bend Way Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	36	**1**	37	0	2	0	2	0	0	0	0	**4**	0	**4**	**8**	47
07:30 AM	0	**47**	1	**48**	0	3	0	3	0	0	0	0	3	0	0	3	**54**
07:45 AM	0	41	0	41	0	4	0	4	0	0	0	0	1	0	1	2	47
08:00 AM	0	34	0	34	0	**8**	0	**8**	0	0	0	0	1	0	3	4	46
Total Volume	0	158	2	160	0	17	0	17	0	0	0	0	9	0	8	17	194
% App. Total	0	98.8	1.2		0	100	0		0	0	0		52.9	0	47.1		
PHF	.000	.840	.500	.833	.000	.531	.000	.531	.000	.000	.000	.000	.563	.000	.500	.531	.898



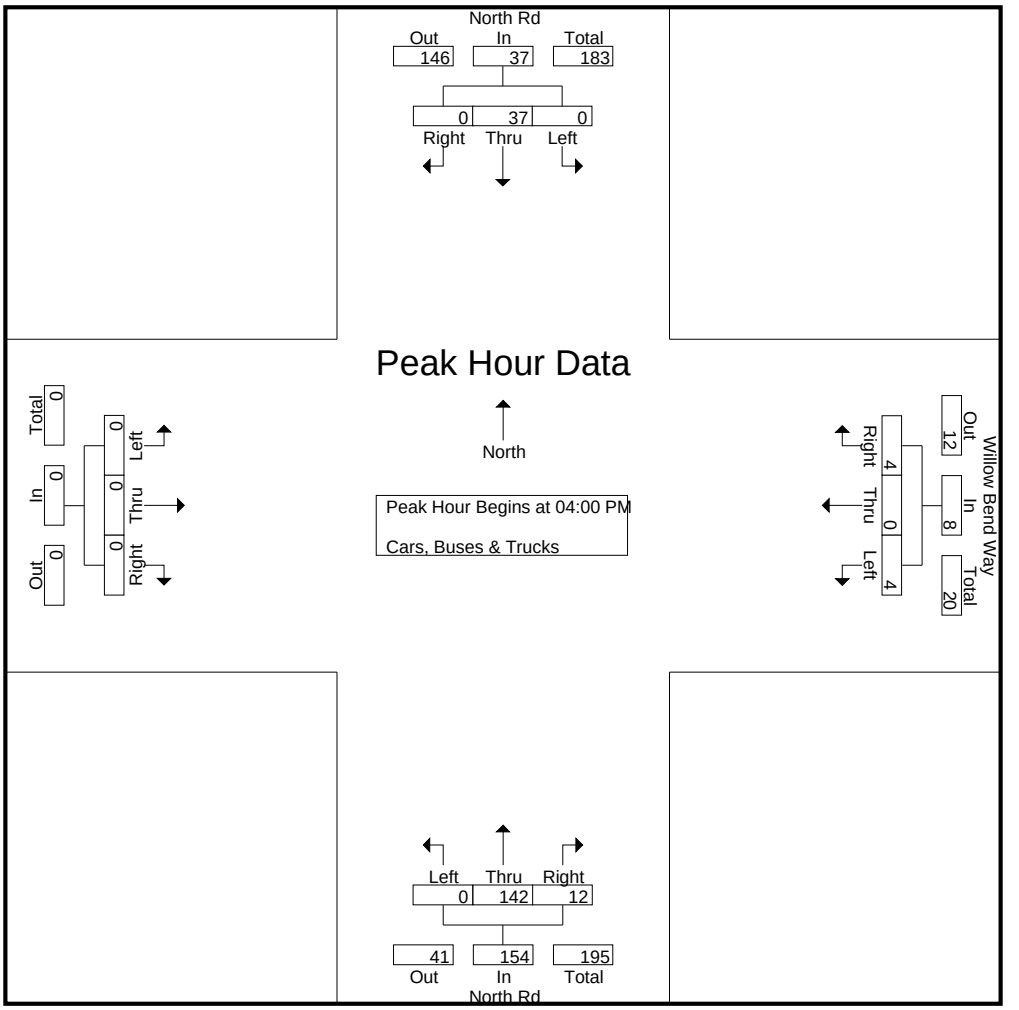
A & R Engineering, Inc.

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

TMC DATA
North Road at Willow Bend Way
7-9 am | 4-6 pm

File Name : 20200104
Site Code : 20200104
Start Date : 8/18/2020
Page No : 3

	North Rd Northbound				North Rd Southbound				Eastbound				Willow Bend Way Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**46**	2	**48**	0	**11**	0	**11**	0	0	0	0	**4**	0	1	**5**	**64**
04:15 PM	0	40	3	43	0	9	0	9	0	0	0	0	0	0	1	1	53
04:30 PM	0	31	**5**	36	0	8	0	8	0	0	0	0	0	0	0	0	44
04:45 PM	0	25	2	27	0	9	0	9	0	0	0	0	0	0	**2**	2	38
Total Volume	0	142	12	154	0	37	0	37	0	0	0	0	4	0	4	8	199
% App. Total	0	92.2	7.8		0	100	0		0	0	0		50	0	50		
PHF	.000	.772	.600	.802	.000	.841	.000	.841	.000	.000	.000	.000	.250	.000	.500	.400	.777



A & R Engineering. Inc.

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

TMC DATA
SR 124 @(Loganville Hwy) South of Janmar
7-9 am | 4-6 pm

File Name : 20200105
Site Code : 20200105
Start Date : 8/18/2020
Page No : 1

Groups Printed- Cars, Buses & Trucks

	SR 124 (Scenic Hwy) Northbound				SR 124 (Scenic Hwy) Southbound				Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	184	0	184	0	183	0	183	0	0	0	0	0	0	0	0	367
07:15 AM	0	243	0	243	0	238	0	238	0	0	0	0	0	0	0	0	481
07:30 AM	0	222	0	222	0	273	0	273	0	0	0	0	0	0	0	0	495
07:45 AM	0	241	0	241	0	276	0	276	0	0	0	0	0	0	0	0	517
Total	0	890	0	890	0	970	0	970	0	0	0	0	0	0	0	0	1860
08:00 AM	0	243	0	243	0	280	0	280	0	0	0	0	0	0	0	0	523
08:15 AM	0	204	0	204	0	266	0	266	0	0	0	0	0	0	0	0	470
08:30 AM	0	234	0	234	0	274	0	274	0	0	0	0	0	0	0	0	508
08:45 AM	0	265	0	265	0	291	0	291	0	0	0	0	0	0	0	0	556
Total	0	946	0	946	0	1111	0	1111	0	0	0	0	0	0	0	0	2057
*** BREAK ***																	
04:00 PM	0	372	0	372	0	384	0	384	0	0	0	0	0	0	0	0	756
04:15 PM	0	324	0	324	0	377	0	377	0	0	0	0	0	0	0	0	701
04:30 PM	0	321	0	321	0	408	0	408	0	0	0	0	0	0	0	0	729
04:45 PM	0	340	0	340	0	383	0	383	0	0	0	0	0	0	0	0	723
Total	0	1357	0	1357	0	1552	0	1552	0	0	0	0	0	0	0	0	2909
05:00 PM	0	333	0	333	0	386	0	386	0	0	0	0	0	0	0	0	719
05:15 PM	0	361	0	361	0	399	0	399	0	0	0	0	0	0	0	0	760
05:30 PM	0	382	0	382	0	368	0	368	0	0	0	0	0	0	0	0	750
05:45 PM	0	343	0	343	0	369	0	369	0	0	0	0	0	0	0	0	712
Total	0	1419	0	1419	0	1522	0	1522	0	0	0	0	0	0	0	0	2941
Grand Total	0	4612	0	4612	0	5155	0	5155	0	0	0	0	0	0	0	0	9767
Apprch %	0	100	0		0	100	0		0	0	0		0	0	0		
Total %	0	47.2	0	47.2	0	52.8	0	52.8	0	0	0	0	0	0	0	0	

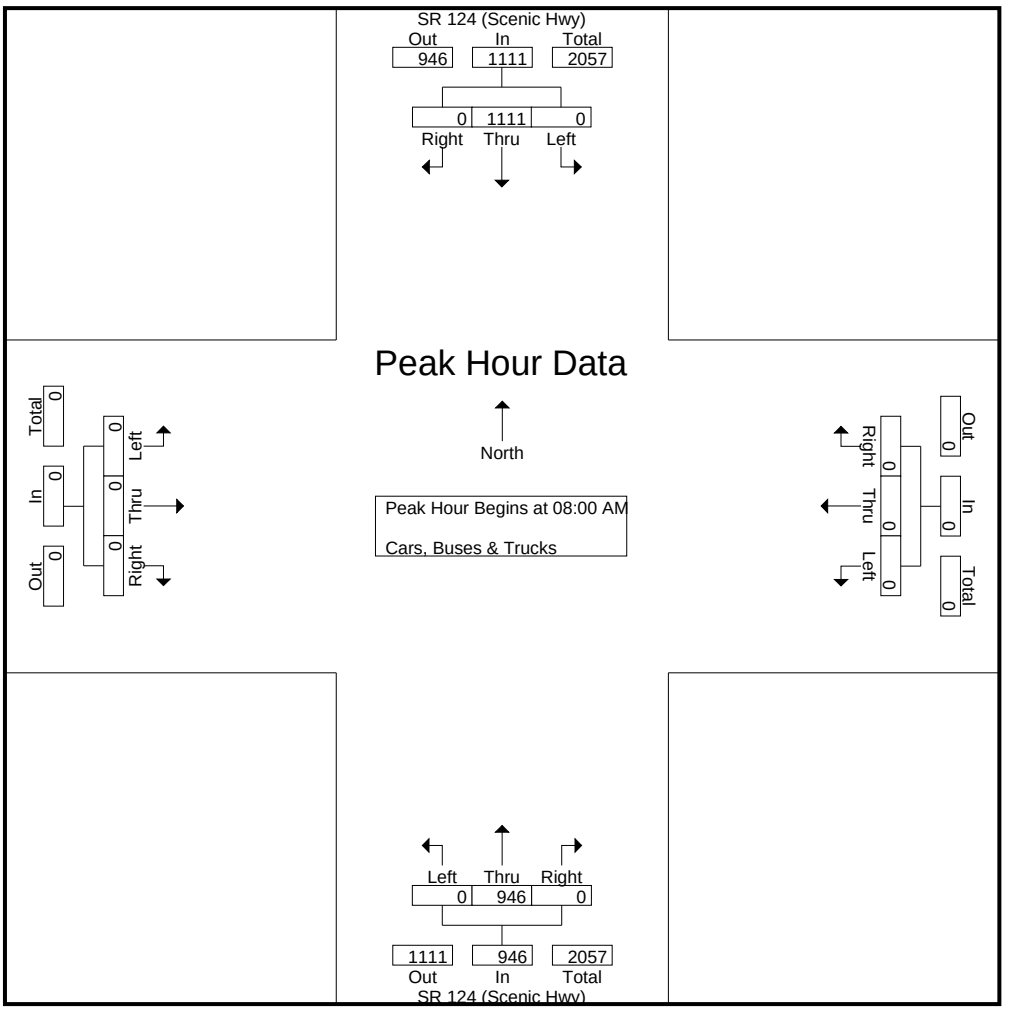
A & R Engineering. Inc.

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

TMC DATA
SR 124 @(Loganville Hwy) South of Janmar
7-9 am | 4-6 pm

File Name : 20200105
Site Code : 20200105
Start Date : 8/18/2020
Page No : 2

	SR 124 (Scenic Hwy) Northbound				SR 124 (Scenic Hwy) Southbound				Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	243	0	243	0	280	0	280	0	0	0	0	0	0	0	0	523
08:15 AM	0	204	0	204	0	266	0	266	0	0	0	0	0	0	0	0	470
08:30 AM	0	234	0	234	0	274	0	274	0	0	0	0	0	0	0	0	508
08:45 AM	0	**265**	0	**265**	0	**291**	0	**291**	0	0	0	0	0	0	0	0	**556**
Total Volume	0	946	0	946	0	1111	0	1111	0	0	0	0	0	0	0	0	2057
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.892	.000	.892	.000	.954	.000	.954	.000	.000	.000	.000	.000	.000	.000	.000	.925



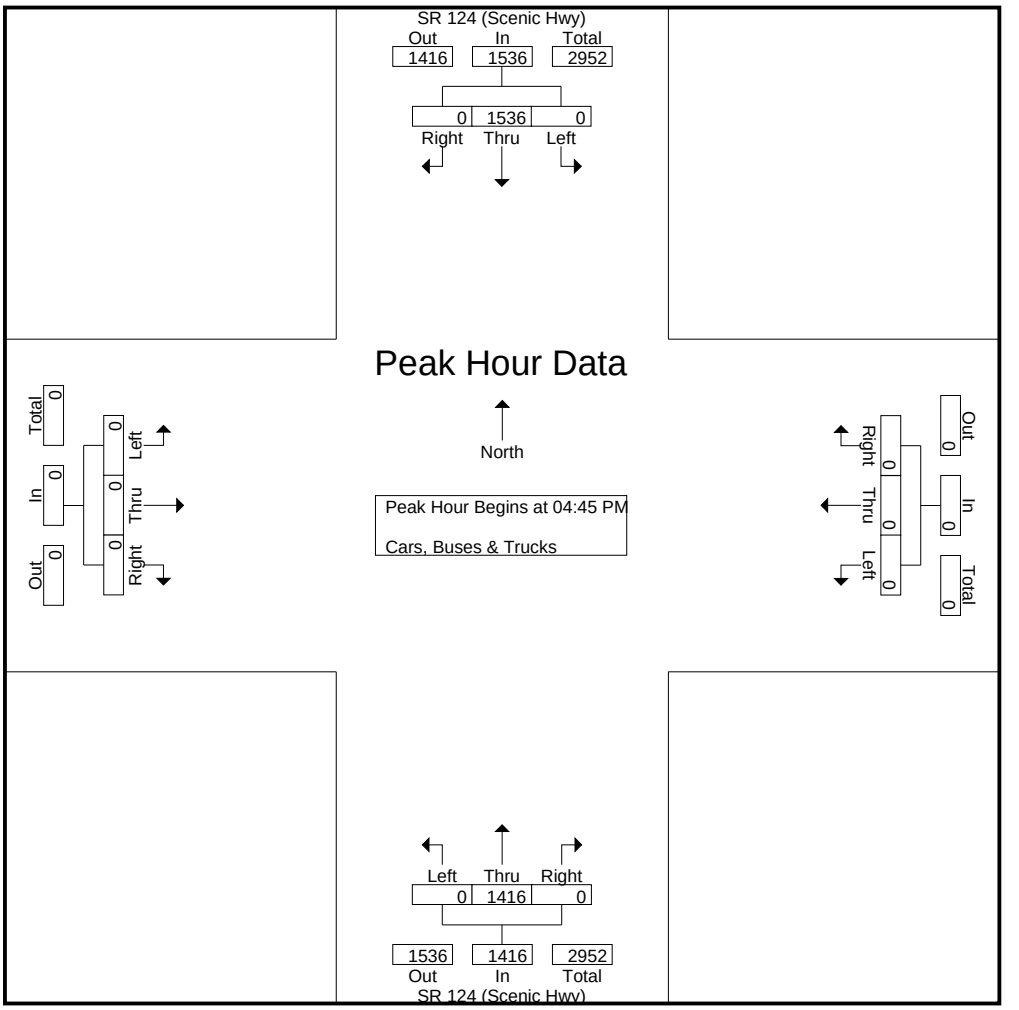
A & R Engineering. Inc.

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

TMC DATA
SR 124 @(Loganville Hwy) South of Janmar
7-9 am | 4-6 pm

File Name : 20200105
Site Code : 20200105
Start Date : 8/18/2020
Page No : 3

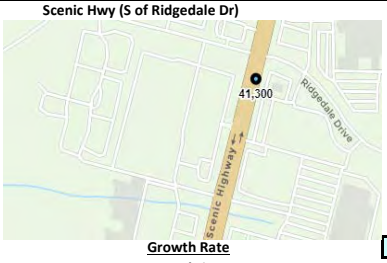
	SR 124 (Scenic Hwy) Northbound				SR 124 (Scenic Hwy) Southbound				Eastbound				Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	340	0	340	0	383	0	383	0	0	0	0	0	0	0	0	723
05:00 PM	0	333	0	333	0	386	0	386	0	0	0	0	0	0	0	0	719
05:15 PM	0	361	0	361	0	**399**	0	**399**	0	0	0	0	0	0	0	0	**760**
05:30 PM	0	**382**	0	**382**	0	368	0	368	0	0	0	0	0	0	0	0	750
Total Volume	0	1416	0	1416	0	1536	0	1536	0	0	0	0	0	0	0	0	2952
% App. Total	0	100	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.927	.000	.927	.000	.962	.000	.962	.000	.000	.000	.000	.000	.000	.000	.000	.971

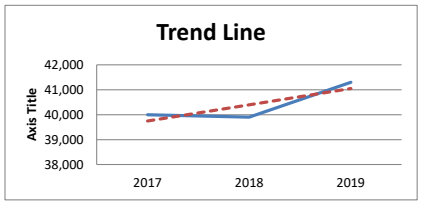


LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2017	2018	2019
Scenic Hwy (S of Ridgedale Dr)	1.6%	0.69	135-0189	00012400	40,000	39,900	41,300
Scenic Hwy (N of Scenic Pines D	2.9%	0.85	135-0192	00012400	39,100	41,100	41,400
Moon Place Rd (SE of Deron Dr	1.8%	1.00	135-8079	00039500	5,020	5,100	5,200
Bennett Rd (NW of Hillside Dr)	1.7%	1.00	135-8061	00033700	3,120	3,170	3,230
Weighted Average	**2.2%**	1.00	Sum of Count Stations =		87,240	89,270	91,130

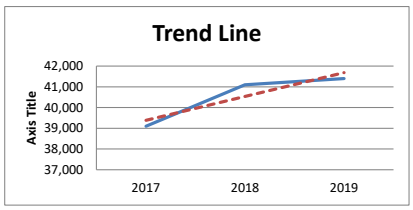
Location	Traffic Counter	RCLINK	2017	2018	2019
Scenic Hwy (S of Ridgedale Dr)	135-0189	00012400	40,000	39,900	41,300





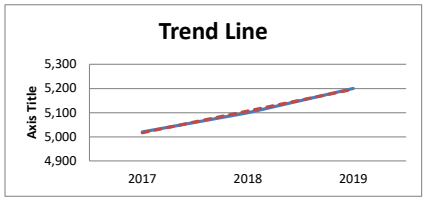
Growth Rate	1.6%	Intercept	-1,271,300	Slope	650.00
Trend Line			39,750	40,400	41,050

Location	Traffic Counter	RCLINK	2017	2018	2019
Scenic Hwy (N of Scenic Pines Dr)	135-0192	00012400	39,100	41,100	41,400



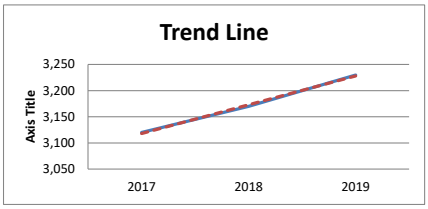
Growth Rate	2.9%	Intercept	-2,280,167	Slope	1,150.00
Trend Line			39,383	40,533	41,683

Location	Traffic Counter	RCLINK	2017	2018	2019
Moon Place Rd (SE of Deron Dr)	135-8079	00039500	5,020	5,100	5,200



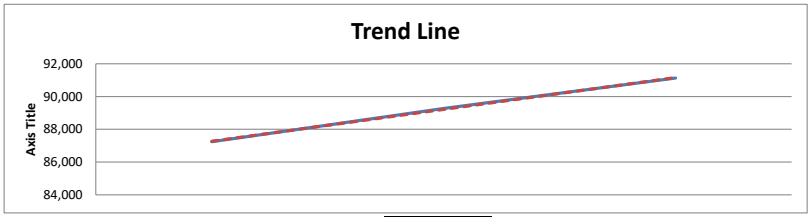
Growth Rate	1.8%	Intercept	-176,513	Slope	90.00
Trend Line			5,017	5,107	5,197

Location	Traffic Counter	RCLINK	2017	2018	2019
Bennett Rd (NW of Hillside Dr)	135-8061	00033700	3,120	3,170	3,230



Growth Rate	1.7%	Intercept	-107,817	Slope	55.00
Trend Line			3,118	3,173	3,228

Weighted Average	2017	2018	2019
Sum of Count Stations	87,240	89,270	91,130



Growth Rate	2.2%	Intercept	-3,835,797	Slope	1,945.00
Trend Line			87,268	89,213	91,158

EXISTING INTERSECTION ANALYSIS

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	11	27	1	10	1479	21	1730	10
Future Vol, veh/h	11	27	1	10	1479	21	1730	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	250	-	265	-	720
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	12	28	1	11	1557	22	1821	11

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	2668	911	1821	1832	0	1557	-	0
Stage 1	1865	-	-	-	-	-	-	-
Stage 2	803	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	18	277	97	329	-	145	-	-
Stage 1	108	-	-	-	-	-	-	-
Stage 2	401	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	15	277	263	263	-	145	-	-
Mov Cap-2 Maneuver	15	-	-	-	-	-	-	-
Stage 1	103	-	-	-	-	-	-	-
Stage 2	340	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	231.4	0.1	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	263	-	46	145	-	-
HCM Lane V/C Ratio	0.044	-	0.87	0.152	-	-
HCM Control Delay (s)	19.3	-	231.4	34.2	-	-
HCM Lane LOS	C	-	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	3.5	0.5	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	7	0	27	8	1368	42	63	1631	7
Future Vol, veh/h	0	0	1	7	0	27	8	1368	42	63	1631	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage,-#		0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	8	0	29	9	1487	46	68	1773	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2671	3414	887	2528	3422	744	1781	0	0	1487	0	0
Stage 1	1909	1909	-	1505	1505	-	-	-	-	-	-	-
Stage 2	762	1505	-	1023	1917	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	11	7	287	14	7	357	345	-	-	448	-	-
Stage 1	70	115	-	127	182	-	-	-	-	-	-	-
Stage 2	363	182	-	252	114	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	9	6	287	12	6	357	345	-	-	448	-	-
Mov Cap-2 Maneuver	9	6	-	12	6	-	-	-	-	-	-	-
Stage 1	68	98	-	124	177	-	-	-	-	-	-	-
Stage 2	324	177	-	213	97	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	141.8	0.1	0.5
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	345	-	-	287	58	448	-	-
HCM Lane V/C Ratio	0.025	-	-	0.004	0.637	0.153	-	-
HCM Control Delay (s)	15.7	-	-	17.6	141.8	14.5	-	-
HCM Lane LOS	C	-	-	C	F	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	2.6	0.5	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	11	336	3	0	156
Future Vol, veh/h	13	11	336	3	0	156
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	12	373	3	0	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	548	375	0	0	376	0
Stage 1	375	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	497	671	-	-	1182	-
Stage 1	695	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	497	671	-	-	1182	-
Mov Cap-2 Maneuver	497	-	-	-	-	-
Stage 1	695	-	-	-	-	-
Stage 2	857	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	564	1182	-
HCM Lane V/C Ratio	-	-	0.047	-	-
HCM Control Delay (s)	-	-	11.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	7	12	6	16	1684	54	1784	15
Future Vol, veh/h	7	12	6	16	1684	54	1784	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	250	-	265	-	720
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	7	13	6	17	1754	56	1858	16

Major/Minor	Minor2			Major1		Major2		
Conflicting Flow All	2893	929	1858	1874	0	1754	-	0
Stage 1	1970	-	-	-	-	-	-	-
Stage 2	923	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	13	269	92	317	-	108	-	-
Stage 1	94	-	-	-	-	-	-	-
Stage 2	347	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	~ 5	269	185	185	-	108	-	-
Mov Cap-2 Maneuver	~ 5	-	-	-	-	-	-	-
Stage 1	82	-	-	-	-	-	-	-
Stage 2	167	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 850.6	0.3	2
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	185	-	13	108	-	-
HCM Lane V/C Ratio	0.124	-	1.522	0.521	-	-
HCM Control Delay (s)	27.1	-	$ 850.6	69.9	-	-
HCM Lane LOS	D	-	F	F	-	-
HCM 95th %tile Q(veh)	0.4	-	3.2	2.4	-	-

Notes

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

Intersection	
Int Delay, s/veh	68.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	24	0	135	7	1611	89	117	1595	2
Future Vol, veh/h	0	0	1	24	0	135	7	1611	89	117	1595	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage,-#		0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	25	0	141	7	1678	93	122	1661	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2758	3597	831	2767	3599	839	1663	0	0	1678	0	0
Stage 1	1905	1905	-	1692	1692	-	-	-	-	-	-	-
Stage 2	853	1692	-	1075	1907	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	9	5	313	~ 9	5	309	383	-	-	378	-	-
Stage 1	71	115	-	97	147	-	-	-	-	-	-	-
Stage 2	320	147	-	234	115	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	3	313	~ 7	3	309	383	-	-	378	-	-
Mov Cap-2 Maneuver	4	3	-	~ 7	3	-	-	-	-	-	-	-
Stage 1	70	78	-	95	144	-	-	-	-	-	-	-
Stage 2	171	144	-	158	78	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	$ 1521.6	0.1	1.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	383	-	-	313	42	378	-	-
HCM Lane V/C Ratio	0.019	-	-	0.003	3.943	0.322	-	-
HCM Control Delay (s)	14.6	-	-	16.5	$ 1521.6	19	-	-
HCM Lane LOS	B	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	18.8	1.4	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	181	13	0	69
Future Vol, veh/h	4	4	181	13	0	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	232	17	0	88

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	329	241	0	0	249	0
Stage 1	241	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	665	798	-	-	1317	-
Stage 1	799	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	665	798	-	-	1317	-
Mov Cap-2 Maneuver	665	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	725	1317	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

FUTURE "NO-BUILD" INTERSECTION ANALYSIS (UNSIGNALIZED; SCENARIO 1)

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	11	28	1	10	1539	22	1800	10
Future Vol, veh/h	11	28	1	10	1539	22	1800	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	250	-	265	-	720
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	12	29	1	11	1620	23	1895	11

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	2775	948	1895	1906	0	1620	-	0
Stage 1	1941	-	-	-	-	-	-	-
Stage 2	834	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	15	262	87	308	-	132	-	-
Stage 1	98	-	-	-	-	-	-	-
Stage 2	387	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	12	262	243	243	-	132	-	-
Mov Cap-2 Maneuver	12	-	-	-	-	-	-	-
Stage 1	93	-	-	-	-	-	-	-
Stage 2	320	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 333.2	0.1	0.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	243	-	38	132	-	-
HCM Lane V/C Ratio	0.048	-	1.08	0.175	-	-
HCM Control Delay (s)	20.6	-	$ 333.2	38	-	-
HCM Lane LOS	C	-	F	E	-	-
HCM 95th %tile Q(veh)	0.1	-	4.1	0.6	-	-

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

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	7	0	28	8	1423	44	66	1697	7
Future Vol, veh/h	0	0	1	7	0	28	8	1423	44	66	1697	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	8	0	30	9	1547	48	72	1845	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2781	3554	923	2632	3562	774	1853	0	0	1547	0	0
Stage 1	1989	1989	-	1565	1565	-	-	-	-	-	-	-
Stage 2	792	1565	-	1067	1997	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	9	6	272	11	6	341	323	-	-	425	-	-
Stage 1	63	105	-	116	170	-	-	-	-	-	-	-
Stage 2	349	170	-	237	104	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	7	5	272	9	5	341	323	-	-	425	-	-
Mov Cap-2 Maneuver	7	5	-	9	5	-	-	-	-	-	-	-
Stage 1	61	87	-	113	165	-	-	-	-	-	-	-
Stage 2	309	165	-	196	86	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.3	228.1	0.1	0.6
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	323	-	-	272	45	425	-	-
HCM Lane V/C Ratio	0.027	-	-	0.004	0.845	0.169	-	-
HCM Control Delay (s)	16.5	-	-	18.3	228.1	15.2	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	3.4	0.6	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	11	350	3	0	162
Future Vol, veh/h	14	11	350	3	0	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	12	389	3	0	180

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	571	391	0	0	392	0
Stage 1	391	-	-	-	-	-
Stage 2	180	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	482	658	-	-	1167	-
Stage 1	683	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	482	658	-	-	1167	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	851	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	546	1167	-
HCM Lane V/C Ratio	-	-	0.051	-	-
HCM Control Delay (s)	-	-	11.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	7	12	6	17	1752	56	1856	16
Future Vol, veh/h	7	12	6	17	1752	56	1856	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	250	-	265	-	720
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2
Mvmt Flow	7	13	6	18	1825	58	1933	17

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	3010	967	1933	1950	0	1825	-	0
Stage 1	2049	-	-	-	-	-	-	-
Stage 2	961	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	10	254	82	296	-	97	-	-
Stage 1	85	-	-	-	-	-	-	-
Stage 2	332	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	~ 3	254	171	171	-	97	-	-
Mov Cap-2 Maneuver	~ 3	-	-	-	-	-	-	-
Stage 1	73	-	-	-	-	-	-	-
Stage 2	133	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 1568.3	0.4	2.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	171	-	8	97	-	-
HCM Lane V/C Ratio	0.14	-	2.474	0.601	-	-
HCM Control Delay (s)	29.4	-	$ 1568.3	86.9	-	-
HCM Lane LOS	D	-	F	F	-	-
HCM 95th %tile Q(veh)	0.5	-	3.6	2.8	-	-

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

Intersection	
Int Delay, s/veh	106.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	25	0	140	7	1676	93	122	1659	2
Future Vol, veh/h	0	0	1	25	0	140	7	1676	93	122	1659	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	26	0	146	7	1746	97	127	1728	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2869	3742	864	2878	3744	873	1730	0	0	1746	0	0
Stage 1	1982	1982	-	1760	1760	-	-	-	-	-	-	-
Stage 2	887	1760	-	1118	1984	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	4	297	~ 7	4	293	361	-	-	356	-	-
Stage 1	63	105	-	88	136	-	-	-	-	-	-	-
Stage 2	305	136	-	221	105	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	3	297	~ 5	3	293	361	-	-	356	-	-
Mov Cap-2 Maneuver	3	3	-	~ 5	3	-	-	-	-	-	-	-
Stage 1	62	68	-	86	133	-	-	-	-	-	-	-
Stage 2	150	133	-	142	68	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	$ 2389.7	0.1	1.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	361	-	-	297	30	356	-	-
HCM Lane V/C Ratio	0.02	-	-	0.004	5.729	0.357	-	-
HCM Control Delay (s)	15.2	-	-	17.2	$ 2389.7	20.6	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	20.8	1.6	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	188	14	0	72
Future Vol, veh/h	4	4	188	14	0	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	241	18	0	92

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	342	250	0	0	259	0
Stage 1	250	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	654	789	-	-	1306	-
Stage 1	792	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	654	789	-	-	1306	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	932	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	715	1306	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

FUTURE "BUILD" INTERSECTION ANALYSIS (UNSIGNALIZED; SCENARIO 1)

Intersection	
Int Delay, s/veh	25.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	11	0	28	22	0	22	1	10	1539	8	22	8	1800	10
Future Vol, veh/h	11	0	28	22	0	22	1	10	1539	8	22	8	1800	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	250	-	250	-	265	-	720
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	29	23	0	23	1	11	1620	8	23	8	1895	11

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	2791	3609	948	2654	3612	810	1895	1906	0	0	1620	1628	0	0
Stage 1	1957	1957	-	1644	1644	-	-	-	-	-	-	-	-	-
Stage 2	834	1652	-	1010	1968	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	~ 9	5	262	~ 11	5	323	87	308	-	-	132	395	-	-
Stage 1	66	109	-	104	156	-	-	-	-	-	-	-	-	-
Stage 2	329	154	-	257	107	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 7	4	262	~ 8	4	323	243	243	-	-	151	151	-	-
Mov Cap-2 Maneuver	~ 7	4	-	~ 8	4	-	-	-	-	-	-	-	-	-
Stage 1	63	86	-	99	148	-	-	-	-	-	-	-	-	-
Stage 2	290	146	-	180	84	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 734.2	$ 1345.4	0.1	0.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	243	-	-	23	16	151	-	-
HCM Lane V/C Ratio	0.048	-	-	1.785	2.895	0.209	-	-
HCM Control Delay (s)	20.6	-	-	$ 734.2	$ 1345.4	35.1	-	-
HCM Lane LOS	C	-	-	F	F	E	-	-
HCM 95th %tile Q(veh)	0.1	-	-	5.2	6.5	0.8	-	-

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

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	7	0	28	8	1431	44	66	1719	7
Future Vol, veh/h	0	0	1	7	0	28	8	1431	44	66	1719	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	8	0	30	9	1555	48	72	1868	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2808	3585	934	2651	3593	778	1876	0	0	1555	0	0
Stage 1	2012	2012	-	1573	1573	-	-	-	-	-	-	-
Stage 2	796	1573	-	1078	2020	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	5	267	11	5	339	316	-	-	422	-	-
Stage 1	60	102	-	115	169	-	-	-	-	-	-	-
Stage 2	347	169	-	233	101	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	6	4	267	9	4	339	316	-	-	422	-	-
Mov Cap-2 Maneuver	6	4	-	9	4	-	-	-	-	-	-	-
Stage 1	58	85	-	112	164	-	-	-	-	-	-	-
Stage 2	307	164	-	192	84	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	228.1	0.1	0.6
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	316	-	-	267	45	422	-	-
HCM Lane V/C Ratio	0.028	-	-	0.004	0.845	0.17	-	-
HCM Control Delay (s)	16.7	-	-	18.5	228.1	15.3	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	3.4	0.6	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↕			↕	
Traffic Vol, veh/h	5	0	5	14	0	11	2	350	3	0	162	2
Future Vol, veh/h	5	0	5	14	0	11	2	350	3	0	162	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	6	16	0	12	2	389	3	0	180	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	582	577	181	579	577	391	182	0	0	392	0	0
Stage 1	181	181	-	395	395	-	-	-	-	-	-	-
Stage 2	401	396	-	184	182	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	424	427	862	426	427	658	1393	-	-	1167	-	-
Stage 1	821	750	-	630	605	-	-	-	-	-	-	-
Stage 2	626	604	-	818	749	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	416	427	862	423	427	658	1393	-	-	1167	-	-
Mov Cap-2 Maneuver	416	427	-	423	427	-	-	-	-	-	-	-
Stage 1	820	750	-	629	604	-	-	-	-	-	-	-
Stage 2	613	603	-	813	749	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	12.6	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1393	-	-	561	502	1167	-	-
HCM Lane V/C Ratio	0.002	-	-	0.02	0.055	-	-	-
HCM Control Delay (s)	7.6	0	-	11.5	12.6	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	49.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	7	0	12	14	0	14	6	17	1752	23	56	23	1856	16
Future Vol, veh/h	7	0	12	14	0	14	6	17	1752	23	56	23	1856	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	-	250	-	250	-	265	-	720
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	13	15	0	15	6	18	1825	24	58	24	1933	17

Major/Minor	Minor2			Minor1			Major1				Major2			
Conflicting Flow All	3058	3994	967	3004	3987	913	1933	1950	0	0	1825	1849	0	0
Stage 1	2097	2097	-	1873	1873	-	-	-	-	-	-	-	-	-
Stage 2	961	1897	-	1131	2114	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	~ 5	3	254	~ 6	3	276	82	296	-	-	97	324	-	-
Stage 1	53	92	-	74	120	-	-	-	-	-	-	-	-	-
Stage 2	275	116	-	217	90	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 2	1	254	~ 2	1	276	171	171	-	-	116	116	-	-
Mov Cap-2 Maneuver	~ 2	1	-	~ 2	1	-	-	-	-	-	-	-	-	-
Stage 1	46	27	-	64	103	-	-	-	-	-	-	-	-	-
Stage 2	224	100	-	61	27	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 2704.2	$ 4547.1	0.4	3.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	171	-	-	5	4	116	-	-
HCM Lane V/C Ratio	0.14	-	-	3.958	7.292	0.709	-	-
HCM Control Delay (s)	29.4	-	-	$ 2704.2	$ 4547.1	89.4	-	-
HCM Lane LOS	D	-	-	F	F	F	-	-
HCM 95th %tile Q(veh)	0.5	-	-	3.8	5.2	3.8	-	-

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

Intersection	
Int Delay, s/veh	105.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	25	0	140	7	1699	93	122	1673	2
Future Vol, veh/h	0	0	1	25	0	140	7	1699	93	122	1673	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	26	0	146	7	1770	97	127	1743	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2896	3781	872	2910	3783	885	1745	0	0	1770	0	0
Stage 1	1997	1997	-	1784	1784	-	-	-	-	-	-	-
Stage 2	899	1784	-	1126	1999	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	4	294	~ 7	4	288	356	-	-	348	-	-
Stage 1	62	104	-	85	133	-	-	-	-	-	-	-
Stage 2	300	133	-	218	103	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	2	2	294	~ 5	2	288	356	-	-	348	-	-
Mov Cap-2 Maneuver	2	2	-	~ 5	2	-	-	-	-	-	-	-
Stage 1	61	66	-	83	130	-	-	-	-	-	-	-
Stage 2	145	130	-	138	65	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	$ 2389.7	0.1	1.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	356	-	-	294	30	348	-	-
HCM Lane V/C Ratio	0.02	-	-	0.004	5.729	0.365	-	-
HCM Control Delay (s)	15.3	-	-	17.3	$ 2389.7	21.2	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	20.8	1.6	-	-

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	4	4	0	4	6	188	14	0	72	6
Future Vol, veh/h	4	0	4	4	0	4	6	188	14	0	72	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	5	0	5	8	241	18	0	92	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	365	371	96	365	366	250	100	0	0	259	0	0
Stage 1	96	96	-	266	266	-	-	-	-	-	-	-
Stage 2	269	275	-	99	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	591	559	960	591	562	789	1493	-	-	1306	-	-
Stage 1	911	815	-	739	689	-	-	-	-	-	-	-
Stage 2	737	683	-	907	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	584	556	960	586	559	789	1493	-	-	1306	-	-
Mov Cap-2 Maneuver	584	556	-	586	559	-	-	-	-	-	-	-
Stage 1	906	815	-	735	686	-	-	-	-	-	-	-
Stage 2	728	680	-	902	812	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.4	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1493	-	-	726	673	1306	-	-
HCM Lane V/C Ratio	0.005	-	-	0.014	0.015	-	-	-
HCM Control Delay (s)	7.4	0	-	10	10.4	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

FUTURE "NO-BUILD" INTERSECTION ANALYSIS (SIGNALIZED; SCENARIO 2)

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	11	28	1	10	1539	22	1800	10
Future Volume (vph)	11	28	1	10	1539	22	1800	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00			1.00	0.95	1.00	0.95	1.00
Frt	0.90			1.00	1.00	1.00	1.00	0.85
Flt Protected	0.99			0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1661			1770	3539	1770	3539	1583
Flt Permitted	0.99			0.10	1.00	0.14	1.00	1.00
Satd. Flow (perm)	1661			183	3539	259	3539	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	29	1	11	1620	23	1895	11
RTOR Reduction (vph)	28	0	0	0	0	0	0	2
Lane Group Flow (vph)	13	0	0	12	1620	23	1895	9
Turn Type	Prot		Perm	Perm	NA	Perm	NA	Perm
Protected Phases	4				2		6	
Permitted Phases			2	2		6		6
Actuated Green, G (s)	5.9			103.1	103.1	103.1	103.1	103.1
Effective Green, g (s)	5.9			103.1	103.1	103.1	103.1	103.1
Actuated g/C Ratio	0.05			0.86	0.86	0.86	0.86	0.86
Clearance Time (s)	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	81			157	3040	222	3040	1360
v/s Ratio Prot	c0.01				0.46		c0.54	
v/s Ratio Perm				0.07		0.09		0.01
v/c Ratio	0.17			0.08	0.53	0.10	0.62	0.01
Uniform Delay, d1	54.7			1.3	2.2	1.3	2.6	1.2
Progression Factor	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0			0.9	0.7	0.9	1.0	0.0
Delay (s)	55.7			2.2	2.9	2.2	3.5	1.2
Level of Service	E			A	A	A	A	A
Approach Delay (s)	55.7				2.9		3.5	
Approach LOS	E				A		A	

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	7	0	28	8	1423	44	66	1697	7
Future Vol, veh/h	0	0	1	7	0	28	8	1423	44	66	1697	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	8	0	30	9	1547	48	72	1845	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2781	3554	923	2632	3562	774	1853	0	0	1547	0	0
Stage 1	1989	1989	-	1565	1565	-	-	-	-	-	-	-
Stage 2	792	1565	-	1067	1997	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	9	6	272	11	6	341	323	-	-	425	-	-
Stage 1	63	105	-	116	170	-	-	-	-	-	-	-
Stage 2	349	170	-	237	104	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	7	5	272	9	5	341	323	-	-	425	-	-
Mov Cap-2 Maneuver	7	5	-	9	5	-	-	-	-	-	-	-
Stage 1	61	87	-	113	165	-	-	-	-	-	-	-
Stage 2	309	165	-	196	86	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.3	228.1	0.1	0.6
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	323	-	-	272	45	425	-	-
HCM Lane V/C Ratio	0.027	-	-	0.004	0.845	0.169	-	-
HCM Control Delay (s)	16.5	-	-	18.3	228.1	15.2	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	3.4	0.6	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	11	350	3	0	162
Future Vol, veh/h	14	11	350	3	0	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	12	389	3	0	180

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	571	391	0	0	392	0
Stage 1	391	-	-	-	-	-
Stage 2	180	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	482	658	-	-	1167	-
Stage 1	683	-	-	-	-	-
Stage 2	851	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	482	658	-	-	1167	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	851	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	546	1167	-
HCM Lane V/C Ratio	-	-	0.051	-	-
HCM Control Delay (s)	-	-	11.9	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Volume (vph)	7	12	6	17	1752	56	1856	16
Future Volume (vph)	7	12	6	17	1752	56	1856	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5			5.5	5.5	5.5	5.5	5.5
Lane Util. Factor	1.00			1.00	0.95	1.00	0.95	1.00
Frt	0.91			1.00	1.00	1.00	1.00	0.85
Flt Protected	0.98			0.95	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1670			1770	3539	1770	3539	1583
Flt Permitted	0.98			0.09	1.00	0.10	1.00	1.00
Satd. Flow (perm)	1670			168	3539	195	3539	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	12	6	18	1825	58	1933	17
RTOR Reduction (vph)	13	0	0	0	0	0	0	3
Lane Group Flow (vph)	7	0	0	24	1825	58	1933	14
Turn Type	Prot		Perm	Perm	NA	Perm	NA	Perm
Protected Phases	4				2		6	
Permitted Phases			2	2		6		6
Actuated Green, G (s)	2.9			66.5	66.5	66.5	66.5	66.5
Effective Green, g (s)	2.9			66.5	66.5	66.5	66.5	66.5
Actuated g/C Ratio	0.04			0.83	0.83	0.83	0.83	0.83
Clearance Time (s)	5.5			5.5	5.5	5.5	5.5	5.5
Vehicle Extension (s)	3.0			5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	60			138	2927	161	2927	1309
v/s Ratio Prot	c0.00				0.52		c0.55	
v/s Ratio Perm				0.14		0.30		0.01
v/c Ratio	0.12			0.17	0.62	0.36	0.66	0.01
Uniform Delay, d1	37.5			1.4	2.5	1.7	2.6	1.2
Progression Factor	1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9			2.7	1.0	6.2	1.2	0.0
Delay (s)	38.5			4.1	3.5	7.9	3.8	1.2
Level of Service	D			A	A	A	A	A
Approach Delay (s)	38.5				3.5		3.9	
Approach LOS	D				A		A	

Intersection Summary			
HCM 2000 Control Delay	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	106.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	25	0	140	7	1676	93	122	1659	2
Future Vol, veh/h	0	0	1	25	0	140	7	1676	93	122	1659	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	26	0	146	7	1746	97	127	1728	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2869	3742	864	2878	3744	873	1730	0	0	1746	0	0
Stage 1	1982	1982	-	1760	1760	-	-	-	-	-	-	-
Stage 2	887	1760	-	1118	1984	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	4	297	~ 7	4	293	361	-	-	356	-	-
Stage 1	63	105	-	88	136	-	-	-	-	-	-	-
Stage 2	305	136	-	221	105	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	3	297	~ 5	3	293	361	-	-	356	-	-
Mov Cap-2 Maneuver	3	3	-	~ 5	3	-	-	-	-	-	-	-
Stage 1	62	68	-	86	133	-	-	-	-	-	-	-
Stage 2	150	133	-	142	68	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	$ 2389.7	0.1	1.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	361	-	-	297	30	356	-	-
HCM Lane V/C Ratio	0.02	-	-	0.004	5.729	0.357	-	-
HCM Control Delay (s)	15.2	-	-	17.2	$ 2389.7	20.6	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	20.8	1.6	-	-

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

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	4	188	14	0	72
Future Vol, veh/h	4	4	188	14	0	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	241	18	0	92

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	342	250	0	0	259	0
Stage 1	250	-	-	-	-	-
Stage 2	92	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	654	789	-	-	1306	-
Stage 1	792	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	654	789	-	-	1306	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	932	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	715	1306	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	-	-	10.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

FUTURE "BUILD" INTERSECTION ANALYSIS(SIGNALIZED; SCENARIO 2)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	11	0	28	22	0	22	1	10	1539	8	22	8
Future Volume (vph)	11	0	28	22	0	22	1	10	1539	8	22	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5	5.5	5.5		5.5
Lane Util. Factor		1.00			1.00			1.00	0.95	1.00		1.00
Frt		0.90			0.93			1.00	1.00	0.85		1.00
Flt Protected		0.99			0.98			0.95	1.00	1.00		0.95
Satd. Flow (prot)		1661			1695			1770	3539	1583		1770
Flt Permitted		0.99			0.82			0.08	1.00	1.00		0.12
Satd. Flow (perm)		1661			1426			152	3539	1583		230
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	0	29	23	0	23	1	11	1620	8	23	8
RTOR Reduction (vph)	0	39	0	0	44	0	0	0	0	2	0	0
Lane Group Flow (vph)	0	2	0	0	2	0	0	12	1620	6	0	31
Turn Type	Split	NA		Perm	NA		Perm	Perm	NA	Perm	Perm	Perm
Protected Phases	4	4			8				2			
Permitted Phases				8			2	2		2	6	6
Actuated Green, G (s)		4.9			5.1			93.5	93.5	93.5		93.5
Effective Green, g (s)		4.9			5.1			93.5	93.5	93.5		93.5
Actuated g/C Ratio		0.04			0.04			0.78	0.78	0.78		0.78
Clearance Time (s)		5.5			5.5			5.5	5.5	5.5		5.5
Vehicle Extension (s)		3.0			3.0			5.0	5.0	5.0		5.0
Lane Grp Cap (vph)		67			60			118	2757	1233		179
v/s Ratio Prot		c0.00							0.46			
v/s Ratio Perm					c0.00			0.08		0.00		0.13
v/c Ratio		0.02			0.03			0.10	0.59	0.01		0.17
Uniform Delay, d1		55.3			55.1			3.2	5.4	2.9		3.4
Progression Factor		1.00			1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2		0.2			0.2			1.7	0.9	0.0		2.1
Delay (s)		55.4			55.3			4.9	6.3	2.9		5.5
Level of Service		E			E			A	A	A		A
Approach Delay (s)		55.4			55.3				6.3			
Approach LOS		E			E				A			

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1800	10
Future Volume (vph)	1800	10
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.5	5.5
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	1895	11
RTOR Reduction (vph)	0	2
Lane Group Flow (vph)	1895	9
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	93.5	93.5
Effective Green, g (s)	93.5	93.5
Actuated g/C Ratio	0.78	0.78
Clearance Time (s)	5.5	5.5
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2757	1233
v/s Ratio Prot	c0.54	
v/s Ratio Perm		0.01
v/c Ratio	0.69	0.01
Uniform Delay, d1	6.3	2.9
Progression Factor	1.00	1.00
Incremental Delay, d2	1.4	0.0
Delay (s)	7.7	3.0
Level of Service	A	A
Approach Delay (s)	7.7	
Approach LOS	A	

Intersection Summary

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	7	0	28	8	1431	44	66	1719	7
Future Vol, veh/h	0	0	1	7	0	28	8	1431	44	66	1719	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	8	0	30	9	1555	48	72	1868	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2808	3585	934	2651	3593	778	1876	0	0	1555	0	0
Stage 1	2012	2012	-	1573	1573	-	-	-	-	-	-	-
Stage 2	796	1573	-	1078	2020	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	5	267	11	5	339	316	-	-	422	-	-
Stage 1	60	102	-	115	169	-	-	-	-	-	-	-
Stage 2	347	169	-	233	101	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	6	4	267	9	4	339	316	-	-	422	-	-
Mov Cap-2 Maneuver	6	4	-	9	4	-	-	-	-	-	-	-
Stage 1	58	85	-	112	164	-	-	-	-	-	-	-
Stage 2	307	164	-	192	84	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	228.1	0.1	0.6
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	316	-	-	267	45	422	-	-
HCM Lane V/C Ratio	0.028	-	-	0.004	0.845	0.17	-	-
HCM Control Delay (s)	16.7	-	-	18.5	228.1	15.3	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	3.4	0.6	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↕			↕	
Traffic Vol, veh/h	5	0	5	14	0	11	2	350	3	0	162	2
Future Vol, veh/h	5	0	5	14	0	11	2	350	3	0	162	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	6	16	0	12	2	389	3	0	180	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	582	577	181	579	577	391	182	0	0	392	0	0
Stage 1	181	181	-	395	395	-	-	-	-	-	-	-
Stage 2	401	396	-	184	182	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	424	427	862	426	427	658	1393	-	-	1167	-	-
Stage 1	821	750	-	630	605	-	-	-	-	-	-	-
Stage 2	626	604	-	818	749	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	416	427	862	423	427	658	1393	-	-	1167	-	-
Mov Cap-2 Maneuver	416	427	-	423	427	-	-	-	-	-	-	-
Stage 1	820	750	-	629	604	-	-	-	-	-	-	-
Stage 2	613	603	-	813	749	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	12.6	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1393	-	-	561	502	1167	-	-
HCM Lane V/C Ratio	0.002	-	-	0.02	0.055	-	-	-
HCM Control Delay (s)	7.6	0	-	11.5	12.6	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	7	0	12	14	0	14	6	17	1752	23	56	23
Future Volume (vph)	7	0	12	14	0	14	6	17	1752	23	56	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.5			5.5			5.5	5.5	5.5		5.5
Lane Util. Factor		1.00			1.00			1.00	0.95	1.00		1.00
Frt		0.91			0.93			1.00	1.00	0.85		1.00
Flt Protected		0.98			0.98			0.95	1.00	1.00		0.95
Satd. Flow (prot)		1670			1695			1770	3539	1583		1770
Flt Permitted		0.98			0.83			0.08	1.00	1.00		0.10
Satd. Flow (perm)		1670			1448			157	3539	1583		184
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	0	12	15	0	15	6	18	1825	24	58	24
RTOR Reduction (vph)	0	20	0	0	29	0	0	0	0	5	0	0
Lane Group Flow (vph)	0	0	0	0	1	0	0	24	1825	20	0	82
Turn Type	Split	NA		Perm	NA		Perm	Perm	NA	Perm	Perm	Perm
Protected Phases	4	4			8				2			
Permitted Phases				8			2	2		2	6	6
Actuated Green, G (s)		2.4			3.6			97.5	97.5	97.5		97.5
Effective Green, g (s)		2.4			3.6			97.5	97.5	97.5		97.5
Actuated g/C Ratio		0.02			0.03			0.81	0.81	0.81		0.81
Clearance Time (s)		5.5			5.5			5.5	5.5	5.5		5.5
Vehicle Extension (s)		3.0			3.0			5.0	5.0	5.0		5.0
Lane Grp Cap (vph)		33			43			127	2875	1286		149
v/s Ratio Prot		c0.00							0.52			
v/s Ratio Perm					c0.00			0.15		0.01		0.45
v/c Ratio		0.01			0.02			0.19	0.63	0.02		0.55
Uniform Delay, d1		57.6			56.5			2.5	4.4	2.1		3.8
Progression Factor		1.00			1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2		0.1			0.2			3.3	1.1	0.0		13.8
Delay (s)		57.8			56.7			5.8	5.4	2.2		17.7
Level of Service		E			E			A	A	A		B
Approach Delay (s)		57.8			56.7				5.4			
Approach LOS		E			E				A			

Intersection Summary			
HCM 2000 Control Delay	6.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	1856	16
Future Volume (vph)	1856	16
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	5.5	5.5
Lane Util. Factor	0.95	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	3539	1583
Flt Permitted	1.00	1.00
Satd. Flow (perm)	3539	1583
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	1933	17
RTOR Reduction (vph)	0	3
Lane Group Flow (vph)	1933	14
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Actuated Green, G (s)	97.5	97.5
Effective Green, g (s)	97.5	97.5
Actuated g/C Ratio	0.81	0.81
Clearance Time (s)	5.5	5.5
Vehicle Extension (s)	5.0	5.0
Lane Grp Cap (vph)	2875	1286
v/s Ratio Prot	c0.55	
v/s Ratio Perm		0.01
v/c Ratio	0.67	0.01
Uniform Delay, d1	4.6	2.1
Progression Factor	1.00	1.00
Incremental Delay, d2	1.3	0.0
Delay (s)	5.9	2.1
Level of Service	A	A
Approach Delay (s)	6.4	
Approach LOS	A	

Intersection Summary

Intersection	
Int Delay, s/veh	105.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	1	25	0	140	7	1699	93	122	1673	2
Future Vol, veh/h	0	0	1	25	0	140	7	1699	93	122	1673	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	215	-	320	260	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	1	26	0	146	7	1770	97	127	1743	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2896	3781	872	2910	3783	885	1745	0	0	1770	0	0
Stage 1	1997	1997	-	1784	1784	-	-	-	-	-	-	-
Stage 2	899	1784	-	1126	1999	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	4	294	~ 7	4	288	356	-	-	348	-	-
Stage 1	62	104	-	85	133	-	-	-	-	-	-	-
Stage 2	300	133	-	218	103	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	2	2	294	~ 5	2	288	356	-	-	348	-	-
Mov Cap-2 Maneuver	2	2	-	~ 5	2	-	-	-	-	-	-	-
Stage 1	61	66	-	83	130	-	-	-	-	-	-	-
Stage 2	145	130	-	138	65	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	$ 2389.7	0.1	1.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	356	-	-	294	30	348	-	-
HCM Lane V/C Ratio	0.02	-	-	0.004	5.729	0.365	-	-
HCM Control Delay (s)	15.3	-	-	17.3	$ 2389.7	21.2	-	-
HCM Lane LOS	C	-	-	C	F	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	20.8	1.6	-	-

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

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↕			↕	
Traffic Vol, veh/h	4	0	4	4	0	4	6	188	14	0	72	6
Future Vol, veh/h	4	0	4	4	0	4	6	188	14	0	72	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	5	5	0	5	8	241	18	0	92	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	365	371	96	365	366	250	100	0	0	259	0	0
Stage 1	96	96	-	266	266	-	-	-	-	-	-	-
Stage 2	269	275	-	99	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	591	559	960	591	562	789	1493	-	-	1306	-	-
Stage 1	911	815	-	739	689	-	-	-	-	-	-	-
Stage 2	737	683	-	907	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	584	556	960	586	559	789	1493	-	-	1306	-	-
Mov Cap-2 Maneuver	584	556	-	586	559	-	-	-	-	-	-	-
Stage 1	906	815	-	735	686	-	-	-	-	-	-	-
Stage 2	728	680	-	902	812	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.4	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1493	-	-	726	673	1306	-	-
HCM Lane V/C Ratio	0.005	-	-	0.014	0.015	-	-	-
HCM Control Delay (s)	7.4	0	-	10	10.4	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

TRAFFIC VOLUME WORKSHEETS

20-108 Residential Development at Scenic Hwy and North Rd, Gwinnet County, GA

Traffic Volumes

A&R Engineering
September 2020

1. SR 124 @ Stratford Dr

A.M. Peak Hour

	SR 124 (Scenic Highway) Northbound					SR 124 (Scenic Highway) Southbound					Stratford Drive Eastbound				Site Driveway Westbound			
Condition	U	L	T	R	Tot	U	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2020 Counts during Covid-19:	1	7	1049	0	1057	15	0	1227	7	1249	8	0	19	27	0	0	0	0
Pharr Elem School ITE Projected Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Existing 2020 Volumes:	1	10	1479	0	1490	21	0	1730	10	1761	11	0	27	38	0	0	0	0
Growth Factor (%):	2	2	2	2		2	2	2	2		2	2	2		2	2	2	
No-Build 2022 Volumes:	1	10	1539	0	1550	22	0	1800	10	1832	11	0	28	39	0	0	0	0
Total New Trips:	0	0	0	8	8	0	8	0	0	8	0	0	0	0	22	0	22	44
Future 2022 Traffic Volumes:	1	10	1539	8	1558	22	8	1800	10	1840	11	0	28	39	22	0	22	44

P.M. Peak Hour

	SR 124 (Scenic Highway) Northbound					SR 124 (Scenic Highway) Southbound					Stratford Drive Eastbound				Site Driveway Westbound			
Condition	U	L	T	R	Tot	U	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2020 Counts during Covid-19:	6	15	1604	0	1625	51	0	1699	14	1764	7	0	11	18	0	0	0	0
Pharr Elem School ITE Projected Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Existing 2020 Volumes:	6	16	1684	0	1706	54	0	1784	15	1853	7	0	12	19	0	0	0	0
Growth Factor (%):	2	2	2	2		2	2	2	2		2	2	2		2	2	2	
No-Build 2022 Volumes:	6	17	1752	0	1775	56	0	1856	16	1928	7	0	12	19	0	0	0	0
Total New Trips:	0	0	0	23	23	0	23	0	0	23	0	0	0	0	14	0	14	28
Future 2022 Traffic Volumes:	6	17	1752	23	1798	56	23	1856	16	1951	7	0	12	19	14	0	14	28

Number of Years =	2
Growth Factor (%) =	2
AM Covid-19 Factor =	41%
PM Covid-19 Factor =	5%

20-108 Residential Development at Scenic Hwy and North Rd, Gwinnet County, GA

Traffic Volumes

A&R Engineering
September 2020

2. SR 124 @ Sam's Club Drwy

A.M. Peak Hour

Condition	SR 124 (Scenic Highway) Northbound				SR 124 (Scenic Highway) Southbound				Mt. Zion Baptist Church Drwy Eastbound				Sam's Club Driveway Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2020 Counts during Covid-19:	6	970	30	1006	45	1157	5	1207	0	0	1	1	5	0	19	24
Pharr Elem School ITE Projected Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Existing 2020 Volumes:	8	1368	42	1418	63	1631	7	1701	0	0	1	1	7	0	27	34
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2022 Volumes:	8	1423	44	1475	66	1697	7	1770	0	0	1	1	7	0	28	35
Total New Trips:	0	8	0	8	0	22	0	22	0	0	0	0	0	0	0	0
Future 2022 Traffic Volumes:	8	1431	44	1483	66	1719	7	1792	0	0	1	1	7	0	28	35

P.M. Peak Hour

Condition	SR 124 (Scenic Highway) Northbound				SR 124 (Scenic Highway) Southbound				Mt. Zion Baptist Church Drwy Eastbound				Sam's Club Driveway Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2020 Counts during Covid-19:	7	1534	85	1626	111	1519	2	1632	0	0	1	1	23	0	129	152
Pharr Elem School ITE Projected Trips	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjusted Existing 2020 Volumes:	7	1611	89	1707	117	1595	2	1714	0	0	1	1	24	0	135	159
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2022 Volumes:	7	1676	93	1776	122	1659	2	1783	0	0	1	1	25	0	140	165
Total New Trips:	0	23	0	23	0	14	0	14	0	0	0	0	0	0	0	0
Future 2022 Traffic Volumes:	7	1699	93	1799	122	1673	2	1797	0	0	1	1	25	0	140	165

Number of Years =	2
Growth Factor (%) =	2
AM Covid-19 Factor =	41%
PM Covid-19 Factor =	5%

20-108 Residential Development at Scenic Hwy and North Rd, Gwinnet County, GA

Traffic Volumes

A&R Engineering
September 2020

3. North Rd @ Willow Bend Way

A.M. Peak Hour

Condition	North Road Northbound				North Road Southbound				Site Driveway Eastbound				Willow Bend Way Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2020 Counts during Covid-19:	0	158	2	160	0	17	0	17	0	0	0	0	9	0	8	17
Pharr Elem School ITE Projected Trips	0	113	0	113	0	132	0	132	0	0	0	0	0	0	0	0
Adjusted Existing 2020 Volumes:	0	336	3	339	0	156	0	156	0	0	0	0	13	0	11	24
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2022 Volumes:	0	350	3	353	0	162	0	162	0	0	0	0	14	0	11	25
Total New Trips:	2	0	0	2	0	0	2	2	5	0	5	10	0	0	0	0
Future 2022 Traffic Volumes:	2	350	3	355	0	162	2	164	5	0	5	10	14	0	11	25

P.M. Peak Hour

Condition	North Road Northbound				North Road Southbound				Site Driveway Eastbound				Willow Bend Way Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2020 Counts during Covid-19:	0	142	12	154	0	37	0	37	0	0	0	0	4	0	4	8
Pharr Elem School ITE Projected Trips	0	32	0	32	0	30	0	30	0	0	0	0	0	0	0	0
Adjusted Existing 2020 Volumes:	0	181	13	194	0	69	0	69	0	0	0	0	4	0	4	8
Growth Factor (%):	2	2	2		2	2	2		2	2	2		2	2	2	
No-Build 2022 Volumes:	0	188	14	202	0	72	0	72	0	0	0	0	4	0	4	8
Total New Trips:	6	0	0	6	0	0	6	6	4	0	4	8	0	0	0	0
Future 2022 Traffic Volumes:	6	188	14	208	0	72	6	78	4	0	4	8	4	0	4	8

Number of Years =	2
Growth Factor (%) =	2
AM Covid-19 Factor =	41%
PM Covid-19 Factor =	5%