City of Flowery Branch
City Council Meeting
Thursday, April 2, 2026, 6:00 PM
5410 Pine Street
Flowery Branch, GA 30542

Call Work Session to Order:

Pledge of Allegiance:

Adoption of Agenda:

Awards & Recognitions:

Public Hearing:

a. Public Hearing to Consider First Reading of Ordinance 774 for Annexation of 4651 and 4665 Hog Mountain Road

b. Public Hearing to Consider First Reading of Ordinance 775 for Rezoning of 4651 and 4665 Hog Mountain Road

c. Public Hearing to Consider First Reading of Ordinance 776 Variances at 4651 and 4665 Hog Mountain Road

Unfinished Business - Work Session:

New Business - Work Session:

a. Tax Allocation District - Financial Update (Presentation Only)

b. Consider Purchase of Trimble X9 Scanner

Department Reports:

a. City Manager Report

b. City Clerk Report

c. Department of Fun Report

d. Finance Department Report

e. Human Resources Report

f. Planning Department Report

g. Police Department Report

h. Public Utilities Report

i. Public Works Report

j. Attorney Report

k. Council Report

Adjournment Work Session:

Voting Session Agenda

Call Voting Session to Order:

Public Comments:

Please limit to two minutes

Consent Agenda:

a. Consider March 19, 2026 City Council Meeting Minutes

Unfinished Business - Voting Session:

a. Consider Second Reading of Ordinance 778 for Text Amendments to Article 37 – Variances and Article 38 – Administrative Variances

b. Consider Second Reading of Ordinance 779 for Text Amendments to Section 12.2 Public Hearing Procedures

New Business - Voting Session:

a. Consider First Reading of Ordinance 774 for Annexation of 4651 and 4665 Hog Mountain Road

b. Consider First Reading of Ordinance 775 for Rezoning of 4651 and 4665 Hog Mountain Road

c. Consider First Reading of Ordinance 776 Variances at 4651 and 4665 Hog Mountain Road

d. Consider Purchase of Trimble X9 Scanner

Executive Session:

As needed for discussion of personnel, litigation, or property.

Adjournment:

If you have a disability or impairment and need special assistance, please contact the City Clerk prior to the meeting at 770-967-6371 - Meeting agenda is subject to change.

ORDINANCE NO. 774

AN ORDINANCE TO ANNEX AND BRING WITHIN THE CORPORATE LIMITS OF THE CITY OF FLOWERY BRANCH, STATE OF GEORGIA, REAL PROPERTY TOTALING 19.398 +/- ACRES OF LAND, OWNED BY CDII PROPERTIES, LLC, IDENTIFIED AS 4651 & 4665 HOG MOUNTAIN ROAD, HALL COUNTY TAX PARCELS 15046 000008B AND 15046 000008 AND AS SHOWN AND DESCRIBED ON ATTACHED EXHIBIT "A", PROVIDING FOR CERTIFICATION AND FILING BY THE CITY CLERK, PROVIDING FOR SEVERABILITY, REPEALING CONFLICTING ORDINANCES, PROVIDING FOR AN EFFECTIVE DATE AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, CDII Properties, LLC owns the subject parcels of land identified as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 as shown and described on Exhibit "A"; and

WHEREAS, the City Council of the City of Flowery Branch has considered the application of CDII Properties, LLC and in conjunction with the standards set forth in O.C.G.A. §§ 36-36-1 through 36-36-110, the notice requirements of O.C.G.A.§ 36-36-111, and the City of Flowery Branch Community Agenda for annexation into the City's corporate limits; and

WHEREAS, said parcels of land identified as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 are within the unincorporated area of Hall County, State of Georgia, and are contiguous to the existing corporate limits of the City of Flowery Branch, Georgia at this time; and

WHEREAS, CDII Properties, LLC has submitted to the City Council of Flowery Branch, Georgia, a written application and affidavit signed by all the owners of the land evidencing their desire to have their property annexed, and whereas a survey and complete description of the subject parcel being considered to be annexed, is included in the application; and

WHEREAS, the City Council held a public hearing at the meeting on April 2nd, 2026, duly noticed as prescribed by law and published in the Gainesville Times, regarding said application, as shall be set forth in the minutes of said meeting.

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. RECITALS.

All of the foregoing recitals of this Ordinance are incorporated by reference as if fully set forth herein and are made part of this annexation ordinance.

SECTION 2. ANNEXATION.

The City Council of Flowery Branch, Georgia, does hereby annex and include within the corporate limits of the City of Flowery Branch, Georgia real parcels of land known as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 as shown and described on Exhibit "A". Said Exhibit is incorporated by reference as if fully set forth herein.

SECTION 3. CERTIFICATION BY THE CITY CLERK

The City Council of Flowery Branch, Georgia, authorizes and directs the City Clerk of Flowery Branch, Georgia to certify this Ordinance and attached Exhibit and have a certified copy of this Ordinance and its Exhibits filed with the Department of Community Affairs and any other public official or agencies as required by law.

SECTION 4. SEVERABILITY.

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 5. EFFECTIVE DATE.

The effective date of this Ordinance shall be May 7th, 2026.

SECTION 6. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____, 2026.

_____
Oliver McClellan, Mayor

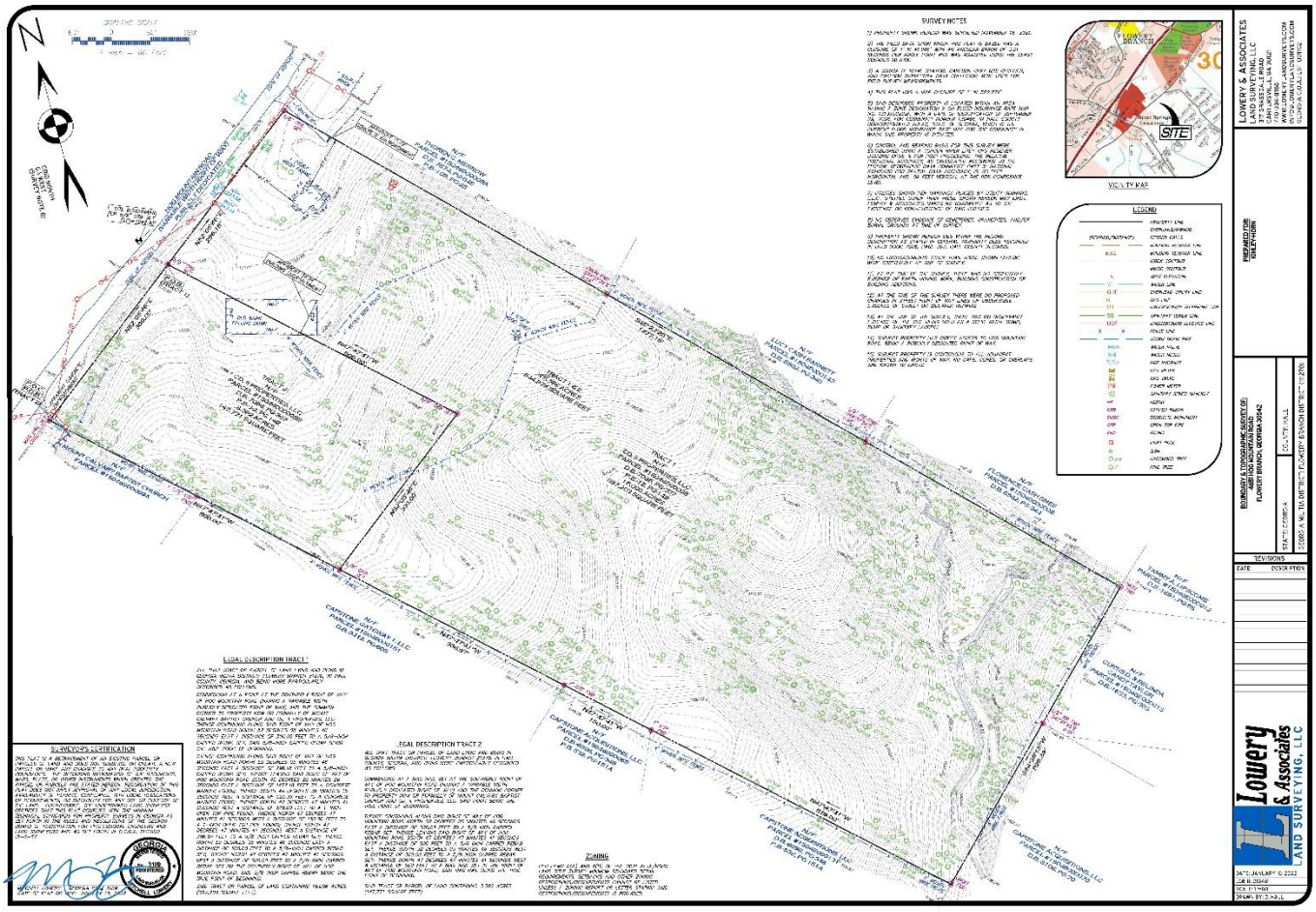
ATTEST

_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM

_____
Ted C. Baggett, City Attorney

Exhibit A


SURVEY NOTES
VICINITY MAP
SITE
LEGEND
LEGAL DESCRIPTION TRACT 1
LEGAL DESCRIPTION TRACT 2
ZONING
SURVEYOR'S CERTIFICATION
LOWERY & ASSOCIATES
LAND SURVEYING, LLC

LEGAL DESCRIPTION TRACT 1

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC; THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 296.18 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 45 DEGREES 22 MINUTES 26 SECONDS EAST A DISTANCE OF 1477.18 FEET TO A CONCRETE MARKER FOUND; THENCE SOUTH 44 DEGREES 38 MINUTES 15 SECONDS WEST A DISTANCE OF 525.39 FEET TO A CONCRETE MARKER FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 519.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 150.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 386.97 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500.00 FEET TO A 5/8–INCH CAPPED REBAR SET ON THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 16.006 ACRES (697,203 SQUARE FEET).

LEGAL DESCRIPTION TRACT 2

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A MAG NAIL SET AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC, SAID POINT BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET. THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 47 DEGREES 47 MINUTES 41 SECONDS EAST A DISTANCE OF 500 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 52 DEGREES 05 MINUTES 46 SECONDS WEST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500 FEET TO A MAG NAIL SET IN THE RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID MAG NAIL BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 3.392 ACRES (147,771 SQUARE FEET).

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: April 2nd, 2026

Subject: Annexation, Rezoning, and Variances

Applicant: Highpoint Development
1776 Peachtree Street
Atlanta, GA 30309
502-386-7022

Owner: CD II Properties, LLC
P.O. Box 99
Demorest, GA 30535
502-386-7022

Existing Zoning: AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.

Location and Size:

4651 Hog Mountain Road; Parcel 15046 000008; 16.0 Acres
4665 Hog Mountain Road; Parcel 15046 000008B; 3.398
Total Area: 19.398 Acres

Proposed Annexation:

The applicant proposes the annexation of the above-referenced parcels (19.398 Acres) from unincorporated Hall County into the City limits of Flowery Branch.

Proposed Zoning:

The applicant is proposing to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

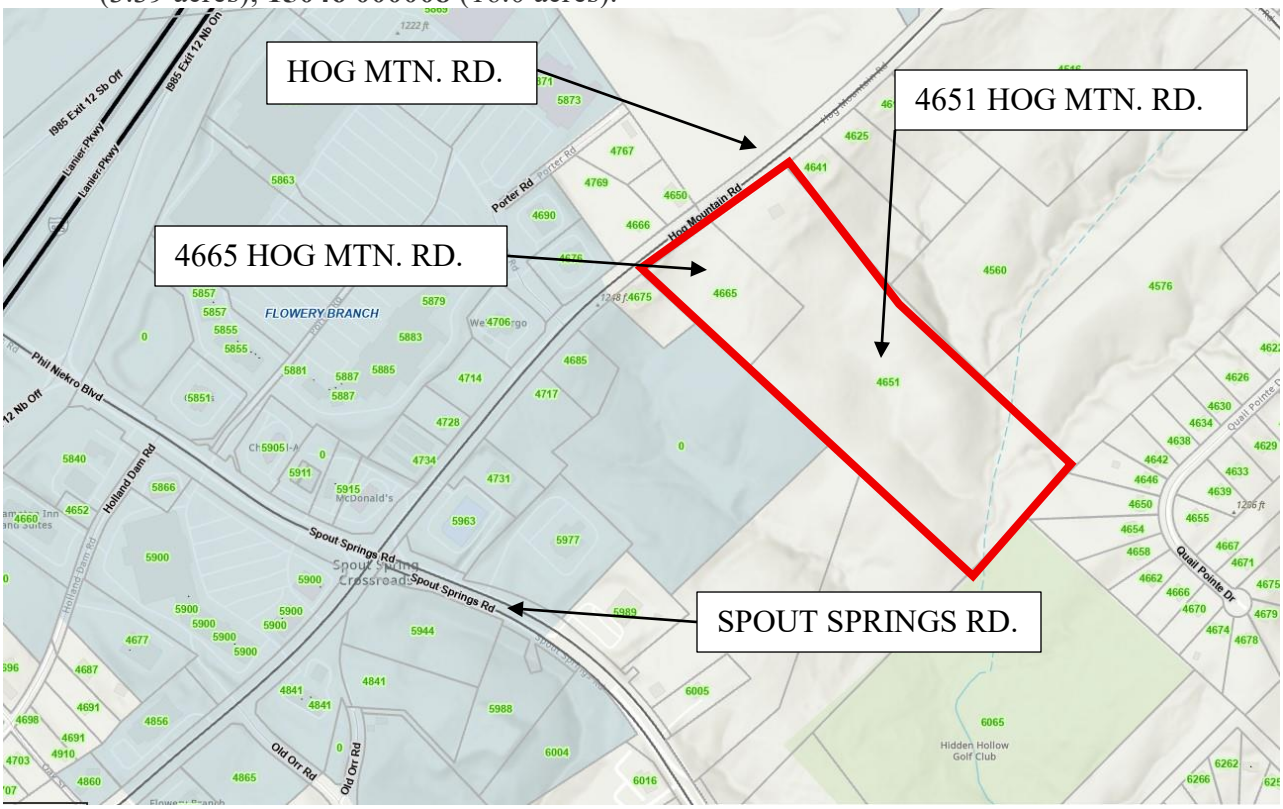
The applicant proposes the development of 75 single-family detached residential lots. The two subject parcels are requested to be rezoned from Hall County AR-1 (Agricultural Residential) and R-1 (Residential) zoning districts, located within unincorporated Hall County, to the Single-Family Townhome (SF-TH) zoning district within the City of Flowery Branch. Concurrent variances from the SF-TH zoning requirements and applicable dimensional standards are also requested.

Concurrent Variances:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography.
2. Variance to **Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. The site plan provided by the applicant lists a total of 75 lots.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements.

Location:

- 4665 and 4651 Hog Mountain Road; tax parcel identification numbers **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres).



Site Plan:

The applicant is proposing 75 single-family detached lots on 19.398 acres.



The site is located on Hog Mountain Road north of the intersection with Spout Springs Road.
The site is an undeveloped wooded lot with state waters located on the eastern side of the site.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC

Architectural Concepts:

The applicant submitted conceptual renderings of the proposed single-family detached architecture. Per the submitted renderings it appears the homes meet architectural standards of material and material application. However, without detailed floor plans, staff is unable to verify compliance with the City's established dimensional standards. To facilitate a thorough review, the applicant must provide complete architectural drawings, to confirm that all requirements are met. A detailed review is done by staff following Article 40 prior to the issuance of permits. The design concepts provided are for illustrative purposes only and were submitted as part of the rezoning case.



ARCHITECTURAL FEATURES:

The achitecture leans toward a mountain bungalow style, with forms and finishes that feel sturdy, familiar, and tied to the landscape. Dark charcoal accents sharpen the earthy palette, while carriage-style garage doors and well-placed sconces add character without slipping into ornament. Matching metal gutters bring a clean outline to the façades, and the porch roof extending across the front-facing garage helps keep everything at a comfortable, human scale. The result is a street presence that feels connected, warm, and intentionally crafted—neighbors, not statements.



EXAMPLE FRONT ELEVATION DARK COLOR SCHEME



COLOR PALETTE:

The three offered schemes—light, mid-tone, and dark—are drawn from the muted, earthy tones of the North Georgia landscape. Each palette reflects the surrounding ridge and creek setting, favoring natural hues: soft mineral whites, weathered wood browns, and deeper charcoal colors that echo stone, soil, and shaded canopy. Together, they provide variation without discord, allowing homes to feel individually tailored yet quietly unified within the broader landscape.



EXAMPLE FRONT ELEVATION LIGHT COLOR SCHEME









ARCHITECTURAL FEATURES:

Details stay simple and purposeful. Porch brackets and extended overhangs provide clear structure and shade without excess. Gable vents, occasional gable windows, and selectively used shutters add just enough dimension to the façades, keeping each home grounded and consistent without feeling repetitive.



EXAMPLE FRONT ELEVATION MID-COLOR SCHEME



EXAMPLE TYPICAL REAR ELEVATION WITH COVERED PORCH



EXAMPLE FRONT ELEVATION BRICK MATERIAL



EXAMPLE SIDE VIEW OF FRONT PORCH WITH BRICK

Open Space Analysis:

Pursuant to Article 10 – Development Requirements and Guidelines, Sec. 10.22 – Open Space Requirements, any proposed residential development is required to provide a total minimum of 15% open space, derived from a combination of Civic Space options (10%) and Amenity Space options (5%).
The site data table provided by the applicant lists a total of 18.5% open space with location details shown on the site plan:



Site Data Table	Required	Provided
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

The site plan proposes several open space options in various locations throughout the development and includes a pocket park, community pavilion, community fire pit, centralized mail kiosk with parking, landscaped seating areas, and a trail system comprised of both hardscape and mulch trails with a stream crossing. Detailed landscape plans and a trail plan including a material list for trail surfacing options, seating, fencing, and stream crossing will be required at time of LDP review.

The following conceptual images were provided by the applicant to illustrate amenity spaces and trail features. Plans submitted for amenity and civic spaces and trail features should substantially adhere to the images below:



Traffic Impacts, Vehicular Flow, and Entrances/Exits

The Conceptual Site Plan for the proposed development indicates 75 residential single-family detached units.

1. Site Access

- A single entrance is proposed off Hog Mountain Road.
- The entrance must include both a right-turn and left-turn lane in. The exit shall include both a left and right dedicated lane. These turn lanes will help to alleviate congestion during peak demand periods and maintain the flow of through traffic. All roadway designs shall be in accordance with the GDOT Driveway Manual.
- The developer is responsible for obtaining and dedicating to the City any right-of-way necessary to construct the required left-turn and right-turn lanes into the site, ensuring that a minimum 13-foot-wide shoulder is maintained.
- Road improvements meeting the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, and 5-foot sidewalk—are required along the entire frontage of the site.
- All costs associated with the required road improvements—including the left-turn lane, right-turn lane, curb and gutter, sidewalk, and associated storm drainage—shall be borne by the developer.

2. Sight Distance

- The driveway design must meet the minimum sight-distance requirements specified in the GDOT Driveway Manual. The engineer shall verify that both stopping-sight distance (SSD) and operational-sight distance (OSD) criteria are satisfied under existing field conditions.

3. Utility Coordination

- Any utilities located beneath the proposed deceleration or turn-lane pavement must be relocated outside of the pavement area.
- All costs associated with utility relocation shall be borne by the developer and coordination with the respective utility owners must be completed prior to construction.

4. Traffic Impact Study

- The current Traffic Study by A&R Engineering was prepared for single-family detached houses by using category 210 for Single-Family Detached.

- All design elements shall comply with GDOT standards. Coordination with Hall County DOT, City of Flowery Branch, and affected utility providers should occur early in the design process to avoid delays.
- The Traffic Impact Study shows that a dedicated left turn in and right turn deceleration lanes are warranted. Recommended conditions will incorporate the required improvements for traffic relief.
- The Traffic Impact Study recommends a single outbound exit lane from the proposed subdivision. However, the study also indicates that during the peak AM period, school dismissal period, and peak PM period, outbound movements from the site operate at a Level of Service (LOS) D. Based on these findings, staff recommends the provision of two outbound exit lanes—one dedicated left-turn lane and one dedicated right-turn lane—to improve operational efficiency and overall LOS for vehicles exiting the subdivision.

Level of Service LOS Description

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.

7.0 Conclusions and Recommendations

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Sewer Design and Capacity Impacts

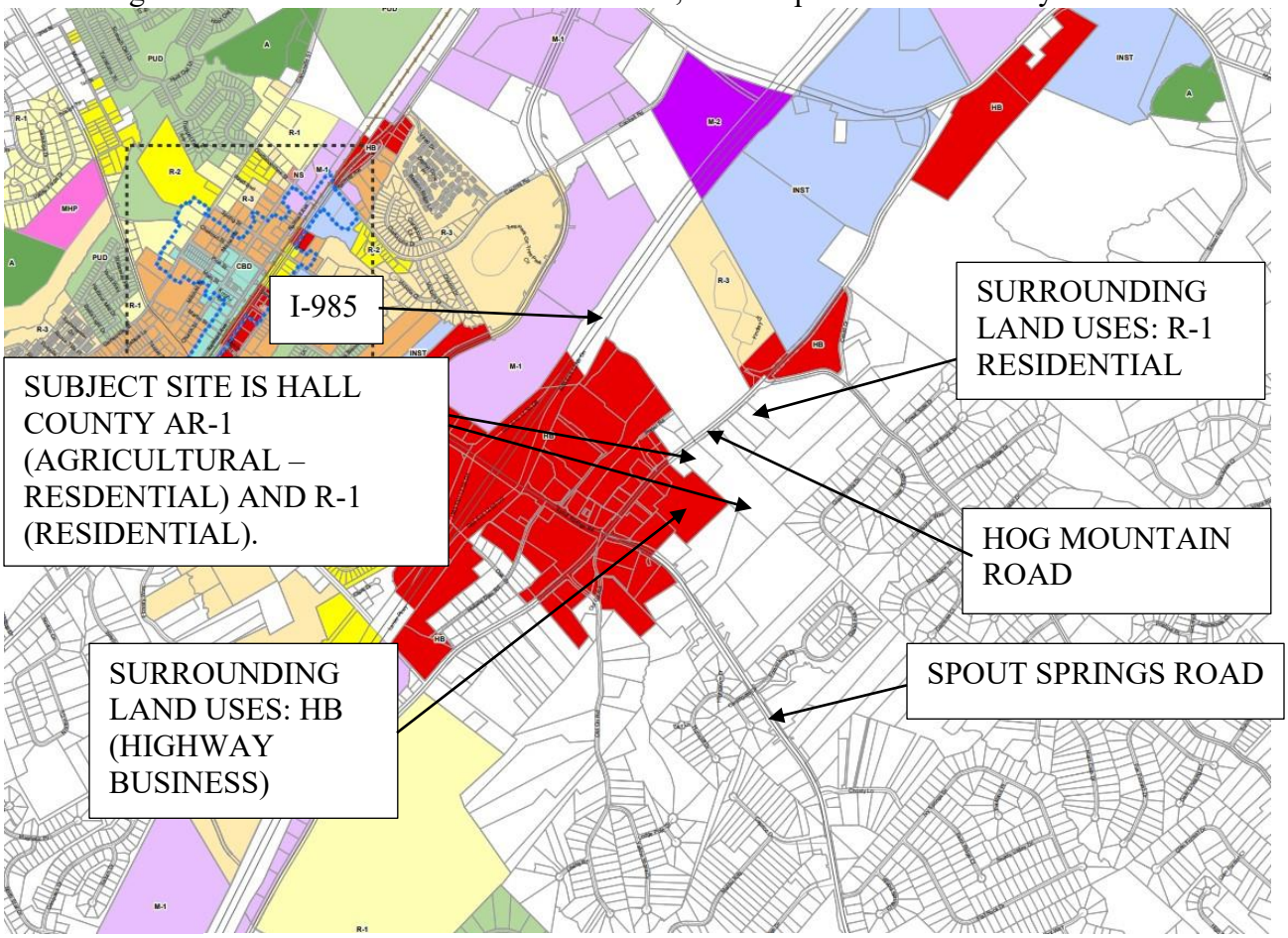
The proposed development of 75 residential units will generate a peak sanitary sewer demand of **20,625** gallons per day, based on the City's standard rate of 275 gallons per unit. Given the City's current peak capacity of **727,798** gallons per day, bringing these units online would reduce available capacity to approximately **707,173** gallons per day.

Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Public Utilities Director.

The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

Zoning Map:

AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.



Legend

Zoning Districts

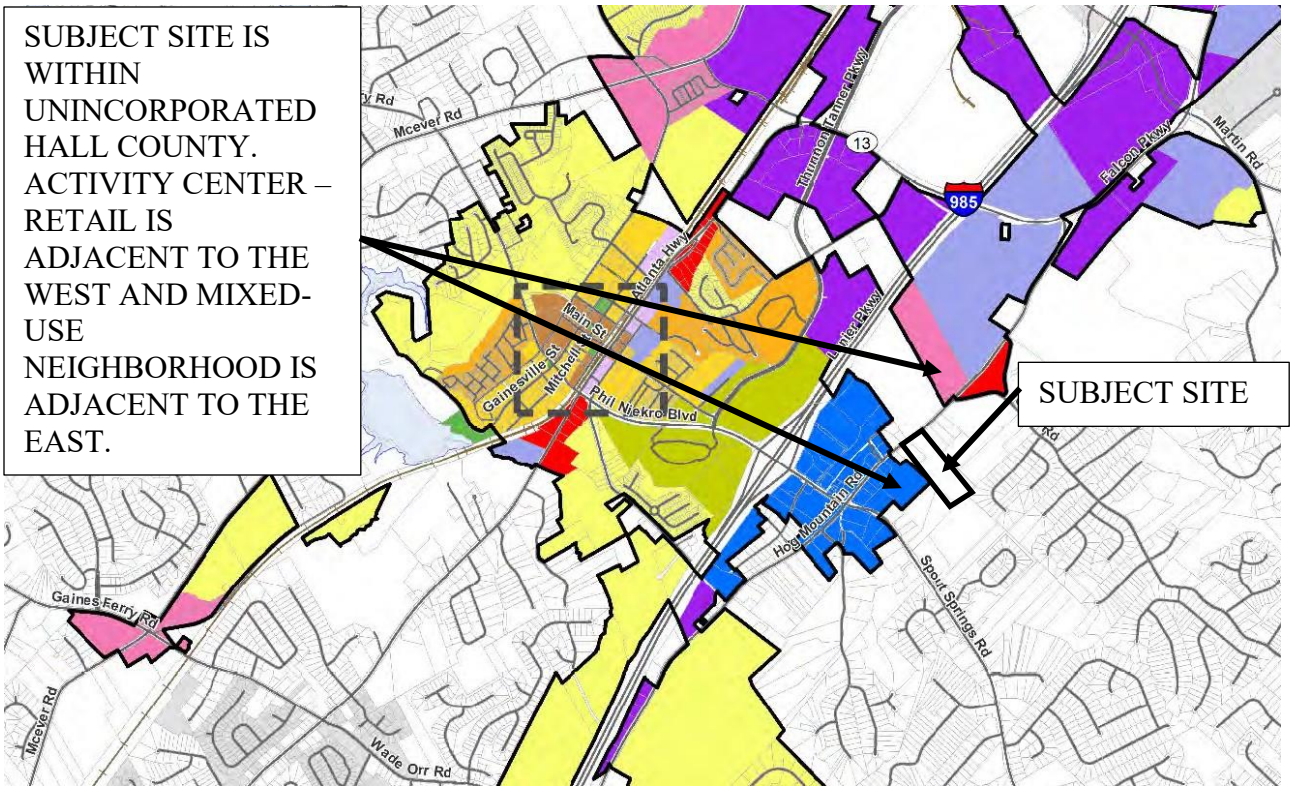
- Residential Low Density (R-1)
- Residential Moderate Density (R-2)
- Residential Multi-family (R-3)
- Traditional Neighborhood Development (TND)
- Planned Unit Development (PUD)
- Manufactured Home Park (MHP)
- Central Business District (CBD)
- Neighborhood Shopping (NS)
- Highway Business (HB)
- Institutional (INST)
- Manufacturing & Industrial, Light (M-1)
- Manufacturing & Industrial, Heavy (M-2)
- Agriculture (A)

Historic Districts

- Local Historic District

Future Development Plan:

SUBJECT SITE IS WITHIN UNINCORPORATED HALL COUNTY. ACTIVITY CENTER – RETAIL IS ADJACENT TO THE WEST AND MIXED-USE NEIGHBORHOOD IS ADJACENT TO THE EAST.



Other City Limits

CHARACTER AREA

- CONSERVATION
- SUBURBAN RESIDENTIAL
- TRADITIONAL NEIGHBORHOOD
- URBAN DENSITY COMMUNITY
- OLD TOWN
- MIXED USE - DOWNTOWN
- MIXED USE - NEIGHBORHOOD
- NEIGHBORHOOD COMMERCIAL
- ACTIVITY CENTER
- ACTIVITY CENTER - RETAIL
- INDUSTRIAL EMPLOYMENT
- INSTITUTIONAL CAMPUS





ARTICLE 2
Section 2.2. Design-Related Definitions.

Density: The number of families, individuals, dwelling units or housing structures per unit of land. Gross density is determined by dividing the number of families, individuals, dwelling units or housing structures by the gross area of the land (i.e. all land within the boundaries of the particular area excluding nothing). Net density is determined by subtracting from the gross area the following conditions identified on the land:

- 50 percent of any land identified as a wetland; and
- 50 percent of any land identified waters of the state including the buffer zones; and
- 50 percent of any land identified as a flood hazard boundary; and
- 50 percent of any land within an electricity transmission easement or right-of-way; and
- 50 percent of any land within a gas transmission easement or right-of-way.

The result of this calculation is the net acreage. The net acreage is divided into the number of units to determine the net density. The applicant provided a net density number but did not provide the areas of the wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.

Sec. 34.7. - Analysis Requirements for Rezoning

Applications to amend the official zoning map shall provide a written analysis comparing the proposed action with the criteria in this Section. A zoning map amendment or conditional use application may be justified only if it bears a reasonable relationship to the public health, safety, morality, or general welfare, and after consideration of the analysis requirements which may in individual cases be considered criteria relevant to the Zoning Administrator in making recommendations and by the City Council in the decision-making process.

a) *Whether the proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.*
The development of residential single-family detached homes is a suitable use in view of the use and development of adjacent and nearby property.

b) *Whether the proposal will adversely affect the existing use or usability of adjacent or nearby property.*
The proposed use will not adversely affect the existing use or usability of adjacent or nearby property.

c) *Whether the property to be affected by the proposal can be used in accordance with the existing regulations and has reasonable economic use as currently zoned.*
Annexation is necessary to connect the site to Flowery Branch's sanitary sewer system, while rezoning is required to align the site with the city's zoning designations.

d) *Whether the proposal will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.*
Input from the City's engineer was provided in this staff report.

e) *Whether the proposal is in conformity with the policy and intent of the comprehensive plan including but not limited to the character area map and future land use plan map.*
The proposed development is directly adjacent to the Activity Center – Retail character area. Mixed Use character area is located adjacent to the northeast on Hog Mountain Road. The proposed residential development would be a transitional zoning from retail to residential.

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 proposal.*

There are no other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the proposal.

g) *Existing use(s) and zoning of the subject property and nearby properties.*
The proposed development is for detached single-family and no other similar developments are nearby.

h) *Existing value of the property under the existing zoning district classification, the extent to which the property value of the subject property is diminished by the existing zoning district, and the value of the property under the proposed zoning district; if such information is provided by the applicant or can be discerned. This consideration may include the length of time the property has been vacant or unused as currently zoned and efforts taken by the property owner(s) to use the property or sell the property under the existing zoning district classification.*
Staff has no information to provide on the value of the subject property.

i) *Whether a proposed zoning map amendment or conditional use approval will be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.*
Staff has no information to provide on the value of the adjacent property.

j) *The possible creation of an isolated zoning district unrelated to adjacent and nearby districts.*
There are no SF-TH zoning designations in the area. This zoning would create an isolated zoning district.

k) *Possible effects of the change in zoning district map, or change in use, on the character of a zoning district.*
The proposed use is not similar to nearby development.

l) *The possible impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality.*
The subsequent LDP will be required to be compliant with all erosion and stormwater regulations.

m) *The relation that the proposed map amendment or conditional use bears to the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance*.

The proposed rezoning will have impacts on the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance due to the isolated zoning to SF-TH in this area.

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Topography could be considered a hardship. The variance request could be considered for approval with an alternative solution such as three-way stops at intersections and a two-way stop at the smallest radius curve. Alternatives shall be approved by the City Engineer.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 sq.ft. to 5,500 sq.ft. The applicant states the shape of the lot (lot width) limits the depth of lots across the parcel and the topography limits the placement of deeper lots. Topography and parcel shapes are legitimate hardships for a Variance.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course: Topography could be considered a hardship. The applicant proposes installing several speed tables and offsetting each home by five feet from adjacent homes to help break up the straight sight lines.

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The shape of the parcel is deeper than it is wide. The shape of the parcel requires two turns to be less than 275-foot radius to make the directional change. The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

(c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.

(d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.

(e) The special circumstances are not the result of the actions of the applicant;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The special circumstances are not the result of the actions of the applicant.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The special circumstances are not the result of the actions of the applicant.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The special circumstances are not the result of the actions of the applicant.

(f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

1. Variance Request **Section 1014, Table 10.1** radius of curvature:
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size:
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation:

Staff has worked with the applicant over time to get the plans to a point where it's reasonable to believe that each variance request is the minimum variance that will make possible the proposed use of land, building or structure in the use district proposed.

(g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.
With annexation and rezoning to the proper zoning category, residential dwellings would be permitted uses.

Variance Details:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography. The variance request could be considered for approval with an alternative solution approved by the City Engineer.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. Many lots are above the minimum lot area with an average lot size 6,852 square feet. The width of the parcel with two parallel streets limits the depth of some lots and the shape of a parcel can be considered a hardship.

   Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements. The applicant's

site plan indicated locations speed table / pedestrian crossings to slow speeds in straight runs of the road. The applicant is also proposing offsetting each home by five feet from adjacent homes to help break up the straight sight lines. Staff believe these alternatives maintain the intent of this code section.

Staff Recommendation for Annexation, Rezoning, and Variances

Recommendation:

There are three applications proposed at 4651 and 4665 Hog Mountain Road, parcels **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres). The first consideration for the City Council is the proposed annexation of both parcels. With annexation, the subject site must be rezoned from Hall County AR-1 – Agricultural & Residential - R-1- Residential to a Flowery Branch zoning category. The applicant is proposing to rezone the property to Single-Family Townhome Development (SF-TH).

Variance Recommendations for Ordinance 776:

Staff recommends **approval** of Ordinance 776 for three Variances with the following conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is recommended for approval with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.

2. A Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.

3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is recommended for approval the following conditions:

    1. The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
    2. The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

Staff recommends **approval of the Annexation and Rezoning** applications with the conditions provided.

Recommended Conditions of Approval of Annexation and Rezoning:

Please find below the proffered conditions for the proposed rezoning, organized by discipline and drafted to ensure consistency with the submitted concept materials and to protect the public interest:

1. **General Development**
    a. Building Locations and Scope:
    The total number of residential lots within the detached townhome development shall not exceed 75.
    b. Density Measurement:
    Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
    c. Maximum net density shall not exceed 6 units per acre.
    d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
        i. No more than ten percent (10%) of the total homes may be leased.
        ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
        iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

2. **Civil Site Engineering**
    a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
    b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
    c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
    d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.
3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.

6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.
8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026

ORDINANCE NO. 775

AN ORDINANCE TO REZONE, REAL PROPERTY TOTALING 19.398 +/- ACRES OF LAND, OWNED BY CDII PROPERTIES, LLC, IDENTIFIED AS 4651 & 4665 HOG MOUNTAIN ROAD, HALL COUNTY TAX PARCELS 15046 000008B AND 15046 000008 FROM HALL COUNTY RESIDENTIAL 1 (R-1) AND AGRICULTURAL RESIDENTIAL 1 (AR-1) TO FLOWERY BRANCH SINGLE-FAMILY TOWNHOME (SF-TH) AND AS SHOWN AND DESCRIBED ON ATTACHED EXHIBIT "A", AS CONDITIONED IN EXHIBIT "B", TO AUTHORIZE AN UPDATE TO THE OFFICIAL ZONING MAP, PROVIDING FOR SEVERABILITY, , PROVIDING FOR AN EFFECTIVE DATE, REPEALING CONFLICTING ORDINANCES, AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, CDII Properties LLC owns the subject parcels of land identified as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 as shown and described on Exhibit "A"; and

WHEREAS, a complete description of the subject property being rezoned is included herein; and

WHEREAS, the City Council held a public hearing at the meeting on April 2nd, 2026, duly noticed as prescribed by law and published in the Gainesville Times, regarding said application, as shall be set forth in the minutes of said meeting; and,

WHEREAS, the City Council of the City of Flowery Branch, Georgia has considered the appropriate zoning classification of the subject property in light of the comprehensive plan,

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. FINDINGS.

The City Council finds that the proposed rezoning from Hall County AR-1 & R-1 to City of the Flowery Branch SF-TH is consistent with the adopted standards for governing the exercise of the zoning power consistent with O.C.G.A. § 36-66-5 and requirements of the Zoning Ordinance as identified below.

1. The proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.

2. The proposal is not expected to adversely affect the existing use or usability of adjacent or nearby property.

3. Use as SF-TH is appropriate given the size of the property and it is reasonable to believe the property will have reasonable economic value so zoned.

4. The development if approved and constructed is not expected to result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

5. The proposal is generally in conformity with the policy and intent of the comprehensive plan including the character area map and future land use plan map.

6. The proposal is considered appropriate in view of existing use(s) and zoning of the subject property and nearby properties.

7. No precise determination has been made by staff with regard to the value differential between development under the current zoning as opposed to SF-TH, although it is reasonable to believe value would increase as a result of the rezoning.

8. A proposed development will not be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.

9. There are no known adverse effects that would result from the change in zoning district map, or change in use, on the character of a zoning district.

10. Development as proposed is not expected to impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality. Compliance with city subdivision and land development regulations will be required, which include but are not limited to soil erosion and sedimentation, stormwater, and flood damage prevention.

SECTION 2. REZONING.

The subject parcel, as shown and described on Exhibit "A" and as conditioned in Exhibit "B", is hereby rezoned from Hall County AR-1 & R-1 to Flowery Branch SF-TH.

SECTION 3. AMENDMENT OF THE ZONING MAP.

This Ordinance is enacted as an amendment to the Zoning Map of Flowery Branch, Georgia. Accordingly, the Zoning Administrator is hereby authorized to update the Official Map consistent with Article 3 of the Zoning Ordinance.

SECTION 4. SEVERABILITY.

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 5. EFFECTIVE DATE.

The effective date of this Ordinance shall be May 7th, 2026.

SECTION 6. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____, 2026.

_____
Oliver McClellan, Mayor

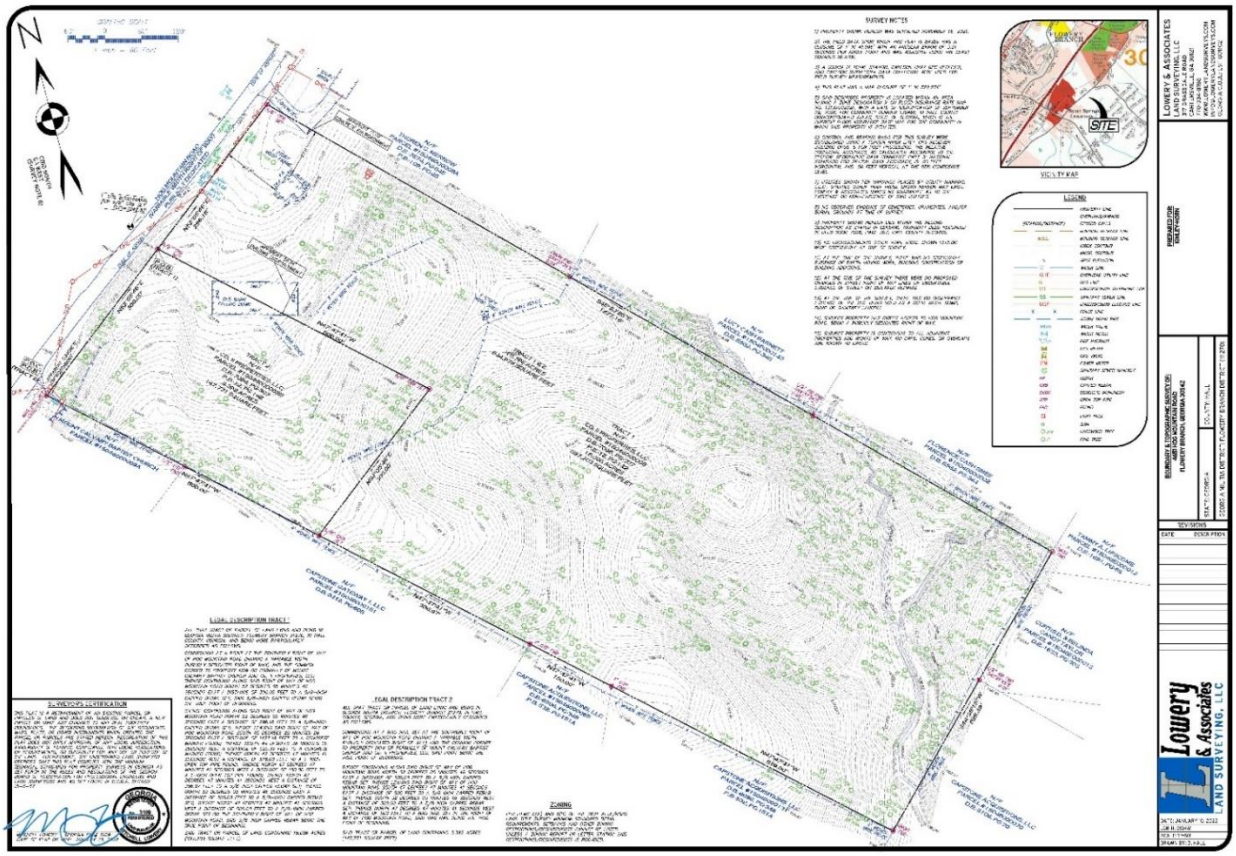
ATTEST

_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM

_____
Ted C. Baggett, City Attorney

Exhibit A


SURVEY NOTES
LEGEND
LEGAL DESCRIPTION TRACT 1
LEGAL DESCRIPTION TRACT 2
ZONING
SURVEYOR'S CERTIFICATION
LOWERY & ASSOCIATES
LAND SURVEYING, LLC

LEGAL DESCRIPTION TRACT 1

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC; THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 296.18 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 45 DEGREES 22 MINUTES 26 SECONDS EAST A DISTANCE OF 1477.18 FEET TO A CONCRETE MARKER FOUND; THENCE SOUTH 44 DEGREES 38 MINUTES 15 SECONDS WEST A DISTANCE OF 525.39 FEET TO A CONCRETE MARKER FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 519.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 150.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 386.97 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500.00 FEET TO A 5/8–INCH CAPPED REBAR SET ON THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 16.006 ACRES (697,203 SQUARE FEET).

LEGAL DESCRIPTION TRACT 2

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A MAG NAIL SET AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC, SAID POINT BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET. THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 47 DEGREES 47 MINUTES 41 SECONDS EAST A DISTANCE OF 500 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 52 DEGREES 05 MINUTES 46 SECONDS WEST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500 FEET TO A MAG NAIL SET IN THE RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID MAG NAIL BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 3.392 ACRES (147,771 SQUARE FEET).

Exhibit 'B'

Conditions of Use:

1. **General Development**
   a. Building Locations and Scope:
   The total number of residential lots within the detached townhome development shall not exceed 75.
   b. Density Measurement:
   Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
   c. Maximum net density shall not exceed 6 units per acre.
   d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
      i. No more than ten percent (10%) of the total homes may be leased.
      ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
      iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.
2. **Civil Site Engineering**
   a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
   b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
   c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
   d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.

3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.
6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.

8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.
9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: April 2nd, 2026

Subject: Annexation, Rezoning, and Variances

Applicant: Highpoint Development
1776 Peachtree Street
Atlanta, GA 30309
502-386-7022

Owner: CD II Properties, LLC
P.O. Box 99
Demorest, GA 30535
502-386-7022

Existing Zoning: AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.

Location and Size:

4651 Hog Mountain Road; Parcel 15046 000008; 16.0 Acres
4665 Hog Mountain Road; Parcel 15046 000008B; 3.398
Total Area: 19.398 Acres

Proposed Annexation:

The applicant proposes the annexation of the above-referenced parcels (19.398 Acres) from unincorporated Hall County into the City limits of Flowery Branch.

Proposed Zoning:

The applicant is proposing to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

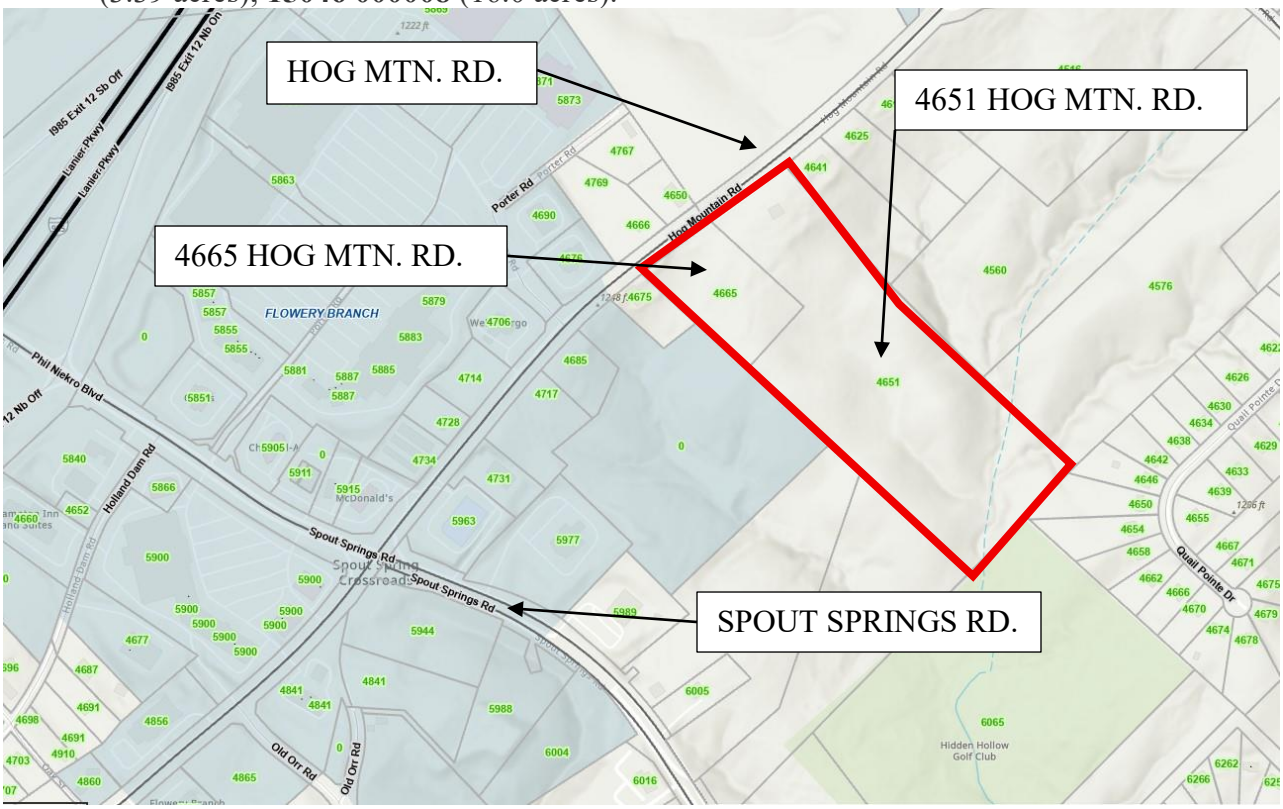
The applicant proposes the development of 75 single-family detached residential lots. The two subject parcels are requested to be rezoned from Hall County AR-1 (Agricultural Residential) and R-1 (Residential) zoning districts, located within unincorporated Hall County, to the Single-Family Townhome (SF-TH) zoning district within the City of Flowery Branch. Concurrent variances from the SF-TH zoning requirements and applicable dimensional standards are also requested.

Concurrent Variances:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography.
2. Variance to **Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. The site plan provided by the applicant lists a total of 75 lots.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements.

Location:

- 4665 and 4651 Hog Mountain Road; tax parcel identification numbers **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres).



Site Plan:

The applicant is proposing 75 single-family detached lots on 19.398 acres.



The site is located on Hog Mountain Road north of the intersection with Spout Springs Road.
The site is an undeveloped wooded lot with state waters located on the eastern side of the site.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC

Architectural Concepts:

The applicant submitted conceptual renderings of the proposed single-family detached architecture. Per the submitted renderings it appears the homes meet architectural standards of material and material application. However, without detailed floor plans, staff is unable to verify compliance with the City's established dimensional standards. To facilitate a thorough review, the applicant must provide complete architectural drawings, to confirm that all requirements are met. A detailed review is done by staff following Article 40 prior to the issuance of permits. The design concepts provided are for illustrative purposes only and were submitted as part of the rezoning case.



ARCHITECTURAL FEATURES:

The achitecture leans toward a mountain bungalow style, with forms and finishes that feel sturdy, familiar, and tied to the landscape. Dark charcoal accents sharpen the earthy palette, while carriage-style garage doors and well-placed sconces add character without slipping into ornament. Matching metal gutters bring a clean outline to the façades, and the porch roof extending across the front-facing garage helps keep everything at a comfortable, human scale. The result is a street presence that feels connected, warm, and intentionally crafted—neighbors, not statements.



EXAMPLE FRONT ELEVATION DARK COLOR SCHEME



COLOR PALETTE:

The three offered schemes—light, mid-tone, and dark—are drawn from the muted, earthy tones of the North Georgia landscape. Each palette reflects the surrounding ridge and creek setting, favoring natural hues: soft mineral whites, weathered wood browns, and deeper charcoal colors that echo stone, soil, and shaded canopy. Together, they provide variation without discord, allowing homes to feel individually tailored yet quietly unified within the broader landscape.



EXAMPLE FRONT ELEVATION LIGHT COLOR SCHEME









ARCHITECTURAL FEATURES:

Details stay simple and purposeful. Porch brackets and extended overhangs provide clear structure and shade without excess. Gable vents, occasional gable windows, and selectively used shutters add just enough dimension to the façades, keeping each home grounded and consistent without feeling repetitive.



EXAMPLE FRONT ELEVATION MID-COLOR SCHEME



EXAMPLE TYPICAL REAR ELEVATION WITH COVERED PORCH



EXAMPLE FRONT ELEVATION BRICK MATERIAL



EXAMPLE SIDE VIEW OF FRONT PORCH WITH BRICK

Open Space Analysis:

Pursuant to Article 10 – Development Requirements and Guidelines, Sec. 10.22 – Open Space Requirements, any proposed residential development is required to provide a total minimum of 15% open space, derived from a combination of Civic Space options (10%) and Amenity Space options (5%).
The site data table provided by the applicant lists a total of 18.5% open space with location details shown on the site plan:



Site Data Table	Required	Provided
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

The site plan proposes several open space options in various locations throughout the development and includes a pocket park, community pavilion, community fire pit, centralized mail kiosk with parking, landscaped seating areas, and a trail system comprised of both hardscape and mulch trails with a stream crossing. Detailed landscape plans and a trail plan including a material list for trail surfacing options, seating, fencing, and stream crossing will be required at time of LDP review.

The following conceptual images were provided by the applicant to illustrate amenity spaces and trail features. Plans submitted for amenity and civic spaces and trail features should substantially adhere to the images below:



Traffic Impacts, Vehicular Flow, and Entrances/Exits

The Conceptual Site Plan for the proposed development indicates 75 residential single-family detached units.

1. Site Access

- A single entrance is proposed off Hog Mountain Road.
- The entrance must include both a right-turn and left-turn lane in. The exit shall include both a left and right dedicated lane. These turn lanes will help to alleviate congestion during peak demand periods and maintain the flow of through traffic. All roadway designs shall be in accordance with the GDOT Driveway Manual.
- The developer is responsible for obtaining and dedicating to the City any right-of-way necessary to construct the required left-turn and right-turn lanes into the site, ensuring that a minimum 13-foot-wide shoulder is maintained.
- Road improvements meeting the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, and 5-foot sidewalk—are required along the entire frontage of the site.
- All costs associated with the required road improvements—including the left-turn lane, right-turn lane, curb and gutter, sidewalk, and associated storm drainage—shall be borne by the developer.

2. Sight Distance

- The driveway design must meet the minimum sight-distance requirements specified in the GDOT Driveway Manual. The engineer shall verify that both stopping-sight distance (SSD) and operational-sight distance (OSD) criteria are satisfied under existing field conditions.

3. Utility Coordination

- Any utilities located beneath the proposed deceleration or turn-lane pavement must be relocated outside of the pavement area.
- All costs associated with utility relocation shall be borne by the developer and coordination with the respective utility owners must be completed prior to construction.

4. Traffic Impact Study

- The current Traffic Study by A&R Engineering was prepared for single-family detached houses by using category 210 for Single-Family Detached.

- All design elements shall comply with GDOT standards. Coordination with Hall County DOT, City of Flowery Branch, and affected utility providers should occur early in the design process to avoid delays.
- The Traffic Impact Study shows that a dedicated left turn in and right turn deceleration lanes are warranted. Recommended conditions will incorporate the required improvements for traffic relief.
- The Traffic Impact Study recommends a single outbound exit lane from the proposed subdivision. However, the study also indicates that during the peak AM period, school dismissal period, and peak PM period, outbound movements from the site operate at a Level of Service (LOS) D. Based on these findings, staff recommends the provision of two outbound exit lanes—one dedicated left-turn lane and one dedicated right-turn lane—to improve operational efficiency and overall LOS for vehicles exiting the subdivision.

Level of Service LOS Description

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.

7.0 Conclusions and Recommendations

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Sewer Design and Capacity Impacts

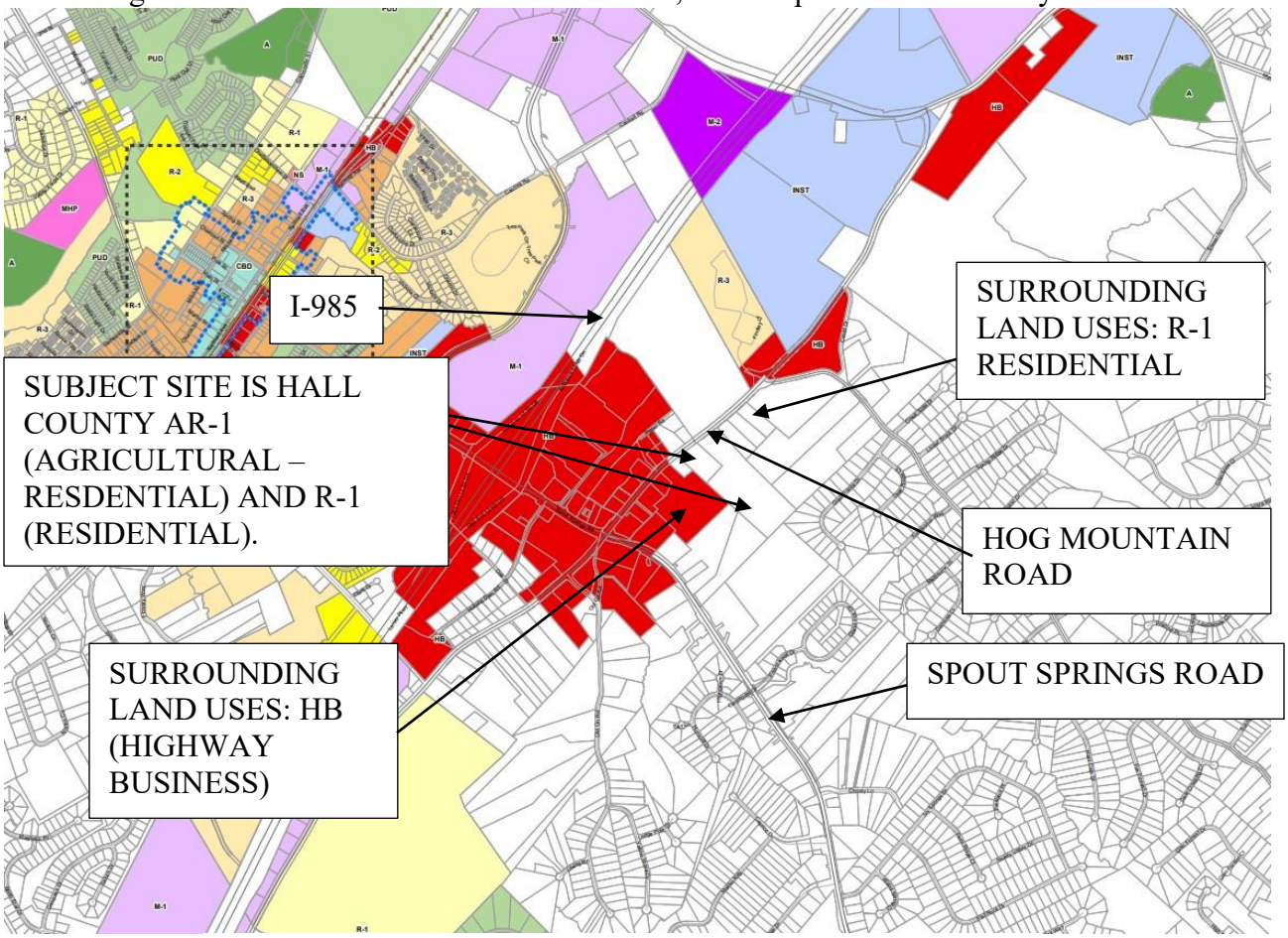
The proposed development of 75 residential units will generate a peak sanitary sewer demand of **20,625** gallons per day, based on the City's standard rate of 275 gallons per unit. Given the City's current peak capacity of **727,798** gallons per day, bringing these units online would reduce available capacity to approximately **707,173** gallons per day.

Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Public Utilities Director.

The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

Zoning Map:

AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.



Legend

Zoning Districts

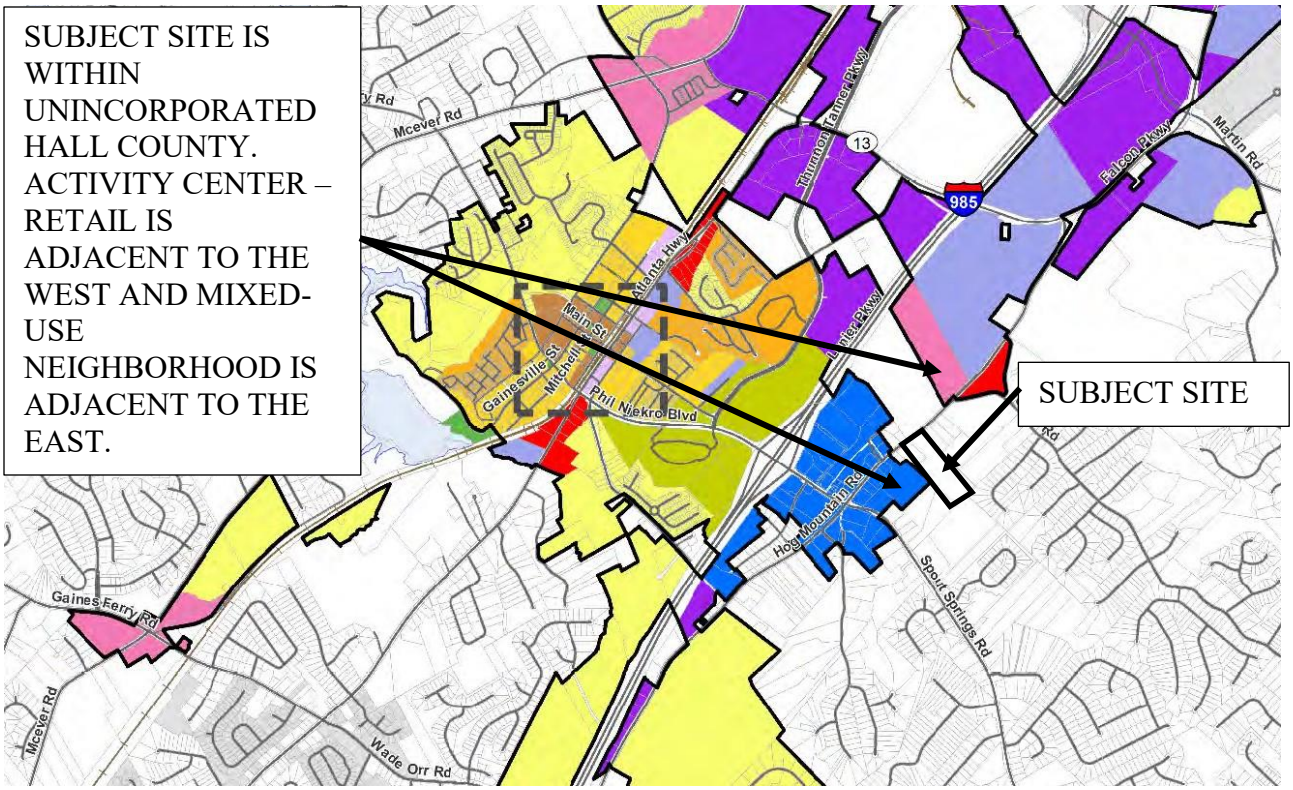
- Residential Low Density (R-1)
- Residential Moderate Density (R-2)
- Residential Multi-family (R-3)
- Traditional Neighborhood Development (TND)
- Planned Unit Development (PUD)
- Manufactured Home Park (MHP)
- Central Business District (CBD)
- Neighborhood Shopping (NS)
- Highway Business (HB)
- Institutional (INST)
- Manufacturing & Industrial, Light (M-1)
- Manufacturing & Industrial, Heavy (M-2)
- Agriculture (A)

Historic Districts

- Local Historic District

Future Development Plan:

SUBJECT SITE IS WITHIN UNINCORPORATED HALL COUNTY. ACTIVITY CENTER – RETAIL IS ADJACENT TO THE WEST AND MIXED-USE NEIGHBORHOOD IS ADJACENT TO THE EAST.



Other City Limits

CHARACTER AREA

- CONSERVATION
- SUBURBAN RESIDENTIAL
- TRADITIONAL NEIGHBORHOOD
- URBAN DENSITY COMMUNITY
- OLD TOWN
- MIXED USE - DOWNTOWN
- MIXED USE - NEIGHBORHOOD
- NEIGHBORHOOD COMMERCIAL
- ACTIVITY CENTER
- ACTIVITY CENTER - RETAIL
- INDUSTRIAL EMPLOYMENT
- INSTITUTIONAL CAMPUS





ARTICLE 2
Section 2.2. Design-Related Definitions.

Density: The number of families, individuals, dwelling units or housing structures per unit of land. Gross density is determined by dividing the number of families, individuals, dwelling units or housing structures by the gross area of the land (i.e. all land within the boundaries of the particular area excluding nothing). Net density is determined by subtracting from the gross area the following conditions identified on the land:

- 50 percent of any land identified as a wetland; and
- 50 percent of any land identified waters of the state including the buffer zones; and
- 50 percent of any land identified as a flood hazard boundary; and
- 50 percent of any land within an electricity transmission easement or right-of-way; and
- 50 percent of any land within a gas transmission easement or right-of-way.

The result of this calculation is the net acreage. The net acreage is divided into the number of units to determine the net density. The applicant provided a net density number but did not provide the areas of the wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.

Sec. 34.7. - Analysis Requirements for Rezoning

Applications to amend the official zoning map shall provide a written analysis comparing the proposed action with the criteria in this Section. A zoning map amendment or conditional use application may be justified only if it bears a reasonable relationship to the public health, safety, morality, or general welfare, and after consideration of the analysis requirements which may in individual cases be considered criteria relevant to the Zoning Administrator in making recommendations and by the City Council in the decision-making process.

a) *Whether the proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.*
The development of residential single-family detached homes is a suitable use in view of the use and development of adjacent and nearby property.

b) *Whether the proposal will adversely affect the existing use or usability of adjacent or nearby property.*
The proposed use will not adversely affect the existing use or usability of adjacent or nearby property.

c) *Whether the property to be affected by the proposal can be used in accordance with the existing regulations and has reasonable economic use as currently zoned.*
Annexation is necessary to connect the site to Flowery Branch's sanitary sewer system, while rezoning is required to align the site with the city's zoning designations.

d) *Whether the proposal will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.*
Input from the City's engineer was provided in this staff report.

e) *Whether the proposal is in conformity with the policy and intent of the comprehensive plan including but not limited to the character area map and future land use plan map.*
The proposed development is directly adjacent to the Activity Center – Retail character area. Mixed Use character area is located adjacent to the northeast on Hog Mountain Road. The proposed residential development would be a transitional zoning from retail to residential.

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 proposal.*

There are no other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the proposal.

g) *Existing use(s) and zoning of the subject property and nearby properties.*
The proposed development is for detached single-family and no other similar developments are nearby.

h) *Existing value of the property under the existing zoning district classification, the extent to which the property value of the subject property is diminished by the existing zoning district, and the value of the property under the proposed zoning district; if such information is provided by the applicant or can be discerned. This consideration may include the length of time the property has been vacant or unused as currently zoned and efforts taken by the property owner(s) to use the property or sell the property under the existing zoning district classification.*
Staff has no information to provide on the value of the subject property.

i) *Whether a proposed zoning map amendment or conditional use approval will be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.*
Staff has no information to provide on the value of the adjacent property.

j) *The possible creation of an isolated zoning district unrelated to adjacent and nearby districts.*
There are no SF-TH zoning designations in the area. This zoning would create an isolated zoning district.

k) *Possible effects of the change in zoning district map, or change in use, on the character of a zoning district.*
The proposed use is not similar to nearby development.

l) *The possible impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality.*
The subsequent LDP will be required to be compliant with all erosion and stormwater regulations.

m) *The relation that the proposed map amendment or conditional use bears to the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance*.

The proposed rezoning will have impacts on the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance due to the isolated zoning to SF-TH in this area.

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Topography could be considered a hardship. The variance request could be considered for approval with an alternative solution such as three-way stops at intersections and a two-way stop at the smallest radius curve. Alternatives shall be approved by the City Engineer.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 sq.ft. to 5,500 sq.ft. The applicant states the shape of the lot (lot width) limits the depth of lots across the parcel and the topography limits the placement of deeper lots. Topography and parcel shapes are legitimate hardships for a Variance.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course: Topography could be considered a hardship. The applicant proposes installing several speed tables and offsetting each home by five feet from adjacent homes to help break up the straight sight lines.

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The shape of the parcel is deeper than it is wide. The shape of the parcel requires two turns to be less than 275-foot radius to make the directional change. The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

(c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.

(d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.

(e) The special circumstances are not the result of the actions of the applicant;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The special circumstances are not the result of the actions of the applicant.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The special circumstances are not the result of the actions of the applicant.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The special circumstances are not the result of the actions of the applicant.

(f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

1. Variance Request **Section 1014, Table 10.1** radius of curvature:
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size:
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation:

Staff has worked with the applicant over time to get the plans to a point where it's reasonable to believe that each variance request is the minimum variance that will make possible the proposed use of land, building or structure in the use district proposed.

(g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.
With annexation and rezoning to the proper zoning category, residential dwellings would be permitted uses.

Variance Details:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography. The variance request could be considered for approval with an alternative solution approved by the City Engineer.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. Many lots are above the minimum lot area with an average lot size 6,852 square feet. The width of the parcel with two parallel streets limits the depth of some lots and the shape of a parcel can be considered a hardship.

   Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements. The applicant's

site plan indicated locations speed table / pedestrian crossings to slow speeds in straight runs of the road. The applicant is also proposing offsetting each home by five feet from adjacent homes to help break up the straight sight lines. Staff believe these alternatives maintain the intent of this code section.

Staff Recommendation for Annexation, Rezoning, and Variances

Recommendation:

There are three applications proposed at 4651 and 4665 Hog Mountain Road, parcels **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres). The first consideration for the City Council is the proposed annexation of both parcels. With annexation, the subject site must be rezoned from Hall County AR-1 – Agricultural & Residential - R-1- Residential to a Flowery Branch zoning category. The applicant is proposing to rezone the property to Single-Family Townhome Development (SF-TH).

Variance Recommendations for Ordinance 776:

Staff recommends **approval** of Ordinance 776 for three Variances with the following conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is recommended for approval with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.

2. A Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.

3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is recommended for approval the following conditions:

    1. The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
    2. The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

Staff recommends **approval of the Annexation and Rezoning** applications with the conditions provided.

Recommended Conditions of Approval of Annexation and Rezoning:

Please find below the proffered conditions for the proposed rezoning, organized by discipline and drafted to ensure consistency with the submitted concept materials and to protect the public interest:

1. **General Development**
    a. Building Locations and Scope:
    The total number of residential lots within the detached townhome development shall not exceed 75.
    b. Density Measurement:
    Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
    c. Maximum net density shall not exceed 6 units per acre.
    d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
        i. No more than ten percent (10%) of the total homes may be leased.
        ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
        iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

2. **Civil Site Engineering**
    a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
    b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
    c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
    d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.
3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.

6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.
8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE
AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026

TRAFFIC IMPACT STUDY
FOR
PROPOSED RESIDENTIAL DEVELOPMENT
AT 4665 HOG MOUNTAIN ROAD

HALL COUNTY, GEORGIA



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A & R Project # 25-081

TABLE OF CONTENTS

Item **Page**

1.0 Introduction 1
2.0 Existing Facilities / Conditions 3
2.1 Roadway Facilities 3
2.1.1 Hog Mountain Road 3
2.1.2 Spout Springs Road 3
2.1.3 Findley Drive 3
2.1.4 Cash Road 3
3.0 Study Methodology 4
3.1 Unsignalized Intersections 4
3.2 Signalized Intersections 5
4.0 Existing 2026 Traffic Analysis 6
4.1 Existing Traffic Volumes 6
4.2 Existing Traffic Operations 10
5.0 Proposed Development 11
5.1 Trip Generation 13
5.2 Trip Distribution 13
5.3 Adjacent Development at 4560 Hog Mountain Road 14
5.3.1 Shifted Findley Drive Traffic 14
6.0 Future 2027 Traffic Analysis 18
6.1 Future "No-Build" Conditions 18
6.1.1 Annual Traffic Growth 18
6.2 Future "Build" Conditions 18
6.3 Auxiliary Lane Analysis 21
6.3.1 Left Turn Lane Analysis 21
6.3.2 Deceleration Turn Lane Analysis 21
6.4 Future Traffic Operations 22
7.0 Conclusions and Recommendations 24
7.1 Recommendations for Site Access Configuration 24
Appendix

LIST OF TABLES

Item **Page**

Table 1 – Level of Service Criteria for Unsignalized Intersections 4
Table 2 – Level of Service Criteria for Signalized Intersections 5
Table 3 – Existing 2025 Intersection Operations 10
Table 4 – Trip Generation (Proposed Site) 13
Table 5 – Trip Generation (Adjacent site) 14
Table 6 – GDOT Requirements for Left Turn Lanes 21
Table 7 – GDOT Requirements for Deceleration Lanes 21
Table 8 – Future Intersection Operations 22

LIST OF FIGURES

Item **Page**

Figure 1 – Location Map 2
Figure 2 – 2025 Weekday Peak Hour Volumes 7
Figure 3 – Existing 2026 Weekday Peak Hour Volumes 8
Figure 4 – Existing Traffic Control and Lane Geometry 9
Figure 5 – Site Plan 12
Figure 6 – Trip Distribution and Site-Generated Peak Hour Volumes – Proposed Site 15
Figure 7 – Trip Distribution and Site-Generated Peak Hour Volumes – Adjacent Site 16
Figure 8 – Trip Distribution and Site-Generated Peak Hour Volumes – Adjacent Site (Shifted Trips) 17
Figure 9 – Future (No-Build) Peak Hour Volumes 19
Figure 10 – Future (Build) Peak Hour Volumes 20
Figure 11 – Future Traffic Control and Lane Geometry 23

1.0 INTRODUCTION

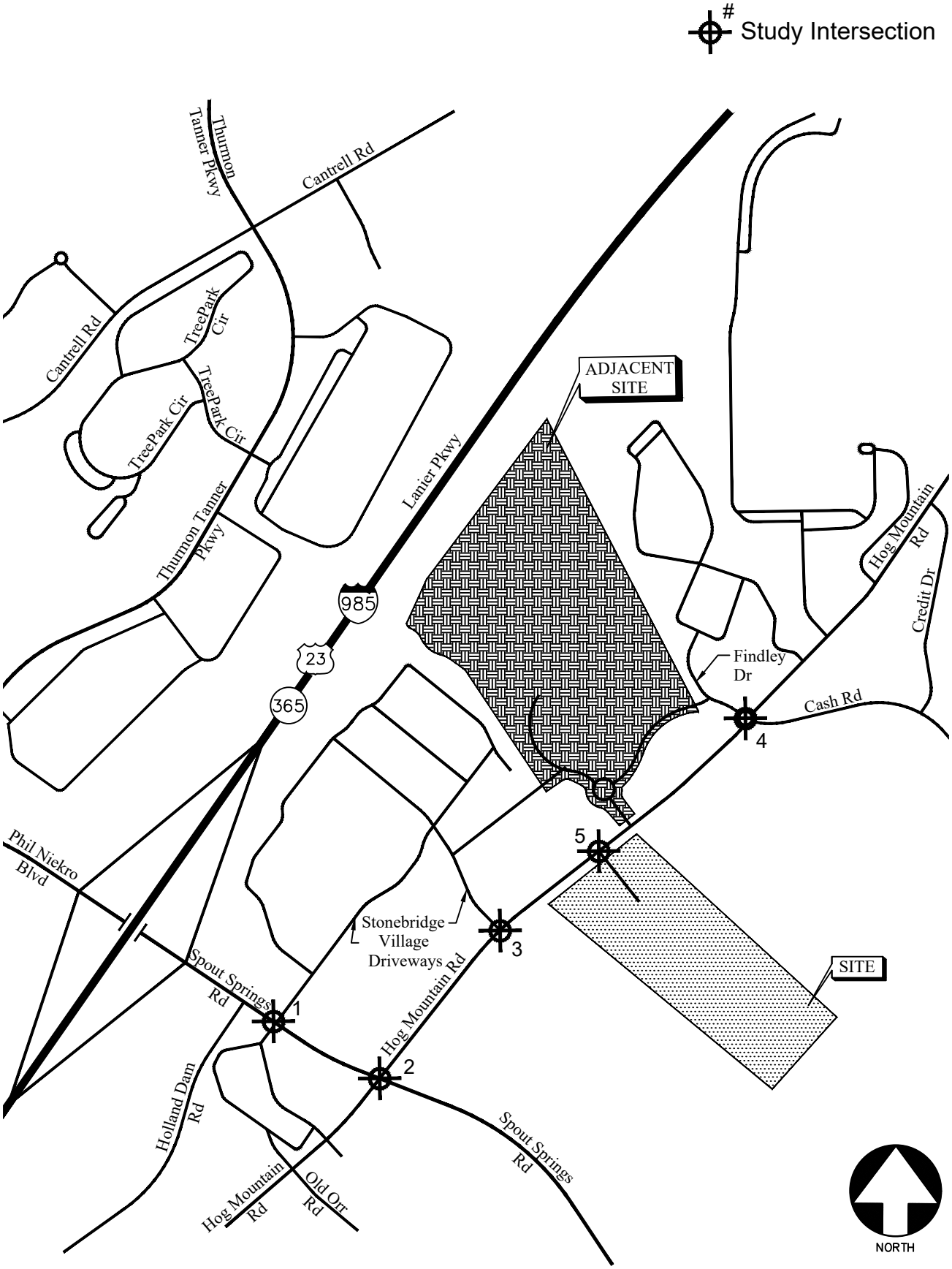
The purpose of this study is to determine the traffic impact from the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County, Georgia. The traffic analysis evaluates the current operations and the future conditions with the traffic generated by the development. The proposed residential development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.



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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road

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 are 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 Hog Mountain Road

Hog Mountain Road is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID 139-0191) indicate that the daily traffic volume on Hog Mountain Road in 2024 was 8,000 vehicles per day south of Spout Springs Road. GDOT classifies Hog Mountain Road as a major collector roadway.

2.1.2 Spout Springs Road

Spout Springs Road is a four-lane roadway that is median-divided to the east of its intersection with Hog Mountain Road and has a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 139-0441) indicate that the daily traffic volume on Spout Springs Road in 2024 was 13,600 vehicles per day east of Hog Mountain Road. GDOT classifies Spout Springs Road as a minor arterial roadway.

2.1.3 Findley Drive

Findley Drive is a two-lane residential roadway in the vicinity of the site. Findley Drive changes names to Cash Road to the east of its intersection with Hog Mountain Road.

2.1.4 Cash Road

Cash Road is an east-west, two-lane, undivided roadway with a posted speed limit of 40 mph in the vicinity of the site. GDOT traffic counts (Station ID 139-0779) indicate that the daily traffic volume on Cash Road in 2024 was 3,210 vehicles per day east of Credit Drive. GDOT classifies Cash Road as a major collector roadway.

3.0 STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board Highway Capacity Manual, 7th edition (HCM 7). Synchro 12 software, which utilizes the HCM methodology, was used for 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 controlled by a stop sign on minor streets, the level of service (LOS) for motor vehicles with controlled movements is determined by the computed control delay according to the thresholds stated in Table 1 below. LOS is determined for each minor street movement (or shared movement), as well as for major street left turns. LOS is not defined for the intersection as a whole or for major street approaches. The LOS of any controlled movement which experiences a volume-to-capacity ratio greater than 1 is designed as "F" regardless of the control delay.

Control delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Several factors affect the control 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 the main road without experiencing long delays.

TABLE 1 – LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)	LOS by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 and ≤ 15	B	F
> 15 and ≤ 25	C	F
> 25 and ≤ 35	D	F
> 35 and ≤ 50	E	F
> 50	F	F

*The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection.

Source: Highway Capacity Manual, 7th edition, Exhibit 20-2 *LOS Criteria: Motorized Vehicle Mode*

3.2 Signalized Intersections

According to HCM procedures, LOS can be calculated for the entire intersection, each intersection approach, and each lane group. HCM uses control delay alone to characterize LOS for the entire intersection or an approach. Control delay per vehicle is composed of initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Both control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. A volume-to-capacity ratio greater than 1.0 for a lane group indicates failure from capacity perspective. Therefore, such a lane group is assigned LOS F regardless of the amount of control delay.

Table 2 below summarizes the LOS criteria from HCM for motorized vehicles at signalized intersections.

TABLE 2 – LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)*	LOS for Lane Group by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 55	D	F
> 55 and ≤ 80	E	F
> 80	F	F

*For approach-based and intersection wide assessments, LOS is defined solely by control delay

Source: Highway Capacity Manual, 7th edition, Exhibit 19-8 *LOS Criteria: Motorized Vehicle Mode*

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

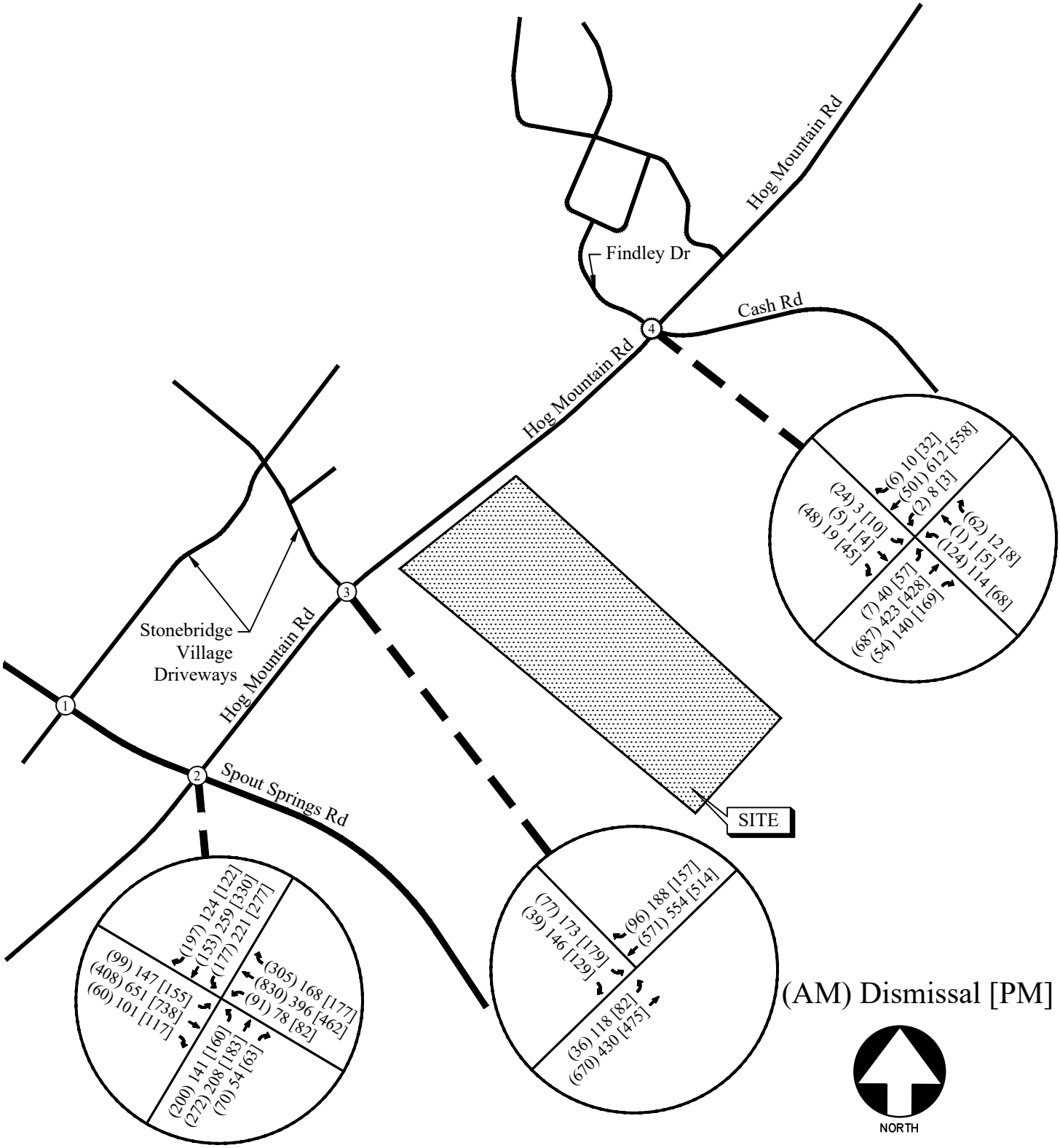
4.0 EXISTING 2026 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

1. Spout Springs Road at Stonebridge Village West Driveway
2. Spout Springs Road at Hog Mountain Road
3. Hog Mountain Road at Stonebridge Village East Driveway
4. Hog Mountain Road at Findley Drive / Cash Road

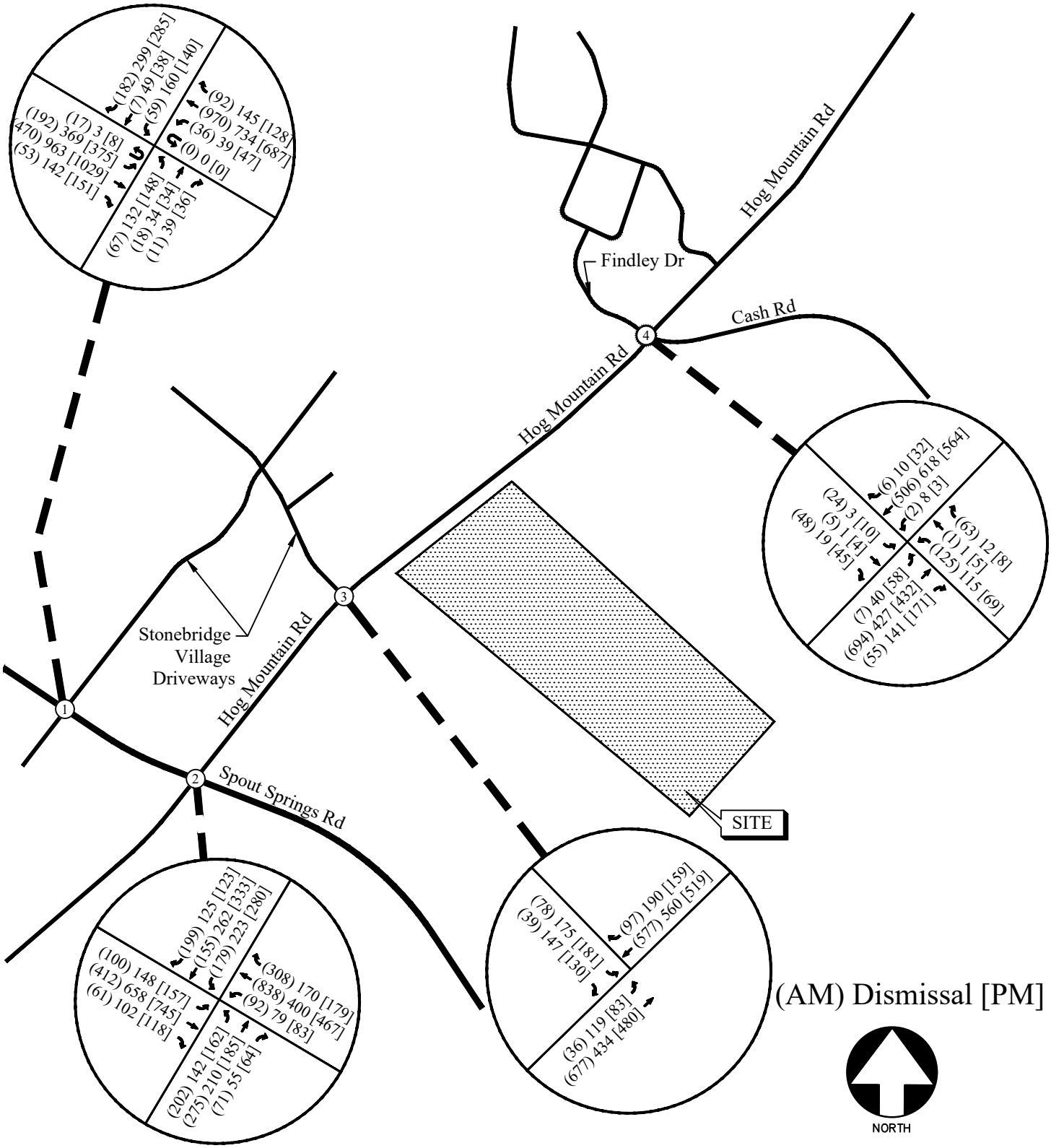
Turning movement counts for intersections 2, 3, and 4 were collected on Tuesday, March 04, 2025, and the traffic data for intersection was recorded on January 08, 2026. All turning movement counts were recorded during the AM, school dismissal, and PM peak hours between 7:00 AM to 9:00 AM, 2:00 PM to 4:00 PM, and 4:00 PM to 6:00 PM, respectively. The four consecutive 15-minute interval volumes that produced the highest volume at the intersections were then determined. Because the traffic counts for intersections 2, 3, and 4 were collected in 2025, a 1% annual linear growth factor (explained in Page 18) was applied to these volumes to estimate the existing 2026 intersection data. These adjusted counts make up the 2025 peak hour traffic volumes and are shown in Figure 3. The existing traffic control and lane geometry for the intersections are shown in Figure 4.



2025 WEEKDAY PEAK HOUR VOLUMES FIGURE 2

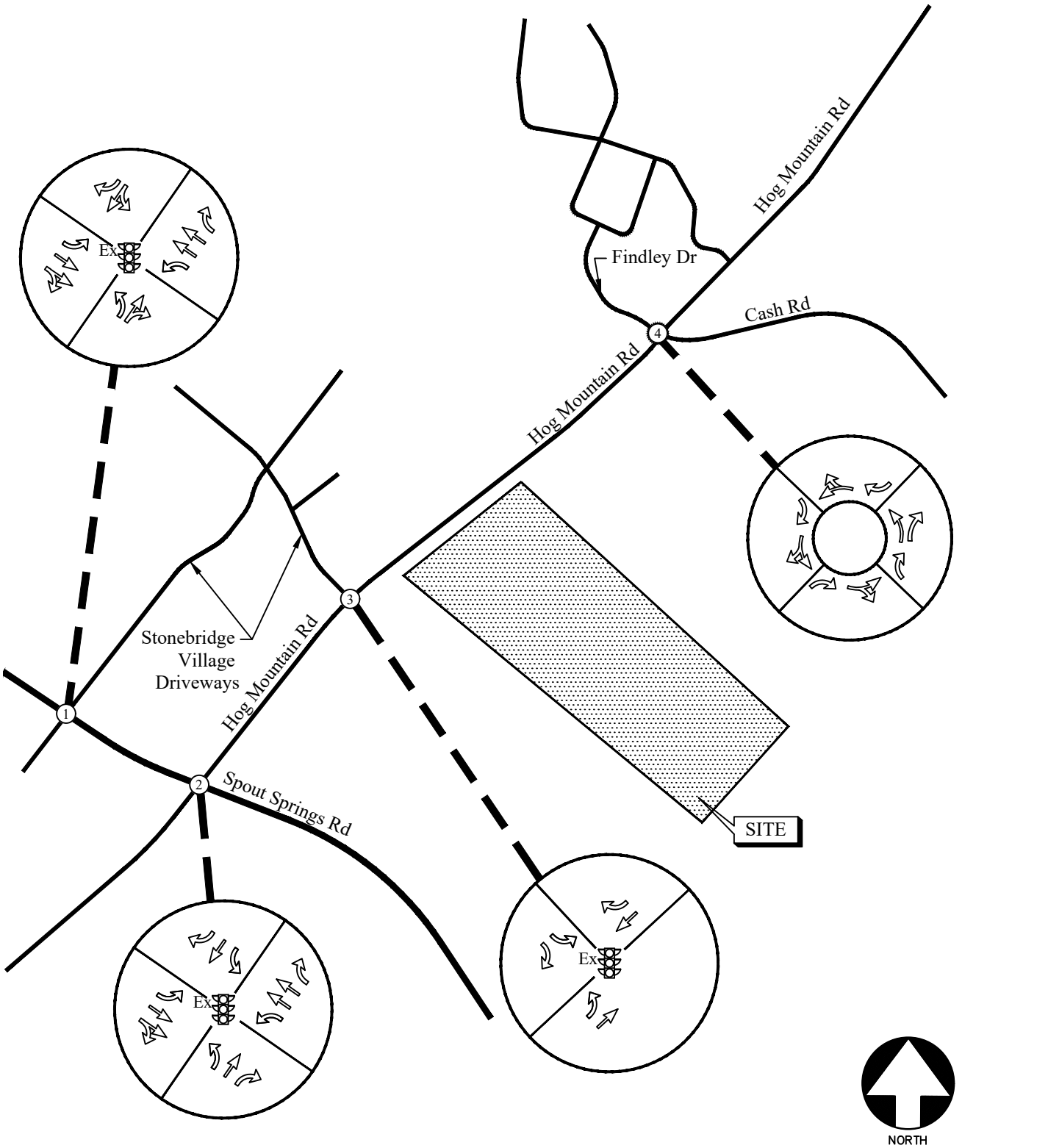
A&R Engineering Inc.

*Intersection 2,3 & 4 is (Projected 2025 to 2026 Volumes)



EXISTING WEEKDAY PEAK HOUR VOLUMES FIGURE 3

A&R Engineering Inc.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 4

A&R Engineering Inc.

4.2 Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The analysis results are shown in Table 3.

TABLE 3 – EXISTING 2025 INTERSECTION OPERATIONS

	Intersection	Traffic Control	LOS (Delay)		
			AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	Signalized	**B (17.9)**	**C (28.6)**	**C (26.8)**
	-Eastbound Approach		A (9.4)	C (22.0)	C (20.0)
	-Westbound Approach		B (11.9)	C (25.0)	C (22.3)
	-Northbound Approach		D (51.6)	E (60.0)	E (60.2)
	-Southbound Approach		E (56.7)	D (42.0)	D (42.5)
2	**Spout Springs Road @ Hog Mountain Road**	Signalized	**C (34.3)**	**D (35.8)**	**D (37.0)**
	-Eastbound Approach		C (28.8)	C (30.2)	C (33.2)
	-Westbound Approach		C (21.6)	B (17.8)	C (20.6)
	-Northbound Approach		D (50.1)	D (51.5)	D (47.2)
	-Southbound Approach		D (45.6)	D (47.0)	D (48.3)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	Signalized	**A (7.4)**	**B (14.5)**	**B (13.2)**
	-Eastbound Approach		D (46.2)	D (42.5)	D (42.0)
	-Northbound Approach		A (4.1)	A (6.5)	A (5.0)
	-Southbound Approach		A (3.6)	A (6.4)	A (4.9)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	Roundabout	**B (10.4)**	**B (10.9)**	**A (8.4)**
	-Eastbound Approach		A (7.5)	A (7.3)	A (6.3)
	-Westbound Approach		A (9.4)	A (6.7)	A (5.4)
	-Northbound Approach		B (11.9)	A (8.8)	A (8.2)
	-Southbound Approach		A (9.2)	B (13.9)	A (9.2)

The results of the existing traffic operations analysis indicate that the signalized study intersections (intersections 1, 2, and 3) are operating at an overall level of service "D" or better in the AM, dismissal, and PM peak hours. The roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road is operating at an overall level of service "B" or better with peak hour traffic.

5.0 PROPOSED DEVELOPMENT

The proposed residential development will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.



A site plan is shown in Figure 5.

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	-
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6,700	5,500
Average Lot Area	-	6,700
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1,200	2,200
Minimum Front Yard Setback From Lot Line (FT)	-	-
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45%	Less than 45%
Civic Space	10% Minimum	15.1%
Amenity Space	5% Minimum	6.1%

GROSS DENSITY = 81 LOTS / 19.398 AC =	4.18	Lots/AC
NET AREA = GROSS AREA - 50% of STREAM BUFFERS =	18.873	AC
NET DENSITY = 81 LOTS / 18.873 AC =	4.29	Lots/AC



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

5.3 Adjacent Development at 4560 Hog Mountain Road

There is a proposed residential development that will be located at 4560 Hog Mountain Road to the west of this site. The adjacent development will consist of one full access driveway on Hog Mountain Road in addition to an access connection with Findley Drive to the north and a second connection to the Stonebridge Village retail stores to the south. The development will consist of 296 low-rise apartment units. Because this project is estimated to be completed by 2027, its impact on the study network was considered in both the "No Build" and "Build" conditions.

The calculated site-generated traffic volumes for this adjacent development are shown in Table 5, and its peak hour volumes passing through the study area are shown in Figure 7.

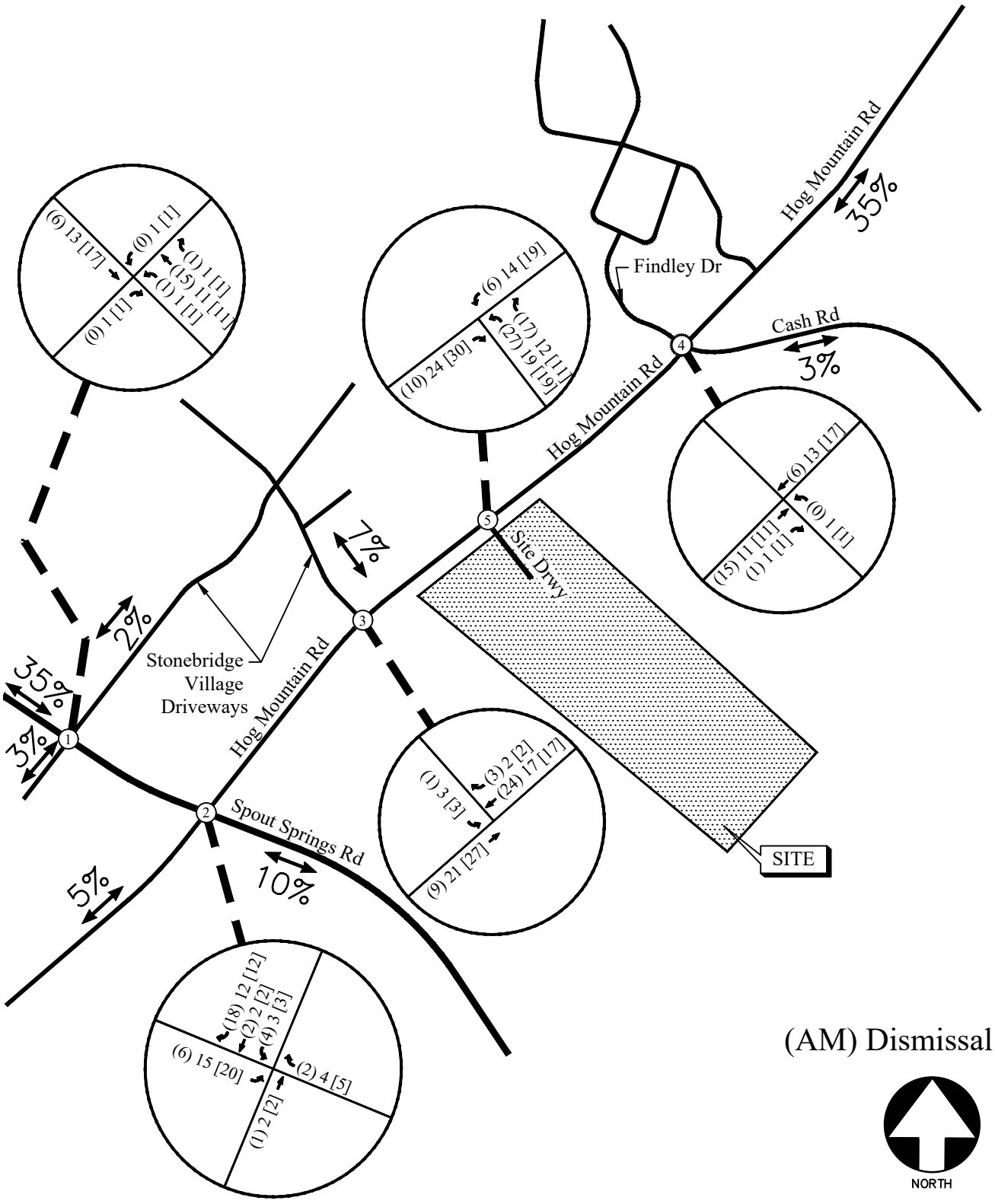
TABLE 5 – TRIP GENERATION (ADJACENT SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 220 – Multifamily Housing (Low-Rise)	296 Units	28	87	115	68	52	120	93	55	148	1,973

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution rates

5.3.1 Shifted Findley Drive Traffic

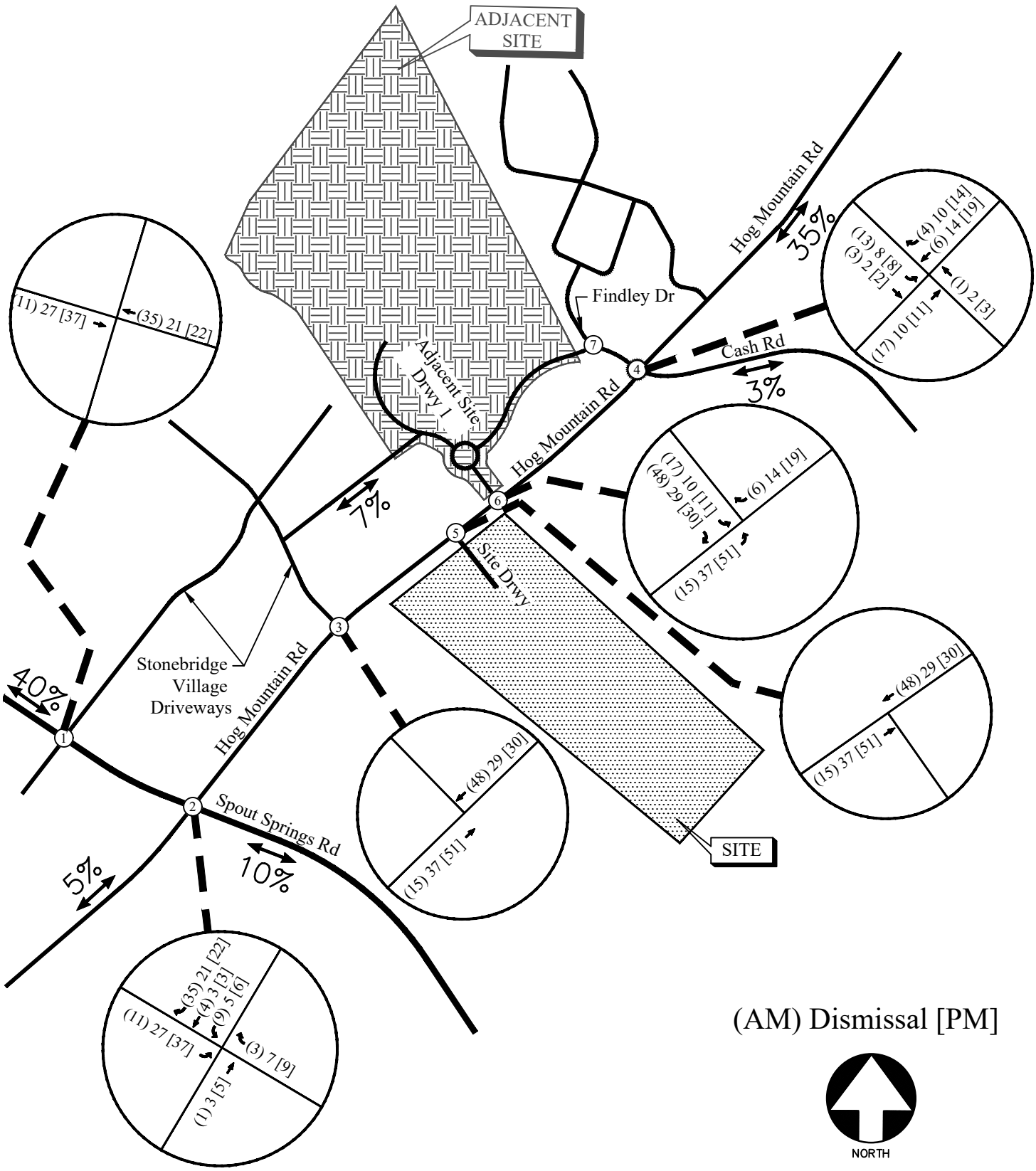
Since the adjacent development proposes access connections at Findley Drive to the north and at Stonebridge Village to the south, some residential traffic from the Folksong Apartments development on Findley Drive will be able to use these connections to travel directly between their apartments and the retail stores/restaurants in Stonebridge Village without needing to travel on Hog Mountain Road. These estimated shifted traffic volumes are shown in Figure 8.



TRIP DISTRIBUTION AND SITE-GENERATED PEAK HOUR VOLUMES (PROPOSED SITE)

FIGURE 6

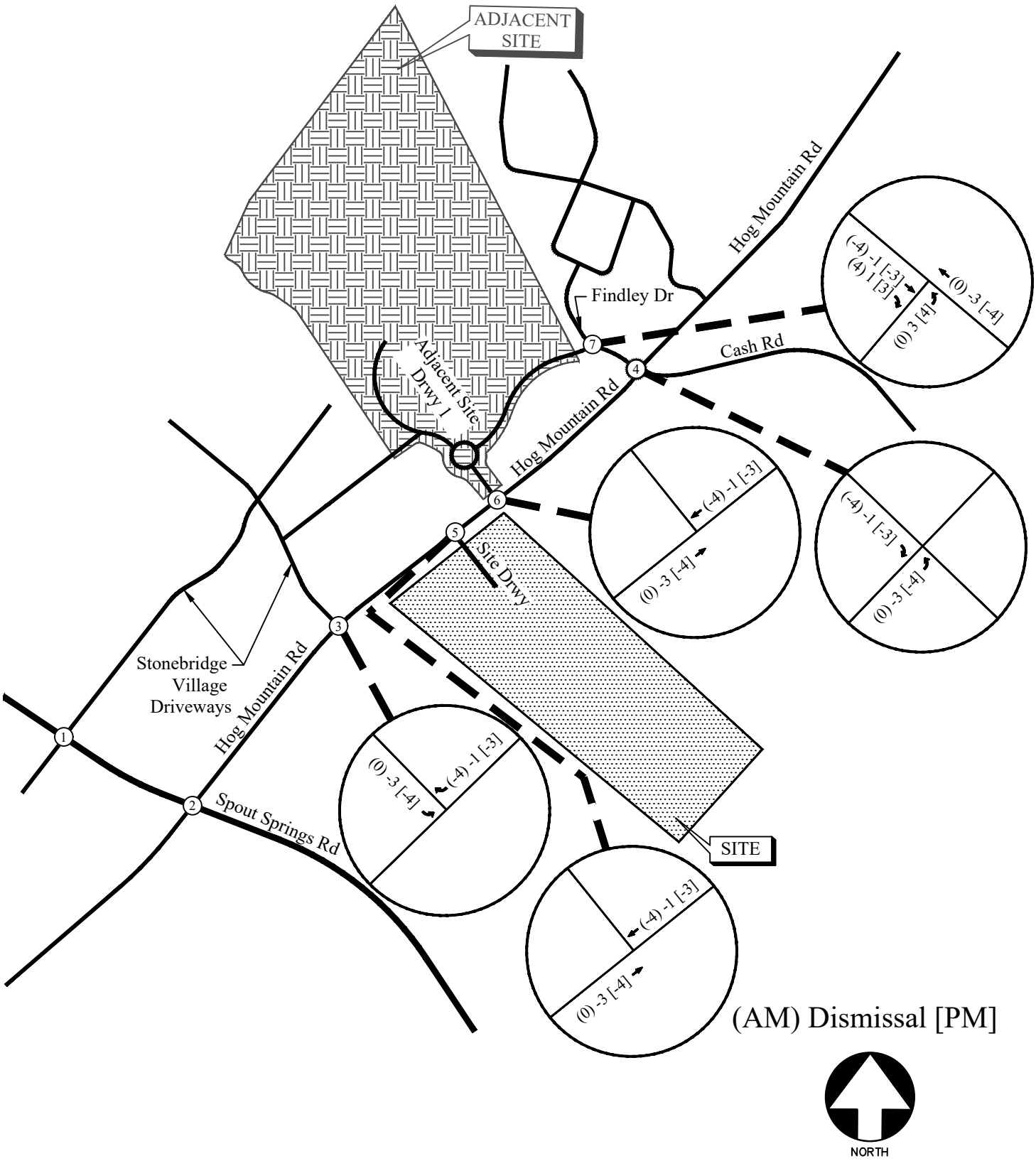
A&R Engineering Inc.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES (ADJACENT SITE)

FIGURE 7

A&R Engineering Inc.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES (ADJACENT SITE - SHIFTED TRIPS)

FIGURE 8

A&R Engineering Inc.

6.0 FUTURE 2027 TRAFFIC ANALYSIS

The future 2027 traffic operations are analyzed for the "Build" and "No-Build" conditions.

6.1 Future "No-Build" Conditions

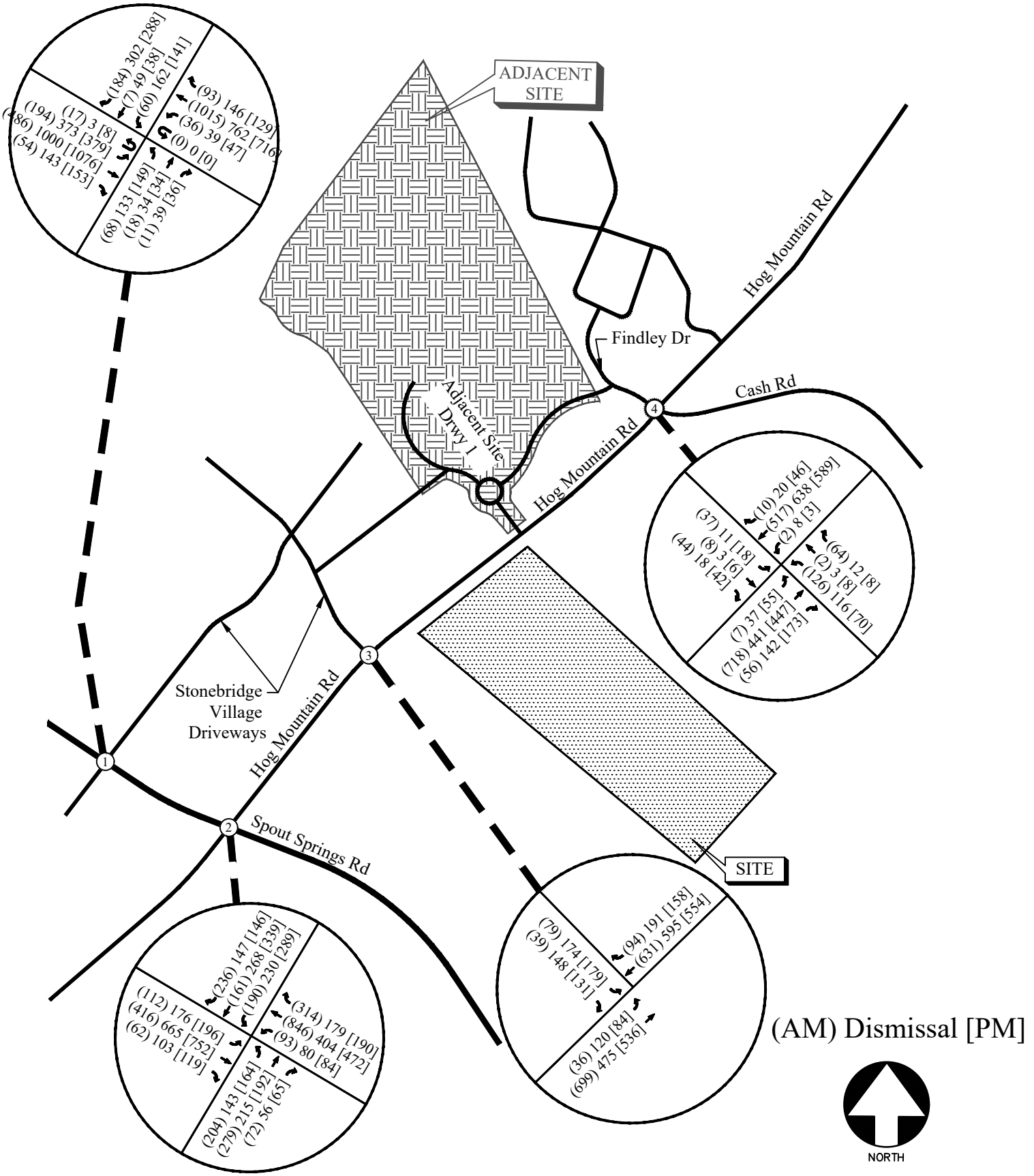
The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The future "No-Build" volumes consist of the existing 2026 traffic volumes (Figure 3) plus increases due to the annual growth of traffic while also factoring in the adjacent site traffic (Figure 7) and the shifted trips explained in Section 5.3.1 (Figure 8).

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 (2022-2024) revealed a traffic volume increase of approximately 1% in the area. This growth factor was applied to the existing traffic volumes 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 9.

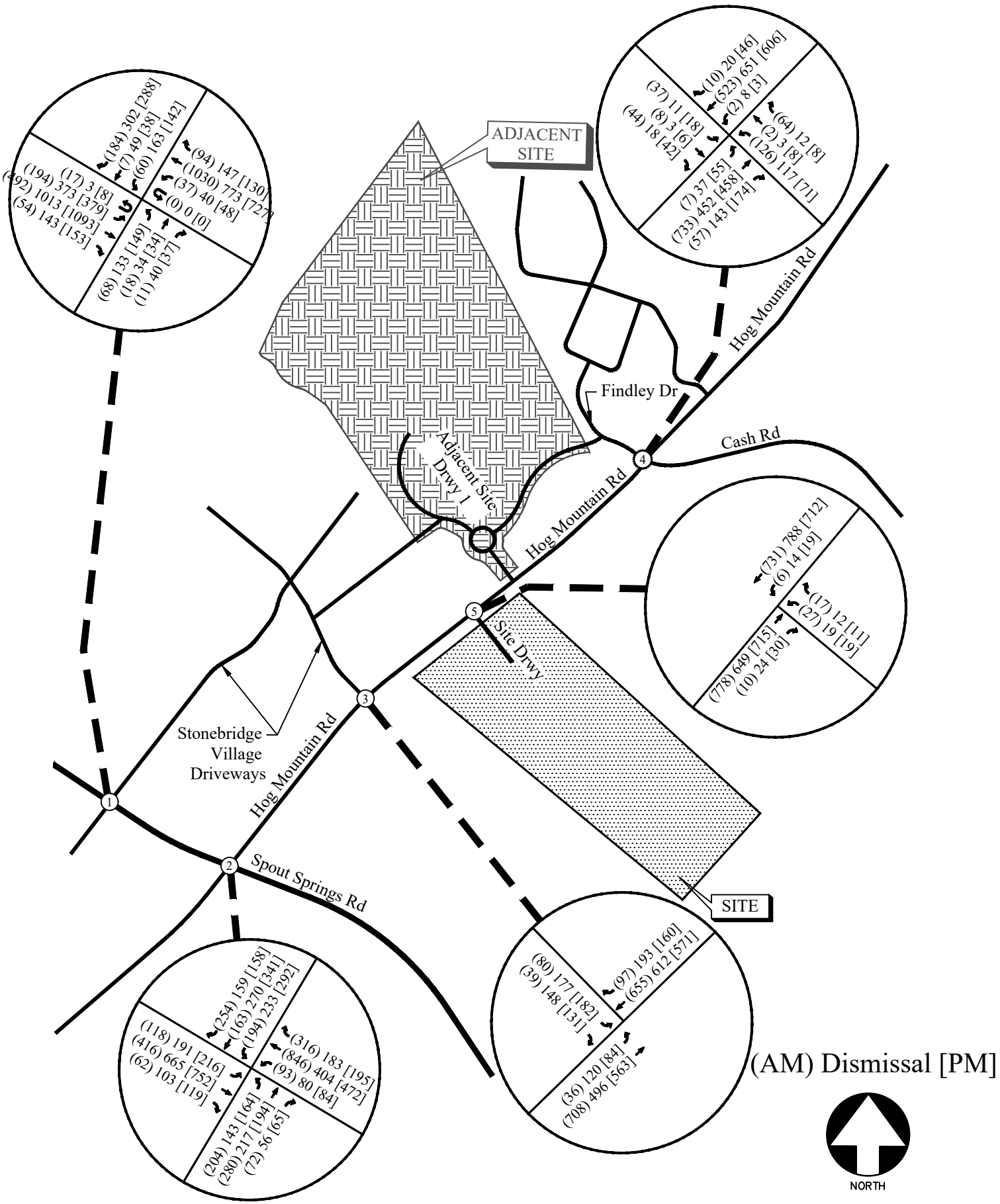
6.2 Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. To evaluate future traffic operations in this area, the additional traffic volumes from the site (Figures 6) were added to the base traffic volumes (Figure 9) to calculate the future traffic volumes after the construction of the development. These total future "Build" traffic volumes are shown in Figure 10.



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 9

A&R Engineering Inc.



FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 10

A&R Engineering Inc.

6.3 Auxiliary Lane Analysis

Included below are analyses for turn lanes at the proposed site driveway as per GDOT standards. The analyses below are based off the trip generation volumes in Table 4 and the trip distribution explained in Section 5.2. According to the estimated trip generation calculations, the 24-hour two-way volume for traffic entering and exiting the site is 919 vehicles.

6.3.1 Left Turn Lane Analysis

For a two-lane roadway with an AADT greater than 6,000 vehicles and a posted speed limit of 45 mph, the daily site-generated left turn movements threshold to warrant a turn lane is 175 left-turning vehicles per day. The estimated daily left-turning volume at the site driveway is shown in Table 6.

TABLE 6 – GDOT REQUIREMENTS FOR LEFT TURN LANES

Intersection	Left Turn Traffic (% total entering)	Left Turn Volume (vehicles/day)	Roadway Speed / # Lanes / AADT	GDOT Threshold (vehicles/ day)	Warrants Met?
Hog Mountain Road @ Site Driveway	38% (Southbound)	**175** (Total Trips) ÷ 2 × 0.38 = (919) ÷ 2 x 0.38 = 175	45 mph / 2-Lane / > 6,000	175	Yes

Based on GDOT standards, a left turn lane is warranted at the proposed site driveway.

6.3.2 Deceleration Turn Lane Analysis

For a two-lane roadway with an AADT greater than 6,000 vehicles and a posted speed limit of 45 mph, the daily site-generated right turn movements threshold to warrant a deceleration lane is 75 right-turning vehicles per day. The estimated daily right-turning volume at the site driveway is shown in Table 7.

TABLE 7 – GDOT REQUIREMENTS FOR DECELERATION LANES

Intersection	Right Turn Traffic (% total entering)	Right Turn Volume (vehicles/day)	Roadway Speed / # Lanes / AADT	GDOT Threshold (vehicles/ day)	Warrants Met?
Hog Mountain Road @ Site Driveway	62% (Northbound)	**285** (Total Trips) ÷ 2 × 0.62 = (919) ÷ 2 x 0.62 = 285	45 mph / 2-Lane / > 6,000	75	Yes

Based on GDOT standards, a right turn lane is warranted at the proposed site driveway.

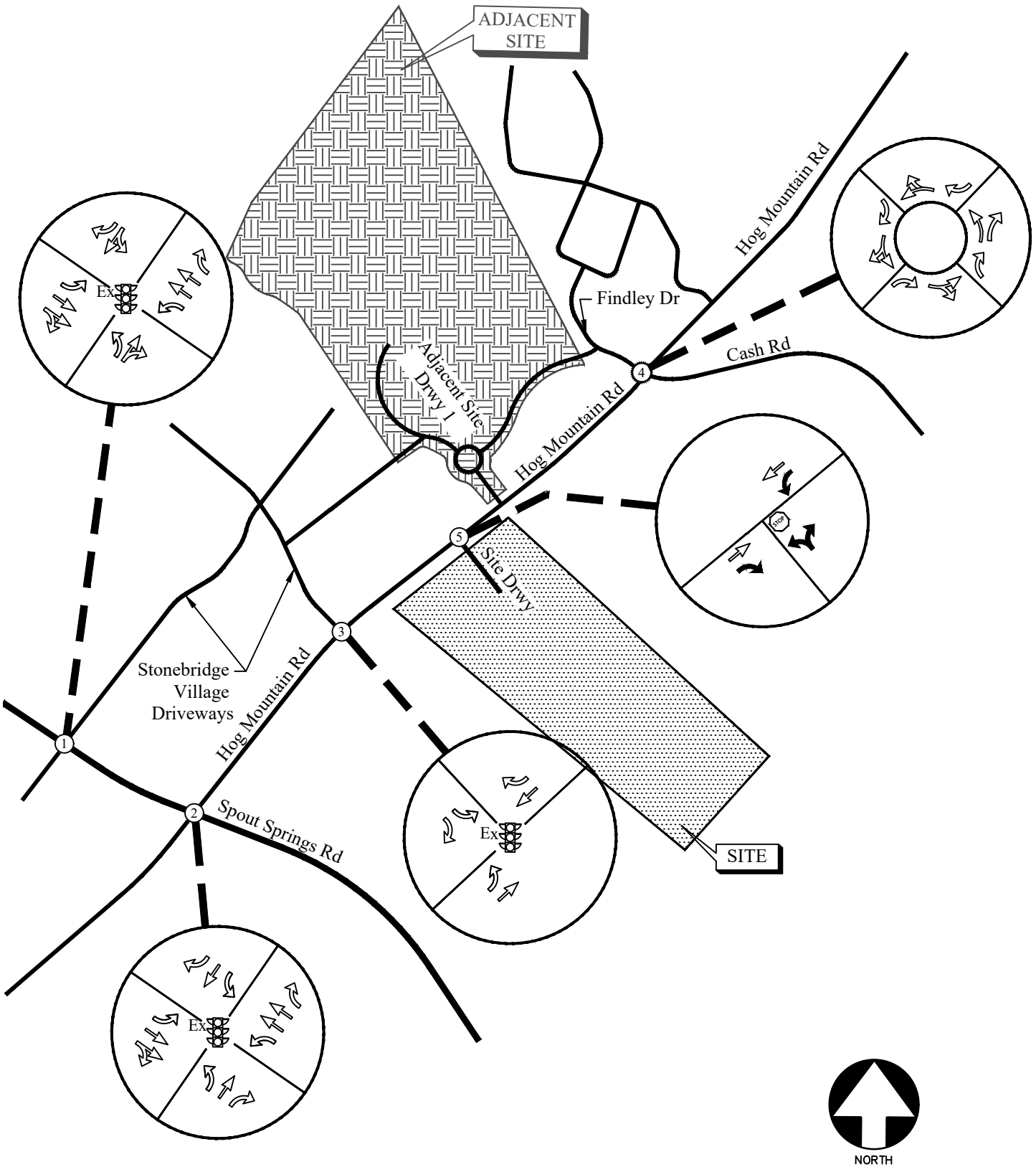
6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 11

A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Appendix

Existing Intersection Traffic Counts .....
Linear Regression of Daily Traffic.....
Existing Intersection Analysis.....
Future “No-Build” Intersection Analysis.....
Future “Build” Intersection Analysis.....
Traffic Volume Worksheets .....

EXISTING INTERSECTION TRAFFIC COUNTS

A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	20	6	0	26	16	1	40	57	55	158	13	1	227	9	300	25	334	644
07:15 AM	24	6	3	33	23	1	46	70	48	90	14	5	157	9	233	25	267	527
07:30 AM	7	3	2	12	5	1	52	58	48	123	8	5	184	11	259	20	290	544
07:45 AM	16	3	6	25	15	4	44	63	41	99	18	6	164	7	178	22	207	459
Total	67	18	11	96	59	7	182	248	192	470	53	17	732	36	970	92	1098	2174
08:00 AM	11	1	3	15	19	7	33	59	53	103	16	7	179	4	150	28	182	435
08:15 AM	9	4	3	16	11	7	49	67	60	100	15	2	177	5	148	25	178	438
08:30 AM	16	5	3	24	16	5	42	63	49	100	14	4	167	9	147	26	182	436
08:45 AM	26	8	1	35	12	4	48	64	56	108	20	0	184	10	158	19	187	470
Total	62	18	10	90	58	23	172	253	218	411	65	13	707	28	603	98	729	1779
*** BREAK ***																		
02:00 PM	28	7	5	40	21	15	59	95	72	199	33	4	308	10	159	26	195	638
02:15 PM	36	13	7	56	36	9	57	102	77	214	41	5	337	8	154	40	202	697
02:30 PM	28	9	3	40	30	10	66	106	97	215	32	0	344	5	186	44	235	725
02:45 PM	43	9	11	63	51	19	91	161	104	218	23	0	345	10	200	44	254	823
Total	135	38	26	199	138	53	273	464	350	846	129	9	1334	33	699	154	886	2883
03:00 PM	32	8	6	46	36	11	71	118	72	263	32	2	369	4	189	41	234	767
03:15 PM	25	8	10	43	38	13	67	118	100	220	42	0	362	15	176	27	218	741
03:30 PM	32	9	12	53	35	6	70	111	93	262	45	1	401	10	169	33	212	777
03:45 PM	52	13	10	75	35	14	59	108	116	228	44	1	389	14	160	27	201	773
Total	141	38	38	217	144	44	267	455	381	973	163	4	1521	43	694	128	865	3058
04:00 PM	36	5	8	49	41	7	81	129	76	274	33	2	385	8	164	30	202	765
04:15 PM	36	5	8	49	34	12	76	122	104	269	41	1	415	13	171	30	214	800
04:30 PM	38	13	9	60	39	11	68	118	101	254	35	2	392	16	172	28	216	786
04:45 PM	38	11	11	60	26	8	60	94	94	232	42	3	371	10	180	40	230	755
Total	148	34	36	218	140	38	285	463	375	1029	151	8	1563	47	687	128	862	3106
05:00 PM	39	10	7	56	32	11	55	98	83	204	36	3	326	7	166	41	214	694
05:15 PM	24	9	7	40	34	20	60	114	132	208	24	3	367	12	183	30	225	746
05:30 PM	45	10	10	65	38	11	62	111	86	196	33	5	320	6	157	32	195	691
05:45 PM	18	6	6	30	27	7	47	81	94	185	28	1	308	14	127	32	173	592
Total	126	35	30	191	131	49	224	404	395	793	121	12	1321	39	633	135	807	2723
Grand Total	679	181	151	1011	670	214	1403	2287	1911	4522	682	63	7178	226	4286	735	5247	15723
Apprch %	67.2	17.9	14.9		29.3	9.4	61.3		26.6	63	9.5	0.9		4.3	81.7	14		
Total %	4.3	1.2	1	6.4	4.3	1.4	8.9	14.5	12.2	28.8	4.3	0.4	45.7	1.4	27.3	4.7	33.4	

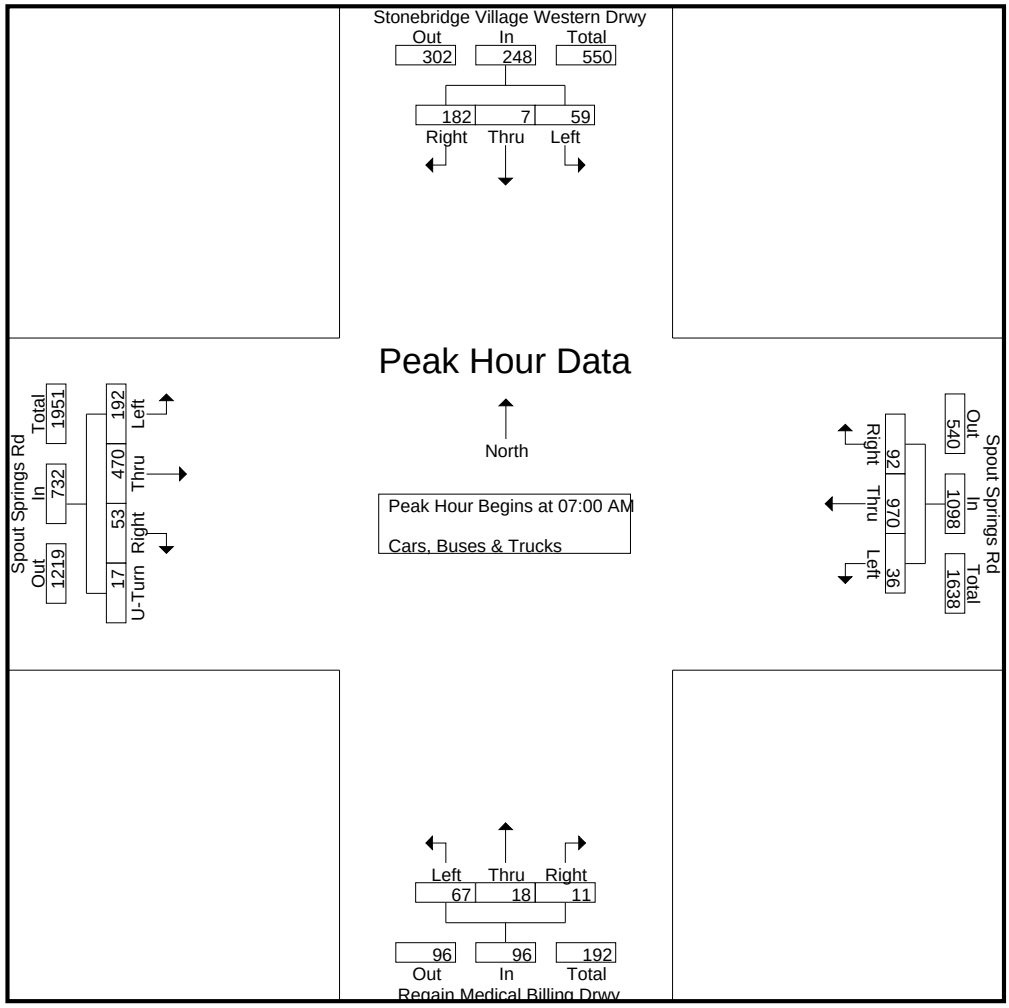
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 2

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	20	**6**	0	26	16	1	40	57	**55**	**158**	13	1	**227**	9	**300**	**25**	**334**	**644**
07:15 AM	**24**	6	3	**33**	**23**	1	46	**70**	48	90	14	5	157	9	233	25	267	527
07:30 AM	7	3	2	12	5	1	**52**	58	48	123	8	5	184	**11**	259	20	290	544
07:45 AM	16	3	**6**	25	15	**4**	44	63	41	99	**18**	**6**	164	7	178	22	207	459
Total Volume	67	18	11	96	59	7	182	248	192	470	53	17	732	36	970	92	1098	2174
% App. Total	69.8	18.8	11.5		23.8	2.8	73.4		26.2	64.2	7.2	2.3		3.3	88.3	8.4		
PHF	.698	.750	.458	.727	.641	.438	.875	.886	.873	.744	.736	.708	.806	.818	.808	.920	.822	.844



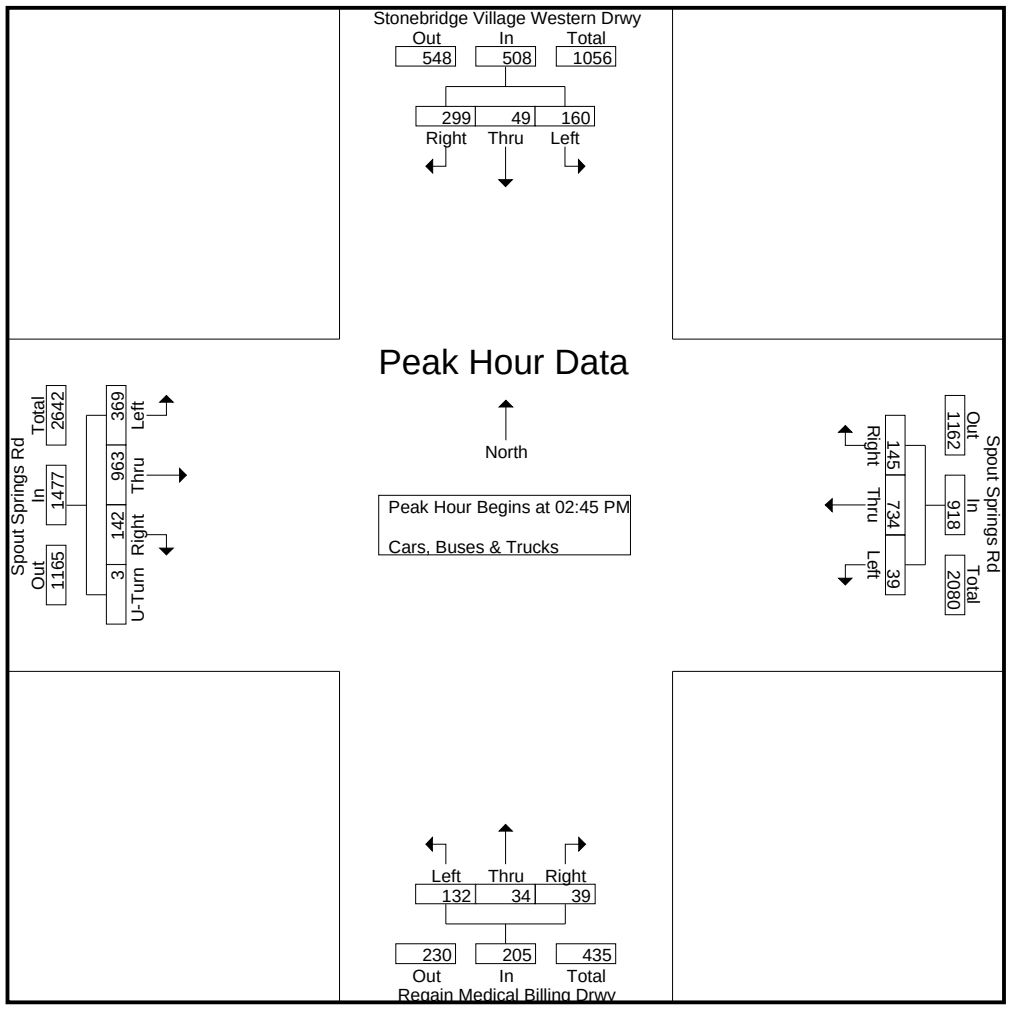
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 3

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 02:45 PM																		
02:45 PM	**43**	**9**	11	**63**	**51**	**19**	**91**	**161**	**104**	218	23	0	345	10	**200**	**44**	**254**	**823**
03:00 PM	32	8	6	46	36	11	71	118	72	**263**	32	**2**	369	4	189	41	234	767
03:15 PM	25	8	10	43	38	13	67	118	100	220	42	0	362	**15**	176	27	218	741
03:30 PM	32	9	**12**	53	35	6	70	111	93	262	**45**	1	**401**	10	169	33	212	777
Total Volume	132	34	39	205	160	49	299	508	369	963	142	3	1477	39	734	145	918	3108
% App. Total	64.4	16.6	19		31.5	9.6	58.9		25	65.2	9.6	0.2		4.2	80	15.8		
PHF	.767	.944	.813	.813	.784	.645	.821	.789	.887	.915	.789	.375	.921	.650	.918	.824	.904	.944



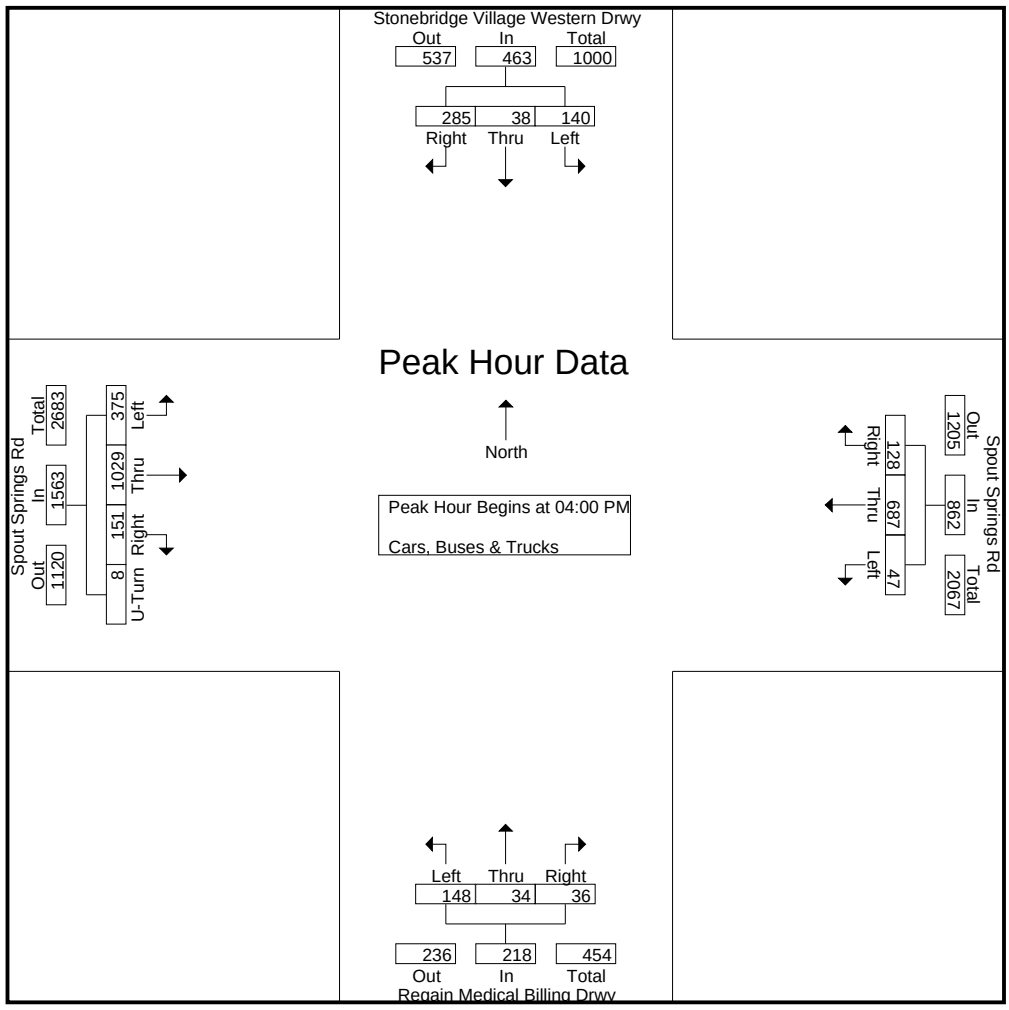
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Marietta, GA 30067

TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 4

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:00 PM																		
04:00 PM	36	5	8	49	**41**	7	**81**	**129**	76	**274**	33	2	385	8	164	30	202	765
04:15 PM	36	5	8	49	34	**12**	76	122	**104**	269	41	1	**415**	13	171	30	214	**800**
04:30 PM	**38**	**13**	9	**60**	39	11	68	118	101	254	35	2	392	**16**	172	28	216	786
04:45 PM	38	11	**11**	60	26	8	60	94	94	232	**42**	**3**	371	10	**180**	**40**	**230**	755
Total Volume	148	34	36	218	140	38	285	463	375	1029	151	8	1563	47	687	128	862	3106
% App. Total	67.9	15.6	16.5		30.2	8.2	61.6		24	65.8	9.7	0.5		5.5	79.7	14.8		
PHF	.974	.654	.818	.908	.854	.792	.880	.897	.901	.939	.899	.667	.942	.734	.954	.800	.937	.971



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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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	30	21	8	59	20	16	38	74	12	76	7	95	12	169	24	205	433
07:15 AM	49	27	6	82	34	26	45	105	19	89	7	115	18	257	38	313	615
07:30 AM	60	52	20	132	27	20	54	101	32	96	11	139	28	242	72	342	714
07:45 AM	46	95	13	154	47	44	32	123	24	118	20	162	24	218	89	331	770
Total	185	195	47	427	128	106	169	403	87	379	45	511	82	886	223	1191	2532
08:00 AM	53	70	20	143	59	48	61	168	21	101	13	135	22	192	83	297	743
08:15 AM	41	55	17	113	44	41	50	135	22	93	16	131	17	178	61	256	635
08:30 AM	35	43	12	90	36	39	37	112	20	74	11	105	14	143	47	204	511
08:45 AM	20	25	11	56	24	33	25	82	23	65	14	102	18	132	24	174	414
Total	149	193	60	402	163	161	173	497	86	333	54	473	71	645	215	931	2303
*** BREAK ***																	
02:00 PM	17	34	11	62	38	41	26	105	21	98	12	131	10	116	35	161	459
02:15 PM	22	39	15	76	43	49	33	125	35	101	14	150	14	125	41	180	531
02:30 PM	29	37	10	76	46	53	37	136	28	123	19	170	16	111	39	166	548
02:45 PM	34	45	16	95	51	59	31	141	32	148	23	203	19	108	34	161	600
Total	102	155	52	309	178	202	127	507	116	470	68	654	59	460	149	668	2138
03:00 PM	37	52	12	101	49	55	27	131	34	169	29	232	22	98	42	162	626
03:15 PM	39	47	11	97	57	61	29	147	38	151	21	210	15	92	35	142	596
03:30 PM	35	51	15	101	52	67	31	150	31	178	24	233	18	99	44	161	645
03:45 PM	30	58	16	104	63	76	37	176	44	153	27	224	23	107	47	177	681
Total	141	208	54	403	221	259	124	604	147	651	101	899	78	396	168	642	2548
04:00 PM	33	49	19	101	64	82	35	181	43	194	28	265	21	112	40	173	720
04:15 PM	47	43	14	104	69	84	31	184	40	188	25	253	16	105	42	163	704
04:30 PM	41	47	18	106	73	88	27	188	37	179	29	245	21	119	46	186	725
04:45 PM	39	44	12	95	71	76	29	176	35	177	35	247	24	126	49	199	717
Total	160	183	63	406	277	330	122	729	155	738	117	1010	82	462	177	721	2866
05:00 PM	33	53	21	107	66	79	26	171	33	164	37	234	26	120	50	196	708
05:15 PM	27	50	27	104	64	71	21	156	30	151	33	214	29	127	59	215	689
05:30 PM	26	41	24	91	57	62	18	137	24	149	24	197	32	115	52	199	624
05:45 PM	20	37	18	75	51	54	12	117	22	123	18	163	24	106	41	171	526
Total	106	181	90	377	238	266	77	581	109	587	112	808	111	468	202	781	2547
Grand Total	843	1115	366	2324	1205	1324	792	3321	700	3158	497	4355	483	3317	1134	4934	14934
Apprch %	36.3	48	15.7		36.3	39.9	23.8		16.1	72.5	11.4		9.8	67.2	23		
Total %	5.6	7.5	2.5	15.6	8.1	8.9	5.3	22.2	4.7	21.1	3.3	29.2	3.2	22.2	7.6	33	

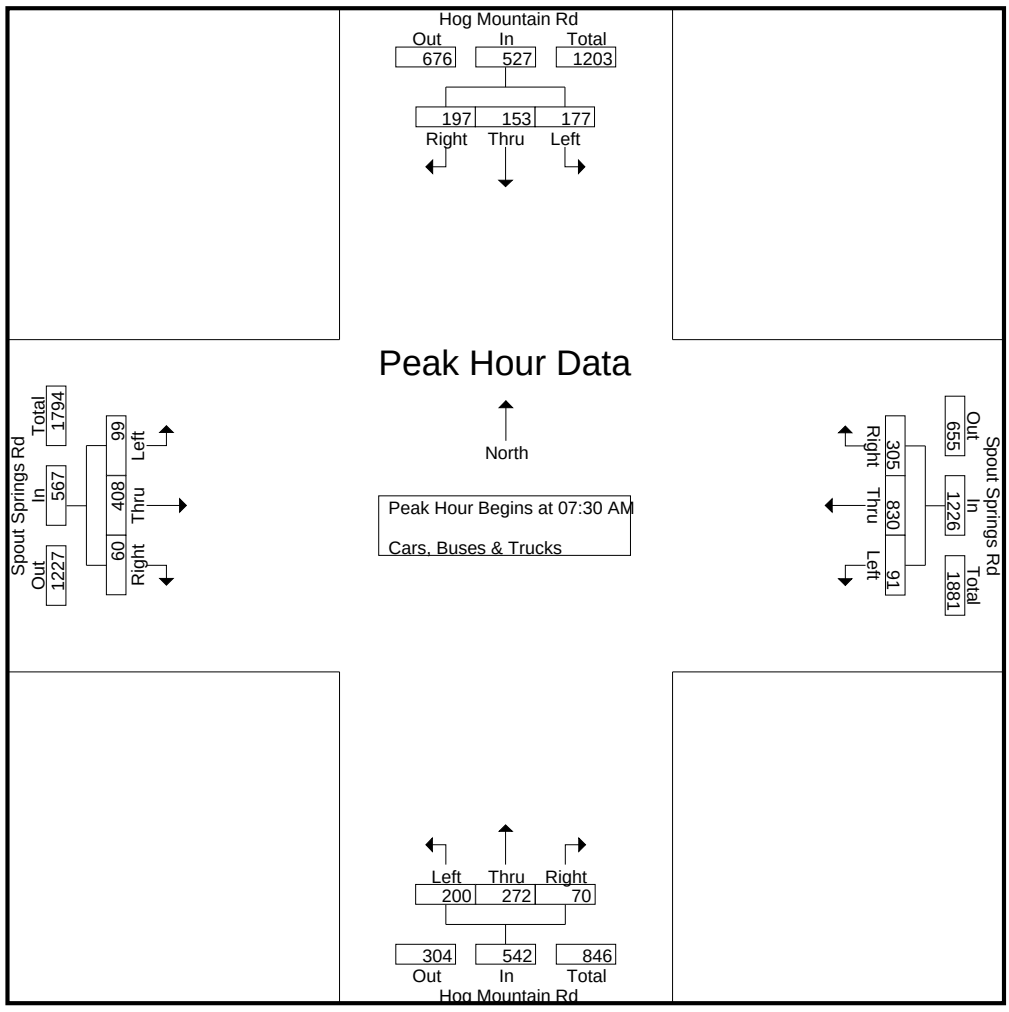
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 2

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**60**	52	**20**	132	27	20	54	101	**32**	96	11	139	**28**	**242**	72	**342**	714
07:45 AM	46	**95**	13	**154**	47	44	32	123	24	**118**	**20**	**162**	24	218	**89**	331	**770**
08:00 AM	53	70	20	143	**59**	**48**	**61**	**168**	21	101	13	135	22	192	83	297	743
08:15 AM	41	55	17	113	44	41	50	135	22	93	16	131	17	178	61	256	635
Total Volume	200	272	70	542	177	153	197	527	99	408	60	567	91	830	305	1226	2862
% App. Total	36.9	50.2	12.9		33.6	29	37.4		17.5	72	10.6		7.4	67.7	24.9		
PHF	.833	.716	.875	.880	.750	.797	.807	.784	.773	.864	.750	.875	.813	.857	.857	.896	.929



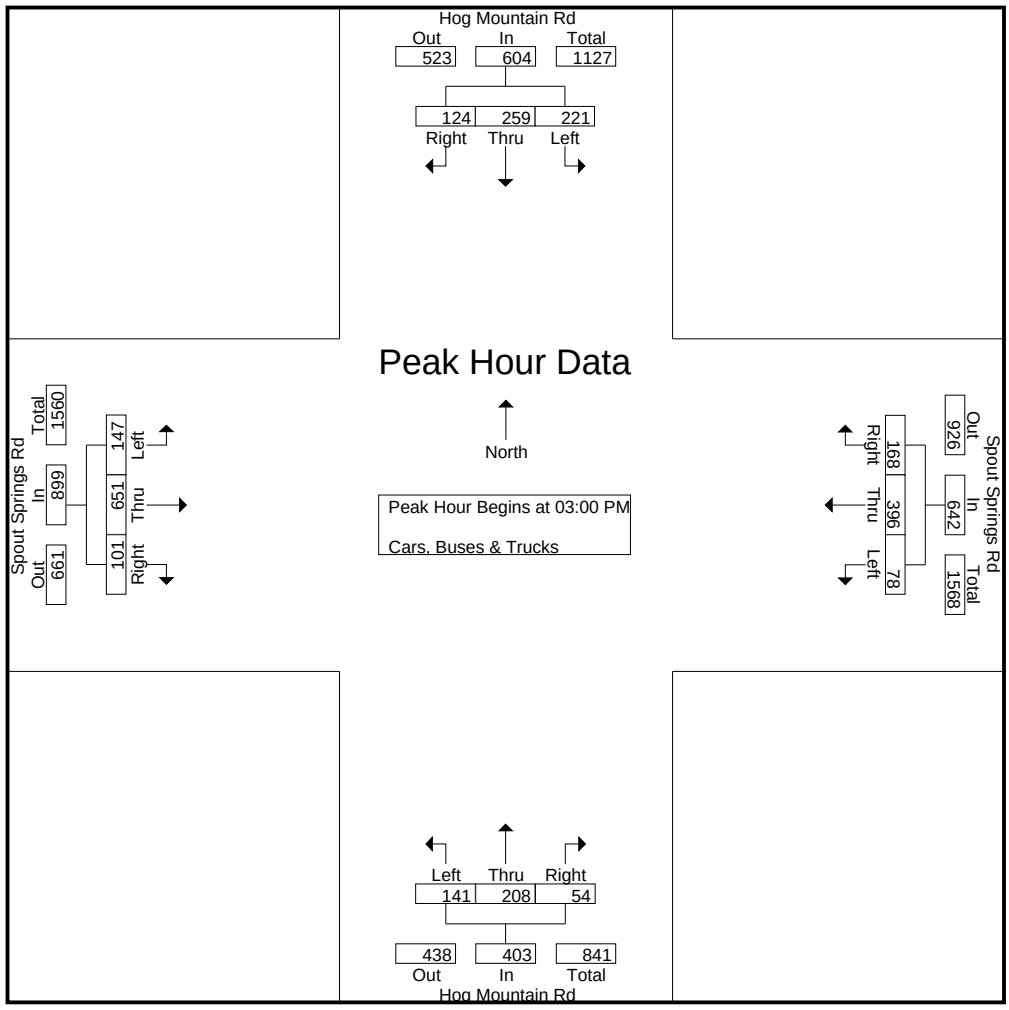
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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 3

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	37	52	12	101	49	55	27	131	34	169	**29**	232	22	98	42	162	626
03:15 PM	**39**	47	11	97	57	61	29	147	38	151	21	210	15	92	35	142	596
03:30 PM	35	51	15	101	52	67	31	150	31	**178**	24	**233**	18	99	44	161	645
03:45 PM	30	**58**	**16**	**104**	**63**	**76**	**37**	**176**	**44**	153	27	224	**23**	**107**	**47**	**177**	**681**
Total Volume	141	208	54	403	221	259	124	604	147	651	101	899	78	396	168	642	2548
% App. Total	35	51.6	13.4		36.6	42.9	20.5		16.4	72.4	11.2		12.1	61.7	26.2		
PHF	.904	.897	.844	.969	.877	.852	.838	.858	.835	.914	.871	.965	.848	.925	.894	.907	.935



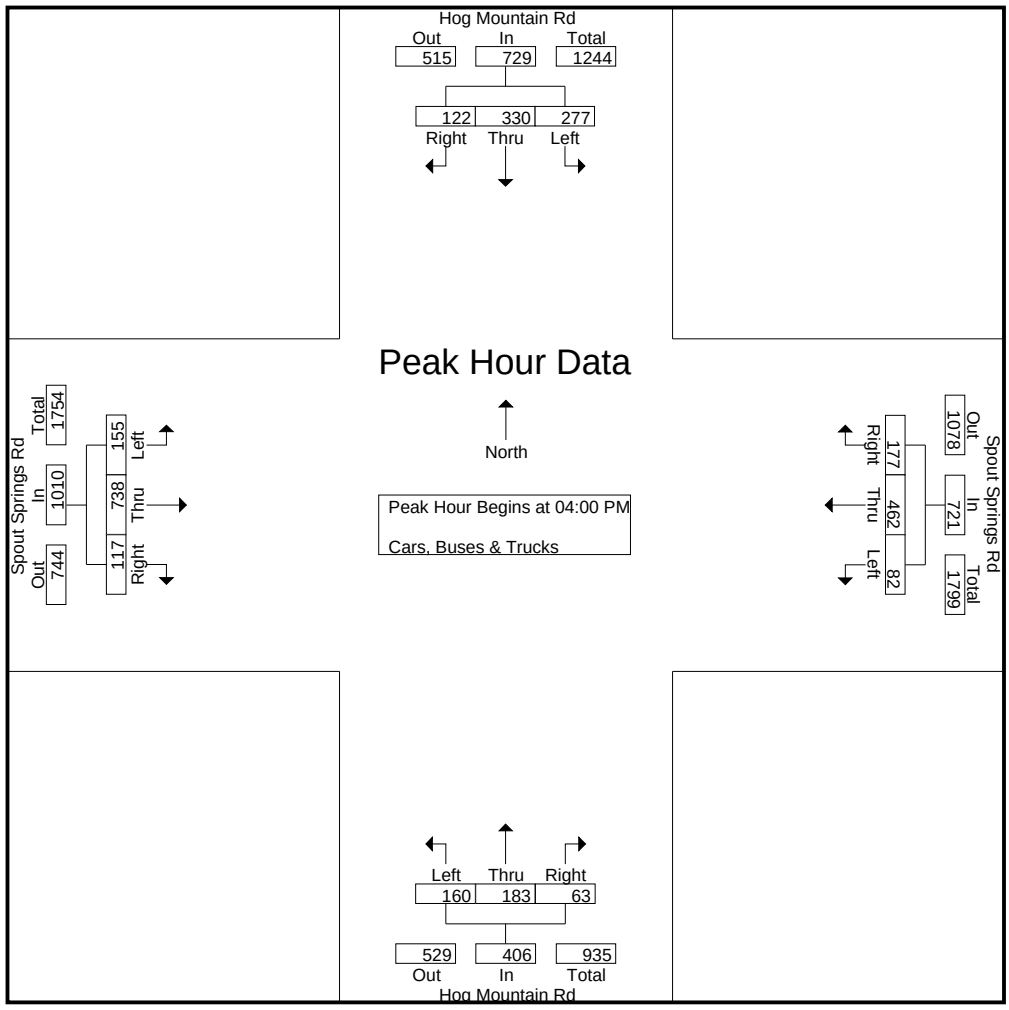
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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 4

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	33	**49**	**19**	101	64	82	**35**	181	**43**	**194**	28	**265**	21	112	40	173	720
04:15 PM	**47**	43	14	104	69	84	31	184	40	188	25	253	16	105	42	163	704
04:30 PM	41	47	18	**106**	**73**	**88**	27	**188**	37	179	29	245	21	119	46	186	**725**
04:45 PM	39	44	12	95	71	76	29	176	35	177	**35**	247	**24**	**126**	**49**	**199**	717
Total Volume	160	183	63	406	277	330	122	729	155	738	117	1010	82	462	177	721	2866
% App. Total	39.4	45.1	15.5		38	45.3	16.7		15.3	73.1	11.6		11.4	64.1	24.5		
PHF	.851	.934	.829	.958	.949	.938	.871	.969	.901	.951	.836	.953	.854	.917	.903	.906	.988



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TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping
Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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	4	43	0	47	0	54	2	56	7	0	5	12	0	0	0	0	115
07:15 AM	3	74	0	77	0	93	6	99	7	0	8	15	0	0	0	0	191
07:30 AM	9	88	0	97	0	85	19	104	20	0	6	26	0	0	0	0	227
07:45 AM	13	220	0	233	0	149	20	169	15	0	5	20	0	0	0	0	422
Total	29	425	0	454	0	381	47	428	49	0	24	73	0	0	0	0	955
08:00 AM	5	198	0	203	0	161	30	191	28	0	18	46	0	0	0	0	440
08:15 AM	9	164	0	173	0	176	27	203	14	0	10	24	0	0	0	0	400
08:30 AM	18	46	0	64	0	62	28	90	12	0	11	23	0	0	0	0	177
08:45 AM	24	49	0	73	0	81	19	100	16	0	14	30	0	0	0	0	203
Total	56	457	0	513	0	480	104	584	70	0	53	123	0	0	0	0	1220
*** BREAK ***																	
02:00 PM	34	41	0	75	0	72	30	102	51	0	43	94	0	0	0	0	271
02:15 PM	22	77	0	99	0	77	35	112	35	0	41	76	0	0	0	0	287
02:30 PM	32	83	0	115	0	76	50	126	51	0	41	92	0	0	0	0	333
02:45 PM	30	81	0	111	0	74	37	111	46	0	44	90	0	0	0	0	312
Total	118	282	0	400	0	299	152	451	183	0	169	352	0	0	0	0	1203
03:00 PM	26	95	0	121	0	70	41	111	44	0	34	78	0	0	0	0	310
03:15 PM	25	102	0	127	0	95	37	132	48	0	39	87	0	0	0	0	346
03:30 PM	28	118	0	146	0	181	54	235	50	0	39	89	0	0	0	0	470
03:45 PM	39	115	0	154	0	208	56	264	31	0	34	65	0	0	0	0	483
Total	118	430	0	548	0	554	188	742	173	0	146	319	0	0	0	0	1609
04:00 PM	33	86	0	119	0	142	50	192	54	0	54	108	0	0	0	0	419
04:15 PM	24	91	0	115	0	80	42	122	54	0	36	90	0	0	0	0	327
04:30 PM	38	92	0	130	0	105	41	146	49	0	30	79	0	0	0	0	355
04:45 PM	26	82	0	108	0	85	37	122	54	0	38	92	0	0	0	0	322
Total	121	351	0	472	0	412	170	582	211	0	158	369	0	0	0	0	1423
05:00 PM	27	117	0	144	0	131	35	166	57	0	29	86	0	0	0	0	396
05:15 PM	25	115	0	140	0	129	42	171	41	0	34	75	0	0	0	0	386
05:30 PM	14	126	0	140	0	129	43	172	42	0	35	77	0	0	0	0	389
05:45 PM	16	117	0	133	0	125	37	162	39	0	31	70	0	0	0	0	365
Total	82	475	0	557	0	514	157	671	179	0	129	308	0	0	0	0	1536
Grand Total	524	2420	0	2944	0	2640	818	3458	865	0	679	1544	0	0	0	0	7946
Apprch %	17.8	82.2	0		0	76.3	23.7		56	0	44		0	0	0		
Total %	6.6	30.5	0	37.1	0	33.2	10.3	43.5	10.9	0	8.5	19.4	0	0	0	0	

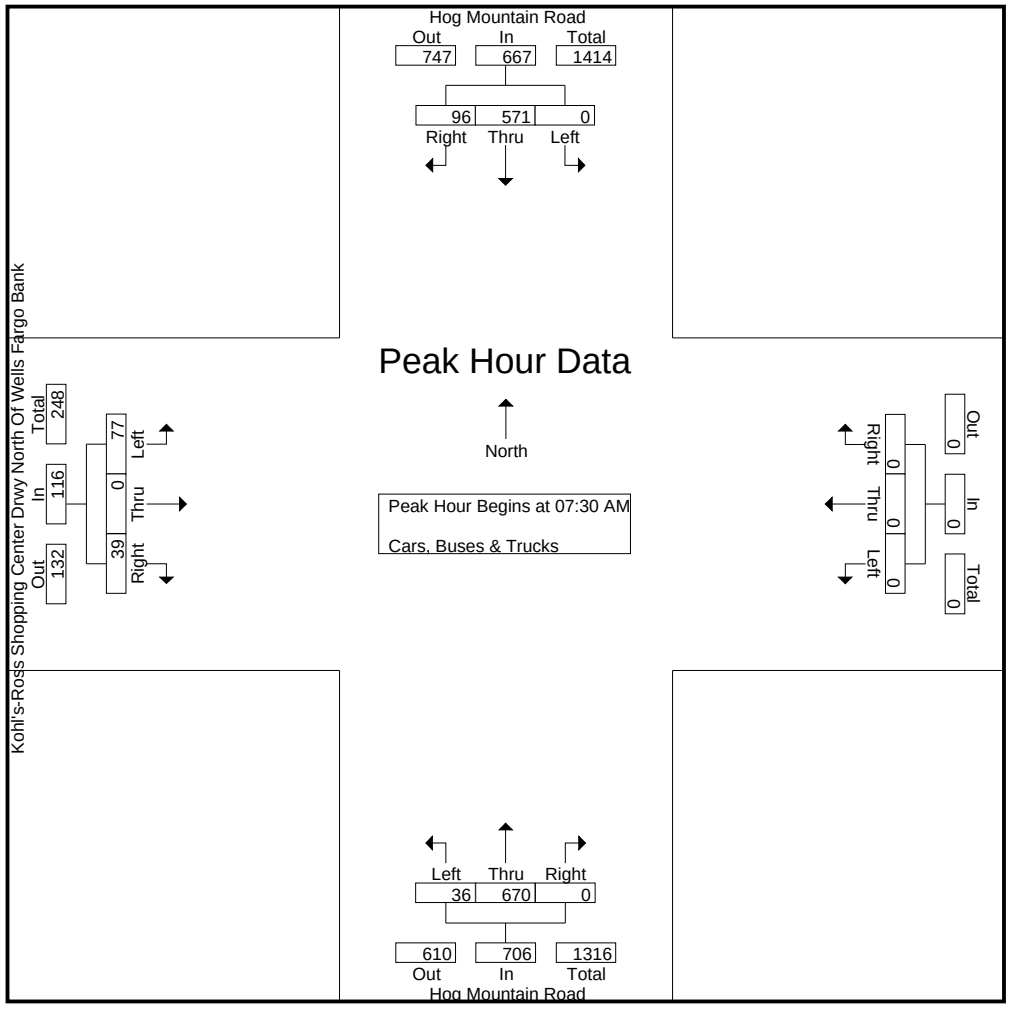
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	9	88	0	97	0	85	19	104	20	0	6	26	0	0	0	0	227
07:45 AM	**13**	**220**	0	**233**	0	149	20	169	15	0	5	20	0	0	0	0	422
08:00 AM	5	198	0	203	0	161	**30**	191	**28**	0	**18**	**46**	0	0	0	0	**440**
08:15 AM	9	164	0	173	0	**176**	27	**203**	14	0	10	24	0	0	0	0	400
Total Volume	36	670	0	706	0	571	96	667	77	0	39	116	0	0	0	0	1489
% App. Total	5.1	94.9	0		0	85.6	14.4		66.4	0	33.6		0	0	0		
PHF	.692	.761	.000	.758	.000	.811	.800	.821	.688	.000	.542	.630	.000	.000	.000	.000	.846



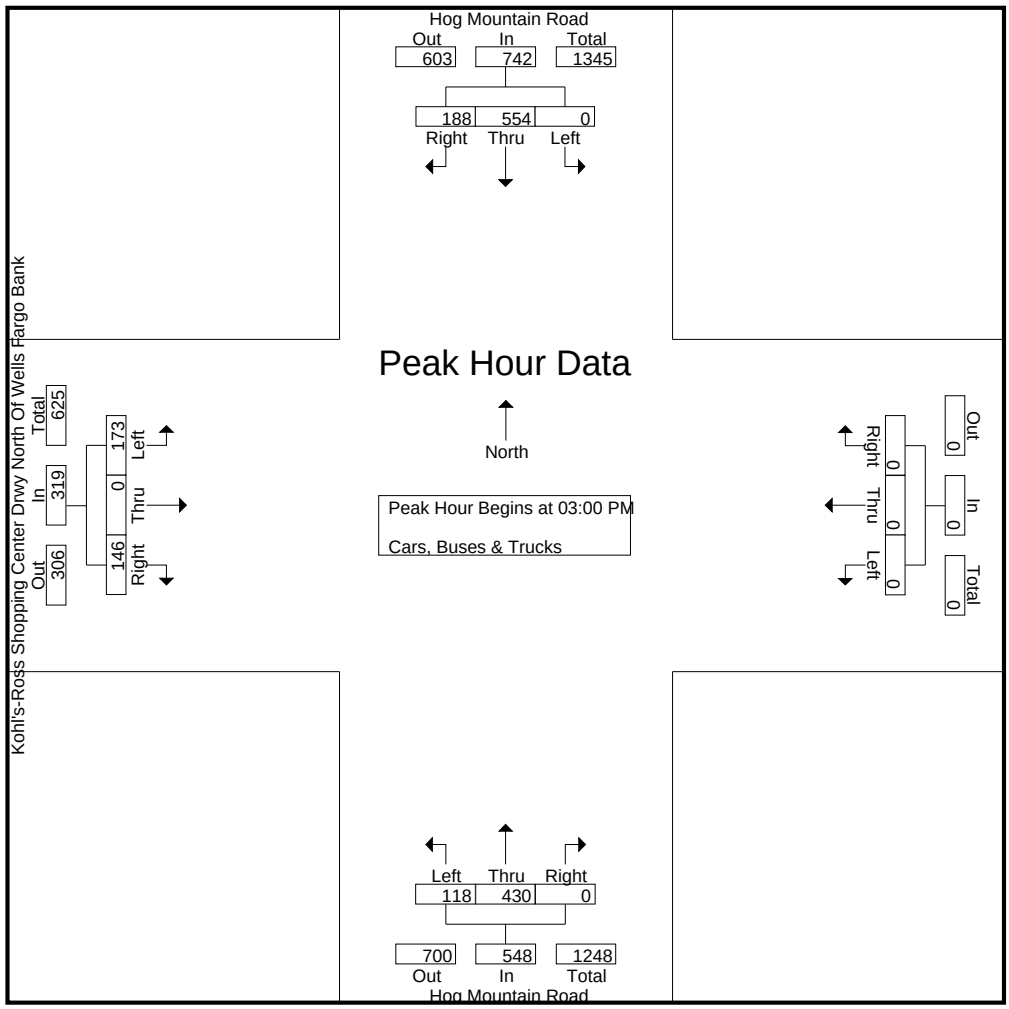
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025
Page No : 3

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	26	95	0	121	0	70	41	111	44	0	34	78	0	0	0	0	310
03:15 PM	25	102	0	127	0	95	37	132	48	0	**39**	87	0	0	0	0	346
03:30 PM	28	**118**	0	146	0	181	54	235	**50**	0	39	**89**	0	0	0	0	470
03:45 PM	**39**	115	0	**154**	0	**208**	**56**	**264**	31	0	34	65	0	0	0	0	**483**
Total Volume	118	430	0	548	0	554	188	742	173	0	146	319	0	0	0	0	1609
% App. Total	21.5	78.5	0		0	74.7	25.3		54.2	0	45.8		0	0	0		
PHF	.756	.911	.000	.890	.000	.666	.839	.703	.865	.000	.936	.896	.000	.000	.000	.000	.833



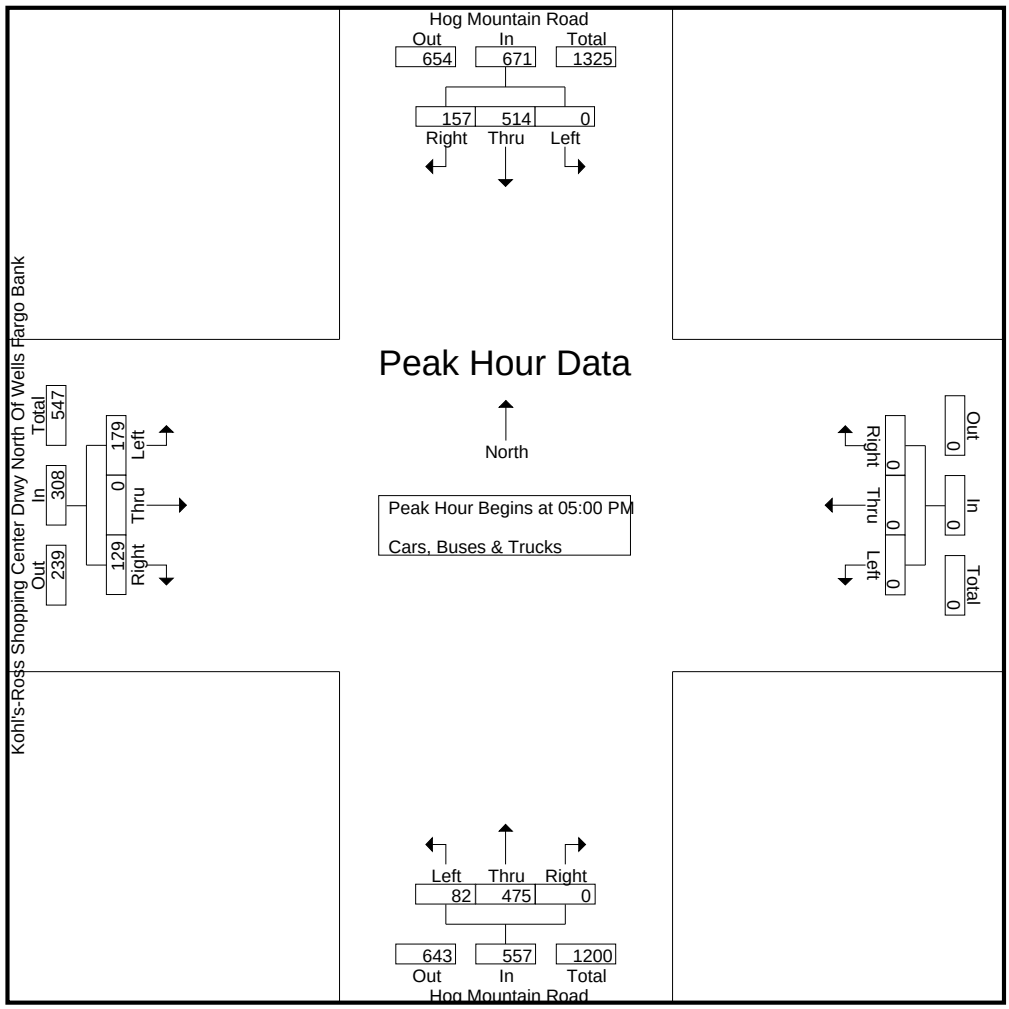
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025
Page No : 4

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**27**	117	0	**144**	0	**131**	35	166	**57**	0	29	**86**	0	0	0	0	**396**
05:15 PM	25	115	0	140	0	129	42	171	41	0	34	75	0	0	0	0	386
05:30 PM	14	**126**	0	140	0	129	**43**	**172**	42	0	**35**	77	0	0	0	0	389
05:45 PM	16	117	0	133	0	125	37	162	39	0	31	70	0	0	0	0	365
Total Volume	82	475	0	557	0	514	157	671	179	0	129	308	0	0	0	0	1536
% App. Total	14.7	85.3	0		0	76.6	23.4		58.1	0	41.9		0	0	0		
PHF	.759	.942	.000	.967	.000	.981	.913	.975	.785	.000	.921	.895	.000	.000	.000	.000	.970



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TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	38	8	50	0	20	1	21	9	2	11	22	24	0	4	28	121
07:15 AM	3	67	9	79	0	41	4	45	8	2	20	30	38	0	5	43	197
07:30 AM	0	101	7	108	0	52	2	54	13	2	12	27	40	0	13	53	242
07:45 AM	3	214	20	237	0	129	1	130	7	3	10	20	31	0	17	48	435
Total	10	420	44	474	0	242	8	250	37	9	53	99	133	0	39	172	995
08:00 AM	2	214	10	226	1	146	2	149	3	0	12	15	35	1	21	57	447
08:15 AM	2	158	17	177	1	174	1	176	1	0	14	15	18	0	11	29	397
08:30 AM	4	47	7	58	1	48	1	50	4	0	14	18	28	0	3	31	157
08:45 AM	6	47	10	63	1	64	1	66	7	2	13	22	22	0	0	22	173
Total	14	466	44	524	4	432	5	441	15	2	53	70	103	1	35	139	1174
*** BREAK ***																	
02:00 PM	6	67	18	91	0	81	2	83	2	1	3	6	17	0	1	18	198
02:15 PM	6	84	24	114	0	81	4	85	0	1	12	13	19	0	6	25	237
02:30 PM	7	95	32	134	0	96	5	101	6	2	12	20	17	1	0	18	273
02:45 PM	5	100	22	127	0	87	7	94	2	2	6	10	18	1	6	25	256
Total	24	346	96	466	0	345	18	363	10	6	33	49	71	2	13	86	964
03:00 PM	11	99	29	139	0	81	2	83	0	0	2	2	28	0	4	32	256
03:15 PM	10	113	25	148	0	107	4	111	1	0	7	8	20	1	4	25	292
03:30 PM	7	123	40	170	3	201	1	205	1	0	6	7	29	0	2	31	413
03:45 PM	12	88	46	146	5	223	3	231	1	1	4	6	37	0	2	39	422
Total	40	423	140	603	8	612	10	630	3	1	19	23	114	1	12	127	1383
04:00 PM	12	97	31	140	3	163	5	171	1	1	9	11	20	0	2	22	344
04:15 PM	10	98	37	145	2	96	3	101	2	0	6	8	19	0	1	20	274
04:30 PM	7	100	34	141	2	107	1	110	1	0	6	7	31	1	1	33	291
04:45 PM	13	83	39	135	1	98	2	101	1	0	2	3	22	1	8	31	270
Total	42	378	141	561	8	464	11	483	5	1	23	29	92	2	12	106	1179
05:00 PM	10	125	39	174	2	140	4	146	2	2	8	12	17	0	0	17	349
05:15 PM	14	96	46	156	0	139	10	149	3	0	12	15	20	3	2	25	345
05:30 PM	18	109	41	168	1	142	10	153	3	1	14	18	17	0	4	21	360
05:45 PM	15	98	43	156	0	137	8	145	2	1	11	14	14	2	2	18	333
Total	57	428	169	654	3	558	32	593	10	4	45	59	68	5	8	81	1387
Grand Total	187	2461	634	3282	23	2653	84	2760	80	23	226	329	581	11	119	711	7082
Apprch %	5.7	75	19.3		0.8	96.1	3		24.3	7	68.7		81.7	1.5	16.7		
Total %	2.6	34.8	9	46.3	0.3	37.5	1.2	39	1.1	0.3	3.2	4.6	8.2	0.2	1.7	10	

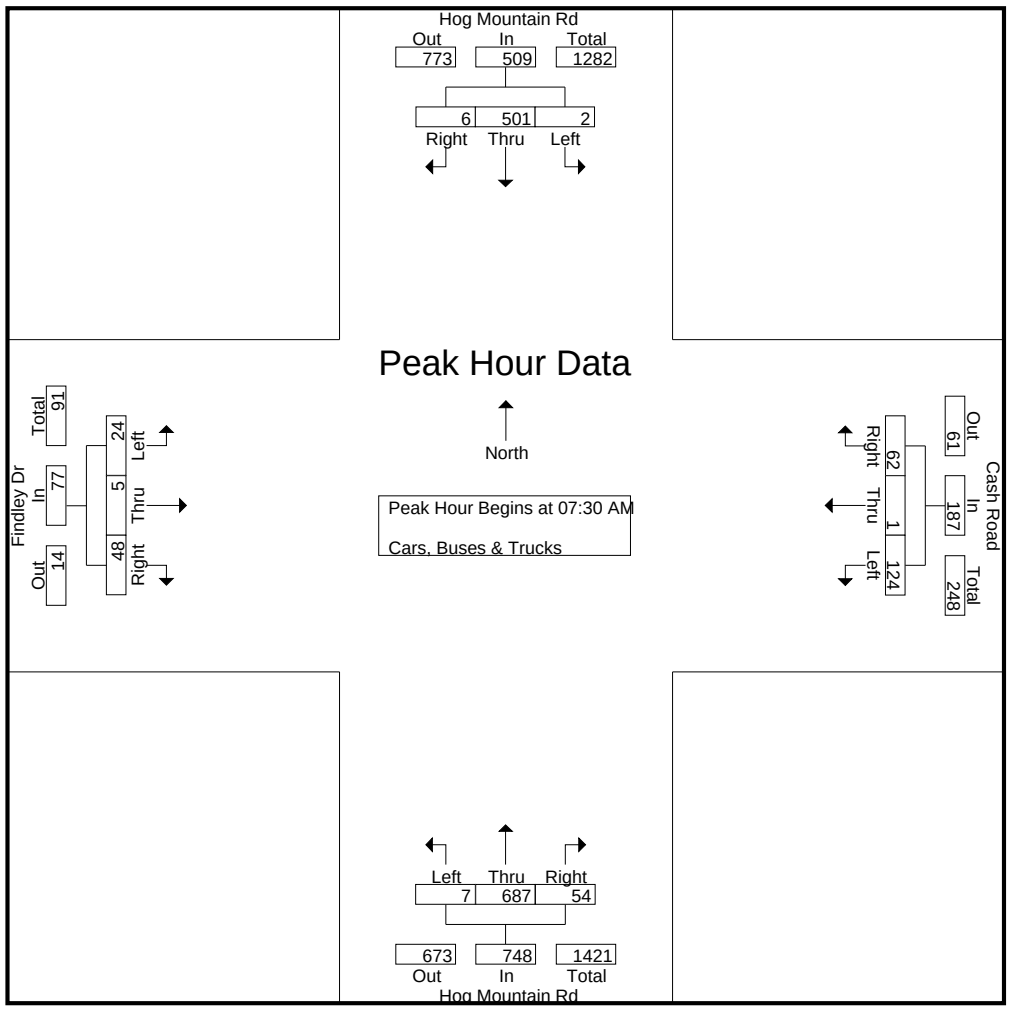
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 2

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	101	7	108	0	52	**2**	54	**13**	2	12	**27**	**40**	0	13	53	242
07:45 AM	**3**	**214**	**20**	**237**	0	129	1	130	7	**3**	10	20	31	0	17	48	435
08:00 AM	2	214	10	226	**1**	146	2	149	3	0	12	15	35	**1**	**21**	**57**	**447**
08:15 AM	2	158	17	177	1	**174**	1	**176**	1	0	**14**	15	18	0	11	29	397
Total Volume	7	687	54	748	2	501	6	509	24	5	48	77	124	1	62	187	1521
% App. Total	0.9	91.8	7.2		0.4	98.4	1.2		31.2	6.5	62.3		66.3	0.5	33.2		
PHF	.583	.803	.675	.789	.500	.720	.750	.723	.462	.417	.857	.713	.775	.250	.738	.820	.851



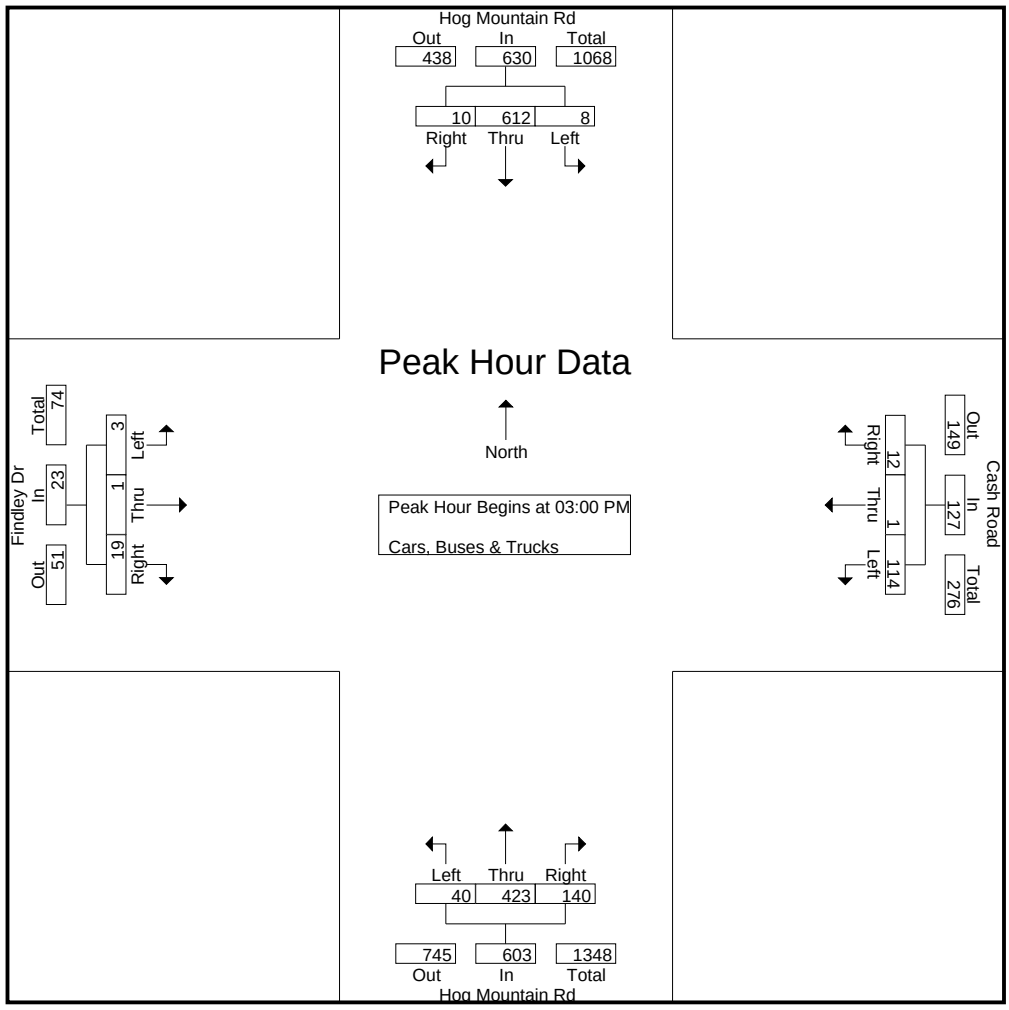
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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 3

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	11	99	29	139	0	81	2	83	0	0	2	2	28	0	**4**	32	256
03:15 PM	10	113	25	148	0	107	**4**	111	**1**	0	**7**	**8**	20	**1**	4	25	292
03:30 PM	7	**123**	40	**170**	3	201	1	205	1	0	6	7	29	0	2	31	413
03:45 PM	**12**	88	**46**	146	**5**	**223**	3	**231**	1	**1**	4	6	**37**	0	2	**39**	**422**
Total Volume	40	423	140	603	8	612	10	630	3	1	19	23	114	1	12	127	1383
% App. Total	6.6	70.1	23.2		1.3	97.1	1.6		13	4.3	82.6		89.8	0.8	9.4		
PHF	.833	.860	.761	.887	.400	.686	.625	.682	.750	.250	.679	.719	.770	.250	.750	.814	.819



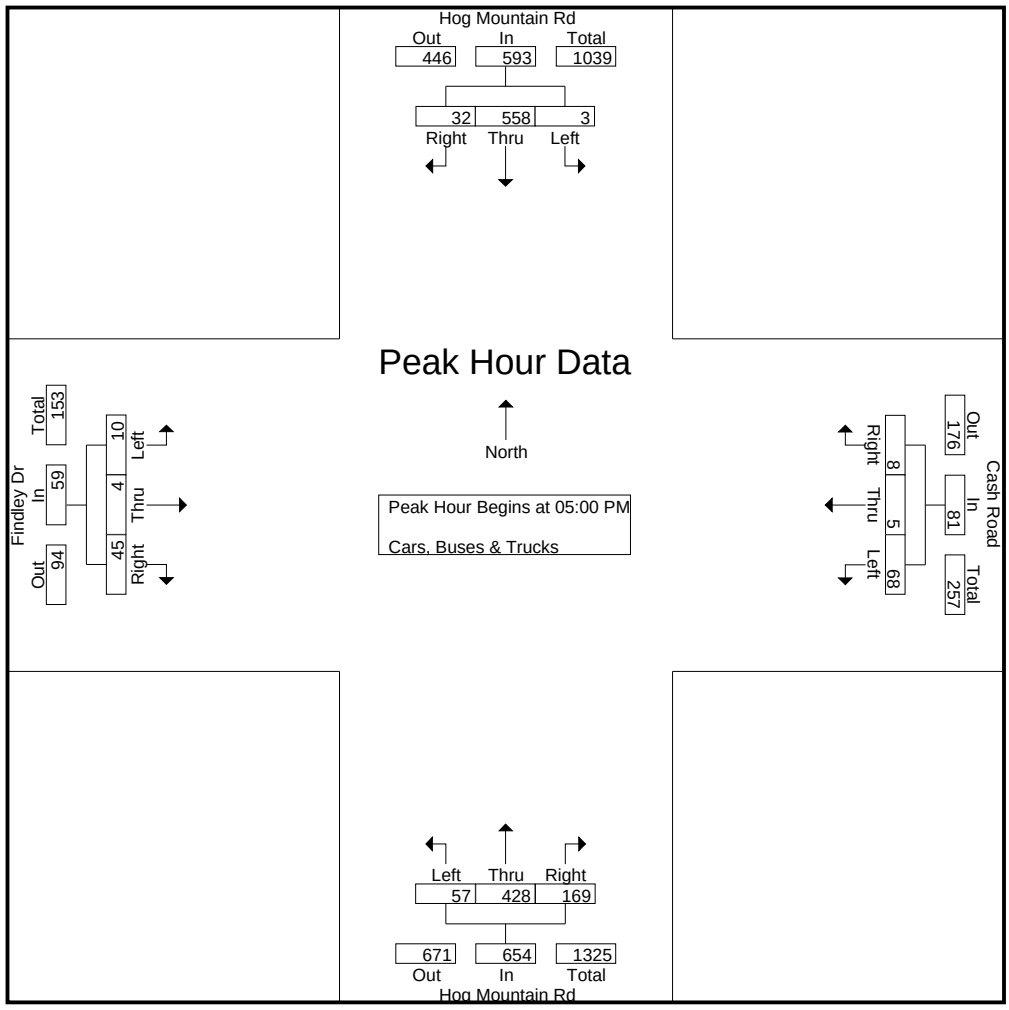
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 4

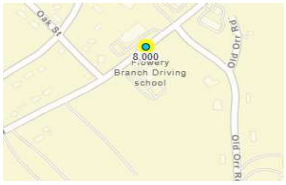
	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	10	**125**	39	**174**	**2**	140	4	146	2	**2**	8	12	17	0	0	17	349
05:15 PM	14	96	**46**	156	0	139	**10**	149	**3**	0	12	15	**20**	**3**	2	**25**	345
05:30 PM	**18**	109	41	168	1	**142**	10	**153**	3	1	**14**	**18**	17	0	**4**	21	**360**
05:45 PM	15	98	43	156	0	137	8	145	2	1	11	14	14	2	2	18	333
Total Volume	57	428	169	654	3	558	32	593	10	4	45	59	68	5	8	81	1387
% App. Total	8.7	65.4	25.8		0.5	94.1	5.4		16.9	6.8	76.3		84	6.2	9.9		
PHF	.792	.856	.918	.940	.375	.982	.800	.969	.833	.500	.804	.819	.850	.417	.500	.810	.963

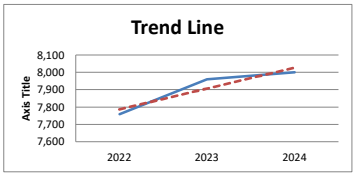


LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2022	2023	2024
Hog Mountain Rd (S of Spout Springs Rd)	1.5%	0.87	139-0191	00338005	7,760	7,960	8,000
Cash Rd (E of Sunny Ridge Ct)	1.6%	0.82	139-0779	00063400	3,110	3,200	3,210
SR 13 (Falcon Pkwy) (S of Martin Rd)	6.3%	0.80	139-0174	00001300	12,100	13,600	13,700
Spout Springs Rd (E of Hog Mountain Rd)	0.7%	1.00	139-7386	00130000	13,400	13,500	13,600
Phil Niekro Blvd (W of Thurman Tanner Pkwy)	-4.3%	0.69	139-0445	-	10,900	9,930	10,000
Weighted Average	**1.3%**	0.93	Sum of Count Stations =		47,270	48,190	48,510

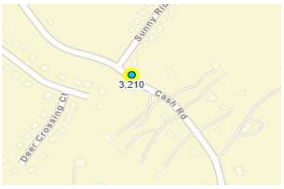
Location	Traffic Counter	RCLINK	2022	2023	2024
Hog Mountain Rd (S of Spout Springs Rd)	139-0191	00338005	7,760	7,960	8,000

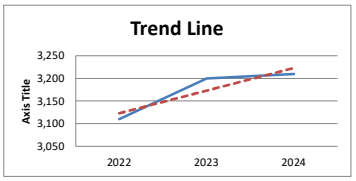




Growth Rate		Intercept	-234,853	Slope	120.00
Trend Line			7,787	7,907	8,027

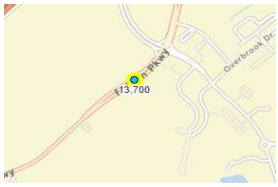
Location	Traffic Counter	RCLINK	2022	2023	2024
Cash Rd (E of Sunny Ridge Ct)	139-0779	00063400	3,110	3,200	3,210

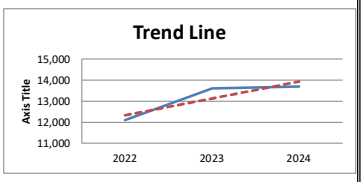




Growth Rate		Intercept	-97,977	Slope	50.00
Trend Line			3,123	3,173	3,223

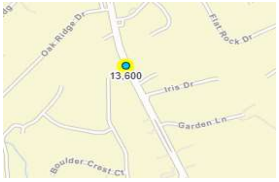
Location	Traffic Counter	RCLINK	2022	2023	2024
SR 13 (Falcon Pkwy) (S of Martin Rd)	139-0174	00001300	12,100	13,600	13,700

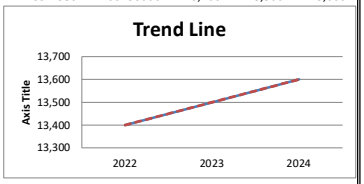




Growth Rate		Intercept	########	Slope	800.00
Trend Line			12,333	13,133	13,933

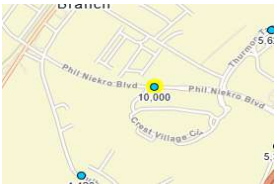
Location	Traffic Counter	RCLINK	2022	2023	2024
Spout Springs Rd (E of Hog Mountain Rd)	139-7386	00130000	13,400	13,500	13,600

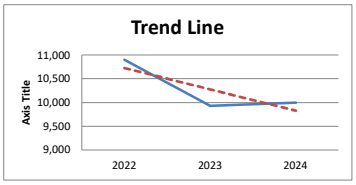




Growth Rate		Intercept	-188,800	Slope	100.00
Trend Line			13,400	13,500	13,600

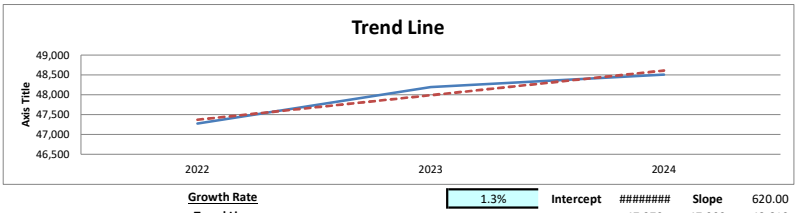
Location	Traffic Counter	RCLINK	2022	2023	2024
Phil Niekro Blvd (W of Thurman Tanner Pkwy)	139-0445	-	10,900	9,930	10,000





Growth Rate		Intercept	920,627	Slope	-450.00
Trend Line			10,727	10,277	9,827

Weighted Average	2022	2023	2024
Sum of Count Stations	47,270	48,190	48,510



Growth Rate		Intercept	########	Slope	620.00
Trend Line			47,370	47,990	48,610

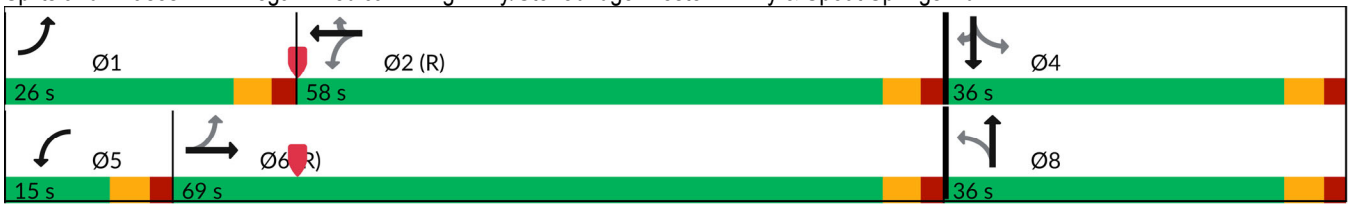
EXISTING INTERSECTION ANALYSIS

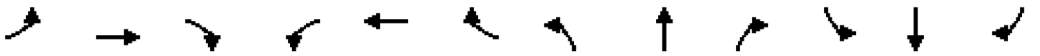
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	209	470	36	970	92	67	18	59	7	182
Future Volume (vph)	209	470	36	970	92	67	18	59	7	182
Lane Group Flow (vph)	249	623	43	1155	110	80	34	0	78	217
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	26.0	69.0	15.0	58.0	58.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	21.7%	57.5%	12.5%	48.3%	48.3%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.54	0.25	0.08	0.53	0.11	0.58	0.17		0.55	0.60
Control Delay (s/veh)	8.9	6.6	5.4	24.3	8.0	66.5	34.5		64.4	13.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	8.9	6.6	5.4	24.6	8.0	66.5	34.5		64.4	13.5
Queue Length 50th (ft)	36	79	7	396	26	61	15		59	0
Queue Length 95th (ft)	69	116	m20	460	65	102	42		100	55
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	511	2529	619	2190	1026	334	456		342	564
Starvation Cap Reductn	0	0	0	388	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.49	0.25	0.07	0.64	0.11	0.24	0.07		0.23	0.38

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	470	53	36	970	92	67	18	11	59	7	182
Future Volume (veh/h)	209	470	53	36	970	92	67	18	11	59	7	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	249	560	63	43	1155	110	80	21	13	70	8	217
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	2167	243	600	2261	1009	169	171	106	236	24	251
Arrive On Green	0.07	0.67	0.67	0.03	0.64	0.64	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3221	361	1781	3554	1585	1156	1081	669	1134	152	1585
Grp Volume(v), veh/h	249	308	315	43	1155	110	80	0	34	78	0	217
Grp Sat Flow(s),veh/h/ln	1781	1777	1805	1781	1777	1585	1156	0	1750	1286	0	1585
Q Serve(g_s), s	5.6	8.2	8.3	1.0	21.0	3.3	8.1	0.0	2.0	5.7	0.0	16.0
Cycle Q Clear(g_c), s	5.6	8.2	8.3	1.0	21.0	3.3	15.8	0.0	2.0	7.7	0.0	16.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.38	0.90		1.00
Lane Grp Cap(c), veh/h	383	1195	1214	600	2261	1009	169	0	277	260	0	251
V/C Ratio(X)	0.65	0.26	0.26	0.07	0.51	0.11	0.47	0.00	0.12	0.30	0.00	0.87
Avail Cap(c_a), veh/h	566	1195	1214	685	2261	1009	280	0	445	396	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	7.8	7.8	6.8	11.8	8.5	52.9	0.0	43.4	46.5	0.0	49.3
Incr Delay (d2), s/veh	1.9	0.5	0.5	0.0	0.7	0.2	2.1	0.0	0.2	0.6	0.0	10.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.9	3.0	0.3	7.5	1.1	2.5	0.0	0.9	2.2	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.3	8.3	8.3	6.9	12.4	8.7	55.0	0.0	43.6	47.1	0.0	60.2
LnGrp LOS	B	A	A	A	B	A	D		D	D		E
Approach Vol, veh/h		872			1308			114			295	
Approach Delay, s/veh		9.4			11.9			51.6			56.7	
Approach LOS		A			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	81.9		24.5	9.3	86.2		24.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	20.5	52.5		30.5	9.5	63.5		30.5				
Max Q Clear Time (g_c+I1), s	7.6	23.0		18.0	3.0	10.3		17.8				
Green Ext Time (p_c), s	0.5	17.2		0.9	0.0	8.4		0.3				

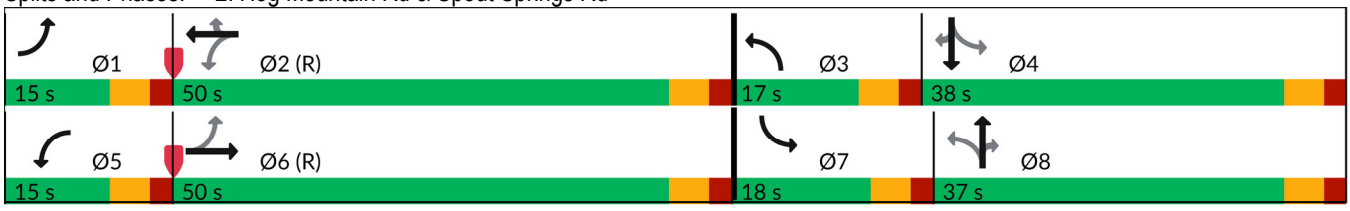
Intersection Summary												
HCM 7th Control Delay, s/veh			17.9									
HCM 7th LOS			B									

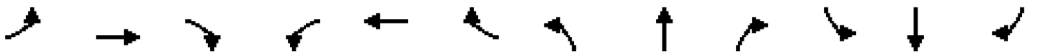
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	100	412	92	838	308	202	275	71	179	155	199
Future Volume (vph)	100	412	92	838	308	202	275	71	179	155	199
Lane Group Flow (vph)	108	509	99	901	331	217	296	76	192	167	214
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	50.0	15.0	50.0	50.0	17.0	37.0	37.0	18.0	38.0	38.0
Total Split (%)	12.5%	41.7%	12.5%	41.7%	41.7%	14.2%	30.8%	30.8%	15.0%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.36	0.33	0.21	0.58	0.40	0.58	0.79	0.18	0.70	0.43	0.43
Control Delay (s/veh)	24.6	26.1	15.2	28.3	8.4	35.2	60.2	2.2	41.6	43.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.6	26.1	15.2	28.3	8.4	35.2	60.2	2.2	41.6	43.7	7.4
Queue Length 50th (ft)	36	113	35	277	39	125	223	0	109	115	0
Queue Length 95th (ft)	114	238	72	387	122	174	302	10	155	170	59
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	311	1552	481	1561	835	377	489	506	281	504	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.33	0.21	0.58	0.40	0.58	0.61	0.15	0.68	0.33	0.37

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	412	61	92	838	308	202	275	71	179	155	199
Future Volume (veh/h)	100	412	61	92	838	308	202	275	71	179	155	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	443	0	99	901	0	217	296	76	192	167	214
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	1737		497	1728		340	340	288	271	353	299
Arrive On Green	0.02	0.16	0.00	0.04	0.49	0.00	0.10	0.18	0.18	0.10	0.19	0.19
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	108	443	0	99	901	0	217	296	76	192	167	214
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.6	13.1	0.0	3.3	20.9	0.0	11.5	18.5	4.9	10.4	9.5	15.2
Cycle Q Clear(g_c), s	3.6	13.1	0.0	3.3	20.9	0.0	11.5	18.5	4.9	10.4	9.5	15.2
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	1737		497	1728		340	340	288	271	353	299
V/C Ratio(X)	0.32	0.26		0.20	0.52		0.64	0.87	0.26	0.71	0.47	0.72
Avail Cap(c_a), veh/h	394	1737		561	1728		340	491	416	274	507	429
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	16.7	31.2	0.0	14.8	21.2	0.0	36.4	47.7	42.2	36.2	43.4	45.7
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.2	1.1	0.0	3.9	11.3	0.5	7.3	0.9	2.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.2	0.0	1.3	8.5	0.0	5.4	9.4	1.9	4.9	4.4	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.3	31.6	0.0	15.0	22.3	0.0	40.4	59.1	42.7	43.4	44.2	48.5
LnGrp LOS	B	C		B	C		D	E	D	D	D	D
Approach Vol, veh/h		551			1000			589			573	
Approach Delay, s/veh		28.8			21.6			50.1			45.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	63.8	17.0	28.1	10.7	64.2	17.9	27.3
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	44.5	11.5	32.5	9.5	44.5	12.5	31.5
Max Q Clear Time (g_c+I1), s	5.6	22.9	13.5	17.2	5.3	15.1	12.4	20.5
Green Ext Time (p_c), s	0.1	10.4	0.0	1.3	0.1	5.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	34.3
HCM 7th LOS	C

Notes

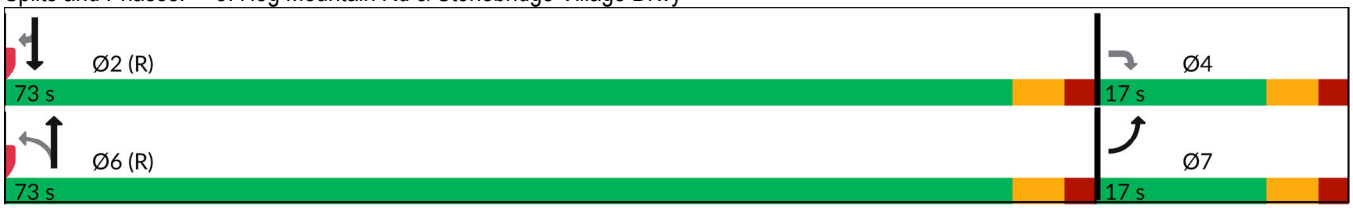
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

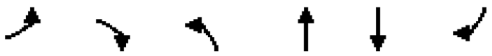
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	78	39	36	677	577	97
Future Volume (vph)	78	39	36	677	577	97
Lane Group Flow (vph)	92	46	42	796	679	114
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	17.0	17.0	73.0	73.0	73.0	73.0
Total Split (%)	18.9%	18.9%	81.1%	81.1%	81.1%	81.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.49	0.23	0.08	0.53	0.45	0.09
Control Delay (s/veh)	46.6	14.3	3.3	5.6	4.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.6	14.3	3.3	5.6	4.8	0.8
Queue Length 50th (ft)	51	0	5	147	113	0
Queue Length 95th (ft)	92	28	13	216	167	9
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	226	242	560	1509	1509	1304
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.19	0.08	0.53	0.45	0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	39	36	677	577	97
Future Volume (veh/h)	78	39	36	677	577	97
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	46	42	796	679	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	128	114	609	1507	1507	
Arrive On Green	0.07	0.07	0.81	0.81	0.81	0.00
Sat Flow, veh/h	1781	1585	761	1870	1870	1585
Grp Volume(v), veh/h	92	46	42	796	679	0
Grp Sat Flow(s),veh/h/ln	1781	1585	761	1870	1870	1585
Q Serve(g_s), s	4.5	2.5	1.6	13.0	10.0	0.0
Cycle Q Clear(g_c), s	4.5	2.5	11.6	13.0	10.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	128	114	609	1507	1507	
V/C Ratio(X)	0.72	0.40	0.07	0.53	0.45	
Avail Cap(c_a), veh/h	228	203	609	1507	1507	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.82	0.82	1.00	0.00
Uniform Delay (d), s/veh	40.9	39.9	4.4	3.0	2.7	0.0
Incr Delay (d2), s/veh	7.3	2.3	0.2	1.1	1.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	0.2	2.2	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.1	42.2	4.6	4.0	3.6	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	138			838	679	
Approach Delay, s/veh	46.2			4.1	3.6	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		78.0		12.0		78.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		11.5		67.5
Max Q Clear Time (g_c+I1), s		12.0		6.5		15.0
Green Ext Time (p_c), s		11.1		0.1		15.2

Intersection Summary	
HCM 7th Control Delay, s/veh	7.4
HCM 7th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	90	222	889	604
Demand Flow Rate, veh/h	92	226	906	616
Vehicles Circulating, veh/h	759	869	37	159
Vehicles Exiting, veh/h	16	74	814	861
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.5	9.4	11.9	9.2
Approach LOS	A	A	B	A

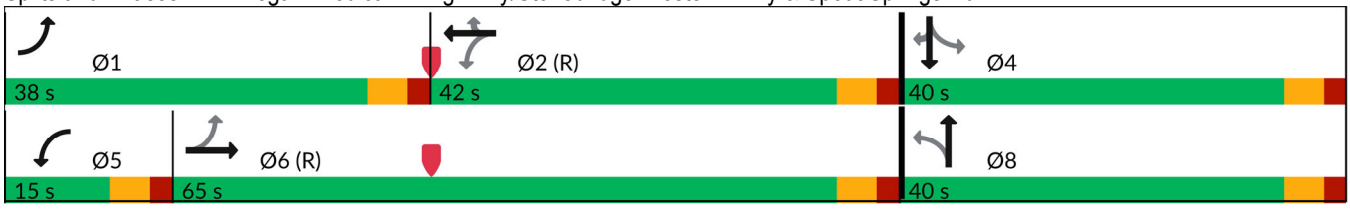
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	92	151	75	906	616
Cap Entry Lane, veh/h	636	569	573	1329	1173
Entry HV Adj Factor	0.977	0.980	0.980	0.981	0.981
Flow Entry, veh/h	90	148	74	889	604
Cap Entry, veh/h	622	557	562	1303	1151
V/C Ratio	0.145	0.265	0.132	0.682	0.525
Control Delay, s/veh	7.5	10.1	8.0	11.9	9.2
LOS	A	B	A	B	A
95th %tile Queue, veh	1	1	0	6	3

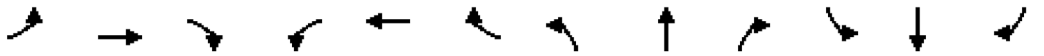
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	372	963	39	734	145	132	34	160	49	299
Future Volume (vph)	372	963	39	734	145	132	34	160	49	299
Lane Group Flow (vph)	396	1175	41	781	154	140	77	0	222	318
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	65.0	15.0	42.0	42.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	31.7%	54.2%	12.5%	35.0%	35.0%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.69	0.55	0.14	0.50	0.20	0.81	0.19		0.77	0.59
Control Delay (s/veh)	16.7	16.5	8.3	28.5	10.7	76.8	19.5		60.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	16.7	16.5	8.3	28.5	10.7	76.8	19.5		60.9	13.6
Queue Length 50th (ft)	111	276	7	248	17	105	23		165	42
Queue Length 95th (ft)	236	419	m17	375	75	172	59		235	123
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	666	2134	338	1574	777	231	521		388	635
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.59	0.55	0.12	0.50	0.20	0.61	0.15		0.57	0.50

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	963	142	39	734	145	132	34	39	160	49	299
Future Volume (veh/h)	372	963	142	39	734	145	132	34	39	160	49	299
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	396	1024	151	41	781	154	140	36	41	170	52	318
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	1690	249	268	1538	686	177	229	261	329	84	456
Arrive On Green	0.14	0.54	0.54	0.03	0.43	0.43	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	3107	458	1781	3554	1585	1012	798	909	960	294	1585
Grp Volume(v), veh/h	396	585	590	41	781	154	140	0	77	222	0	318
Grp Sat Flow(s),veh/h/ln	1781	1777	1788	1781	1777	1585	1012	0	1707	1253	0	1585
Q Serve(g_s), s	14.0	26.9	26.9	1.5	19.2	7.3	13.9	0.0	4.0	16.6	0.0	21.5
Cycle Q Clear(g_c), s	14.0	26.9	26.9	1.5	19.2	7.3	34.5	0.0	4.0	20.6	0.0	21.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.53	0.77		1.00
Lane Grp Cap(c), veh/h	477	967	973	268	1538	686	177	0	491	413	0	456
V/C Ratio(X)	0.83	0.61	0.61	0.15	0.51	0.22	0.79	0.00	0.16	0.54	0.00	0.70
Avail Cap(c_a), veh/h	706	967	973	354	1538	686	177	0	491	413	0	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	18.6	18.6	18.5	24.7	21.4	54.2	0.0	31.9	39.6	0.0	38.1
Incr Delay (d2), s/veh	5.4	2.8	2.8	0.2	1.1	0.7	21.2	0.0	0.1	1.4	0.0	4.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	10.9	11.0	0.6	7.9	2.8	5.3	0.0	1.7	6.0	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.6	21.4	21.4	18.8	25.9	22.1	75.4	0.0	32.0	41.0	0.0	42.7
LnGrp LOS	C	C	C	B	C	C	E		C	D		D
Approach Vol, veh/h		1571			976			217			540	
Approach Delay, s/veh		22.0			25.0			60.0			42.0	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.6	57.4		40.0	9.2	70.8		40.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	36.5		34.5	9.5	59.5		34.5				
Max Q Clear Time (g_c+I1), s	16.0	21.2		23.5	3.5	28.9		36.5				
Green Ext Time (p_c), s	1.1	8.1		2.0	0.0	16.4		0.0				

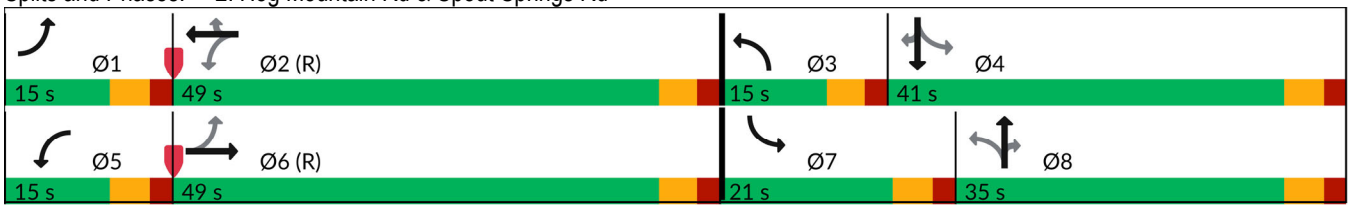
Intersection Summary												
HCM 7th Control Delay, s/veh			28.6									
HCM 7th LOS			C									

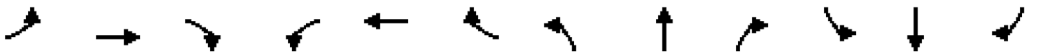
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	148	658	79	400	170	142	210	55	223	262	125
Future Volume (vph)	148	658	79	400	170	142	210	55	223	262	125
Lane Group Flow (vph)	157	809	84	426	181	151	223	59	237	279	133
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	49.0	15.0	49.0	49.0	15.0	35.0	35.0	21.0	41.0	41.0
Total Split (%)	12.5%	40.8%	12.5%	40.8%	40.8%	12.5%	29.2%	29.2%	17.5%	34.2%	34.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.29	0.48	0.24	0.28	0.23	0.58	0.73	0.15	0.74	0.72	0.31
Control Delay (s/veh)	24.2	35.2	15.0	23.7	4.4	38.6	61.5	0.8	44.0	54.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.2	35.2	15.0	23.7	4.4	38.6	61.5	0.8	44.0	54.2	7.7
Queue Length 50th (ft)	72	254	28	112	0	86	169	0	142	205	0
Queue Length 95th (ft)	166	413	60	171	48	128	241	0	197	281	49
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	539	1672	371	1544	792	260	457	519	330	551	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.48	0.23	0.28	0.23	0.58	0.49	0.11	0.72	0.51	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	658	102	79	400	170	142	210	55	223	262	125
Future Volume (veh/h)	148	658	102	79	400	170	142	210	55	223	262	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	700	0	84	426	0	151	223	59	237	279	133
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	569	1810		379	1737		247	265	224	313	353	300
Arrive On Green	0.02	0.17	0.00	0.04	0.49	0.00	0.08	0.14	0.14	0.13	0.19	0.19
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	157	700	0	84	426	0	151	223	59	237	279	133
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	5.1	21.0	0.0	2.8	8.4	0.0	8.7	13.9	4.0	13.2	17.1	8.9
Cycle Q Clear(g_c), s	5.1	21.0	0.0	2.8	8.4	0.0	8.7	13.9	4.0	13.2	17.1	8.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	569	1810		379	1737		247	265	224	313	353	300
V/C Ratio(X)	0.28	0.39		0.22	0.25		0.61	0.84	0.26	0.76	0.79	0.44
Avail Cap(c_a), veh/h	604	1810		450	1737		247	460	390	318	553	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	14.3	33.2	0.0	15.7	17.8	0.0	40.4	50.2	45.9	36.7	46.4	43.1
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.3	0.3	0.0	4.4	7.1	0.6	8.6	3.5	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	10.1	0.0	1.1	3.3	0.0	4.0	6.9	1.6	6.3	8.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.5	33.7	0.0	15.9	18.2	0.0	44.9	57.3	46.5	45.3	49.9	44.0
LnGrp LOS	B	C		B	B		D	E	D	D	D	D
Approach Vol, veh/h		857			510			433			649	
Approach Delay, s/veh		30.2			17.8			51.5			47.0	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	64.2	15.0	28.2	10.2	66.6	20.7	22.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	9.5	35.5	9.5	43.5	15.5	29.5
Max Q Clear Time (g_c+I1), s	7.1	10.4	10.7	19.1	4.8	23.0	15.2	15.9
Green Ext Time (p_c), s	0.1	5.3	0.0	1.7	0.1	7.7	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	35.8
HCM 7th LOS	D

Notes

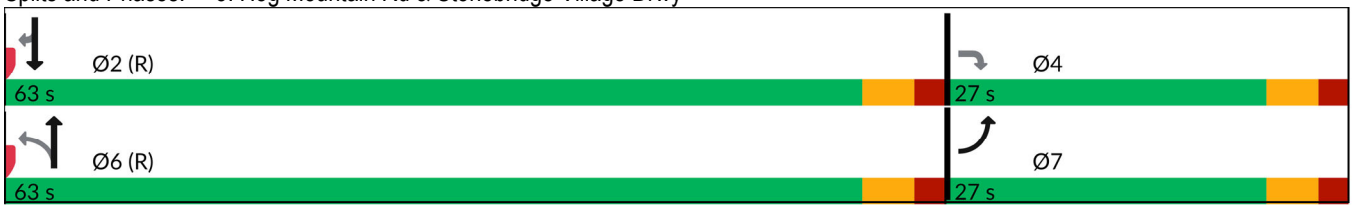
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

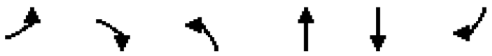
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	175	147	119	434	560	190
Future Volume (vph)	175	147	119	434	560	190
Lane Group Flow (vph)	211	177	143	523	675	229
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	27.0	27.0	63.0	63.0	63.0	63.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.68	0.42	0.32	0.40	0.52	0.19
Control Delay (s/veh)	45.2	7.9	8.6	7.3	8.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.2	7.9	8.6	7.3	8.8	1.3
Queue Length 50th (ft)	115	0	27	107	156	0
Queue Length 95th (ft)	159	39	64	179	254	18
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	422	512	442	1307	1307	1179
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.35	0.32	0.40	0.52	0.19

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	175	147	119	434	560	190
Future Volume (veh/h)	175	147	119	434	560	190
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	177	143	523	675	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	261	233	522	1367	1367	
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.00
Sat Flow, veh/h	1781	1585	764	1870	1870	1585
Grp Volume(v), veh/h	211	177	143	523	675	0
Grp Sat Flow(s),veh/h/ln	1781	1585	764	1870	1870	1585
Q Serve(g_s), s	10.3	9.7	8.7	9.4	13.7	0.0
Cycle Q Clear(g_c), s	10.3	9.7	22.4	9.4	13.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	261	233	522	1367	1367	
V/C Ratio(X)	0.81	0.76	0.27	0.38	0.49	
Avail Cap(c_a), veh/h	426	379	522	1367	1367	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.89	0.89	1.00	0.00
Uniform Delay (d), s/veh	37.2	36.9	9.8	4.5	5.1	0.0
Incr Delay (d2), s/veh	5.8	5.1	1.2	0.7	1.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.0	1.4	2.6	3.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.0	42.0	11.0	5.2	6.4	0.0
LnGrp LOS	D	D	B	A	A	
Approach Vol, veh/h	388			666	675	
Approach Delay, s/veh	42.5			6.5	6.4	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.3		18.7		71.3
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		57.5		21.5		57.5
Max Q Clear Time (g_c+I1), s		15.7		12.3		24.4
Green Ext Time (p_c), s		10.3		0.9		9.1

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	28	156	742	776
Demand Flow Rate, veh/h	28	159	756	791
Vehicles Circulating, veh/h	922	585	15	194
Vehicles Exiting, veh/h	63	186	935	535
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	6.7	8.8	13.9
Approach LOS	A	A	A	B

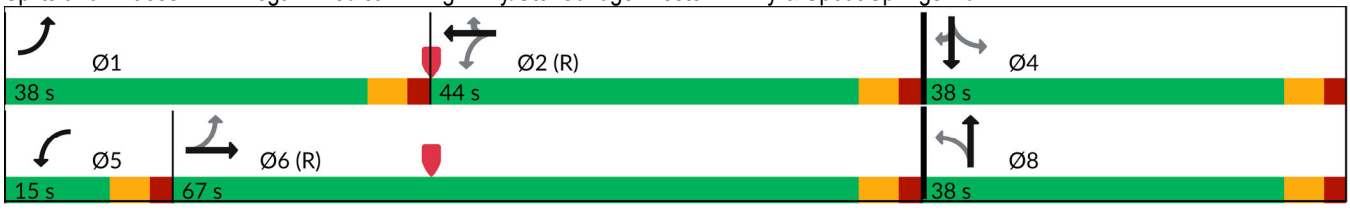
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	28	144	15	756	791
Cap Entry Lane, veh/h	539	760	800	1359	1132
Entry HV Adj Factor	0.999	0.979	0.980	0.981	0.981
Flow Entry, veh/h	28	141	15	742	776
Cap Entry, veh/h	538	744	784	1333	1111
V/C Ratio	0.052	0.190	0.019	0.556	0.699
Control Delay, s/veh	7.3	6.9	4.8	8.8	13.9
LOS	A	A	A	A	B
95th %tile Queue, veh	0	1	0	4	6

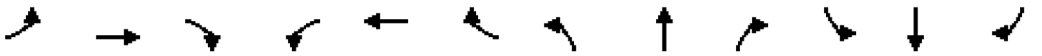
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	383	1029	47	687	128	148	34	140	38	285
Future Volume (vph)	383	1029	47	687	128	148	34	140	38	285
Lane Group Flow (vph)	395	1217	48	708	132	153	72	0	183	294
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	67.0	15.0	44.0	44.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	31.7%	55.8%	12.5%	36.7%	36.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.64	0.55	0.16	0.41	0.16	0.88	0.20		0.71	0.56
Control Delay (s/veh)	12.5	15.2	6.9	24.9	10.7	88.6	21.5		59.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	12.5	15.2	6.9	24.9	10.7	88.6	21.5		59.4	9.6
Queue Length 50th (ft)	101	273	5	220	22	118	23		136	10
Queue Length 95th (ft)	193	425	m17	332	72	185	58		199	81
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	716	2211	339	1709	830	246	492		365	631
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.55	0.55	0.14	0.41	0.16	0.62	0.15		0.50	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	1029	151	47	687	128	148	34	36	140	38	285
Future Volume (veh/h)	383	1029	151	47	687	128	148	34	36	140	38	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	395	1061	156	48	708	132	153	35	37	144	39	294
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	513	1736	255	270	1615	720	194	225	238	320	74	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3109	456	1781	3554	1585	1047	832	880	982	275	1585
Grp Volume(v), veh/h	395	606	611	48	708	132	153	0	72	183	0	294
Grp Sat Flow(s),veh/h/ln	1781	1777	1788	1781	1777	1585	1047	0	1712	1257	0	1585
Q Serve(g_s), s	13.4	27.4	27.5	1.7	16.3	5.9	15.3	0.0	3.8	13.3	0.0	19.9
Cycle Q Clear(g_c), s	13.4	27.4	27.5	1.7	16.3	5.9	32.5	0.0	3.8	17.2	0.0	19.9
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.51	0.79		1.00
Lane Grp Cap(c), veh/h	513	992	999	270	1615	720	194	0	464	394	0	429
V/C Ratio(X)	0.77	0.61	0.61	0.18	0.44	0.18	0.79	0.00	0.16	0.46	0.00	0.68
Avail Cap(c_a), veh/h	751	992	999	352	1615	720	194	0	464	394	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	17.8	17.8	17.2	22.3	19.5	53.3	0.0	33.3	39.7	0.0	39.2
Incr Delay (d2), s/veh	2.9	2.8	2.8	0.3	0.8	0.5	19.4	0.0	0.2	0.9	0.0	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	11.0	11.1	0.7	6.7	2.2	5.7	0.0	1.6	4.9	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	20.5	20.6	17.5	23.1	20.0	72.7	0.0	33.5	40.6	0.0	43.6
LnGrp LOS	B	C	C	B	C	B	E		C	D		D
Approach Vol, veh/h		1612			888			225			477	
Approach Delay, s/veh		20.0			22.3			60.2			42.5	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	60.0		38.0	9.5	72.5		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	38.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.4	18.3		21.9	3.7	29.5		34.5				
Green Ext Time (p_c), s	1.1	8.7		1.7	0.0	17.6		0.0				

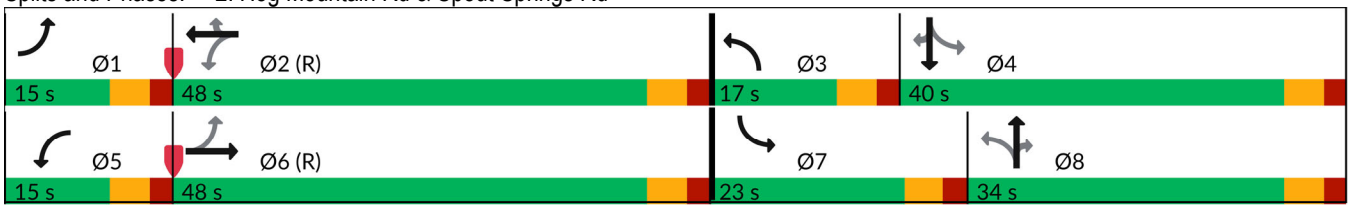
Intersection Summary												
HCM 7th Control Delay, s/veh			26.8									
HCM 7th LOS			C									

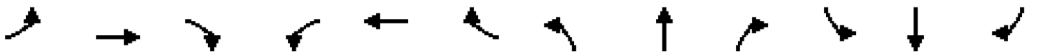
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	157	745	83	467	179	162	185	64	280	333	123
Future Volume (vph)	157	745	83	467	179	162	185	64	280	333	123
Lane Group Flow (vph)	159	872	84	472	181	164	187	65	283	336	124
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	48.0	15.0	48.0	48.0	17.0	34.0	34.0	23.0	40.0	40.0
Total Split (%)	12.5%	40.0%	12.5%	40.0%	40.0%	14.2%	28.3%	28.3%	19.2%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.33	0.55	0.28	0.32	0.24	0.64	0.57	0.16	0.71	0.81	0.28
Control Delay (s/veh)	28.5	39.1	17.4	25.9	4.6	38.1	51.6	0.8	38.8	59.0	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	39.1	17.4	25.9	4.6	38.1	51.6	0.8	38.8	59.0	7.5
Queue Length 50th (ft)	78	293	30	133	0	89	137	0	167	252	1
Queue Length 95th (ft)	0	0	65	192	49	129	198	0	222	334	47
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	481	1581	322	1465	761	263	442	507	403	535	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.55	0.26	0.32	0.24	0.62	0.42	0.13	0.70	0.63	0.23

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	745	118	83	467	179	162	185	64	280	333	123
Future Volume (veh/h)	157	745	118	83	467	179	162	185	64	280	333	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	753	0	84	472	0	164	187	65	283	336	124
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	516	1703		335	1619		254	284	241	385	383	325
Arrive On Green	0.02	0.16	0.00	0.04	0.46	0.00	0.09	0.15	0.15	0.15	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	159	753	0	84	472	0	164	187	65	283	336	124
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	5.6	23.0	0.0	3.0	10.0	0.0	9.2	11.3	4.4	15.5	20.9	8.1
Cycle Q Clear(g_c), s	5.6	23.0	0.0	3.0	10.0	0.0	9.2	11.3	4.4	15.5	20.9	8.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	516	1703		335	1619		254	284	241	385	383	325
V/C Ratio(X)	0.31	0.44		0.25	0.29		0.64	0.66	0.27	0.74	0.88	0.38
Avail Cap(c_a), veh/h	544	1703		405	1619		259	444	376	385	538	456
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	16.5	36.0	0.0	18.0	20.5	0.0	38.7	47.9	45.0	34.5	46.2	41.1
Incr Delay (d2), s/veh	0.3	0.7	0.0	0.4	0.5	0.0	5.3	2.6	0.6	6.6	10.6	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	11.0	0.0	1.2	4.1	0.0	4.3	5.3	1.7	7.2	10.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.7	36.7	0.0	18.4	21.0	0.0	44.0	50.5	45.6	41.1	56.8	41.8
LnGrp LOS	B	D		B	C		D	D	D	D	E	D
Approach Vol, veh/h		912			556			416			743	
Approach Delay, s/veh		33.2			20.6			47.2			48.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	60.2	16.7	30.1	10.2	63.0	23.0	23.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	42.5	11.5	34.5	9.5	42.5	17.5	28.5
Max Q Clear Time (g_c+I1), s	7.6	12.0	11.2	22.9	5.0	25.0	17.5	13.3
Green Ext Time (p_c), s	0.1	5.8	0.0	1.7	0.1	7.6	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	37.0
HCM 7th LOS	D

Notes

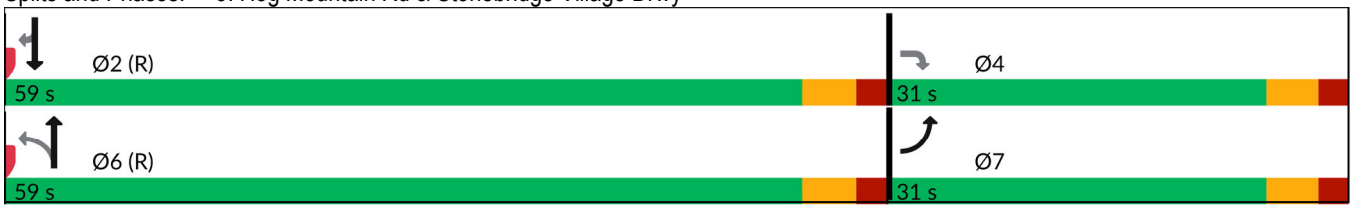
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

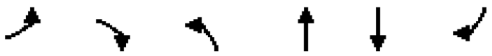
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	130	83	480	519	159
Future Volume (vph)	181	130	83	480	519	159
Lane Group Flow (vph)	187	134	86	495	535	164
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	31.0	31.0	59.0	59.0	59.0	59.0
Total Split (%)	34.4%	34.4%	65.6%	65.6%	65.6%	65.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.64	0.36	0.15	0.37	0.40	0.14
Control Delay (s/veh)	44.9	8.5	5.8	6.6	6.9	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.9	8.5	5.8	6.6	6.9	1.2
Queue Length 50th (ft)	102	0	14	95	105	0
Queue Length 95th (ft)	160	45	37	179	200	20
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	501	544	566	1329	1329	1176
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.25	0.15	0.37	0.40	0.14

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	181	130	83	480	519	159
Future Volume (veh/h)	181	130	83	480	519	159
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	134	86	495	535	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	238	212	638	1392	1392	
Arrive On Green	0.13	0.13	0.74	0.74	0.74	0.00
Sat Flow, veh/h	1781	1585	870	1870	1870	1585
Grp Volume(v), veh/h	187	134	86	495	535	0
Grp Sat Flow(s),veh/h/ln	1781	1585	870	1870	1870	1585
Q Serve(g_s), s	9.1	7.2	3.5	8.3	9.2	0.0
Cycle Q Clear(g_c), s	9.1	7.2	12.8	8.3	9.2	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	238	212	638	1392	1392	
V/C Ratio(X)	0.79	0.63	0.13	0.36	0.38	
Avail Cap(c_a), veh/h	505	449	638	1392	1392	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.93	0.93	1.00	0.00
Uniform Delay (d), s/veh	37.8	36.9	6.4	4.0	4.1	0.0
Incr Delay (d2), s/veh	5.7	3.1	0.4	0.7	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	0.6	2.2	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.5	40.0	6.8	4.7	4.9	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	321			581	535	
Approach Delay, s/veh	42.0			5.0	4.9	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		72.5		17.5		72.5
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		53.5		25.5		53.5
Max Q Clear Time (g_c+I1), s		11.2		11.1		14.8
Green Ext Time (p_c), s		7.4		0.9		7.8

Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	61	85	688	624
Demand Flow Rate, veh/h	62	86	702	637
Vehicles Circulating, veh/h	676	530	17	139
Vehicles Exiting, veh/h	100	189	721	469
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	5.4	8.2	9.2
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	62	78	8	702	637
Cap Entry Lane, veh/h	692	804	855	1356	1197
Entry HV Adj Factor	0.983	0.986	0.980	0.980	0.980
Flow Entry, veh/h	61	77	8	688	624
Cap Entry, veh/h	680	792	838	1329	1173
V/C Ratio	0.090	0.097	0.010	0.518	0.532
Control Delay, s/veh	6.3	5.5	4.4	8.2	9.2
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	3	3

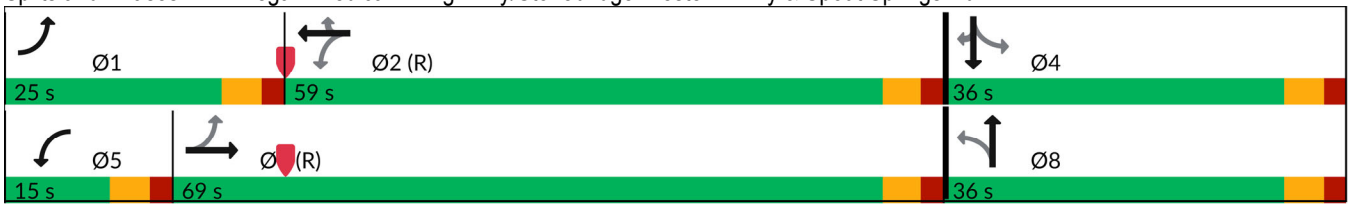
FUTURE "NO-BUILD" INTERSECTION ANALYSIS

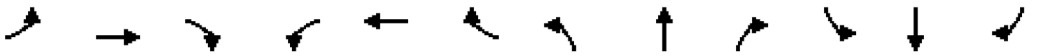
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	211	486	36	1015	93	68	18	60	7	184
Future Volume (vph)	211	486	36	1015	93	68	18	60	7	184
Lane Group Flow (vph)	251	643	43	1208	111	81	34	0	79	219
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	25.0	69.0	15.0	59.0	59.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	20.8%	57.5%	12.5%	49.2%	49.2%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.56	0.25	0.08	0.56	0.11	0.58	0.17		0.55	0.60
Control Delay (s/veh)	10.6	6.6	5.7	25.9	8.2	66.5	34.4		64.4	13.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	10.6	6.6	5.7	26.2	8.2	66.5	34.4		64.4	13.5
Queue Length 50th (ft)	37	83	7	446	26	62	15		60	0
Queue Length 95th (ft)	89	121	m20	494	65	102	42		100	55
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	484	2526	607	2172	1019	334	456		342	565
Starvation Cap Reductn	0	0	0	367	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.52	0.25	0.07	0.67	0.11	0.24	0.07		0.23	0.39

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	486	54	36	1015	93	68	18	11	60	7	184
Future Volume (veh/h)	211	486	54	36	1015	93	68	18	11	60	7	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	251	579	64	43	1208	111	81	21	13	71	8	219
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	2167	239	588	2255	1006	169	172	107	238	24	253
Arrive On Green	0.07	0.67	0.67	0.03	0.63	0.63	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3227	356	1781	3554	1585	1154	1081	669	1137	150	1585
Grp Volume(v), veh/h	251	318	325	43	1208	111	81	0	34	79	0	219
Grp Sat Flow(s),veh/h/ln	1781	1777	1806	1781	1777	1585	1154	0	1750	1287	0	1585
Q Serve(g_s), s	5.7	8.6	8.6	1.0	22.6	3.3	8.2	0.0	2.0	5.8	0.0	16.2
Cycle Q Clear(g_c), s	5.7	8.6	8.6	1.0	22.6	3.3	16.0	0.0	2.0	7.8	0.0	16.2
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.38	0.90		1.00
Lane Grp Cap(c), veh/h	368	1193	1213	588	2255	1006	169	0	279	262	0	253
V/C Ratio(X)	0.68	0.27	0.27	0.07	0.54	0.11	0.48	0.00	0.12	0.30	0.00	0.87
Avail Cap(c_a), veh/h	535	1193	1213	673	2255	1006	278	0	445	396	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.6	7.9	7.9	6.9	12.1	8.6	52.9	0.0	43.2	46.4	0.0	49.2
Incr Delay (d2), s/veh	2.2	0.5	0.5	0.0	0.7	0.2	2.1	0.0	0.2	0.6	0.0	11.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.1	3.1	0.3	8.1	1.1	2.5	0.0	0.9	2.2	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	8.4	8.4	7.0	12.9	8.8	55.0	0.0	43.4	47.0	0.0	60.3
LnGrp LOS	B	A	A	A	B	A	E		D	D		E
Approach Vol, veh/h		894			1362			115			298	
Approach Delay, s/veh		10.0			12.3			51.6			56.8	
Approach LOS		A			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	81.7		24.6	9.3	86.1		24.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	19.5	53.5		30.5	9.5	63.5		30.5				
Max Q Clear Time (g_c+I1), s	7.7	24.6		18.2	3.0	10.6		18.0				
Green Ext Time (p_c), s	0.5	17.8		0.9	0.0	8.7		0.3				

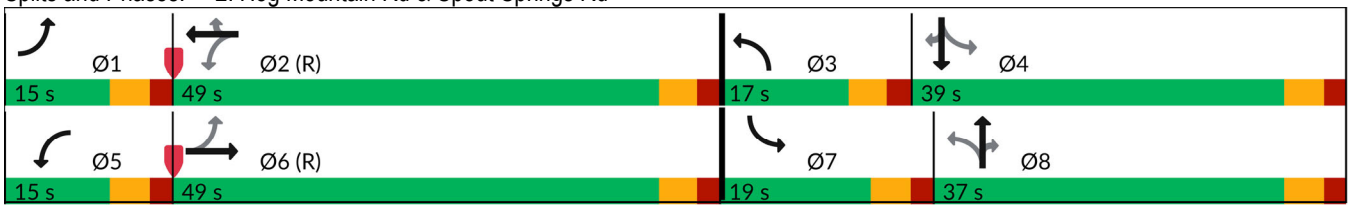
Intersection Summary												
HCM 7th Control Delay, s/veh			18.2									
HCM 7th LOS			B									

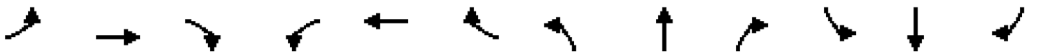
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	112	416	93	846	314	204	279	72	190	161	236
Future Volume (vph)	112	416	93	846	314	204	279	72	190	161	236
Lane Group Flow (vph)	120	514	100	910	338	219	300	77	204	173	254
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	49.0	15.0	49.0	49.0	17.0	37.0	37.0	19.0	39.0	39.0
Total Split (%)	12.5%	40.8%	12.5%	40.8%	40.8%	14.2%	30.8%	30.8%	15.8%	32.5%	32.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.41	0.34	0.22	0.60	0.41	0.57	0.79	0.18	0.71	0.43	0.47
Control Delay (s/veh)	28.6	29.6	15.8	29.7	9.1	34.3	60.3	2.3	40.9	42.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.6	29.6	15.8	29.7	9.1	34.4	60.3	2.3	40.9	42.7	7.7
Queue Length 50th (ft)	51	117	36	288	44	124	226	0	115	118	3
Queue Length 95th (ft)	129	264	74	398	130	173	306	10	162	174	67
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	301	1515	469	1519	819	384	489	506	295	520	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	7	0	0	0	0	11
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.34	0.21	0.60	0.41	0.58	0.61	0.15	0.69	0.33	0.42

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	416	62	93	846	314	204	279	72	190	161	236
Future Volume (veh/h)	112	416	62	93	846	314	204	279	72	190	161	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	447	0	100	910	0	219	300	77	204	173	254
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	1707		488	1686		341	344	291	281	367	311
Arrive On Green	0.02	0.16	0.00	0.04	0.47	0.00	0.10	0.18	0.18	0.11	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	120	447	0	100	910	0	219	300	77	204	173	254
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.1	13.3	0.0	3.4	21.7	0.0	11.5	18.7	5.0	11.0	9.8	18.4
Cycle Q Clear(g_c), s	4.1	13.3	0.0	3.4	21.7	0.0	11.5	18.7	5.0	11.0	9.8	18.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1707		488	1686		341	344	291	281	367	311
V/C Ratio(X)	0.36	0.26		0.21	0.54		0.64	0.87	0.26	0.73	0.47	0.82
Avail Cap(c_a), veh/h	381	1707		550	1686		341	491	416	288	522	442
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	17.6	31.8	0.0	15.5	22.3	0.0	36.3	47.6	42.0	35.8	42.7	46.2
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.2	1.2	0.0	4.1	11.7	0.5	7.6	0.8	6.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.3	0.0	1.3	8.8	0.0	5.5	9.6	2.0	5.2	4.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	32.2	0.0	15.7	23.5	0.0	40.4	59.3	42.5	43.4	43.5	53.1
LnGrp LOS	B	C		B	C		D	E	D	D	D	D
Approach Vol, veh/h		567			1010			596			631	
Approach Delay, s/veh		29.2			22.8			50.2			47.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	62.4	17.0	29.0	10.8	63.1	18.5	27.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	11.5	33.5	9.5	43.5	13.5	31.5
Max Q Clear Time (g_c+I1), s	6.1	23.7	13.5	20.4	5.4	15.3	13.0	20.7
Green Ext Time (p_c), s	0.1	9.9	0.0	1.4	0.1	5.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	35.4
HCM 7th LOS	D

Notes

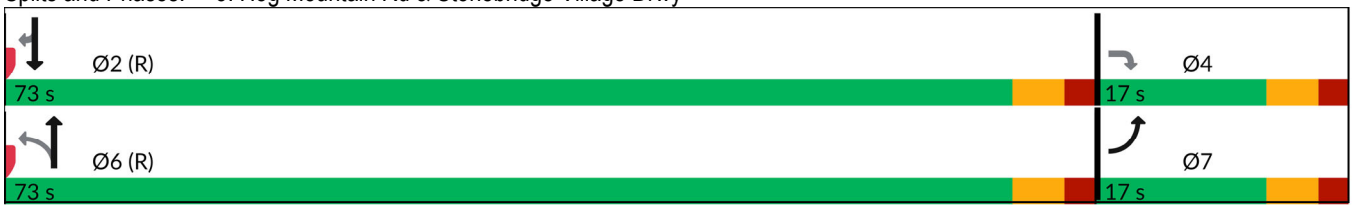
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

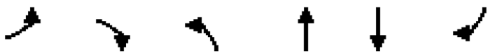
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	39	36	699	631	94
Future Volume (vph)	79	39	36	699	631	94
Lane Group Flow (vph)	93	46	42	822	742	111
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	17.0	17.0	73.0	73.0	73.0	73.0
Total Split (%)	18.9%	18.9%	81.1%	81.1%	81.1%	81.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.50	0.23	0.08	0.54	0.49	0.09
Control Delay (s/veh)	46.7	14.3	3.3	5.8	5.2	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.7	14.3	3.3	5.8	5.2	0.8
Queue Length 50th (ft)	51	0	5	156	131	0
Queue Length 95th (ft)	93	28	13	227	191	9
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	226	242	512	1509	1509	1303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.19	0.08	0.54	0.49	0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	39	36	699	631	94
Future Volume (veh/h)	79	39	36	699	631	94
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	46	42	822	742	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	129	115	566	1506	1506	
Arrive On Green	0.07	0.07	0.81	0.81	0.81	0.00
Sat Flow, veh/h	1781	1585	718	1870	1870	1585
Grp Volume(v), veh/h	93	46	42	822	742	0
Grp Sat Flow(s),veh/h/ln	1781	1585	718	1870	1870	1585
Q Serve(g_s), s	4.6	2.5	1.8	13.7	11.5	0.0
Cycle Q Clear(g_c), s	4.6	2.5	13.3	13.7	11.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	129	115	566	1506	1506	
V/C Ratio(X)	0.72	0.40	0.07	0.55	0.49	
Avail Cap(c_a), veh/h	228	203	566	1506	1506	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.80	0.80	1.00	0.00
Uniform Delay (d), s/veh	40.8	39.9	5.0	3.0	2.8	0.0
Incr Delay (d2), s/veh	7.3	2.2	0.2	1.1	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	0.2	2.4	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.1	42.1	5.2	4.2	4.0	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	139			864	742	
Approach Delay, s/veh	46.1			4.2	4.0	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		78.0		12.0		78.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		11.5		67.5
Max Q Clear Time (g_c+I1), s		13.5		6.6		15.7
Green Ext Time (p_c), s		12.7		0.1		16.1

Intersection Summary	
HCM 7th Control Delay, s/veh	7.5
HCM 7th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	105	225	919	622
Demand Flow Rate, veh/h	107	230	937	634
Vehicles Circulating, veh/h	773	915	56	161
Vehicles Exiting, veh/h	22	78	824	907
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.9	10.0	13.2	9.5
Approach LOS	A	B	B	A

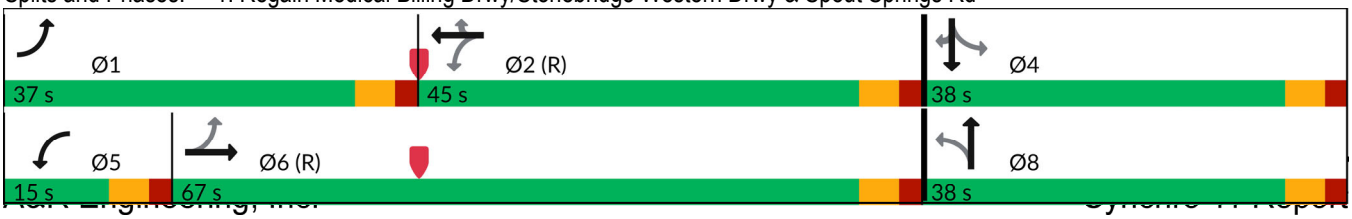
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	107	153	77	937	634
Cap Entry Lane, veh/h	627	543	547	1303	1171
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.981
Flow Entry, veh/h	105	150	75	919	622
Cap Entry, veh/h	615	532	536	1278	1148
V/C Ratio	0.171	0.282	0.140	0.719	0.541
Control Delay, s/veh	7.9	10.8	8.5	13.2	9.5
LOS	A	B	A	B	A
95th %tile Queue, veh	1	1	0	7	3

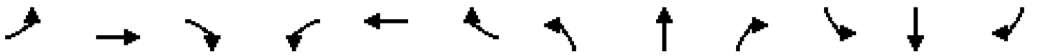
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	376	1000	39	762	146	133	34	162	49	302
Future Volume (vph)	376	1000	39	762	146	133	34	162	49	302
Lane Group Flow (vph)	400	1216	41	811	155	141	77	0	224	321
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	37.0	67.0	15.0	45.0	45.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	30.8%	55.8%	12.5%	37.5%	37.5%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.71	0.57	0.15	0.51	0.20	0.84	0.19		0.79	0.61
Control Delay (s/veh)	18.1	16.5	8.6	29.3	10.9	82.4	19.9		63.0	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	18.1	16.5	8.6	29.3	10.9	82.4	19.9		63.0	14.9
Queue Length 50th (ft)	113	292	9	257	18	107	23		167	48
Queue Length 95th (ft)	241	423	m19	384	73	#190	60		244	133
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	647	2142	326	1590	784	214	494		365	609
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.62	0.57	0.13	0.51	0.20	0.66	0.16		0.61	0.53

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	1000	143	39	762	146	133	34	39	162	49	302
Future Volume (veh/h)	376	1000	143	39	762	146	133	34	39	162	49	302
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	1064	152	41	811	155	141	36	41	172	52	321
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	1750	250	268	1609	718	154	216	246	311	78	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3122	445	1781	3554	1585	1009	798	909	951	287	1585
Grp Volume(v), veh/h	400	605	611	41	811	155	141	0	77	224	0	321
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1781	1777	1585	1009	0	1707	1238	0	1585
Q Serve(g_s), s	13.6	27.2	27.3	1.5	19.4	7.1	11.2	0.0	4.1	17.2	0.0	22.2
Cycle Q Clear(g_c), s	13.6	27.2	27.3	1.5	19.4	7.1	32.5	0.0	4.1	21.3	0.0	22.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.53	0.77		1.00
Lane Grp Cap(c), veh/h	477	996	1004	268	1609	718	154	0	462	388	0	429
V/C Ratio(X)	0.84	0.61	0.61	0.15	0.50	0.22	0.92	0.00	0.17	0.58	0.00	0.75
Avail Cap(c_a), veh/h	697	996	1004	354	1609	718	154	0	462	388	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	17.6	17.6	17.3	23.3	19.9	56.3	0.0	33.4	41.5	0.0	40.0
Incr Delay (d2), s/veh	6.0	2.8	2.7	0.2	1.1	0.6	48.2	0.0	0.2	2.1	0.0	7.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	10.9	11.1	0.6	7.9	2.6	6.4	0.0	1.8	6.3	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.7	20.3	20.3	17.6	24.4	20.6	104.5	0.0	33.6	43.6	0.0	47.1
LnGrp LOS	C	C	C	B	C	C	F		C	D		D
Approach Vol, veh/h		1616			1007			218			545	
Approach Delay, s/veh		21.2			23.5			79.4			45.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.2	59.8		38.0	9.2	72.8		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	31.5	39.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	21.4		24.2	3.5	29.3		34.5				
Green Ext Time (p_c), s	1.1	9.4		1.7	0.0	17.6		0.0				

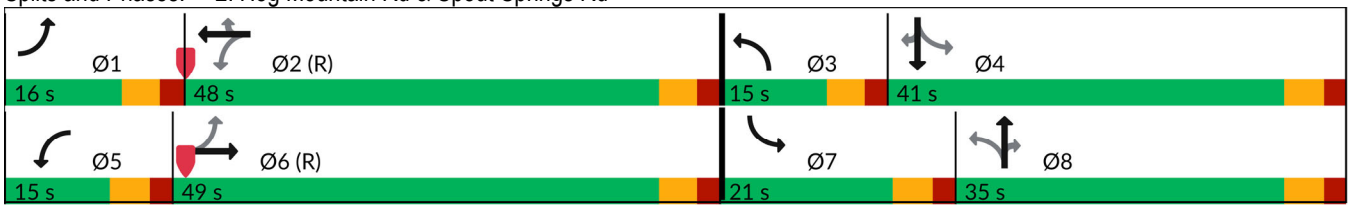
Intersection Summary												
HCM 7th Control Delay, s/veh			29.6									
HCM 7th LOS			C									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	665	80	404	179	143	215	56	230	268	147
Future Volume (vph)	176	665	80	404	179	143	215	56	230	268	147
Lane Group Flow (vph)	187	817	85	430	190	152	229	60	245	285	156
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	16.0	49.0	15.0	48.0	48.0	15.0	35.0	35.0	21.0	41.0	41.0
Total Split (%)	13.3%	40.8%	12.5%	40.0%	40.0%	12.5%	29.2%	29.2%	17.5%	34.2%	34.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.35	0.49	0.25	0.29	0.24	0.59	0.74	0.15	0.76	0.72	0.34
Control Delay (s/veh)	26.6	38.3	15.4	24.8	4.5	38.4	61.4	0.8	45.4	53.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.6	38.3	15.4	24.8	4.5	38.4	61.4	0.8	45.4	53.8	7.5
Queue Length 50th (ft)	99	286	29	117	0	86	173	0	146	209	0
Queue Length 95th (ft)	197	425	61	174	50	128	246	0	202	286	52
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	539	1657	364	1499	780	261	457	519	330	551	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.49	0.23	0.29	0.24	0.58	0.50	0.12	0.74	0.52	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	665	103	80	404	179	143	215	56	230	268	147
Future Volume (veh/h)	176	665	103	80	404	179	143	215	56	230	268	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	707	0	85	430	0	152	229	60	245	285	156
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	568	1789		371	1682		249	271	230	318	364	309
Arrive On Green	0.02	0.17	0.00	0.04	0.47	0.00	0.08	0.14	0.14	0.13	0.19	0.19
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	187	707	0	85	430	0	152	229	60	245	285	156
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.3	21.3	0.0	2.9	8.7	0.0	8.7	14.3	4.0	13.6	17.4	10.5
Cycle Q Clear(g_c), s	6.3	21.3	0.0	2.9	8.7	0.0	8.7	14.3	4.0	13.6	17.4	10.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	1789		371	1682		249	271	230	318	364	309
V/C Ratio(X)	0.33	0.40		0.23	0.26		0.61	0.85	0.26	0.77	0.78	0.51
Avail Cap(c_a), veh/h	600	1789		443	1682		249	460	390	318	553	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	15.0	33.7	0.0	16.4	18.9	0.0	40.1	50.0	45.6	36.4	45.9	43.1
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.3	0.4	0.0	4.4	7.1	0.6	9.4	3.4	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	10.2	0.0	1.2	3.5	0.0	4.0	7.0	1.6	6.5	8.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.3	34.3	0.0	16.8	19.3	0.0	44.5	57.1	46.2	45.8	49.3	44.2
LnGrp LOS	B	C		B	B		D	E	D	D	D	D
Approach Vol, veh/h		894			515			441			686	
Approach Delay, s/veh		30.3			18.9			51.3			46.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	62.3	15.0	28.9	10.2	65.9	21.0	22.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	10.5	42.5	9.5	35.5	9.5	43.5	15.5	29.5
Max Q Clear Time (g_c+I1), s	8.3	10.7	10.7	19.4	4.9	23.3	15.6	16.3
Green Ext Time (p_c), s	0.1	5.3	0.0	1.8	0.1	7.7	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	36.1
HCM 7th LOS	D

Notes

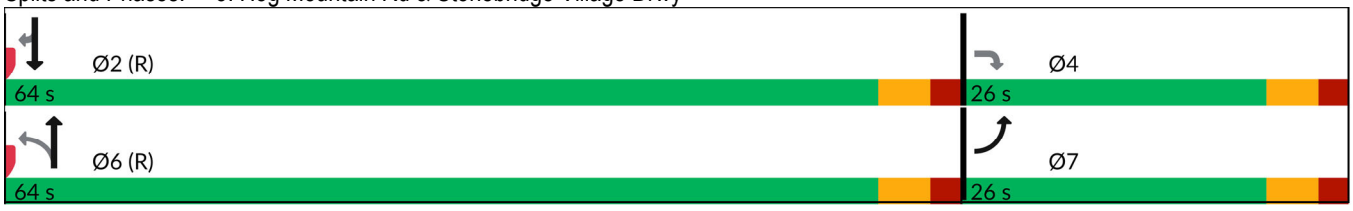
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

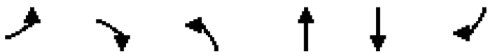
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	174	148	120	475	595	191
Future Volume (vph)	174	148	120	475	595	191
Lane Group Flow (vph)	210	178	145	572	717	230
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	26.0	26.0	64.0	64.0	64.0	64.0
Total Split (%)	28.9%	28.9%	71.1%	71.1%	71.1%	71.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.68	0.42	0.35	0.44	0.55	0.19
Control Delay (s/veh)	46.0	8.1	9.0	7.6	9.1	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	8.1	9.0	7.6	9.1	1.3
Queue Length 50th (ft)	115	0	28	122	172	1
Queue Length 95th (ft)	162	40	65	193	268	18
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	403	498	416	1311	1311	1181
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.36	0.35	0.44	0.55	0.19

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	148	120	475	595	191
Future Volume (veh/h)	174	148	120	475	595	191
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	210	178	145	572	717	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	260	231	495	1369	1369	
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.00
Sat Flow, veh/h	1781	1585	734	1870	1870	1585
Grp Volume(v), veh/h	210	178	145	572	717	0
Grp Sat Flow(s),veh/h/ln	1781	1585	734	1870	1870	1585
Q Serve(g_s), s	10.3	9.7	9.6	10.6	15.0	0.0
Cycle Q Clear(g_c), s	10.3	9.7	24.6	10.6	15.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	260	231	495	1369	1369	
V/C Ratio(X)	0.81	0.77	0.29	0.42	0.52	
Avail Cap(c_a), veh/h	406	361	495	1369	1369	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	0.00
Uniform Delay (d), s/veh	37.2	37.0	10.6	4.7	5.2	0.0
Incr Delay (d2), s/veh	6.6	5.4	1.3	0.8	1.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.1	1.5	2.9	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.9	42.4	11.9	5.5	6.7	0.0
LnGrp LOS	D	D	B	A	A	
Approach Vol, veh/h	388			717	717	
Approach Delay, s/veh	43.2			6.8	6.7	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.4		18.6		71.4
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		58.5		20.5		58.5
Max Q Clear Time (g_c+I1), s		17.0		12.3		26.6
Green Ext Time (p_c), s		11.3		0.8		9.9

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	39	160	756	812
Demand Flow Rate, veh/h	39	163	771	828
Vehicles Circulating, veh/h	948	608	27	194
Vehicles Exiting, veh/h	74	190	960	562
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	7.0	9.2	15.2
Approach LOS	A	A	A	C

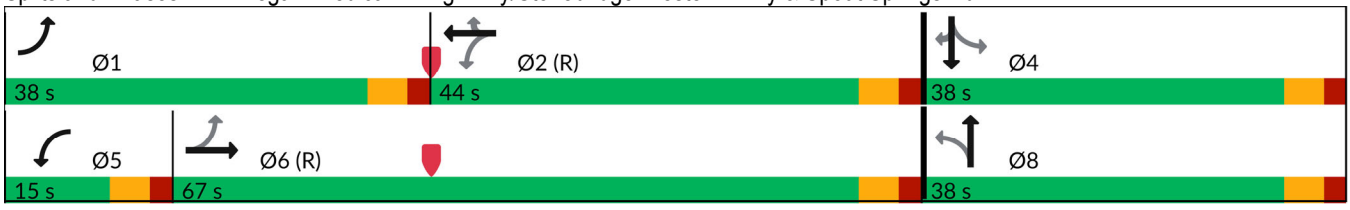
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	39	148	15	771	828
Cap Entry Lane, veh/h	525	742	778	1342	1132
Entry HV Adj Factor	0.998	0.979	0.980	0.981	0.981
Flow Entry, veh/h	39	145	15	756	812
Cap Entry, veh/h	524	727	763	1317	1111
V/C Ratio	0.074	0.199	0.020	0.574	0.731
Control Delay, s/veh	7.8	7.2	4.9	9.2	15.2
LOS	A	A	A	A	C
95th %tile Queue, veh	0	1	0	4	7

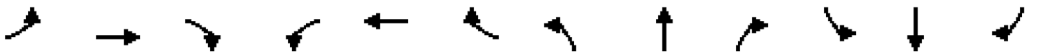
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	387	1076	47	716	129	149	34	141	38	288
Future Volume (vph)	387	1076	47	716	129	149	34	141	38	288
Lane Group Flow (vph)	399	1267	48	738	133	154	72	0	184	297
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	67.0	15.0	44.0	44.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	31.7%	55.8%	12.5%	36.7%	36.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.66	0.57	0.17	0.44	0.16	0.89	0.20		0.71	0.56
Control Delay (s/veh)	13.5	15.7	7.6	26.9	11.8	89.2	21.4		59.4	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	13.5	15.7	7.6	26.9	11.8	89.2	21.4		59.4	9.8
Queue Length 50th (ft)	103	292	8	230	22	119	23		137	12
Queue Length 95th (ft)	205	453	m16	352	m73	187	58		199	84
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	701	2207	323	1678	815	246	492		364	632
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.57	0.57	0.15	0.44	0.16	0.63	0.15		0.51	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1076	153	47	716	129	149	34	36	141	38	288
Future Volume (veh/h)	387	1076	153	47	716	129	149	34	36	141	38	288
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	399	1109	158	48	738	133	154	35	37	145	39	297
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	504	1744	248	257	1610	718	192	225	238	320	74	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3123	444	1781	3554	1585	1044	832	880	983	271	1585
Grp Volume(v), veh/h	399	630	637	48	738	133	154	0	72	184	0	297
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1781	1777	1585	1044	0	1712	1255	0	1585
Q Serve(g_s), s	13.6	29.1	29.3	1.7	17.2	6.0	15.2	0.0	3.8	13.5	0.0	20.2
Cycle Q Clear(g_c), s	13.6	29.1	29.3	1.7	17.2	6.0	32.5	0.0	3.8	17.3	0.0	20.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.51	0.79		1.00
Lane Grp Cap(c), veh/h	504	992	1000	257	1610	718	192	0	464	393	0	429
V/C Ratio(X)	0.79	0.63	0.64	0.19	0.46	0.19	0.80	0.00	0.16	0.47	0.00	0.69
Avail Cap(c_a), veh/h	739	992	1000	339	1610	718	192	0	464	393	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	18.1	18.2	17.6	22.7	19.6	53.5	0.0	33.3	39.8	0.0	39.3
Incr Delay (d2), s/veh	3.6	3.1	3.1	0.3	0.9	0.5	21.0	0.0	0.2	0.9	0.0	4.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	11.7	11.9	0.7	7.0	2.2	5.8	0.0	1.6	4.9	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.6	21.2	21.3	17.9	23.5	20.1	74.5	0.0	33.5	40.6	0.0	44.0
LnGrp LOS	B	C	C	B	C	C	E		C	D		D
Approach Vol, veh/h		1666			919			226			481	
Approach Delay, s/veh		20.9			22.7			61.4			42.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.1	59.9		38.0	9.5	72.5		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	38.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	19.2		22.2	3.7	31.3		34.5				
Green Ext Time (p_c), s	1.1	8.8		1.7	0.0	17.8		0.0				

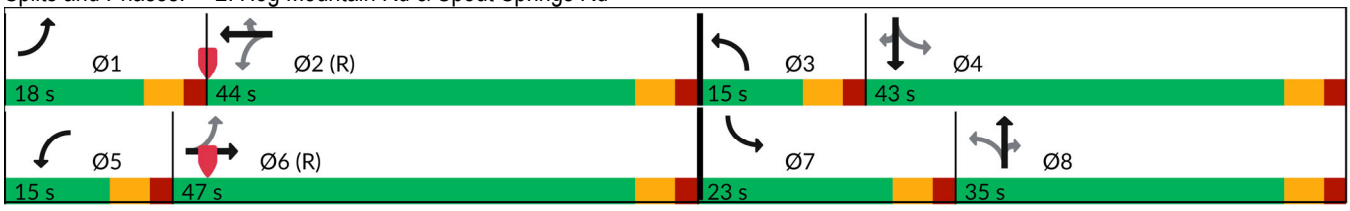
Intersection Summary			
HCM 7th Control Delay, s/veh		27.4	
HCM 7th LOS		C	

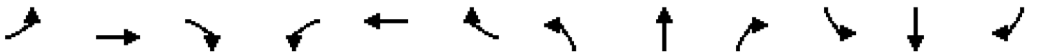
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	752	84	472	190	164	192	65	289	339	146
Future Volume (vph)	196	752	84	472	190	164	192	65	289	339	146
Lane Group Flow (vph)	198	880	85	477	192	166	194	66	292	342	147
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	18.0	47.0	15.0	44.0	44.0	15.0	35.0	35.0	23.0	43.0	43.0
Total Split (%)	15.0%	39.2%	12.5%	36.7%	36.7%	12.5%	29.2%	29.2%	19.2%	35.8%	35.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.40	0.55	0.28	0.33	0.25	0.70	0.62	0.16	0.76	0.80	0.32
Control Delay (s/veh)	28.5	40.8	17.2	27.1	4.9	44.1	54.3	0.8	42.7	57.1	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	40.8	17.2	27.1	4.9	44.1	54.3	0.8	42.7	57.1	9.2
Queue Length 50th (ft)	109	325	30	135	0	93	144	0	177	256	10
Queue Length 95th (ft)	214	454	65	205	53	132	206	0	231	334	58
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	502	1594	326	1428	753	238	457	519	389	582	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.55	0.26	0.33	0.25	0.70	0.42	0.13	0.75	0.59	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	752	119	84	472	190	164	192	65	289	339	146
Future Volume (veh/h)	196	752	119	84	472	190	164	192	65	289	339	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	198	760	0	85	477	0	166	194	66	292	342	147
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	531	1733		339	1609		231	268	227	369	393	333
Arrive On Green	0.02	0.16	0.00	0.04	0.45	0.00	0.08	0.14	0.14	0.15	0.21	0.21
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	198	760	0	85	477	0	166	194	66	292	342	147
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.8	23.2	0.0	3.0	10.2	0.0	9.5	11.9	4.5	16.3	21.2	9.7
Cycle Q Clear(g_c), s	6.8	23.2	0.0	3.0	10.2	0.0	9.5	11.9	4.5	16.3	21.2	9.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	531	1733		339	1609		231	268	227	369	393	333
V/C Ratio(X)	0.37	0.44		0.25	0.30		0.72	0.72	0.29	0.79	0.87	0.44
Avail Cap(c_a), veh/h	583	1733		409	1609		231	460	390	369	584	495
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	16.1	35.5	0.0	17.9	20.8	0.0	41.0	49.1	46.0	35.7	45.8	41.3
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.4	0.5	0.0	10.3	3.7	0.7	10.2	8.6	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	11.1	0.0	1.2	4.2	0.0	4.7	5.7	1.8	7.9	10.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	36.2	0.0	18.3	21.2	0.0	51.3	52.8	46.7	45.9	54.4	42.1
LnGrp LOS	B	D		B	C		D	D	D	D	D	D
Approach Vol, veh/h		958			562			426			781	
Approach Delay, s/veh		32.1			20.8			51.3			48.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	59.8	15.0	30.7	10.3	64.0	23.0	22.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	12.5	38.5	9.5	37.5	9.5	41.5	17.5	29.5
Max Q Clear Time (g_c+I1), s	8.8	12.2	11.5	23.2	5.0	25.2	18.3	13.9
Green Ext Time (p_c), s	0.2	5.6	0.0	2.0	0.1	7.4	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.6
HCM 7th LOS	D

Notes

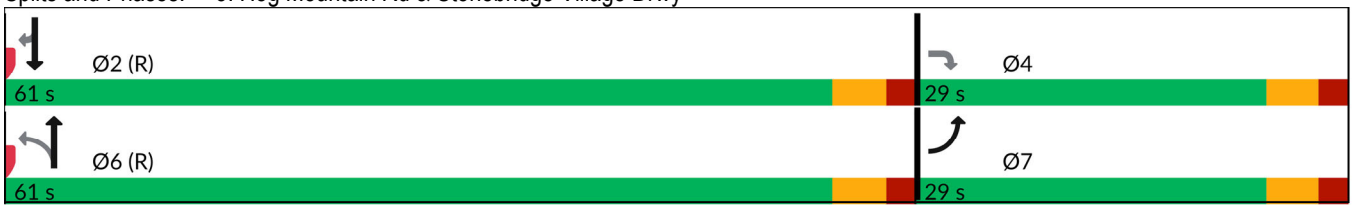
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

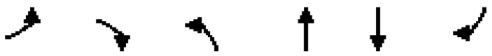
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	179	131	84	536	554	158
Future Volume (vph)	179	131	84	536	554	158
Lane Group Flow (vph)	185	135	87	553	571	163
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.64	0.36	0.16	0.42	0.43	0.14
Control Delay (s/veh)	45.0	8.6	5.9	7.0	7.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	8.6	5.9	7.0	7.1	1.2
Queue Length 50th (ft)	101	0	14	109	115	0
Queue Length 95th (ft)	159	46	38	207	217	20
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	462	513	538	1331	1331	1178
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.26	0.16	0.42	0.43	0.14

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	179	131	84	536	554	158
Future Volume (veh/h)	179	131	84	536	554	158
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	135	87	553	571	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	235	209	613	1395	1395	
Arrive On Green	0.13	0.13	0.75	0.75	0.75	0.00
Sat Flow, veh/h	1781	1585	841	1870	1870	1585
Grp Volume(v), veh/h	185	135	87	553	571	0
Grp Sat Flow(s),veh/h/ln	1781	1585	841	1870	1870	1585
Q Serve(g_s), s	9.1	7.3	3.8	9.6	10.0	0.0
Cycle Q Clear(g_c), s	9.1	7.3	13.8	9.6	10.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	235	209	613	1395	1395	
V/C Ratio(X)	0.79	0.65	0.14	0.40	0.41	
Avail Cap(c_a), veh/h	465	414	613	1395	1395	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.91	0.91	1.00	0.00
Uniform Delay (d), s/veh	37.8	37.1	6.7	4.1	4.2	0.0
Incr Delay (d2), s/veh	5.8	3.3	0.4	0.8	0.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	0.6	2.5	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.6	40.4	7.2	4.9	5.1	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	320			640	571	
Approach Delay, s/veh	42.3			5.2	5.1	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		72.6		17.4		72.6
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		55.5		23.5		55.5
Max Q Clear Time (g_c+I1), s		12.0		11.1		15.8
Green Ext Time (p_c), s		8.2		0.8		9.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	69	89	703	665
Demand Flow Rate, veh/h	70	90	717	678
Vehicles Circulating, veh/h	703	552	28	140
Vehicles Exiting, veh/h	115	193	745	494
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.6	5.6	8.5	9.8
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	70	82	8	717	678
Cap Entry Lane, veh/h	674	786	834	1341	1196
Entry HV Adj Factor	0.984	0.986	0.980	0.980	0.980
Flow Entry, veh/h	69	81	8	703	665
Cap Entry, veh/h	663	775	817	1314	1173
V/C Ratio	0.104	0.104	0.010	0.535	0.567
Control Delay, s/veh	6.6	5.7	4.5	8.5	9.8
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	3	4

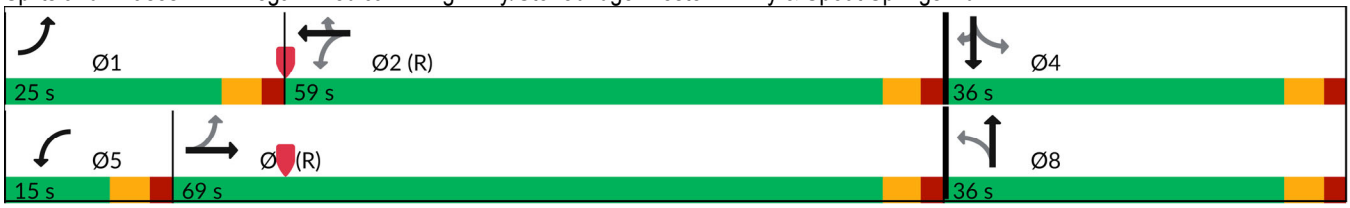
FUTURE "BUILD" INTERSECTION ANALYSIS

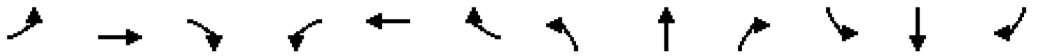
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	211	492	37	1030	94	68	18	60	7	184
Future Volume (vph)	211	492	37	1030	94	68	18	60	7	184
Lane Group Flow (vph)	251	650	44	1226	112	81	34	0	79	219
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	25.0	69.0	15.0	59.0	59.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	20.8%	57.5%	12.5%	49.2%	49.2%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.57	0.26	0.08	0.57	0.11	0.58	0.17		0.55	0.60
Control Delay (s/veh)	11.3	6.7	5.7	25.8	8.2	66.5	34.4		64.4	13.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	11.3	6.7	5.7	26.1	8.2	66.5	34.4		64.4	13.5
Queue Length 50th (ft)	37	84	7	448	26	62	15		60	0
Queue Length 95th (ft)	94	122	m20	498	64	102	42		100	55
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	479	2525	601	2166	1016	334	456		342	565
Starvation Cap Reductn	0	0	0	351	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.52	0.26	0.07	0.68	0.11	0.24	0.07		0.23	0.39

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	492	54	37	1030	94	68	18	11	60	7	184
Future Volume (veh/h)	211	492	54	37	1030	94	68	18	11	60	7	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	251	586	64	44	1226	112	81	21	13	71	8	219
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	2169	236	585	2255	1006	169	172	107	238	24	253
Arrive On Green	0.07	0.67	0.67	0.03	0.63	0.63	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3232	352	1781	3554	1585	1154	1081	669	1137	150	1585
Grp Volume(v), veh/h	251	322	328	44	1226	112	81	0	34	79	0	219
Grp Sat Flow(s),veh/h/ln	1781	1777	1807	1781	1777	1585	1154	0	1750	1287	0	1585
Q Serve(g_s), s	5.7	8.7	8.8	1.0	23.1	3.3	8.2	0.0	2.0	5.8	0.0	16.2
Cycle Q Clear(g_c), s	5.7	8.7	8.8	1.0	23.1	3.3	16.0	0.0	2.0	7.8	0.0	16.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.38	0.90		1.00
Lane Grp Cap(c), veh/h	363	1192	1213	585	2255	1006	169	0	279	262	0	253
V/C Ratio(X)	0.69	0.27	0.27	0.08	0.54	0.11	0.48	0.00	0.12	0.30	0.00	0.87
Avail Cap(c_a), veh/h	530	1192	1213	668	2255	1006	278	0	445	396	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	7.9	7.9	6.9	12.2	8.6	52.9	0.0	43.2	46.4	0.0	49.2
Incr Delay (d2), s/veh	2.4	0.6	0.6	0.0	0.7	0.2	2.1	0.0	0.2	0.6	0.0	11.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.1	3.2	0.3	8.3	1.1	2.5	0.0	0.9	2.2	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	8.5	8.5	7.0	13.0	8.8	55.0	0.0	43.4	47.0	0.0	60.3
LnGrp LOS	B	A	A	A	B	A	E		D	D		E
Approach Vol, veh/h		901			1382			115			298	
Approach Delay, s/veh		10.1			12.4			51.6			56.8	
Approach LOS		B			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	81.7		24.6	9.3	86.0		24.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	19.5	53.5		30.5	9.5	63.5		30.5				
Max Q Clear Time (g_c+I1), s	7.7	25.1		18.2	3.0	10.8		18.0				
Green Ext Time (p_c), s	0.5	17.9		0.9	0.0	8.8		0.3				

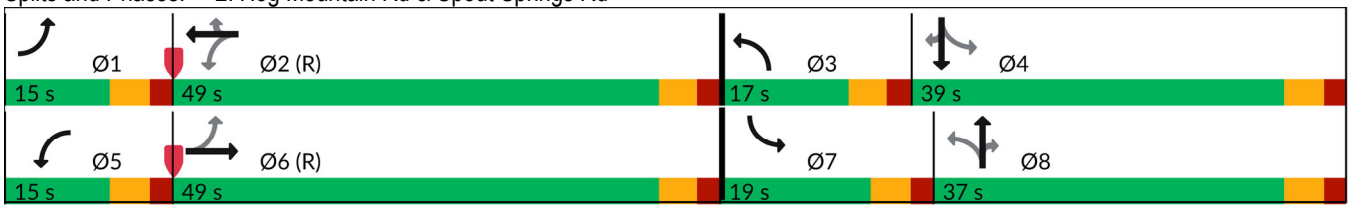
Intersection Summary												
HCM 7th Control Delay, s/veh			18.2									
HCM 7th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	118	416	93	846	316	204	280	72	194	163	254
Future Volume (vph)	118	416	93	846	316	204	280	72	194	163	254
Lane Group Flow (vph)	127	514	100	910	340	219	301	77	209	175	273
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	49.0	15.0	49.0	49.0	17.0	37.0	37.0	19.0	39.0	39.0
Total Split (%)	12.5%	40.8%	12.5%	40.8%	40.8%	14.2%	30.8%	30.8%	15.8%	32.5%	32.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.44	0.34	0.22	0.60	0.42	0.57	0.79	0.18	0.73	0.43	0.51
Control Delay (s/veh)	29.6	29.8	15.9	29.9	9.2	34.3	60.4	2.3	42.2	42.8	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (s/veh)	29.6	29.8	15.9	29.9	9.2	34.6	60.4	2.3	42.2	42.8	9.6
Queue Length 50th (ft)	56	120	36	290	45	124	227	0	118	119	15
Queue Length 95th (ft)	136	264	74	398	131	173	307	10	165	175	84
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	300	1513	468	1511	817	384	489	506	294	520	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	19	0	0	0	0	29
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.34	0.21	0.60	0.42	0.60	0.62	0.15	0.71	0.34	0.46

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	416	62	93	846	316	204	280	72	194	163	254
Future Volume (veh/h)	118	416	62	93	846	316	204	280	72	194	163	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	447	0	100	910	0	219	301	77	209	175	273
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1697		485	1668		340	345	292	285	372	315
Arrive On Green	0.02	0.16	0.00	0.04	0.47	0.00	0.10	0.18	0.18	0.11	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	127	447	0	100	910	0	219	301	77	209	175	273
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.3	13.3	0.0	3.5	21.9	0.0	11.5	18.8	5.0	11.3	9.9	20.0
Cycle Q Clear(g_c), s	4.3	13.3	0.0	3.5	21.9	0.0	11.5	18.8	5.0	11.3	9.9	20.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	1697		485	1668		340	345	292	285	372	315
V/C Ratio(X)	0.39	0.26		0.21	0.55		0.64	0.87	0.26	0.73	0.47	0.87
Avail Cap(c_a), veh/h	377	1697		547	1668		340	491	416	288	522	442
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	17.9	32.0	0.0	15.7	22.7	0.0	36.2	47.6	42.0	35.6	42.5	46.5
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.2	1.3	0.0	4.1	11.8	0.5	8.0	0.8	10.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.4	0.0	1.4	8.9	0.0	5.5	9.6	1.9	5.3	4.5	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	32.4	0.0	15.9	24.0	0.0	40.3	59.3	42.4	43.6	43.3	57.3
LnGrp LOS	B	C		B	C		D	E	D	D	D	E
Approach Vol, veh/h		574			1010			597			657	
Approach Delay, s/veh		29.3			23.2			50.2			49.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	61.8	17.0	29.4	10.8	62.8	18.8	27.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	11.5	33.5	9.5	43.5	13.5	31.5
Max Q Clear Time (g_c+I1), s	6.3	23.9	13.5	22.0	5.5	15.3	13.3	20.8
Green Ext Time (p_c), s	0.1	9.9	0.0	1.4	0.1	5.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	36.1
HCM 7th LOS	D

Notes

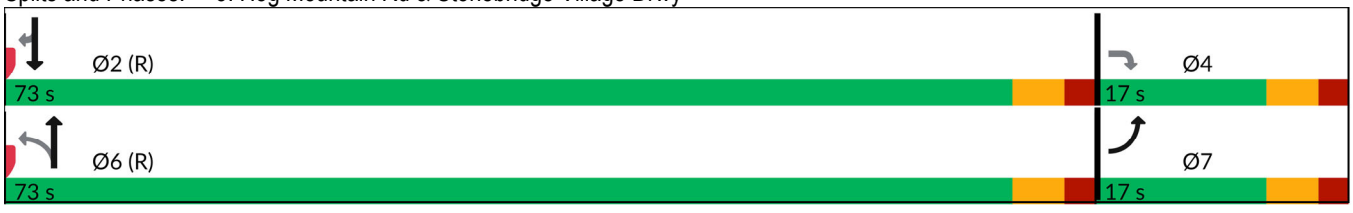
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

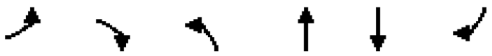
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	39	36	708	655	97
Future Volume (vph)	80	39	36	708	655	97
Lane Group Flow (vph)	94	46	42	833	771	114
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	17.0	17.0	73.0	73.0	73.0	73.0
Total Split (%)	18.9%	18.9%	81.1%	81.1%	81.1%	81.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.50	0.23	0.09	0.55	0.51	0.09
Control Delay (s/veh)	46.9	14.3	3.4	5.9	5.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	14.3	3.4	5.9	5.4	0.8
Queue Length 50th (ft)	52	0	5	161	140	0
Queue Length 95th (ft)	94	28	13	233	203	9
Internal Link Dist (ft)	209			979	736	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	226	242	491	1508	1508	1303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.19	0.09	0.55	0.51	0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	39	36	708	655	97
Future Volume (veh/h)	80	39	36	708	655	97
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	46	42	833	771	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	130	116	546	1505	1505	
Arrive On Green	0.07	0.07	0.80	0.80	0.80	0.00
Sat Flow, veh/h	1781	1585	698	1870	1870	1585
Grp Volume(v), veh/h	94	46	42	833	771	0
Grp Sat Flow(s),veh/h/ln	1781	1585	698	1870	1870	1585
Q Serve(g_s), s	4.6	2.5	1.9	14.1	12.3	0.0
Cycle Q Clear(g_c), s	4.6	2.5	14.2	14.1	12.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	130	116	546	1505	1505	
V/C Ratio(X)	0.72	0.40	0.08	0.55	0.51	
Avail Cap(c_a), veh/h	228	203	546	1505	1505	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.80	0.80	1.00	0.00
Uniform Delay (d), s/veh	40.8	39.8	5.3	3.1	2.9	0.0
Incr Delay (d2), s/veh	7.3	2.2	0.2	1.2	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	0.2	2.5	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.1	42.0	5.5	4.3	4.2	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	140			875	771	
Approach Delay, s/veh	46.1			4.3	4.2	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		77.9		12.1		77.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		11.5		67.5
Max Q Clear Time (g_c+I1), s		14.3		6.6		16.2
Green Ext Time (p_c), s		13.6		0.1		16.4

Intersection Summary	
HCM 7th Control Delay, s/veh	7.5
HCM 7th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	105	225	937	629
Demand Flow Rate, veh/h	107	230	955	641
Vehicles Circulating, veh/h	780	932	56	161
Vehicles Exiting, veh/h	22	79	831	924
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	10.3	13.8	9.6
Approach LOS	A	B	B	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	107	153	77	955	641
Cap Entry Lane, veh/h	623	533	538	1303	1171
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.981
Flow Entry, veh/h	105	150	75	937	629
Cap Entry, veh/h	610	523	527	1278	1148
V/C Ratio	0.172	0.287	0.142	0.733	0.547
Control Delay, s/veh	8.0	11.1	8.7	13.8	9.6
LOS	A	B	A	B	A
95th %tile Queue, veh	1	1	0	7	3

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	17	778	10	6	731
Future Vol, veh/h	27	17	778	10	6	731
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	-	-	175	235	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	18	846	11	7	795

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1653	846	0	0	857	0
Stage 1	846	-	-	-	-	-
Stage 2	808	-	-	-	-	-
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	108	362	-	-	784	-
Stage 1	421	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	107	362	-	-	784	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	40.75	0	0.08
HCM LOS	E		

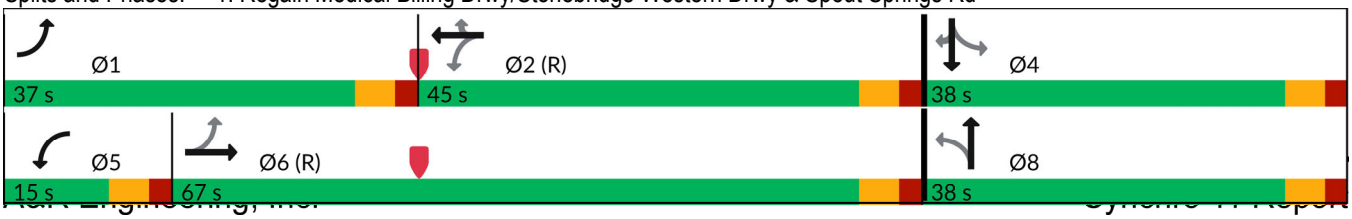
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	147	784	-
HCM Lane V/C Ratio	-	-	0.325	0.008	-
HCM Ctrl Dly (s/v)	-	-	40.7	9.6	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0	-

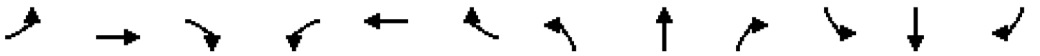
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	376	1013	40	773	147	133	34	163	49	302
Future Volume (vph)	376	1013	40	773	147	133	34	163	49	302
Lane Group Flow (vph)	400	1230	43	822	156	141	79	0	225	321
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	37.0	67.0	15.0	45.0	45.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	30.8%	55.8%	12.5%	37.5%	37.5%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.71	0.58	0.16	0.52	0.20	0.84	0.20		0.79	0.61
Control Delay (s/veh)	18.6	16.7	8.8	29.7	11.1	82.4	19.4		63.2	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	18.6	16.7	8.8	29.7	11.1	82.4	19.4		63.2	15.0
Queue Length 50th (ft)	114	298	10	260	33	106	23		167	48
Queue Length 95th (ft)	245	431	m20	391	74	#190	61		245	134
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	643	2139	321	1583	781	213	494		365	608
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.62	0.58	0.13	0.52	0.20	0.66	0.16		0.62	0.53

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	1013	143	40	773	147	133	34	40	163	49	302
Future Volume (veh/h)	376	1013	143	40	773	147	133	34	40	163	49	302
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	1078	152	43	822	156	141	36	43	173	52	321
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	473	1751	247	265	1609	718	152	210	251	309	77	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3128	440	1781	3554	1585	1009	776	927	946	284	1585
Grp Volume(v), veh/h	400	612	618	43	822	156	141	0	79	225	0	321
Grp Sat Flow(s),veh/h/ln	1781	1777	1791	1781	1777	1585	1009	0	1703	1231	0	1585
Q Serve(g_s), s	13.6	27.7	27.8	1.5	19.8	7.2	10.9	0.0	4.3	17.3	0.0	22.2
Cycle Q Clear(g_c), s	13.6	27.7	27.8	1.5	19.8	7.2	32.5	0.0	4.3	21.6	0.0	22.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.54	0.77		1.00
Lane Grp Cap(c), veh/h	473	995	1003	265	1609	718	152	0	461	386	0	429
V/C Ratio(X)	0.85	0.61	0.62	0.16	0.51	0.22	0.93	0.00	0.17	0.58	0.00	0.75
Avail Cap(c_a), veh/h	693	995	1003	350	1609	718	152	0	461	386	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	17.7	17.7	17.4	23.4	19.9	56.4	0.0	33.5	41.7	0.0	40.0
Incr Delay (d2), s/veh	6.4	2.8	2.8	0.3	1.1	0.7	52.3	0.0	0.2	2.2	0.0	7.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	11.2	11.3	0.6	8.1	2.7	6.5	0.0	1.8	6.3	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.3	20.6	20.6	17.6	24.5	20.6	108.7	0.0	33.6	43.9	0.0	47.1
LnGrp LOS	C	C	C	B	C	C	F		C	D		D
Approach Vol, veh/h		1630			1021			220			546	
Approach Delay, s/veh		21.5			23.6			81.7			45.8	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.2	59.8		38.0	9.3	72.7		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	31.5	39.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	21.8		24.2	3.5	29.8		34.5				
Green Ext Time (p_c), s	1.1	9.4		1.7	0.0	17.7		0.0				

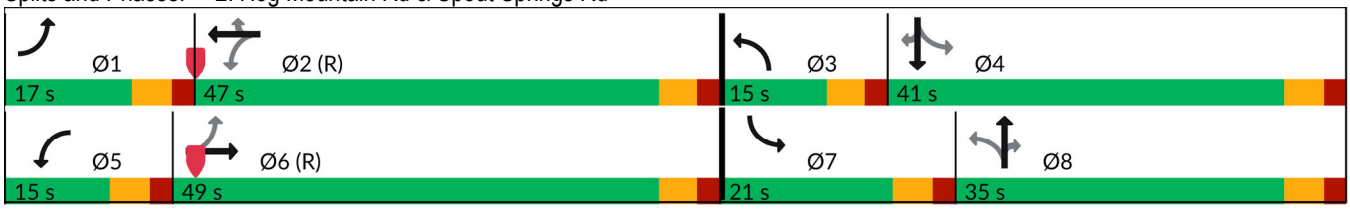
Intersection Summary												
HCM 7th Control Delay, s/veh			29.9									
HCM 7th LOS			C									

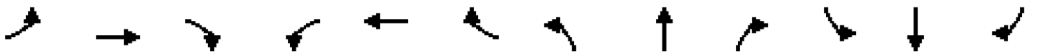
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	191	665	80	404	183	143	217	56	233	270	159
Future Volume (vph)	191	665	80	404	183	143	217	56	233	270	159
Lane Group Flow (vph)	203	817	85	430	195	152	231	60	248	287	169
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	17.0	49.0	15.0	47.0	47.0	15.0	35.0	35.0	21.0	41.0	41.0
Total Split (%)	14.2%	40.8%	12.5%	39.2%	39.2%	12.5%	29.2%	29.2%	17.5%	34.2%	34.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.38	0.49	0.25	0.29	0.25	0.59	0.74	0.15	0.77	0.72	0.36
Control Delay (s/veh)	27.1	38.8	15.6	25.4	4.6	38.3	61.3	0.8	46.0	53.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	38.8	15.6	25.4	4.6	38.3	61.3	0.8	46.0	53.7	7.3
Queue Length 50th (ft)	112	295	29	118	0	85	175	0	148	210	0
Queue Length 95th (ft)	211	424	62	177	51	128	248	0	205	288	53
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	544	1653	363	1474	773	261	457	519	330	551	587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.49	0.23	0.29	0.25	0.58	0.51	0.12	0.75	0.52	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	665	103	80	404	183	143	217	56	233	270	159
Future Volume (veh/h)	191	665	103	80	404	183	143	217	56	233	270	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	707	0	85	430	0	152	231	60	248	287	169
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	570	1785		371	1661		248	273	231	318	366	311
Arrive On Green	0.02	0.17	0.00	0.04	0.47	0.00	0.08	0.15	0.15	0.13	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	203	707	0	85	430	0	152	231	60	248	287	169
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.8	21.3	0.0	3.0	8.8	0.0	8.7	14.4	4.0	13.7	17.5	11.5
Cycle Q Clear(g_c), s	6.8	21.3	0.0	3.0	8.8	0.0	8.7	14.4	4.0	13.7	17.5	11.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	570	1785		371	1661		248	273	231	318	366	311
V/C Ratio(X)	0.36	0.40		0.23	0.26		0.61	0.85	0.26	0.78	0.78	0.54
Avail Cap(c_a), veh/h	608	1785		442	1661		248	460	390	318	553	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	15.1	33.8	0.0	16.7	19.4	0.0	40.0	49.9	45.5	36.4	45.8	43.4
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.3	0.4	0.0	4.4	7.2	0.6	9.9	3.5	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	10.2	0.0	1.2	3.6	0.0	4.0	7.1	1.6	6.6	8.2	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.4	34.3	0.0	17.0	19.7	0.0	44.5	57.2	46.1	46.3	49.3	44.7
LnGrp LOS	B	C		B	B		D	E	D	D	D	D
Approach Vol, veh/h		910			515			443			704	
Approach Delay, s/veh		30.1			19.3			51.3			47.1	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	61.6	15.0	29.0	10.2	65.8	21.0	23.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.5	41.5	9.5	35.5	9.5	43.5	15.5	29.5
Max Q Clear Time (g_c+I1), s	8.8	10.8	10.7	19.5	5.0	23.3	15.7	16.4
Green Ext Time (p_c), s	0.1	5.2	0.0	1.8	0.1	7.7	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	36.3
HCM 7th LOS	D

Notes

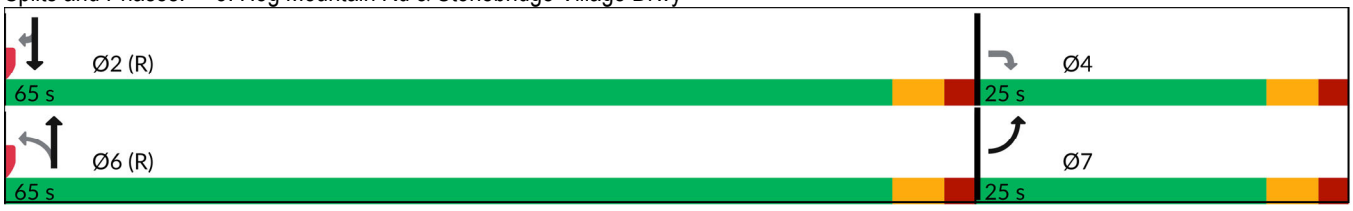
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

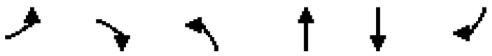
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	177	148	120	496	612	193
Future Volume (vph)	177	148	120	496	612	193
Lane Group Flow (vph)	213	178	145	598	737	233
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	25.0	25.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.70	0.42	0.36	0.46	0.56	0.20
Control Delay (s/veh)	47.1	8.2	9.2	7.7	9.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.1	8.2	9.2	7.7	9.1	1.2
Queue Length 50th (ft)	116	0	29	131	181	0
Queue Length 95th (ft)	166	41	64	197	268	17
Internal Link Dist (ft)	209			979	736	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	383	482	403	1314	1314	1184
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.37	0.36	0.46	0.56	0.20

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	148	120	496	612	193
Future Volume (veh/h)	177	148	120	496	612	193
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	213	178	145	598	737	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	261	233	481	1367	1367	
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.00
Sat Flow, veh/h	1781	1585	721	1870	1870	1585
Grp Volume(v), veh/h	213	178	145	598	737	0
Grp Sat Flow(s),veh/h/ln	1781	1585	721	1870	1870	1585
Q Serve(g_s), s	10.4	9.7	10.1	11.4	15.7	0.0
Cycle Q Clear(g_c), s	10.4	9.7	25.8	11.4	15.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	261	233	481	1367	1367	
V/C Ratio(X)	0.82	0.77	0.30	0.44	0.54	
Avail Cap(c_a), veh/h	386	343	481	1367	1367	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	0.00
Uniform Delay (d), s/veh	37.2	36.9	11.1	4.8	5.4	0.0
Incr Delay (d2), s/veh	8.2	5.9	1.4	0.9	1.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.1	1.6	3.1	4.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	45.4	42.8	12.5	5.7	6.9	0.0
LnGrp LOS	D	D	B	A	A	
Approach Vol, veh/h	391			743	737	
Approach Delay, s/veh	44.2			7.0	6.9	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.3		18.7		71.3
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		59.5		19.5		59.5
Max Q Clear Time (g_c+I1), s		17.7		12.4		27.8
Green Ext Time (p_c), s		11.9		0.8		10.4

Intersection Summary	
HCM 7th Control Delay, s/veh	14.7
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	39	162	770	828
Demand Flow Rate, veh/h	39	165	785	844
Vehicles Circulating, veh/h	966	621	27	196
Vehicles Exiting, veh/h	74	191	978	575
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	7.1	9.4	15.9
Approach LOS	A	A	A	C

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	39	150	15	785	844
Cap Entry Lane, veh/h	515	732	768	1342	1130
Entry HV Adj Factor	0.998	0.979	0.980	0.981	0.981
Flow Entry, veh/h	39	147	15	770	828
Cap Entry, veh/h	514	717	753	1317	1109
V/C Ratio	0.076	0.205	0.020	0.585	0.747
Control Delay, s/veh	8.0	7.3	5.0	9.4	15.9
LOS	A	A	A	A	C
95th %tile Queue, veh	0	1	0	4	7

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	12	649	24	14	788
Future Vol, veh/h	19	12	649	24	14	788
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	-	-	175	235	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	13	705	26	15	857

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1592	705	0	0	732	0
Stage 1	705	-	-	-	-	-
Stage 2	887	-	-	-	-	-
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	118	436	-	-	873	-
Stage 1	490	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	436	-	-	873	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	395	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	32.99	0	0.16
HCM LOS	D		

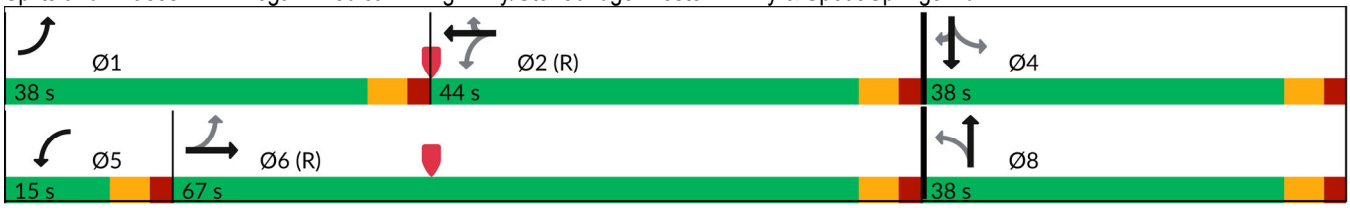
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	162	873	-
HCM Lane V/C Ratio	-	-	0.208	0.017	-
HCM Ctrl Dly (s/v)	-	-	33	9.2	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

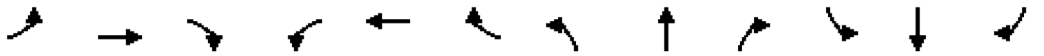
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	387	1093	48	727	130	149	34	142	38	288
Future Volume (vph)	387	1093	48	727	130	149	34	142	38	288
Lane Group Flow (vph)	399	1285	49	749	134	154	73	0	185	297
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	67.0	15.0	44.0	44.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	31.7%	55.8%	12.5%	36.7%	36.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.66	0.58	0.18	0.45	0.16	0.89	0.20		0.71	0.56
Control Delay (s/veh)	13.8	15.9	7.8	27.7	12.1	89.4	21.1		59.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	13.8	15.9	7.8	27.7	12.1	89.4	21.1		59.6	10.0
Queue Length 50th (ft)	103	298	8	231	23	119	23		137	13
Queue Length 95th (ft)	209	462	m16	367	84	187	59		201	85
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	697	2208	318	1674	813	245	492		364	630
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.57	0.58	0.15	0.45	0.16	0.63	0.15		0.51	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1093	153	48	727	130	149	34	37	142	38	288
Future Volume (veh/h)	387	1093	153	48	727	130	149	34	37	142	38	288
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	399	1127	158	49	749	134	154	35	38	146	39	297
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	500	1747	244	252	1610	718	190	222	241	320	72	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3131	438	1781	3554	1585	1044	820	890	982	268	1585
Grp Volume(v), veh/h	399	638	647	49	749	134	154	0	73	185	0	297
Grp Sat Flow(s),veh/h/ln	1781	1777	1792	1781	1777	1585	1044	0	1710	1249	0	1585
Q Serve(g_s), s	13.6	29.7	29.9	1.7	17.5	6.1	15.0	0.0	3.9	13.6	0.0	20.2
Cycle Q Clear(g_c), s	13.6	29.7	29.9	1.7	17.5	6.1	32.5	0.0	3.9	17.5	0.0	20.2
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.52	0.79		1.00
Lane Grp Cap(c), veh/h	500	992	1000	252	1610	718	190	0	463	392	0	429
V/C Ratio(X)	0.80	0.64	0.65	0.19	0.47	0.19	0.81	0.00	0.16	0.47	0.00	0.69
Avail Cap(c_a), veh/h	735	992	1000	334	1610	718	190	0	463	392	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	18.3	18.3	17.7	22.8	19.6	53.7	0.0	33.3	39.9	0.0	39.3
Incr Delay (d2), s/veh	3.9	3.2	3.2	0.3	0.9	0.5	22.3	0.0	0.2	0.9	0.0	4.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	12.0	12.2	0.7	7.2	2.2	5.9	0.0	1.7	4.9	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.1	21.5	21.6	18.0	23.6	20.1	76.0	0.0	33.5	40.8	0.0	44.0
LnGrp LOS	C	C	C	B	C	C	E		C	D		D
Approach Vol, veh/h		1684			932			227			482	
Approach Delay, s/veh		21.2			22.8			62.3			42.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.1	59.9		38.0	9.5	72.5		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	38.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	19.5		22.2	3.7	31.9		34.5				
Green Ext Time (p_c), s	1.1	8.8		1.7	0.0	17.8		0.0				

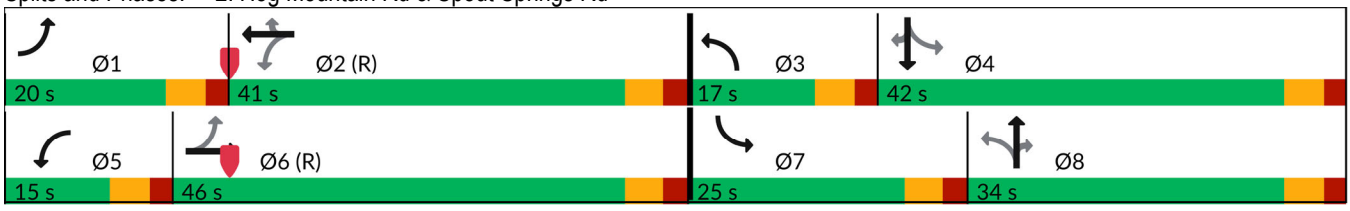
Intersection Summary	
HCM 7th Control Delay, s/veh	27.6
HCM 7th LOS	C

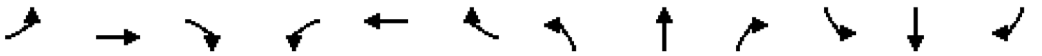
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	216	752	84	472	195	164	194	65	292	341	158
Future Volume (vph)	216	752	84	472	195	164	194	65	292	341	158
Lane Group Flow (vph)	218	880	85	477	197	166	196	66	295	344	160
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	20.0	46.0	15.0	41.0	41.0	17.0	34.0	34.0	25.0	42.0	42.0
Total Split (%)	16.7%	38.3%	12.5%	34.2%	34.2%	14.2%	28.3%	28.3%	20.8%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.45	0.57	0.29	0.35	0.27	0.64	0.62	0.16	0.73	0.80	0.34
Control Delay (s/veh)	30.6	43.1	18.6	29.3	5.3	37.4	53.8	0.8	38.6	57.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	43.1	18.6	29.3	5.3	37.4	53.8	0.8	38.6	57.2	9.5
Queue Length 50th (ft)	133	353	31	141	0	90	146	0	173	257	12
Queue Length 95th (ft)	233	454	68	213	55	128	208	0	226	336	63
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	502	1548	312	1351	726	267	442	507	417	566	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.57	0.27	0.35	0.27	0.62	0.44	0.13	0.71	0.61	0.28

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	752	119	84	472	195	164	194	65	292	341	158
Future Volume (veh/h)	216	752	119	84	472	195	164	194	65	292	341	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	218	760	0	85	477	0	166	196	66	295	344	160
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	1673		328	1525		257	285	241	391	394	334
Arrive On Green	0.03	0.16	0.00	0.04	0.43	0.00	0.09	0.15	0.15	0.15	0.21	0.21
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	218	760	0	85	477	0	166	196	66	295	344	160
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.7	23.3	0.0	3.2	10.6	0.0	9.3	11.9	4.4	16.2	21.3	10.6
Cycle Q Clear(g_c), s	7.7	23.3	0.0	3.2	10.6	0.0	9.3	11.9	4.4	16.2	21.3	10.6
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	520	1673		328	1525		257	285	241	391	394	334
V/C Ratio(X)	0.42	0.45		0.26	0.31		0.65	0.69	0.27	0.75	0.87	0.48
Avail Cap(c_a), veh/h	588	1673		396	1525		260	444	376	409	569	482
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	17.2	36.7	0.0	19.3	22.6	0.0	38.7	48.2	45.0	34.2	45.8	41.6
Incr Delay (d2), s/veh	0.4	0.7	0.0	0.4	0.5	0.0	5.4	3.0	0.6	6.9	9.3	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	11.2	0.0	1.3	4.4	0.0	4.3	5.6	1.7	7.5	10.6	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	37.4	0.0	19.7	23.1	0.0	44.0	51.1	45.6	41.1	55.1	42.5
LnGrp LOS	B	D		B	C		D	D	D	D	E	D
Approach Vol, veh/h		978			562			428			799	
Approach Delay, s/veh		33.0			22.6			47.5			47.4	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	57.0	16.8	30.8	10.4	62.0	23.8	23.8
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	14.5	35.5	11.5	36.5	9.5	40.5	19.5	28.5
Max Q Clear Time (g_c+I1), s	9.7	12.6	11.3	23.3	5.2	25.3	18.2	13.9
Green Ext Time (p_c), s	0.2	5.3	0.0	2.0	0.1	7.0	0.1	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.3
HCM 7th LOS	D

Notes

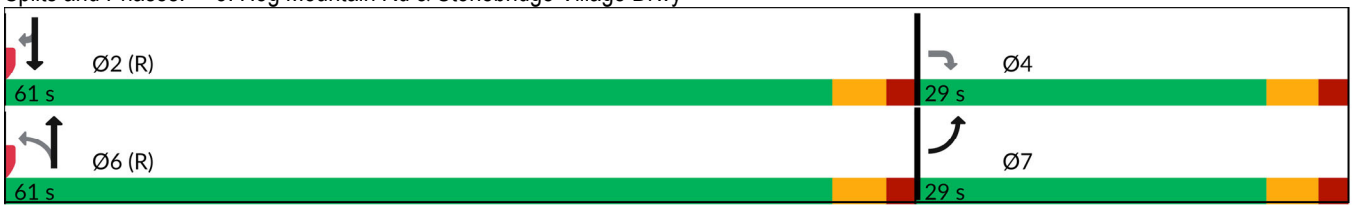
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

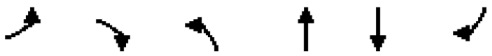
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	131	84	563	571	160
Future Volume (vph)	182	131	84	563	571	160
Lane Group Flow (vph)	188	135	87	580	589	165
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.65	0.36	0.17	0.44	0.44	0.14
Control Delay (s/veh)	45.0	8.5	6.0	7.3	7.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	8.5	6.0	7.3	7.3	1.2
Queue Length 50th (ft)	103	0	14	118	121	0
Queue Length 95th (ft)	161	45	38	223	228	20
Internal Link Dist (ft)	209			979	736	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	462	513	523	1328	1328	1176
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.26	0.17	0.44	0.44	0.14

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	182	131	84	563	571	160
Future Volume (veh/h)	182	131	84	563	571	160
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	135	87	580	589	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	238	212	598	1392	1392	
Arrive On Green	0.13	0.13	0.74	0.74	0.74	0.00
Sat Flow, veh/h	1781	1585	827	1870	1870	1585
Grp Volume(v), veh/h	188	135	87	580	589	0
Grp Sat Flow(s),veh/h/ln	1781	1585	827	1870	1870	1585
Q Serve(g_s), s	9.2	7.3	3.9	10.3	10.6	0.0
Cycle Q Clear(g_c), s	9.2	7.3	14.5	10.3	10.6	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	238	212	598	1392	1392	
V/C Ratio(X)	0.79	0.64	0.15	0.42	0.42	
Avail Cap(c_a), veh/h	465	414	598	1392	1392	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.90	0.90	1.00	0.00
Uniform Delay (d), s/veh	37.8	36.9	7.0	4.3	4.3	0.0
Incr Delay (d2), s/veh	5.8	3.2	0.5	0.8	0.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.0	0.6	2.7	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.6	40.1	7.5	5.1	5.2	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	323			667	589	
Approach Delay, s/veh	42.1			5.4	5.2	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		72.5		17.5		72.5
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		55.5		23.5		55.5
Max Q Clear Time (g_c+I1), s		12.6		11.2		16.5
Green Ext Time (p_c), s		8.5		0.8		9.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	69	90	715	682
Demand Flow Rate, veh/h	70	91	730	696
Vehicles Circulating, veh/h	722	564	28	141
Vehicles Exiting, veh/h	115	194	764	506
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	5.7	8.7	10.2
Approach LOS	A	A	A	B

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	70	83	8	730	696
Cap Entry Lane, veh/h	661	776	824	1341	1195
Entry HV Adj Factor	0.984	0.986	0.980	0.980	0.980
Flow Entry, veh/h	69	82	8	715	682
Cap Entry, veh/h	650	765	807	1314	1172
V/C Ratio	0.106	0.107	0.010	0.544	0.582
Control Delay, s/veh	6.7	5.8	4.6	8.7	10.2
LOS	A	A	A	A	B
95th %tile Queue, veh	0	0	0	3	4

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	11	715	30	19	712
Future Vol, veh/h	19	11	715	30	19	712
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	-	-	175	235	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	12	777	33	21	774

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1592	777	0	0	810	0
Stage 1	777	-	-	-	-	-
Stage 2	815	-	-	-	-	-
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	118	397	-	-	816	-
Stage 1	453	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	115	397	-	-	816	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	424	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	34.21	0	0.25
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	155	816	-
HCM Lane V/C Ratio	-	-	0.21	0.025	-
HCM Ctrl Dly (s/v)	-	-	34.2	9.5	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

TRAFFIC VOLUME WORKSHEETS

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

1. Spout Springs@Stonebridge(W)

A.M. Peak Hour

	Regain Medical Billing Driveway Northbound					Stonebridge Village East Driveway Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2026 Traffic Counts:	0	67	18	11	96	0	59	7	182	248	17	192	470	53	732	0	36	970	92	1098
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	0	0	35	0	35
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	68	18	11	97	0	60	7	184	251	17	194	486	54	751	0	36	1015	93	1144
Total New Trips:	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	1	15	1	17
Future 2027 Traffic Volumes:	0	68	18	11	97	0	60	7	184	251	17	194	492	54	757	0	37	1030	94	1161

School Dismissal Peak Hour

	Regain Medical Billing Driveway Northbound					Stonebridge Village East Driveway Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2026 Traffic Counts:	0	132	34	39	205	0	160	49	299	508	3	369	963	142	1477	0	39	734	145	918
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	0	0	0	0	0	0	0	0	0	0	27	0	27	0	0	21	0	21
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	133	34	39	206	0	162	49	302	513	3	373	1000	143	1519	0	39	762	146	947
Total New Trips:	0	0	0	1	1	0	1	0	0	1	0	0	13	0	13	0	1	11	1	13
Future 2027 Traffic Volumes:	0	133	34	40	207	0	163	49	302	514	3	373	1013	143	1532	0	40	773	147	960

P.M. Peak Hour

	Regain Medical Billing Driveway Northbound					Stonebridge Village East Driveway Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2026 Traffic Counts:	0	148	34	36	218	0	140	38	285	463	8	375	1029	151	1563	0	47	687	128	862
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	0	0	22	0	22
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	149	34	36	219	0	141	38	288	467	8	379	1076	153	1616	0	47	716	129	892
Total New Trips:	0	0	0	1	1	0	1	0	0	1	0	0	17	0	17	0	1	11	1	13
Future 2027 Traffic Volumes:	0	149	34	37	220	0	142	38	288	468	8	379	1093	153	1633	0	48	727	130	905

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

2. Spout Springs @ Hog Mountain

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	200	272	70	542	0	177	153	197	527	0	99	408	60	567	0	91	830	305	1226
Projected 2026 Volumes:	0	202	275	71	548	0	179	155	199	533	0	100	412	61	573	0	92	838	308	1238
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	1	0	1	0	9	4	35	48	0	11	0	0	11	0	0	0	3	3
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	204	279	72	555	0	190	161	236	587	0	112	416	62	590	0	93	846	314	1253
Total New Trips:	0	0	1	0	1	0	4	2	18	24	0	6	0	0	6	0	0	0	2	2
Future 2027 Traffic Volumes:	0	204	280	72	556	0	194	163	254	611	0	118	416	62	596	0	93	846	316	1255

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	141	208	54	403	0	221	259	124	604	0	147	651	101	899	0	78	396	168	642
Projected 2026 Volumes:	0	142	210	55	407	0	223	262	125	610	0	148	658	102	908	0	79	400	170	649
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	3	0	3	0	5	3	21	29	0	27	0	0	27	0	0	0	7	7
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	143	215	56	414	0	230	268	147	645	0	176	665	103	944	0	80	404	179	663
Total New Trips:	0	0	2	0	2	0	3	2	12	17	0	15	0	0	15	0	0	0	4	4
Future 2027 Traffic Volumes:	0	143	217	56	416	0	233	270	159	662	0	191	665	103	959	0	80	404	183	667

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	160	183	63	406	0	277	330	122	729	0	155	738	117	1010	0	82	462	177	721
Projected 2026 Volumes:	0	162	185	64	411	0	280	333	123	736	0	157	745	118	1020	0	83	467	179	729
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	5	0	5	0	6	3	22	31	0	37	0	0	37	0	0	0	9	9
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	164	192	65	421	0	289	339	146	774	0	196	752	119	1067	0	84	472	190	746
Total New Trips:	0	0	2	0	2	0	3	2	12	17	0	20	0	0	20	0	0	0	5	5
Future 2027 Traffic Volumes:	0	164	194	65	423	0	292	341	158	791	0	216	752	119	1087	0	84	472	195	751

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

3.Hog Mtn@StonebridgeVillage(E)

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Stonebridge Village East Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	36	670	0	706	0	0	571	96	667	0	77	0	39	116	0	0	0	0	0
Projected 2026 Volumes:	0	36	677	0	713	0	0	577	97	674	0	78	0	39	117	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	15	0	15	0	0	48	0	48	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-4	-4	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	36	699	0	735	0	0	631	94	725	0	79	0	39	118	0	0	0	0	0
Total New Trips:	0	0	9	0	9	0	0	24	3	27	0	1	0	0	1	0	0	0	0	0
Future 2027 Traffic Volumes:	0	36	708	0	744	0	0	655	97	752	0	80	0	39	119	0	0	0	0	0

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Stonebridge Village East Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	118	430	0	548	0	0	554	188	742	0	173	0	146	319	0	0	0	0	0
Projected 2026 Volumes:	0	119	434	0	553	0	0	560	190	750	0	175	0	147	322	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	37	0	37	0	0	29	0	29	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-1	-1	0	-3	0	0	-3	0	0	0	0	0
No-Build 2027 Volumes:	0	120	475	0	595	0	0	595	191	786	0	174	0	148	322	0	0	0	0	0
Total New Trips:	0	0	21	0	21	0	0	17	2	19	0	3	0	0	3	0	0	0	0	0
Future 2027 Traffic Volumes:	0	120	496	0	616	0	0	612	193	805	0	177	0	148	325	0	0	0	0	0

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Stonebridge Village East Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	82	475	0	557	0	0	514	157	671	0	179	0	129	308	0	0	0	0	0
Projected 2026 Volumes:	0	83	480	0	563	0	0	519	159	678	0	181	0	130	311	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	51	0	51	0	0	30	0	30	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-3	-3	0	-4	0	0	-4	0	0	0	0	0
No-Build 2027 Volumes:	0	84	536	0	620	0	0	554	158	712	0	179	0	131	310	0	0	0	0	0
Total New Trips:	0	0	27	0	27	0	0	17	2	19	0	3	0	0	3	0	0	0	0	0
Future 2027 Traffic Volumes:	0	84	563	0	647	0	0	571	160	731	0	182	0	131	313	0	0	0	0	0

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

4. Hog Mountain @ Cash Rd

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	7	687	54	748	0	2	501	6	509	0	24	5	48	77	0	124	1	62	187
Projected 2026 Volumes:	0	7	694	55	756	0	2	506	6	514	0	24	5	48	77	0	125	1	63	189
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	17	0	17	0	0	6	4	10	0	13	3	0	16	0	0	1	0	1
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-4	0	0	0	0	0
No-Build 2027 Volumes:	0	7	718	56	781	0	2	517	10	529	0	37	8	44	89	0	126	2	64	192
Total New Trips:	0	0	15	1	16	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	0	7	733	57	797	0	2	523	10	535	0	37	8	44	89	0	126	2	64	192

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	40	423	140	603	0	8	612	10	630	0	3	1	19	23	0	114	1	12	127
Projected 2026 Volumes:	0	40	427	141	608	0	8	618	10	636	0	3	1	19	23	0	115	1	12	128
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	10	0	10	0	0	14	10	24	0	8	2	0	10	0	0	2	0	2
Adjacent Site Shifted Traffic :	0	-3	0	0	-3	0	0	0	0	0	0	0	0	-1	-1	0	0	0	0	0
No-Build 2027 Volumes:	0	37	441	142	620	0	8	638	20	666	0	11	3	18	32	0	116	3	12	131
Total New Trips:	0	0	11	1	12	0	0	13	0	13	0	0	0	0	0	0	1	0	0	1
Future 2027 Traffic Volumes:	0	37	452	143	632	0	8	651	20	679	0	11	3	18	32	0	117	3	12	132

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	57	428	169	654	0	3	558	32	593	0	10	4	45	59	0	68	5	8	81
Projected 2026 Volumes:	0	58	432	171	661	0	3	564	32	599	0	10	4	45	59	0	69	5	8	82
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	11	0	11	0	0	19	14	33	0	8	2	0	10	0	0	3	0	3
Adjacent Site Shifted Traffic :	0	-4	0	0	-4	0	0	0	0	0	0	0	0	-3	-3	0	0	0	0	0
No-Build 2027 Volumes:	0	55	447	173	675	0	3	589	46	638	0	18	6	42	66	0	70	8	8	86
Total New Trips:	0	0	11	1	12	0	0	17	0	17	0	0	0	0	0	0	1	0	0	1
Future 2027 Traffic Volumes:	0	55	458	174	687	0	3	606	46	655	0	18	6	42	66	0	71	8	8	87

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

5. Hog Mountain @ Site Drwy

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					- Eastbound					Site Driveway Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	748	0	748	0	0	673	0	673	0	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	755	0	755	0	0	680	0	680	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	15	0	15	0	0	48	0	48	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	-4	0	-4	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	778	0	778	0	0	731	0	731	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	10	10	0	6	0	0	6	0	0	0	0	0	0	27	0	17	44
Future 2027 Traffic Volumes:	0	0	778	10	788	0	6	731	0	737	0	0	0	0	0	0	27	0	17	44

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					- Eastbound					Site Driveway Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	603	0	603	0	0	745	0	745	0	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	609	0	609	0	0	752	0	752	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	37	0	37	0	0	29	0	29	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	-3	0	-3	0	0	-1	0	-1	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	649	0	649	0	0	788	0	788	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	24	24	0	14	0	0	14	0	0	0	0	0	0	19	0	12	31
Future 2027 Traffic Volumes:	0	0	649	24	673	0	14	788	0	802	0	0	0	0	0	0	19	0	12	31

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					- Eastbound					Site Driveway Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	654	0	654	0	0	671	0	671	0	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	661	0	661	0	0	678	0	678	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	51	0	51	0	0	30	0	30	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	-4	0	-4	0	0	-3	0	-3	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	715	0	715	0	0	712	0	712	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	30	30	0	19	0	0	19	0	0	0	0	0	0	19	0	11	30
Future 2027 Traffic Volumes:	0	0	715	30	745	0	19	712	0	731	0	0	0	0	0	0	19	0	11	30



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026













Public Hearing Published 03/18/2026 First Reading 04/02/2026
Public Hearing 04/02/2026 Second Reading TBD

ORDINANCE NO. 776

AN ORDINANCE GRANTING VARIANCES FROM THE REQUIREMENTS SET FORTH IN THE CITY OF FLOWERY BRANCH ZONING ORDINANCE, SAID VARIANCES TO BE FROM SEC. 1014, TABLE 10.1, CENTERLINE RADIUS OF CURVATURE, FROM SEC. 7.4 – TABLE 7.2 MINIMUM LOT SIZE, FROM SEC. 1021(C) – RESIDENTIAL STREET DESIGN, FOR 4651 & 4665 HOG MOUNTAIN ROAD, HALL COUNTY TAX PARCELS 15046 000008 AND 15046 000008B, OWNED BY CD II PROPERTIES, LLC; AS SHOWN AND DESCRIBED ON ATTACHED EXHIBIT "A", PROVIDING FOR SEVERABILITY, PROVIDING FOR AN EFFECTIVE DATE, REPEALING CONFLICTING ORDINANCES, AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, CDII Properties LLC owns the subject parcel of land identified as Hall County Tax Parcel Identification No. 15046 000008 and 15046 000008B as shown and described on Exhibit "A"; and

WHEREAS, CDII Properties, LLC has submitted to the City Council of Flowery Branch, Georgia, a written and signed application and affidavit showing consent to apply for variances and whereas a survey and complete description of the subject parcel is included in the application; and

WHEREAS, the City Council held a public hearing at the meeting on April 2nd , 2026, duly noticed as prescribed by law and published in the Gainesville Times, regarding said application, as shall be set forth in the minutes of said meeting.

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. FINDINGS

The City Council hereby finds that the following conditions exist, thus warranting the granting of certain variances from the zoning ordinance:

Commented [TB1]: Just list the criteria that are met by the applicant. When the new variance language passes, we will need to change this introductory language to show that all variance criteria have been met.

a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;
b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;
c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;
e) The special circumstances are not the result of the actions of the applicant;
f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and
g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.

SECTION 2. VARIANCES GRANTED, AND CONDITIONS IMPOSED.

The following variances from the zoning ordinance are hereby granted, subject to certain specified conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is approved with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.
2. A Variance **to Sec. 7.4 Tabel 7.2** is approved for a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.
3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is approved with the following conditions:
   a) The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
   b) The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

SECTION 3. SEVERABILITY

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 4. EFFECTIVE DATE.

The effective date of this Ordinance shall be May 7th, 2026.

SECTION 5. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____ 2026.

Public Hearing Published 03/18/2026
Public Hearing 04/02/2026

First Reading 04/02/2026
Second Reading TBD

_____
Oliver McClellan, Mayor

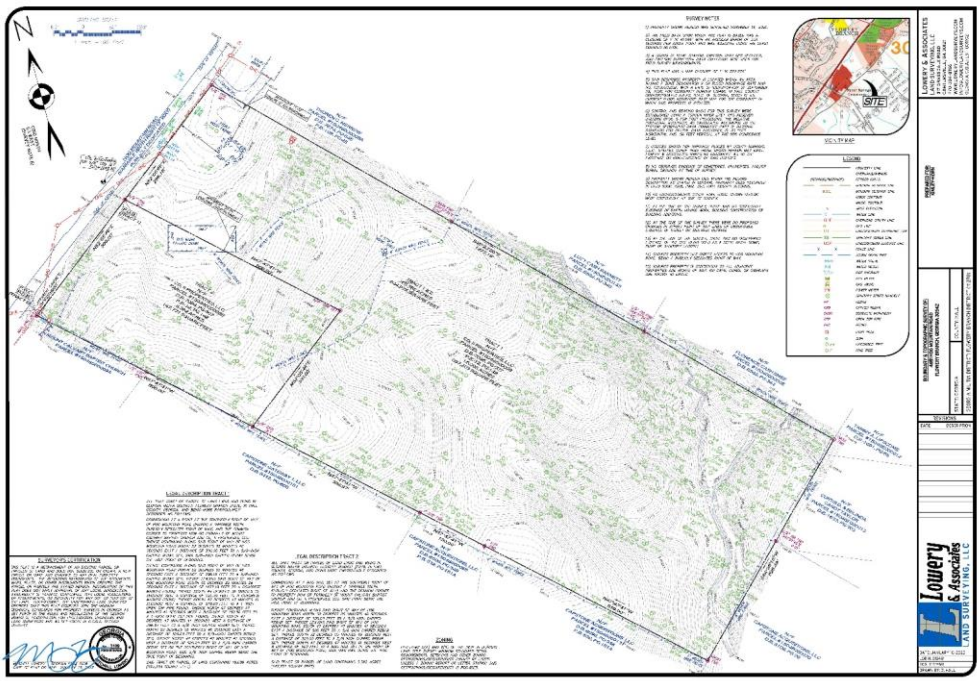
_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM

_____
Ted C. Baggett, City Attorney

Public Hearing Published 03/18/2026 First Reading 04/02/2026
Public Hearing 04/02/2026 Second Reading TBD

Exhibit A



LEGAL DESCRIPTION TRACT 1

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC; THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8-INCH CAPPED REBAR SET, SAID 5/8-INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 296.18 FEET TO A 5/8-INCH CAPPED REBAR SET; THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 45 DEGREES 22 MINUTES 26 SECONDS EAST A DISTANCE OF 1477.18 FEET TO A CONCRETE MARKER FOUND; THENCE SOUTH 44 DEGREES 38 MINUTES 15 SECONDS WEST A DISTANCE OF 525.39 FEET TO A CONCRETE MARKER FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 519.00 FEET TO A 1-INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 150.00 FEET TO A 1-INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 386.97 FEET TO A 5/8-INCH CAPPED REBAR SET; THENCE NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8-INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500.00 FEET TO A 5/8-INCH CAPPED REBAR SET ON THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID 5/8-INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 16.006 ACRES (697,203 SQUARE FEET).

Public Hearing Published 03/18/2026 First Reading 04/02/2026
Public Hearing 04/02/2026 Second Reading TBD

LEGAL DESCRIPTION TRACT 2

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A MAG NAIL SET AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC, SAID POINT BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET. THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 47 DEGREES 47 MINUTES 41 SECONDS EAST A DISTANCE OF 500 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 52 DEGREES 05 MINUTES 46 SECONDS WEST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500 FEET TO A MAG NAIL SET IN THE RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID MAG NAIL BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 3.392 ACRES (147,771 SQUARE FEET).

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: April 2nd, 2026

Subject: Annexation, Rezoning, and Variances

Applicant: Highpoint Development
1776 Peachtree Street
Atlanta, GA 30309
502-386-7022

Owner: CD II Properties, LLC
P.O. Box 99
Demorest, GA 30535
502-386-7022

Existing Zoning: AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.

Location and Size:

4651 Hog Mountain Road; Parcel 15046 000008; 16.0 Acres
4665 Hog Mountain Road; Parcel 15046 000008B; 3.398
Total Area: 19.398 Acres

Proposed Annexation:

The applicant proposes the annexation of the above-referenced parcels (19.398 Acres) from unincorporated Hall County into the City limits of Flowery Branch.

Proposed Zoning:

The applicant is proposing to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

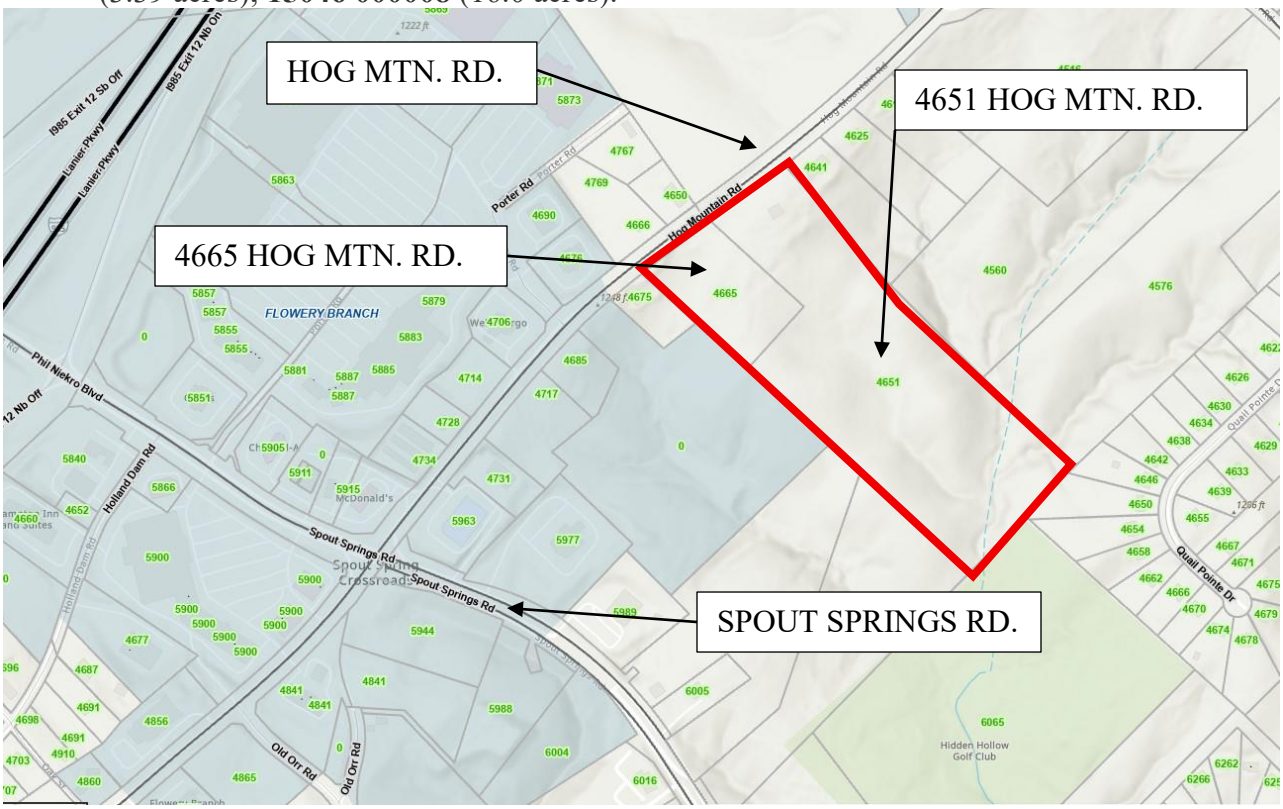
The applicant proposes the development of 75 single-family detached residential lots. The two subject parcels are requested to be rezoned from Hall County AR-1 (Agricultural Residential) and R-1 (Residential) zoning districts, located within unincorporated Hall County, to the Single-Family Townhome (SF-TH) zoning district within the City of Flowery Branch. Concurrent variances from the SF-TH zoning requirements and applicable dimensional standards are also requested.

Concurrent Variances:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography.
2. Variance to **Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. The site plan provided by the applicant lists a total of 75 lots.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements.

Location:

- 4665 and 4651 Hog Mountain Road; tax parcel identification numbers **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres).



Site Plan:

The applicant is proposing 75 single-family detached lots on 19.398 acres.



The site is located on Hog Mountain Road north of the intersection with Spout Springs Road.
The site is an undeveloped wooded lot with state waters located on the eastern side of the site.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC

Architectural Concepts:

The applicant submitted conceptual renderings of the proposed single-family detached architecture. Per the submitted renderings it appears the homes meet architectural standards of material and material application. However, without detailed floor plans, staff is unable to verify compliance with the City's established dimensional standards. To facilitate a thorough review, the applicant must provide complete architectural drawings, to confirm that all requirements are met. A detailed review is done by staff following Article 40 prior to the issuance of permits. The design concepts provided are for illustrative purposes only and were submitted as part of the rezoning case.



ARCHITECTURAL FEATURES:

The achitecture leans toward a mountain bungalow style, with forms and finishes that feel sturdy, familiar, and tied to the landscape. Dark charcoal accents sharpen the earthy palette, while carriage-style garage doors and well-placed sconces add character without slipping into ornament. Matching metal gutters bring a clean outline to the façades, and the porch roof extending across the front-facing garage helps keep everything at a comfortable, human scale. The result is a street presence that feels connected, warm, and intentionally crafted—neighbors, not statements.



EXAMPLE FRONT ELEVATION DARK COLOR SCHEME



COLOR PALETTE:

The three offered schemes—light, mid-tone, and dark—are drawn from the muted, earthy tones of the North Georgia landscape. Each palette reflects the surrounding ridge and creek setting, favoring natural hues: soft mineral whites, weathered wood browns, and deeper charcoal colors that echo stone, soil, and shaded canopy. Together, they provide variation without discord, allowing homes to feel individually tailored yet quietly unified within the broader landscape.



EXAMPLE FRONT ELEVATION LIGHT COLOR SCHEME






ARCHITECTURAL FEATURES:

Details stay simple and purposeful. Porch brackets and extended overhangs provide clear structure and shade without excess. Gable vents, occasional gable windows, and selectively used shutters add just enough dimension to the façades, keeping each home grounded and consistent without feeling repetitive.



EXAMPLE FRONT ELEVATION MID-COLOR SCHEME



EXAMPLE TYPICAL REAR ELEVATION WITH COVERED PORCH



EXAMPLE FRONT ELEVATION BRICK MATERIAL



EXAMPLE SIDE VIEW OF FRONT PORCH WITH BRICK

Open Space Analysis:

Pursuant to Article 10 – Development Requirements and Guidelines, Sec. 10.22 – Open Space Requirements, any proposed residential development is required to provide a total minimum of 15% open space, derived from a combination of Civic Space options (10%) and Amenity Space options (5%).
The site data table provided by the applicant lists a total of 18.5% open space with location details shown on the site plan:



Site Data Table	Required	Provided
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

The site plan proposes several open space options in various locations throughout the development and includes a pocket park, community pavilion, community fire pit, centralized mail kiosk with parking, landscaped seating areas, and a trail system comprised of both hardscape and mulch trails with a stream crossing. Detailed landscape plans and a trail plan including a material list for trail surfacing options, seating, fencing, and stream crossing will be required at time of LDP review.

The following conceptual images were provided by the applicant to illustrate amenity spaces and trail features. Plans submitted for amenity and civic spaces and trail features should substantially adhere to the images below:



Traffic Impacts, Vehicular Flow, and Entrances/Exits

The Conceptual Site Plan for the proposed development indicates 75 residential single-family detached units.

1. Site Access

- A single entrance is proposed off Hog Mountain Road.
- The entrance must include both a right-turn and left-turn lane in. The exit shall include both a left and right dedicated lane. These turn lanes will help to alleviate congestion during peak demand periods and maintain the flow of through traffic. All roadway designs shall be in accordance with the GDOT Driveway Manual.
- The developer is responsible for obtaining and dedicating to the City any right-of-way necessary to construct the required left-turn and right-turn lanes into the site, ensuring that a minimum 13-foot-wide shoulder is maintained.
- Road improvements meeting the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, and 5-foot sidewalk—are required along the entire frontage of the site.
- All costs associated with the required road improvements—including the left-turn lane, right-turn lane, curb and gutter, sidewalk, and associated storm drainage—shall be borne by the developer.

2. Sight Distance

- The driveway design must meet the minimum sight-distance requirements specified in the GDOT Driveway Manual. The engineer shall verify that both stopping-sight distance (SSD) and operational-sight distance (OSD) criteria are satisfied under existing field conditions.

3. Utility Coordination

- Any utilities located beneath the proposed deceleration or turn-lane pavement must be relocated outside of the pavement area.
- All costs associated with utility relocation shall be borne by the developer and coordination with the respective utility owners must be completed prior to construction.

4. Traffic Impact Study

- The current Traffic Study by A&R Engineering was prepared for single-family detached houses by using category 210 for Single-Family Detached.

- All design elements shall comply with GDOT standards. Coordination with Hall County DOT, City of Flowery Branch, and affected utility providers should occur early in the design process to avoid delays.
- The Traffic Impact Study shows that a dedicated left turn in and right turn deceleration lanes are warranted. Recommended conditions will incorporate the required improvements for traffic relief.
- The Traffic Impact Study recommends a single outbound exit lane from the proposed subdivision. However, the study also indicates that during the peak AM period, school dismissal period, and peak PM period, outbound movements from the site operate at a Level of Service (LOS) D. Based on these findings, staff recommends the provision of two outbound exit lanes—one dedicated left-turn lane and one dedicated right-turn lane—to improve operational efficiency and overall LOS for vehicles exiting the subdivision.

Level of Service LOS Description

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.

7.0 Conclusions and Recommendations

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Sewer Design and Capacity Impacts

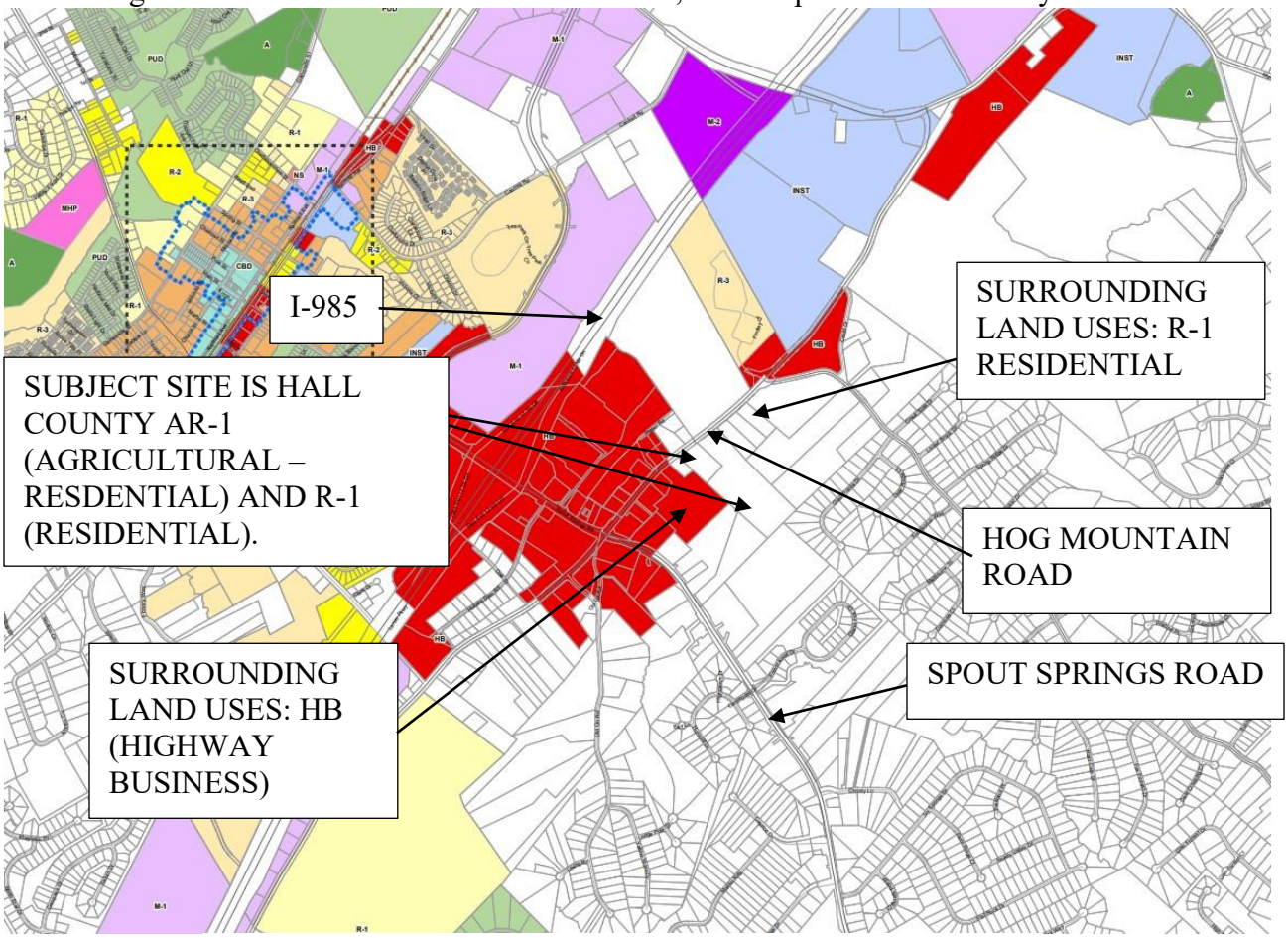
The proposed development of 75 residential units will generate a peak sanitary sewer demand of **20,625** gallons per day, based on the City's standard rate of 275 gallons per unit. Given the City's current peak capacity of **727,798** gallons per day, bringing these units online would reduce available capacity to approximately **707,173** gallons per day.

Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Public Utilities Director.

The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

Zoning Map:

AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.



Legend

Zoning Districts

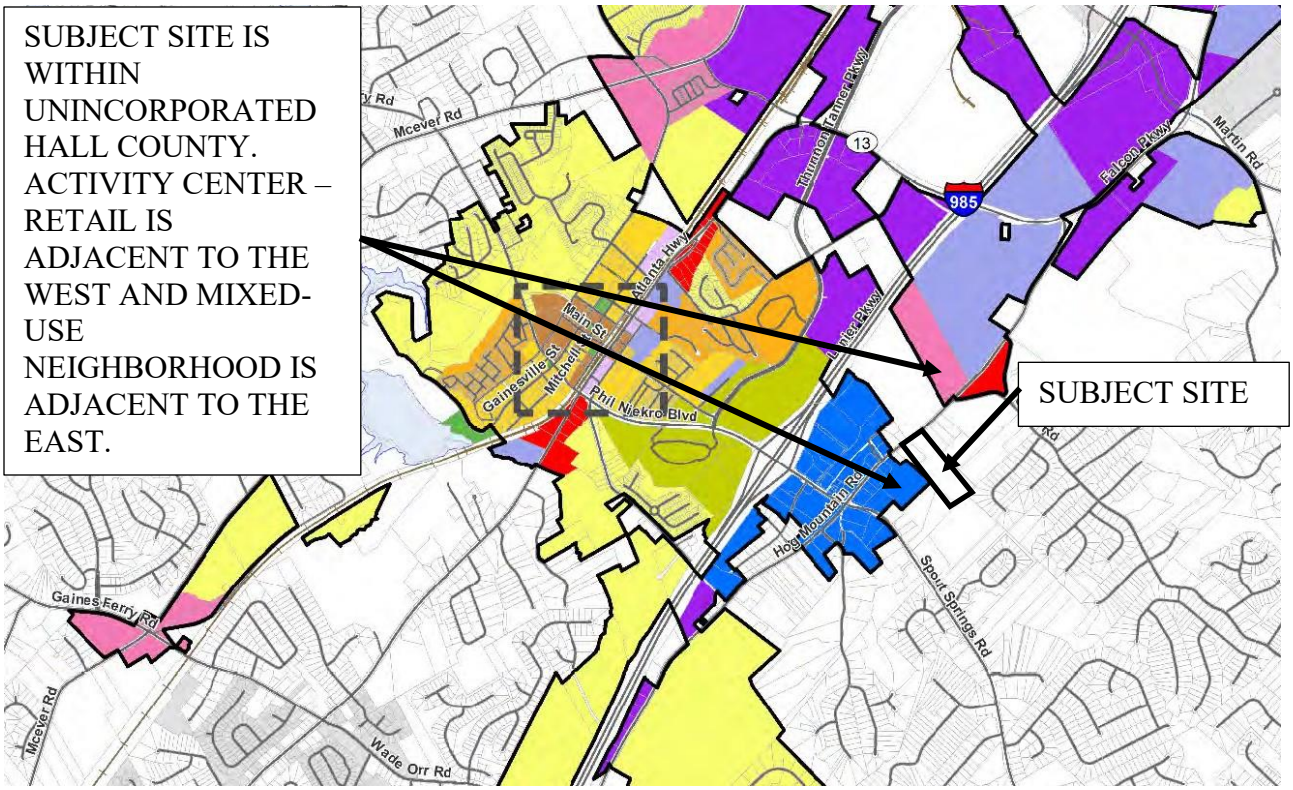
- Residential Low Density (R-1)
- Residential Moderate Density (R-2)
- Residential Multi-family (R-3)
- Traditional Neighborhood Development (TND)
- Planned Unit Development (PUD)
- Manufactured Home Park (MHP)
- Central Business District (CBD)
- Neighborhood Shopping (NS)
- Highway Business (HB)
- Institutional (INST)
- Manufacturing & Industrial, Light (M-1)
- Manufacturing & Industrial, Heavy (M-2)
- Agriculture (A)

Historic Districts

- Local Historic District

Future Development Plan:

SUBJECT SITE IS WITHIN UNINCORPORATED HALL COUNTY. ACTIVITY CENTER – RETAIL IS ADJACENT TO THE WEST AND MIXED-USE NEIGHBORHOOD IS ADJACENT TO THE EAST.



Other City Limits

CHARACTER AREA

- CONSERVATION
- SUBURBAN RESIDENTIAL
- TRADITIONAL NEIGHBORHOOD
- URBAN DENSITY COMMUNITY
- OLD TOWN
- MIXED USE - DOWNTOWN
- MIXED USE - NEIGHBORHOOD
- NEIGHBORHOOD COMMERCIAL
- ACTIVITY CENTER
- ACTIVITY CENTER - RETAIL
- INDUSTRIAL EMPLOYMENT
- INSTITUTIONAL CAMPUS





ARTICLE 2
Section 2.2. Design-Related Definitions.

Density: The number of families, individuals, dwelling units or housing structures per unit of land. Gross density is determined by dividing the number of families, individuals, dwelling units or housing structures by the gross area of the land (i.e. all land within the boundaries of the particular area excluding nothing). Net density is determined by subtracting from the gross area the following conditions identified on the land:

- 50 percent of any land identified as a wetland; and
- 50 percent of any land identified waters of the state including the buffer zones; and
- 50 percent of any land identified as a flood hazard boundary; and
- 50 percent of any land within an electricity transmission easement or right-of-way; and
- 50 percent of any land within a gas transmission easement or right-of-way.

The result of this calculation is the net acreage. The net acreage is divided into the number of units to determine the net density. The applicant provided a net density number but did not provide the areas of the wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.

Sec. 34.7. - Analysis Requirements for Rezoning

Applications to amend the official zoning map shall provide a written analysis comparing the proposed action with the criteria in this Section. A zoning map amendment or conditional use application may be justified only if it bears a reasonable relationship to the public health, safety, morality, or general welfare, and after consideration of the analysis requirements which may in individual cases be considered criteria relevant to the Zoning Administrator in making recommendations and by the City Council in the decision-making process.

a) *Whether the proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.*
The development of residential single-family detached homes is a suitable use in view of the use and development of adjacent and nearby property.

b) *Whether the proposal will adversely affect the existing use or usability of adjacent or nearby property.*
The proposed use will not adversely affect the existing use or usability of adjacent or nearby property.

c) *Whether the property to be affected by the proposal can be used in accordance with the existing regulations and has reasonable economic use as currently zoned.*
Annexation is necessary to connect the site to Flowery Branch's sanitary sewer system, while rezoning is required to align the site with the city's zoning designations.

d) *Whether the proposal will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.*
Input from the City's engineer was provided in this staff report.

e) *Whether the proposal is in conformity with the policy and intent of the comprehensive plan including but not limited to the character area map and future land use plan map.*
The proposed development is directly adjacent to the Activity Center – Retail character area. Mixed Use character area is located adjacent to the northeast on Hog Mountain Road. The proposed residential development would be a transitional zoning from retail to residential.

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 proposal.*

There are no other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the proposal.

g) *Existing use(s) and zoning of the subject property and nearby properties.*
The proposed development is for detached single-family and no other similar developments are nearby.

h) *Existing value of the property under the existing zoning district classification, the extent to which the property value of the subject property is diminished by the existing zoning district, and the value of the property under the proposed zoning district; if such information is provided by the applicant or can be discerned. This consideration may include the length of time the property has been vacant or unused as currently zoned and efforts taken by the property owner(s) to use the property or sell the property under the existing zoning district classification.*
Staff has no information to provide on the value of the subject property.

i) *Whether a proposed zoning map amendment or conditional use approval will be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.*
Staff has no information to provide on the value of the adjacent property.

j) *The possible creation of an isolated zoning district unrelated to adjacent and nearby districts.*
There are no SF-TH zoning designations in the area. This zoning would create an isolated zoning district.

k) *Possible effects of the change in zoning district map, or change in use, on the character of a zoning district.*
The proposed use is not similar to nearby development.

l) *The possible impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality.*
The subsequent LDP will be required to be compliant with all erosion and stormwater regulations.

m) *The relation that the proposed map amendment or conditional use bears to the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance*.

The proposed rezoning will have impacts on the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance due to the isolated zoning to SF-TH in this area.

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Topography could be considered a hardship. The variance request could be considered for approval with an alternative solution such as three-way stops at intersections and a two-way stop at the smallest radius curve. Alternatives shall be approved by the City Engineer.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 sq.ft. to 5,500 sq.ft. The applicant states the shape of the lot (lot width) limits the depth of lots across the parcel and the topography limits the placement of deeper lots. Topography and parcel shapes are legitimate hardships for a Variance.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course: Topography could be considered a hardship. The applicant proposes installing several speed tables and offsetting each home by five feet from adjacent homes to help break up the straight sight lines.

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The shape of the parcel is deeper than it is wide. The shape of the parcel requires two turns to be less than 275-foot radius to make the directional change. The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

(c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.

(d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.

(e) The special circumstances are not the result of the actions of the applicant;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The special circumstances are not the result of the actions of the applicant.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The special circumstances are not the result of the actions of the applicant.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The special circumstances are not the result of the actions of the applicant.

(f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

1. Variance Request **Section 1014, Table 10.1** radius of curvature:
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size:
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation:

Staff has worked with the applicant over time to get the plans to a point where it's reasonable to believe that each variance request is the minimum variance that will make possible the proposed use of land, building or structure in the use district proposed.

(g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.
With annexation and rezoning to the proper zoning category, residential dwellings would be permitted uses.

Variance Details:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography. The variance request could be considered for approval with an alternative solution approved by the City Engineer.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. Many lots are above the minimum lot area with an average lot size 6,852 square feet. The width of the parcel with two parallel streets limits the depth of some lots and the shape of a parcel can be considered a hardship.

   Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements. The applicant's

site plan indicated locations speed table / pedestrian crossings to slow speeds in straight runs of the road. The applicant is also proposing offsetting each home by five feet from adjacent homes to help break up the straight sight lines. Staff believe these alternatives maintain the intent of this code section.

Staff Recommendation for Annexation, Rezoning, and Variances

Recommendation:

There are three applications proposed at 4651 and 4665 Hog Mountain Road, parcels **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres). The first consideration for the City Council is the proposed annexation of both parcels. With annexation, the subject site must be rezoned from Hall County AR-1 – Agricultural & Residential - R-1- Residential to a Flowery Branch zoning category. The applicant is proposing to rezone the property to Single-Family Townhome Development (SF-TH).

Variance Recommendations for Ordinance 776:

Staff recommends **approval** of Ordinance 776 for three Variances with the following conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is recommended for approval with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.

2. A Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.

3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is recommended for approval the following conditions:

    1. The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
    2. The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

Staff recommends **approval of the Annexation and Rezoning** applications with the conditions provided.

Recommended Conditions of Approval of Annexation and Rezoning:

Please find below the proffered conditions for the proposed rezoning, organized by discipline and drafted to ensure consistency with the submitted concept materials and to protect the public interest:

1. **General Development**
    a. Building Locations and Scope:
    The total number of residential lots within the detached townhome development shall not exceed 75.
    b. Density Measurement:
    Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
    c. Maximum net density shall not exceed 6 units per acre.
    d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
        i. No more than ten percent (10%) of the total homes may be leased.
        ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
        iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

2. **Civil Site Engineering**
    a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
    b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
    c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
    d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.
3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.

6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.
8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.

Project Narrative for Hog Mountain Road Tract

LOCATION – 4651 & 4665 Road, Flowery Branch, GA 30542
ACREAGE – 19.398 acres +/-
APPLICANT – Highpoint Development
PROPOSED ZONING – SFTH

Summary

The accompanying application seeks annexation and zoning district change from AR-I in Hall County to SFTH in Flowery Branch for a 19.398-acre tract, consisting of Parcel #'s 15046 000008 & 15046 000008B. The property appears to have been vacant for a number of years. The location is on Hog Mountain Road in south Hall approximately 1300 LF north of Spout Springs Road. The intent is to develop up to 75 units of quality housing (single-family) along with an extensive amount of undeveloped natural area. At least 15% of the site will be maintained as open space. Although not specifically identified, the property is located adjacent to the "Retail Activity Center" Character Area of the 2041 Comprehensive Plan. We believe this property could serve as a transitional use from the retail area to south and the lower density subdivisions to the north and east.

Site Description

The property has approximately 640 LF of frontage along Hog Mountain Road, rectangular and approximately 1,500 LF deep. The site is undeveloped with several dilapidated out buildings and contains a mix of trees and vegetation. A jurisdictional stream (Lott Creek) is located near the rear of the property and appears to be a tributary of Mulberry Creek. Domestic water (24") is provided by the City of Gainesville and is located on the northwest side of Hog Mountain Road. Flowery Branch will provide sanitary Sewer through a new, on-site pump station and force main to nearby gravity lines located within the Stonebridge Village retail center. All other dry utilities are located within a reasonable distance for service extensions.

Adjacencies

The property is surrounded by Hall County residential zonings, AR-III, PRD and R-1 and a small HB property on the west side of Hog Mountain Road. Adjacent Flowery Branch zoning is HB.

Access

Access to the property is proposed from a driveway on Hog Mountain Road approximately 1,800 LF north of Spout Springs Road. The nearest cross street is Cash Road, located approximately 900 LF northeast of the property.

Proximity to Other Uses

- Nearest distance to undeveloped commercial property – parcel #15046 000151-zoned HB located adjacent to southwestern boundary.
- Nearest distance to developed commercial property – parcel #08096 000014 zoned H-B, directly across at 4650 Hog Mountain Road.

- Nearest distance to a single-family home – a single-family home at 4641 Hog Mountain Road is located within 40’ of the northeastern boundary.
- Nearest distance to a subdivision – Hunters Landing S/D is located 0.6 miles away.

Aerial View



Comprehensive Plan Consistency

Since the subject property is currently located in unincorporated Hall County, the Flowery Branch Comprehensive Plan does not specifically identify the future land use for this property. With Retail/Commercial uses directly to the south of the subject property and lower density residential uses to the north, it would be reasonable to assume that the subject property could provide a transitional use and density between the uses identified. Although this specific property is not included in the Comprehensive Plan Future Development Map, it does lie adjacent to the "Activity Center – Retail" character area. It is our opinion that the slightly higher densities offered under the SFTH zoning district, and the specific use for attached single-family homes, would be applicable for this property.

Traffic Impact Study

A Traffic Impact Study has been requested by the City and included for review. The following recommendations were made:

- One entering lane and one exiting lane
- Stop sign controlled on the driveway approach with Hog Mountain Rd remaining free flow
- A right turn lane for entering traffic
- A left turn lane in for entering traffic accounting for the intersection in front of the Chic-fil-A along Spout Springs Rd

Development Strategy

The Concept Plan includes traditional front entry single family homes. The architectural style of the homes will be influenced by the mountain bungalow style to feel more rooted in the community and within the SFTH design intent. The single-family homes located along the Hog Mountain Road frontage will be facing interior to the development and we will have elevated facades on the rear of these homes to provide a grand appearance along Hog Mountain Rd. We will provide a desirable streetscape for the project's entrance including a professionally landscaped monument sign. The single-family homes will all have front-loaded garages. The community will have amenities including walking trails, a creek bridge crossing, and a centralized amenity area including a community gathering pavilion, firepit communal area with chairs and a common area green space.

Architectural Materials & Site Improvements

Single-family homes will follow the requirements of Section 12.6.i at a minimum with a general design theme that would include:

- Two-car garages
- Front facades with a combination of masonry and hardi-plank siding materials
- Side & Rear facades with hardi-plank siding, glazing & trim
- Architectural weight shingles
- Sodded yards (4 sides)
- One tree per lot (minimum 2 ½" caliper)
- Variance Requested –
    - *Minimum Road Radius Variance –* Request for minimum at 48' with stop signed intersections past the first horizontal curve
    - *Removal of Street Deviation Variance –* Street deviation distance to be eliminated w/ concessions

- *Minimum Lot Size Variance –* Minimum lot size to be reduced
    - Overall average lot size of 6,700sf or greater (code minimum is 6,700sf /lot)
    - Minimum lot width – 40ft or greater (code minimum is 40ft)
    - Minimum lot area – 5,500sf
    - Total of 25% of lots will be between 5,500sf and 6,000sf
        - The remaining 75% of lots will exceed 6,000sf
        - Total average of all lots will be 6,700sf or above

Entrance Monumentation

The entrance may include the items listed below

- Masonry walls
- Wood or PVC fencing
- Illuminated Signage in accordance with the Flowery Branch Sign Ordinance
- Ornamental Sculpture
- Landscaping & Irrigation

Amenities

The community amenities, at a minimum, will contain the following items:

- Centralized amenity area w/
    - Community gathering pavilion
    - Communal firepit with seating
    - Common area greenspace
    - Central mail kiosk provided subject to USPS review/approval
- Walking Trails
    - Will include fence along rear of Lots 30-33 within stream buffer
    - Signage stating "TRAIL HEAD – No Land Disturbing Activities Allowed"
- Creek Crossing

Signage

The Developer and/or Builder shall be allowed to post permanent directional signs and monuments within the Community to direct traffic to sales and recreation centers and to identify differing residential areas. All permanent internal signage must be outside of any Right of Way or Utility Easement with a Landscape and Signage easement recorded on the Final Plat.

Temporary Sales and Marketing signs not exceeding 32 square feet per sign face and 8 feet in height may be used along Hog Mountain Road.

Model Home Permits

Applicant requests that up to twelve (12) model home permits be issued prior to Final Plat recording provided that hard surface (crusher run) access is provided and fire protection (functioning hydrant) is located within 500 feet of any structure under construction. However, no certificate of occupancy permits (CO) will be issued prior to final plat recording.

Sales and Construction Trailers

Applicant is requesting permission to install one sales trailer and one construction trailer with associated parking areas in locations to be determined at the time of street paving and possible ahead of final plat approval.

Homeowner's Association

A Homeowner's Association will be created in order to administer the covenants, conditions and restrictions that will be placed on the property by the Developer. The HOA will manage the overall management of the property including maintenance, architectural controls and financial management.

HOA Language requested by the City to be included in HOA Formation Documents as stated below:

- The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
    - No more than ten percent (10%) of the total homes may be leased
    - No more than two houses may be owned by one owner in the development and the owner or the owner's immediate family member must reside at one of the two homes
    - A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

Annexation

Hall County has given verbal confirmation they would approve the annexation into Flowery Branch assuming the adjacent parcels are not attempting to annex at the same time.

Conceptual Master Plan

The development of the community shall be controlled by the Conceptual Master Plan (the "Plan") attached as exhibit "A". The plan is considered conceptual in nature, and as such may require minor modifications during the engineering and development process. Modifications to the locations and arrangement of lots, roads, amenities, and other improvements that do not conflict with specific standards and requirements of these conditions may be made by the Developer, so long as such modifications do not change the land use, increase the overall density of the project or reduce any established exterior buffers or setbacks.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE
AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026

Justification for Sole-Source Procurement: Trimble X9 Laser Scanner

DATE: March 27, 2026

FROM: Chief Chris Hulsey, Flowery Branch Police Department

TO: City of Flowery Branch City Council

SUBJECT: Purchase Approval – Trimble X9 Forensic Laser Scanner

PURPOSE
This letter is submitted to request City Council approval for the sole source purchase of a Trimble X9 3D Laser Scanner and Trimble T110 Tablet for use by the Flowery Branch Police Department's crime scene and collision reconstruction units.

After evaluating available 3D laser scanning systems, including the Leica RTC360 and FARO Focus Core 100m, the Police Department has determined that only the Trimble X9 system meets all mission-critical operational, forensic, and evidentiary requirements. Due to unique capabilities not offered by competing systems, competition is not practicable.

ESSENTIAL OPERATIONAL CAPABILITIES
1. Forensic Integrity Through Automated Calibration
The Trimble X9 automatically performs internal calibration prior to scanning, verifying accuracy at the time evidence is collected. Competing scanners require periodic factory calibration, creating potential gaps that may be challenged in court. The Leica and Faro scanners require with yearly calibration that would cost additional thousands per year.

2. Rapid Setup and Officer Safety (Self-Leveling)
Crime scenes often occur on uneven terrain. The Trimble X9 self-levels over a wide range, allowing fast deployment without manual adjustment, reducing scene time and officer exposure to traffic and hazardous conditions.

3. Environmental Durability
The Trimble X9 is designed to operate in rain, dust, and freezing temperatures, allowing forensic operations to continue regardless of weather conditions. Competing systems have more limited environmental tolerances.

4. Forensic-Specific Software
The Trimble X9 integrates with Trimble Forensics Reveal software, which is purpose-built for law enforcement and includes tools for collision reconstruction and bullet

trajectory analysis. Competing software platforms are primarily designed for engineering or construction use.

5. Real-Time Field Verification
When paired with the Trimble T110 Tablet, large forensic datasets can be processed and verified at the scene, ensuring data completeness before a scene is cleared and preventing the need for unsafe or impractical return visits.

WHY COMPETITION IS NOT PRACTICABLE
While other manufacturers produce laser scanning equipment, none provide the same combination of automated calibration, ease of use, forensic analysis capability, environmental reliability, and real-time field processing required for law enforcement operations. Selecting an alternative system would increase legal risk, training burden, scene time, and long-term costs.

CONCLUSION
The Trimble X9 Laser Scanner and T110 Tablet represent the only solution that fully meets the Flowery Branch Police Department's operational and forensic needs. This purchase qualifies as a sole source procurement, and approval by City Council is respectfully requested.

Respectfully submitted,

C. S. Hulsey

Chief Chris Hulsey
Flowery Branch Police Department

FLOWERY BRANCH CITY COUNCIL

EXECUTIVE SUMMARY

SUBJECT: Consider purchase of Trimble X9 Scanner

DATE: April 2nd, 2026

(X) RECOMMENDATION
( ) POLICY DISCUSSION
( ) STATUS REPORT
( ) OTHER

BUDGET INFORMATION:
ANNUAL-
CAPITAL- $75,000.00

COUNCIL ACTION REQUESTED ON:

PURPOSE: The Trimble X9 is a high-precision 3D laser scanning system designed to enhance the accuracy, speed, and reliability of scene documentation across multiple city functions. For crash reconstruction and crime scene investigations, the X9 captures complete, court-defensible measurements in minutes, reducing scene-closure time while preserving every detail for later analysis. For public works and infrastructure projects, it provides accurate spatial data to support planning, design, and asset management.

HISTORY: The Trimble X9 is the latest evolution of Trimble's 3D laser-scanning technology, built on the proven foundation of the earlier X7 model. Developed to meet growing demands for faster, more accurate scene documentation, the X9 delivers improved range, speed, and imaging performance. Its advanced self-calibrating and self-leveling capabilities reflect Trimble's continued commitment to creating reliable, high-precision tools for public safety, forensics, and municipal operations.

FACTS AND ISSUES:

We evaluated three leading terrestrial laser-scanning systems: Trimble X9, FARO, and Leica. All three are capable scanners, but they differ significantly in workflow efficiency, calibration requirements, durability, and long-term operational reliability.

Why the Trimble X9 Is a sole source device and software:

1. Forensic Integrity via Auto-Calibration
2. Fast, Simple Field Workflow
3. Environmental Durability
4. Superior Multi-Department Use
5. Integrated Imaging Options
6. Specialized Forensic Analysis
7. Unrivaled Field Processing

Two Trimble X9 configurations were evaluated:

- **X9 Core (Short-Range Model):** Effective scanning range up to **200 feet**.
- **X9 Premium (Long-Range Model):** Extended scanning range up to **500 feet**, allowing coverage of larger intersections, multi-lane highways, and expansive public works areas.

The Police Department has secured $15,000 in external funding through the Norfolk Southern Safety First Grant.

Options:

1. Approve purchase of the Trimble X9 scanner
2. Do not approve purchase of the Trimble X9 scanner

RECOMMENDED SAMPLE MOTION:

I make motion to approve the purchase of the Trimble X9 scanner from Duncan Parnell, utilizing $15,000 in grant funding and $60,000.00 from excess funds from IT equipment upgrades annual program.

DEPARTMENT: Police Department

Prepared by: Kelsey Cash

Trimble Inc.
10368 Westmoor Drive
Westminster, CO 80021
USA

December 1, 2025

To Whom it May Concern:

This letter is to confirm that the Trimble Forensics X9 solution and equipment being offered provides functionality and capabilities unique to Trimble.

The Trimble X9 Scanner is controlled using the T110 tablet with the Trimble Forensics Capture software. **These solutions offer unique patented technology and workflows proprietary to Trimble.**

- Real-time on scene data registration
- Auto calibration and diagnostic reporting for every scan
- Automatic survey grade self-leveling accuracy
- An ingress protection rating of IP55 for dust and water protection
- Single shot data capture ability for reference and validation purposes
- Ability to capture data from typically hard to scan objects like black vehicles

The equipment and solutions being referenced are only available through authorized Trimble Forensics partners or distributors.

Please feel free to contact me with any questions

Keegan Kinney



Channel Manager
Trimble Inc.
(250) 574-0188
keegan_kinney@trimble.com

Duncan Parnell
Successful Projects Start Here

Quote

Quote Number: Q-65863
Quote Date: 3/31/2026
Quote Expires: 5/1/2026

Bill To:
Flowery Branch Police Dept.
5270 Railroad Avenue
Flowery Branch, GA 30542

Ship To:
Flowery Branch Police Dept.
5270 Railroad Avenue
Flowery Branch, GA 30542

Prepared By:
Duncan-Parnell, Inc.
1208 Copeland Oaks Dr
Morrisville, North Carolina 27560

Requested By: Todd Templeton
PH: (770) 967-6336 Cell:
toddt@flowerybranchga.org

Customer P21 Account:
Customer ID:
Ship-To ID:

Sales Rep: Daniel Detwiler
(689) 312-0330
daniel.detwiler@duncan-parnell.com

X9 Premium - Perpetual

Line	Item ID	Item Description	Qty	Optional	Unit Price	Extended Price
1	FOR-X9-LR-PERP	Forensic X9 Long Range Kit Perpetual	1	No	$67,729.50	$67,729.50
2	X9-100-01-GEO	Trimble X9 Instrument Pack Configurable	1	No	Included	$0.00
3	X9-CFG-001-150	Trimble X9 Premium Perp Config	1	No	Included	$0.00
4	101070-00-01	Dual Battery Charger w/Power Supply Cord	1	No	Included	$0.00
5	X9-T10X-ACC-01	Trimble X9 T110 Tablet Accessory Kit	1	No	Included	$0.00
6	114050-50	T110 Tablet Full Pack Out	1	No	Included	$0.00
7	114111	Trimble T10 Battery 8000mAHr	1	No	Included	$0.00
8	114113	Trimble T10 Battery Charger Kit Single	1	No	Included	$0.00
9	131932	Trimble T10 Shoulder Strap	1	No	Included	$0.00
10	90574-QR	Quick Release Adapter - X-Series Scanner	1	No	Included	$0.00
11	90574-TR	Carbon Fiber Tripod - X-Series Scanner	1	No	Included	$0.00
12	X7-BP-01	Trimble X9 Backpack	1	No	Included	$0.00
13	131922-01-BLK-GEO	65w USB Type C Charger	1	No	Included	$0.00
14	140100-00-GEO	USB3.1 Type C to Type C Charge Sync	1	No	Included	$0.00
15	FOR-CAP-WIN-P	Forensics Capture w/Perspective Software	1	No	Included	$0.00
16	PER-CORE	Trimble Perspective SW Perpetual Core Li	1	No	Included	$0.00
17	FOR-PERSP-TO-CAP	Upg Perspective to TF Capture w/X7 Mod	1	No	Included	$0.00
18	121718-BLK-GEO	USB C Vehicle Charger	1	No	Included	$0.00
19	ADLS-SCAN	TPP X9 Hardware Warranty 5 Yrs	1	No	$6,900.00	$6,900.00
20	FORENSICS HARDWARE DISCOUNT	Forensics Customer Hardware Discount	1	No	$-9,767.12	$-9,767.12
21	UPSFEDUSPSFRT	UPS/FED-EX/POSTAGE/DHL/FREIGHT	1	No	$137.62	$137.62
					X9 Premium - Perpetual Pre-Tax Total:	$65,000.00

Computer Software

Line	Item ID	Item Description	Qty	Optional	Unit Price	Extended Price
22	FOR-03-0313-NR	Trimble ForensicSuite (Reveal+Realworks)	1	No	$500.00	$500.00
(1) Year Subscription License for (1) User Login TLM: Todd Templeton toddt@flowerybranchga.org						
					Computer Software Pre-Tax Total:	$500.00

Training

Line	Item ID	Item Description	Qty	Optional	Unit Price	Extended Price
23	FOR-30000	Training Public Safety Onsite	5	No	$1,900.00	$9,500.00
(5) Days of in person training. This will be hands on covering proper deployment of the X9 scanner for crime scenes & crash scenes. Students will learn basic diagram skills and scan processing skills using the Trimble Forensics Reveal Software. Up to 8 students can be accommodated for this course. Computers will be provided.						
					Training Pre-Tax Total:	$9,500.00

Subtotal	$75,000.00
Estimated Tax Amount	
Grand Total	$75,000.00
	Do not pay from quote

Delivery Instructions:

TERMS AND CONDITIONS:

- Optional Items are not included in Pre-Tax Total
- SALES TAX AND SHIPPING CHARGES ARE ESTIMATED. **DO NOT PAY FROM QUOTE.**

ACCEPTED BY: _____ DATE: _____ PO:

We withhold the right to adjust prices of these products if we receive a tariff charge from the Manufacturer before this quotation expires. If you have any questions, please let us know. We are here to help.
Online payment options are available upon receipt of invoice or by making a down payment request.
Avoid a credit card surcharge by making an ACH payment online.
Ask your sales rep today about PayNOW with Duncan-Parnell.

City of Flowery Branch
City Council Meeting
Thursday, March 19, 2026, 6:00 PM
5410 Pine Street
Flowery Branch, GA 30542

Call Work Session to Order:

Mayor McClellan called the meeting to order at 6:00 p.m.

Present: Mayor McClellan and Council Members Joseph Mezzanotte, William McDaniel, Charles Vanderbilt and Pete Lena.

Also present were City Manager Tonya Parrish, City Clerk Shelia Cooper, Finance Director Matthew Hamby, Human Resources Director Krystle Hightower, Planning & Community Development Director Chris McCrary, Fun Director Renee Carden, Public Utilities Director Peter Woerner, Public Works Director Bill Whidden, Police Chief Chris Hulsey, Budget & Purchasing Manager Nancy Rodriguez, and City Attorney Ted Baggett.

Absent: Council Member Chris Mundy

Pledge of Allegiance:

Mayor McClellan led the Pledge of Allegiance.

Adoption of Agenda:

There was a motion made to adopt the agenda as presented.

Motion:	William McDaniel
Second:	Joseph Mezzanotte
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

Awards & Recognitions:

Mayor McClellan presented the Finance Department with a proclamation for Government Finance Professionals Week and encouraged all residents, elected officials, and community organizations to join in recognizing and expressing appreciation for the dedicated government finance professionals across our community and the state of Georgia.

Public Hearing:

a. Public Hearing to Consider First Reading of Ordinance 778 for Text Amendments to Article 37 – Variances and Article 38 – Administrative Variances.

City Clerk Cooper read the caption for Ordinance 778.

Director McCrary presented Ordinance 778 for a text amendment to Article 37 and Article 38 to eliminate shortcomings and improve criteria clarity and consistency. These amendments are intended to provide clearer standards for evaluating variance requests and to streamline the procedures for variance applications. Staff recommends amending the language to require all criteria be met for any variance to be approved. Staff recommends revising the language in Sections 37.5 and 38.7 to more clearly articulate the circumstances in which Variances may be approved. The proposed changes to criteria would apply to Administrative Variances as well.

Council held a discussion with Director McCrary.

In Favor of Ordinance 778:
Arianne Mathe, 5476 Mulberry Preserve Drive, Flowery Branch, Georgia 30542

There being none in opposition, Mayor McClellan closed the public hearing at 6:17 p.m.

b. Public Hearing to Consider First Reading of Ordinance 779 for Text Amendments to Section 12.2 Public Hearing Procedures.

City Clerk Cooper read the caption for Ordinance 779.

Director McCrary presented Ordinance 779 for text amendments to Section 12.2 Public Hearing Procedures. Staff recommends revising several portions of the article with straightforward text amendments to improve readability and consistency. The primary purpose of Ordinance 779 is to formally codify the procedures applicable to ordinance considerations. In accordance with Code Section 2.12, an ordinance may not be adopted on the same day it is introduced. This Ordinance establishes the procedures governing consideration from first reading through second reading. Notwithstanding this process, the governing body retains the authority at the time of first reading to issue a vote to deny or to defer the Ordinance upon its initial introduction.

There being none for or against Ordinance 779, Mayor McClellan closed the public hearing at 6:22 p.m.

Unfinished Business - Work Session: There was no unfinished business.

New Business - Work Session:

a. Consider Change Order #1 to Contract with Cornerstone Mechanical, LLC for bid 25-005 Tidewater & Portsmouth Lift Stations Rehabilitation

Budget Manager Rodriguez presented Change Order number one to the contract with Cornerstone Mechanical LLC for Bid 25-005 for Tidewater & Portsmouth lift stations rehabilitation. Cornerstone Mechanical was preparing to begin the equipment rehabilitation at the Tidewater Lift Station in February. During a site visit, the controls technician identified an electrical miscalculation affecting both the existing control panel and the

newly fabricated replacement panel. The wiring configuration and electrical values on the current panel did not align with those of the new panel intended for installation.

To resolve this issue and ensure proper system operation, Cornerstone Mechanical will need to replace wiring, circuit breakers, and several additional electrical components on the upgraded control panel. These modifications are necessary to bring the system into alignment and allow the project to proceed efficiently. Excess funds will be pulled from the Oakwood Industrial Lift Station Rehabilitation project. That project is complete and has a remaining balance of $63,449.00. This change order will be an increase of $12,875.00 to the contract for the rehabilitation of two lift stations; Portsmouth located at 7065 Valley Forge Drive and Tidewater located at 6212 Mitchell Street.

Council held a discussion with Director Woerner.

b. Consider Resolution 26-006, to Appoint Whitnie Riden as Assistant Solicitor

City Clerk Cooper read the caption for Resolution 26-006.

Kelsey Cash, Police Administrator, presented Resolution 26-006, to appoint Whitnie Riden as Assistant Solicitor.

c. Consider Resolution 26-007, to Appoint Benjamin Mozingo as Public Defender

City Clerk Cooper read the caption for Resolution 26-007.

Kelsey Cash, Police Administrator, presented Resolution 26-007, to appoint Benjamin Mozingo as Public Defender.

d. Consideration of a Pre-Development Agreement with Penn Hodge Properties for the Old Town Redevelopment Project

Director McCrary presented a Pre-Development Agreement with Penn Hodge Properties for the Old Town Redevelopment Project. The initial phase is only for due diligence, feasibility, analysis, and preliminary design and engineering. The Flowery Branch Old Town Redevelopment Plan represents a comprehensive, mixed-use revitalization initiative designed to enhance economic vitality, pedestrian accessibility, aesthetic appeal, and overall quality of life in downtown. The proposal outlines key project components that address current parking challenges, promote residential density needed to support local businesses, activate public spaces, and integrate cohesive Old Town architectural themes. The plan aligns principles of smart growth, sustainable urban development, and community-oriented design by increasing walkability, providing public amenities, and fostering a vibrant, year-round downtown environment.

This redevelopment plan is envisioned as a phased, market-responsive initiative that can elvole based on feedback, economic conditions, and partnership opportunities. Discussion is welcome on next steps, initial engineering/architectural design studies, infrastructure coordination, funding mechanisms, and the community engagement process.

Council held a discussion with Diretor McCrary and Mr. Penn Hodge.

Department Reports:

Department of Fun Report

Director Carden noted upcoming events.

Finance Department Report

Director Hamby thanked Mayor McClellan and Council for the Government Finance Professionals Week Proclamation, and he thanked his team for all their hard work.

Council Report

Council Member Mezzanotte spoke about the importance of mental health awareness.

Council Member McDaniel gave praise to the police department and the wastewater facility.

Adjournment Work Session:

Mayor McClellan adjourned the work session at 7:12 p.m.

Voting Session Agenda

Call Voting Session to Order:

Mayor McClellan called the voting session to order at 7:12 p.m.

Public Comments:

Jerry Smith, 6268 Shoreview Circle, Flowery Branch, Georgia 30542
Mr. Smith spoke about parking in downtown Flowery Branch.

Mr. Cameron Dees, 4810 Zephyr Cove Place, Flowery Branch, Georgia 30542
Mr. Dees spoke about the U.S. Immigration and Customs Enforcement Center proposed in Oakwood, Georgia.

Consent Agenda:

There was a motion made to approve the consent agenda as presented.

- Consider February 2026 Per Diem for Council Member Mezzanotte
- Consider March 5, 2026 City Council Meeting Minutes

Motion:	Charles Vanderbilt
Second:	Willliam McDaniel
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

Unfinished Business - Voting Session: There was no unfinished business – voting session.

New Business - Voting Session:

a. Consider Change Order #1 to Contract with Cornerstone Mechanical, LLC for bid 25-005 Tidewater & Portsmouth Lift Stations Rehabilitation

There was a motion made to approve Change Order #1 with Cornerstone Mechanical, LLC for the Tidewater & Portsmouth Lift Stations Rehabilitation project.

Motion:	Pete Lena
Second:	William McDaniel
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lean
Nays:	None
Result:	passed

b. Consider Resolution 26-006, to Appoint Whitnie Riden as Assistant Solicitor

City Clerk Cooper read the caption for Resolution 26-006.

There was a motion made to approve Resolution 26-006 to appoint Whitnie Riden as Assistant Solicitor.

Motion:	William McDaniel
Second:	Joseph Mezzanotte
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

c. Consider Resolution 26-007, to Appoint Benjamin Mozingo as Public Defender

City Clerk Cooper read the caption for Resolution 26-007.

There was a motion made to approve Resolution 26-007 to appoint Benjamin Mozingo as Public Defender.

First:	Joseph Mezzanotte
Second:	Pete Lena
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

d. Consider First Reading of Ordinance 778 for Text Amendments to Article 37 – Variances and Article 38 – Administrative Variances.

City Clerk Cooper read the caption for Ordinance 778.

There was a motion made to approve the First Reading of Ordinance 778.

Motion:	William McDaniel
Second:	Joseph Mezzanotte
Ayes:	Joseph Mezzanotte, William McDaniel., Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

e. Consider First Reading of Ordinance 779 for Text Amendments to Section 12.2 Public Hearing Procedures.

There was a motion made to approve the First Reading of Ordinance 779.

Motion:	William McDaniel
Second:	Pete Lena
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

f. Consideration of a Pre-Development Agreement with Penn Hodge Properties for the Old Town Redevelopment Project

There was a motion made to approve a Pre-Development Agreement between the City of Flowery Branch and Penn Hodge Properties for the Old Town Redevelopment Project.

Motion:	Charles Vanderbilt
Second:	Pete Lena

Council held a discussion before the vote of the Pre-Development Agreement.

Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

Executive Session:

There was a motion made to enter executive session for matters related to the acquisition/disposition of real estate, for matters related to certain personnel issues, and for matters related to pending or potential litigation at 7:23 p.m.

Motion:	Pete Lena
Second:	Charles Vanderbilt
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

There was a motion made to exit the executive session at 8:07 p.m.

Motion:	William McDaniel
Second:	Charles Vanderbilt
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

Adjournment:

There was a motion made to adjourn the meeting at 8:07 p.m.

Motion:	William McDaniel
Second:	Pete Lena
Ayes:	Joseph Mezzanotte, William McDaniel, Charles Vandeerbilt, Pete Lena
Nays:	None
Result:	passed

_____	_____	_____
Oliver McClellan	Date	Shelia Cooper
Mayor		City Clerk

Public Hearing Published 02/18/2026
Public Hearing 03/19/2026

First Reading 03/19/2026
Second Reading 04/02/2026

ORDINANCE NO. 778

AN ORDINANCE AMENDING THE ZONING ORDINANCE OF THE CITY OF FLOWERY BRANCH, GEORGIA, TO AMEND SECTION 37.5. – CRITERIA FOR GRANTING VARIANCES IN ARTICLE 37 – VARIANCES IN APPENDIX C – ZONING ORDINANCE, TO AMEND SECTION 38.2 – PROVISIONS THAT MAY BE ADMINISTRATIVELY VARIED IN ARTICLE 38 – ADMINISTRATIVE VARIANCES IN APPENDIX C- ZONING ORDINANCE, TO AMEND SECTION 38.4 – APPLICATION REQUIREMENTS, IN ARTICLE 38 – ADMINISTRATIVE VARIANCES IN APPENDIX C – ZONING ORDINANCE, TO AMEND SECTION 38.7 – CRITERIA FOR GRANTING VARIANCES IN ARTICLE 38 – ADMINISTRATIVE VARIANCES IN APPENDIX C – ZONING ORDINANCE, TO AMEND SECTION 38.8 – PROCEDURES IN ARTICLE 38 – ADMINISTRATIVE VARIANCES IN APPENDIX C – ZONING ORDINANCE; TO PROVIDE FOR SEVERABILITY, TO REPEAL CONFLICTING ORDINANCES, TO PROVIDE FOR AN EFFECTIVE DATE; AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, the Zoning Ordinance of the City of Flowery Branch, Georgia, authorizes the amendment of the text of the City of Flowery Branch Zoning Ordinance by the City Council; and

WHEREAS, the Zoning Administrator is authorized, pursuant to Section 33.2 of the Zoning Ordinance, to initiate an amendment to the Zoning Ordinance for consideration by the City Council; and

WHEREAS, it is in the public interest to update existing codes; and

WHEREAS, the City has complied with the Zoning Procedures Law and the requirements of Article 33 of the Zoning Ordinance with regard to text amendments, including the holding of an advertised public hearing; and

WHEREAS, the City of Flowery Branch deems necessary to amend the Zoning Ordinance by amending Article 37 – Variances and Article 38 – Administrative Variances to clarify the criteria of variance considerations and procedures of variance applications; and

WHEREAS, the City Council finds that in the interests of the public, the enactment of this ordinance by reasonable means, as allowed under state law, and not unduly oppressive, is necessary to protect the health, safety, morals, and general welfare of the citizens of the city.

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1.

Section 37.5 of Article 37 of Appendix C is hereby amended to read as follows:

"Sec. 37.5 – Criteria for Graning Variances.

1. Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that all of the following conditions exist. The City Council shall not approve a variance application unless it shall have adopted findings that all of the following conditions exist:
    a) Arises from a condition that is unique and peculiar to the land, structures, and buildings involved.
    b) Is necessary because the particular physical surroundings, the size, shape, or topographical condition of the specific property involved would result in unnecessary hardship for the owner, lessee or occupants; as distinguished from a mere inconvenience, if the provisions of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) are literally enforced.
    c) The condition requiring the requested relief is not ordinarily found in properties of the same zoning district as the subject property.
    d) The condition is created by the regulations of the City's Subdivision Ordinance (Appendix B) or the City's Zoning Ordinance (Appendix C) and not by an action or actions of the property owner or the applicant.
    e) The granting of the variance will not impair or injure other property or improvements in the neighborhood in which the subject property is located, nor impair an adequate supply of light or air to adjacent property, substantially increase the congestion in the public streets, increase the danger of fire, endanger the public safety, or substantially diminish or impair property values within the neighborhood.
    f) The variance granted is the minimum variance that will make possible the reasonable use of the land, buildings, or structures.
    g) The variance desired will not be opposed to the purpose and intent of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) or the purpose and intent of the current Flowery Branch Comprehensive Plan.
2. No variance shall be authorized to:
    a) Allow a structure or use not authorized in the applicable zoning district or a density of development that is not authorized within such district.
    b) Allow any variance that conflicts with or changes any requirement enacted as a condition of zoning or of a Conditional Use Permit granted by the City Council.

c) Reduce, waive, or modify in any manner the minimum lot area established by the City Council through a special condition of approval.
d) Permit the expansion or enlargement of any non-conforming use of land, non-conforming use of land and buildings in combination, non-conforming use of land and structures in combination, or non-conforming use requiring a Conditional Use Permit.
e) Permit the re-establishment of any non-conforming use of land, non-conforming use of land and buildings in combination, non-conforming use of land and structures in combination, or non-conforming use requiring a Conditional Use Permit where such use has lapsed.

3. The City Council may attach reasonable conditions to a variance through the exercise of its legislative powers and police powers when necessary to prevent or minimize adverse impacts upon property or the environment or to further the purpose and intent of the City's Comprehensive Plan."

SECTION 2.

Section 38.2 of Article 38 of Appendix C is hereby amended to read as follows:
"Sec. 38.2 – Provisions that May Be Administratively Varied.

The following provisions of this zoning ordinance may be administratively varied by the Director of Planning and Community Development, in accordance with the criteria in Section 38.7, subject to the specific limitations of this Section:

a) Front building setback for a principal building, reduction not to exceed seven (7) feet.
b) Side building setback for a principal building, reduction not to exceed three (3) feet.
c) Rear building setback for a principal building, reduction not to exceed five (5) feet.
d) Setback for an accessory building, reduction not to exceed two (2) feet.
e) Maximum height of a building, not to exceed five (5) feet above the applicable maximum.
f) Parking above the maximum or twenty percent (20%) below the minimum required as specified in Table 21.3, on a case-by-case basis based upon the scale and impacts of the request, for good cause shown, as provided in Section 21.18 of this zoning ordinance.
g) The maximum height of fences and walls, not to exceed a two (2) foot increase.
h) Certain dimensional requirements of the TND zoning district, as specified in Table 7.2 of this zoning ordinance, may be administratively varied by the Director of Planning and Community Development, for one or more lots for detached, single-family dwellings only, as follows:

1. The required minimum lot size of 6,700 square feet may be reduced to 6,000 square feet (and the corresponding maximum density may be increased from 6.5 to 7.26 dwelling units per acre);
2. The required minimum lot width of forty-five (45) feet may be reduced to forty (40) feet;
3. The minimum lot depth may be reduced from eighty (80) feet to seventy (70) feet."

SECTION 3.

Section 38.4 of Article 38 of Appendix C is hereby amended to read as follows:

"Sec. 38.4 – Application Requirements.

Applications for administrative variance shall require submittal of an application meeting the requirements specified in this Section.

a) Application fee as specified by this ordinance or established by resolution of the City Council;

b) Application form furnished by the Director of Planning and Community Development, including signed and notarized signature of property owner;

c) Legal description of the property;

d) Survey plat of the property;

e) Letter of intent describing the proposed use of the property or other action requested;

f) Site plan of the property at an appropriate engineering scale showing the proposed use and relevant information regarding proposed improvements;

g) Statistics regarding the proposed development;

h) Written analysis of how the proposed action compares to decision criteria specified for deciding on the subject type of application;

i) Description of any special conditions voluntarily made a part of the request;

j) A notarized letter of consent for proposed variance from adjoining property owners as required and;

k) Other information as may be required by the Director of Planning and Community Development necessary to determine compliance with the City's zoning or land use regulations or the purpose and intent of the City's Comprehensive Plan."

SECTION 4.

Section 38.7 of Article 38 of Appendix C is hereby amended to read as follows:

"Sec. 38.7 – Criteria for Granting Variances.

1. Any applicant requesting consideration of an administrative variance shall provide a written justification that the following conditions exist. The Director of Planning and Community Development shall not approve an administrative variance application unless said Director issues written findings that all of the following conditions exist:
    a) Arises from a condition that is unique and peculiar to the land, structures, or buildings involved.
    b) Is necessary because the particular physical surroundings, the size, shape, or topographical condition of the specific property involved would result in unnecessary hardship for the owner, lessee or occupants; as distinguished from a mere inconvenience, if the provisions of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) are literally enforced.
    c) The condition requiring the requested relief is not ordinarily found in properties of the same zoning district as the subject property.
    d) The condition is created by the regulations of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) and not by an action or actions of the property owner or the applicant.
    e) The granting of the variance will not impair or injure other property or improvements in the neighborhood in which the subject property is located, nor impair an adequate supply of light or air to adjacent property, substantially increase the congestion in the public streets, increase the danger of fire, create a hazard to air navigation, endanger the public safety or substantially diminish or impair property values within the neighborhood.
    f) The variance granted is the minimum variance that will make possible the reasonable use of the land, buildings, or structures.
    g) The variance desired will not be opposed to the general spirit and intent of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) or the purpose and intent of the current Flowery Branch Comprehensive Plan.
2. No variance shall be authorized to:
    a) Allow a structure or use not authorized in the applicable zoning district or a density of development that is not authorized within such district
    b) Allow any variance that conflicts with or changes any requirement enacted as a condition of zoning or of a Conditional Use Permit by the City Council.
    c) Reduce, waive, or modify in any manner the minimum lot area established by the City Council through a special condition of approval.
    d) Permit the expansion or enlargement of any non-conforming use of land, non-conforming use of land and buildings in combination, non-

conforming use of land and structures in combination, or non-conforming use requiring a Conditional Use Permit.

e) Permit the re-establishment of any non-conforming use of land, non-conforming use of land and buildings in combination, non-conforming use of land and structures in combination, or non-conforming use requiring a Conditional Use Permit where such use has lapsed.

3. The Planning and Community Development Director may attach reasonable conditions to an administrative variance when necessary to prevent or minimize adverse impacts upon property or the environment.

SECTION 5.

Section 38.8 of Article 38 of Appendix C is hereby amended to read as follows:

"Sec. 38.8 – Procedures.

Administrative variance applications shall be considered and processed in accordance with the requirements of this Section.

(a) Director of Planning and Community Development shall review all completed applications, as described under Section 38.6.
(b) The Director of Planning and Community Development Director shall render a final decision on any application for administrative variance on or before fifteen (15) days following acceptance of a complete application.
(c) The applicant shall be informed in writing of the Director's decision and the findings of fact supporting the decision, which shall be sent within five (5) working days of the date of the decision. Failure to receive the written decision within five (5) working days shall not constitute a procedural error on the part of the City, nor affect the decision of the Director in any manner.
(d) Any administrative variance issued by the Director not in conformity with the provisions of this Article shall be null and void.

SECTION 6.

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 7.

The effective date of this Ordinance shall be upon approval by the City Council of the City of Flowery Branch, Georgia.

SECTION 8.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____day of _____2026.

_____
Oliver McClellan, Mayor

ATTEST:

_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM:

_____
Ted Baggett, City Attorney

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: March 19th, 2026

Subject / Code Section:

Ordinance 778 – Section 37.5. – Criteria for Granting Variances in Article 37- Variances, of Appendix C – Zoning Ordinance, Section 38.2 – Provisions That May Be Administratively Varied, Section 38.4 – Application Requirements, Section 38.7 – Criteria for Granting Variances, Section 38.8 – Procedures in Article 38 – Administrative Variances

Applicant: Planning and Community Development

EXECUTIVE SUMMARY

The current code sections governing Administrative Variances and City Council approved Variances contain several shortcomings. Ordinance 778 proposes text amendments to clarify the language related to variance criteria. These amendments to Article 37 – Variances and Article 38 – Administrative Variances are intended to provide clearer standards for evaluating variance requests and to streamline the procedures for variance applications.





Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

This section uses "one or more" and the language should require all criteria be met as proposed:

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that ~~one or more of~~ the following conditions ~~(s)~~ exist. The City Council shall not approve a variance application unless it shall have adopted findings that ~~one or more of~~ the following conditions exist:

The proposed change requiring all criteria to be met mirrors the same amendment outlined in Section 38.7:

Sec. 38.7. Criteria for Granting Variances.

Any applicant requesting consideration of an administrative variance shall provide a written justification that ~~one or more of~~ the following conditions ~~(s)~~ exist. The Director of Planning and Community Development shall not approve an administrative variance application unless it shall have adopted findings that ~~the one or more of~~ the following conditions exist:

Staff is proposing to rewrite the criteria for both code sections for clarification and guidance on approving variances. Currently, the criteria for variances is limited and does not provide enough structure:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

(c)Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

(d)The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

(e)The special circumstances are not the result of the actions of the applicant;

(f)The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

(g)The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.

Staff recommends revising the language in Sections 37.5 and 38.7 to more clearly articulate the circumstances in which Variances may be approved:

1. Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that all of the following conditions exist. The City Council shall not approve a variance application unless it shall have adopted findings that all of the following conditions exist:
    a) Arises from a condition that is unique and peculiar to the land, structures, and buildings involved.
    b) Is necessary because the particular physical surroundings, the size, shape, or topographical condition of the specific property involved would result in unnecessary hardship for the owner, lessee or occupants; as distinguished from a mere inconvenience, if the provisions of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) are literally enforced.
    c) The condition requiring the requested relief is not ordinarily found in properties of the same zoning district as the subject property.
    d) The condition is created by the regulations of the City's Subdivision Ordinance (Appendix B) or the City's Zoning Ordinance (Appendix C) and not by an action or actions of the property owner or the applicant.
    e) The granting of the variance will not impair or injure other property or improvements in the neighborhood in which the subject property is located, nor impair an adequate supply of light or air to adjacent property, substantially increase the congestion in the public streets, increase the danger of fire, endanger the public safety, or substantially diminish or impair property values within the neighborhood.

f) The variance granted is the minimum variance that will make possible the reasonable use of the land, buildings, or structures.

g) The variance desired will not be opposed to the purpose and intent of the City's Subdivision Ordinance (Appendix B) and the City's Zoning Ordinance (Appendix C) or the purpose and intent of the current Flowery Branch Comprehensive Plan.

2. No variance shall be authorized to:

a) Allow a structure or use not authorized in the applicable zoning district or a density of development that is not authorized within such district.

b) Allow any variance that conflicts with or changes any requirement enacted as a condition of zoning or of a Conditional Use Permit granted by the City Council.

c) Reduce, waive, or modify in any manner the minimum lot area established by the City Council through a special condition of approval.

d) Permit the expansion or enlargement of any non-conforming use of land, non-conforming use of land and buildings in combination, non-conforming use of land and structures in combination, or non-conforming use requiring a Conditional Use Permit.

e) Permit the re-establishment of any non-conforming use of land, non-conforming use of land and buildings in combination, non-conforming use of land and structures in combination, or non-conforming use requiring a Conditional Use Permit where such use has lapsed.

3. The City Council may attach reasonable conditions to a variance through the exercise of its legislative powers and police powers when necessary to prevent or minimize adverse impacts upon property or the environment or to further the purpose and intent of the City's Comprehensive Plan."

Subsection 3 in Section 38.7 replaces City Council with Planning and Community Development Director since these are administratively approved:

3. The Planning and Community Development Director may attach reasonable conditions to an administrative variance when necessary to prevent or minimize adverse impacts upon property or the environment.

Based on staff's experience, newspaper publication is not necessary for Administrative Variances, even though it is currently required under Code Section 38:

(b) At least fifteen (15) but not more than forty-five (45) days prior to the date the Director of Planning and Community Development considers an administrative variance for

approval, the City shall cause to be published within a newspaper of general circulation within the city a notice stating the time, place, and purpose.

Notice shall also be provided by first-class mail to the owner of the property that is subject to the proposed administrative variance. This notification letter shall include the same information as the published notice and shall be mailed using the USPS Certificate of Mailing at least fifteen (15) days prior to consideration by the Director.

Staff recommends striking this paragraph. In its place, staff advises that applicants be required to provide written consent from all adjacent property owners before an administrative variance may be approved. This requirement effectively functions as notice of the variance. If the applicant is unable to obtain the necessary consent, the matter shall be forwarded to the City Council for consideration as a full variance in a public hearing.

A notarized letter of consent for the proposed variance from adjoining property owners as required

Recommendation:

Staff recommends **APPROVAL** of the proposed Ordinance 778.

Public Hearing Published 03/04/2026 First Reading 03/19/2026
Public Hearing 03/19/2026 Second Reading 04/02/2026

ORDINANCE NO. 779

AN ORDINANCE AMENDING THE ZONING ORDINANCE OF THE CITY OF FLOWERY BRANCH, GEORGIA, ORDINANCE NO. 779, TO REPEAL AND REPLACE ARTICLE 35. – PUBLIC HEARING PROCEDURES OF APPENDIX C- ZONING ORDINANCE, TO PROVIDE FOR SEVERABILITY, TO PROVIDE FOR AN EFFECTIVE DATE, TO REPEAL CONFLICTING ORDINANCES, AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, the Zoning Ordinance of the City of Flowery Branch, Georgia, authorizes the amendment of the text of the City of Flowery Branch Zoning Ordinance by the City Council; and

WHEREAS, the Zoning Administrator is authorized, pursuant to Section 33.2 of the Zoning Ordinance, to initiate an amendment to the Zoning Ordinance for consideration by the City Council; and

WHEREAS, it is in the public interest to update existing codes; and

WHEREAS, the City has complied with the Zoning Procedures Law and the requirements of Article 33 of the Zoning Ordinance with regard to text amendments, including the holding of an advertised public hearing; and

WHEREAS, the City of Flowery Branch deems necessary to amend the Zoning Ordinance by amending Article 35 – Public Hearing Procedures to clarify the procedures for public hearings; and

WHEREAS, the City Council finds that in the interests of the public, the enactment of this ordinance by reasonable means, as allowed under state law, and not unduly oppressive, is necessary to protect the health, safety, morals, and general welfare of the citizens of the city.

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS THAT THE FLOWERY BRANCH ZONING ORDINANCE IS AMENDED AS FOLLOWS:

SECTION 1. AMENDMENT.

Article 35- Public Hearing Procedures of Appendix C- Zoning Ordinance, is hereby repealed and replaced to read as is shown on attached Exhibit “A”.

SECTION 2. SEVERABILITY.

Public Hearing Published 03/04/2026 First Reading 03/19/2026
Public Hearing 03/19/2026 Second Reading 04/02/2026

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 3. EFFECTIVE DATE.

The effective date of this Ordinance shall be upon approval by the City Council of the City of Flowery Branch, Georgia.

SECTION 4. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____, _____.

_____
Oliver McClellan, Mayor

ATTEST:

_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM:

_____
Ted Baggett, City Attorney

Exhibit "A"

ARTICLE 35. PUBLIC HEARING PROCEDURES

Sec. 35.1. Applicability.

Any public hearing required by this zoning ordinance for an application for rezoning (amendment to the official zoning map), conditional use, variance (whether filed individually or concurrently with another application), any zoning ordinance brought forward by a member of the governing authority or city administration, and administrative appeal shall be called and conducted in accordance with the procedures of this Article. Nothing contained in this Article shall be construed as prohibiting a presiding officer from conducting a public hearing in a fair, orderly, and decorous manner.

Sec. 35.2. Presiding Officer.

The presiding officer shall preside over the public hearing. In the case of the Governing Body, the Mayor shall preside, or in the absence of the Mayor, the Mayor Pro-Tem shall preside. If neither is present to preside, another member of the Governing Body shall be designated to preside.

Sec. 35.3. Opening of Public Hearing.

(a) The presiding officer shall indicate that a public hearing has been called on one or more applications made, shall summarize the processes required by this zoning ordinance, and shall open the public hearing.

(b) Thereupon, the presiding officer shall call the first case and the hearing body shall consider each application on an individual basis in succession as printed on the published agenda or as otherwise approved by the hearing body; provided, however, that the presiding officer may at his or her discretion call and consider more than one application simultaneously when more than one application involves the same piece of property, and when proceedings would be efficiently completed by combining separately required public hearings and discussing more than one scheduled matter as a single group of applications, subject to the limitations on decisions involving simultaneous processing of applications as specified in this zoning ordinance.

Sec. 35.4. Report of Zoning Administrator.

Upon opening the public hearing, the presiding officer shall recognize the Zoning Administrator, who shall provide a summary of the application and present any recommendations or results of investigations. Upon recognition by the presiding officer, any member of the Governing Body may ask questions of the Zoning Administrator.

Sec. 35.5. Proponents.

(a) When an individual application comes up for hearing, the presiding officer may ask for a show of hands of those persons who wish to appear in support of the application. If it appears that the number of persons wishing to appear in support of the application is in excess of that which may reasonably be heard, the presiding officer may request that a spokesperson for the group be chosen to make presentations.

(b) Following the report of the Zoning Administrator, the presiding officer shall first recognize the applicant or his or her agent, spokesperson, or each of them, who may present and explain the application.

(c) There shall be a minimum time period of ten (10) minutes per application at the public hearing for the proponents, which includes the applicant or their agent, to present data, evidence, and opinions; however, the Governing Body shall not be obligated to provide the full ten-minute period to the proponents if they elect not to use that much time. Any member of the Governing Body upon recognition by the presiding officer may ask questions of the applicant or agent of the applicant, or anyone else speaking in favor of an application. The period of time during which the governing body asks questions of the applicant or agent of the applicant or others wishing to speak in support and those in support answer such questions shall not count towards the time limit for the proponents.

(d) Prior to speaking, each speaker will identify him or herself and state his or her current address. Each speaker may speak only to the proposed application under consideration and shall address his or her remarks only to the hearing body. Each speaker shall refrain from personal attacks on any other speaker or the discussion of facts or opinions irrelevant to the proposed application under consideration. The presiding officer may limit or refuse a speaker the right to continue if, after first being cautioned, the speaker continues to violate this procedure.

Sec. 35.6. Opponents.

(a) At the conclusion of comments made by proponents, the presiding officer shall allow those wishing to speak in opposition to address the governing body. If it appears that the number of persons wishing to speak in opposition exceeds that which may reasonably be heard, the presiding officer may request that a spokesperson be selected for the group.

(c) There shall be a minimum time period of ten (10) minutes per application at the public hearing for the opponents to present data, evidence, and opinions and ask questions; however, the Governing Body shall not be obligated to provide the full ten-minutes per application to the opponents if they elect not to use that much time.

(d) Prior to speaking, each speaker will identify him or herself and state his or her current address. Each speaker may speak only to the proposed application under consideration and shall address his or her remarks only to the hearing body. Each speaker shall refrain from personal attacks on any other speaker or the discussion of facts or opinions irrelevant to the proposed application under consideration. The presiding officer may limit or refuse a speaker the right to continue if, after first being cautioned, the speaker continues to violate this procedure.

(e) Upon recognition by the presiding officer, any member of the Governing Body may ask questions of anyone speaking in opposition. The period of time during which the governing body asks questions of anyone speaking in opposition and those in opposition answer such questions shall not count towards the time limit for the opponents.

Sec. 35.7. Applicant's Final Comments.

At the conclusion of testimony from opponents, the applicant or his or her agent, or both, shall be allowed a short opportunity to provide final comments and remarks if there is any time remaining from the ten (10) minutes originally afforded to the proponents. Any member of the Governing Body upon recognition by the presiding officer may ask questions of the applicant, his or her agent, or both. The period of time during which the governing body asks questions of the applicants and the applicants respond to such questions during final comments shall not count towards the time limit for the applicants.

Sec. 35.8. Close of Hearing.

The presiding officer, may, in his or her discretion, allow additional time for comments on an application, provided however, that an equal amount of additional time shall be afforded to proponents and opponents. After the foregoing procedures have been completed, the presiding officer will indicate that the public hearing is closed. Upon the closing of the public hearing, the applicant or his agent and any member of the public shall no longer address the Governing Body in any way, including hand waving or motions for attention.

Sec. 35.9. Decision.

(a) At the conclusion of the hearing, with respect to any ordinance pending before the governing body associated with an application (including any zoning or land use ordinance before the governing authority due to the action of the governing body or city administration), the governing authority may:

i) Vote to deny its passage regardless of whether the ordinance is before the governing body for a first or second read, provided that a denial of the ordinance upon its first read shall preclude the necessity of a second reading, and such denial shall be considered final action; or

ii) Allow an ordinance that has only had one read to advance to a second reading, provided that any ordinance not denied after the first reading shall advance to a second reading and appear as an agenda item at the next regular meeting of the governing authority notwithstanding whether the governing authority voted to advance the ordinance to a second reading; or

iii) Vote to amend an ordinance regardless of whether the ordinance is before the governing body for a first or second read, provided that final approval of an amended ordinance shall require an affirmative vote after a second reading; or

iv) Vote to postpone the second reading of an ordinance or vote to postpone the final vote regarding an ordinance after a second reading, provided that such postponement and final vote shall be held no more than ninety (90) days from the date of the public hearing.

(b) After hearing evidence, in making a decision, the Governing Body shall apply the evidence to the criteria specified in this zoning ordinance for the application in question and other considerations and recommendations as may be considered appropriate. It shall be the duty of the applicant to carry the burden of proof that approval of the proposed application will promote the public health, safety, morality or general welfare.

(c) If the hearing body determines from the evidence presented by the applicant has shown that the proposed application promotes the health, safety, morals, and general welfare under applicable criteria, then the application shall be granted, subject to those reasonable conditions as may be imposed by the Governing Body on its own initiative or as recommended by the Zoning Administrator. Otherwise, such application shall be denied.

(d) In cases where one or more companion applications are submitted and the Governing Body attaches conditions to the application, such conditions shall, unless specifically stated otherwise, become conditions of approval for each companion application.

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: March 19th, 2026

Subject / Code Section:

Ordinance 779 – Article 35. – Public Hearing Procedures

Applicant: Planning and Community Development

EXECUTIVE SUMMARY

The existing code sections governing Public Hearing Procedures require clarification and updates. Staff recommends revising several portions of the article with straightforward text amendments to improve readability and consistency. The primary purpose of Ordinance 779 is to formally codify the procedures applicable to ordinance considerations. In accordance with Code Section 2.12, an ordinance may not be adopted on the same day it is introduced. This Ordinance establishes the procedures governing consideration from first reading through second reading. Notwithstanding this process, the governing body retains the authority at the time of first reading to issue a vote to deny or to defer the Ordinance upon its initial introduction.

Sec. 35.9. Decision.

a) ~~Once the public hearing is closed, the Governing Body may either vote on the ordinance or postpone the vote to a later meeting, consistent with the requirements of this zoning ordinance. If the vote is deferred, the time, date, and location for further consideration must be announced during the same meeting in which the public hearing occurred. In accordance with Part I, Chapter, Article II – Government Structure, Section 2.12 regarding ordinance procedures, an ordinance cannot be adopted on the same day it is introduced. If the Governing Body intends to adopt the ordinance, the vote must take place at the next meeting held in the following month after its introduction.~~

At the conclusion of the hearing, with respect to any ordinance pending before the governing body associated with an application (including any zoning or land use ordinance before the governing

authority due to the action of the governing body or city administration), the governing authority may:

i) Vote to deny its passage regardless of whether the ordinance is before the governing body for a first or second read, provided that a denial of the ordinance upon its first read shall preclude the necessity of a second reading, and such denial shall be considered final action; or

ii) Allow an ordinance that has only had one read to advance to a second reading, provided that any ordinance not denied after the first reading shall advance to a second reading and appear as an agenda item at the next regular meeting of the governing authority notwithstanding whether the governing authority voted to advance the ordinance to a second reading; or

iii) Vote to amend an ordinance regardless of whether the ordinance is before the governing body for a first or second read, provided that final approval of an amended ordinance shall require an affirmative vote after a second reading; or

iv) Vote to postpone the second reading of an ordinance or vote to postpone the final vote regarding an ordinance after a second reading, provided that such postponement and final vote shall be held no more than ninety (90) days from the date of the public hearing.

Staff Recommendation:

Staff recommends **APPROVAL** of Ordinance 779 – Article 35 – Public Hearing Procedures.

ORDINANCE NO. 774

AN ORDINANCE TO ANNEX AND BRING WITHIN THE CORPORATE LIMITS OF THE CITY OF FLOWERY BRANCH, STATE OF GEORGIA, REAL PROPERTY TOTALING 19.398 +/- ACRES OF LAND, OWNED BY CDII PROPERTIES, LLC, IDENTIFIED AS 4651 & 4665 HOG MOUNTAIN ROAD, HALL COUNTY TAX PARCELS 15046 000008B AND 15046 000008 AND AS SHOWN AND DESCRIBED ON ATTACHED EXHIBIT "A", PROVIDING FOR CERTIFICATION AND FILING BY THE CITY CLERK, PROVIDING FOR SEVERABILITY, REPEALING CONFLICTING ORDINANCES, PROVIDING FOR AN EFFECTIVE DATE AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, CDII Properties, LLC owns the subject parcels of land identified as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 as shown and described on Exhibit "A"; and

WHEREAS, the City Council of the City of Flowery Branch has considered the application of CDII Properties, LLC and in conjunction with the standards set forth in O.C.G.A. §§ 36-36-1 through 36-36-110, the notice requirements of O.C.G.A.§ 36-36-111, and the City of Flowery Branch Community Agenda for annexation into the City's corporate limits; and

WHEREAS, said parcels of land identified as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 are within the unincorporated area of Hall County, State of Georgia, and are contiguous to the existing corporate limits of the City of Flowery Branch, Georgia at this time; and

WHEREAS, CDII Properties, LLC has submitted to the City Council of Flowery Branch, Georgia, a written application and affidavit signed by all the owners of the land evidencing their desire to have their property annexed, and whereas a survey and complete description of the subject parcel being considered to be annexed, is included in the application; and

WHEREAS, the City Council held a public hearing at the meeting on April 2nd, 2026, duly noticed as prescribed by law and published in the Gainesville Times, regarding said application, as shall be set forth in the minutes of said meeting.

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. RECITALS.

All of the foregoing recitals of this Ordinance are incorporated by reference as if fully set forth herein and are made part of this annexation ordinance.

SECTION 2. ANNEXATION.

The City Council of Flowery Branch, Georgia, does hereby annex and include within the corporate limits of the City of Flowery Branch, Georgia real parcels of land known as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 as shown and described on Exhibit "A". Said Exhibit is incorporated by reference as if fully set forth herein.

SECTION 3. CERTIFICATION BY THE CITY CLERK

The City Council of Flowery Branch, Georgia, authorizes and directs the City Clerk of Flowery Branch, Georgia to certify this Ordinance and attached Exhibit and have a certified copy of this Ordinance and its Exhibits filed with the Department of Community Affairs and any other public official or agencies as required by law.

SECTION 4. SEVERABILITY.

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 5. EFFECTIVE DATE.

The effective date of this Ordinance shall be May 7th, 2026.

SECTION 6. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____, 2026.

_____
Oliver McClellan, Mayor

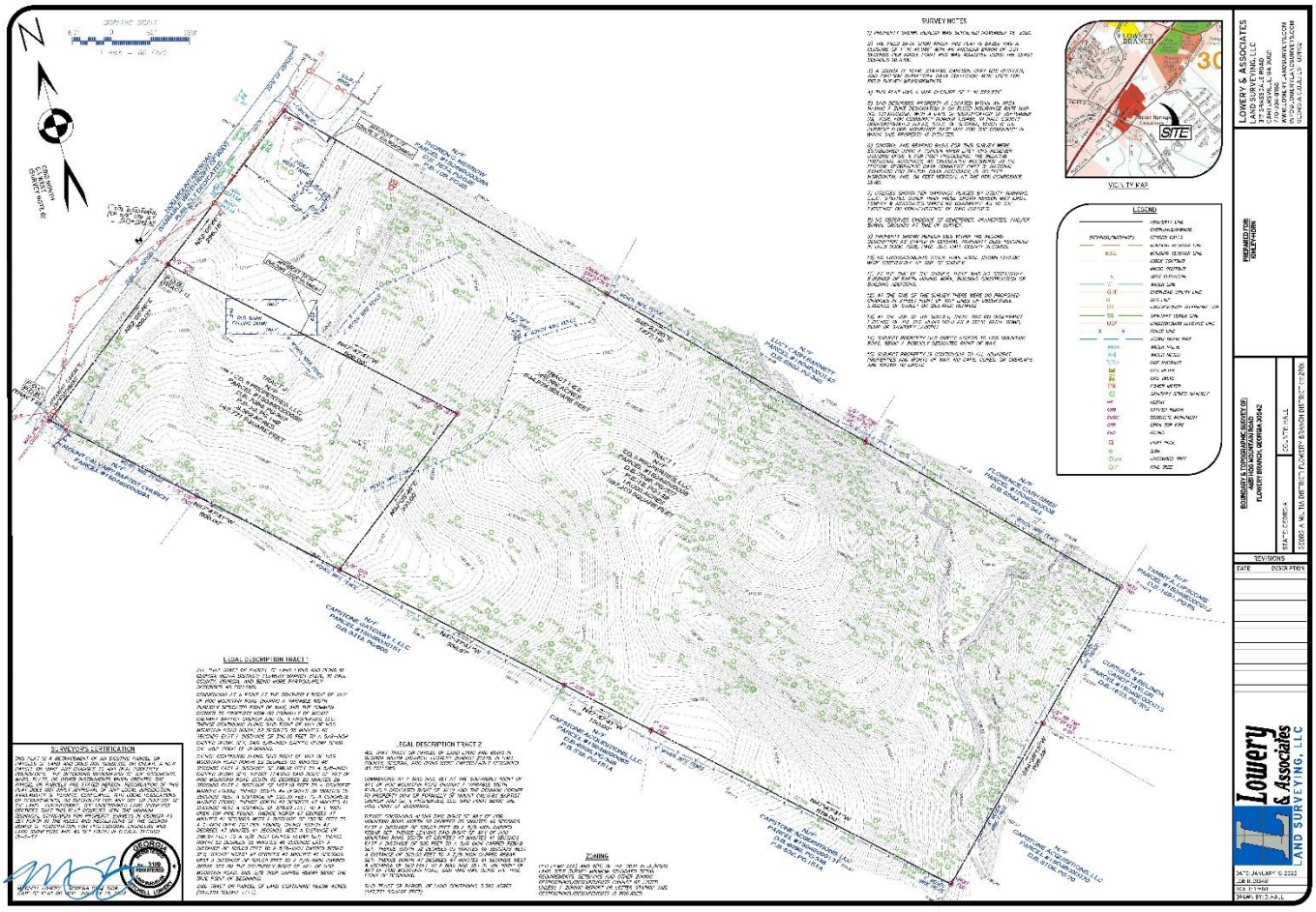
ATTEST

_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM

_____
Ted C. Baggett, City Attorney

Exhibit A


SURVEY NOTES
VICINITY MAP
SITE
LEGEND
LEGAL DESCRIPTION TRACT 1
LEGAL DESCRIPTION TRACT 2
SURVEYOR'S CERTIFICATION
ZONING
LOWERY & ASSOCIATES
LAND SURVEYING, LLC
Lowery & Associates
LAND SURVEYING, LLC

LEGAL DESCRIPTION TRACT 1

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC; THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 296.18 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 45 DEGREES 22 MINUTES 26 SECONDS EAST A DISTANCE OF 1477.18 FEET TO A CONCRETE MARKER FOUND; THENCE SOUTH 44 DEGREES 38 MINUTES 15 SECONDS WEST A DISTANCE OF 525.39 FEET TO A CONCRETE MARKER FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 519.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 150.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 386.97 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500.00 FEET TO A 5/8–INCH CAPPED REBAR SET ON THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 16.006 ACRES (697,203 SQUARE FEET).

LEGAL DESCRIPTION TRACT 2

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A MAG NAIL SET AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC, SAID POINT BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET. THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 47 DEGREES 47 MINUTES 41 SECONDS EAST A DISTANCE OF 500 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 52 DEGREES 05 MINUTES 46 SECONDS WEST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500 FEET TO A MAG NAIL SET IN THE RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID MAG NAIL BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 3.392 ACRES (147,771 SQUARE FEET).

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: April 2nd, 2026

Subject: Annexation, Rezoning, and Variances

Applicant: Highpoint Development
1776 Peachtree Street
Atlanta, GA 30309
502-386-7022

Owner: CD II Properties, LLC
P.O. Box 99
Demorest, GA 30535
502-386-7022

Existing Zoning: AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.

Location and Size:

4651 Hog Mountain Road; Parcel 15046 000008; 16.0 Acres
4665 Hog Mountain Road; Parcel 15046 000008B; 3.398
Total Area: 19.398 Acres

Proposed Annexation:

The applicant proposes the annexation of the above-referenced parcels (19.398 Acres) from unincorporated Hall County into the City limits of Flowery Branch.

Proposed Zoning:

The applicant is proposing to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

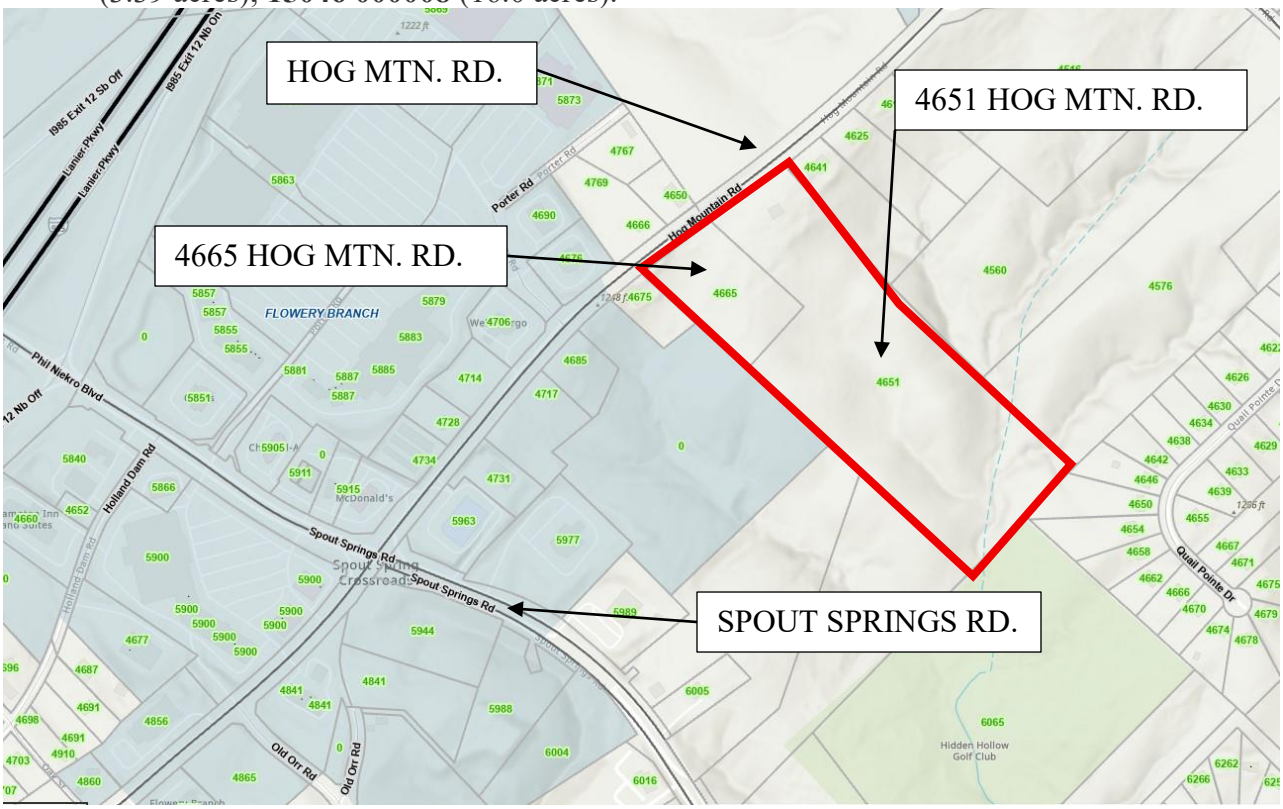
The applicant proposes the development of 75 single-family detached residential lots. The two subject parcels are requested to be rezoned from Hall County AR-1 (Agricultural Residential) and R-1 (Residential) zoning districts, located within unincorporated Hall County, to the Single-Family Townhome (SF-TH) zoning district within the City of Flowery Branch. Concurrent variances from the SF-TH zoning requirements and applicable dimensional standards are also requested.

Concurrent Variances:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography.
2. Variance to **Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. The site plan provided by the applicant lists a total of 75 lots.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements.

Location:

- 4665 and 4651 Hog Mountain Road; tax parcel identification numbers **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres).



Site Plan:

The applicant is proposing 75 single-family detached lots on 19.398 acres.



The site is located on Hog Mountain Road north of the intersection with Spout Springs Road.
The site is an undeveloped wooded lot with state waters located on the eastern side of the site.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC

Architectural Concepts:

The applicant submitted conceptual renderings of the proposed single-family detached architecture. Per the submitted renderings it appears the homes meet architectural standards of material and material application. However, without detailed floor plans, staff is unable to verify compliance with the City's established dimensional standards. To facilitate a thorough review, the applicant must provide complete architectural drawings, to confirm that all requirements are met. A detailed review is done by staff following Article 40 prior to the issuance of permits. The design concepts provided are for illustrative purposes only and were submitted as part of the rezoning case.



ARCHITECTURAL FEATURES:

The achitecture leans toward a mountain bungalow style, with forms and finishes that feel sturdy, familiar, and tied to the landscape. Dark charcoal accents sharpen the earthy palette, while carriage-style garage doors and well-placed sconces add character without slipping into ornament. Matching metal gutters bring a clean outline to the façades, and the porch roof extending across the front-facing garage helps keep everything at a comfortable, human scale. The result is a street presence that feels connected, warm, and intentionally crafted—neighbors, not statements.



EXAMPLE FRONT ELEVATION DARK COLOR SCHEME



COLOR PALETTE:

The three offered schemes—light, mid-tone, and dark—are drawn from the muted, earthy tones of the North Georgia landscape. Each palette reflects the surrounding ridge and creek setting, favoring natural hues: soft mineral whites, weathered wood browns, and deeper charcoal colors that echo stone, soil, and shaded canopy. Together, they provide variation without discord, allowing homes to feel individually tailored yet quietly unified within the broader landscape.



EXAMPLE FRONT ELEVATION LIGHT COLOR SCHEME






ARCHITECTURAL FEATURES:

Details stay simple and purposeful. Porch brackets and extended overhangs provide clear structure and shade without excess. Gable vents, occasional gable windows, and selectively used shutters add just enough dimension to the façades, keeping each home grounded and consistent without feeling repetitive.



EXAMPLE FRONT ELEVATION MID-COLOR SCHEME



EXAMPLE TYPICAL REAR ELEVATION WITH COVERED PORCH



EXAMPLE FRONT ELEVATION BRICK MATERIAL



EXAMPLE SIDE VIEW OF FRONT PORCH WITH BRICK

Open Space Analysis:

Pursuant to Article 10 – Development Requirements and Guidelines, Sec. 10.22 – Open Space Requirements, any proposed residential development is required to provide a total minimum of 15% open space, derived from a combination of Civic Space options (10%) and Amenity Space options (5%).
The site data table provided by the applicant lists a total of 18.5% open space with location details shown on the site plan:



Site Data Table	Required	Provided
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

The site plan proposes several open space options in various locations throughout the development and includes a pocket park, community pavilion, community fire pit, centralized mail kiosk with parking, landscaped seating areas, and a trail system comprised of both hardscape and mulch trails with a stream crossing. Detailed landscape plans and a trail plan including a material list for trail surfacing options, seating, fencing, and stream crossing will be required at time of LDP review.

The following conceptual images were provided by the applicant to illustrate amenity spaces and trail features. Plans submitted for amenity and civic spaces and trail features should substantially adhere to the images below:



Traffic Impacts, Vehicular Flow, and Entrances/Exits

The Conceptual Site Plan for the proposed development indicates 75 residential single-family detached units.

1. Site Access

- A single entrance is proposed off Hog Mountain Road.
- The entrance must include both a right-turn and left-turn lane in. The exit shall include both a left and right dedicated lane. These turn lanes will help to alleviate congestion during peak demand periods and maintain the flow of through traffic. All roadway designs shall be in accordance with the GDOT Driveway Manual.
- The developer is responsible for obtaining and dedicating to the City any right-of-way necessary to construct the required left-turn and right-turn lanes into the site, ensuring that a minimum 13-foot-wide shoulder is maintained.
- Road improvements meeting the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, and 5-foot sidewalk—are required along the entire frontage of the site.
- All costs associated with the required road improvements—including the left-turn lane, right-turn lane, curb and gutter, sidewalk, and associated storm drainage—shall be borne by the developer.

2. Sight Distance

- The driveway design must meet the minimum sight-distance requirements specified in the GDOT Driveway Manual. The engineer shall verify that both stopping-sight distance (SSD) and operational-sight distance (OSD) criteria are satisfied under existing field conditions.

3. Utility Coordination

- Any utilities located beneath the proposed deceleration or turn-lane pavement must be relocated outside of the pavement area.
- All costs associated with utility relocation shall be borne by the developer and coordination with the respective utility owners must be completed prior to construction.

4. Traffic Impact Study

- The current Traffic Study by A&R Engineering was prepared for single-family detached houses by using category 210 for Single-Family Detached.

- All design elements shall comply with GDOT standards. Coordination with Hall County DOT, City of Flowery Branch, and affected utility providers should occur early in the design process to avoid delays.
- The Traffic Impact Study shows that a dedicated left turn in and right turn deceleration lanes are warranted. Recommended conditions will incorporate the required improvements for traffic relief.
- The Traffic Impact Study recommends a single outbound exit lane from the proposed subdivision. However, the study also indicates that during the peak AM period, school dismissal period, and peak PM period, outbound movements from the site operate at a Level of Service (LOS) D. Based on these findings, staff recommends the provision of two outbound exit lanes—one dedicated left-turn lane and one dedicated right-turn lane—to improve operational efficiency and overall LOS for vehicles exiting the subdivision.

Level of Service LOS Description

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.

7.0 Conclusions and Recommendations

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Sewer Design and Capacity Impacts

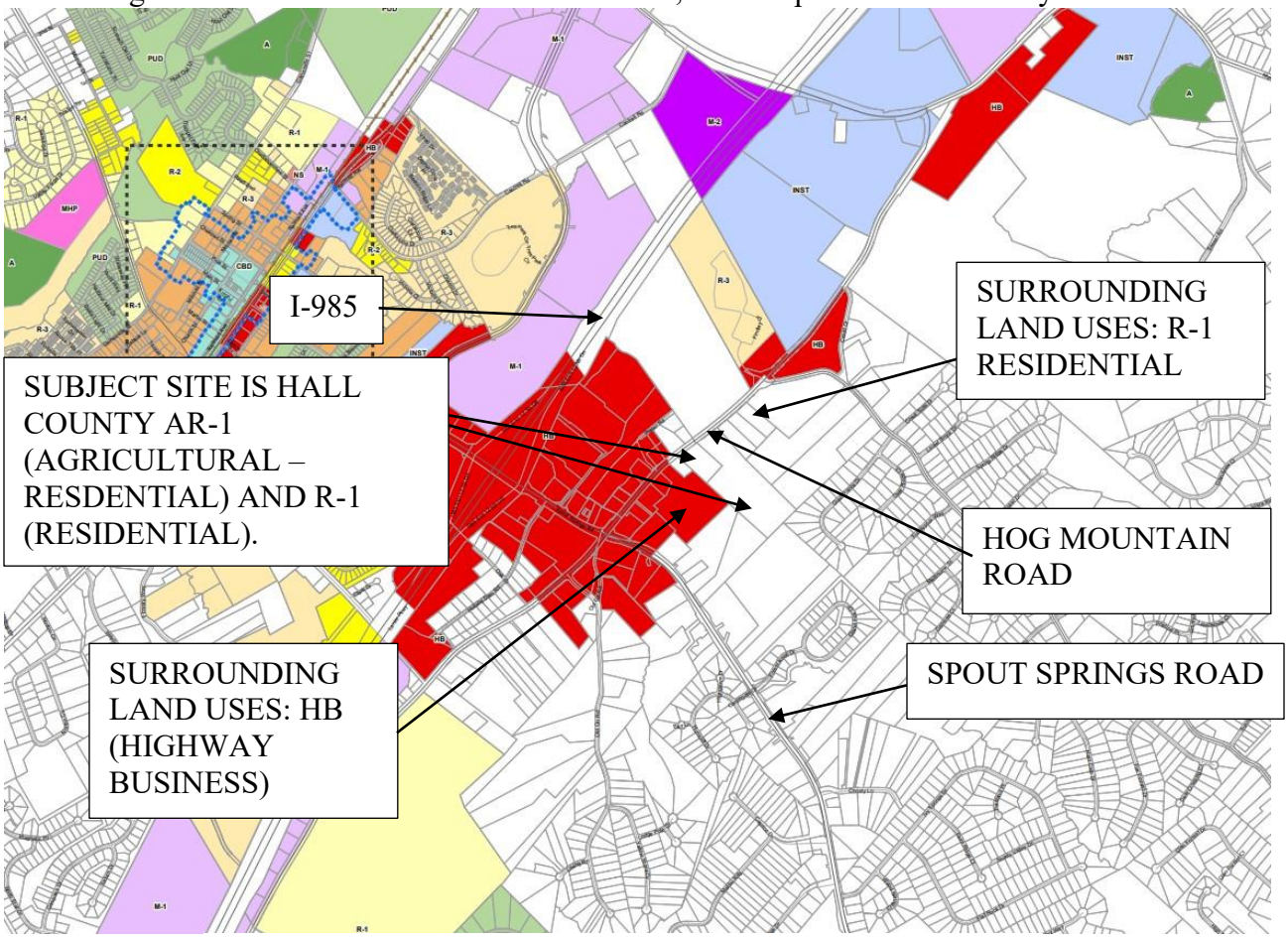
The proposed development of 75 residential units will generate a peak sanitary sewer demand of **20,625** gallons per day, based on the City's standard rate of 275 gallons per unit. Given the City's current peak capacity of **727,798** gallons per day, bringing these units online would reduce available capacity to approximately **707,173** gallons per day.

Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Public Utilities Director.

The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

Zoning Map:

AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.



Legend

Zoning Districts

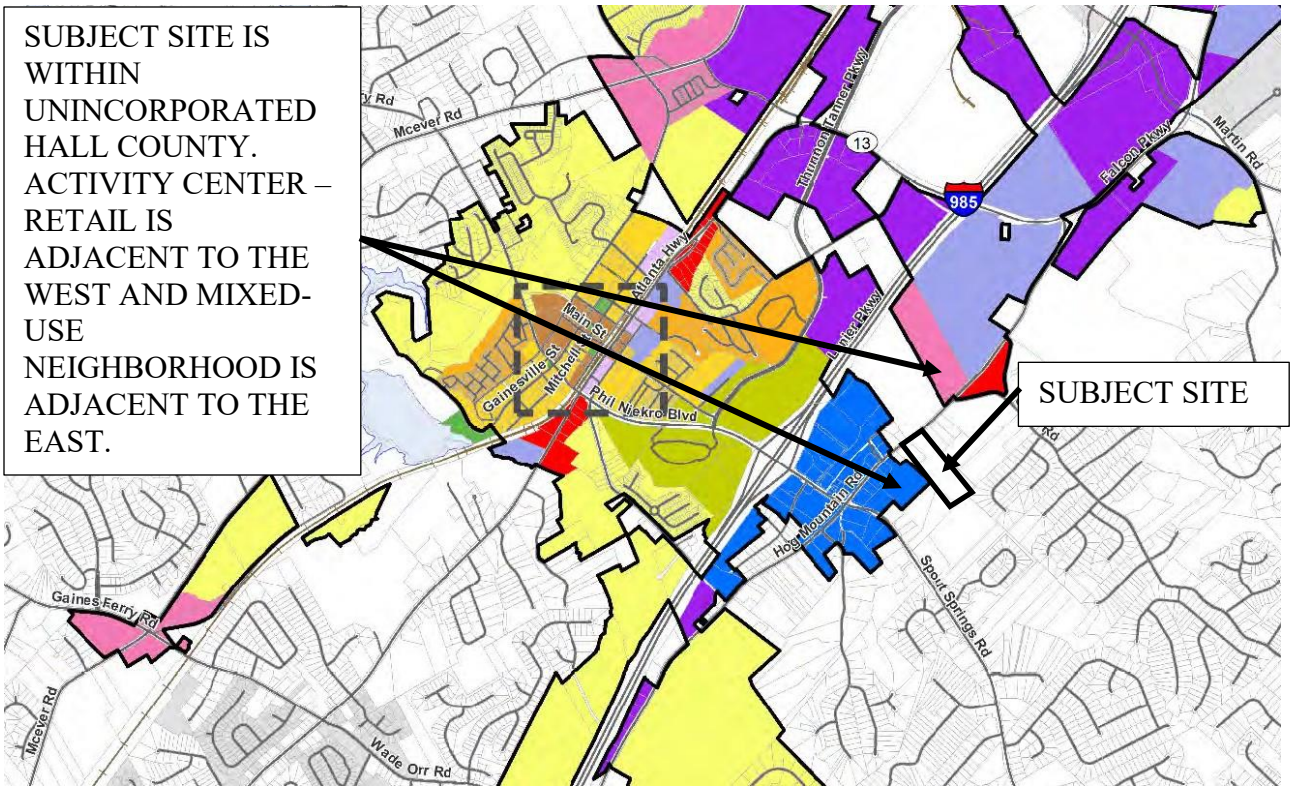
- Residential Low Density (R-1)
- Residential Moderate Density (R-2)
- Residential Multi-family (R-3)
- Traditional Neighborhood Development (TND)
- Planned Unit Development (PUD)
- Manufactured Home Park (MHP)
- Central Business District (CBD)
- Neighborhood Shopping (NS)
- Highway Business (HB)
- Institutional (INST)
- Manufacturing & Industrial, Light (M-1)
- Manufacturing & Industrial, Heavy (M-2)
- Agriculture (A)

Historic Districts

- Local Historic District

Future Development Plan:

SUBJECT SITE IS WITHIN UNINCORPORATED HALL COUNTY. ACTIVITY CENTER – RETAIL IS ADJACENT TO THE WEST AND MIXED-USE NEIGHBORHOOD IS ADJACENT TO THE EAST.



Other City Limits

CHARACTER AREA

- CONSERVATION
- SUBURBAN RESIDENTIAL
- TRADITIONAL NEIGHBORHOOD
- URBAN DENSITY COMMUNITY
- OLD TOWN
- MIXED USE - DOWNTOWN
- MIXED USE - NEIGHBORHOOD
- NEIGHBORHOOD COMMERCIAL
- ACTIVITY CENTER
- ACTIVITY CENTER - RETAIL
- INDUSTRIAL EMPLOYMENT
- INSTITUTIONAL CAMPUS





ARTICLE 2
Section 2.2. Design-Related Definitions.

Density: The number of families, individuals, dwelling units or housing structures per unit of land. Gross density is determined by dividing the number of families, individuals, dwelling units or housing structures by the gross area of the land (i.e. all land within the boundaries of the particular area excluding nothing). Net density is determined by subtracting from the gross area the following conditions identified on the land:

- 50 percent of any land identified as a wetland; and
- 50 percent of any land identified waters of the state including the buffer zones; and
- 50 percent of any land identified as a flood hazard boundary; and
- 50 percent of any land within an electricity transmission easement or right-of-way; and
- 50 percent of any land within a gas transmission easement or right-of-way.

The result of this calculation is the net acreage. The net acreage is divided into the number of units to determine the net density. The applicant provided a net density number but did not provide the areas of the wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.

Sec. 34.7. - Analysis Requirements for Rezoning

Applications to amend the official zoning map shall provide a written analysis comparing the proposed action with the criteria in this Section. A zoning map amendment or conditional use application may be justified only if it bears a reasonable relationship to the public health, safety, morality, or general welfare, and after consideration of the analysis requirements which may in individual cases be considered criteria relevant to the Zoning Administrator in making recommendations and by the City Council in the decision-making process.

a) *Whether the proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.*
The development of residential single-family detached homes is a suitable use in view of the use and development of adjacent and nearby property.

b) *Whether the proposal will adversely affect the existing use or usability of adjacent or nearby property.*
The proposed use will not adversely affect the existing use or usability of adjacent or nearby property.

c) *Whether the property to be affected by the proposal can be used in accordance with the existing regulations and has reasonable economic use as currently zoned.*
Annexation is necessary to connect the site to Flowery Branch's sanitary sewer system, while rezoning is required to align the site with the city's zoning designations.

d) *Whether the proposal will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.*
Input from the City's engineer was provided in this staff report.

e) *Whether the proposal is in conformity with the policy and intent of the comprehensive plan including but not limited to the character area map and future land use plan map.*
The proposed development is directly adjacent to the Activity Center – Retail character area. Mixed Use character area is located adjacent to the northeast on Hog Mountain Road. The proposed residential development would be a transitional zoning from retail to residential.

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 proposal.*

There are no other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the proposal.

g) *Existing use(s) and zoning of the subject property and nearby properties.*
The proposed development is for detached single-family and no other similar developments are nearby.

h) *Existing value of the property under the existing zoning district classification, the extent to which the property value of the subject property is diminished by the existing zoning district, and the value of the property under the proposed zoning district; if such information is provided by the applicant or can be discerned. This consideration may include the length of time the property has been vacant or unused as currently zoned and efforts taken by the property owner(s) to use the property or sell the property under the existing zoning district classification.*
Staff has no information to provide on the value of the subject property.

i) *Whether a proposed zoning map amendment or conditional use approval will be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.*
Staff has no information to provide on the value of the adjacent property.

j) *The possible creation of an isolated zoning district unrelated to adjacent and nearby districts.*
There are no SF-TH zoning designations in the area. This zoning would create an isolated zoning district.

k) *Possible effects of the change in zoning district map, or change in use, on the character of a zoning district.*
The proposed use is not similar to nearby development.

l) *The possible impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality.*
The subsequent LDP will be required to be compliant with all erosion and stormwater regulations.

m) *The relation that the proposed map amendment or conditional use bears to the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance*.

The proposed rezoning will have impacts on the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance due to the isolated zoning to SF-TH in this area.

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Topography could be considered a hardship. The variance request could be considered for approval with an alternative solution such as three-way stops at intersections and a two-way stop at the smallest radius curve. Alternatives shall be approved by the City Engineer.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 sq.ft. to 5,500 sq.ft. The applicant states the shape of the lot (lot width) limits the depth of lots across the parcel and the topography limits the placement of deeper lots. Topography and parcel shapes are legitimate hardships for a Variance.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course: Topography could be considered a hardship. The applicant proposes installing several speed tables and offsetting each home by five feet from adjacent homes to help break up the straight sight lines.

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The shape of the parcel is deeper than it is wide. The shape of the parcel requires two turns to be less than 275-foot radius to make the directional change. The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

(c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.

(d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.

(e) The special circumstances are not the result of the actions of the applicant;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The special circumstances are not the result of the actions of the applicant.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The special circumstances are not the result of the actions of the applicant.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The special circumstances are not the result of the actions of the applicant.

(f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

1. Variance Request **Section 1014, Table 10.1** radius of curvature:
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size:
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation:

Staff has worked with the applicant over time to get the plans to a point where it's reasonable to believe that each variance request is the minimum variance that will make possible the proposed use of land, building or structure in the use district proposed.

(g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.
With annexation and rezoning to the proper zoning category, residential dwellings would be permitted uses.

Variance Details:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography. The variance request could be considered for approval with an alternative solution approved by the City Engineer.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. Many lots are above the minimum lot area with an average lot size 6,852 square feet. The width of the parcel with two parallel streets limits the depth of some lots and the shape of a parcel can be considered a hardship.

   Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements. The applicant's

site plan indicated locations speed table / pedestrian crossings to slow speeds in straight runs of the road. The applicant is also proposing offsetting each home by five feet from adjacent homes to help break up the straight sight lines. Staff believe these alternatives maintain the intent of this code section.

Staff Recommendation for Annexation, Rezoning, and Variances

Recommendation:

There are three applications proposed at 4651 and 4665 Hog Mountain Road, parcels **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres). The first consideration for the City Council is the proposed annexation of both parcels. With annexation, the subject site must be rezoned from Hall County AR-1 – Agricultural & Residential - R-1- Residential to a Flowery Branch zoning category. The applicant is proposing to rezone the property to Single-Family Townhome Development (SF-TH).

Variance Recommendations for Ordinance 776:

Staff recommends **approval** of Ordinance 776 for three Variances with the following conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is recommended for approval with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.

2. A Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.

3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is recommended for approval the following conditions:

    1. The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
    2. The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

Staff recommends **approval of the Annexation and Rezoning** applications with the conditions provided.

Recommended Conditions of Approval of Annexation and Rezoning:

Please find below the proffered conditions for the proposed rezoning, organized by discipline and drafted to ensure consistency with the submitted concept materials and to protect the public interest:

1. **General Development**
    a. Building Locations and Scope:
    The total number of residential lots within the detached townhome development shall not exceed 75.
    b. Density Measurement:
    Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
    c. Maximum net density shall not exceed 6 units per acre.
    d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
        i. No more than ten percent (10%) of the total homes may be leased.
        ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
        iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

2. **Civil Site Engineering**
    a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
    b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
    c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
    d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.
3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.

6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.
8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE
AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026

ORDINANCE NO. 775

AN ORDINANCE TO REZONE, REAL PROPERTY TOTALING 19.398 +/- ACRES OF LAND, OWNED BY CDII PROPERTIES, LLC, IDENTIFIED AS 4651 & 4665 HOG MOUNTAIN ROAD, HALL COUNTY TAX PARCELS 15046 000008B AND 15046 000008 FROM HALL COUNTY RESIDENTIAL 1 (R-1) AND AGRICULTURAL RESIDENTIAL 1 (AR-1) TO FLOWERY BRANCH SINGLE-FAMILY TOWNHOME (SF-TH) AND AS SHOWN AND DESCRIBED ON ATTACHED EXHIBIT "A", AS CONDITIONED IN EXHIBIT "B", TO AUTHORIZE AN UPDATE TO THE OFFICIAL ZONING MAP, PROVIDING FOR SEVERABILITY, , PROVIDING FOR AN EFFECTIVE DATE, REPEALING CONFLICTING ORDINANCES, AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, CDII Properties LLC owns the subject parcels of land identified as Hall County Tax Parcel Identification No. 15046 000008B and 15046 000008 as shown and described on Exhibit "A"; and

WHEREAS, a complete description of the subject property being rezoned is included herein; and

WHEREAS, the City Council held a public hearing at the meeting on April 2nd, 2026, duly noticed as prescribed by law and published in the Gainesville Times, regarding said application, as shall be set forth in the minutes of said meeting; and,

WHEREAS, the City Council of the City of Flowery Branch, Georgia has considered the appropriate zoning classification of the subject property in light of the comprehensive plan,

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. FINDINGS.

The City Council finds that the proposed rezoning from Hall County AR-1 & R-1 to City of the Flowery Branch SF-TH is consistent with the adopted standards for governing the exercise of the zoning power consistent with O.C.G.A. § 36-66-5 and requirements of the Zoning Ordinance as identified below.

1. The proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.

2. The proposal is not expected to adversely affect the existing use or usability of adjacent or nearby property.

3. Use as SF-TH is appropriate given the size of the property and it is reasonable to believe the property will have reasonable economic value so zoned.

4. The development if approved and constructed is not expected to result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

5. The proposal is generally in conformity with the policy and intent of the comprehensive plan including the character area map and future land use plan map.

6. The proposal is considered appropriate in view of existing use(s) and zoning of the subject property and nearby properties.

7. No precise determination has been made by staff with regard to the value differential between development under the current zoning as opposed to SF-TH, although it is reasonable to believe value would increase as a result of the rezoning.

8. A proposed development will not be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.

9. There are no known adverse effects that would result from the change in zoning district map, or change in use, on the character of a zoning district.

10. Development as proposed is not expected to impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality. Compliance with city subdivision and land development regulations will be required, which include but are not limited to soil erosion and sedimentation, stormwater, and flood damage prevention.

SECTION 2. REZONING.

The subject parcel, as shown and described on Exhibit "A" and as conditioned in Exhibit "B", is hereby rezoned from Hall County AR-1 & R-1 to Flowery Branch SF-TH.

SECTION 3. AMENDMENT OF THE ZONING MAP.

This Ordinance is enacted as an amendment to the Zoning Map of Flowery Branch, Georgia. Accordingly, the Zoning Administrator is hereby authorized to update the Official Map consistent with Article 3 of the Zoning Ordinance.

SECTION 4. SEVERABILITY.

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 5. EFFECTIVE DATE.

The effective date of this Ordinance shall be May 7th, 2026.

SECTION 6. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____, 2026.

_____
Oliver McClellan, Mayor

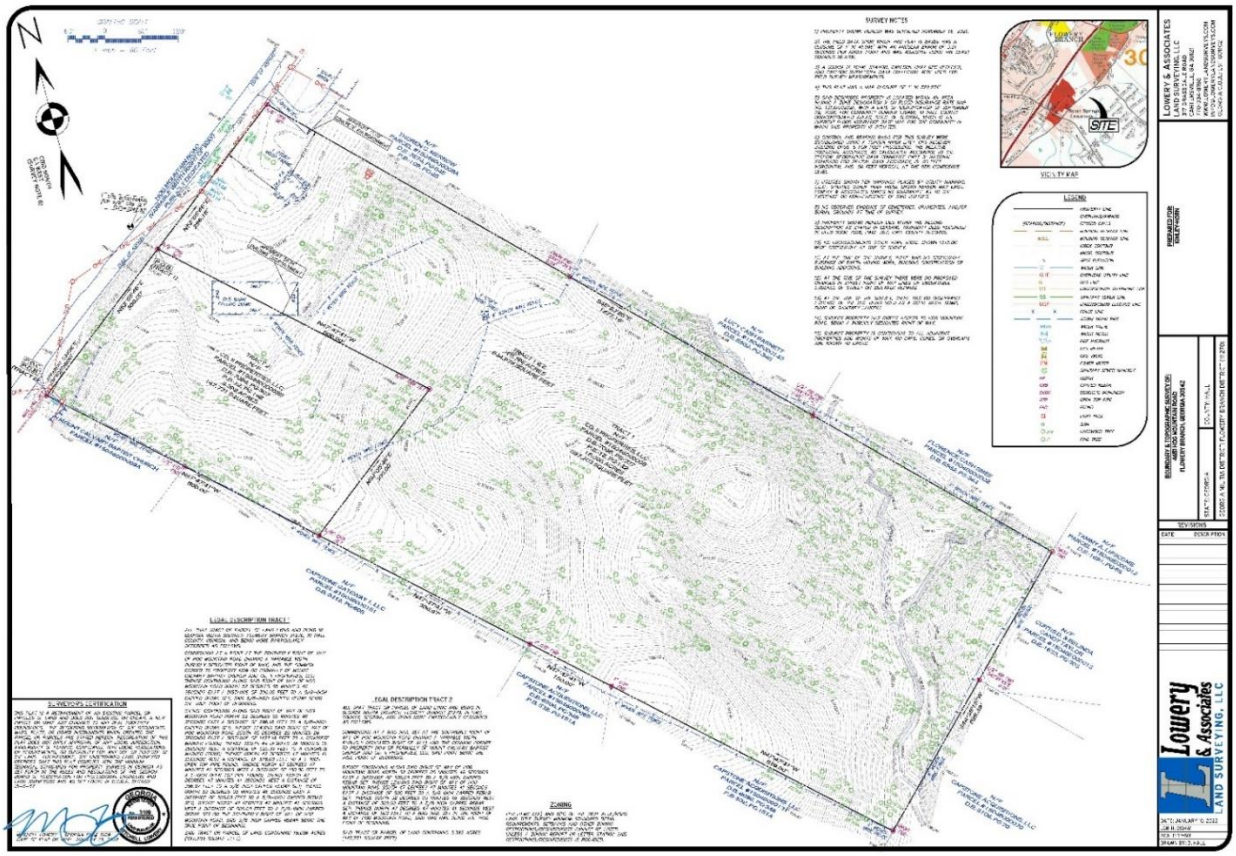
ATTEST

_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM

_____
Ted C. Baggett, City Attorney

Exhibit A


SURVEY NOTES
LEGEND
VICINITY MAP
SITE
LEGAL DESCRIPTION TRACT 1
LEGAL DESCRIPTION TRACT 2
ZONING
LOWERY & ASSOCIATES
LAND SURVEYING, LLC

LEGAL DESCRIPTION TRACT 1

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC; THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 296.18 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 45 DEGREES 22 MINUTES 26 SECONDS EAST A DISTANCE OF 1477.18 FEET TO A CONCRETE MARKER FOUND; THENCE SOUTH 44 DEGREES 38 MINUTES 15 SECONDS WEST A DISTANCE OF 525.39 FEET TO A CONCRETE MARKER FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 519.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 150.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 386.97 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500.00 FEET TO A 5/8–INCH CAPPED REBAR SET ON THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 16.006 ACRES (697,203 SQUARE FEET).

LEGAL DESCRIPTION TRACT 2

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A MAG NAIL SET AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC, SAID POINT BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET. THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 47 DEGREES 47 MINUTES 41 SECONDS EAST A DISTANCE OF 500 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 52 DEGREES 05 MINUTES 46 SECONDS WEST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500 FEET TO A MAG NAIL SET IN THE RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID MAG NAIL BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 3.392 ACRES (147,771 SQUARE FEET).

Exhibit 'B'

Conditions of Use:

1. **General Development**
   a. Building Locations and Scope:
   The total number of residential lots within the detached townhome development shall not exceed 75.
   b. Density Measurement:
   Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
   c. Maximum net density shall not exceed 6 units per acre.
   d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
      i. No more than ten percent (10%) of the total homes may be leased.
      ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
      iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.
2. **Civil Site Engineering**
   a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
   b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
   c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
   d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.

3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.
6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.

8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.
9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: April 2nd, 2026

Subject: Annexation, Rezoning, and Variances

Applicant: Highpoint Development
1776 Peachtree Street
Atlanta, GA 30309
502-386-7022

Owner: CD II Properties, LLC
P.O. Box 99
Demorest, GA 30535
502-386-7022

Existing Zoning: AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.

Location and Size:

4651 Hog Mountain Road; Parcel 15046 000008; 16.0 Acres
4665 Hog Mountain Road; Parcel 15046 000008B; 3.398
Total Area: 19.398 Acres

Proposed Annexation:

The applicant proposes the annexation of the above-referenced parcels (19.398 Acres) from unincorporated Hall County into the City limits of Flowery Branch.

Proposed Zoning:

The applicant is proposing to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

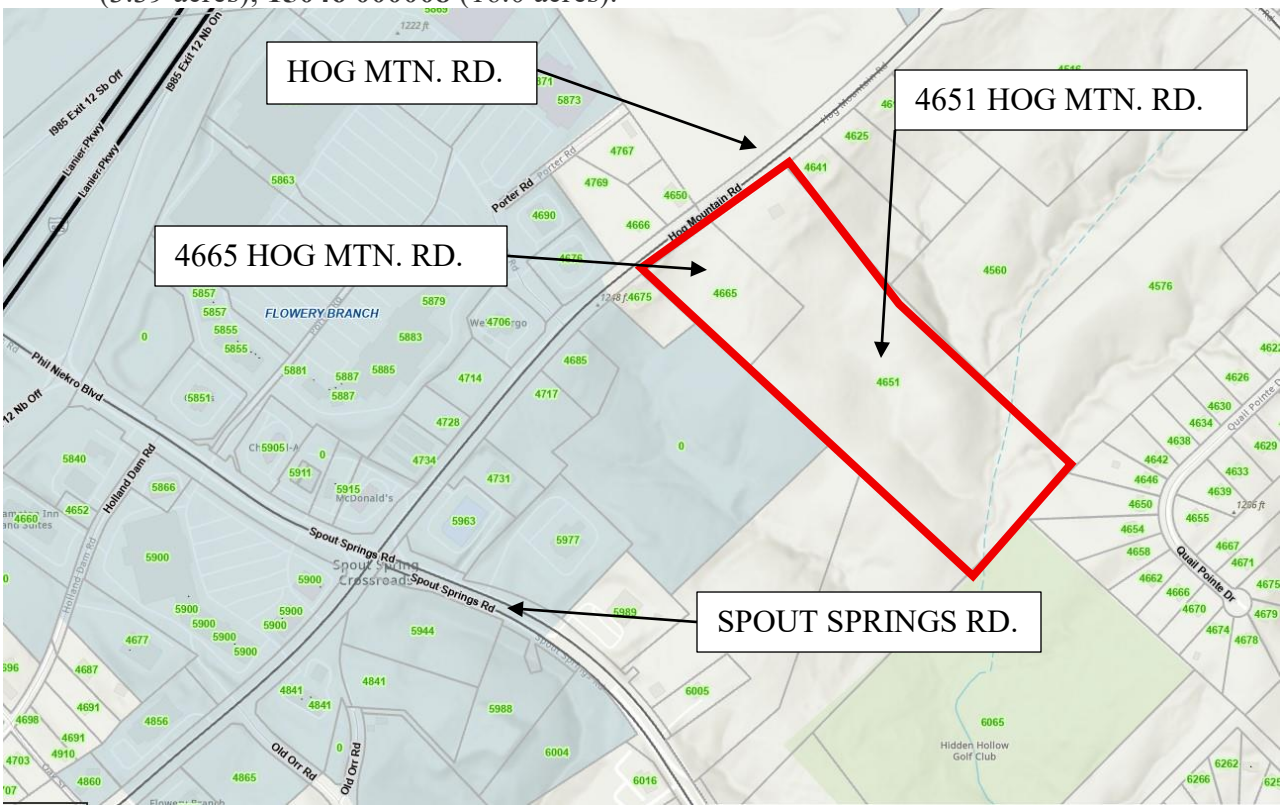
The applicant proposes the development of 75 single-family detached residential lots. The two subject parcels are requested to be rezoned from Hall County AR-1 (Agricultural Residential) and R-1 (Residential) zoning districts, located within unincorporated Hall County, to the Single-Family Townhome (SF-TH) zoning district within the City of Flowery Branch. Concurrent variances from the SF-TH zoning requirements and applicable dimensional standards are also requested.

Concurrent Variances:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography.
2. Variance to **Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. The site plan provided by the applicant lists a total of 75 lots.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements.

Location:

- 4665 and 4651 Hog Mountain Road; tax parcel identification numbers **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres).



Site Plan:

The applicant is proposing 75 single-family detached lots on 19.398 acres.



The site is located on Hog Mountain Road north of the intersection with Spout Springs Road.
The site is an undeveloped wooded lot with state waters located on the eastern side of the site.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC

Architectural Concepts:

The applicant submitted conceptual renderings of the proposed single-family detached architecture. Per the submitted renderings it appears the homes meet architectural standards of material and material application. However, without detailed floor plans, staff is unable to verify compliance with the City's established dimensional standards. To facilitate a thorough review, the applicant must provide complete architectural drawings, to confirm that all requirements are met. A detailed review is done by staff following Article 40 prior to the issuance of permits. The design concepts provided are for illustrative purposes only and were submitted as part of the rezoning case.



ARCHITECTURAL FEATURES:

The achitecture leans toward a mountain bungalow style, with forms and finishes that feel sturdy, familiar, and tied to the landscape. Dark charcoal accents sharpen the earthy palette, while carriage-style garage doors and well-placed sconces add character without slipping into ornament. Matching metal gutters bring a clean outline to the façades, and the porch roof extending across the front-facing garage helps keep everything at a comfortable, human scale. The result is a street presence that feels connected, warm, and intentionally crafted—neighbors, not statements.



EXAMPLE FRONT ELEVATION DARK COLOR SCHEME



COLOR PALETTE:

The three offered schemes—light, mid-tone, and dark—are drawn from the muted, earthy tones of the North Georgia landscape. Each palette reflects the surrounding ridge and creek setting, favoring natural hues: soft mineral whites, weathered wood browns, and deeper charcoal colors that echo stone, soil, and shaded canopy. Together, they provide variation without discord, allowing homes to feel individually tailored yet quietly unified within the broader landscape.



EXAMPLE FRONT ELEVATION LIGHT COLOR SCHEME









ARCHITECTURAL FEATURES:

Details stay simple and purposeful. Porch brackets and extended overhangs provide clear structure and shade without excess. Gable vents, occasional gable windows, and selectively used shutters add just enough dimension to the façades, keeping each home grounded and consistent without feeling repetitive.



EXAMPLE FRONT ELEVATION MID-COLOR SCHEME



EXAMPLE TYPICAL REAR ELEVATION WITH COVERED PORCH



EXAMPLE FRONT ELEVATION BRICK MATERIAL



EXAMPLE SIDE VIEW OF FRONT PORCH WITH BRICK

Open Space Analysis:

Pursuant to Article 10 – Development Requirements and Guidelines, Sec. 10.22 – Open Space Requirements, any proposed residential development is required to provide a total minimum of 15% open space, derived from a combination of Civic Space options (10%) and Amenity Space options (5%).
The site data table provided by the applicant lists a total of 18.5% open space with location details shown on the site plan:



Site Data Table	Required	Provided
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

The site plan proposes several open space options in various locations throughout the development and includes a pocket park, community pavilion, community fire pit, centralized mail kiosk with parking, landscaped seating areas, and a trail system comprised of both hardscape and mulch trails with a stream crossing. Detailed landscape plans and a trail plan including a material list for trail surfacing options, seating, fencing, and stream crossing will be required at time of LDP review.

The following conceptual images were provided by the applicant to illustrate amenity spaces and trail features. Plans submitted for amenity and civic spaces and trail features should substantially adhere to the images below:



Traffic Impacts, Vehicular Flow, and Entrances/Exits

The Conceptual Site Plan for the proposed development indicates 75 residential single-family detached units.

1. Site Access

- A single entrance is proposed off Hog Mountain Road.
- The entrance must include both a right-turn and left-turn lane in. The exit shall include both a left and right dedicated lane. These turn lanes will help to alleviate congestion during peak demand periods and maintain the flow of through traffic. All roadway designs shall be in accordance with the GDOT Driveway Manual.
- The developer is responsible for obtaining and dedicating to the City any right-of-way necessary to construct the required left-turn and right-turn lanes into the site, ensuring that a minimum 13-foot-wide shoulder is maintained.
- Road improvements meeting the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, and 5-foot sidewalk—are required along the entire frontage of the site.
- All costs associated with the required road improvements—including the left-turn lane, right-turn lane, curb and gutter, sidewalk, and associated storm drainage—shall be borne by the developer.

2. Sight Distance

- The driveway design must meet the minimum sight-distance requirements specified in the GDOT Driveway Manual. The engineer shall verify that both stopping-sight distance (SSD) and operational-sight distance (OSD) criteria are satisfied under existing field conditions.

3. Utility Coordination

- Any utilities located beneath the proposed deceleration or turn-lane pavement must be relocated outside of the pavement area.
- All costs associated with utility relocation shall be borne by the developer and coordination with the respective utility owners must be completed prior to construction.

4. Traffic Impact Study

- The current Traffic Study by A&R Engineering was prepared for single-family detached houses by using category 210 for Single-Family Detached.

- All design elements shall comply with GDOT standards. Coordination with Hall County DOT, City of Flowery Branch, and affected utility providers should occur early in the design process to avoid delays.
- The Traffic Impact Study shows that a dedicated left turn in and right turn deceleration lanes are warranted. Recommended conditions will incorporate the required improvements for traffic relief.
- The Traffic Impact Study recommends a single outbound exit lane from the proposed subdivision. However, the study also indicates that during the peak AM period, school dismissal period, and peak PM period, outbound movements from the site operate at a Level of Service (LOS) D. Based on these findings, staff recommends the provision of two outbound exit lanes—one dedicated left-turn lane and one dedicated right-turn lane—to improve operational efficiency and overall LOS for vehicles exiting the subdivision.

Level of Service LOS Description

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.

7.0 Conclusions and Recommendations

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Sewer Design and Capacity Impacts

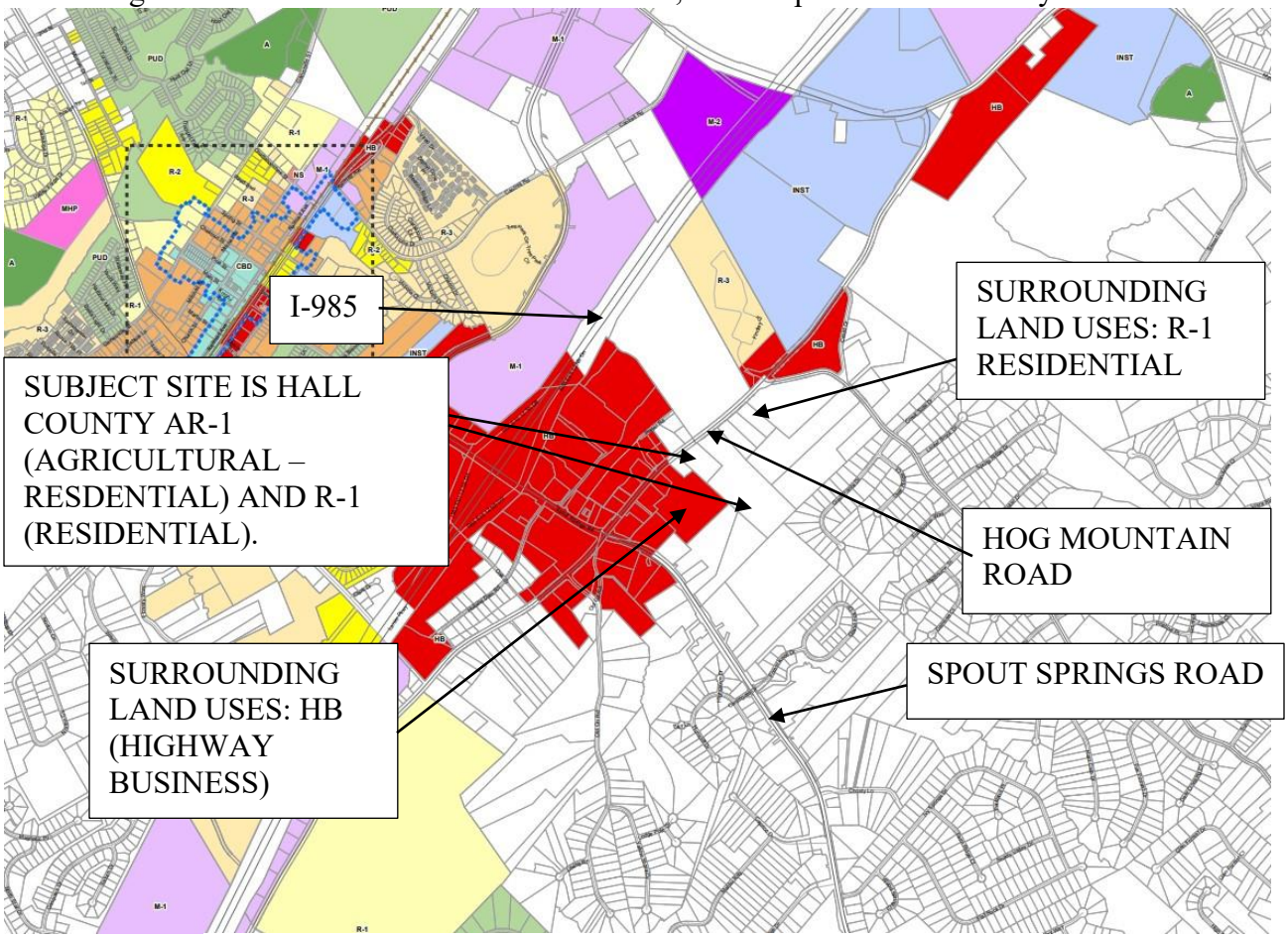
The proposed development of 75 residential units will generate a peak sanitary sewer demand of **20,625** gallons per day, based on the City's standard rate of 275 gallons per unit. Given the City's current peak capacity of **727,798** gallons per day, bringing these units online would reduce available capacity to approximately **707,173** gallons per day.

Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Public Utilities Director.

The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

Zoning Map:

AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.



Legend

Zoning Districts

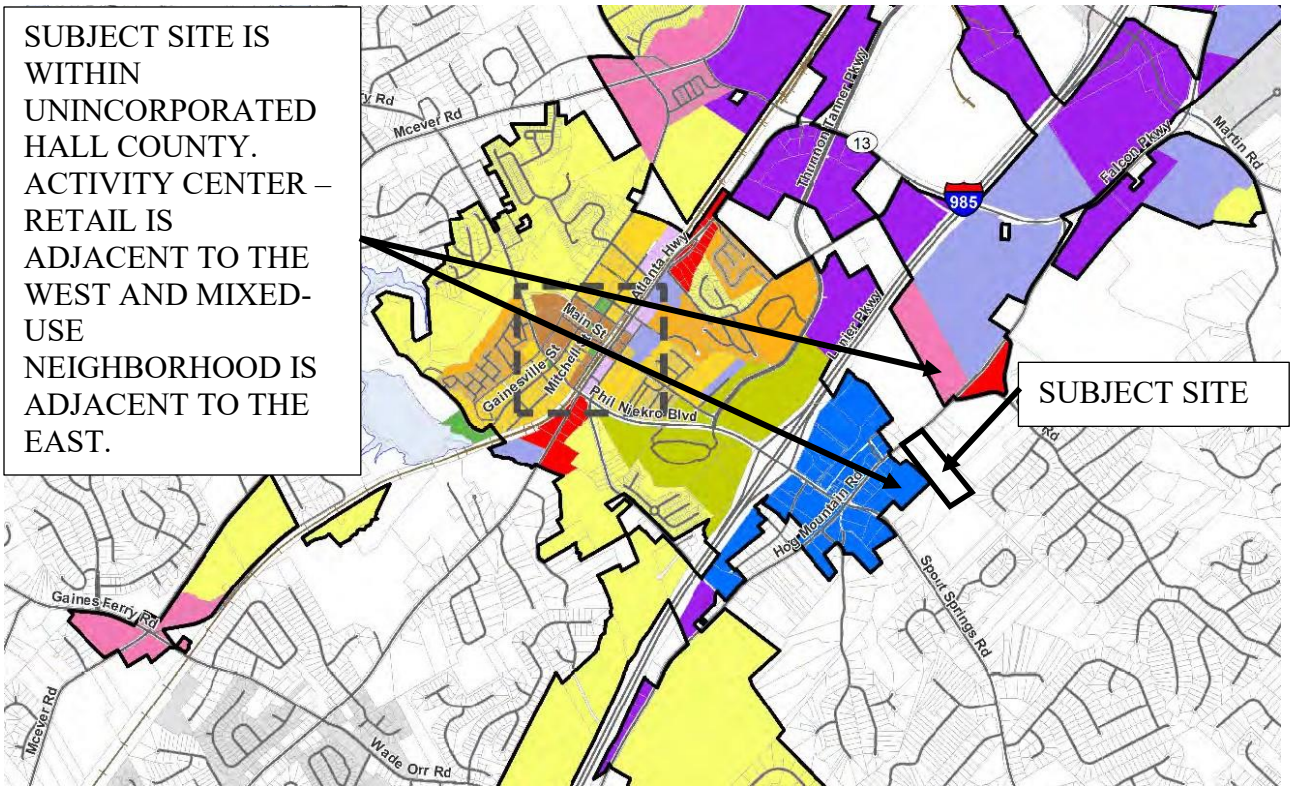
- Residential Low Density (R-1)
- Residential Moderate Density (R-2)
- Residential Multi-family (R-3)
- Traditional Neighborhood Development (TND)
- Planned Unit Development (PUD)
- Manufactured Home Park (MHP)
- Central Business District (CBD)
- Neighborhood Shopping (NS)
- Highway Business (HB)
- Institutional (INST)
- Manufacturing & Industrial, Light (M-1)
- Manufacturing & Industrial, Heavy (M-2)
- Agriculture (A)

Historic Districts

- Local Historic District

Future Development Plan:

SUBJECT SITE IS WITHIN UNINCORPORATED HALL COUNTY. ACTIVITY CENTER – RETAIL IS ADJACENT TO THE WEST AND MIXED-USE NEIGHBORHOOD IS ADJACENT TO THE EAST.



Other City Limits

CHARACTER AREA

- CONSERVATION
- SUBURBAN RESIDENTIAL
- TRADITIONAL NEIGHBORHOOD
- URBAN DENSITY COMMUNITY
- OLD TOWN
- MIXED USE - DOWNTOWN
- MIXED USE - NEIGHBORHOOD
- NEIGHBORHOOD COMMERCIAL
- ACTIVITY CENTER
- ACTIVITY CENTER - RETAIL
- INDUSTRIAL EMPLOYMENT
- INSTITUTIONAL CAMPUS





ARTICLE 2
Section 2.2. Design-Related Definitions.

Density: The number of families, individuals, dwelling units or housing structures per unit of land. Gross density is determined by dividing the number of families, individuals, dwelling units or housing structures by the gross area of the land (i.e. all land within the boundaries of the particular area excluding nothing). Net density is determined by subtracting from the gross area the following conditions identified on the land:

- 50 percent of any land identified as a wetland; and
- 50 percent of any land identified waters of the state including the buffer zones; and
- 50 percent of any land identified as a flood hazard boundary; and
- 50 percent of any land within an electricity transmission easement or right-of-way; and
- 50 percent of any land within a gas transmission easement or right-of-way.

The result of this calculation is the net acreage. The net acreage is divided into the number of units to determine the net density. The applicant provided a net density number but did not provide the areas of the wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.

Sec. 34.7. - Analysis Requirements for Rezoning

Applications to amend the official zoning map shall provide a written analysis comparing the proposed action with the criteria in this Section. A zoning map amendment or conditional use application may be justified only if it bears a reasonable relationship to the public health, safety, morality, or general welfare, and after consideration of the analysis requirements which may in individual cases be considered criteria relevant to the Zoning Administrator in making recommendations and by the City Council in the decision-making process.

a) *Whether the proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.*
The development of residential single-family detached homes is a suitable use in view of the use and development of adjacent and nearby property.

b) *Whether the proposal will adversely affect the existing use or usability of adjacent or nearby property.*
The proposed use will not adversely affect the existing use or usability of adjacent or nearby property.

c) *Whether the property to be affected by the proposal can be used in accordance with the existing regulations and has reasonable economic use as currently zoned.*
Annexation is necessary to connect the site to Flowery Branch's sanitary sewer system, while rezoning is required to align the site with the city's zoning designations.

d) *Whether the proposal will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.*
Input from the City's engineer was provided in this staff report.

e) *Whether the proposal is in conformity with the policy and intent of the comprehensive plan including but not limited to the character area map and future land use plan map.*
The proposed development is directly adjacent to the Activity Center – Retail character area. Mixed Use character area is located adjacent to the northeast on Hog Mountain Road. The proposed residential development would be a transitional zoning from retail to residential.

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 proposal.*

There are no other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the proposal.

g) *Existing use(s) and zoning of the subject property and nearby properties.*
The proposed development is for detached single-family and no other similar developments are nearby.

h) *Existing value of the property under the existing zoning district classification, the extent to which the property value of the subject property is diminished by the existing zoning district, and the value of the property under the proposed zoning district; if such information is provided by the applicant or can be discerned. This consideration may include the length of time the property has been vacant or unused as currently zoned and efforts taken by the property owner(s) to use the property or sell the property under the existing zoning district classification.*
Staff has no information to provide on the value of the subject property.

i) *Whether a proposed zoning map amendment or conditional use approval will be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.*
Staff has no information to provide on the value of the adjacent property.

j) *The possible creation of an isolated zoning district unrelated to adjacent and nearby districts.*
There are no SF-TH zoning designations in the area. This zoning would create an isolated zoning district.

k) *Possible effects of the change in zoning district map, or change in use, on the character of a zoning district.*
The proposed use is not similar to nearby development.

l) *The possible impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality.*
The subsequent LDP will be required to be compliant with all erosion and stormwater regulations.

m) *The relation that the proposed map amendment or conditional use bears to the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance*.

The proposed rezoning will have impacts on the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance due to the isolated zoning to SF-TH in this area.

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Topography could be considered a hardship. The variance request could be considered for approval with an alternative solution such as three-way stops at intersections and a two-way stop at the smallest radius curve. Alternatives shall be approved by the City Engineer.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 sq.ft. to 5,500 sq.ft. The applicant states the shape of the lot (lot width) limits the depth of lots across the parcel and the topography limits the placement of deeper lots. Topography and parcel shapes are legitimate hardships for a Variance.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course: Topography could be considered a hardship. The applicant proposes installing several speed tables and offsetting each home by five feet from adjacent homes to help break up the straight sight lines.

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The shape of the parcel is deeper than it is wide. The shape of the parcel requires two turns to be less than 275-foot radius to make the directional change. The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

(c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.

(d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.

(e) The special circumstances are not the result of the actions of the applicant;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The special circumstances are not the result of the actions of the applicant.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The special circumstances are not the result of the actions of the applicant.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The special circumstances are not the result of the actions of the applicant.

(f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

1. Variance Request **Section 1014, Table 10.1** radius of curvature:
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size:
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation:

Staff has worked with the applicant over time to get the plans to a point where it's reasonable to believe that each variance request is the minimum variance that will make possible the proposed use of land, building or structure in the use district proposed.

(g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.
With annexation and rezoning to the proper zoning category, residential dwellings would be permitted uses.

Variance Details:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography. The variance request could be considered for approval with an alternative solution approved by the City Engineer.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. Many lots are above the minimum lot area with an average lot size 6,852 square feet. The width of the parcel with two parallel streets limits the depth of some lots and the shape of a parcel can be considered a hardship.

   Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements. The applicant's

site plan indicated locations speed table / pedestrian crossings to slow speeds in straight runs of the road. The applicant is also proposing offsetting each home by five feet from adjacent homes to help break up the straight sight lines. Staff believe these alternatives maintain the intent of this code section.

Staff Recommendation for Annexation, Rezoning, and Variances

Recommendation:

There are three applications proposed at 4651 and 4665 Hog Mountain Road, parcels **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres). The first consideration for the City Council is the proposed annexation of both parcels. With annexation, the subject site must be rezoned from Hall County AR-1 – Agricultural & Residential - R-1- Residential to a Flowery Branch zoning category. The applicant is proposing to rezone the property to Single-Family Townhome Development (SF-TH).

Variance Recommendations for Ordinance 776:

Staff recommends **approval** of Ordinance 776 for three Variances with the following conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is recommended for approval with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.

2. A Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.

3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is recommended for approval the following conditions:

    1. The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
    2. The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

Staff recommends **approval of the Annexation and Rezoning** applications with the conditions provided.

Recommended Conditions of Approval of Annexation and Rezoning:

Please find below the proffered conditions for the proposed rezoning, organized by discipline and drafted to ensure consistency with the submitted concept materials and to protect the public interest:

1. **General Development**
    a. Building Locations and Scope:
    The total number of residential lots within the detached townhome development shall not exceed 75.
    b. Density Measurement:
    Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
    c. Maximum net density shall not exceed 6 units per acre.
    d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
        i. No more than ten percent (10%) of the total homes may be leased.
        ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
        iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

2. **Civil Site Engineering**
    a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
    b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
    c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
    d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.
3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.

6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.
8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026

TRAFFIC IMPACT STUDY
FOR
PROPOSED RESIDENTIAL DEVELOPMENT
AT 4665 HOG MOUNTAIN ROAD

HALL COUNTY, GEORGIA



Prepared for:

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January 13, 2026
A & R Project # 25-081

TABLE OF CONTENTS

Item		Page
1.0	**Introduction**	**1**
2.0	**Existing Facilities / Conditions**	**3**
2.1	Roadway Facilities	3
2.1.1	Hog Mountain Road	3
2.1.2	Spout Springs Road	3
2.1.3	Findley Drive	3
2.1.4	Cash Road	3
3.0	**Study Methodology**	**4**
3.1	Unsignalized Intersections	4
3.2	Signalized Intersections	5
4.0	**Existing 2026 Traffic Analysis**	**6**
4.1	Existing Traffic Volumes	6
4.2	Existing Traffic Operations	10
5.0	**Proposed Development**	**11**
5.1	Trip Generation	13
5.2	Trip Distribution	13
5.3	Adjacent Development at 4560 Hog Mountain Road	14
5.3.1	Shifted Findley Drive Traffic	14
6.0	**Future 2027 Traffic Analysis**	**18**
6.1	Future “No-Build” Conditions	18
6.1.1	Annual Traffic Growth	18
6.2	Future “Build” Conditions	18
6.3	Auxiliary Lane Analysis	21
6.3.1	Left Turn Lane Analysis	21
6.3.2	Deceleration Turn Lane Analysis	21
6.4	Future Traffic Operations	22
7.0	**Conclusions and Recommendations**	**24**
7.1	Recommendations for Site Access Configuration	24

Appendix

LIST OF TABLES

Item **Page**

Table 1 – Level of Service Criteria for Unsignalized Intersections 4
Table 2 – Level of Service Criteria for Signalized Intersections 5
Table 3 – Existing 2025 Intersection Operations 10
Table 4 – Trip Generation (Proposed Site) 13
Table 5 – Trip Generation (Adjacent site) 14
Table 6 – GDOT Requirements for Left Turn Lanes 21
Table 7 – GDOT Requirements for Deceleration Lanes 21
Table 8 – Future Intersection Operations 22

LIST OF FIGURES

Item **Page**

Figure 1 – Location Map 2
Figure 2 – 2025 Weekday Peak Hour Volumes 7
Figure 3 – Existing 2026 Weekday Peak Hour Volumes 8
Figure 4 – Existing Traffic Control and Lane Geometry 9
Figure 5 – Site Plan 12
Figure 6 – Trip Distribution and Site-Generated Peak Hour Volumes – Proposed Site 15
Figure 7 – Trip Distribution and Site-Generated Peak Hour Volumes – Adjacent Site 16
Figure 8 – Trip Distribution and Site-Generated Peak Hour Volumes – Adjacent Site (Shifted Trips) 17
Figure 9 – Future (No-Build) Peak Hour Volumes 19
Figure 10 – Future (Build) Peak Hour Volumes 20
Figure 11 – Future Traffic Control and Lane Geometry 23

1.0 INTRODUCTION

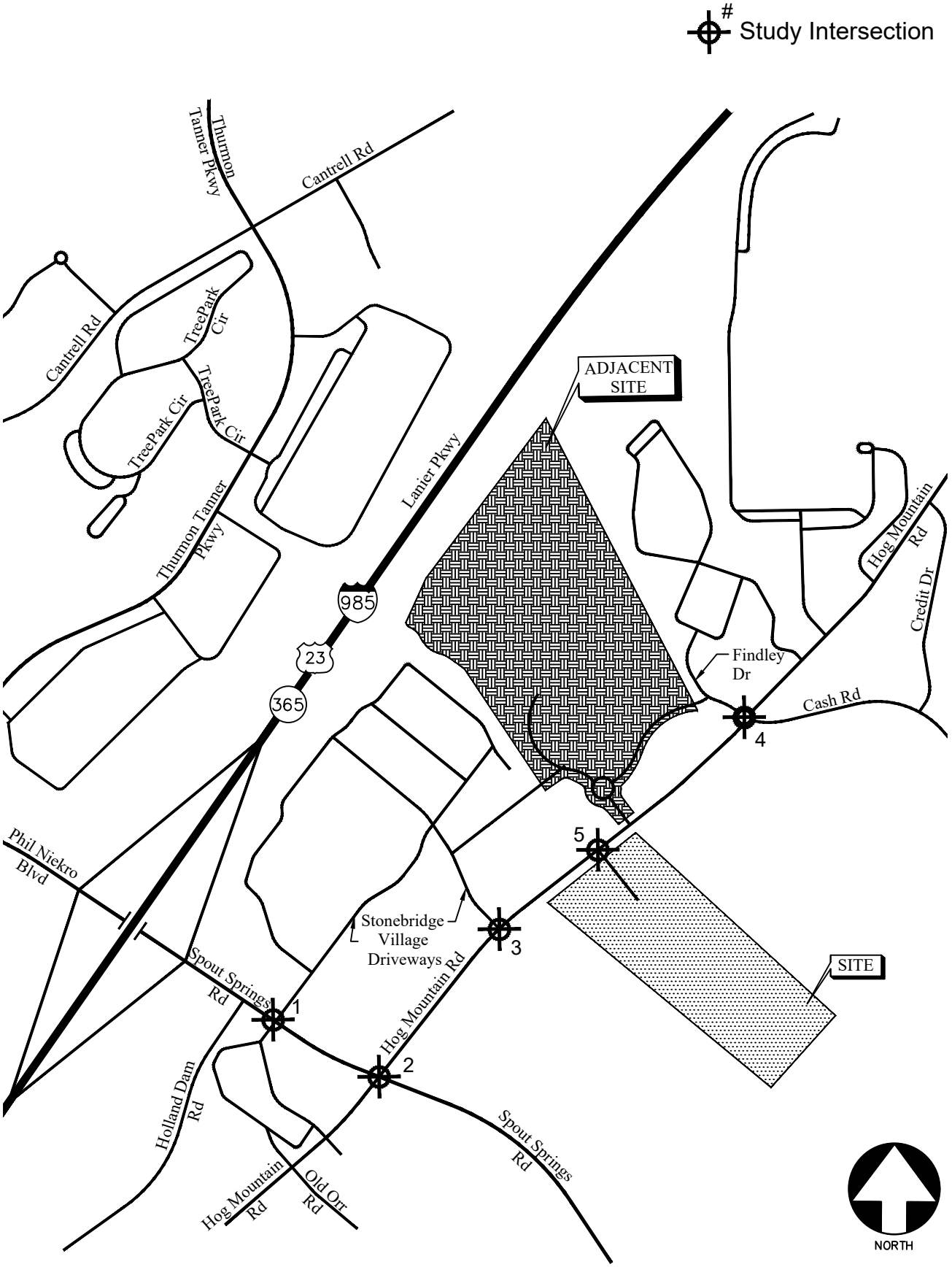
The purpose of this study is to determine the traffic impact from the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County, Georgia. The traffic analysis evaluates the current operations and the future conditions with the traffic generated by the development. The proposed residential development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.



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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road

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 are shown in Figure 1.



LOCATION MAP FIGURE 1

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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 Hog Mountain Road

Hog Mountain Road is a north-south, two-lane, undivided roadway with a posted speed limit of 45 mph in the vicinity of the site. Georgia Department of Transportation (GDOT) traffic counts (Station ID 139-0191) indicate that the daily traffic volume on Hog Mountain Road in 2024 was 8,000 vehicles per day south of Spout Springs Road. GDOT classifies Hog Mountain Road as a major collector roadway.

2.1.2 Spout Springs Road

Spout Springs Road is a four-lane roadway that is median-divided to the east of its intersection with Hog Mountain Road and has a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station ID 139-0441) indicate that the daily traffic volume on Spout Springs Road in 2024 was 13,600 vehicles per day east of Hog Mountain Road. GDOT classifies Spout Springs Road as a minor arterial roadway.

2.1.3 Findley Drive

Findley Drive is a two-lane residential roadway in the vicinity of the site. Findley Drive changes names to Cash Road to the east of its intersection with Hog Mountain Road.

2.1.4 Cash Road

Cash Road is an east-west, two-lane, undivided roadway with a posted speed limit of 40 mph in the vicinity of the site. GDOT traffic counts (Station ID 139-0779) indicate that the daily traffic volume on Cash Road in 2024 was 3,210 vehicles per day east of Credit Drive. GDOT classifies Cash Road as a major collector roadway.

3.0 STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board Highway Capacity Manual, 7th edition (HCM 7). Synchro 12 software, which utilizes the HCM methodology, was used for 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 controlled by a stop sign on minor streets, the level of service (LOS) for motor vehicles with controlled movements is determined by the computed control delay according to the thresholds stated in Table 1 below. LOS is determined for each minor street movement (or shared movement), as well as for major street left turns. LOS is not defined for the intersection as a whole or for major street approaches. The LOS of any controlled movement which experiences a volume-to-capacity ratio greater than 1 is designed as "F" regardless of the control delay.

Control delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Several factors affect the control 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 the main road without experiencing long delays.

TABLE 1 – LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)	LOS by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 and ≤ 15	B	F
> 15 and ≤ 25	C	F
> 25 and ≤ 35	D	F
> 35 and ≤ 50	E	F
> 50	F	F

*The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection.

Source: Highway Capacity Manual, 7th edition, Exhibit 20-2 *LOS Criteria: Motorized Vehicle Mode*

3.2 Signalized Intersections

According to HCM procedures, LOS can be calculated for the entire intersection, each intersection approach, and each lane group. HCM uses control delay alone to characterize LOS for the entire intersection or an approach. Control delay per vehicle is composed of initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Both control delay and volume-to-capacity ratio are used to characterize LOS for a lane group. A volume-to-capacity ratio greater than 1.0 for a lane group indicates failure from capacity perspective. Therefore, such a lane group is assigned LOS F regardless of the amount of control delay.

Table 2 below summarizes the LOS criteria from HCM for motorized vehicles at signalized intersections.

TABLE 2 – LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Control Delay (sec/vehicle)*	LOS for Lane Group by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 55	D	F
> 55 and ≤ 80	E	F
> 80	F	F

*For approach-based and intersection wide assessments, LOS is defined solely by control delay

Source: Highway Capacity Manual, 7th edition, Exhibit 19-8 *LOS Criteria: Motorized Vehicle Mode*

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

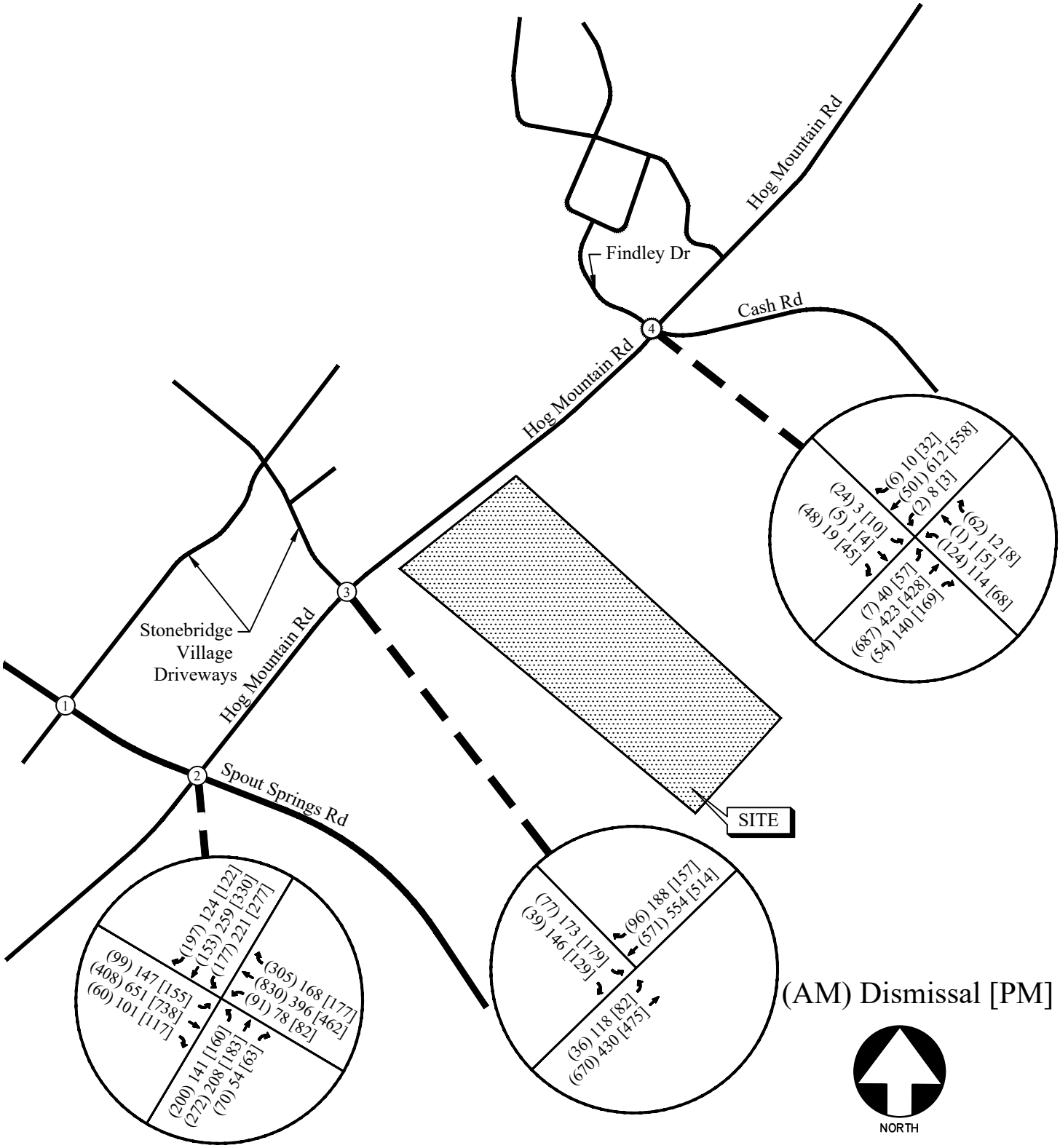
4.0 EXISTING 2026 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

Existing traffic counts were obtained at the following study intersections:

1. Spout Springs Road at Stonebridge Village West Driveway
2. Spout Springs Road at Hog Mountain Road
3. Hog Mountain Road at Stonebridge Village East Driveway
4. Hog Mountain Road at Findley Drive / Cash Road

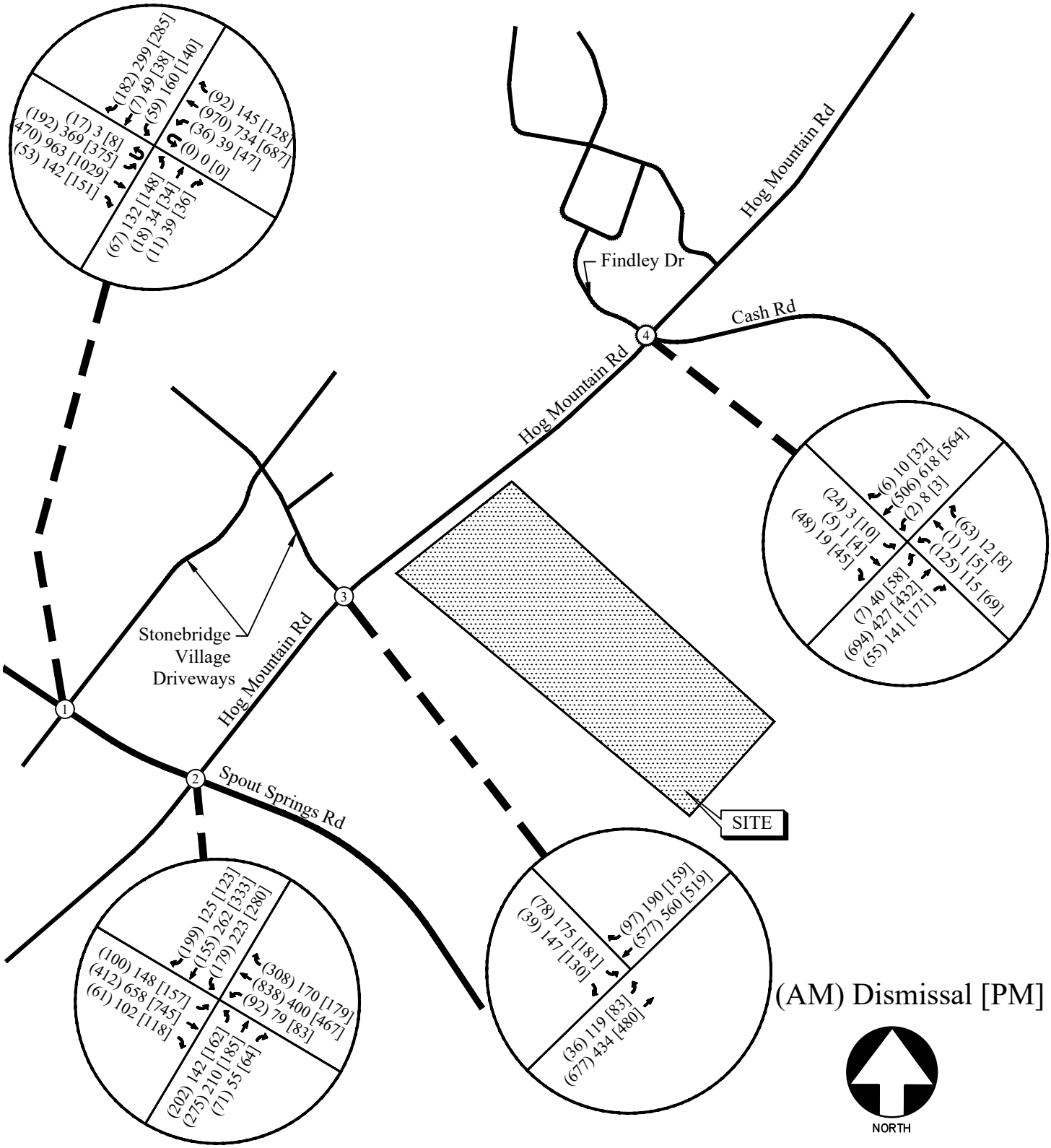
Turning movement counts for intersections 2, 3, and 4 were collected on Tuesday, March 04, 2025, and the traffic data for intersection was recorded on January 08, 2026. All turning movement counts were recorded during the AM, school dismissal, and PM peak hours between 7:00 AM to 9:00 AM, 2:00 PM to 4:00 PM, and 4:00 PM to 6:00 PM, respectively. The four consecutive 15-minute interval volumes that produced the highest volume at the intersections were then determined. Because the traffic counts for intersections 2, 3, and 4 were collected in 2025, a 1% annual linear growth factor (explained in Page 18) was applied to these volumes to estimate the existing 2026 intersection data. These adjusted counts make up the 2025 peak hour traffic volumes and are shown in Figure 3. The existing traffic control and lane geometry for the intersections are shown in Figure 4.



2025 WEEKDAY PEAK HOUR VOLUMES FIGURE 2

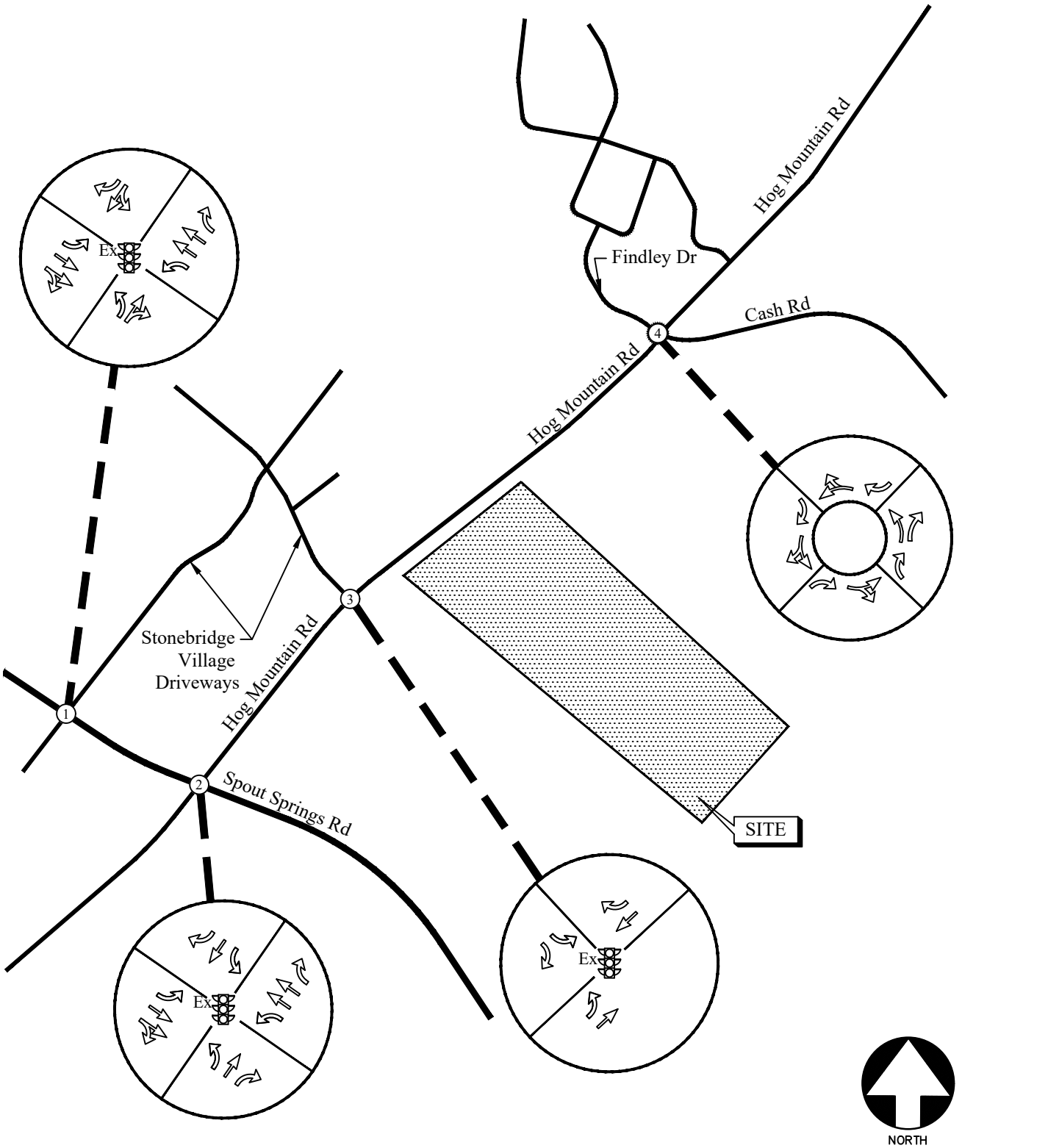
A&R Engineering Inc.

*Intersection 2,3 & 4 is (Projected 2025 to 2026 Volumes)



EXISTING WEEKDAY PEAK HOUR VOLUMES FIGURE 3

A&R Engineering Inc.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 4

A&R Engineering Inc.

4.2 Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology. The analysis results are shown in Table 3.

TABLE 3 – EXISTING 2025 INTERSECTION OPERATIONS

	Intersection	Traffic Control	LOS (Delay)		
			AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	Signalized	**B (17.9)**	**C (28.6)**	**C (26.8)**
	-Eastbound Approach		A (9.4)	C (22.0)	C (20.0)
	-Westbound Approach		B (11.9)	C (25.0)	C (22.3)
	-Northbound Approach		D (51.6)	E (60.0)	E (60.2)
	-Southbound Approach		E (56.7)	D (42.0)	D (42.5)
2	**Spout Springs Road @ Hog Mountain Road**	Signalized	**C (34.3)**	**D (35.8)**	**D (37.0)**
	-Eastbound Approach		C (28.8)	C (30.2)	C (33.2)
	-Westbound Approach		C (21.6)	B (17.8)	C (20.6)
	-Northbound Approach		D (50.1)	D (51.5)	D (47.2)
	-Southbound Approach		D (45.6)	D (47.0)	D (48.3)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	Signalized	**A (7.4)**	**B (14.5)**	**B (13.2)**
	-Eastbound Approach		D (46.2)	D (42.5)	D (42.0)
	-Northbound Approach		A (4.1)	A (6.5)	A (5.0)
	-Southbound Approach		A (3.6)	A (6.4)	A (4.9)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	Roundabout	**B (10.4)**	**B (10.9)**	**A (8.4)**
	-Eastbound Approach		A (7.5)	A (7.3)	A (6.3)
	-Westbound Approach		A (9.4)	A (6.7)	A (5.4)
	-Northbound Approach		B (11.9)	A (8.8)	A (8.2)
	-Southbound Approach		A (9.2)	B (13.9)	A (9.2)

The results of the existing traffic operations analysis indicate that the signalized study intersections (intersections 1, 2, and 3) are operating at an overall level of service "D" or better in the AM, dismissal, and PM peak hours. The roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road is operating at an overall level of service "B" or better with peak hour traffic.

5.0 PROPOSED DEVELOPMENT

The proposed residential development will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.



A site plan is shown in Figure 5.

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	-
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6,700	5,500
Average Lot Area	-	6,700
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1,200	2,200
Minimum Front Yard Setback From Lot Line (FT)	-	-
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45%	Less than 45%
Civic Space	10% Minimum	15.1%
Amenity Space	5% Minimum	6.1%

GROSS DENSITY = 81 LOTS / 19.398 AC =	4.18	Lots/AC
NET AREA = GROSS AREA - 50% of STREAM BUFFERS =	18.873	AC
NET DENSITY = 81 LOTS / 18.873 AC =	4.29	Lots/AC



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

5.3 Adjacent Development at 4560 Hog Mountain Road

There is a proposed residential development that will be located at 4560 Hog Mountain Road to the west of this site. The adjacent development will consist of one full access driveway on Hog Mountain Road in addition to an access connection with Findley Drive to the north and a second connection to the Stonebridge Village retail stores to the south. The development will consist of 296 low-rise apartment units. Because this project is estimated to be completed by 2027, its impact on the study network was considered in both the "No Build" and "Build" conditions.

The calculated site-generated traffic volumes for this adjacent development are shown in Table 5, and its peak hour volumes passing through the study area are shown in Figure 7.

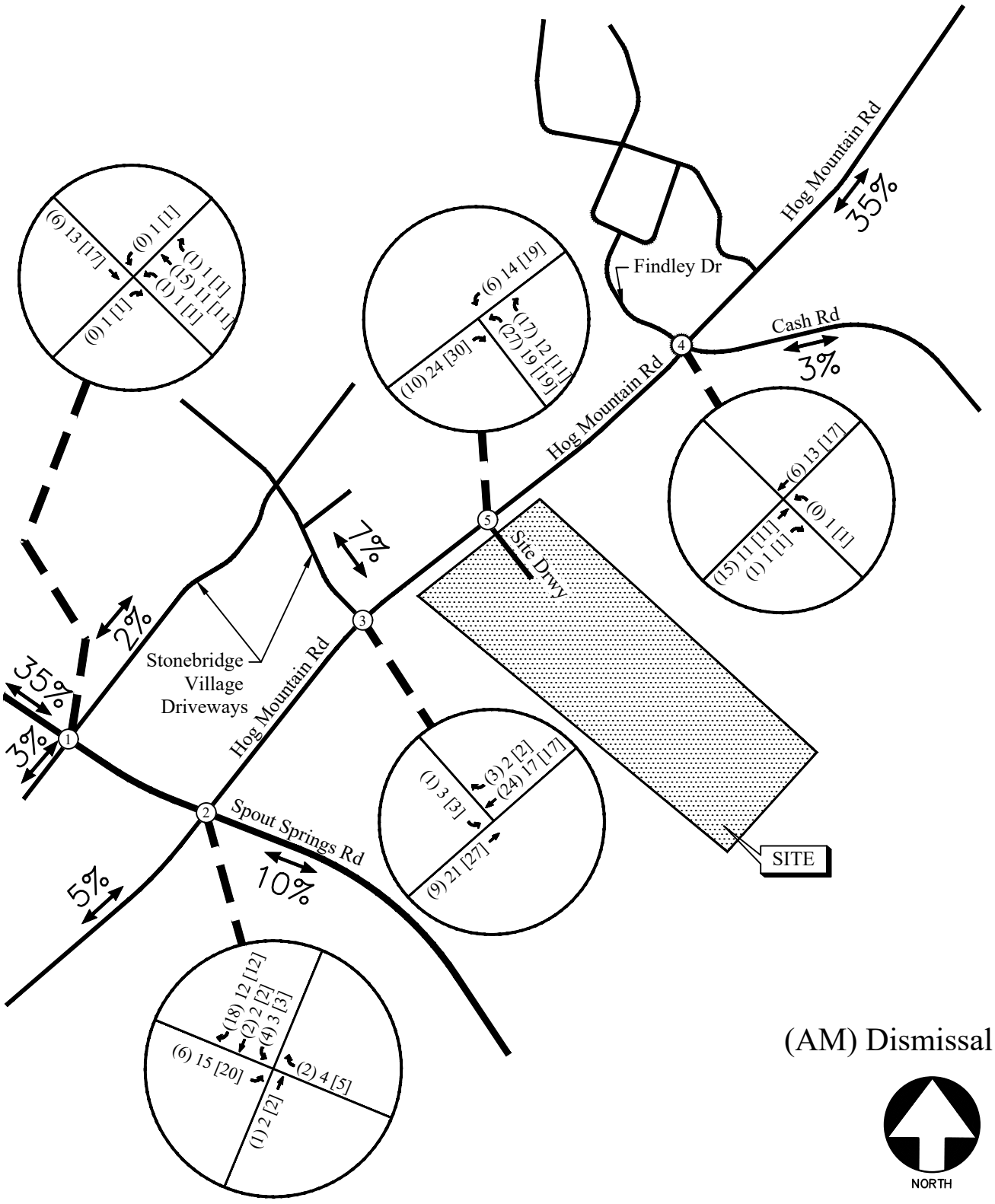
TABLE 5 – TRIP GENERATION (ADJACENT SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 220 – Multifamily Housing (Low-Rise)	296 Units	28	87	115	68	52	120	93	55	148	1,973

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution rates

5.3.1 Shifted Findley Drive Traffic

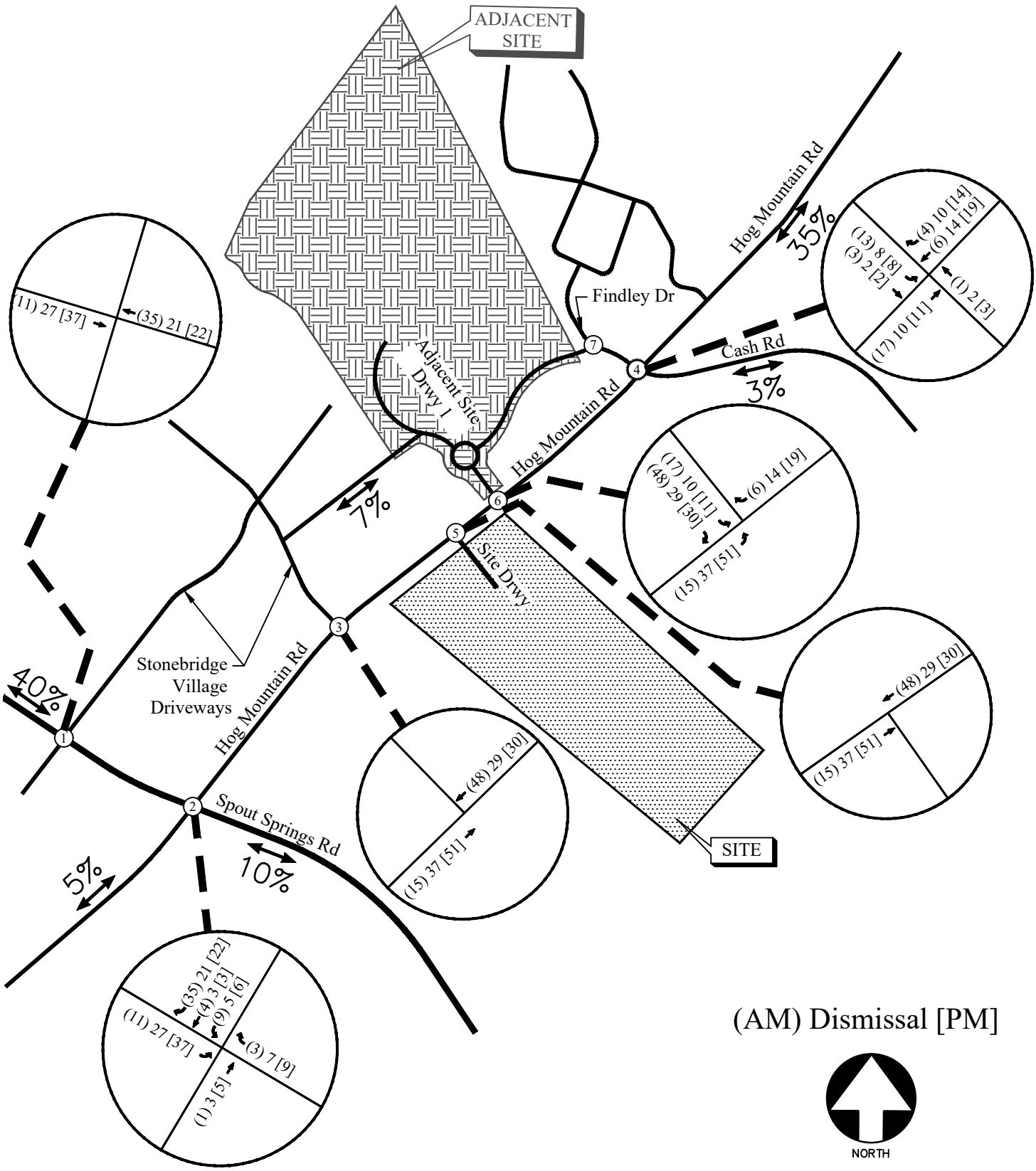
Since the adjacent development proposes access connections at Findley Drive to the north and at Stonebridge Village to the south, some residential traffic from the Folksong Apartments development on Findley Drive will be able to use these connections to travel directly between their apartments and the retail stores/restaurants in Stonebridge Village without needing to travel on Hog Mountain Road. These estimated shifted traffic volumes are shown in Figure 8.



TRIP DISTRIBUTION AND SITE-GENERATED PEAK HOUR VOLUMES (PROPOSED SITE)

FIGURE 6

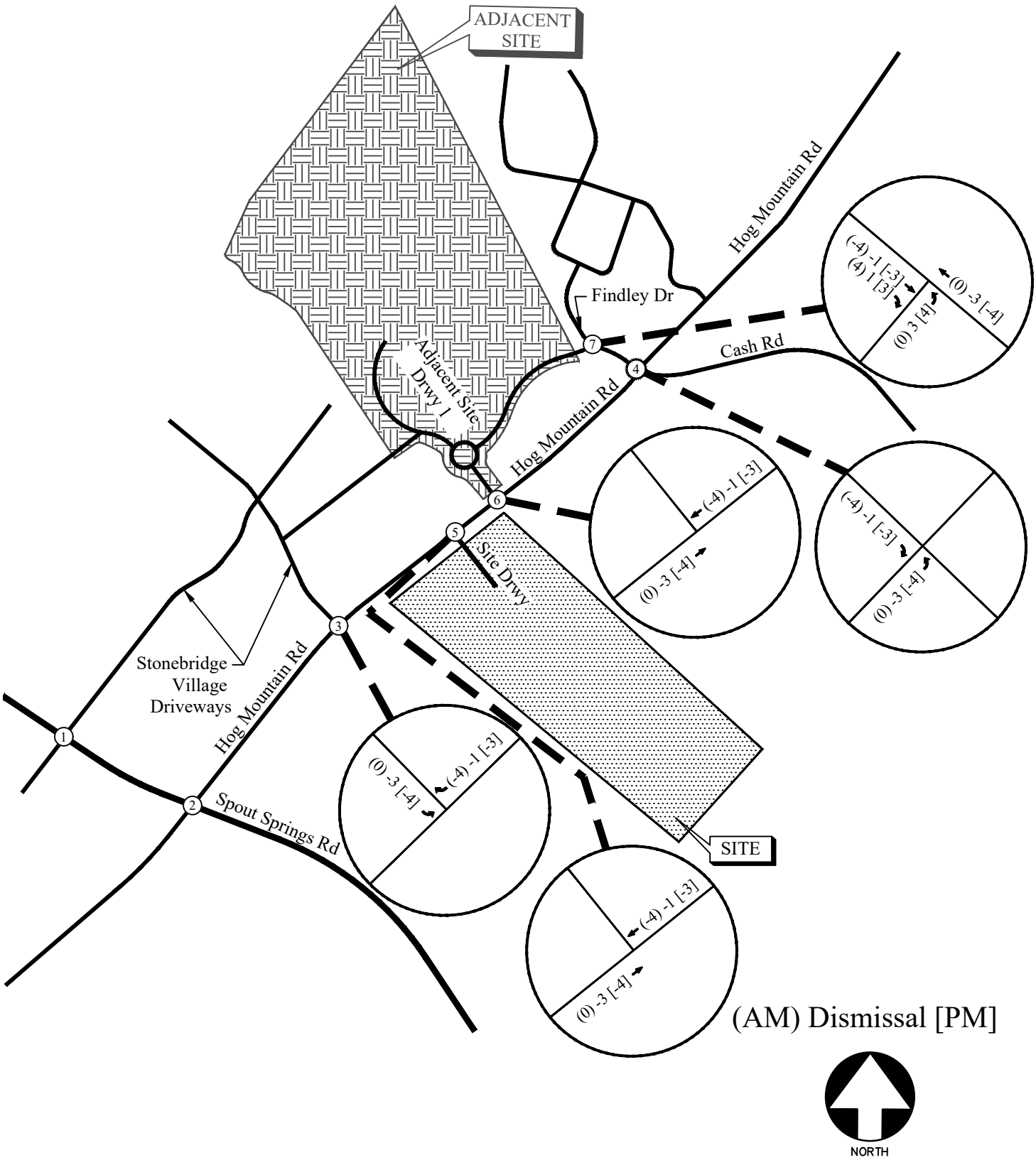
A&R Engineering Inc.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES (ADJACENT SITE)

FIGURE 7

A&R Engineering Inc.



TRIP DISTRIBUTION AND SITE-GENERATED WEEKDAY PEAK HOUR VOLUMES (ADJACENT SITE - SHIFTED TRIPS)

FIGURE 8

A&R Engineering Inc.

6.0 FUTURE 2027 TRAFFIC ANALYSIS

The future 2027 traffic operations are analyzed for the "Build" and "No-Build" conditions.

6.1 Future "No-Build" Conditions

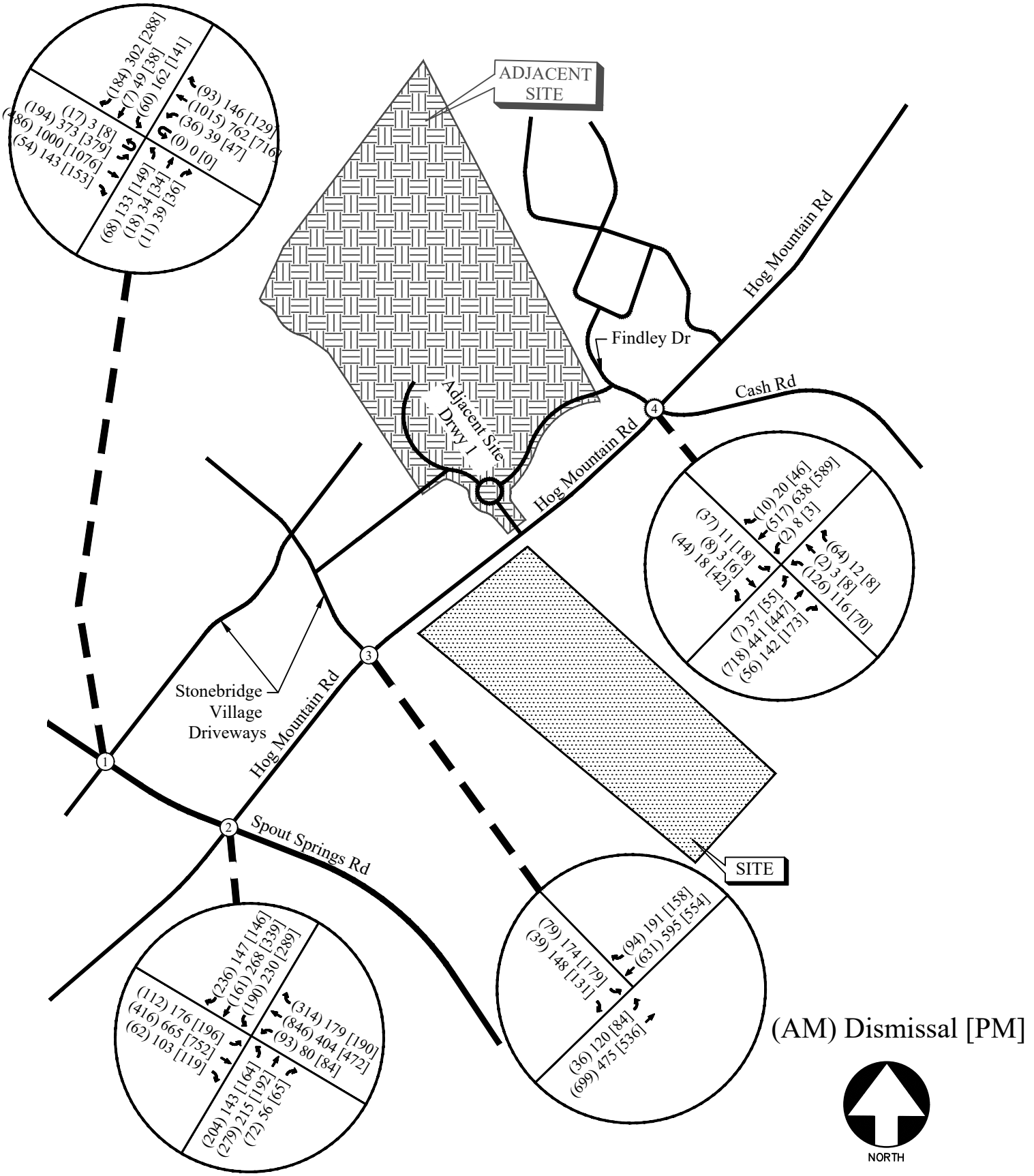
The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The future "No-Build" volumes consist of the existing 2026 traffic volumes (Figure 3) plus increases due to the annual growth of traffic while also factoring in the adjacent site traffic (Figure 7) and the shifted trips explained in Section 5.3.1 (Figure 8).

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 (2022-2024) revealed a traffic volume increase of approximately 1% in the area. This growth factor was applied to the existing traffic volumes 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 9.

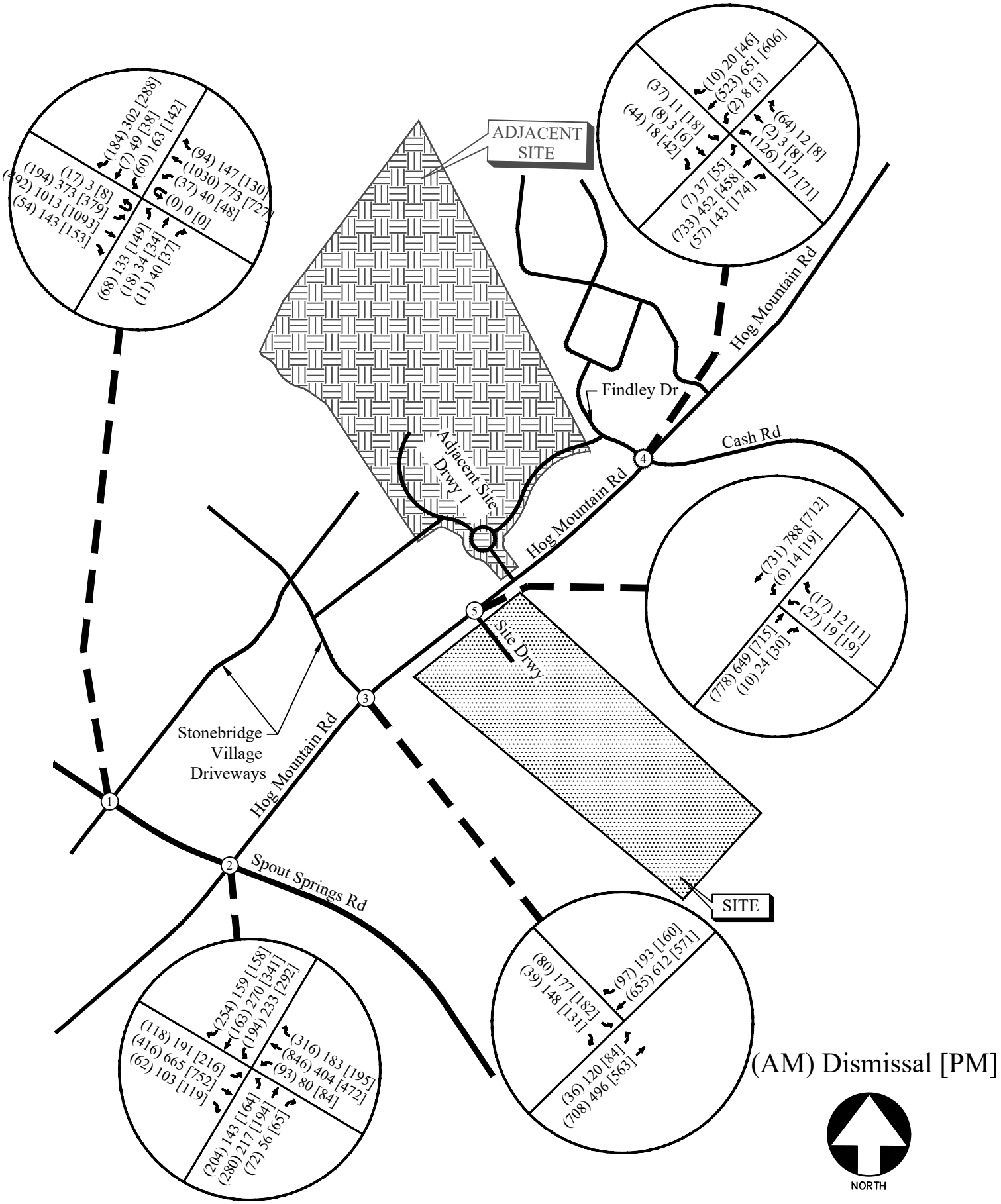
6.2 Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. To evaluate future traffic operations in this area, the additional traffic volumes from the site (Figures 6) were added to the base traffic volumes (Figure 9) to calculate the future traffic volumes after the construction of the development. These total future "Build" traffic volumes are shown in Figure 10.



FUTURE (NO-BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 9

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FUTURE (BUILD) WEEKDAY PEAK HOUR VOLUMES FIGURE 10

A&R Engineering Inc.

6.3 Auxiliary Lane Analysis

Included below are analyses for turn lanes at the proposed site driveway as per GDOT standards. The analyses below are based off the trip generation volumes in Table 4 and the trip distribution explained in Section 5.2. According to the estimated trip generation calculations, the 24-hour two-way volume for traffic entering and exiting the site is 919 vehicles.

6.3.1 Left Turn Lane Analysis

For a two-lane roadway with an AADT greater than 6,000 vehicles and a posted speed limit of 45 mph, the daily site-generated left turn movements threshold to warrant a turn lane is 175 left-turning vehicles per day. The estimated daily left-turning volume at the site driveway is shown in Table 6.

TABLE 6 – GDOT REQUIREMENTS FOR LEFT TURN LANES

Intersection	Left Turn Traffic (% total entering)	Left Turn Volume (vehicles/day)	Roadway Speed / # Lanes / AADT	GDOT Threshold (vehicles/ day)	Warrants Met?
Hog Mountain Road @ Site Driveway	38% (Southbound)	**175** (Total Trips) ÷ 2 × 0.38 = (919) ÷ 2 x 0.38 = 175	45 mph / 2-Lane / > 6,000	175	Yes

Based on GDOT standards, a left turn lane is warranted at the proposed site driveway.

6.3.2 Deceleration Turn Lane Analysis

For a two-lane roadway with an AADT greater than 6,000 vehicles and a posted speed limit of 45 mph, the daily site-generated right turn movements threshold to warrant a deceleration lane is 75 right-turning vehicles per day. The estimated daily right-turning volume at the site driveway is shown in Table 7.

TABLE 7 – GDOT REQUIREMENTS FOR DECELERATION LANES

Intersection	Right Turn Traffic (% total entering)	Right Turn Volume (vehicles/day)	Roadway Speed / # Lanes / AADT	GDOT Threshold (vehicles/ day)	Warrants Met?
Hog Mountain Road @ Site Driveway	62% (Northbound)	**285** (Total Trips) ÷ 2 × 0.62 = (919) ÷ 2 x 0.62 = 285	45 mph / 2-Lane / > 6,000	75	Yes

Based on GDOT standards, a right turn lane is warranted at the proposed site driveway.

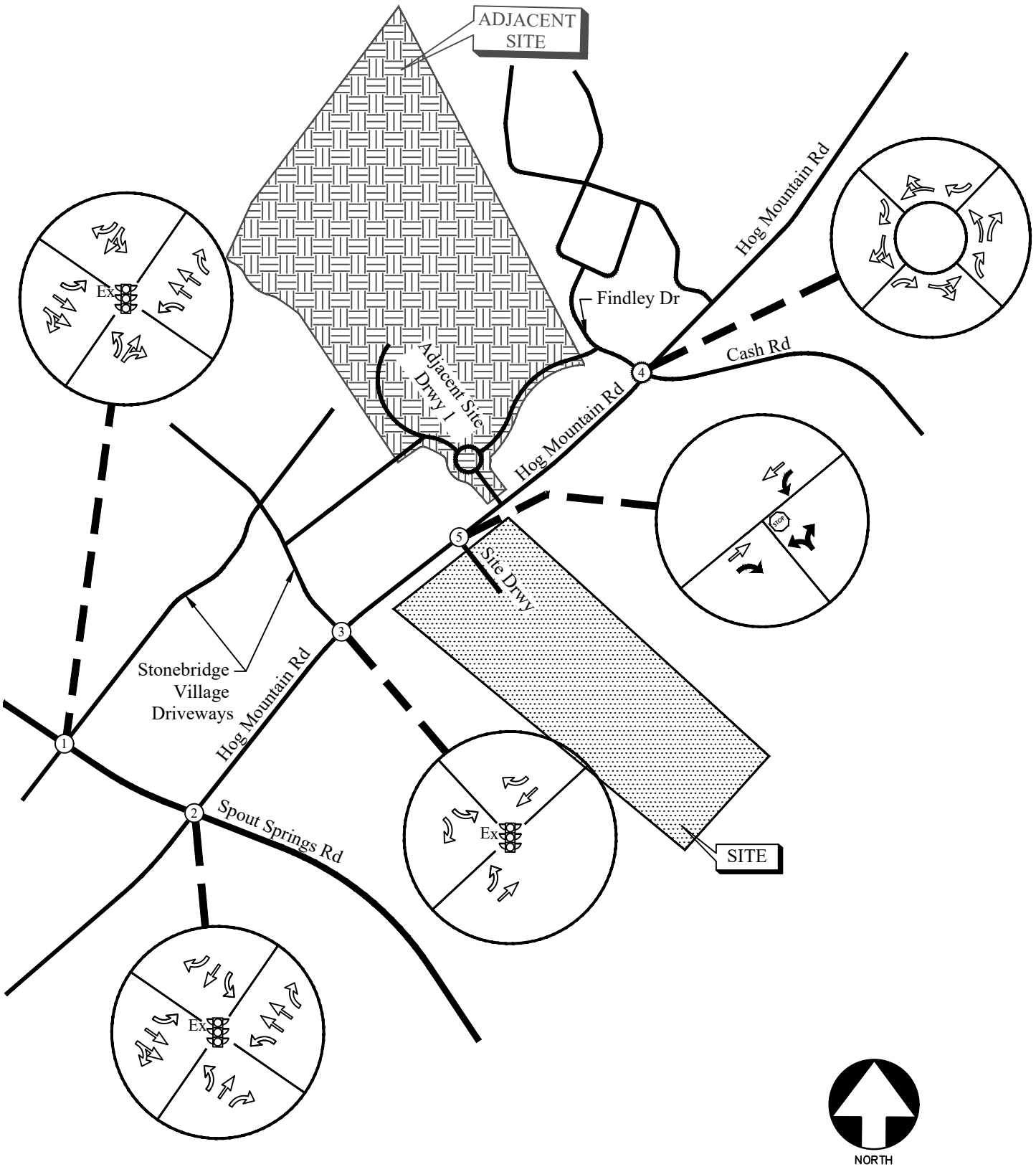
6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 11

A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Appendix

Existing Intersection Traffic Counts .....
Linear Regression of Daily Traffic.....
Existing Intersection Analysis.....
Future “No-Build” Intersection Analysis.....
Future “Build” Intersection Analysis.....
Traffic Volume Worksheets .....

EXISTING INTERSECTION TRAFFIC COUNTS

A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	20	6	0	26	16	1	40	57	55	158	13	1	227	9	300	25	334	644
07:15 AM	24	6	3	33	23	1	46	70	48	90	14	5	157	9	233	25	267	527
07:30 AM	7	3	2	12	5	1	52	58	48	123	8	5	184	11	259	20	290	544
07:45 AM	16	3	6	25	15	4	44	63	41	99	18	6	164	7	178	22	207	459
Total	67	18	11	96	59	7	182	248	192	470	53	17	732	36	970	92	1098	2174
08:00 AM	11	1	3	15	19	7	33	59	53	103	16	7	179	4	150	28	182	435
08:15 AM	9	4	3	16	11	7	49	67	60	100	15	2	177	5	148	25	178	438
08:30 AM	16	5	3	24	16	5	42	63	49	100	14	4	167	9	147	26	182	436
08:45 AM	26	8	1	35	12	4	48	64	56	108	20	0	184	10	158	19	187	470
Total	62	18	10	90	58	23	172	253	218	411	65	13	707	28	603	98	729	1779
*** BREAK ***																		
02:00 PM	28	7	5	40	21	15	59	95	72	199	33	4	308	10	159	26	195	638
02:15 PM	36	13	7	56	36	9	57	102	77	214	41	5	337	8	154	40	202	697
02:30 PM	28	9	3	40	30	10	66	106	97	215	32	0	344	5	186	44	235	725
02:45 PM	43	9	11	63	51	19	91	161	104	218	23	0	345	10	200	44	254	823
Total	135	38	26	199	138	53	273	464	350	846	129	9	1334	33	699	154	886	2883
03:00 PM	32	8	6	46	36	11	71	118	72	263	32	2	369	4	189	41	234	767
03:15 PM	25	8	10	43	38	13	67	118	100	220	42	0	362	15	176	27	218	741
03:30 PM	32	9	12	53	35	6	70	111	93	262	45	1	401	10	169	33	212	777
03:45 PM	52	13	10	75	35	14	59	108	116	228	44	1	389	14	160	27	201	773
Total	141	38	38	217	144	44	267	455	381	973	163	4	1521	43	694	128	865	3058
04:00 PM	36	5	8	49	41	7	81	129	76	274	33	2	385	8	164	30	202	765
04:15 PM	36	5	8	49	34	12	76	122	104	269	41	1	415	13	171	30	214	800
04:30 PM	38	13	9	60	39	11	68	118	101	254	35	2	392	16	172	28	216	786
04:45 PM	38	11	11	60	26	8	60	94	94	232	42	3	371	10	180	40	230	755
Total	148	34	36	218	140	38	285	463	375	1029	151	8	1563	47	687	128	862	3106
05:00 PM	39	10	7	56	32	11	55	98	83	204	36	3	326	7	166	41	214	694
05:15 PM	24	9	7	40	34	20	60	114	132	208	24	3	367	12	183	30	225	746
05:30 PM	45	10	10	65	38	11	62	111	86	196	33	5	320	6	157	32	195	691
05:45 PM	18	6	6	30	27	7	47	81	94	185	28	1	308	14	127	32	173	592
Total	126	35	30	191	131	49	224	404	395	793	121	12	1321	39	633	135	807	2723
Grand Total	679	181	151	1011	670	214	1403	2287	1911	4522	682	63	7178	226	4286	735	5247	15723
Apprch %	67.2	17.9	14.9		29.3	9.4	61.3		26.6	63	9.5	0.9		4.3	81.7	14		
Total %	4.3	1.2	1	6.4	4.3	1.4	8.9	14.5	12.2	28.8	4.3	0.4	45.7	1.4	27.3	4.7	33.4	

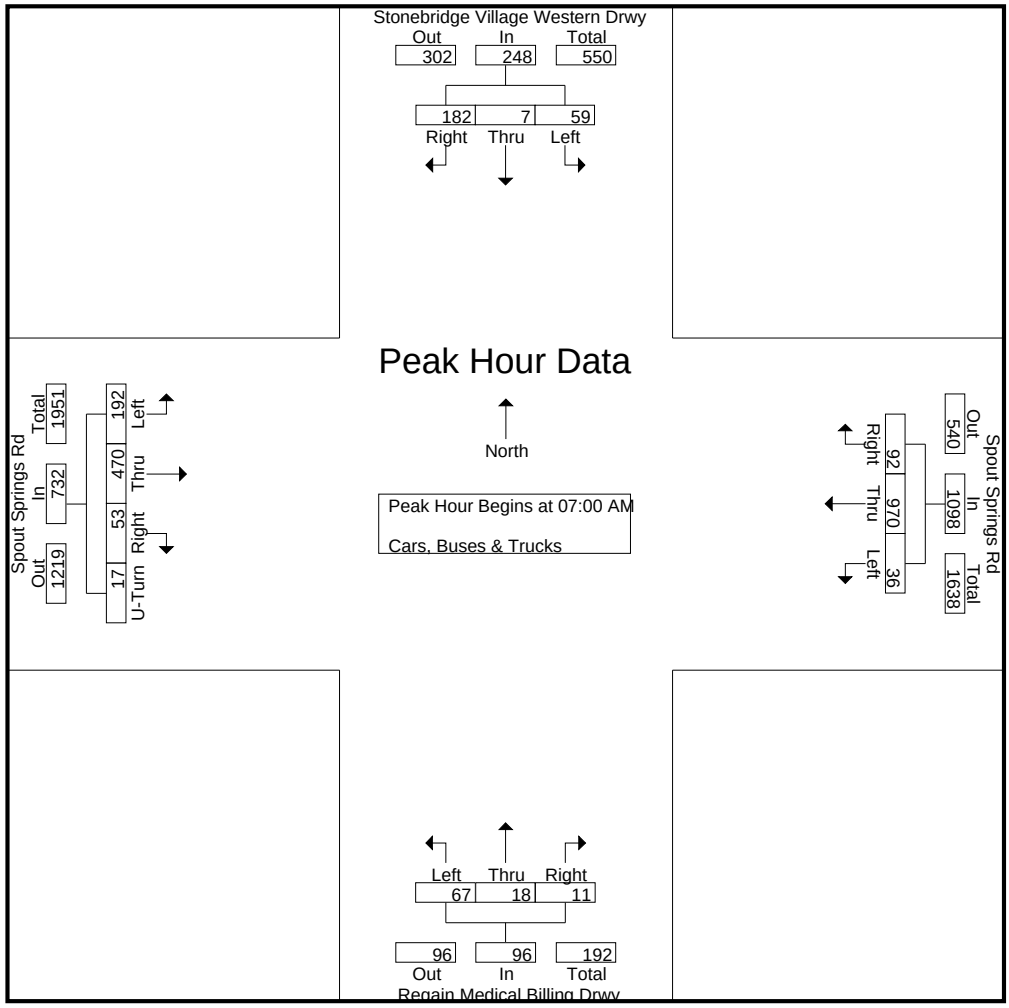
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Marietta, GA 30067

TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 2

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	20	**6**	0	26	16	1	40	57	**55**	**158**	13	1	**227**	9	**300**	**25**	**334**	**644**
07:15 AM	**24**	6	3	**33**	**23**	1	46	**70**	48	90	14	5	157	9	233	25	267	527
07:30 AM	7	3	2	12	5	1	**52**	58	48	123	8	5	184	**11**	259	20	290	544
07:45 AM	16	3	**6**	25	15	**4**	44	63	41	99	**18**	**6**	164	7	178	22	207	459
Total Volume	67	18	11	96	59	7	182	248	192	470	53	17	732	36	970	92	1098	2174
% App. Total	69.8	18.8	11.5		23.8	2.8	73.4		26.2	64.2	7.2	2.3		3.3	88.3	8.4		
PHF	.698	.750	.458	.727	.641	.438	.875	.886	.873	.744	.736	.708	.806	.818	.808	.920	.822	.844



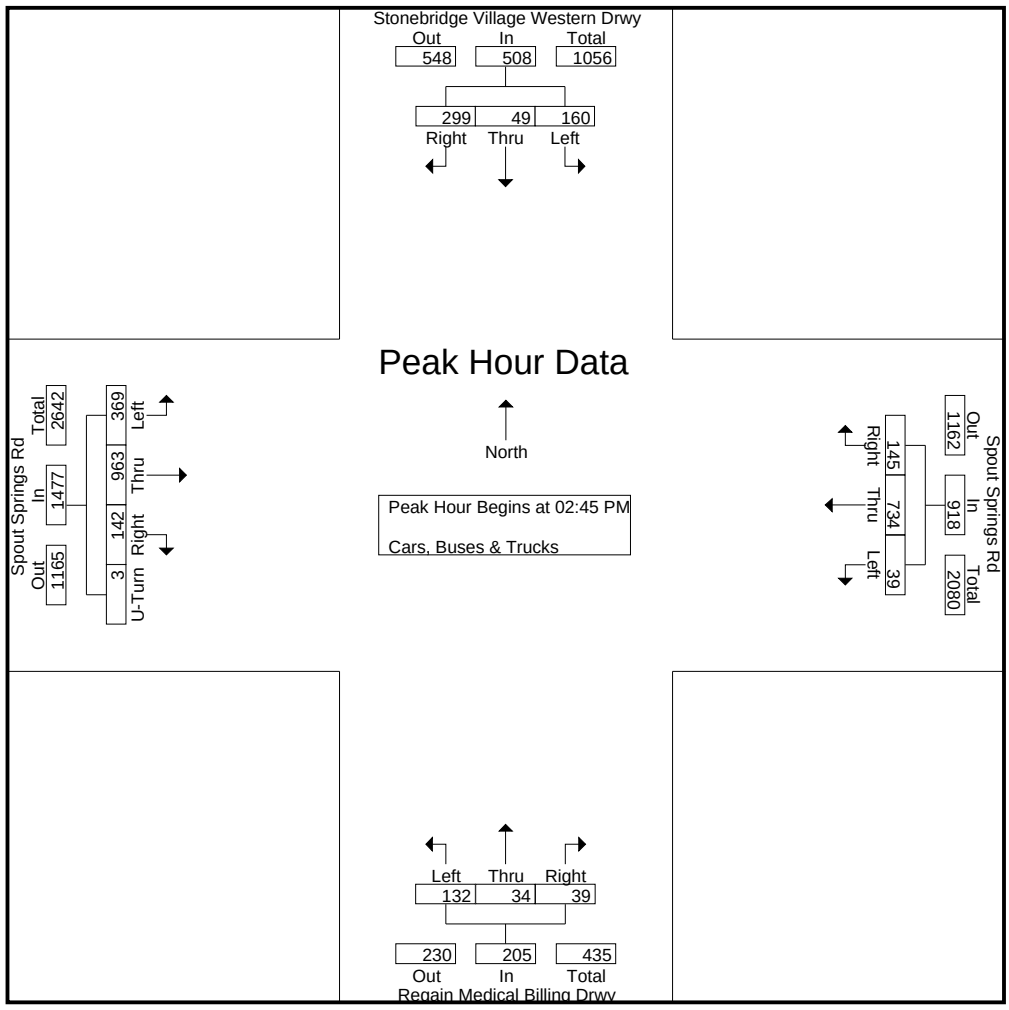
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TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 3

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 02:45 PM																		
02:45 PM	**43**	**9**	11	**63**	**51**	**19**	**91**	**161**	**104**	218	23	0	345	10	**200**	**44**	**254**	**823**
03:00 PM	32	8	6	46	36	11	71	118	72	**263**	32	**2**	369	4	189	41	234	767
03:15 PM	25	8	10	43	38	13	67	118	100	220	42	0	362	**15**	176	27	218	741
03:30 PM	32	9	**12**	53	35	6	70	111	93	262	**45**	1	**401**	10	169	33	212	777
Total Volume	132	34	39	205	160	49	299	508	369	963	142	3	1477	39	734	145	918	3108
% App. Total	64.4	16.6	19		31.5	9.6	58.9		25	65.2	9.6	0.2		4.2	80	15.8		
PHF	.767	.944	.813	.813	.784	.645	.821	.789	.887	.915	.789	.375	.921	.650	.918	.824	.904	.944



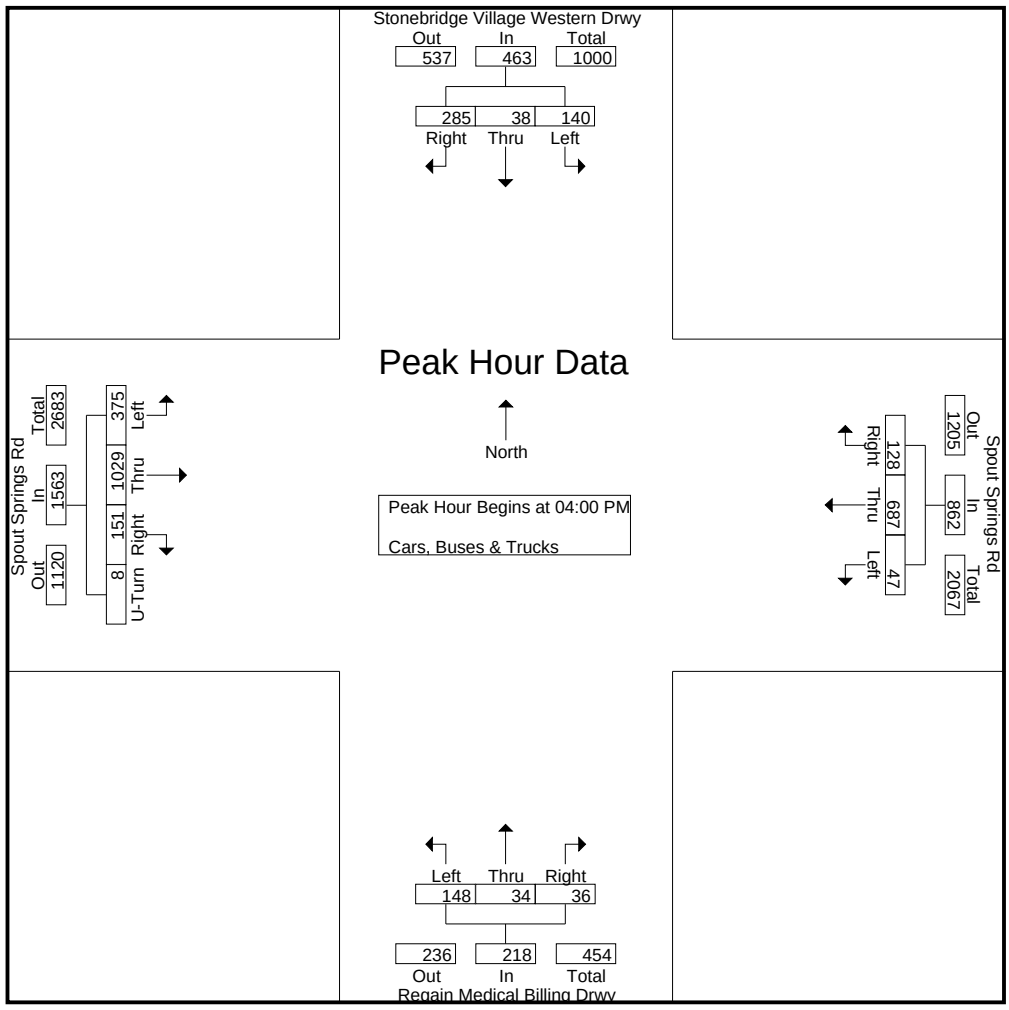
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TMC Data
Spout Springs Road @ Stonebridge Village
W Drwy / Regain Medical Billing Drwy
7-9 am | 2-4 pm | 4-6 pm

File Name : 20260002
Site Code : 20260002
Start Date : 01-08-2026
Page No : 4

	Regain Medical Billing Drwy Northbound				Stonebridge Village Western Drwy Southbound				Spout Springs Rd Eastbound					Spout Springs Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:00 PM																		
04:00 PM	36	5	8	49	**41**	7	**81**	**129**	76	**274**	33	2	385	8	164	30	202	765
04:15 PM	36	5	8	49	34	**12**	76	122	**104**	269	41	1	**415**	13	171	30	214	**800**
04:30 PM	**38**	**13**	9	**60**	39	11	68	118	101	254	35	2	392	**16**	172	28	216	786
04:45 PM	38	11	**11**	60	26	8	60	94	94	232	**42**	**3**	371	10	**180**	**40**	**230**	755
Total Volume	148	34	36	218	140	38	285	463	375	1029	151	8	1563	47	687	128	862	3106
% App. Total	67.9	15.6	16.5		30.2	8.2	61.6		24	65.8	9.7	0.5		5.5	79.7	14.8		
PHF	.974	.654	.818	.908	.854	.792	.880	.897	.901	.939	.899	.667	.942	.734	.954	.800	.937	.971



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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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	30	21	8	59	20	16	38	74	12	76	7	95	12	169	24	205	433
07:15 AM	49	27	6	82	34	26	45	105	19	89	7	115	18	257	38	313	615
07:30 AM	60	52	20	132	27	20	54	101	32	96	11	139	28	242	72	342	714
07:45 AM	46	95	13	154	47	44	32	123	24	118	20	162	24	218	89	331	770
Total	185	195	47	427	128	106	169	403	87	379	45	511	82	886	223	1191	2532
08:00 AM	53	70	20	143	59	48	61	168	21	101	13	135	22	192	83	297	743
08:15 AM	41	55	17	113	44	41	50	135	22	93	16	131	17	178	61	256	635
08:30 AM	35	43	12	90	36	39	37	112	20	74	11	105	14	143	47	204	511
08:45 AM	20	25	11	56	24	33	25	82	23	65	14	102	18	132	24	174	414
Total	149	193	60	402	163	161	173	497	86	333	54	473	71	645	215	931	2303
*** BREAK ***																	
02:00 PM	17	34	11	62	38	41	26	105	21	98	12	131	10	116	35	161	459
02:15 PM	22	39	15	76	43	49	33	125	35	101	14	150	14	125	41	180	531
02:30 PM	29	37	10	76	46	53	37	136	28	123	19	170	16	111	39	166	548
02:45 PM	34	45	16	95	51	59	31	141	32	148	23	203	19	108	34	161	600
Total	102	155	52	309	178	202	127	507	116	470	68	654	59	460	149	668	2138
03:00 PM	37	52	12	101	49	55	27	131	34	169	29	232	22	98	42	162	626
03:15 PM	39	47	11	97	57	61	29	147	38	151	21	210	15	92	35	142	596
03:30 PM	35	51	15	101	52	67	31	150	31	178	24	233	18	99	44	161	645
03:45 PM	30	58	16	104	63	76	37	176	44	153	27	224	23	107	47	177	681
Total	141	208	54	403	221	259	124	604	147	651	101	899	78	396	168	642	2548
04:00 PM	33	49	19	101	64	82	35	181	43	194	28	265	21	112	40	173	720
04:15 PM	47	43	14	104	69	84	31	184	40	188	25	253	16	105	42	163	704
04:30 PM	41	47	18	106	73	88	27	188	37	179	29	245	21	119	46	186	725
04:45 PM	39	44	12	95	71	76	29	176	35	177	35	247	24	126	49	199	717
Total	160	183	63	406	277	330	122	729	155	738	117	1010	82	462	177	721	2866
05:00 PM	33	53	21	107	66	79	26	171	33	164	37	234	26	120	50	196	708
05:15 PM	27	50	27	104	64	71	21	156	30	151	33	214	29	127	59	215	689
05:30 PM	26	41	24	91	57	62	18	137	24	149	24	197	32	115	52	199	624
05:45 PM	20	37	18	75	51	54	12	117	22	123	18	163	24	106	41	171	526
Total	106	181	90	377	238	266	77	581	109	587	112	808	111	468	202	781	2547
Grand Total	843	1115	366	2324	1205	1324	792	3321	700	3158	497	4355	483	3317	1134	4934	14934
Apprch %	36.3	48	15.7		36.3	39.9	23.8		16.1	72.5	11.4		9.8	67.2	23		
Total %	5.6	7.5	2.5	15.6	8.1	8.9	5.3	22.2	4.7	21.1	3.3	29.2	3.2	22.2	7.6	33	

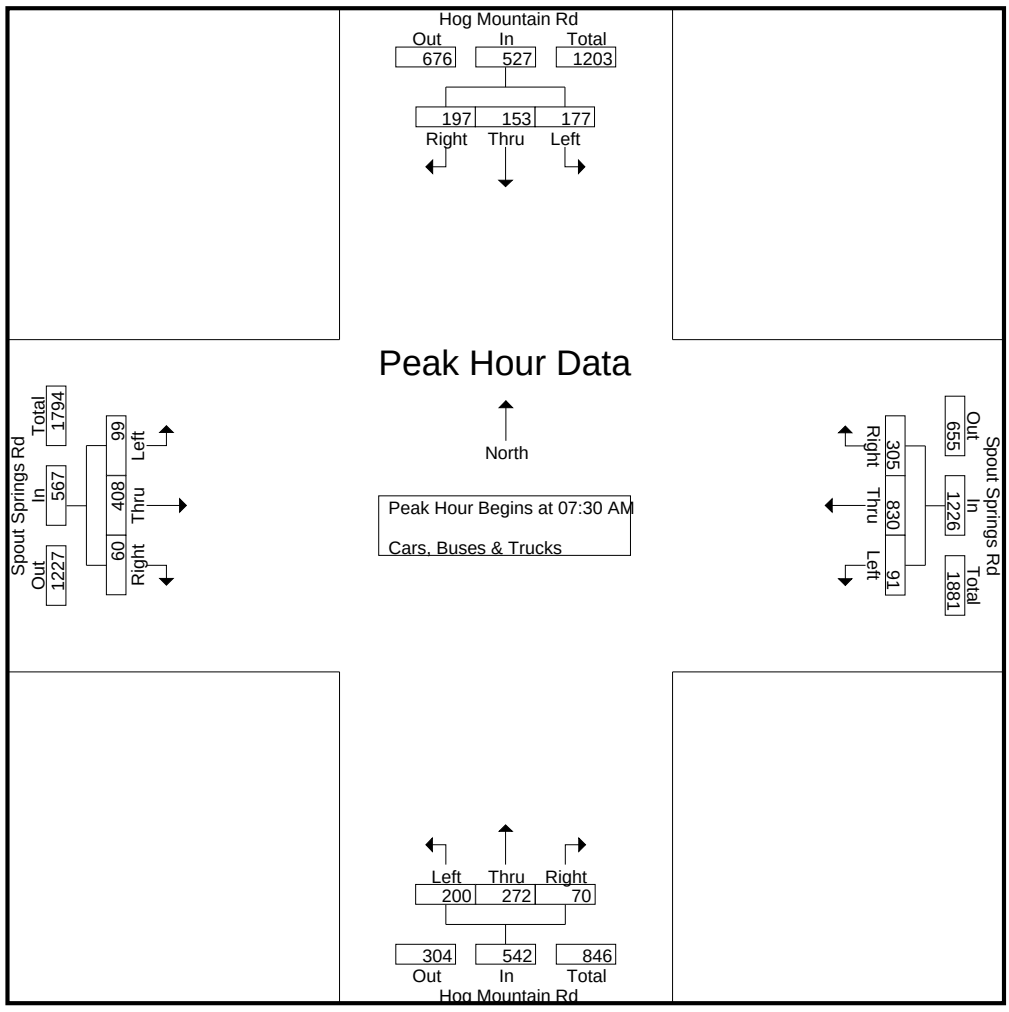
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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 2

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**60**	52	**20**	132	27	20	54	101	**32**	96	11	139	**28**	**242**	72	**342**	714
07:45 AM	46	**95**	13	**154**	47	44	32	123	24	**118**	**20**	**162**	24	218	**89**	331	**770**
08:00 AM	53	70	20	143	**59**	**48**	**61**	**168**	21	101	13	135	22	192	83	297	743
08:15 AM	41	55	17	113	44	41	50	135	22	93	16	131	17	178	61	256	635
Total Volume	200	272	70	542	177	153	197	527	99	408	60	567	91	830	305	1226	2862
% App. Total	36.9	50.2	12.9		33.6	29	37.4		17.5	72	10.6		7.4	67.7	24.9		
PHF	.833	.716	.875	.880	.750	.797	.807	.784	.773	.864	.750	.875	.813	.857	.857	.896	.929



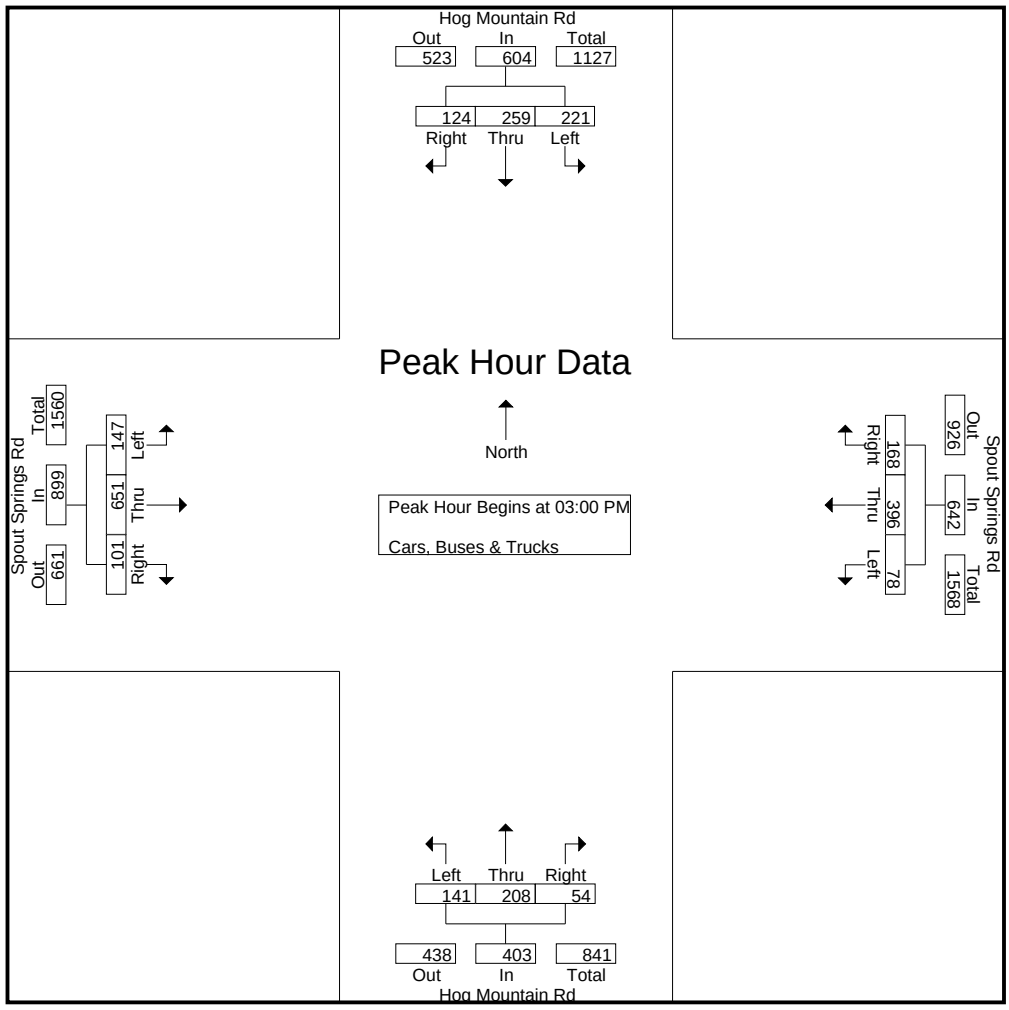
A & R Engineering, Inc.

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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 3

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	37	52	12	101	49	55	27	131	34	169	**29**	232	22	98	42	162	626
03:15 PM	**39**	47	11	97	57	61	29	147	38	151	21	210	15	92	35	142	596
03:30 PM	35	51	15	101	52	67	31	150	31	**178**	24	**233**	18	99	44	161	645
03:45 PM	30	**58**	**16**	**104**	**63**	**76**	**37**	**176**	**44**	153	27	224	**23**	**107**	**47**	**177**	**681**
Total Volume	141	208	54	403	221	259	124	604	147	651	101	899	78	396	168	642	2548
% App. Total	35	51.6	13.4		36.6	42.9	20.5		16.4	72.4	11.2		12.1	61.7	26.2		
PHF	.904	.897	.844	.969	.877	.852	.838	.858	.835	.914	.871	.965	.848	.925	.894	.907	.935



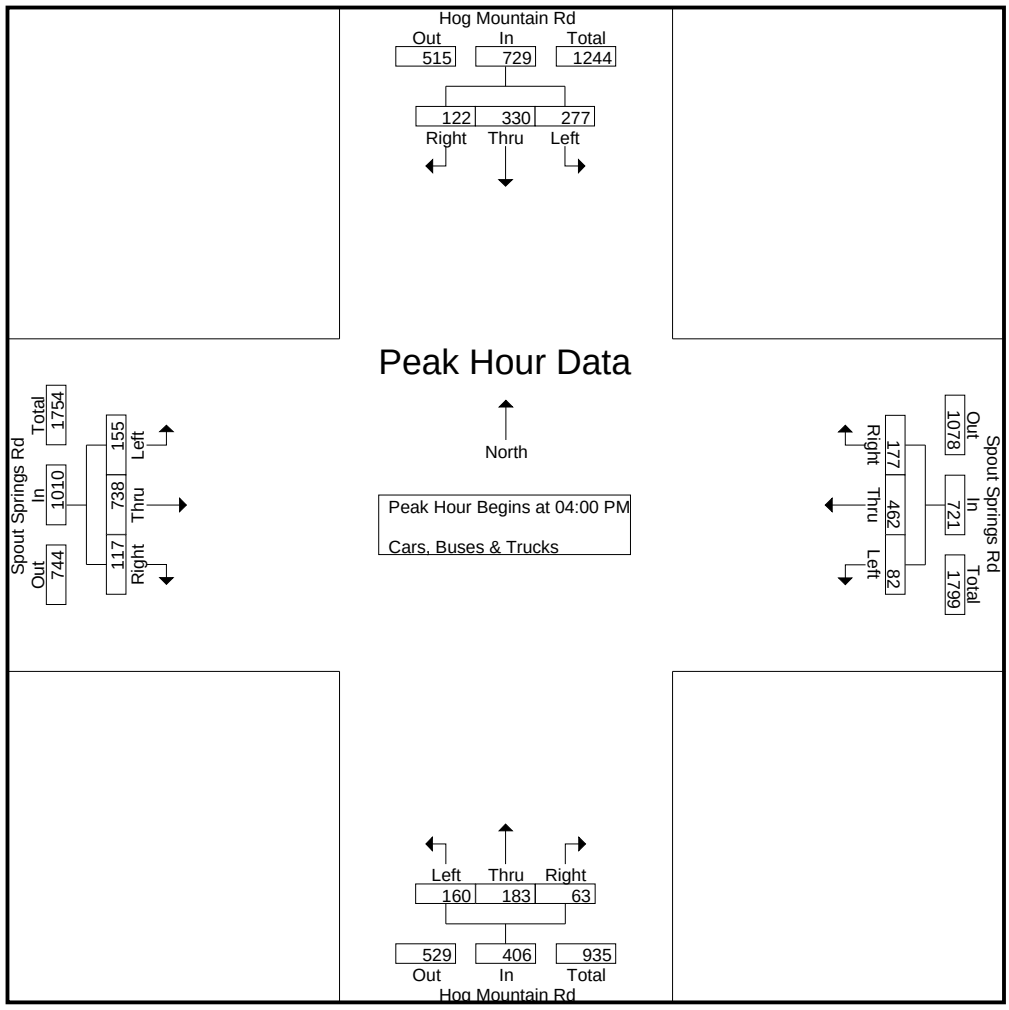
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Spout Springs Rd
7-9am | 2-4pm | 4-6pm

File Name : 20250060
Site Code : 20250060
Start Date : 03-04-2025
Page No : 4

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Spout Springs Rd Eastbound				Spout Springs Rd 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	33	**49**	**19**	101	64	82	**35**	181	**43**	**194**	28	**265**	21	112	40	173	720
04:15 PM	**47**	43	14	104	69	84	31	184	40	188	25	253	16	105	42	163	704
04:30 PM	41	47	18	**106**	**73**	**88**	27	**188**	37	179	29	245	21	119	46	186	**725**
04:45 PM	39	44	12	95	71	76	29	176	35	177	**35**	247	**24**	**126**	**49**	**199**	717
Total Volume	160	183	63	406	277	330	122	729	155	738	117	1010	82	462	177	721	2866
% App. Total	39.4	45.1	15.5		38	45.3	16.7		15.3	73.1	11.6		11.4	64.1	24.5		
PHF	.851	.934	.829	.958	.949	.938	.871	.969	.901	.951	.836	.953	.854	.917	.903	.906	.988



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TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping
Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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	4	43	0	47	0	54	2	56	7	0	5	12	0	0	0	0	115
07:15 AM	3	74	0	77	0	93	6	99	7	0	8	15	0	0	0	0	191
07:30 AM	9	88	0	97	0	85	19	104	20	0	6	26	0	0	0	0	227
07:45 AM	13	220	0	233	0	149	20	169	15	0	5	20	0	0	0	0	422
Total	29	425	0	454	0	381	47	428	49	0	24	73	0	0	0	0	955
08:00 AM	5	198	0	203	0	161	30	191	28	0	18	46	0	0	0	0	440
08:15 AM	9	164	0	173	0	176	27	203	14	0	10	24	0	0	0	0	400
08:30 AM	18	46	0	64	0	62	28	90	12	0	11	23	0	0	0	0	177
08:45 AM	24	49	0	73	0	81	19	100	16	0	14	30	0	0	0	0	203
Total	56	457	0	513	0	480	104	584	70	0	53	123	0	0	0	0	1220
*** BREAK ***																	
02:00 PM	34	41	0	75	0	72	30	102	51	0	43	94	0	0	0	0	271
02:15 PM	22	77	0	99	0	77	35	112	35	0	41	76	0	0	0	0	287
02:30 PM	32	83	0	115	0	76	50	126	51	0	41	92	0	0	0	0	333
02:45 PM	30	81	0	111	0	74	37	111	46	0	44	90	0	0	0	0	312
Total	118	282	0	400	0	299	152	451	183	0	169	352	0	0	0	0	1203
03:00 PM	26	95	0	121	0	70	41	111	44	0	34	78	0	0	0	0	310
03:15 PM	25	102	0	127	0	95	37	132	48	0	39	87	0	0	0	0	346
03:30 PM	28	118	0	146	0	181	54	235	50	0	39	89	0	0	0	0	470
03:45 PM	39	115	0	154	0	208	56	264	31	0	34	65	0	0	0	0	483
Total	118	430	0	548	0	554	188	742	173	0	146	319	0	0	0	0	1609
04:00 PM	33	86	0	119	0	142	50	192	54	0	54	108	0	0	0	0	419
04:15 PM	24	91	0	115	0	80	42	122	54	0	36	90	0	0	0	0	327
04:30 PM	38	92	0	130	0	105	41	146	49	0	30	79	0	0	0	0	355
04:45 PM	26	82	0	108	0	85	37	122	54	0	38	92	0	0	0	0	322
Total	121	351	0	472	0	412	170	582	211	0	158	369	0	0	0	0	1423
05:00 PM	27	117	0	144	0	131	35	166	57	0	29	86	0	0	0	0	396
05:15 PM	25	115	0	140	0	129	42	171	41	0	34	75	0	0	0	0	386
05:30 PM	14	126	0	140	0	129	43	172	42	0	35	77	0	0	0	0	389
05:45 PM	16	117	0	133	0	125	37	162	39	0	31	70	0	0	0	0	365
Total	82	475	0	557	0	514	157	671	179	0	129	308	0	0	0	0	1536
Grand Total	524	2420	0	2944	0	2640	818	3458	865	0	679	1544	0	0	0	0	7946
Apprch %	17.8	82.2	0		0	76.3	23.7		56	0	44		0	0	0		
Total %	6.6	30.5	0	37.1	0	33.2	10.3	43.5	10.9	0	8.5	19.4	0	0	0	0	

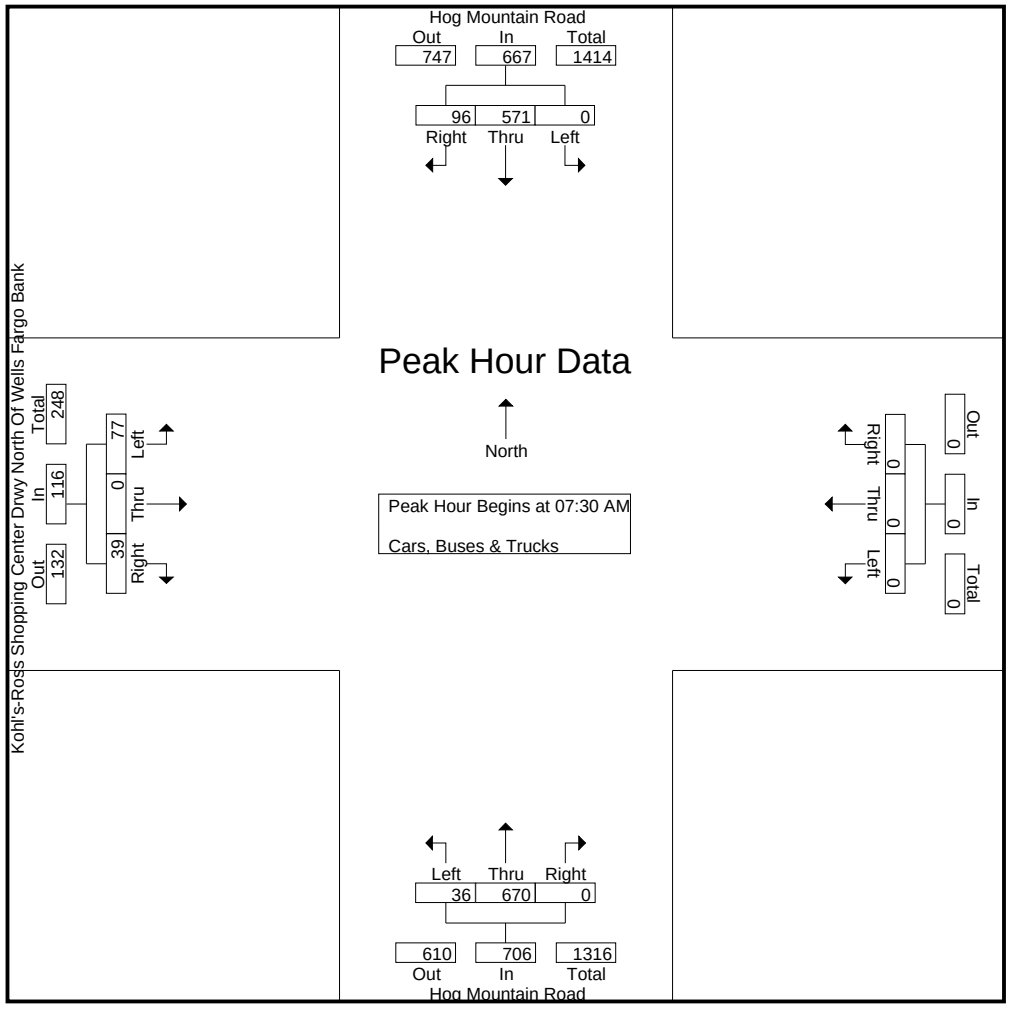
A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	9	88	0	97	0	85	19	104	20	0	6	26	0	0	0	0	227
07:45 AM	**13**	**220**	0	**233**	0	149	20	169	15	0	5	20	0	0	0	0	422
08:00 AM	5	198	0	203	0	161	**30**	191	**28**	0	**18**	**46**	0	0	0	0	**440**
08:15 AM	9	164	0	173	0	**176**	27	**203**	14	0	10	24	0	0	0	0	400
Total Volume	36	670	0	706	0	571	96	667	77	0	39	116	0	0	0	0	1489
% App. Total	5.1	94.9	0		0	85.6	14.4		66.4	0	33.6		0	0	0		
PHF	.692	.761	.000	.758	.000	.811	.800	.821	.688	.000	.542	.630	.000	.000	.000	.000	.846



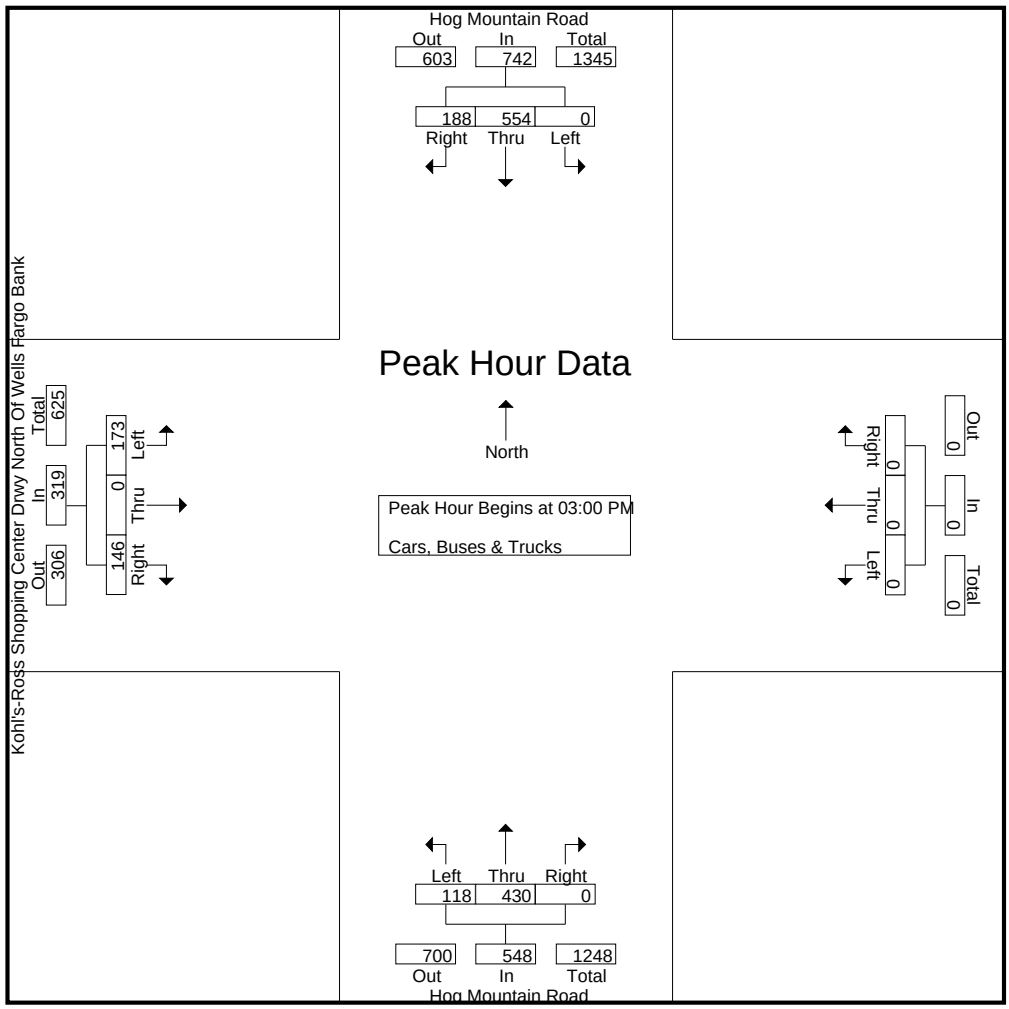
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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025
Page No : 3

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	26	95	0	121	0	70	41	111	44	0	34	78	0	0	0	0	310
03:15 PM	25	102	0	127	0	95	37	132	48	0	**39**	87	0	0	0	0	346
03:30 PM	28	**118**	0	146	0	181	54	235	**50**	0	39	**89**	0	0	0	0	470
03:45 PM	**39**	115	0	**154**	0	**208**	**56**	**264**	31	0	34	65	0	0	0	0	**483**
Total Volume	118	430	0	548	0	554	188	742	173	0	146	319	0	0	0	0	1609
% App. Total	21.5	78.5	0		0	74.7	25.3		54.2	0	45.8		0	0	0		
PHF	.756	.911	.000	.890	.000	.666	.839	.703	.865	.000	.936	.896	.000	.000	.000	.000	.833



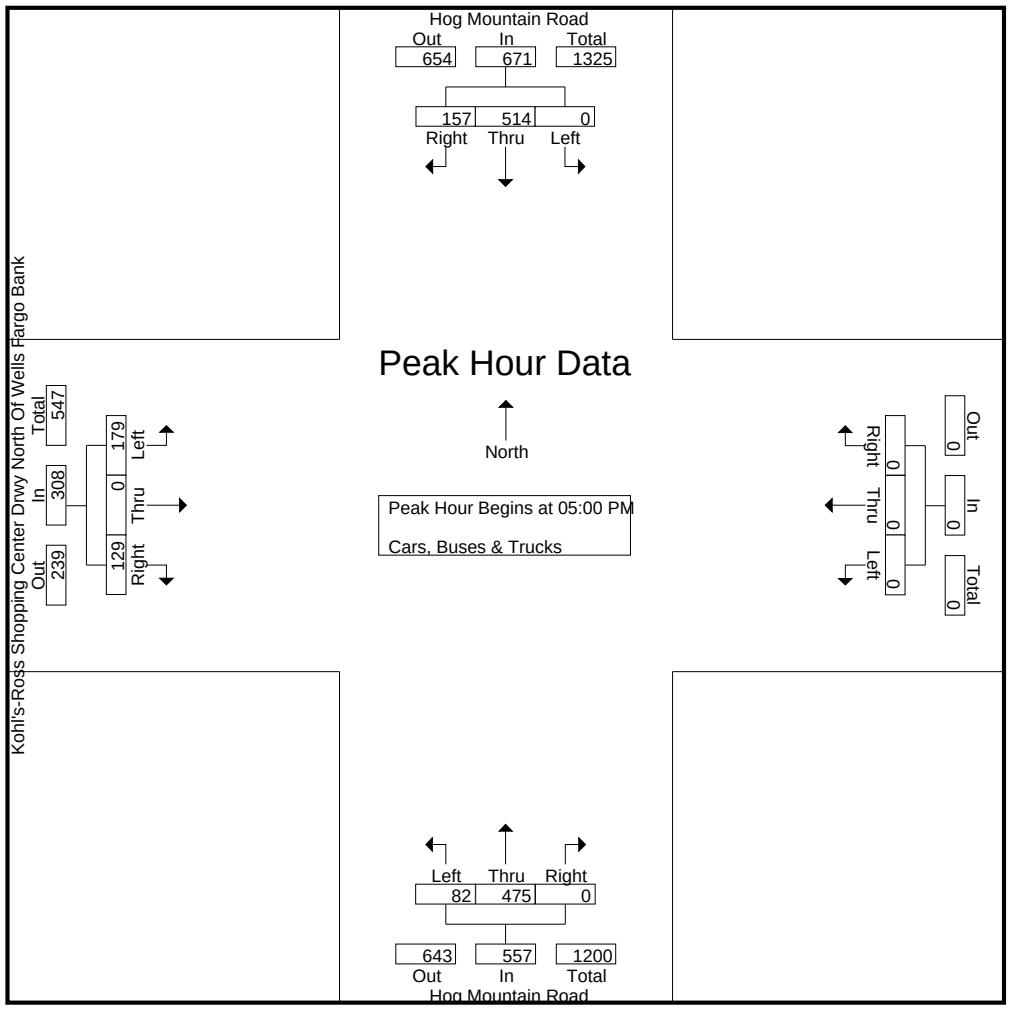
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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

File Name : 20250059
Site Code : 20250059
Start Date : 03-04-2025
Page No : 4

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Kohl's-Ross Shopping Center Drwy North Of Wells Fargo Bank 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 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**27**	117	0	**144**	0	**131**	35	166	**57**	0	29	**86**	0	0	0	0	**396**
05:15 PM	25	115	0	140	0	129	42	171	41	0	34	75	0	0	0	0	386
05:30 PM	14	**126**	0	140	0	129	**43**	**172**	42	0	**35**	77	0	0	0	0	389
05:45 PM	16	117	0	133	0	125	37	162	39	0	31	70	0	0	0	0	365
Total Volume	82	475	0	557	0	514	157	671	179	0	129	308	0	0	0	0	1536
% App. Total	14.7	85.3	0		0	76.6	23.4		58.1	0	41.9		0	0	0		
PHF	.759	.942	.000	.967	.000	.981	.913	.975	.785	.000	.921	.895	.000	.000	.000	.000	.970



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Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 1

Groups Printed- Cars, Buses & Trucks

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	38	8	50	0	20	1	21	9	2	11	22	24	0	4	28	121
07:15 AM	3	67	9	79	0	41	4	45	8	2	20	30	38	0	5	43	197
07:30 AM	0	101	7	108	0	52	2	54	13	2	12	27	40	0	13	53	242
07:45 AM	3	214	20	237	0	129	1	130	7	3	10	20	31	0	17	48	435
Total	10	420	44	474	0	242	8	250	37	9	53	99	133	0	39	172	995
08:00 AM	2	214	10	226	1	146	2	149	3	0	12	15	35	1	21	57	447
08:15 AM	2	158	17	177	1	174	1	176	1	0	14	15	18	0	11	29	397
08:30 AM	4	47	7	58	1	48	1	50	4	0	14	18	28	0	3	31	157
08:45 AM	6	47	10	63	1	64	1	66	7	2	13	22	22	0	0	22	173
Total	14	466	44	524	4	432	5	441	15	2	53	70	103	1	35	139	1174
*** BREAK ***																	
02:00 PM	6	67	18	91	0	81	2	83	2	1	3	6	17	0	1	18	198
02:15 PM	6	84	24	114	0	81	4	85	0	1	12	13	19	0	6	25	237
02:30 PM	7	95	32	134	0	96	5	101	6	2	12	20	17	1	0	18	273
02:45 PM	5	100	22	127	0	87	7	94	2	2	6	10	18	1	6	25	256
Total	24	346	96	466	0	345	18	363	10	6	33	49	71	2	13	86	964
03:00 PM	11	99	29	139	0	81	2	83	0	0	2	2	28	0	4	32	256
03:15 PM	10	113	25	148	0	107	4	111	1	0	7	8	20	1	4	25	292
03:30 PM	7	123	40	170	3	201	1	205	1	0	6	7	29	0	2	31	413
03:45 PM	12	88	46	146	5	223	3	231	1	1	4	6	37	0	2	39	422
Total	40	423	140	603	8	612	10	630	3	1	19	23	114	1	12	127	1383
04:00 PM	12	97	31	140	3	163	5	171	1	1	9	11	20	0	2	22	344
04:15 PM	10	98	37	145	2	96	3	101	2	0	6	8	19	0	1	20	274
04:30 PM	7	100	34	141	2	107	1	110	1	0	6	7	31	1	1	33	291
04:45 PM	13	83	39	135	1	98	2	101	1	0	2	3	22	1	8	31	270
Total	42	378	141	561	8	464	11	483	5	1	23	29	92	2	12	106	1179
05:00 PM	10	125	39	174	2	140	4	146	2	2	8	12	17	0	0	17	349
05:15 PM	14	96	46	156	0	139	10	149	3	0	12	15	20	3	2	25	345
05:30 PM	18	109	41	168	1	142	10	153	3	1	14	18	17	0	4	21	360
05:45 PM	15	98	43	156	0	137	8	145	2	1	11	14	14	2	2	18	333
Total	57	428	169	654	3	558	32	593	10	4	45	59	68	5	8	81	1387
Grand Total	187	2461	634	3282	23	2653	84	2760	80	23	226	329	581	11	119	711	7082
Apprch %	5.7	75	19.3		0.8	96.1	3		24.3	7	68.7		81.7	1.5	16.7		
Total %	2.6	34.8	9	46.3	0.3	37.5	1.2	39	1.1	0.3	3.2	4.6	8.2	0.2	1.7	10	

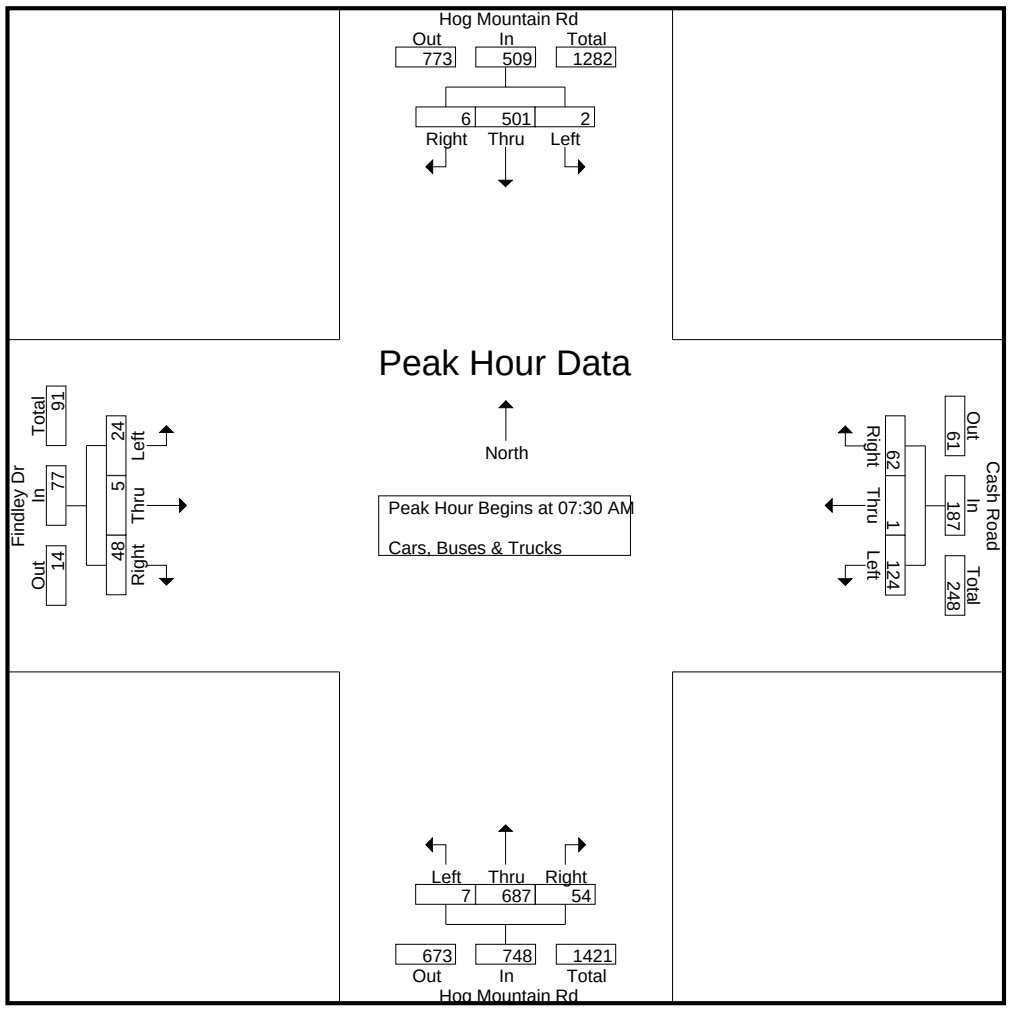
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 2

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	101	7	108	0	52	**2**	54	**13**	2	12	**27**	**40**	0	13	53	242
07:45 AM	**3**	**214**	**20**	**237**	0	129	1	130	7	**3**	10	20	31	0	17	48	435
08:00 AM	2	214	10	226	**1**	146	2	149	3	0	12	15	35	**1**	**21**	**57**	**447**
08:15 AM	2	158	17	177	1	**174**	1	**176**	1	0	**14**	15	18	0	11	29	397
Total Volume	7	687	54	748	2	501	6	509	24	5	48	77	124	1	62	187	1521
% App. Total	0.9	91.8	7.2		0.4	98.4	1.2		31.2	6.5	62.3		66.3	0.5	33.2		
PHF	.583	.803	.675	.789	.500	.720	.750	.723	.462	.417	.857	.713	.775	.250	.738	.820	.851



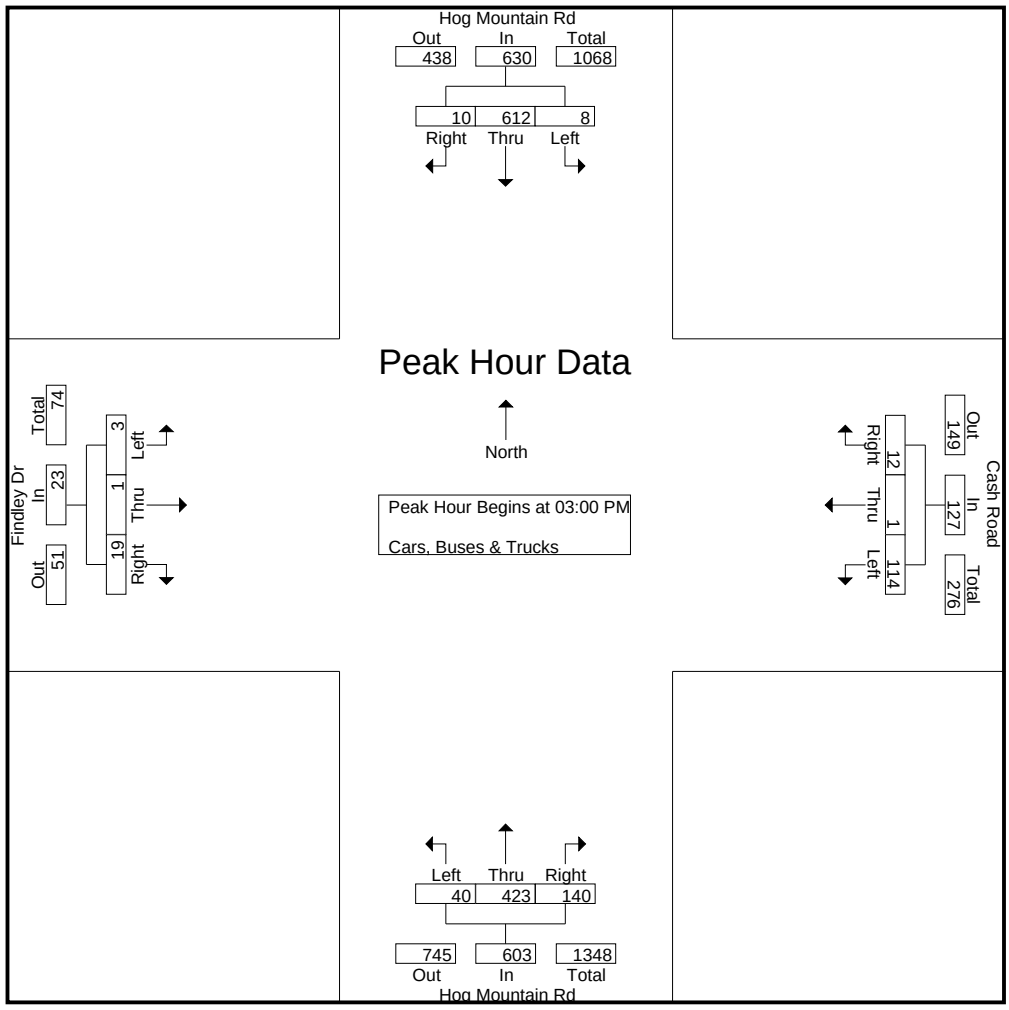
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 3

	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	11	99	29	139	0	81	2	83	0	0	2	2	28	0	**4**	32	256
03:15 PM	10	113	25	148	0	107	**4**	111	**1**	0	**7**	**8**	20	**1**	4	25	292
03:30 PM	7	**123**	40	**170**	3	201	1	205	1	0	6	7	29	0	2	31	413
03:45 PM	**12**	88	**46**	146	**5**	**223**	3	**231**	1	**1**	4	6	**37**	0	2	**39**	**422**
Total Volume	40	423	140	603	8	612	10	630	3	1	19	23	114	1	12	127	1383
% App. Total	6.6	70.1	23.2		1.3	97.1	1.6		13	4.3	82.6		89.8	0.8	9.4		
PHF	.833	.860	.761	.887	.400	.686	.625	.682	.750	.250	.679	.719	.770	.250	.750	.814	.819



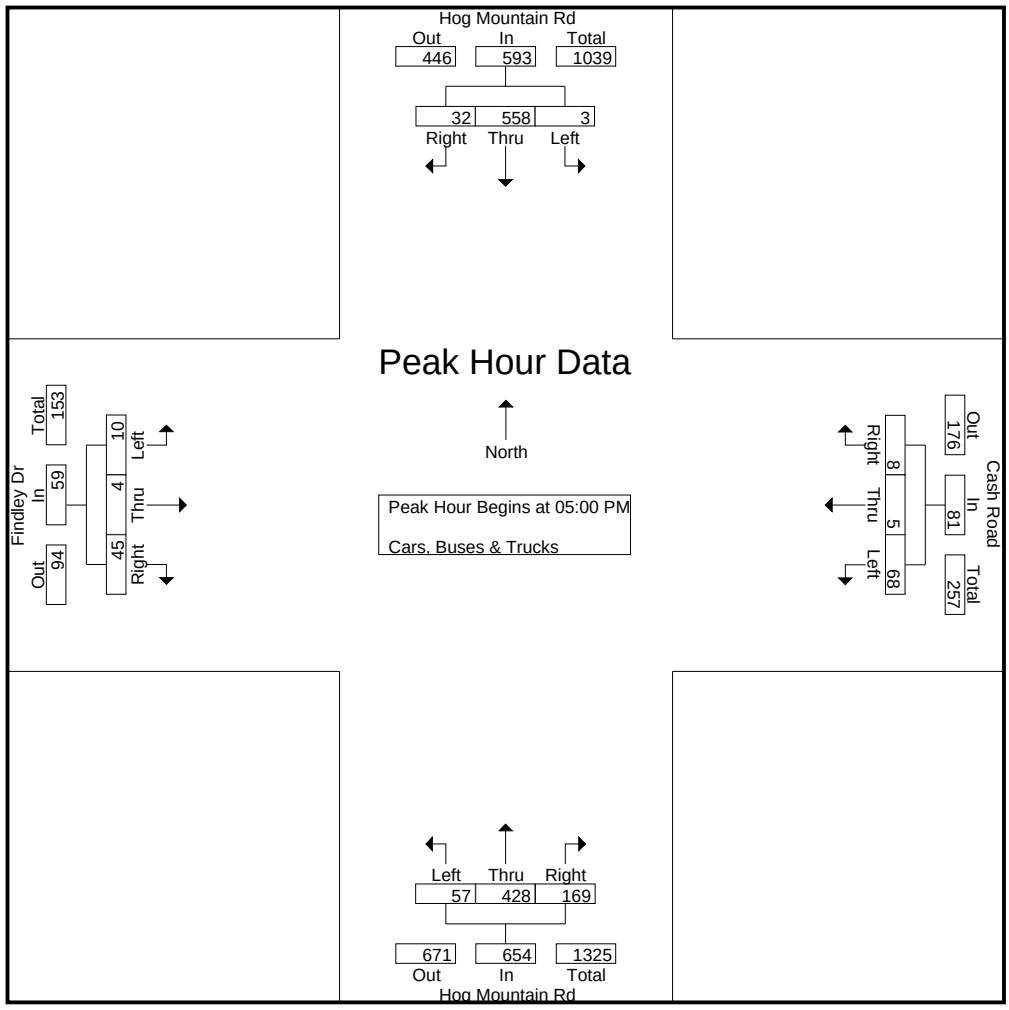
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data
Hog Mountain Rd @ Findley Dr-Cash Road
7-9am | 2-4pm | 4-6pm

File Name : 20250058
Site Code : 20250058
Start Date : 03-04-2025
Page No : 4

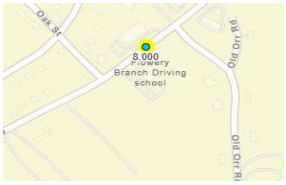
	Hog Mountain Rd Northbound				Hog Mountain Rd Southbound				Findley Dr Eastbound				Cash Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	10	**125**	39	**174**	**2**	140	4	146	2	**2**	8	12	17	0	0	17	349
05:15 PM	14	96	**46**	156	0	139	**10**	149	**3**	0	12	15	**20**	**3**	2	**25**	345
05:30 PM	**18**	109	41	168	1	**142**	10	**153**	3	1	**14**	**18**	17	0	**4**	21	**360**
05:45 PM	15	98	43	156	0	137	8	145	2	1	11	14	14	2	2	18	333
Total Volume	57	428	169	654	3	558	32	593	10	4	45	59	68	5	8	81	1387
% App. Total	8.7	65.4	25.8		0.5	94.1	5.4		16.9	6.8	76.3		84	6.2	9.9		
PHF	.792	.856	.918	.940	.375	.982	.800	.969	.833	.500	.804	.819	.850	.417	.500	.810	.963

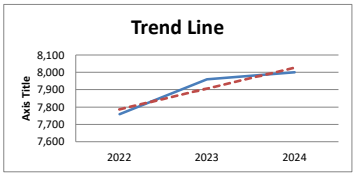


LINEAR REGRESSION OF DAILY TRAFFIC

Location	Growth Rate	R Squared	Station ID	Route	2022	2023	2024
Hog Mountain Rd (S of Spout Springs Rd)	1.5%	0.87	139-0191	00338005	7,760	7,960	8,000
Cash Rd (E of Sunny Ridge Ct)	1.6%	0.82	139-0779	00063400	3,110	3,200	3,210
SR 13 (Falcon Pkwy) (S of Martin Rd)	6.3%	0.80	139-0174	00001300	12,100	13,600	13,700
Spout Springs Rd (E of Hog Mountain Rd)	0.7%	1.00	139-7386	00130000	13,400	13,500	13,600
Phil Niekro Blvd (W of Thurman Tanner Pkwy)	-4.3%	0.69	139-0445	-	10,900	9,930	10,000
Weighted Average	**1.3%**	0.93	Sum of Count Stations =		47,270	48,190	48,510

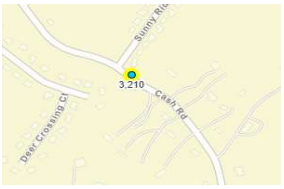
Location	Traffic Counter	RCLINK	2022	2023	2024
Hog Mountain Rd (S of Spout Springs Rd)	139-0191	00338005	7,760	7,960	8,000

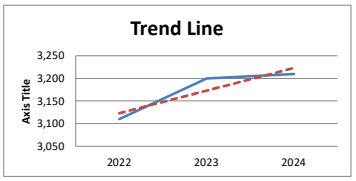




Growth Rate		Intercept	-234,853	Slope	120.00
Trend Line			7,787	7,907	8,027

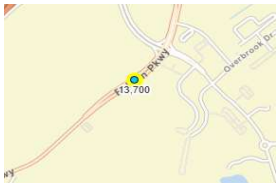
Location	Traffic Counter	RCLINK	2022	2023	2024
Cash Rd (E of Sunny Ridge Ct)	139-0779	00063400	3,110	3,200	3,210

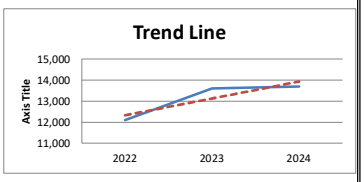




Growth Rate		Intercept	-97,977	Slope	50.00
Trend Line			3,123	3,173	3,223

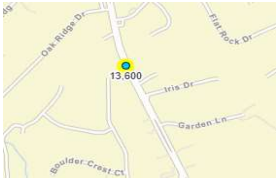
Location	Traffic Counter	RCLINK	2022	2023	2024
SR 13 (Falcon Pkwy) (S of Martin Rd)	139-0174	00001300	12,100	13,600	13,700

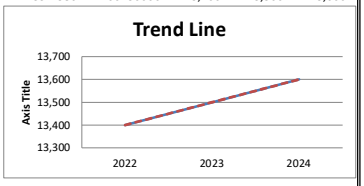




Growth Rate		Intercept	########	Slope	800.00
Trend Line			12,333	13,133	13,933

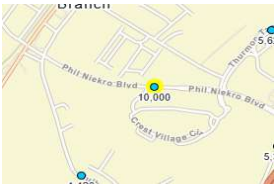
Location	Traffic Counter	RCLINK	2022	2023	2024
Spout Springs Rd (E of Hog Mountain Rd)	139-7386	00130000	13,400	13,500	13,600

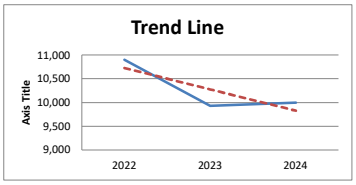




Growth Rate		Intercept	-188,800	Slope	100.00
Trend Line			13,400	13,500	13,600

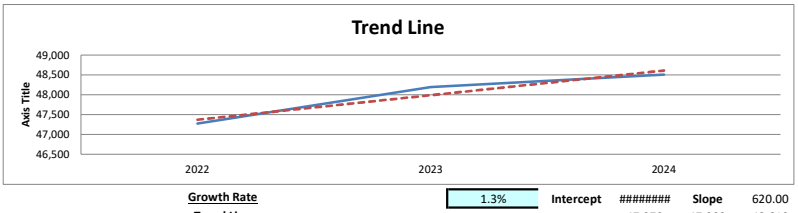
Location	Traffic Counter	RCLINK	2022	2023	2024
Phil Niekro Blvd (W of Thurman Tanner Pkwy)	139-0445	-	10,900	9,930	10,000





Growth Rate		Intercept	920,627	Slope	-450.00
Trend Line			10,727	10,277	9,827

Weighted Average	2022	2023	2024
Sum of Count Stations	47,270	48,190	48,510



Growth Rate		Intercept	########	Slope	620.00
Trend Line			47,370	47,990	48,610

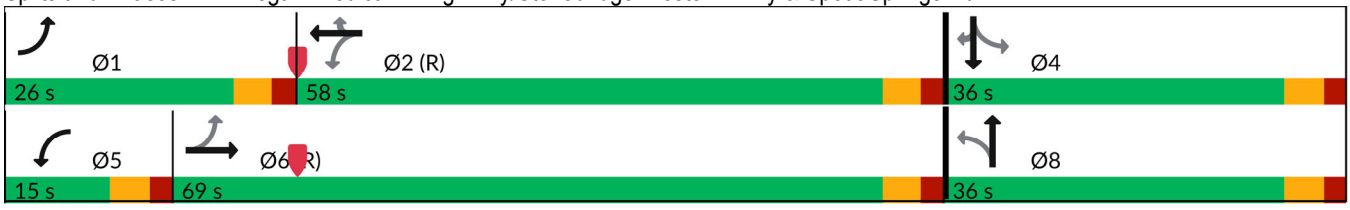
EXISTING INTERSECTION ANALYSIS

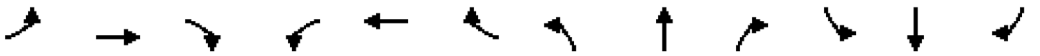
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	209	470	36	970	92	67	18	59	7	182
Future Volume (vph)	209	470	36	970	92	67	18	59	7	182
Lane Group Flow (vph)	249	623	43	1155	110	80	34	0	78	217
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	26.0	69.0	15.0	58.0	58.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	21.7%	57.5%	12.5%	48.3%	48.3%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.54	0.25	0.08	0.53	0.11	0.58	0.17		0.55	0.60
Control Delay (s/veh)	8.9	6.6	5.4	24.3	8.0	66.5	34.5		64.4	13.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	8.9	6.6	5.4	24.6	8.0	66.5	34.5		64.4	13.5
Queue Length 50th (ft)	36	79	7	396	26	61	15		59	0
Queue Length 95th (ft)	69	116	m20	460	65	102	42		100	55
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	511	2529	619	2190	1026	334	456		342	564
Starvation Cap Reductn	0	0	0	388	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.49	0.25	0.07	0.64	0.11	0.24	0.07		0.23	0.38

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	470	53	36	970	92	67	18	11	59	7	182
Future Volume (veh/h)	209	470	53	36	970	92	67	18	11	59	7	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	249	560	63	43	1155	110	80	21	13	70	8	217
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	2167	243	600	2261	1009	169	171	106	236	24	251
Arrive On Green	0.07	0.67	0.67	0.03	0.64	0.64	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3221	361	1781	3554	1585	1156	1081	669	1134	152	1585
Grp Volume(v), veh/h	249	308	315	43	1155	110	80	0	34	78	0	217
Grp Sat Flow(s),veh/h/ln	1781	1777	1805	1781	1777	1585	1156	0	1750	1286	0	1585
Q Serve(g_s), s	5.6	8.2	8.3	1.0	21.0	3.3	8.1	0.0	2.0	5.7	0.0	16.0
Cycle Q Clear(g_c), s	5.6	8.2	8.3	1.0	21.0	3.3	15.8	0.0	2.0	7.7	0.0	16.0
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.38	0.90		1.00
Lane Grp Cap(c), veh/h	383	1195	1214	600	2261	1009	169	0	277	260	0	251
V/C Ratio(X)	0.65	0.26	0.26	0.07	0.51	0.11	0.47	0.00	0.12	0.30	0.00	0.87
Avail Cap(c_a), veh/h	566	1195	1214	685	2261	1009	280	0	445	396	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	7.8	7.8	6.8	11.8	8.5	52.9	0.0	43.4	46.5	0.0	49.3
Incr Delay (d2), s/veh	1.9	0.5	0.5	0.0	0.7	0.2	2.1	0.0	0.2	0.6	0.0	10.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	2.9	3.0	0.3	7.5	1.1	2.5	0.0	0.9	2.2	0.0	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	12.3	8.3	8.3	6.9	12.4	8.7	55.0	0.0	43.6	47.1	0.0	60.2
LnGrp LOS	B	A	A	A	B	A	D		D	D		E
Approach Vol, veh/h		872			1308			114			295	
Approach Delay, s/veh		9.4			11.9			51.6			56.7	
Approach LOS		A			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	81.9		24.5	9.3	86.2		24.5				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	20.5	52.5		30.5	9.5	63.5		30.5				
Max Q Clear Time (g_c+I1), s	7.6	23.0		18.0	3.0	10.3		17.8				
Green Ext Time (p_c), s	0.5	17.2		0.9	0.0	8.4		0.3				

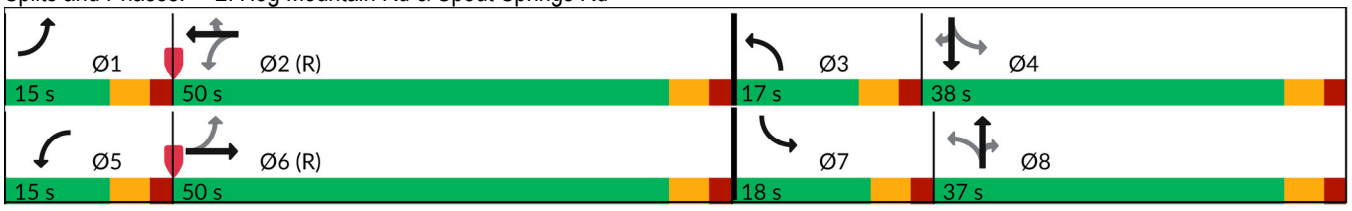
Intersection Summary												
HCM 7th Control Delay, s/veh			17.9									
HCM 7th LOS			B									

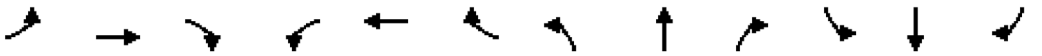
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	100	412	92	838	308	202	275	71	179	155	199
Future Volume (vph)	100	412	92	838	308	202	275	71	179	155	199
Lane Group Flow (vph)	108	509	99	901	331	217	296	76	192	167	214
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	50.0	15.0	50.0	50.0	17.0	37.0	37.0	18.0	38.0	38.0
Total Split (%)	12.5%	41.7%	12.5%	41.7%	41.7%	14.2%	30.8%	30.8%	15.0%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.36	0.33	0.21	0.58	0.40	0.58	0.79	0.18	0.70	0.43	0.43
Control Delay (s/veh)	24.6	26.1	15.2	28.3	8.4	35.2	60.2	2.2	41.6	43.7	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.6	26.1	15.2	28.3	8.4	35.2	60.2	2.2	41.6	43.7	7.4
Queue Length 50th (ft)	36	113	35	277	39	125	223	0	109	115	0
Queue Length 95th (ft)	114	238	72	387	122	174	302	10	155	170	59
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	311	1552	481	1561	835	377	489	506	281	504	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.33	0.21	0.58	0.40	0.58	0.61	0.15	0.68	0.33	0.37

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	412	61	92	838	308	202	275	71	179	155	199
Future Volume (veh/h)	100	412	61	92	838	308	202	275	71	179	155	199
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	108	443	0	99	901	0	217	296	76	192	167	214
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	334	1737		497	1728		340	340	288	271	353	299
Arrive On Green	0.02	0.16	0.00	0.04	0.49	0.00	0.10	0.18	0.18	0.10	0.19	0.19
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	108	443	0	99	901	0	217	296	76	192	167	214
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.6	13.1	0.0	3.3	20.9	0.0	11.5	18.5	4.9	10.4	9.5	15.2
Cycle Q Clear(g_c), s	3.6	13.1	0.0	3.3	20.9	0.0	11.5	18.5	4.9	10.4	9.5	15.2
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	334	1737		497	1728		340	340	288	271	353	299
V/C Ratio(X)	0.32	0.26		0.20	0.52		0.64	0.87	0.26	0.71	0.47	0.72
Avail Cap(c_a), veh/h	394	1737		561	1728		340	491	416	274	507	429
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.90	0.90	0.90
Uniform Delay (d), s/veh	16.7	31.2	0.0	14.8	21.2	0.0	36.4	47.7	42.2	36.2	43.4	45.7
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.2	1.1	0.0	3.9	11.3	0.5	7.3	0.9	2.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.2	0.0	1.3	8.5	0.0	5.4	9.4	1.9	4.9	4.4	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.3	31.6	0.0	15.0	22.3	0.0	40.4	59.1	42.7	43.4	44.2	48.5
LnGrp LOS	B	C		B	C		D	E	D	D	D	D
Approach Vol, veh/h		551			1000			589			573	
Approach Delay, s/veh		28.8			21.6			50.1			45.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	63.8	17.0	28.1	10.7	64.2	17.9	27.3
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	44.5	11.5	32.5	9.5	44.5	12.5	31.5
Max Q Clear Time (g_c+I1), s	5.6	22.9	13.5	17.2	5.3	15.1	12.4	20.5
Green Ext Time (p_c), s	0.1	10.4	0.0	1.3	0.1	5.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	34.3
HCM 7th LOS	C

Notes

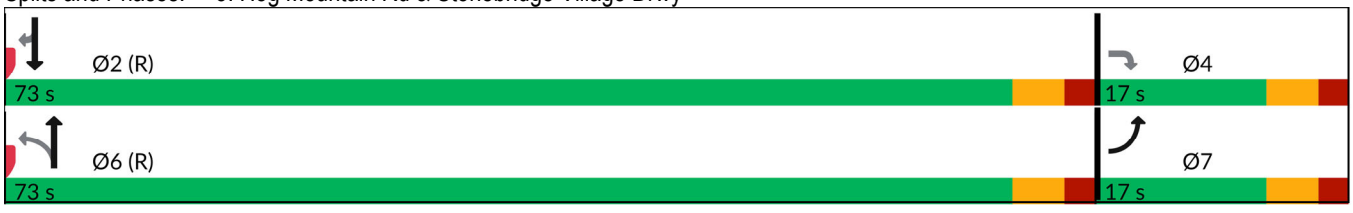
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

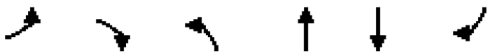
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	78	39	36	677	577	97
Future Volume (vph)	78	39	36	677	577	97
Lane Group Flow (vph)	92	46	42	796	679	114
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	17.0	17.0	73.0	73.0	73.0	73.0
Total Split (%)	18.9%	18.9%	81.1%	81.1%	81.1%	81.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.49	0.23	0.08	0.53	0.45	0.09
Control Delay (s/veh)	46.6	14.3	3.3	5.6	4.8	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.6	14.3	3.3	5.6	4.8	0.8
Queue Length 50th (ft)	51	0	5	147	113	0
Queue Length 95th (ft)	92	28	13	216	167	9
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	226	242	560	1509	1509	1304
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.19	0.08	0.53	0.45	0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	39	36	677	577	97
Future Volume (veh/h)	78	39	36	677	577	97
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	92	46	42	796	679	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	128	114	609	1507	1507	
Arrive On Green	0.07	0.07	0.81	0.81	0.81	0.00
Sat Flow, veh/h	1781	1585	761	1870	1870	1585
Grp Volume(v), veh/h	92	46	42	796	679	0
Grp Sat Flow(s),veh/h/ln	1781	1585	761	1870	1870	1585
Q Serve(g_s), s	4.5	2.5	1.6	13.0	10.0	0.0
Cycle Q Clear(g_c), s	4.5	2.5	11.6	13.0	10.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	128	114	609	1507	1507	
V/C Ratio(X)	0.72	0.40	0.07	0.53	0.45	
Avail Cap(c_a), veh/h	228	203	609	1507	1507	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.82	0.82	1.00	0.00
Uniform Delay (d), s/veh	40.9	39.9	4.4	3.0	2.7	0.0
Incr Delay (d2), s/veh	7.3	2.3	0.2	1.1	1.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	0.2	2.2	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.1	42.2	4.6	4.0	3.6	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	138			838	679	
Approach Delay, s/veh	46.2			4.1	3.6	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		78.0		12.0		78.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		11.5		67.5
Max Q Clear Time (g_c+I1), s		12.0		6.5		15.0
Green Ext Time (p_c), s		11.1		0.1		15.2

Intersection Summary	
HCM 7th Control Delay, s/veh	7.4
HCM 7th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	90	222	889	604
Demand Flow Rate, veh/h	92	226	906	616
Vehicles Circulating, veh/h	759	869	37	159
Vehicles Exiting, veh/h	16	74	814	861
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.5	9.4	11.9	9.2
Approach LOS	A	A	B	A

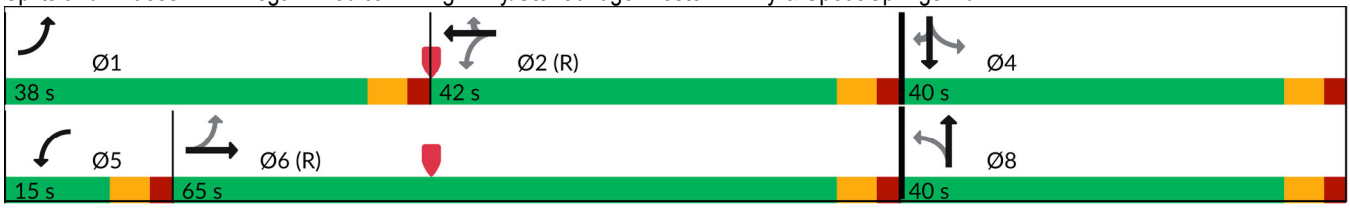
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	92	151	75	906	616
Cap Entry Lane, veh/h	636	569	573	1329	1173
Entry HV Adj Factor	0.977	0.980	0.980	0.981	0.981
Flow Entry, veh/h	90	148	74	889	604
Cap Entry, veh/h	622	557	562	1303	1151
V/C Ratio	0.145	0.265	0.132	0.682	0.525
Control Delay, s/veh	7.5	10.1	8.0	11.9	9.2
LOS	A	B	A	B	A
95th %tile Queue, veh	1	1	0	6	3

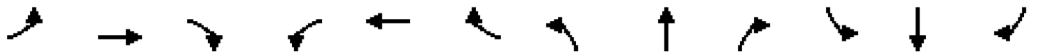
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	372	963	39	734	145	132	34	160	49	299
Future Volume (vph)	372	963	39	734	145	132	34	160	49	299
Lane Group Flow (vph)	396	1175	41	781	154	140	77	0	222	318
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	65.0	15.0	42.0	42.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	31.7%	54.2%	12.5%	35.0%	35.0%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.69	0.55	0.14	0.50	0.20	0.81	0.19		0.77	0.59
Control Delay (s/veh)	16.7	16.5	8.3	28.5	10.7	76.8	19.5		60.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	16.7	16.5	8.3	28.5	10.7	76.8	19.5		60.9	13.6
Queue Length 50th (ft)	111	276	7	248	17	105	23		165	42
Queue Length 95th (ft)	236	419	m17	375	75	172	59		235	123
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	666	2134	338	1574	777	231	521		388	635
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.59	0.55	0.12	0.50	0.20	0.61	0.15		0.57	0.50

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	372	963	142	39	734	145	132	34	39	160	49	299
Future Volume (veh/h)	372	963	142	39	734	145	132	34	39	160	49	299
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	396	1024	151	41	781	154	140	36	41	170	52	318
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	1690	249	268	1538	686	177	229	261	329	84	456
Arrive On Green	0.14	0.54	0.54	0.03	0.43	0.43	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	3107	458	1781	3554	1585	1012	798	909	960	294	1585
Grp Volume(v), veh/h	396	585	590	41	781	154	140	0	77	222	0	318
Grp Sat Flow(s),veh/h/ln	1781	1777	1788	1781	1777	1585	1012	0	1707	1253	0	1585
Q Serve(g_s), s	14.0	26.9	26.9	1.5	19.2	7.3	13.9	0.0	4.0	16.6	0.0	21.5
Cycle Q Clear(g_c), s	14.0	26.9	26.9	1.5	19.2	7.3	34.5	0.0	4.0	20.6	0.0	21.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.53	0.77		1.00
Lane Grp Cap(c), veh/h	477	967	973	268	1538	686	177	0	491	413	0	456
V/C Ratio(X)	0.83	0.61	0.61	0.15	0.51	0.22	0.79	0.00	0.16	0.54	0.00	0.70
Avail Cap(c_a), veh/h	706	967	973	354	1538	686	177	0	491	413	0	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.2	18.6	18.6	18.5	24.7	21.4	54.2	0.0	31.9	39.6	0.0	38.1
Incr Delay (d2), s/veh	5.4	2.8	2.8	0.2	1.1	0.7	21.2	0.0	0.1	1.4	0.0	4.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	10.9	11.0	0.6	7.9	2.8	5.3	0.0	1.7	6.0	0.0	9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.6	21.4	21.4	18.8	25.9	22.1	75.4	0.0	32.0	41.0	0.0	42.7
LnGrp LOS	C	C	C	B	C	C	E		C	D		D
Approach Vol, veh/h		1571			976			217			540	
Approach Delay, s/veh		22.0			25.0			60.0			42.0	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.6	57.4		40.0	9.2	70.8		40.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	36.5		34.5	9.5	59.5		34.5				
Max Q Clear Time (g_c+I1), s	16.0	21.2		23.5	3.5	28.9		36.5				
Green Ext Time (p_c), s	1.1	8.1		2.0	0.0	16.4		0.0				

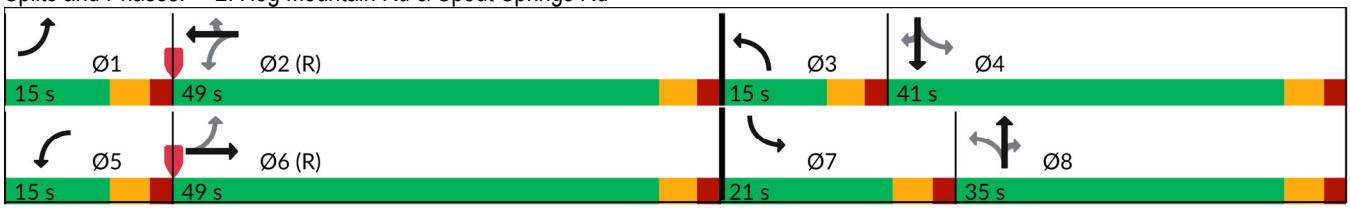
Intersection Summary												
HCM 7th Control Delay, s/veh			28.6									
HCM 7th LOS			C									

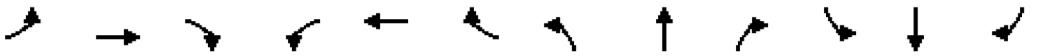
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	148	658	79	400	170	142	210	55	223	262	125
Future Volume (vph)	148	658	79	400	170	142	210	55	223	262	125
Lane Group Flow (vph)	157	809	84	426	181	151	223	59	237	279	133
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	49.0	15.0	49.0	49.0	15.0	35.0	35.0	21.0	41.0	41.0
Total Split (%)	12.5%	40.8%	12.5%	40.8%	40.8%	12.5%	29.2%	29.2%	17.5%	34.2%	34.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.29	0.48	0.24	0.28	0.23	0.58	0.73	0.15	0.74	0.72	0.31
Control Delay (s/veh)	24.2	35.2	15.0	23.7	4.4	38.6	61.5	0.8	44.0	54.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	24.2	35.2	15.0	23.7	4.4	38.6	61.5	0.8	44.0	54.2	7.7
Queue Length 50th (ft)	72	254	28	112	0	86	169	0	142	205	0
Queue Length 95th (ft)	166	413	60	171	48	128	241	0	197	281	49
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	539	1672	371	1544	792	260	457	519	330	551	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.48	0.23	0.28	0.23	0.58	0.49	0.11	0.72	0.51	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	658	102	79	400	170	142	210	55	223	262	125
Future Volume (veh/h)	148	658	102	79	400	170	142	210	55	223	262	125
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	157	700	0	84	426	0	151	223	59	237	279	133
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	569	1810		379	1737		247	265	224	313	353	300
Arrive On Green	0.02	0.17	0.00	0.04	0.49	0.00	0.08	0.14	0.14	0.13	0.19	0.19
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	157	700	0	84	426	0	151	223	59	237	279	133
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	5.1	21.0	0.0	2.8	8.4	0.0	8.7	13.9	4.0	13.2	17.1	8.9
Cycle Q Clear(g_c), s	5.1	21.0	0.0	2.8	8.4	0.0	8.7	13.9	4.0	13.2	17.1	8.9
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	569	1810		379	1737		247	265	224	313	353	300
V/C Ratio(X)	0.28	0.39		0.22	0.25		0.61	0.84	0.26	0.76	0.79	0.44
Avail Cap(c_a), veh/h	604	1810		450	1737		247	460	390	318	553	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	14.3	33.2	0.0	15.7	17.8	0.0	40.4	50.2	45.9	36.7	46.4	43.1
Incr Delay (d2), s/veh	0.2	0.5	0.0	0.3	0.3	0.0	4.4	7.1	0.6	8.6	3.5	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	10.1	0.0	1.1	3.3	0.0	4.0	6.9	1.6	6.3	8.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.5	33.7	0.0	15.9	18.2	0.0	44.9	57.3	46.5	45.3	49.9	44.0
LnGrp LOS	B	C		B	B		D	E	D	D	D	D
Approach Vol, veh/h		857			510			433			649	
Approach Delay, s/veh		30.2			17.8			51.5			47.0	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	64.2	15.0	28.2	10.2	66.6	20.7	22.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	9.5	35.5	9.5	43.5	15.5	29.5
Max Q Clear Time (g_c+I1), s	7.1	10.4	10.7	19.1	4.8	23.0	15.2	15.9
Green Ext Time (p_c), s	0.1	5.3	0.0	1.7	0.1	7.7	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	35.8
HCM 7th LOS	D

Notes

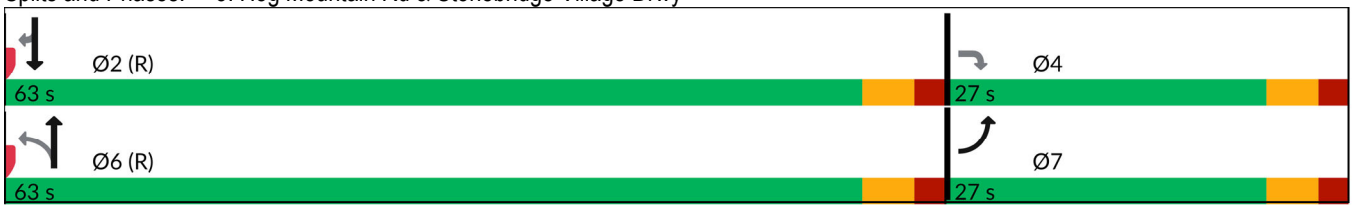
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

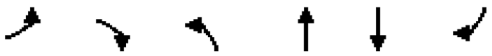
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	175	147	119	434	560	190
Future Volume (vph)	175	147	119	434	560	190
Lane Group Flow (vph)	211	177	143	523	675	229
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	27.0	27.0	63.0	63.0	63.0	63.0
Total Split (%)	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.68	0.42	0.32	0.40	0.52	0.19
Control Delay (s/veh)	45.2	7.9	8.6	7.3	8.8	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.2	7.9	8.6	7.3	8.8	1.3
Queue Length 50th (ft)	115	0	27	107	156	0
Queue Length 95th (ft)	159	39	64	179	254	18
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	422	512	442	1307	1307	1179
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.35	0.32	0.40	0.52	0.19

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	175	147	119	434	560	190
Future Volume (veh/h)	175	147	119	434	560	190
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	211	177	143	523	675	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	261	233	522	1367	1367	
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.00
Sat Flow, veh/h	1781	1585	764	1870	1870	1585
Grp Volume(v), veh/h	211	177	143	523	675	0
Grp Sat Flow(s),veh/h/ln	1781	1585	764	1870	1870	1585
Q Serve(g_s), s	10.3	9.7	8.7	9.4	13.7	0.0
Cycle Q Clear(g_c), s	10.3	9.7	22.4	9.4	13.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	261	233	522	1367	1367	
V/C Ratio(X)	0.81	0.76	0.27	0.38	0.49	
Avail Cap(c_a), veh/h	426	379	522	1367	1367	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.89	0.89	1.00	0.00
Uniform Delay (d), s/veh	37.2	36.9	9.8	4.5	5.1	0.0
Incr Delay (d2), s/veh	5.8	5.1	1.2	0.7	1.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.0	1.4	2.6	3.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.0	42.0	11.0	5.2	6.4	0.0
LnGrp LOS	D	D	B	A	A	
Approach Vol, veh/h	388			666	675	
Approach Delay, s/veh	42.5			6.5	6.4	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.3		18.7		71.3
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		57.5		21.5		57.5
Max Q Clear Time (g_c+I1), s		15.7		12.3		24.4
Green Ext Time (p_c), s		10.3		0.9		9.1

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	28	156	742	776
Demand Flow Rate, veh/h	28	159	756	791
Vehicles Circulating, veh/h	922	585	15	194
Vehicles Exiting, veh/h	63	186	935	535
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	6.7	8.8	13.9
Approach LOS	A	A	A	B

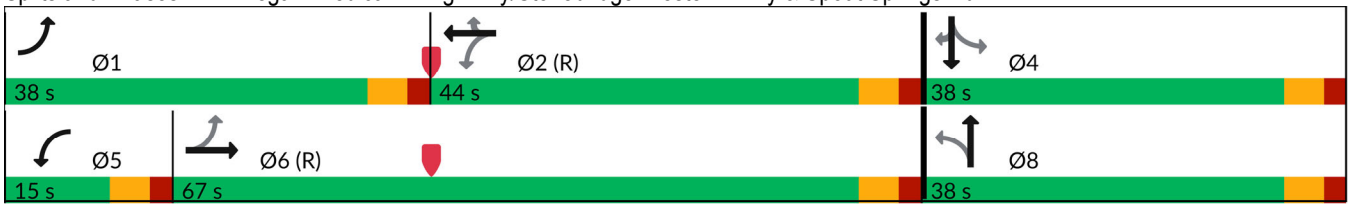
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	28	144	15	756	791
Cap Entry Lane, veh/h	539	760	800	1359	1132
Entry HV Adj Factor	0.999	0.979	0.980	0.981	0.981
Flow Entry, veh/h	28	141	15	742	776
Cap Entry, veh/h	538	744	784	1333	1111
V/C Ratio	0.052	0.190	0.019	0.556	0.699
Control Delay, s/veh	7.3	6.9	4.8	8.8	13.9
LOS	A	A	A	A	B
95th %tile Queue, veh	0	1	0	4	6

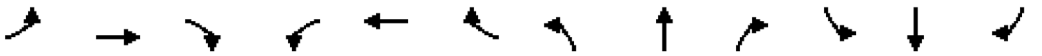
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	383	1029	47	687	128	148	34	140	38	285
Future Volume (vph)	383	1029	47	687	128	148	34	140	38	285
Lane Group Flow (vph)	395	1217	48	708	132	153	72	0	183	294
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	67.0	15.0	44.0	44.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	31.7%	55.8%	12.5%	36.7%	36.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.64	0.55	0.16	0.41	0.16	0.88	0.20		0.71	0.56
Control Delay (s/veh)	12.5	15.2	6.9	24.9	10.7	88.6	21.5		59.4	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	12.5	15.2	6.9	24.9	10.7	88.6	21.5		59.4	9.6
Queue Length 50th (ft)	101	273	5	220	22	118	23		136	10
Queue Length 95th (ft)	193	425	m17	332	72	185	58		199	81
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	716	2211	339	1709	830	246	492		365	631
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.55	0.55	0.14	0.41	0.16	0.62	0.15		0.50	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	383	1029	151	47	687	128	148	34	36	140	38	285
Future Volume (veh/h)	383	1029	151	47	687	128	148	34	36	140	38	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	395	1061	156	48	708	132	153	35	37	144	39	294
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	513	1736	255	270	1615	720	194	225	238	320	74	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3109	456	1781	3554	1585	1047	832	880	982	275	1585
Grp Volume(v), veh/h	395	606	611	48	708	132	153	0	72	183	0	294
Grp Sat Flow(s),veh/h/ln	1781	1777	1788	1781	1777	1585	1047	0	1712	1257	0	1585
Q Serve(g_s), s	13.4	27.4	27.5	1.7	16.3	5.9	15.3	0.0	3.8	13.3	0.0	19.9
Cycle Q Clear(g_c), s	13.4	27.4	27.5	1.7	16.3	5.9	32.5	0.0	3.8	17.2	0.0	19.9
Prop In Lane	1.00		0.26	1.00		1.00	1.00		0.51	0.79		1.00
Lane Grp Cap(c), veh/h	513	992	999	270	1615	720	194	0	464	394	0	429
V/C Ratio(X)	0.77	0.61	0.61	0.18	0.44	0.18	0.79	0.00	0.16	0.46	0.00	0.68
Avail Cap(c_a), veh/h	751	992	999	352	1615	720	194	0	464	394	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.3	17.8	17.8	17.2	22.3	19.5	53.3	0.0	33.3	39.7	0.0	39.2
Incr Delay (d2), s/veh	2.9	2.8	2.8	0.3	0.8	0.5	19.4	0.0	0.2	0.9	0.0	4.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	11.0	11.1	0.7	6.7	2.2	5.7	0.0	1.6	4.9	0.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	20.5	20.6	17.5	23.1	20.0	72.7	0.0	33.5	40.6	0.0	43.6
LnGrp LOS	B	C	C	B	C	B	E		C	D		D
Approach Vol, veh/h		1612			888			225			477	
Approach Delay, s/veh		20.0			22.3			60.2			42.5	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.0	60.0		38.0	9.5	72.5		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	38.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.4	18.3		21.9	3.7	29.5		34.5				
Green Ext Time (p_c), s	1.1	8.7		1.7	0.0	17.6		0.0				

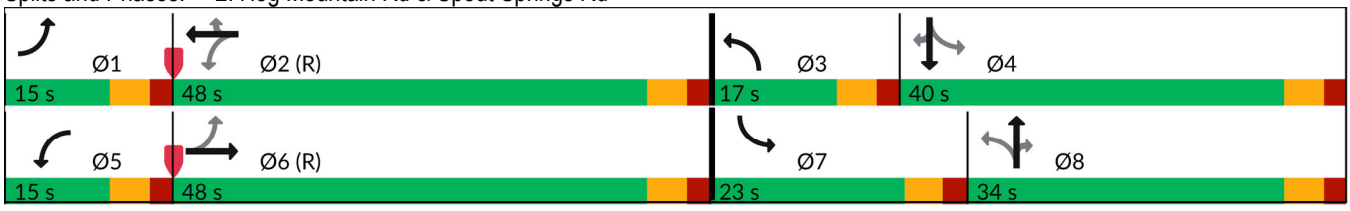
Intersection Summary												
HCM 7th Control Delay, s/veh			26.8									
HCM 7th LOS			C									

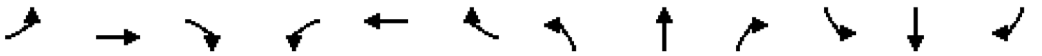
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	157	745	83	467	179	162	185	64	280	333	123
Future Volume (vph)	157	745	83	467	179	162	185	64	280	333	123
Lane Group Flow (vph)	159	872	84	472	181	164	187	65	283	336	124
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	48.0	15.0	48.0	48.0	17.0	34.0	34.0	23.0	40.0	40.0
Total Split (%)	12.5%	40.0%	12.5%	40.0%	40.0%	14.2%	28.3%	28.3%	19.2%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.33	0.55	0.28	0.32	0.24	0.64	0.57	0.16	0.71	0.81	0.28
Control Delay (s/veh)	28.5	39.1	17.4	25.9	4.6	38.1	51.6	0.8	38.8	59.0	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	39.1	17.4	25.9	4.6	38.1	51.6	0.8	38.8	59.0	7.5
Queue Length 50th (ft)	78	293	30	133	0	89	137	0	167	252	1
Queue Length 95th (ft)	0	0	65	192	49	129	198	0	222	334	47
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	481	1581	322	1465	761	263	442	507	403	535	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.55	0.26	0.32	0.24	0.62	0.42	0.13	0.70	0.63	0.23

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	745	118	83	467	179	162	185	64	280	333	123
Future Volume (veh/h)	157	745	118	83	467	179	162	185	64	280	333	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	159	753	0	84	472	0	164	187	65	283	336	124
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	516	1703		335	1619		254	284	241	385	383	325
Arrive On Green	0.02	0.16	0.00	0.04	0.46	0.00	0.09	0.15	0.15	0.15	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	159	753	0	84	472	0	164	187	65	283	336	124
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	5.6	23.0	0.0	3.0	10.0	0.0	9.2	11.3	4.4	15.5	20.9	8.1
Cycle Q Clear(g_c), s	5.6	23.0	0.0	3.0	10.0	0.0	9.2	11.3	4.4	15.5	20.9	8.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	516	1703		335	1619		254	284	241	385	383	325
V/C Ratio(X)	0.31	0.44		0.25	0.29		0.64	0.66	0.27	0.74	0.88	0.38
Avail Cap(c_a), veh/h	544	1703		405	1619		259	444	376	385	538	456
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	16.5	36.0	0.0	18.0	20.5	0.0	38.7	47.9	45.0	34.5	46.2	41.1
Incr Delay (d2), s/veh	0.3	0.7	0.0	0.4	0.5	0.0	5.3	2.6	0.6	6.6	10.6	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	11.0	0.0	1.2	4.1	0.0	4.3	5.3	1.7	7.2	10.5	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.7	36.7	0.0	18.4	21.0	0.0	44.0	50.5	45.6	41.1	56.8	41.8
LnGrp LOS	B	D		B	C		D	D	D	D	E	D
Approach Vol, veh/h		912			556			416			743	
Approach Delay, s/veh		33.2			20.6			47.2			48.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	60.2	16.7	30.1	10.2	63.0	23.0	23.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	42.5	11.5	34.5	9.5	42.5	17.5	28.5
Max Q Clear Time (g_c+I1), s	7.6	12.0	11.2	22.9	5.0	25.0	17.5	13.3
Green Ext Time (p_c), s	0.1	5.8	0.0	1.7	0.1	7.6	0.0	0.9

Intersection Summary	
HCM 7th Control Delay, s/veh	37.0
HCM 7th LOS	D

Notes

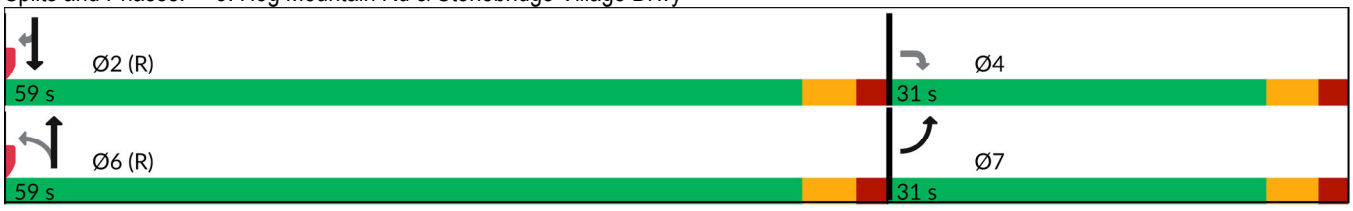
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

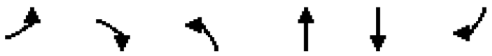
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	130	83	480	519	159
Future Volume (vph)	181	130	83	480	519	159
Lane Group Flow (vph)	187	134	86	495	535	164
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	31.0	31.0	59.0	59.0	59.0	59.0
Total Split (%)	34.4%	34.4%	65.6%	65.6%	65.6%	65.6%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.64	0.36	0.15	0.37	0.40	0.14
Control Delay (s/veh)	44.9	8.5	5.8	6.6	6.9	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.9	8.5	5.8	6.6	6.9	1.2
Queue Length 50th (ft)	102	0	14	95	105	0
Queue Length 95th (ft)	160	45	37	179	200	20
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	501	544	566	1329	1329	1176
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.25	0.15	0.37	0.40	0.14

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	181	130	83	480	519	159
Future Volume (veh/h)	181	130	83	480	519	159
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	134	86	495	535	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	238	212	638	1392	1392	
Arrive On Green	0.13	0.13	0.74	0.74	0.74	0.00
Sat Flow, veh/h	1781	1585	870	1870	1870	1585
Grp Volume(v), veh/h	187	134	86	495	535	0
Grp Sat Flow(s),veh/h/ln	1781	1585	870	1870	1870	1585
Q Serve(g_s), s	9.1	7.2	3.5	8.3	9.2	0.0
Cycle Q Clear(g_c), s	9.1	7.2	12.8	8.3	9.2	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	238	212	638	1392	1392	
V/C Ratio(X)	0.79	0.63	0.13	0.36	0.38	
Avail Cap(c_a), veh/h	505	449	638	1392	1392	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.93	0.93	1.00	0.00
Uniform Delay (d), s/veh	37.8	36.9	6.4	4.0	4.1	0.0
Incr Delay (d2), s/veh	5.7	3.1	0.4	0.7	0.8	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	0.6	2.2	2.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.5	40.0	6.8	4.7	4.9	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	321			581	535	
Approach Delay, s/veh	42.0			5.0	4.9	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		72.5		17.5		72.5
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		53.5		25.5		53.5
Max Q Clear Time (g_c+I1), s		11.2		11.1		14.8
Green Ext Time (p_c), s		7.4		0.9		7.8

Intersection Summary	
HCM 7th Control Delay, s/veh	13.2
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	61	85	688	624
Demand Flow Rate, veh/h	62	86	702	637
Vehicles Circulating, veh/h	676	530	17	139
Vehicles Exiting, veh/h	100	189	721	469
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.3	5.4	8.2	9.2
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	62	78	8	702	637
Cap Entry Lane, veh/h	692	804	855	1356	1197
Entry HV Adj Factor	0.983	0.986	0.980	0.980	0.980
Flow Entry, veh/h	61	77	8	688	624
Cap Entry, veh/h	680	792	838	1329	1173
V/C Ratio	0.090	0.097	0.010	0.518	0.532
Control Delay, s/veh	6.3	5.5	4.4	8.2	9.2
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	3	3

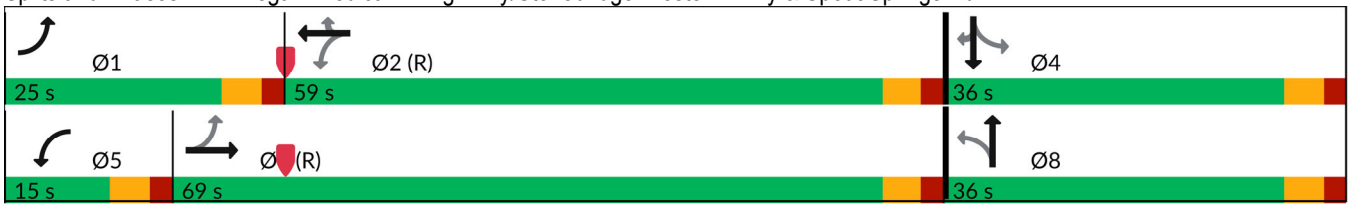
FUTURE "NO-BUILD" INTERSECTION ANALYSIS

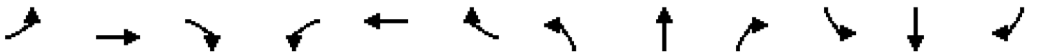
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	211	486	36	1015	93	68	18	60	7	184
Future Volume (vph)	211	486	36	1015	93	68	18	60	7	184
Lane Group Flow (vph)	251	643	43	1208	111	81	34	0	79	219
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	25.0	69.0	15.0	59.0	59.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	20.8%	57.5%	12.5%	49.2%	49.2%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.56	0.25	0.08	0.56	0.11	0.58	0.17		0.55	0.60
Control Delay (s/veh)	10.6	6.6	5.7	25.9	8.2	66.5	34.4		64.4	13.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	10.6	6.6	5.7	26.2	8.2	66.5	34.4		64.4	13.5
Queue Length 50th (ft)	37	83	7	446	26	62	15		60	0
Queue Length 95th (ft)	89	121	m20	494	65	102	42		100	55
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	484	2526	607	2172	1019	334	456		342	565
Starvation Cap Reductn	0	0	0	367	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.52	0.25	0.07	0.67	0.11	0.24	0.07		0.23	0.39

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	486	54	36	1015	93	68	18	11	60	7	184
Future Volume (veh/h)	211	486	54	36	1015	93	68	18	11	60	7	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	251	579	64	43	1208	111	81	21	13	71	8	219
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	2167	239	588	2255	1006	169	172	107	238	24	253
Arrive On Green	0.07	0.67	0.67	0.03	0.63	0.63	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3227	356	1781	3554	1585	1154	1081	669	1137	150	1585
Grp Volume(v), veh/h	251	318	325	43	1208	111	81	0	34	79	0	219
Grp Sat Flow(s),veh/h/ln	1781	1777	1806	1781	1777	1585	1154	0	1750	1287	0	1585
Q Serve(g_s), s	5.7	8.6	8.6	1.0	22.6	3.3	8.2	0.0	2.0	5.8	0.0	16.2
Cycle Q Clear(g_c), s	5.7	8.6	8.6	1.0	22.6	3.3	16.0	0.0	2.0	7.8	0.0	16.2
Prop In Lane	1.00		0.20	1.00		1.00	1.00		0.38	0.90		1.00
Lane Grp Cap(c), veh/h	368	1193	1213	588	2255	1006	169	0	279	262	0	253
V/C Ratio(X)	0.68	0.27	0.27	0.07	0.54	0.11	0.48	0.00	0.12	0.30	0.00	0.87
Avail Cap(c_a), veh/h	535	1193	1213	673	2255	1006	278	0	445	396	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.6	7.9	7.9	6.9	12.1	8.6	52.9	0.0	43.2	46.4	0.0	49.2
Incr Delay (d2), s/veh	2.2	0.5	0.5	0.0	0.7	0.2	2.1	0.0	0.2	0.6	0.0	11.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	3.1	3.1	0.3	8.1	1.1	2.5	0.0	0.9	2.2	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	8.4	8.4	7.0	12.9	8.8	55.0	0.0	43.4	47.0	0.0	60.3
LnGrp LOS	B	A	A	A	B	A	E		D	D		E
Approach Vol, veh/h		894			1362			115			298	
Approach Delay, s/veh		10.0			12.3			51.6			56.8	
Approach LOS		A			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	81.7		24.6	9.3	86.1		24.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	19.5	53.5		30.5	9.5	63.5		30.5				
Max Q Clear Time (g_c+I1), s	7.7	24.6		18.2	3.0	10.6		18.0				
Green Ext Time (p_c), s	0.5	17.8		0.9	0.0	8.7		0.3				

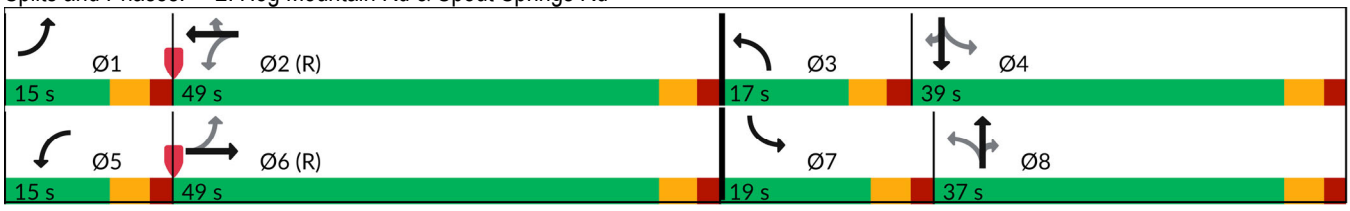
Intersection Summary												
HCM 7th Control Delay, s/veh			18.2									
HCM 7th LOS			B									

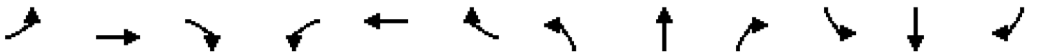
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	112	416	93	846	314	204	279	72	190	161	236
Future Volume (vph)	112	416	93	846	314	204	279	72	190	161	236
Lane Group Flow (vph)	120	514	100	910	338	219	300	77	204	173	254
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	49.0	15.0	49.0	49.0	17.0	37.0	37.0	19.0	39.0	39.0
Total Split (%)	12.5%	40.8%	12.5%	40.8%	40.8%	14.2%	30.8%	30.8%	15.8%	32.5%	32.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.41	0.34	0.22	0.60	0.41	0.57	0.79	0.18	0.71	0.43	0.47
Control Delay (s/veh)	28.6	29.6	15.8	29.7	9.1	34.3	60.3	2.3	40.9	42.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.6	29.6	15.8	29.7	9.1	34.4	60.3	2.3	40.9	42.7	7.7
Queue Length 50th (ft)	51	117	36	288	44	124	226	0	115	118	3
Queue Length 95th (ft)	129	264	74	398	130	173	306	10	162	174	67
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	301	1515	469	1519	819	384	489	506	295	520	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	7	0	0	0	0	11
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.34	0.21	0.60	0.41	0.58	0.61	0.15	0.69	0.33	0.42

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	416	62	93	846	314	204	279	72	190	161	236
Future Volume (veh/h)	112	416	62	93	846	314	204	279	72	190	161	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	447	0	100	910	0	219	300	77	204	173	254
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	329	1707		488	1686		341	344	291	281	367	311
Arrive On Green	0.02	0.16	0.00	0.04	0.47	0.00	0.10	0.18	0.18	0.11	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	120	447	0	100	910	0	219	300	77	204	173	254
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.1	13.3	0.0	3.4	21.7	0.0	11.5	18.7	5.0	11.0	9.8	18.4
Cycle Q Clear(g_c), s	4.1	13.3	0.0	3.4	21.7	0.0	11.5	18.7	5.0	11.0	9.8	18.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	329	1707		488	1686		341	344	291	281	367	311
V/C Ratio(X)	0.36	0.26		0.21	0.54		0.64	0.87	0.26	0.73	0.47	0.82
Avail Cap(c_a), veh/h	381	1707		550	1686		341	491	416	288	522	442
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	17.6	31.8	0.0	15.5	22.3	0.0	36.3	47.6	42.0	35.8	42.7	46.2
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.2	1.2	0.0	4.1	11.7	0.5	7.6	0.8	6.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	6.3	0.0	1.3	8.8	0.0	5.5	9.6	2.0	5.2	4.5	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.3	32.2	0.0	15.7	23.5	0.0	40.4	59.3	42.5	43.4	43.5	53.1
LnGrp LOS	B	C		B	C		D	E	D	D	D	D
Approach Vol, veh/h		567			1010			596			631	
Approach Delay, s/veh		29.2			22.8			50.2			47.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	62.4	17.0	29.0	10.8	63.1	18.5	27.5
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	11.5	33.5	9.5	43.5	13.5	31.5
Max Q Clear Time (g_c+I1), s	6.1	23.7	13.5	20.4	5.4	15.3	13.0	20.7
Green Ext Time (p_c), s	0.1	9.9	0.0	1.4	0.1	5.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	35.4
HCM 7th LOS	D

Notes

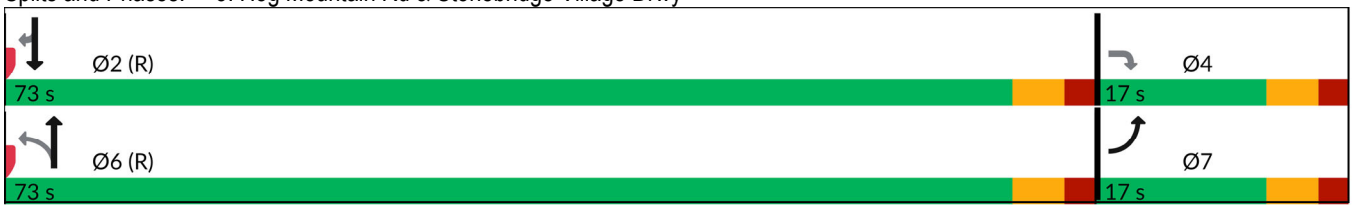
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

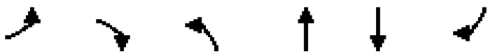
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	79	39	36	699	631	94
Future Volume (vph)	79	39	36	699	631	94
Lane Group Flow (vph)	93	46	42	822	742	111
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	17.0	17.0	73.0	73.0	73.0	73.0
Total Split (%)	18.9%	18.9%	81.1%	81.1%	81.1%	81.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.50	0.23	0.08	0.54	0.49	0.09
Control Delay (s/veh)	46.7	14.3	3.3	5.8	5.2	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.7	14.3	3.3	5.8	5.2	0.8
Queue Length 50th (ft)	51	0	5	156	131	0
Queue Length 95th (ft)	93	28	13	227	191	9
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	226	242	512	1509	1509	1303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.19	0.08	0.54	0.49	0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	39	36	699	631	94
Future Volume (veh/h)	79	39	36	699	631	94
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	46	42	822	742	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	129	115	566	1506	1506	
Arrive On Green	0.07	0.07	0.81	0.81	0.81	0.00
Sat Flow, veh/h	1781	1585	718	1870	1870	1585
Grp Volume(v), veh/h	93	46	42	822	742	0
Grp Sat Flow(s),veh/h/ln	1781	1585	718	1870	1870	1585
Q Serve(g_s), s	4.6	2.5	1.8	13.7	11.5	0.0
Cycle Q Clear(g_c), s	4.6	2.5	13.3	13.7	11.5	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	129	115	566	1506	1506	
V/C Ratio(X)	0.72	0.40	0.07	0.55	0.49	
Avail Cap(c_a), veh/h	228	203	566	1506	1506	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.80	0.80	1.00	0.00
Uniform Delay (d), s/veh	40.8	39.9	5.0	3.0	2.8	0.0
Incr Delay (d2), s/veh	7.3	2.2	0.2	1.1	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	0.2	2.4	2.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.1	42.1	5.2	4.2	4.0	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	139			864	742	
Approach Delay, s/veh	46.1			4.2	4.0	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		78.0		12.0		78.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		11.5		67.5
Max Q Clear Time (g_c+I1), s		13.5		6.6		15.7
Green Ext Time (p_c), s		12.7		0.1		16.1

Intersection Summary	
HCM 7th Control Delay, s/veh	7.5
HCM 7th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	105	225	919	622
Demand Flow Rate, veh/h	107	230	937	634
Vehicles Circulating, veh/h	773	915	56	161
Vehicles Exiting, veh/h	22	78	824	907
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.9	10.0	13.2	9.5
Approach LOS	A	B	B	A

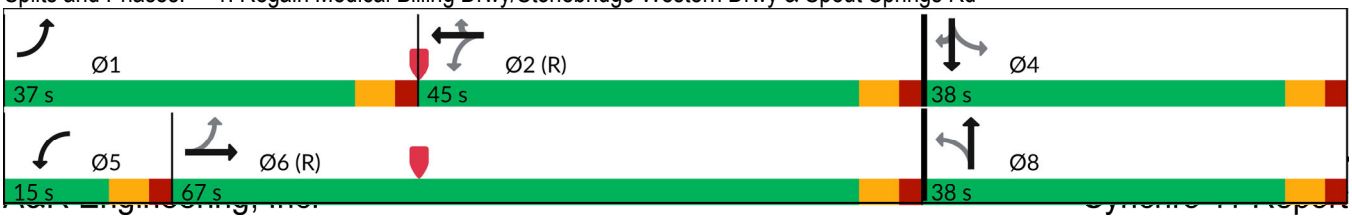
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	107	153	77	937	634
Cap Entry Lane, veh/h	627	543	547	1303	1171
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.981
Flow Entry, veh/h	105	150	75	919	622
Cap Entry, veh/h	615	532	536	1278	1148
V/C Ratio	0.171	0.282	0.140	0.719	0.541
Control Delay, s/veh	7.9	10.8	8.5	13.2	9.5
LOS	A	B	A	B	A
95th %tile Queue, veh	1	1	0	7	3

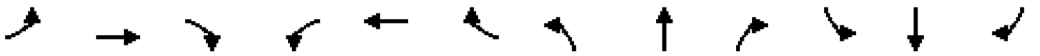
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	376	1000	39	762	146	133	34	162	49	302
Future Volume (vph)	376	1000	39	762	146	133	34	162	49	302
Lane Group Flow (vph)	400	1216	41	811	155	141	77	0	224	321
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	37.0	67.0	15.0	45.0	45.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	30.8%	55.8%	12.5%	37.5%	37.5%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.71	0.57	0.15	0.51	0.20	0.84	0.19		0.79	0.61
Control Delay (s/veh)	18.1	16.5	8.6	29.3	10.9	82.4	19.9		63.0	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	18.1	16.5	8.6	29.3	10.9	82.4	19.9		63.0	14.9
Queue Length 50th (ft)	113	292	9	257	18	107	23		167	48
Queue Length 95th (ft)	241	423	m19	384	73	#190	60		244	133
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	647	2142	326	1590	784	214	494		365	609
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.62	0.57	0.13	0.51	0.20	0.66	0.16		0.61	0.53

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	1000	143	39	762	146	133	34	39	162	49	302
Future Volume (veh/h)	376	1000	143	39	762	146	133	34	39	162	49	302
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	1064	152	41	811	155	141	36	41	172	52	321
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	477	1750	250	268	1609	718	154	216	246	311	78	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3122	445	1781	3554	1585	1009	798	909	951	287	1585
Grp Volume(v), veh/h	400	605	611	41	811	155	141	0	77	224	0	321
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1781	1777	1585	1009	0	1707	1238	0	1585
Q Serve(g_s), s	13.6	27.2	27.3	1.5	19.4	7.1	11.2	0.0	4.1	17.2	0.0	22.2
Cycle Q Clear(g_c), s	13.6	27.2	27.3	1.5	19.4	7.1	32.5	0.0	4.1	21.3	0.0	22.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.53	0.77		1.00
Lane Grp Cap(c), veh/h	477	996	1004	268	1609	718	154	0	462	388	0	429
V/C Ratio(X)	0.84	0.61	0.61	0.15	0.50	0.22	0.92	0.00	0.17	0.58	0.00	0.75
Avail Cap(c_a), veh/h	697	996	1004	354	1609	718	154	0	462	388	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.7	17.6	17.6	17.3	23.3	19.9	56.3	0.0	33.4	41.5	0.0	40.0
Incr Delay (d2), s/veh	6.0	2.8	2.7	0.2	1.1	0.6	48.2	0.0	0.2	2.1	0.0	7.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	10.9	11.1	0.6	7.9	2.6	6.4	0.0	1.8	6.3	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.7	20.3	20.3	17.6	24.4	20.6	104.5	0.0	33.6	43.6	0.0	47.1
LnGrp LOS	C	C	C	B	C	C	F		C	D		D
Approach Vol, veh/h		1616			1007			218			545	
Approach Delay, s/veh		21.2			23.5			79.4			45.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.2	59.8		38.0	9.2	72.8		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	31.5	39.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	21.4		24.2	3.5	29.3		34.5				
Green Ext Time (p_c), s	1.1	9.4		1.7	0.0	17.6		0.0				

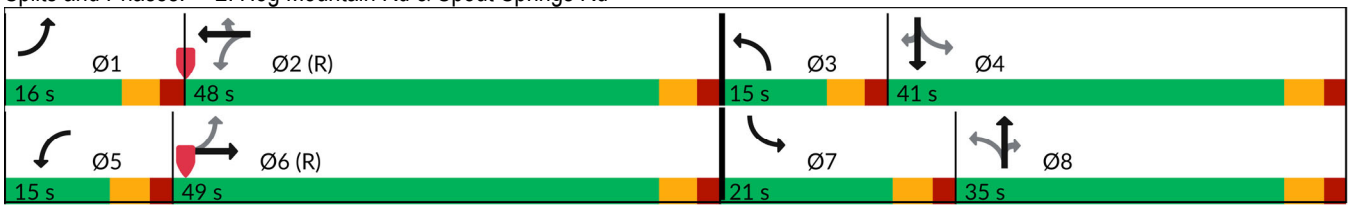
Intersection Summary												
HCM 7th Control Delay, s/veh			29.6									
HCM 7th LOS			C									

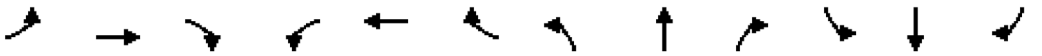
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	176	665	80	404	179	143	215	56	230	268	147
Future Volume (vph)	176	665	80	404	179	143	215	56	230	268	147
Lane Group Flow (vph)	187	817	85	430	190	152	229	60	245	285	156
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	16.0	49.0	15.0	48.0	48.0	15.0	35.0	35.0	21.0	41.0	41.0
Total Split (%)	13.3%	40.8%	12.5%	40.0%	40.0%	12.5%	29.2%	29.2%	17.5%	34.2%	34.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.35	0.49	0.25	0.29	0.24	0.59	0.74	0.15	0.76	0.72	0.34
Control Delay (s/veh)	26.6	38.3	15.4	24.8	4.5	38.4	61.4	0.8	45.4	53.8	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	26.6	38.3	15.4	24.8	4.5	38.4	61.4	0.8	45.4	53.8	7.5
Queue Length 50th (ft)	99	286	29	117	0	86	173	0	146	209	0
Queue Length 95th (ft)	197	425	61	174	50	128	246	0	202	286	52
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	539	1657	364	1499	780	261	457	519	330	551	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.49	0.23	0.29	0.24	0.58	0.50	0.12	0.74	0.52	0.27

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	176	665	103	80	404	179	143	215	56	230	268	147
Future Volume (veh/h)	176	665	103	80	404	179	143	215	56	230	268	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	707	0	85	430	0	152	229	60	245	285	156
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	568	1789		371	1682		249	271	230	318	364	309
Arrive On Green	0.02	0.17	0.00	0.04	0.47	0.00	0.08	0.14	0.14	0.13	0.19	0.19
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	187	707	0	85	430	0	152	229	60	245	285	156
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.3	21.3	0.0	2.9	8.7	0.0	8.7	14.3	4.0	13.6	17.4	10.5
Cycle Q Clear(g_c), s	6.3	21.3	0.0	2.9	8.7	0.0	8.7	14.3	4.0	13.6	17.4	10.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	1789		371	1682		249	271	230	318	364	309
V/C Ratio(X)	0.33	0.40		0.23	0.26		0.61	0.85	0.26	0.77	0.78	0.51
Avail Cap(c_a), veh/h	600	1789		443	1682		249	460	390	318	553	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	15.0	33.7	0.0	16.4	18.9	0.0	40.1	50.0	45.6	36.4	45.9	43.1
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.3	0.4	0.0	4.4	7.1	0.6	9.4	3.4	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	10.2	0.0	1.2	3.5	0.0	4.0	7.0	1.6	6.5	8.2	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.3	34.3	0.0	16.8	19.3	0.0	44.5	57.1	46.2	45.8	49.3	44.2
LnGrp LOS	B	C		B	B		D	E	D	D	D	D
Approach Vol, veh/h		894			515			441			686	
Approach Delay, s/veh		30.3			18.9			51.3			46.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	62.3	15.0	28.9	10.2	65.9	21.0	22.9
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	10.5	42.5	9.5	35.5	9.5	43.5	15.5	29.5
Max Q Clear Time (g_c+I1), s	8.3	10.7	10.7	19.4	4.9	23.3	15.6	16.3
Green Ext Time (p_c), s	0.1	5.3	0.0	1.8	0.1	7.7	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	36.1
HCM 7th LOS	D

Notes

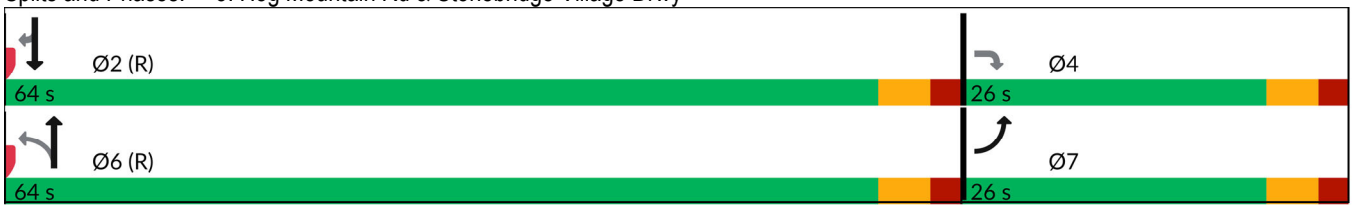
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

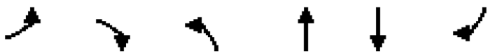
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	174	148	120	475	595	191
Future Volume (vph)	174	148	120	475	595	191
Lane Group Flow (vph)	210	178	145	572	717	230
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	26.0	26.0	64.0	64.0	64.0	64.0
Total Split (%)	28.9%	28.9%	71.1%	71.1%	71.1%	71.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.68	0.42	0.35	0.44	0.55	0.19
Control Delay (s/veh)	46.0	8.1	9.0	7.6	9.1	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.0	8.1	9.0	7.6	9.1	1.3
Queue Length 50th (ft)	115	0	28	122	172	1
Queue Length 95th (ft)	162	40	65	193	268	18
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	403	498	416	1311	1311	1181
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.36	0.35	0.44	0.55	0.19

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	148	120	475	595	191
Future Volume (veh/h)	174	148	120	475	595	191
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	210	178	145	572	717	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	260	231	495	1369	1369	
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.00
Sat Flow, veh/h	1781	1585	734	1870	1870	1585
Grp Volume(v), veh/h	210	178	145	572	717	0
Grp Sat Flow(s),veh/h/ln	1781	1585	734	1870	1870	1585
Q Serve(g_s), s	10.3	9.7	9.6	10.6	15.0	0.0
Cycle Q Clear(g_c), s	10.3	9.7	24.6	10.6	15.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	260	231	495	1369	1369	
V/C Ratio(X)	0.81	0.77	0.29	0.42	0.52	
Avail Cap(c_a), veh/h	406	361	495	1369	1369	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	0.00
Uniform Delay (d), s/veh	37.2	37.0	10.6	4.7	5.2	0.0
Incr Delay (d2), s/veh	6.6	5.4	1.3	0.8	1.4	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.1	1.5	2.9	4.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.9	42.4	11.9	5.5	6.7	0.0
LnGrp LOS	D	D	B	A	A	
Approach Vol, veh/h	388			717	717	
Approach Delay, s/veh	43.2			6.8	6.7	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.4		18.6		71.4
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		58.5		20.5		58.5
Max Q Clear Time (g_c+I1), s		17.0		12.3		26.6
Green Ext Time (p_c), s		11.3		0.8		9.9

Intersection Summary	
HCM 7th Control Delay, s/veh	14.5
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	39	160	756	812
Demand Flow Rate, veh/h	39	163	771	828
Vehicles Circulating, veh/h	948	608	27	194
Vehicles Exiting, veh/h	74	190	960	562
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.8	7.0	9.2	15.2
Approach LOS	A	A	A	C

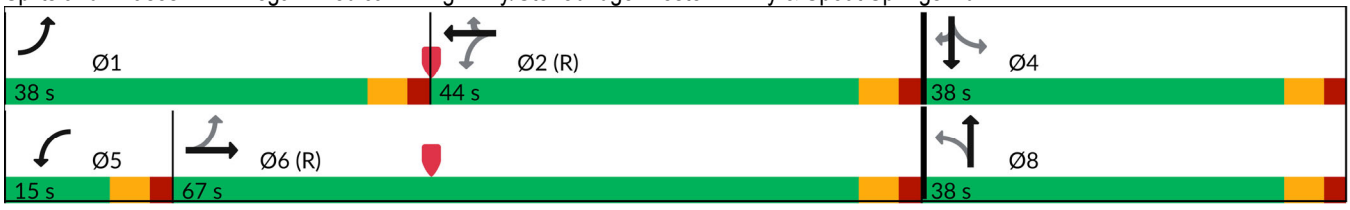
Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	39	148	15	771	828
Cap Entry Lane, veh/h	525	742	778	1342	1132
Entry HV Adj Factor	0.998	0.979	0.980	0.981	0.981
Flow Entry, veh/h	39	145	15	756	812
Cap Entry, veh/h	524	727	763	1317	1111
V/C Ratio	0.074	0.199	0.020	0.574	0.731
Control Delay, s/veh	7.8	7.2	4.9	9.2	15.2
LOS	A	A	A	A	C
95th %tile Queue, veh	0	1	0	4	7

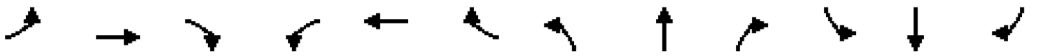
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	387	1076	47	716	129	149	34	141	38	288
Future Volume (vph)	387	1076	47	716	129	149	34	141	38	288
Lane Group Flow (vph)	399	1267	48	738	133	154	72	0	184	297
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	67.0	15.0	44.0	44.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	31.7%	55.8%	12.5%	36.7%	36.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.66	0.57	0.17	0.44	0.16	0.89	0.20		0.71	0.56
Control Delay (s/veh)	13.5	15.7	7.6	26.9	11.8	89.2	21.4		59.4	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	13.5	15.7	7.6	26.9	11.8	89.2	21.4		59.4	9.8
Queue Length 50th (ft)	103	292	8	230	22	119	23		137	12
Queue Length 95th (ft)	205	453	m16	352	m73	187	58		199	84
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	701	2207	323	1678	815	246	492		364	632
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.57	0.57	0.15	0.44	0.16	0.63	0.15		0.51	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1076	153	47	716	129	149	34	36	141	38	288
Future Volume (veh/h)	387	1076	153	47	716	129	149	34	36	141	38	288
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	399	1109	158	48	738	133	154	35	37	145	39	297
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	504	1744	248	257	1610	718	192	225	238	320	74	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3123	444	1781	3554	1585	1044	832	880	983	271	1585
Grp Volume(v), veh/h	399	630	637	48	738	133	154	0	72	184	0	297
Grp Sat Flow(s),veh/h/ln	1781	1777	1790	1781	1777	1585	1044	0	1712	1255	0	1585
Q Serve(g_s), s	13.6	29.1	29.3	1.7	17.2	6.0	15.2	0.0	3.8	13.5	0.0	20.2
Cycle Q Clear(g_c), s	13.6	29.1	29.3	1.7	17.2	6.0	32.5	0.0	3.8	17.3	0.0	20.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.51	0.79		1.00
Lane Grp Cap(c), veh/h	504	992	1000	257	1610	718	192	0	464	393	0	429
V/C Ratio(X)	0.79	0.63	0.64	0.19	0.46	0.19	0.80	0.00	0.16	0.47	0.00	0.69
Avail Cap(c_a), veh/h	739	992	1000	339	1610	718	192	0	464	393	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.0	18.1	18.2	17.6	22.7	19.6	53.5	0.0	33.3	39.8	0.0	39.3
Incr Delay (d2), s/veh	3.6	3.1	3.1	0.3	0.9	0.5	21.0	0.0	0.2	0.9	0.0	4.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	11.7	11.9	0.7	7.0	2.2	5.8	0.0	1.6	4.9	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	19.6	21.2	21.3	17.9	23.5	20.1	74.5	0.0	33.5	40.6	0.0	44.0
LnGrp LOS	B	C	C	B	C	C	E		C	D		D
Approach Vol, veh/h		1666			919			226			481	
Approach Delay, s/veh		20.9			22.7			61.4			42.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.1	59.9		38.0	9.5	72.5		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	38.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	19.2		22.2	3.7	31.3		34.5				
Green Ext Time (p_c), s	1.1	8.8		1.7	0.0	17.8		0.0				

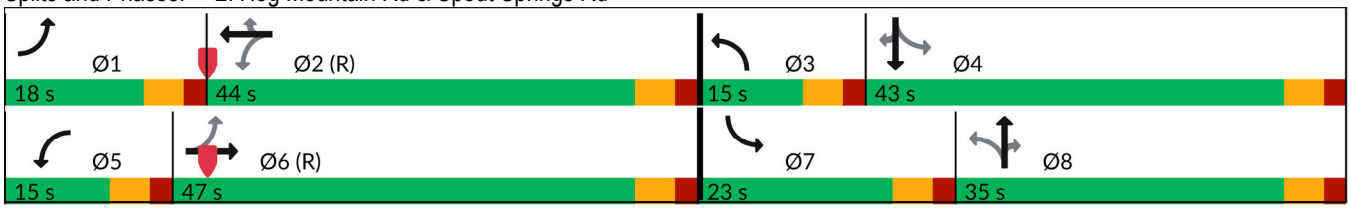
Intersection Summary												
HCM 7th Control Delay, s/veh			27.4									
HCM 7th LOS			C									

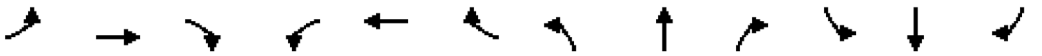
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	196	752	84	472	190	164	192	65	289	339	146
Future Volume (vph)	196	752	84	472	190	164	192	65	289	339	146
Lane Group Flow (vph)	198	880	85	477	192	166	194	66	292	342	147
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	18.0	47.0	15.0	44.0	44.0	15.0	35.0	35.0	23.0	43.0	43.0
Total Split (%)	15.0%	39.2%	12.5%	36.7%	36.7%	12.5%	29.2%	29.2%	19.2%	35.8%	35.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.40	0.55	0.28	0.33	0.25	0.70	0.62	0.16	0.76	0.80	0.32
Control Delay (s/veh)	28.5	40.8	17.2	27.1	4.9	44.1	54.3	0.8	42.7	57.1	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	28.5	40.8	17.2	27.1	4.9	44.1	54.3	0.8	42.7	57.1	9.2
Queue Length 50th (ft)	109	325	30	135	0	93	144	0	177	256	10
Queue Length 95th (ft)	214	454	65	205	53	132	206	0	231	334	58
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	502	1594	326	1428	753	238	457	519	389	582	584
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.55	0.26	0.33	0.25	0.70	0.42	0.13	0.75	0.59	0.25

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	196	752	119	84	472	190	164	192	65	289	339	146
Future Volume (veh/h)	196	752	119	84	472	190	164	192	65	289	339	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	198	760	0	85	477	0	166	194	66	292	342	147
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	531	1733		339	1609		231	268	227	369	393	333
Arrive On Green	0.02	0.16	0.00	0.04	0.45	0.00	0.08	0.14	0.14	0.15	0.21	0.21
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	198	760	0	85	477	0	166	194	66	292	342	147
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.8	23.2	0.0	3.0	10.2	0.0	9.5	11.9	4.5	16.3	21.2	9.7
Cycle Q Clear(g_c), s	6.8	23.2	0.0	3.0	10.2	0.0	9.5	11.9	4.5	16.3	21.2	9.7
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	531	1733		339	1609		231	268	227	369	393	333
V/C Ratio(X)	0.37	0.44		0.25	0.30		0.72	0.72	0.29	0.79	0.87	0.44
Avail Cap(c_a), veh/h	583	1733		409	1609		231	460	390	369	584	495
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	16.1	35.5	0.0	17.9	20.8	0.0	41.0	49.1	46.0	35.7	45.8	41.3
Incr Delay (d2), s/veh	0.3	0.6	0.0	0.4	0.5	0.0	10.3	3.7	0.7	10.2	8.6	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	11.1	0.0	1.2	4.2	0.0	4.7	5.7	1.8	7.9	10.5	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.5	36.2	0.0	18.3	21.2	0.0	51.3	52.8	46.7	45.9	54.4	42.1
LnGrp LOS	B	D		B	C		D	D	D	D	D	D
Approach Vol, veh/h		958			562			426			781	
Approach Delay, s/veh		32.1			20.8			51.3			48.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	59.8	15.0	30.7	10.3	64.0	23.0	22.7
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	12.5	38.5	9.5	37.5	9.5	41.5	17.5	29.5
Max Q Clear Time (g_c+I1), s	8.8	12.2	11.5	23.2	5.0	25.2	18.3	13.9
Green Ext Time (p_c), s	0.2	5.6	0.0	2.0	0.1	7.4	0.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.6
HCM 7th LOS	D

Notes

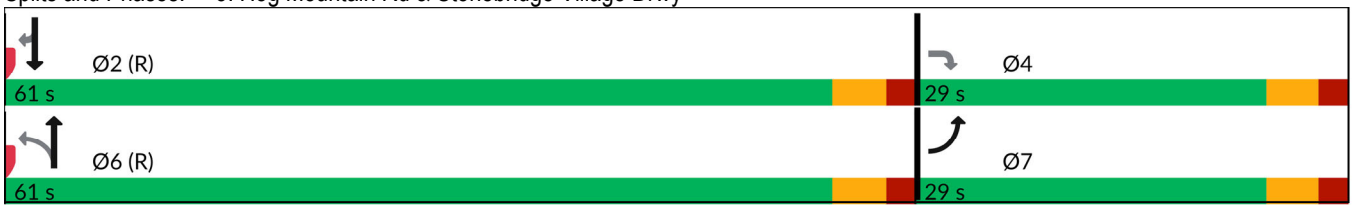
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

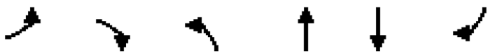
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	179	131	84	536	554	158
Future Volume (vph)	179	131	84	536	554	158
Lane Group Flow (vph)	185	135	87	553	571	163
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.64	0.36	0.16	0.42	0.43	0.14
Control Delay (s/veh)	45.0	8.6	5.9	7.0	7.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	8.6	5.9	7.0	7.1	1.2
Queue Length 50th (ft)	101	0	14	109	115	0
Queue Length 95th (ft)	159	46	38	207	217	20
Internal Link Dist (ft)	209			979	1729	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	462	513	538	1331	1331	1178
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.26	0.16	0.42	0.43	0.14

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	179	131	84	536	554	158
Future Volume (veh/h)	179	131	84	536	554	158
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	185	135	87	553	571	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	235	209	613	1395	1395	
Arrive On Green	0.13	0.13	0.75	0.75	0.75	0.00
Sat Flow, veh/h	1781	1585	841	1870	1870	1585
Grp Volume(v), veh/h	185	135	87	553	571	0
Grp Sat Flow(s),veh/h/ln	1781	1585	841	1870	1870	1585
Q Serve(g_s), s	9.1	7.3	3.8	9.6	10.0	0.0
Cycle Q Clear(g_c), s	9.1	7.3	13.8	9.6	10.0	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	235	209	613	1395	1395	
V/C Ratio(X)	0.79	0.65	0.14	0.40	0.41	
Avail Cap(c_a), veh/h	465	414	613	1395	1395	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.91	0.91	1.00	0.00
Uniform Delay (d), s/veh	37.8	37.1	6.7	4.1	4.2	0.0
Incr Delay (d2), s/veh	5.8	3.3	0.4	0.8	0.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.0	0.6	2.5	2.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.6	40.4	7.2	4.9	5.1	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	320			640	571	
Approach Delay, s/veh	42.3			5.2	5.1	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		72.6		17.4		72.6
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		55.5		23.5		55.5
Max Q Clear Time (g_c+I1), s		12.0		11.1		15.8
Green Ext Time (p_c), s		8.2		0.8		9.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	69	89	703	665
Demand Flow Rate, veh/h	70	90	717	678
Vehicles Circulating, veh/h	703	552	28	140
Vehicles Exiting, veh/h	115	193	745	494
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.6	5.6	8.5	9.8
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	70	82	8	717	678
Cap Entry Lane, veh/h	674	786	834	1341	1196
Entry HV Adj Factor	0.984	0.986	0.980	0.980	0.980
Flow Entry, veh/h	69	81	8	703	665
Cap Entry, veh/h	663	775	817	1314	1173
V/C Ratio	0.104	0.104	0.010	0.535	0.567
Control Delay, s/veh	6.6	5.7	4.5	8.5	9.8
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	3	4

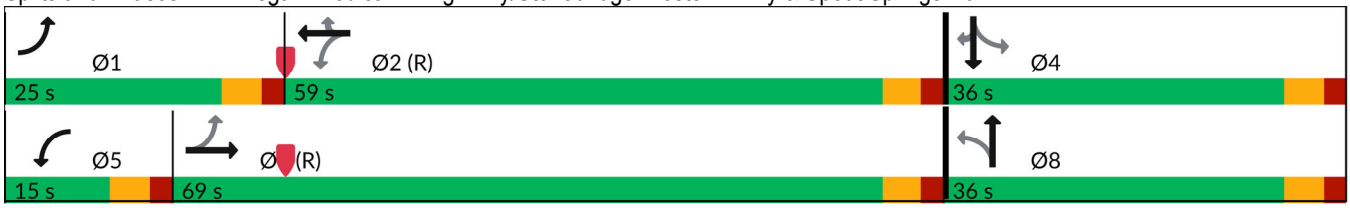
FUTURE "BUILD" INTERSECTION ANALYSIS

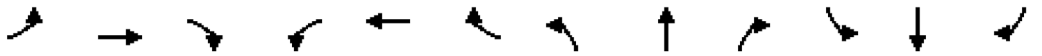
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	211	492	37	1030	94	68	18	60	7	184
Future Volume (vph)	211	492	37	1030	94	68	18	60	7	184
Lane Group Flow (vph)	251	650	44	1226	112	81	34	0	79	219
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	25.0	69.0	15.0	59.0	59.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	20.8%	57.5%	12.5%	49.2%	49.2%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.57	0.26	0.08	0.57	0.11	0.58	0.17		0.55	0.60
Control Delay (s/veh)	11.3	6.7	5.7	25.8	8.2	66.5	34.4		64.4	13.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	11.3	6.7	5.7	26.1	8.2	66.5	34.4		64.4	13.5
Queue Length 50th (ft)	37	84	7	448	26	62	15		60	0
Queue Length 95th (ft)	94	122	m20	498	64	102	42		100	55
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	479	2525	601	2166	1016	334	456		342	565
Starvation Cap Reductn	0	0	0	351	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.52	0.26	0.07	0.68	0.11	0.24	0.07		0.23	0.39

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	492	54	37	1030	94	68	18	11	60	7	184
Future Volume (veh/h)	211	492	54	37	1030	94	68	18	11	60	7	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	251	586	64	44	1226	112	81	21	13	71	8	219
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	363	2169	236	585	2255	1006	169	172	107	238	24	253
Arrive On Green	0.07	0.67	0.67	0.03	0.63	0.63	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	3232	352	1781	3554	1585	1154	1081	669	1137	150	1585
Grp Volume(v), veh/h	251	322	328	44	1226	112	81	0	34	79	0	219
Grp Sat Flow(s),veh/h/ln	1781	1777	1807	1781	1777	1585	1154	0	1750	1287	0	1585
Q Serve(g_s), s	5.7	8.7	8.8	1.0	23.1	3.3	8.2	0.0	2.0	5.8	0.0	16.2
Cycle Q Clear(g_c), s	5.7	8.7	8.8	1.0	23.1	3.3	16.0	0.0	2.0	7.8	0.0	16.2
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.38	0.90		1.00
Lane Grp Cap(c), veh/h	363	1192	1213	585	2255	1006	169	0	279	262	0	253
V/C Ratio(X)	0.69	0.27	0.27	0.08	0.54	0.11	0.48	0.00	0.12	0.30	0.00	0.87
Avail Cap(c_a), veh/h	530	1192	1213	668	2255	1006	278	0	445	396	0	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.79	0.79	0.79	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.1	7.9	7.9	6.9	12.2	8.6	52.9	0.0	43.2	46.4	0.0	49.2
Incr Delay (d2), s/veh	2.4	0.6	0.6	0.0	0.7	0.2	2.1	0.0	0.2	0.6	0.0	11.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	3.1	3.2	0.3	8.3	1.1	2.5	0.0	0.9	2.2	0.0	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	8.5	8.5	7.0	13.0	8.8	55.0	0.0	43.4	47.0	0.0	60.3
LnGrp LOS	B	A	A	A	B	A	E		D	D		E
Approach Vol, veh/h		901			1382			115			298	
Approach Delay, s/veh		10.1			12.4			51.6			56.8	
Approach LOS		B			B			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.7	81.7		24.6	9.3	86.0		24.6				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	19.5	53.5		30.5	9.5	63.5		30.5				
Max Q Clear Time (g_c+I1), s	7.7	25.1		18.2	3.0	10.8		18.0				
Green Ext Time (p_c), s	0.5	17.9		0.9	0.0	8.8		0.3				

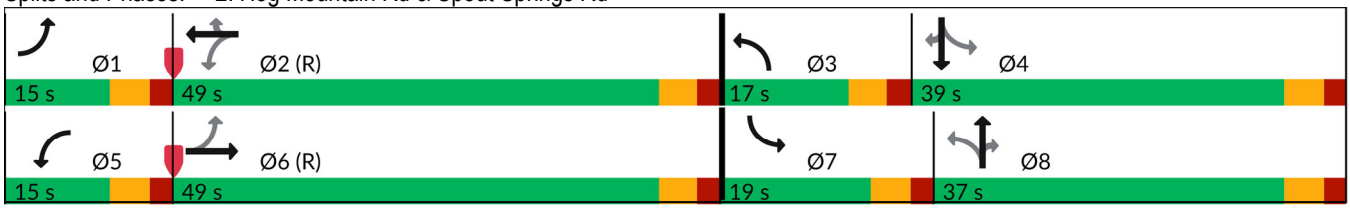
Intersection Summary												
HCM 7th Control Delay, s/veh			18.2									
HCM 7th LOS			B									

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	118	416	93	846	316	204	280	72	194	163	254
Future Volume (vph)	118	416	93	846	316	204	280	72	194	163	254
Lane Group Flow (vph)	127	514	100	910	340	219	301	77	209	175	273
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	15.0	49.0	15.0	49.0	49.0	17.0	37.0	37.0	19.0	39.0	39.0
Total Split (%)	12.5%	40.8%	12.5%	40.8%	40.8%	14.2%	30.8%	30.8%	15.8%	32.5%	32.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.44	0.34	0.22	0.60	0.42	0.57	0.79	0.18	0.73	0.43	0.51
Control Delay (s/veh)	29.6	29.8	15.9	29.9	9.2	34.3	60.4	2.3	42.2	42.8	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1
Total Delay (s/veh)	29.6	29.8	15.9	29.9	9.2	34.6	60.4	2.3	42.2	42.8	9.6
Queue Length 50th (ft)	56	120	36	290	45	124	227	0	118	119	15
Queue Length 95th (ft)	136	264	74	398	131	173	307	10	165	175	84
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	300	1513	468	1511	817	384	489	506	294	520	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	19	0	0	0	0	29
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.34	0.21	0.60	0.42	0.60	0.62	0.15	0.71	0.34	0.46

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	416	62	93	846	316	204	280	72	194	163	254
Future Volume (veh/h)	118	416	62	93	846	316	204	280	72	194	163	254
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	447	0	100	910	0	219	301	77	209	175	273
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	330	1697		485	1668		340	345	292	285	372	315
Arrive On Green	0.02	0.16	0.00	0.04	0.47	0.00	0.10	0.18	0.18	0.11	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	127	447	0	100	910	0	219	301	77	209	175	273
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.3	13.3	0.0	3.5	21.9	0.0	11.5	18.8	5.0	11.3	9.9	20.0
Cycle Q Clear(g_c), s	4.3	13.3	0.0	3.5	21.9	0.0	11.5	18.8	5.0	11.3	9.9	20.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	330	1697		485	1668		340	345	292	285	372	315
V/C Ratio(X)	0.39	0.26		0.21	0.55		0.64	0.87	0.26	0.73	0.47	0.87
Avail Cap(c_a), veh/h	377	1697		547	1668		340	491	416	288	522	442
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	17.9	32.0	0.0	15.7	22.7	0.0	36.2	47.6	42.0	35.6	42.5	46.5
Incr Delay (d2), s/veh	0.7	0.4	0.0	0.2	1.3	0.0	4.1	11.8	0.5	8.0	0.8	10.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	6.4	0.0	1.4	8.9	0.0	5.5	9.6	1.9	5.3	4.5	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	18.7	32.4	0.0	15.9	24.0	0.0	40.3	59.3	42.4	43.6	43.3	57.3
LnGrp LOS	B	C		B	C		D	E	D	D	D	E
Approach Vol, veh/h		574			1010			597			657	
Approach Delay, s/veh		29.3			23.2			50.2			49.2	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.8	61.8	17.0	29.4	10.8	62.8	18.8	27.6
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	9.5	43.5	11.5	33.5	9.5	43.5	13.5	31.5
Max Q Clear Time (g_c+I1), s	6.3	23.9	13.5	22.0	5.5	15.3	13.3	20.8
Green Ext Time (p_c), s	0.1	9.9	0.0	1.4	0.1	5.3	0.0	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	36.1
HCM 7th LOS	D

Notes

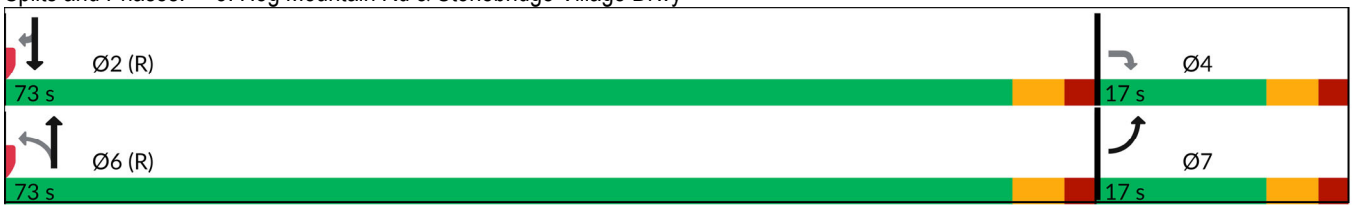
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

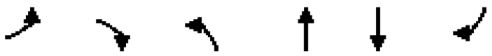
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	39	36	708	655	97
Future Volume (vph)	80	39	36	708	655	97
Lane Group Flow (vph)	94	46	42	833	771	114
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	17.0	17.0	73.0	73.0	73.0	73.0
Total Split (%)	18.9%	18.9%	81.1%	81.1%	81.1%	81.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.50	0.23	0.09	0.55	0.51	0.09
Control Delay (s/veh)	46.9	14.3	3.4	5.9	5.4	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.9	14.3	3.4	5.9	5.4	0.8
Queue Length 50th (ft)	52	0	5	161	140	0
Queue Length 95th (ft)	94	28	13	233	203	9
Internal Link Dist (ft)	209			979	736	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	226	242	491	1508	1508	1303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.19	0.09	0.55	0.51	0.09

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	39	36	708	655	97
Future Volume (veh/h)	80	39	36	708	655	97
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	46	42	833	771	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	130	116	546	1505	1505	
Arrive On Green	0.07	0.07	0.80	0.80	0.80	0.00
Sat Flow, veh/h	1781	1585	698	1870	1870	1585
Grp Volume(v), veh/h	94	46	42	833	771	0
Grp Sat Flow(s),veh/h/ln	1781	1585	698	1870	1870	1585
Q Serve(g_s), s	4.6	2.5	1.9	14.1	12.3	0.0
Cycle Q Clear(g_c), s	4.6	2.5	14.2	14.1	12.3	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	130	116	546	1505	1505	
V/C Ratio(X)	0.72	0.40	0.08	0.55	0.51	
Avail Cap(c_a), veh/h	228	203	546	1505	1505	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.80	0.80	1.00	0.00
Uniform Delay (d), s/veh	40.8	39.8	5.3	3.1	2.9	0.0
Incr Delay (d2), s/veh	7.3	2.2	0.2	1.2	1.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.0	0.2	2.5	2.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	48.1	42.0	5.5	4.3	4.2	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	140			875	771	
Approach Delay, s/veh	46.1			4.3	4.2	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		77.9		12.1		77.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		67.5		11.5		67.5
Max Q Clear Time (g_c+I1), s		14.3		6.6		16.2
Green Ext Time (p_c), s		13.6		0.1		16.4

Intersection Summary	
HCM 7th Control Delay, s/veh	7.5
HCM 7th LOS	A

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	105	225	937	629
Demand Flow Rate, veh/h	107	230	955	641
Vehicles Circulating, veh/h	780	932	56	161
Vehicles Exiting, veh/h	22	79	831	924
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	10.3	13.8	9.6
Approach LOS	A	B	B	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	107	153	77	955	641
Cap Entry Lane, veh/h	623	533	538	1303	1171
Entry HV Adj Factor	0.980	0.980	0.980	0.981	0.981
Flow Entry, veh/h	105	150	75	937	629
Cap Entry, veh/h	610	523	527	1278	1148
V/C Ratio	0.172	0.287	0.142	0.733	0.547
Control Delay, s/veh	8.0	11.1	8.7	13.8	9.6
LOS	A	B	A	B	A
95th %tile Queue, veh	1	1	0	7	3

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	17	778	10	6	731
Future Vol, veh/h	27	17	778	10	6	731
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	-	-	175	235	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	18	846	11	7	795

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1653	846	0	0	857	0
Stage 1	846	-	-	-	-	-
Stage 2	808	-	-	-	-	-
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	108	362	-	-	784	-
Stage 1	421	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	107	362	-	-	784	-
Mov Cap-2 Maneuver	107	-	-	-	-	-
Stage 1	421	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	40.75	0	0.08
HCM LOS	E		

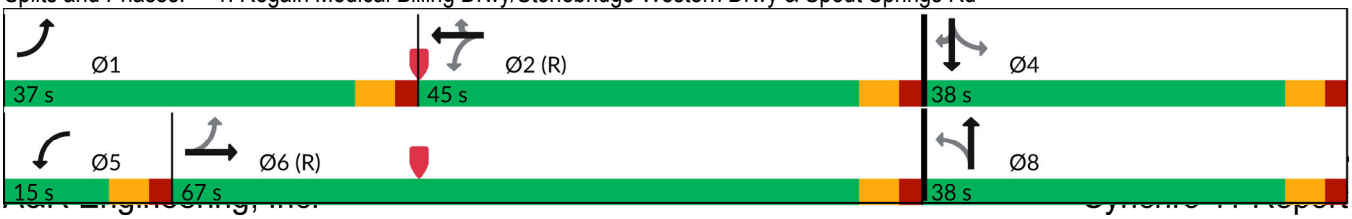
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	147	784	-
HCM Lane V/C Ratio	-	-	0.325	0.008	-
HCM Ctrl Dly (s/v)	-	-	40.7	9.6	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	1.3	0	-

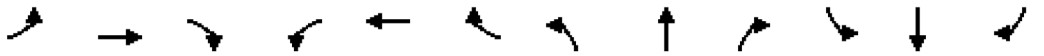
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	376	1013	40	773	147	133	34	163	49	302
Future Volume (vph)	376	1013	40	773	147	133	34	163	49	302
Lane Group Flow (vph)	400	1230	43	822	156	141	79	0	225	321
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	37.0	67.0	15.0	45.0	45.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	30.8%	55.8%	12.5%	37.5%	37.5%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.71	0.58	0.16	0.52	0.20	0.84	0.20		0.79	0.61
Control Delay (s/veh)	18.6	16.7	8.8	29.7	11.1	82.4	19.4		63.2	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	18.6	16.7	8.8	29.7	11.1	82.4	19.4		63.2	15.0
Queue Length 50th (ft)	114	298	10	260	33	106	23		167	48
Queue Length 95th (ft)	245	431	m20	391	74	#190	61		245	134
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	643	2139	321	1583	781	213	494		365	608
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.62	0.58	0.13	0.52	0.20	0.66	0.16		0.62	0.53

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	1013	143	40	773	147	133	34	40	163	49	302
Future Volume (veh/h)	376	1013	143	40	773	147	133	34	40	163	49	302
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	400	1078	152	43	822	156	141	36	43	173	52	321
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	473	1751	247	265	1609	718	152	210	251	309	77	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3128	440	1781	3554	1585	1009	776	927	946	284	1585
Grp Volume(v), veh/h	400	612	618	43	822	156	141	0	79	225	0	321
Grp Sat Flow(s),veh/h/ln	1781	1777	1791	1781	1777	1585	1009	0	1703	1231	0	1585
Q Serve(g_s), s	13.6	27.7	27.8	1.5	19.8	7.2	10.9	0.0	4.3	17.3	0.0	22.2
Cycle Q Clear(g_c), s	13.6	27.7	27.8	1.5	19.8	7.2	32.5	0.0	4.3	21.6	0.0	22.2
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.54	0.77		1.00
Lane Grp Cap(c), veh/h	473	995	1003	265	1609	718	152	0	461	386	0	429
V/C Ratio(X)	0.85	0.61	0.62	0.16	0.51	0.22	0.93	0.00	0.17	0.58	0.00	0.75
Avail Cap(c_a), veh/h	693	995	1003	350	1609	718	152	0	461	386	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.9	17.7	17.7	17.4	23.4	19.9	56.4	0.0	33.5	41.7	0.0	40.0
Incr Delay (d2), s/veh	6.4	2.8	2.8	0.3	1.1	0.7	52.3	0.0	0.2	2.2	0.0	7.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	11.2	11.3	0.6	8.1	2.7	6.5	0.0	1.8	6.3	0.0	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	24.3	20.6	20.6	17.6	24.5	20.6	108.7	0.0	33.6	43.9	0.0	47.1
LnGrp LOS	C	C	C	B	C	C	F		C	D		D
Approach Vol, veh/h		1630			1021			220			546	
Approach Delay, s/veh		21.5			23.6			81.7			45.8	
Approach LOS		C			C			F			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.2	59.8		38.0	9.3	72.7		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	31.5	39.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	21.8		24.2	3.5	29.8		34.5				
Green Ext Time (p_c), s	1.1	9.4		1.7	0.0	17.7		0.0				

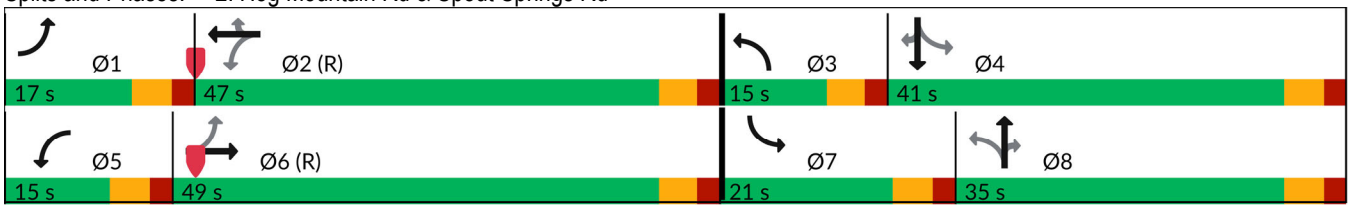
Intersection Summary												
HCM 7th Control Delay, s/veh			29.9									
HCM 7th LOS			C									

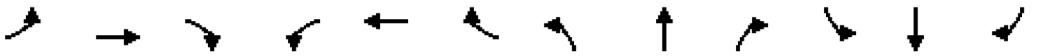
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	191	665	80	404	183	143	217	56	233	270	159
Future Volume (vph)	191	665	80	404	183	143	217	56	233	270	159
Lane Group Flow (vph)	203	817	85	430	195	152	231	60	248	287	169
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	17.0	49.0	15.0	47.0	47.0	15.0	35.0	35.0	21.0	41.0	41.0
Total Split (%)	14.2%	40.8%	12.5%	39.2%	39.2%	12.5%	29.2%	29.2%	17.5%	34.2%	34.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.38	0.49	0.25	0.29	0.25	0.59	0.74	0.15	0.77	0.72	0.36
Control Delay (s/veh)	27.1	38.8	15.6	25.4	4.6	38.3	61.3	0.8	46.0	53.7	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.1	38.8	15.6	25.4	4.6	38.3	61.3	0.8	46.0	53.7	7.3
Queue Length 50th (ft)	112	295	29	118	0	85	175	0	148	210	0
Queue Length 95th (ft)	211	424	62	177	51	128	248	0	205	288	53
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	544	1653	363	1474	773	261	457	519	330	551	587
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.49	0.23	0.29	0.25	0.58	0.51	0.12	0.75	0.52	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	665	103	80	404	183	143	217	56	233	270	159
Future Volume (veh/h)	191	665	103	80	404	183	143	217	56	233	270	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	707	0	85	430	0	152	231	60	248	287	169
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	570	1785		371	1661		248	273	231	318	366	311
Arrive On Green	0.02	0.17	0.00	0.04	0.47	0.00	0.08	0.15	0.15	0.13	0.20	0.20
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	203	707	0	85	430	0	152	231	60	248	287	169
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.8	21.3	0.0	3.0	8.8	0.0	8.7	14.4	4.0	13.7	17.5	11.5
Cycle Q Clear(g_c), s	6.8	21.3	0.0	3.0	8.8	0.0	8.7	14.4	4.0	13.7	17.5	11.5
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	570	1785		371	1661		248	273	231	318	366	311
V/C Ratio(X)	0.36	0.40		0.23	0.26		0.61	0.85	0.26	0.78	0.78	0.54
Avail Cap(c_a), veh/h	608	1785		442	1661		248	460	390	318	553	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	15.1	33.8	0.0	16.7	19.4	0.0	40.0	49.9	45.5	36.4	45.8	43.4
Incr Delay (d2), s/veh	0.3	0.5	0.0	0.3	0.4	0.0	4.4	7.2	0.6	9.9	3.5	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	10.2	0.0	1.2	3.6	0.0	4.0	7.1	1.6	6.6	8.2	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.4	34.3	0.0	17.0	19.7	0.0	44.5	57.2	46.1	46.3	49.3	44.7
LnGrp LOS	B	C		B	B		D	E	D	D	D	D
Approach Vol, veh/h		910			515			443			704	
Approach Delay, s/veh		30.1			19.3			51.3			47.1	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.4	61.6	15.0	29.0	10.2	65.8	21.0	23.0
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	11.5	41.5	9.5	35.5	9.5	43.5	15.5	29.5
Max Q Clear Time (g_c+I1), s	8.8	10.8	10.7	19.5	5.0	23.3	15.7	16.4
Green Ext Time (p_c), s	0.1	5.2	0.0	1.8	0.1	7.7	0.0	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	36.3
HCM 7th LOS	D

Notes

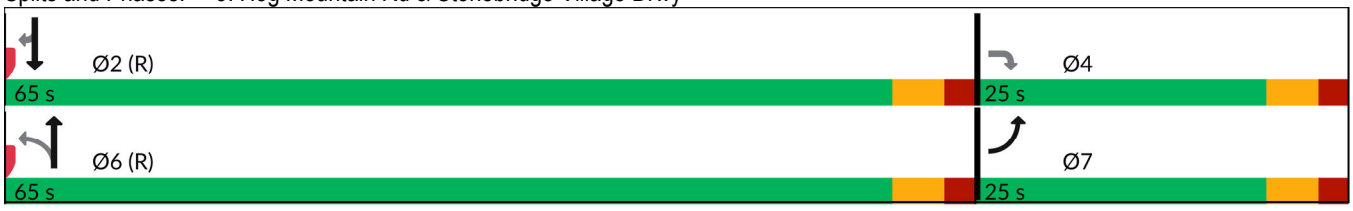
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

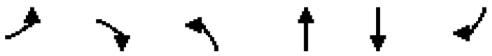
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	177	148	120	496	612	193
Future Volume (vph)	177	148	120	496	612	193
Lane Group Flow (vph)	213	178	145	598	737	233
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	25.0	25.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.70	0.42	0.36	0.46	0.56	0.20
Control Delay (s/veh)	47.1	8.2	9.2	7.7	9.1	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.1	8.2	9.2	7.7	9.1	1.2
Queue Length 50th (ft)	116	0	29	131	181	0
Queue Length 95th (ft)	166	41	64	197	268	17
Internal Link Dist (ft)	209			979	736	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	383	482	403	1314	1314	1184
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.37	0.36	0.46	0.56	0.20

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	148	120	496	612	193
Future Volume (veh/h)	177	148	120	496	612	193
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	213	178	145	598	737	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	261	233	481	1367	1367	
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.00
Sat Flow, veh/h	1781	1585	721	1870	1870	1585
Grp Volume(v), veh/h	213	178	145	598	737	0
Grp Sat Flow(s),veh/h/ln	1781	1585	721	1870	1870	1585
Q Serve(g_s), s	10.4	9.7	10.1	11.4	15.7	0.0
Cycle Q Clear(g_c), s	10.4	9.7	25.8	11.4	15.7	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	261	233	481	1367	1367	
V/C Ratio(X)	0.82	0.77	0.30	0.44	0.54	
Avail Cap(c_a), veh/h	386	343	481	1367	1367	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	0.00
Uniform Delay (d), s/veh	37.2	36.9	11.1	4.8	5.4	0.0
Incr Delay (d2), s/veh	8.2	5.9	1.4	0.9	1.5	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.1	1.6	3.1	4.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	45.4	42.8	12.5	5.7	6.9	0.0
LnGrp LOS	D	D	B	A	A	
Approach Vol, veh/h	391			743	737	
Approach Delay, s/veh	44.2			7.0	6.9	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.3		18.7		71.3
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		59.5		19.5		59.5
Max Q Clear Time (g_c+I1), s		17.7		12.4		27.8
Green Ext Time (p_c), s		11.9		0.8		10.4

Intersection Summary	
HCM 7th Control Delay, s/veh	14.7
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	39	162	770	828
Demand Flow Rate, veh/h	39	165	785	844
Vehicles Circulating, veh/h	966	621	27	196
Vehicles Exiting, veh/h	74	191	978	575
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	8.0	7.1	9.4	15.9
Approach LOS	A	A	A	C

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	39	150	15	785	844
Cap Entry Lane, veh/h	515	732	768	1342	1130
Entry HV Adj Factor	0.998	0.979	0.980	0.981	0.981
Flow Entry, veh/h	39	147	15	770	828
Cap Entry, veh/h	514	717	753	1317	1109
V/C Ratio	0.076	0.205	0.020	0.585	0.747
Control Delay, s/veh	8.0	7.3	5.0	9.4	15.9
LOS	A	A	A	A	C
95th %tile Queue, veh	0	1	0	4	7

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	12	649	24	14	788
Future Vol, veh/h	19	12	649	24	14	788
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	-	-	175	235	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	13	705	26	15	857

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1592	705	0	0	732	0
Stage 1	705	-	-	-	-	-
Stage 2	887	-	-	-	-	-
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	118	436	-	-	873	-
Stage 1	490	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	436	-	-	873	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	395	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	32.99	0	0.16
HCM LOS	D		

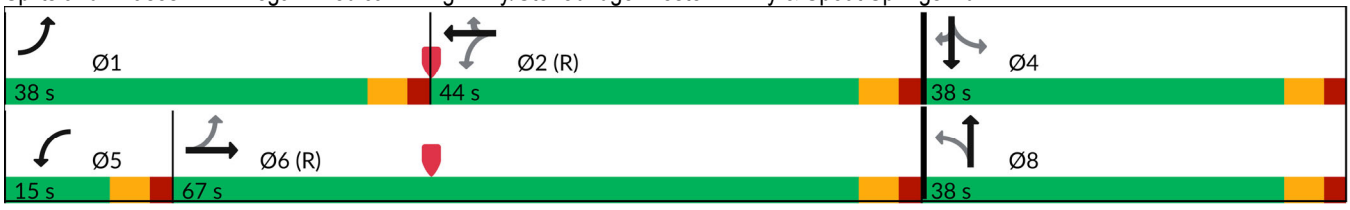
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	162	873	-
HCM Lane V/C Ratio	-	-	0.208	0.017	-
HCM Ctrl Dly (s/v)	-	-	33	9.2	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

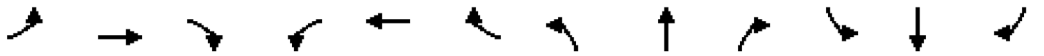
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	387	1093	48	727	130	149	34	142	38	288
Future Volume (vph)	387	1093	48	727	130	149	34	142	38	288
Lane Group Flow (vph)	399	1285	49	749	134	154	73	0	185	297
Turn Type	pm+pt	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2			8		4	
Permitted Phases	6		2		2	8		4		4
Detector Phase	1	6	5	2	2	8	8	4	4	4
Switch Phase										
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	15.0	35.5	15.0	34.5	34.5	35.5	35.5	32.5	32.5	32.5
Total Split (s)	38.0	67.0	15.0	44.0	44.0	38.0	38.0	38.0	38.0	38.0
Total Split (%)	31.7%	55.8%	12.5%	36.7%	36.7%	31.7%	31.7%	31.7%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5		5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.66	0.58	0.18	0.45	0.16	0.89	0.20		0.71	0.56
Control Delay (s/veh)	13.8	15.9	7.8	27.7	12.1	89.4	21.1		59.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay (s/veh)	13.8	15.9	7.8	27.7	12.1	89.4	21.1		59.6	10.0
Queue Length 50th (ft)	103	298	8	231	23	119	23		137	13
Queue Length 95th (ft)	209	462	m16	367	84	187	59		201	85
Internal Link Dist (ft)		474		585			70		307	
Turn Bay Length (ft)	450		175		180					80
Base Capacity (vph)	697	2208	318	1674	813	245	492		364	630
Starvation Cap Reductn	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.57	0.58	0.15	0.45	0.16	0.63	0.15		0.51	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	1093	153	48	727	130	149	34	37	142	38	288
Future Volume (veh/h)	387	1093	153	48	727	130	149	34	37	142	38	288
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	399	1127	158	49	749	134	154	35	38	146	39	297
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	500	1747	244	252	1610	718	190	222	241	320	72	429
Arrive On Green	0.14	0.56	0.56	0.03	0.45	0.45	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1781	3131	438	1781	3554	1585	1044	820	890	982	268	1585
Grp Volume(v), veh/h	399	638	647	49	749	134	154	0	73	185	0	297
Grp Sat Flow(s),veh/h/ln	1781	1777	1792	1781	1777	1585	1044	0	1710	1249	0	1585
Q Serve(g_s), s	13.6	29.7	29.9	1.7	17.5	6.1	15.0	0.0	3.9	13.6	0.0	20.2
Cycle Q Clear(g_c), s	13.6	29.7	29.9	1.7	17.5	6.1	32.5	0.0	3.9	17.5	0.0	20.2
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.52	0.79		1.00
Lane Grp Cap(c), veh/h	500	992	1000	252	1610	718	190	0	463	392	0	429
V/C Ratio(X)	0.80	0.64	0.65	0.19	0.47	0.19	0.81	0.00	0.16	0.47	0.00	0.69
Avail Cap(c_a), veh/h	735	992	1000	334	1610	718	190	0	463	392	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	18.3	18.3	17.7	22.8	19.6	53.7	0.0	33.3	39.9	0.0	39.3
Incr Delay (d2), s/veh	3.9	3.2	3.2	0.3	0.9	0.5	22.3	0.0	0.2	0.9	0.0	4.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	12.0	12.2	0.7	7.2	2.2	5.9	0.0	1.7	4.9	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	20.1	21.5	21.6	18.0	23.6	20.1	76.0	0.0	33.5	40.8	0.0	44.0
LnGrp LOS	C	C	C	B	C	C	E		C	D		D
Approach Vol, veh/h		1684			932			227			482	
Approach Delay, s/veh		21.2			22.8			62.3			42.7	
Approach LOS		C			C			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	22.1	59.9		38.0	9.5	72.5		38.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	5.5	5.5		5.5				
Max Green Setting (Gmax), s	32.5	38.5		32.5	9.5	61.5		32.5				
Max Q Clear Time (g_c+I1), s	15.6	19.5		22.2	3.7	31.9		34.5				
Green Ext Time (p_c), s	1.1	8.8		1.7	0.0	17.8		0.0				

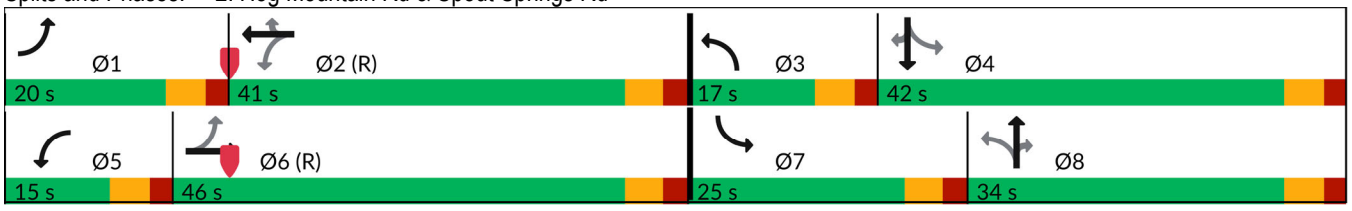
Intersection Summary												
HCM 7th Control Delay, s/veh			27.6									
HCM 7th LOS			C									

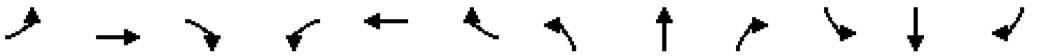
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	216	752	84	472	195	164	194	65	292	341	158
Future Volume (vph)	216	752	84	472	195	164	194	65	292	341	158
Lane Group Flow (vph)	218	880	85	477	197	166	196	66	295	344	160
Turn Type	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6	5	2		3	8		7	4	
Permitted Phases	6		2		2	8		8	4		4
Detector Phase	1	6	5	2	2	3	8	8	7	4	4
Switch Phase											
Minimum Initial (s)	5.0	15.0	5.0	15.0	15.0	5.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	15.0	36.5	15.0	35.5	35.5	15.0	33.5	33.5	15.0	36.5	36.5
Total Split (s)	20.0	46.0	15.0	41.0	41.0	17.0	34.0	34.0	25.0	42.0	42.0
Total Split (%)	16.7%	38.3%	12.5%	34.2%	34.2%	14.2%	28.3%	28.3%	20.8%	35.0%	35.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.45	0.57	0.29	0.35	0.27	0.64	0.62	0.16	0.73	0.80	0.34
Control Delay (s/veh)	30.6	43.1	18.6	29.3	5.3	37.4	53.8	0.8	38.6	57.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	30.6	43.1	18.6	29.3	5.3	37.4	53.8	0.8	38.6	57.2	9.5
Queue Length 50th (ft)	133	353	31	141	0	90	146	0	173	257	12
Queue Length 95th (ft)	233	454	68	213	55	128	208	0	226	336	63
Internal Link Dist (ft)		585		1103			1497			979	
Turn Bay Length (ft)	270		240		160	160		150	175		150
Base Capacity (vph)	502	1548	312	1351	726	267	442	507	417	566	578
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.57	0.27	0.35	0.27	0.62	0.44	0.13	0.71	0.61	0.28

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 63 (53%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hog Mountain Rd & Spout Springs Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	752	119	84	472	195	164	194	65	292	341	158
Future Volume (veh/h)	216	752	119	84	472	195	164	194	65	292	341	158
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	218	760	0	85	477	0	166	196	66	295	344	160
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	520	1673		328	1525		257	285	241	391	394	334
Arrive On Green	0.03	0.16	0.00	0.04	0.43	0.00	0.09	0.15	0.15	0.15	0.21	0.21
Sat Flow, veh/h	1781	3647	0	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	218	760	0	85	477	0	166	196	66	295	344	160
Grp Sat Flow(s),veh/h/ln	1781	1777	0	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	7.7	23.3	0.0	3.2	10.6	0.0	9.3	11.9	4.4	16.2	21.3	10.6
Cycle Q Clear(g_c), s	7.7	23.3	0.0	3.2	10.6	0.0	9.3	11.9	4.4	16.2	21.3	10.6
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	520	1673		328	1525		257	285	241	391	394	334
V/C Ratio(X)	0.42	0.45		0.26	0.31		0.65	0.69	0.27	0.75	0.87	0.48
Avail Cap(c_a), veh/h	588	1673		396	1525		260	444	376	409	569	482
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	17.2	36.7	0.0	19.3	22.6	0.0	38.7	48.2	45.0	34.2	45.8	41.6
Incr Delay (d2), s/veh	0.4	0.7	0.0	0.4	0.5	0.0	5.4	3.0	0.6	6.9	9.3	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	11.2	0.0	1.3	4.4	0.0	4.3	5.6	1.7	7.5	10.6	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	17.6	37.4	0.0	19.7	23.1	0.0	44.0	51.1	45.6	41.1	55.1	42.5
LnGrp LOS	B	D		B	C		D	D	D	D	E	D
Approach Vol, veh/h		978			562			428			799	
Approach Delay, s/veh		33.0			22.6			47.5			47.4	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	57.0	16.8	30.8	10.4	62.0	23.8	23.8
Change Period (Y+Rc), s	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Max Green Setting (Gmax), s	14.5	35.5	11.5	36.5	9.5	40.5	19.5	28.5
Max Q Clear Time (g_c+I1), s	9.7	12.6	11.3	23.3	5.2	25.3	18.2	13.9
Green Ext Time (p_c), s	0.2	5.3	0.0	2.0	0.1	7.0	0.1	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	37.3
HCM 7th LOS	D

Notes

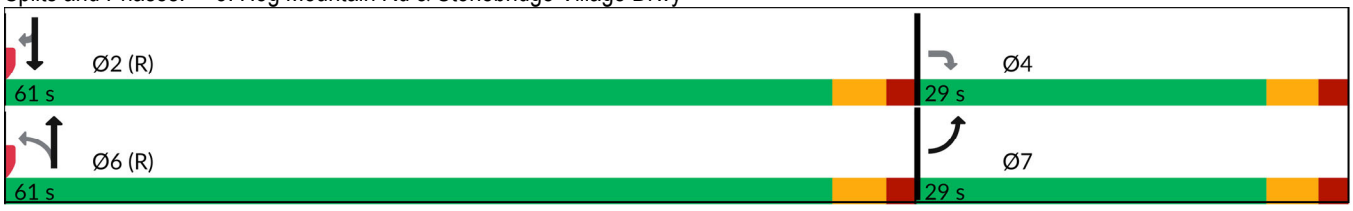
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

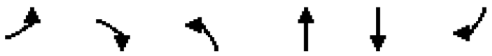
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	131	84	563	571	160
Future Volume (vph)	182	131	84	563	571	160
Lane Group Flow (vph)	188	135	87	580	589	165
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	7			6	2	
Permitted Phases		4	6			2
Detector Phase	7	4	6	6	2	2
Switch Phase						
Minimum Initial (s)	5.0	4.0	15.0	15.0	15.0	15.0
Minimum Split (s)	15.0	15.0	28.5	28.5	36.5	36.5
Total Split (s)	29.0	29.0	61.0	61.0	61.0	61.0
Total Split (%)	32.2%	32.2%	67.8%	67.8%	67.8%	67.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5	5.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio	0.65	0.36	0.17	0.44	0.44	0.14
Control Delay (s/veh)	45.0	8.5	6.0	7.3	7.3	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	8.5	6.0	7.3	7.3	1.2
Queue Length 50th (ft)	103	0	14	118	121	0
Queue Length 95th (ft)	161	45	38	223	228	20
Internal Link Dist (ft)	209			979	736	
Turn Bay Length (ft)		90	130			130
Base Capacity (vph)	462	513	523	1328	1328	1176
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.26	0.17	0.44	0.44	0.14

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hog Mountain Rd & Stonebridge Village Drwy





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	182	131	84	563	571	160
Future Volume (veh/h)	182	131	84	563	571	160
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	135	87	580	589	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	238	212	598	1392	1392	
Arrive On Green	0.13	0.13	0.74	0.74	0.74	0.00
Sat Flow, veh/h	1781	1585	827	1870	1870	1585
Grp Volume(v), veh/h	188	135	87	580	589	0
Grp Sat Flow(s),veh/h/ln	1781	1585	827	1870	1870	1585
Q Serve(g_s), s	9.2	7.3	3.9	10.3	10.6	0.0
Cycle Q Clear(g_c), s	9.2	7.3	14.5	10.3	10.6	0.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	238	212	598	1392	1392	
V/C Ratio(X)	0.79	0.64	0.15	0.42	0.42	
Avail Cap(c_a), veh/h	465	414	598	1392	1392	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.90	0.90	1.00	0.00
Uniform Delay (d), s/veh	37.8	36.9	7.0	4.3	4.3	0.0
Incr Delay (d2), s/veh	5.8	3.2	0.5	0.8	0.9	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	3.0	0.6	2.7	2.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	43.6	40.1	7.5	5.1	5.2	0.0
LnGrp LOS	D	D	A	A	A	
Approach Vol, veh/h	323			667	589	
Approach Delay, s/veh	42.1			5.4	5.2	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		72.5		17.5		72.5
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		55.5		23.5		55.5
Max Q Clear Time (g_c+I1), s		12.6		11.2		16.5
Green Ext Time (p_c), s		8.5		0.8		9.5

Intersection Summary	
HCM 7th Control Delay, s/veh	12.9
HCM 7th LOS	B

Notes

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	69	90	715	682
Demand Flow Rate, veh/h	70	91	730	696
Vehicles Circulating, veh/h	722	564	28	141
Vehicles Exiting, veh/h	115	194	764	506
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	5.7	8.7	10.2
Approach LOS	A	A	A	B

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT		LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976	4.976
A (Intercept)	1380	1380	1380	1380	1380
B (Slope)	1.02e-3	1.02e-3	1.02e-3	1.02e-3	1.02e-3
Entry Flow, veh/h	70	83	8	730	696
Cap Entry Lane, veh/h	661	776	824	1341	1195
Entry HV Adj Factor	0.984	0.986	0.980	0.980	0.980
Flow Entry, veh/h	69	82	8	715	682
Cap Entry, veh/h	650	765	807	1314	1172
V/C Ratio	0.106	0.107	0.010	0.544	0.582
Control Delay, s/veh	6.7	5.8	4.6	8.7	10.2
LOS	A	A	A	A	B
95th %tile Queue, veh	0	0	0	3	4

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	11	715	30	19	712
Future Vol, veh/h	19	11	715	30	19	712
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	-	-	175	235	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	12	777	33	21	774

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1592	777	0	0	810	0
Stage 1	777	-	-	-	-	-
Stage 2	815	-	-	-	-	-
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	118	397	-	-	816	-
Stage 1	453	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	115	397	-	-	816	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	453	-	-	-	-	-
Stage 2	424	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	34.21	0	0.25
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	155	816	-
HCM Lane V/C Ratio	-	-	0.21	0.025	-
HCM Ctrl Dly (s/v)	-	-	34.2	9.5	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

TRAFFIC VOLUME WORKSHEETS

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

1. Spout Springs@Stonebridge(W)

A.M. Peak Hour

	Regain Medical Billing Driveway **Northbound**					Stonebridge Village East Driveway **Southbound**					Spout Springs Road **Eastbound**					Spout Springs Road **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2026 Traffic Counts:	0	67	18	11	96	0	59	7	182	248	17	192	470	53	732	0	36	970	92	1098
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	0	0	35	0	35
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	68	18	11	97	0	60	7	184	251	17	194	486	54	751	0	36	1015	93	1144
Total New Trips:	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	1	15	1	17
Future 2027 Traffic Volumes:	0	68	18	11	97	0	60	7	184	251	17	194	492	54	757	0	37	1030	94	1161

School Dismissal Peak Hour

	Regain Medical Billing Driveway **Northbound**					Stonebridge Village East Driveway **Southbound**					Spout Springs Road **Eastbound**					Spout Springs Road **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2026 Traffic Counts:	0	132	34	39	205	0	160	49	299	508	3	369	963	142	1477	0	39	734	145	918
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	0	0	0	0	0	0	0	0	0	0	27	0	27	0	0	21	0	21
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	133	34	39	206	0	162	49	302	513	3	373	1000	143	1519	0	39	762	146	947
Total New Trips:	0	0	0	1	1	0	1	0	0	1	0	0	13	0	13	0	1	11	1	13
Future 2027 Traffic Volumes:	0	133	34	40	207	0	163	49	302	514	3	373	1013	143	1532	0	40	773	147	960

P.M. Peak Hour

	Regain Medical Billing Driveway **Northbound**					Stonebridge Village East Driveway **Southbound**					Spout Springs Road **Eastbound**					Spout Springs Road **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2026 Traffic Counts:	0	148	34	36	218	0	140	38	285	463	8	375	1029	151	1563	0	47	687	128	862
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	0	0	0	0	0	0	0	0	0	0	37	0	37	0	0	22	0	22
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	149	34	36	219	0	141	38	288	467	8	379	1076	153	1616	0	47	716	129	892
Total New Trips:	0	0	0	1	1	0	1	0	0	1	0	0	17	0	17	0	1	11	1	13
Future 2027 Traffic Volumes:	0	149	34	37	220	0	142	38	288	468	8	379	1093	153	1633	0	48	727	130	905

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

2. Spout Springs @ Hog Mountain

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	200	272	70	542	0	177	153	197	527	0	99	408	60	567	0	91	830	305	1226
Projected 2026 Volumes:	0	202	275	71	548	0	179	155	199	533	0	100	412	61	573	0	92	838	308	1238
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	1	0	1	0	9	4	35	48	0	11	0	0	11	0	0	0	3	3
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	204	279	72	555	0	190	161	236	587	0	112	416	62	590	0	93	846	314	1253
Total New Trips:	0	0	1	0	1	0	4	2	18	24	0	6	0	0	6	0	0	0	2	2
Future 2027 Traffic Volumes:	0	204	280	72	556	0	194	163	254	611	0	118	416	62	596	0	93	846	316	1255

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	141	208	54	403	0	221	259	124	604	0	147	651	101	899	0	78	396	168	642
Projected 2026 Volumes:	0	142	210	55	407	0	223	262	125	610	0	148	658	102	908	0	79	400	170	649
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	3	0	3	0	5	3	21	29	0	27	0	0	27	0	0	0	7	7
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	143	215	56	414	0	230	268	147	645	0	176	665	103	944	0	80	404	179	663
Total New Trips:	0	0	2	0	2	0	3	2	12	17	0	15	0	0	15	0	0	0	4	4
Future 2027 Traffic Volumes:	0	143	217	56	416	0	233	270	159	662	0	191	665	103	959	0	80	404	183	667

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	160	183	63	406	0	277	330	122	729	0	155	738	117	1010	0	82	462	177	721
Projected 2026 Volumes:	0	162	185	64	411	0	280	333	123	736	0	157	745	118	1020	0	83	467	179	729
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	5	0	5	0	6	3	22	31	0	37	0	0	37	0	0	0	9	9
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	164	192	65	421	0	289	339	146	774	0	196	752	119	1067	0	84	472	190	746
Total New Trips:	0	0	2	0	2	0	3	2	12	17	0	20	0	0	20	0	0	0	5	5
Future 2027 Traffic Volumes:	0	164	194	65	423	0	292	341	158	791	0	216	752	119	1087	0	84	472	195	751

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

3.Hog Mtn@StonebridgeVillage(E)

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Stonebridge Village East Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	36	670	0	706	0	0	571	96	667	0	77	0	39	116	0	0	0	0	0
Projected 2026 Volumes:	0	36	677	0	713	0	0	577	97	674	0	78	0	39	117	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	15	0	15	0	0	48	0	48	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-4	-4	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	36	699	0	735	0	0	631	94	725	0	79	0	39	118	0	0	0	0	0
Total New Trips:	0	0	9	0	9	0	0	24	3	27	0	1	0	0	1	0	0	0	0	0
Future 2027 Traffic Volumes:	0	36	708	0	744	0	0	655	97	752	0	80	0	39	119	0	0	0	0	0

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Stonebridge Village East Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	118	430	0	548	0	0	554	188	742	0	173	0	146	319	0	0	0	0	0
Projected 2026 Volumes:	0	119	434	0	553	0	0	560	190	750	0	175	0	147	322	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	37	0	37	0	0	29	0	29	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-1	-1	0	-3	0	0	-3	0	0	0	0	0
No-Build 2027 Volumes:	0	120	475	0	595	0	0	595	191	786	0	174	0	148	322	0	0	0	0	0
Total New Trips:	0	0	21	0	21	0	0	17	2	19	0	3	0	0	3	0	0	0	0	0
Future 2027 Traffic Volumes:	0	120	496	0	616	0	0	612	193	805	0	177	0	148	325	0	0	0	0	0

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Stonebridge Village East Driveway Eastbound					- Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	82	475	0	557	0	0	514	157	671	0	179	0	129	308	0	0	0	0	0
Projected 2026 Volumes:	0	83	480	0	563	0	0	519	159	678	0	181	0	130	311	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	51	0	51	0	0	30	0	30	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-3	-3	0	-4	0	0	-4	0	0	0	0	0
No-Build 2027 Volumes:	0	84	536	0	620	0	0	554	158	712	0	179	0	131	310	0	0	0	0	0
Total New Trips:	0	0	27	0	27	0	0	17	2	19	0	3	0	0	3	0	0	0	0	0
Future 2027 Traffic Volumes:	0	84	563	0	647	0	0	571	160	731	0	182	0	131	313	0	0	0	0	0

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

4. Hog Mountain @ Cash Rd

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	7	687	54	748	0	2	501	6	509	0	24	5	48	77	0	124	1	62	187
Projected 2026 Volumes:	0	7	694	55	756	0	2	506	6	514	0	24	5	48	77	0	125	1	63	189
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	17	0	17	0	0	6	4	10	0	13	3	0	16	0	0	1	0	1
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-4	0	0	0	0	0
No-Build 2027 Volumes:	0	7	718	56	781	0	2	517	10	529	0	37	8	44	89	0	126	2	64	192
Total New Trips:	0	0	15	1	16	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0
Future 2027 Traffic Volumes:	0	7	733	57	797	0	2	523	10	535	0	37	8	44	89	0	126	2	64	192

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	40	423	140	603	0	8	612	10	630	0	3	1	19	23	0	114	1	12	127
Projected 2026 Volumes:	0	40	427	141	608	0	8	618	10	636	0	3	1	19	23	0	115	1	12	128
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	10	0	10	0	0	14	10	24	0	8	2	0	10	0	0	2	0	2
Adjacent Site Shifted Traffic :	0	-3	0	0	-3	0	0	0	0	0	0	0	0	-1	-1	0	0	0	0	0
No-Build 2027 Volumes:	0	37	441	142	620	0	8	638	20	666	0	11	3	18	32	0	116	3	12	131
Total New Trips:	0	0	11	1	12	0	0	13	0	13	0	0	0	0	0	0	1	0	0	1
Future 2027 Traffic Volumes:	0	37	452	143	632	0	8	651	20	679	0	11	3	18	32	0	117	3	12	132

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	57	428	169	654	0	3	558	32	593	0	10	4	45	59	0	68	5	8	81
Projected 2026 Volumes:	0	58	432	171	661	0	3	564	32	599	0	10	4	45	59	0	69	5	8	82
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	11	0	11	0	0	19	14	33	0	8	2	0	10	0	0	3	0	3
Adjacent Site Shifted Traffic :	0	-4	0	0	-4	0	0	0	0	0	0	0	0	-3	-3	0	0	0	0	0
No-Build 2027 Volumes:	0	55	447	173	675	0	3	589	46	638	0	18	6	42	66	0	70	8	8	86
Total New Trips:	0	0	11	1	12	0	0	17	0	17	0	0	0	0	0	0	1	0	0	1
Future 2027 Traffic Volumes:	0	55	458	174	687	0	3	606	46	655	0	18	6	42	66	0	71	8	8	87

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS
Traffic Volumes

A&R Engineering
January 2026

5. Hog Mountain @ Site Drwy

A.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					- Eastbound					Site Driveway Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	748	0	748	0	0	673	0	673	0	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	755	0	755	0	0	680	0	680	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	15	0	15	0	0	48	0	48	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	-4	0	-4	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	778	0	778	0	0	731	0	731	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	10	10	0	6	0	0	6	0	0	0	0	0	0	27	0	17	44
Future 2027 Traffic Volumes:	0	0	778	10	788	0	6	731	0	737	0	0	0	0	0	0	27	0	17	44

School Dismissal Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					- Eastbound					Site Driveway Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	603	0	603	0	0	745	0	745	0	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	609	0	609	0	0	752	0	752	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	37	0	37	0	0	29	0	29	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	-3	0	-3	0	0	-1	0	-1	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	649	0	649	0	0	788	0	788	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	24	24	0	14	0	0	14	0	0	0	0	0	0	19	0	12	31
Future 2027 Traffic Volumes:	0	0	649	24	673	0	14	788	0	802	0	0	0	0	0	0	19	0	12	31

P.M. Peak Hour

	Hog Mountain Road Northbound					Hog Mountain Road Southbound					- Eastbound					Site Driveway Westbound				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2025 Traffic Counts:	0	0	654	0	654	0	0	671	0	671	0	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	661	0	661	0	0	678	0	678	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
Adjacent Site Trips:	0	0	51	0	51	0	0	30	0	30	0	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	-4	0	-4	0	0	-3	0	-3	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	715	0	715	0	0	712	0	712	0	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	30	30	0	19	0	0	19	0	0	0	0	0	0	19	0	11	30
Future 2027 Traffic Volumes:	0	0	715	30	745	0	19	712	0	731	0	0	0	0	0	0	19	0	11	30



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE
AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026













Public Hearing Published 03/18/2026 First Reading 04/02/2026
Public Hearing 04/02/2026 Second Reading TBD

ORDINANCE NO. 776

AN ORDINANCE GRANTING VARIANCES FROM THE REQUIREMENTS SET FORTH IN THE CITY OF FLOWERY BRANCH ZONING ORDINANCE, SAID VARIANCES TO BE FROM SEC. 1014, TABLE 10.1, CENTERLINE RADIUS OF CURVATURE, FROM SEC. 7.4 – TABLE 7.2 MINIMUM LOT SIZE, FROM SEC. 1021(C) – RESIDENTIAL STREET DESIGN, FOR 4651 & 4665 HOG MOUNTAIN ROAD, HALL COUNTY TAX PARCELS 15046 000008 AND 15046 000008B, OWNED BY CD II PROPERTIES, LLC; AS SHOWN AND DESCRIBED ON ATTACHED EXHIBIT "A", PROVIDING FOR SEVERABILITY, PROVIDING FOR AN EFFECTIVE DATE, REPEALING CONFLICTING ORDINANCES, AND FOR ALL OTHER LAWFUL PURPOSES.

WHEREAS, CDII Properties LLC owns the subject parcel of land identified as Hall County Tax Parcel Identification No. 15046 000008 and 15046 000008B as shown and described on Exhibit "A"; and

WHEREAS, CDII Properties, LLC has submitted to the City Council of Flowery Branch, Georgia, a written and signed application and affidavit showing consent to apply for variances and whereas a survey and complete description of the subject parcel is included in the application; and

WHEREAS, the City Council held a public hearing at the meeting on April 2nd , 2026, duly noticed as prescribed by law and published in the Gainesville Times, regarding said application, as shall be set forth in the minutes of said meeting.

NOW THEREFORE, THE COUNCIL OF THE CITY OF FLOWERY BRANCH HEREBY ORDAINS AS FOLLOWS:

SECTION 1. FINDINGS

The City Council hereby finds that the following conditions exist, thus warranting the granting of certain variances from the zoning ordinance:

Commented [TB1]: Just list the criteria that are met by the applicant. When the new variance language passes, we will need to change this introductory language to show that all variance criteria have been met.

a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;
b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;
c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;
e) The special circumstances are not the result of the actions of the applicant;
f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and
g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.

SECTION 2. VARIANCES GRANTED, AND CONDITIONS IMPOSED.

The following variances from the zoning ordinance are hereby granted, subject to certain specified conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is approved with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.
2. A Variance **to Sec. 7.4 Tabel 7.2** is approved for a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.
3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is approved with the following conditions:
   a) The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
   b) The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

SECTION 3. SEVERABILITY

Should any section or provision of this Ordinance be declared invalid or unconstitutional by any court of competent jurisdiction, such declaration shall not affect the validity of this Ordinance as a whole or any part thereof which is not specifically declared to be invalid or unconstitutional.

SECTION 4. EFFECTIVE DATE.

The effective date of this Ordinance shall be May 7th, 2026.

SECTION 5. REPEALER.

All ordinances and parts of ordinances in conflict herewith are hereby repealed to the extent of the conflict.

Approved this _____ day of _____ 2026.

Public Hearing Published 03/18/2026
Public Hearing 04/02/2026

First Reading 04/02/2026
Second Reading TBD

_____
Oliver McClellan, Mayor

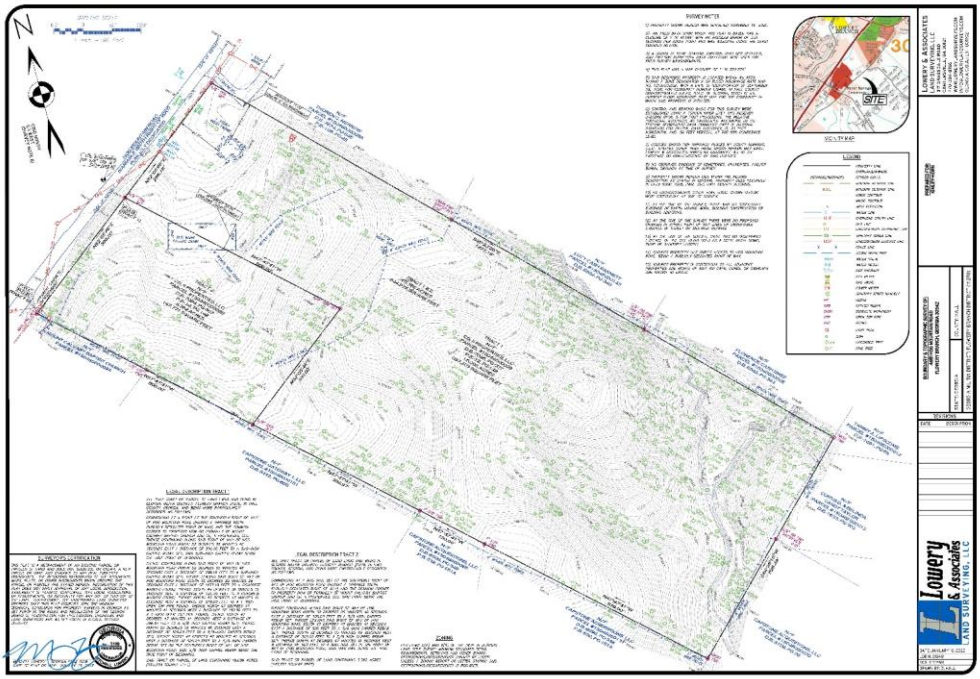
_____
Shelia R. Cooper, City Clerk

APPROVED AS TO FORM

_____
Ted C. Baggett, City Attorney

Public Hearing Published 03/18/2026 First Reading 04/02/2026
Public Hearing 04/02/2026 Second Reading TBD

Exhibit A



LEGAL DESCRIPTION TRACT 1

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC; THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 296.18 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 45 DEGREES 22 MINUTES 26 SECONDS EAST A DISTANCE OF 1477.18 FEET TO A CONCRETE MARKER FOUND; THENCE SOUTH 44 DEGREES 38 MINUTES 15 SECONDS WEST A DISTANCE OF 525.39 FEET TO A CONCRETE MARKER FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 519.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 150.00 FEET TO A 1–INCH OPEN TOP PIPE FOUND; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 386.97 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8–INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500.00 FEET TO A 5/8–INCH CAPPED REBAR SET ON THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID 5/8–INCH CAPPED REBAR BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 16.006 ACRES (697,203 SQUARE FEET).

Public Hearing Published 03/18/2026 First Reading 04/02/2026
Public Hearing 04/02/2026 Second Reading TBD

LEGAL DESCRIPTION TRACT 2

ALL THAT TRACT OR PARCEL OF LAND LYING AND BEING IN GEORGIA MILITIA DISTRICT: FLOWERY BRANCH #1270, IN HALL COUNTY, GEORGIA, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A MAG NAIL SET AT THE SOUTHERLY RIGHT OF WAY OF HOG MOUNTAIN ROAD (HAVING A VARIABLE WIDTH, PUBLICLY DEDICATED RIGHT OF WAY) AND THE COMMON CORNER TO PROPERTY NOW OR FORMALLY OF MOUNT CALVARY BAPTIST CHURCH AND CD, II PROPERTIES, LLC, SAID POINT BEING THE TRUE POINT OF BEGINNING.

THENCE CONTINUING ALONG SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD NORTH 52 DEGREES 05 MINUTES 46 SECONDS EAST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET. THENCE LEAVING SAID RIGHT OF WAY OF HOG MOUNTAIN ROAD SOUTH 47 DEGREES 47 MINUTES 41 SECONDS EAST A DISTANCE OF 500 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE SOUTH 52 DEGREES 05 MINUTES 46 SECONDS WEST A DISTANCE OF 300.00 FEET TO A 5/8 INCH CAPPED REBAR SET; THENCE NORTH 47 DEGREES 47 MINUTES 41 SECONDS WEST A DISTANCE OF 500 FEET TO A MAG NAIL SET IN THE RIGHT OF WAY OF HOG MOUNTAIN ROAD, SAID MAG NAIL BEING THE TRUE POINT OF BEGINNING.

SAID TRACT OR PARCEL OF LAND CONTAINING 3.392 ACRES (147,771 SQUARE FEET).

Memorandum

To: City of Flowery Branch, City Manager, and City Council

From: Chris McCrary, Planning and Community Development Director

Date: April 2nd, 2026

Subject: Annexation, Rezoning, and Variances

Applicant: Highpoint Development
1776 Peachtree Street
Atlanta, GA 30309
502-386-7022

Owner: CD II Properties, LLC
P.O. Box 99
Demorest, GA 30535
502-386-7022

Existing Zoning: AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.

Location and Size:

4651 Hog Mountain Road; Parcel 15046 000008; 16.0 Acres
4665 Hog Mountain Road; Parcel 15046 000008B; 3.398
Total Area: 19.398 Acres

Proposed Annexation:

The applicant proposes the annexation of the above-referenced parcels (19.398 Acres) from unincorporated Hall County into the City limits of Flowery Branch.

Proposed Zoning:

The applicant is proposing to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

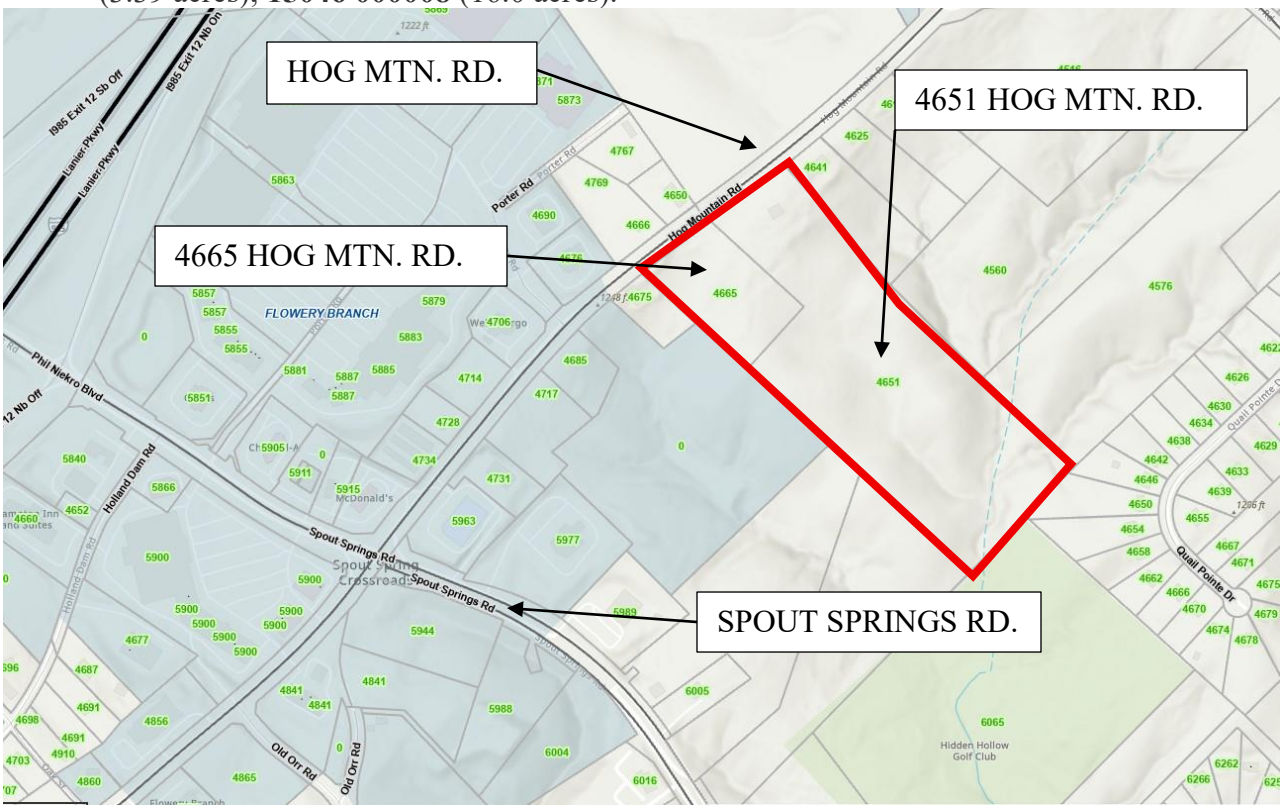
The applicant proposes the development of 75 single-family detached residential lots. The two subject parcels are requested to be rezoned from Hall County AR-1 (Agricultural Residential) and R-1 (Residential) zoning districts, located within unincorporated Hall County, to the Single-Family Townhome (SF-TH) zoning district within the City of Flowery Branch. Concurrent variances from the SF-TH zoning requirements and applicable dimensional standards are also requested.

Concurrent Variances:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography.
2. Variance to **Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. The site plan provided by the applicant lists a total of 75 lots.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements.

Location:

- 4665 and 4651 Hog Mountain Road; tax parcel identification numbers **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres).



Site Plan:

The applicant is proposing 75 single-family detached lots on 19.398 acres.



The site is located on Hog Mountain Road north of the intersection with Spout Springs Road.
The site is an undeveloped wooded lot with state waters located on the eastern side of the site.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC

Architectural Concepts:

The applicant submitted conceptual renderings of the proposed single-family detached architecture. Per the submitted renderings it appears the homes meet architectural standards of material and material application. However, without detailed floor plans, staff is unable to verify compliance with the City's established dimensional standards. To facilitate a thorough review, the applicant must provide complete architectural drawings, to confirm that all requirements are met. A detailed review is done by staff following Article 40 prior to the issuance of permits. The design concepts provided are for illustrative purposes only and were submitted as part of the rezoning case.



ARCHITECTURAL FEATURES:

The achitecture leans toward a mountain bungalow style, with forms and finishes that feel sturdy, familiar, and tied to the landscape. Dark charcoal accents sharpen the earthy palette, while carriage-style garage doors and well-placed sconces add character without slipping into ornament. Matching metal gutters bring a clean outline to the façades, and the porch roof extending across the front-facing garage helps keep everything at a comfortable, human scale. The result is a street presence that feels connected, warm, and intentionally crafted—neighbors, not statements.



EXAMPLE FRONT ELEVATION DARK COLOR SCHEME



COLOR PALETTE:

The three offered schemes—light, mid-tone, and dark—are drawn from the muted, earthy tones of the North Georgia landscape. Each palette reflects the surrounding ridge and creek setting, favoring natural hues: soft mineral whites, weathered wood browns, and deeper charcoal colors that echo stone, soil, and shaded canopy. Together, they provide variation without discord, allowing homes to feel individually tailored yet quietly unified within the broader landscape.



EXAMPLE FRONT ELEVATION LIGHT COLOR SCHEME









ARCHITECTURAL FEATURES:

Details stay simple and purposeful. Porch brackets and extended overhangs provide clear structure and shade without excess. Gable vents, occasional gable windows, and selectively used shutters add just enough dimension to the façades, keeping each home grounded and consistent without feeling repetitive.



EXAMPLE FRONT ELEVATION MID-COLOR SCHEME



EXAMPLE TYPICAL REAR ELEVATION WITH COVERED PORCH



EXAMPLE FRONT ELEVATION BRICK MATERIAL



EXAMPLE SIDE VIEW OF FRONT PORCH WITH BRICK

Open Space Analysis:

Pursuant to Article 10 – Development Requirements and Guidelines, Sec. 10.22 – Open Space Requirements, any proposed residential development is required to provide a total minimum of 15% open space, derived from a combination of Civic Space options (10%) and Amenity Space options (5%).
The site data table provided by the applicant lists a total of 18.5% open space with location details shown on the site plan:



Site Data Table	Required	Provided
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

The site plan proposes several open space options in various locations throughout the development and includes a pocket park, community pavilion, community fire pit, centralized mail kiosk with parking, landscaped seating areas, and a trail system comprised of both hardscape and mulch trails with a stream crossing. Detailed landscape plans and a trail plan including a material list for trail surfacing options, seating, fencing, and stream crossing will be required at time of LDP review.

The following conceptual images were provided by the applicant to illustrate amenity spaces and trail features. Plans submitted for amenity and civic spaces and trail features should substantially adhere to the images below:



Traffic Impacts, Vehicular Flow, and Entrances/Exits

The Conceptual Site Plan for the proposed development indicates 75 residential single-family detached units.

1. Site Access

- A single entrance is proposed off Hog Mountain Road.
- The entrance must include both a right-turn and left-turn lane in. The exit shall include both a left and right dedicated lane. These turn lanes will help to alleviate congestion during peak demand periods and maintain the flow of through traffic. All roadway designs shall be in accordance with the GDOT Driveway Manual.
- The developer is responsible for obtaining and dedicating to the City any right-of-way necessary to construct the required left-turn and right-turn lanes into the site, ensuring that a minimum 13-foot-wide shoulder is maintained.
- Road improvements meeting the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, and 5-foot sidewalk—are required along the entire frontage of the site.
- All costs associated with the required road improvements—including the left-turn lane, right-turn lane, curb and gutter, sidewalk, and associated storm drainage—shall be borne by the developer.

2. Sight Distance

- The driveway design must meet the minimum sight-distance requirements specified in the GDOT Driveway Manual. The engineer shall verify that both stopping-sight distance (SSD) and operational-sight distance (OSD) criteria are satisfied under existing field conditions.

3. Utility Coordination

- Any utilities located beneath the proposed deceleration or turn-lane pavement must be relocated outside of the pavement area.
- All costs associated with utility relocation shall be borne by the developer and coordination with the respective utility owners must be completed prior to construction.

4. Traffic Impact Study

- The current Traffic Study by A&R Engineering was prepared for single-family detached houses by using category 210 for Single-Family Detached.

- All design elements shall comply with GDOT standards. Coordination with Hall County DOT, City of Flowery Branch, and affected utility providers should occur early in the design process to avoid delays.
- The Traffic Impact Study shows that a dedicated left turn in and right turn deceleration lanes are warranted. Recommended conditions will incorporate the required improvements for traffic relief.
- The Traffic Impact Study recommends a single outbound exit lane from the proposed subdivision. However, the study also indicates that during the peak AM period, school dismissal period, and peak PM period, outbound movements from the site operate at a Level of Service (LOS) D. Based on these findings, staff recommends the provision of two outbound exit lanes—one dedicated left-turn lane and one dedicated right-turn lane—to improve operational efficiency and overall LOS for vehicles exiting the subdivision.

Level of Service LOS Description

LOS A is typically assigned when the volume-to-capacity (v/c) ratio is low and either progression is exceptionally favorable, or the cycle length is very short. LOS B is typically assigned when the v/c ratio is low and either progression is highly favorable, or the cycle length is short. However, more vehicles are stopped than with LOS A. LOS C is typically assigned when progression is favorable, or the cycle length is moderate. Individual cycle failures (one or more queued vehicles cannot depart because of insufficient capacity during the cycle) may begin to appear at this level. Many vehicles still pass through the intersection without stopping, but the number of vehicles stopping is significant. LOS D is typically assigned when the v/c ratio is high and either progression is ineffective, or the cycle length is long. There are many vehicle-stops and individual cycle failures are noticeable. LOS E is typically assigned when the v/c ratio is high, progression is very poor, the cycle length is long, and individual cycle failures are frequent. LOS F is typically assigned when the v/c ratio is very high, progression is very poor, the cycle length is long, and most cycles fail to clear the queue.

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 12th edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the ITE land use category: *210 – Single-Family Detached Housing.* The calculated trip generation volumes for the proposed development are shown in Table 4.

TABLE 4 – TRIP GENERATION (PROPOSED SITE)

Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 210 – Single-Family Detached Housing	81 Units	16	44	60	38	31	69	49	30	79	919

* Afternoon school dismissal peak hour trips estimated using the 3 PM – 4 PM rates from ITE's 24-hour vehicle time of day distribution

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 peak hour traffic volumes generated by the site are shown in Figure 6.

6.4 Future Traffic Operations

The future "No-Build" and "Build" traffic operations were analyzed using the volumes in Figures 9 and 10, respectively. The results of the future traffic operations analysis are shown below in Table 8. Recommendations for future traffic control and lane geometry are shown in Figure 11.

TABLE 8 – FUTURE INTERSECTION OPERATIONS

	Intersection	LOS (Delay)					
		NO-BUILD			BUILD		
		AM Peak	Dismissal Peak	PM Peak	AM Peak	Dismissal Peak	PM Peak
1	**Spout Springs Road @ Stonebridge Village West Driveway**	**B (18.2)**	**C (29.6)**	**C (27.4)**	**B (18.2)**	**C (29.9)**	**C (27.6)**
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)	C (21.2)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)	C (22.8)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)	E (62.3)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)	D (42.7)
2	**Spout Springs Road @ Hog Mountain Road**	**D (35.4)**	**D (36.1)**	**D (37.6)**	**D (36.1)**	**D (36.3)**	**D (37.3)**
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)	C (33.0)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)	C (22.6)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)	D (47.5)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)	D (47.4)
3	**Hog Mountain Road @ Stonebridge Village East Driveway**	**A (7.5)**	**B (14.5)**	**B (12.9)**	**A (7.5)**	**B (14.7)**	**B (12.9)**
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)	D (42.1)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)	A (5.4)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)	A (5.2)
4	**Hog Mountain Road @ Findley Drive / Cash Road**	**B (11.3)**	**B (11.7)**	**A (8.8)**	**B (11.6)**	**B (12.2)**	**A (9.1)**
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)	A (6.7)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)	A (5.7)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)	A (8.7)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)	B (10.2)
5	**Hog Mountain Road @ Site Driveway**						
	-Westbound Approach	-	-	-	E (40.7)	D (33.0)	D (34.2)
	-Southbound Left				A (9.6)	A (9.2)	A (9.5)

The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways.

7.0 Conclusions and Recommendations

Traffic impacts were evaluated for the proposed residential development that will be located at 4665 Hog Mountain Road in Hall County. The development will consist of 81 detached houses and proposes one full access driveway on Hog Mountain Road.

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

- Spout Springs Road at Stonebridge Village West Driveway
- Spout Springs Road at Hog Mountain Road
- Hog Mountain Road at Stonebridge Village East Driveway
- Hog Mountain Road at Findley Drive / Cash Road
- Hog Mountain Road at Proposed Site Driveway

The analysis included the evaluation of future operations for "No-Build" and "Build" conditions, both of which account for volume increases due to the annual growth of through traffic. The results of both the future "No-Build" and "Build" traffic operations analyses indicate that the signalized study intersections (intersections 1, 2, and 3) will continue to operate at an overall level of service "D" or better in the AM, dismissal, and PM peak hours, while the roundabout intersection of Hog Mountain Road at Findley Drive / Cash Road will continue to operate at an overall level of service "B" or better with peak hour traffic. The approaches at the stop-controlled site driveway intersection will operate at a level of service "E" or better with peak hour traffic. It is not unusual for minor side streets that are stop-controlled to experience higher delays during peak traffic hours due to the time gap required for vehicles to make turning movements on busy roadways. Based on the analysis results, the impact of site-generated traffic on operations in the study network will be minimal.

7.1 Recommendations for Site Access Configuration

The following access configuration is recommended for the proposed site driveway intersection:

- Site Driveway: Full Access Driveway on Hog Mountain Road
    - One entering lane and one exiting lane
    - Stop-sign controlled on the driveway approach with Hog Mountain Road remaining free flow
    - A right turn and a left turn lane for entering traffic
    - Provide/confirm adequate sight distance per AASHTO standards

Sewer Design and Capacity Impacts

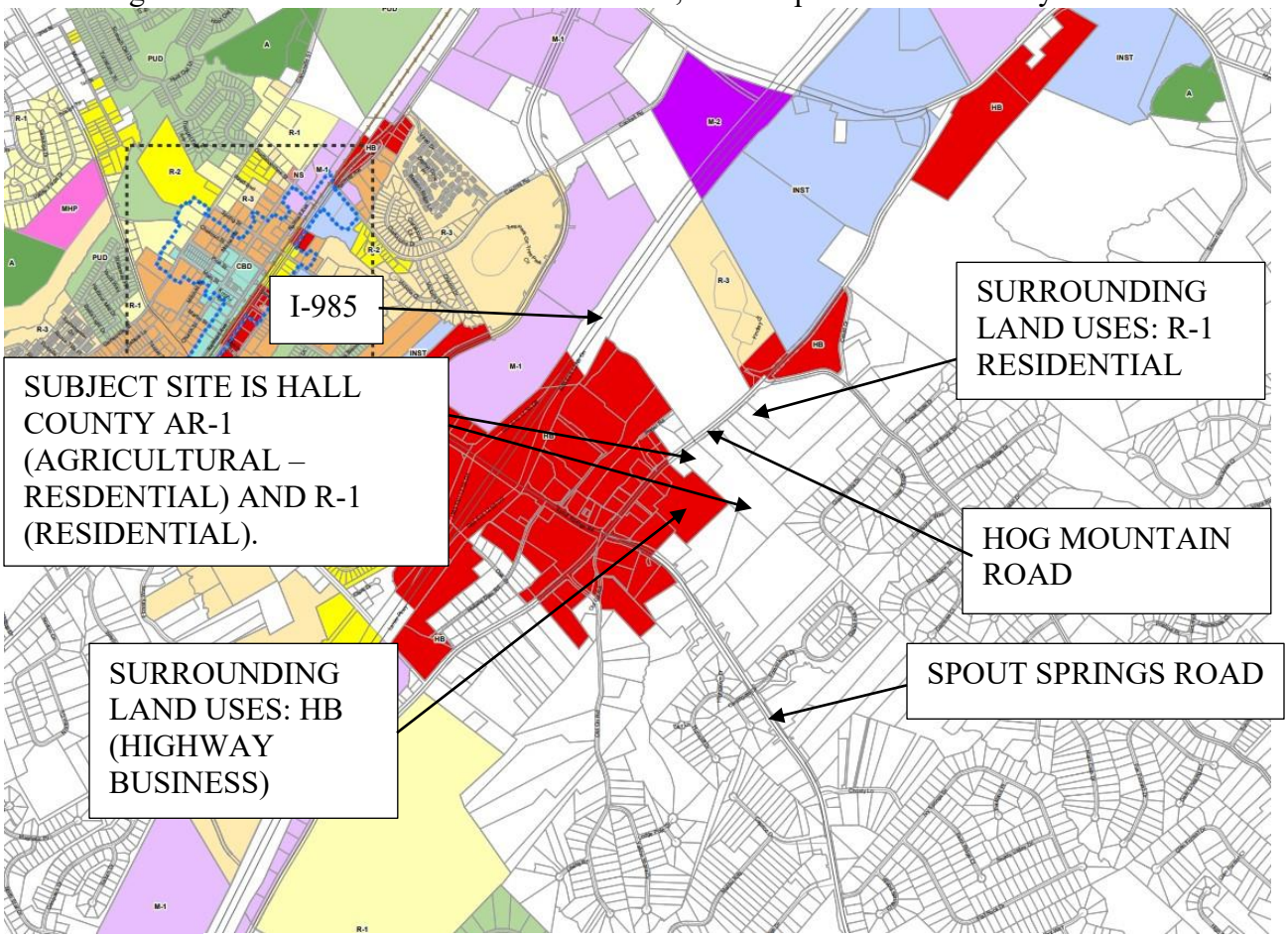
The proposed development of 75 residential units will generate a peak sanitary sewer demand of **20,625** gallons per day, based on the City's standard rate of 275 gallons per unit. Given the City's current peak capacity of **727,798** gallons per day, bringing these units online would reduce available capacity to approximately **707,173** gallons per day.

Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Public Utilities Director.

The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

Zoning Map:

AR-1 – Agricultural – Residential & R-1 Residential, Unincorporated Hall County.



Legend

Zoning Districts

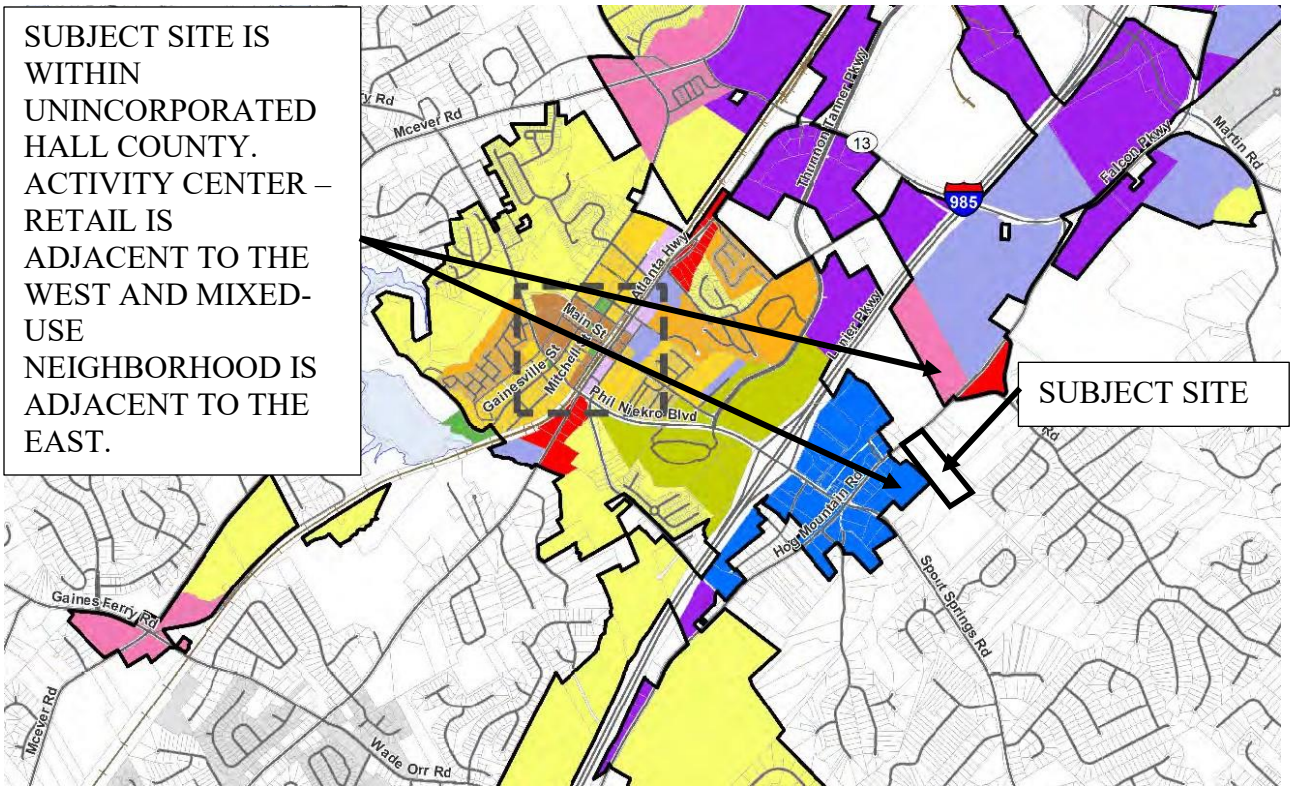
- Residential Low Density (R-1)
- Residential Moderate Density (R-2)
- Residential Multi-family (R-3)
- Traditional Neighborhood Development (TND)
- Planned Unit Development (PUD)
- Manufactured Home Park (MHP)
- Central Business District (CBD)
- Neighborhood Shopping (NS)
- Highway Business (HB)
- Institutional (INST)
- Manufacturing & Industrial, Light (M-1)
- Manufacturing & Industrial, Heavy (M-2)
- Agriculture (A)

Historic Districts

- Local Historic District

Future Development Plan:

SUBJECT SITE IS WITHIN UNINCORPORATED HALL COUNTY. ACTIVITY CENTER – RETAIL IS ADJACENT TO THE WEST AND MIXED-USE NEIGHBORHOOD IS ADJACENT TO THE EAST.



Other City Limits

CHARACTER AREA

- CONSERVATION
- SUBURBAN RESIDENTIAL
- TRADITIONAL NEIGHBORHOOD
- URBAN DENSITY COMMUNITY
- OLD TOWN
- MIXED USE - DOWNTOWN
- MIXED USE - NEIGHBORHOOD
- NEIGHBORHOOD COMMERCIAL
- ACTIVITY CENTER
- ACTIVITY CENTER - RETAIL
- INDUSTRIAL EMPLOYMENT
- INSTITUTIONAL CAMPUS

ARTICLE 2
Section 2.2. Design-Related Definitions.

Density: The number of families, individuals, dwelling units or housing structures per unit of land. Gross density is determined by dividing the number of families, individuals, dwelling units or housing structures by the gross area of the land (i.e. all land within the boundaries of the particular area excluding nothing). Net density is determined by subtracting from the gross area the following conditions identified on the land:

- 50 percent of any land identified as a wetland; and
- 50 percent of any land identified waters of the state including the buffer zones; and
- 50 percent of any land identified as a flood hazard boundary; and
- 50 percent of any land within an electricity transmission easement or right-of-way; and
- 50 percent of any land within a gas transmission easement or right-of-way.

The result of this calculation is the net acreage. The net acreage is divided into the number of units to determine the net density. The applicant provided a net density number but did not provide the areas of the wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.

Sec. 34.7. - Analysis Requirements for Rezoning

Applications to amend the official zoning map shall provide a written analysis comparing the proposed action with the criteria in this Section. A zoning map amendment or conditional use application may be justified only if it bears a reasonable relationship to the public health, safety, morality, or general welfare, and after consideration of the analysis requirements which may in individual cases be considered criteria relevant to the Zoning Administrator in making recommendations and by the City Council in the decision-making process.

a) *Whether the proposal will permit a use that is suitable in view of the use and development of adjacent and nearby property.*
The development of residential single-family detached homes is a suitable use in view of the use and development of adjacent and nearby property.

b) *Whether the proposal will adversely affect the existing use or usability of adjacent or nearby property.*
The proposed use will not adversely affect the existing use or usability of adjacent or nearby property.

c) *Whether the property to be affected by the proposal can be used in accordance with the existing regulations and has reasonable economic use as currently zoned.*
Annexation is necessary to connect the site to Flowery Branch's sanitary sewer system, while rezoning is required to align the site with the city's zoning designations.

d) *Whether the proposal will result in a use which will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.*
Input from the City's engineer was provided in this staff report.

e) *Whether the proposal is in conformity with the policy and intent of the comprehensive plan including but not limited to the character area map and future land use plan map.*
The proposed development is directly adjacent to the Activity Center – Retail character area. Mixed Use character area is located adjacent to the northeast on Hog Mountain Road. The proposed residential development would be a transitional zoning from retail to residential.

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 proposal.*

There are no other existing or changing conditions affecting the use and development of the property which give supporting grounds for either approval or disapproval of the proposal.

g) *Existing use(s) and zoning of the subject property and nearby properties.*
The proposed development is for detached single-family and no other similar developments are nearby.

h) *Existing value of the property under the existing zoning district classification, the extent to which the property value of the subject property is diminished by the existing zoning district, and the value of the property under the proposed zoning district; if such information is provided by the applicant or can be discerned. This consideration may include the length of time the property has been vacant or unused as currently zoned and efforts taken by the property owner(s) to use the property or sell the property under the existing zoning district classification.*
Staff has no information to provide on the value of the subject property.

i) *Whether a proposed zoning map amendment or conditional use approval will be a deterrent to the value or improvement of development of adjacent property in accordance with existing regulations.*
Staff has no information to provide on the value of the adjacent property.

j) *The possible creation of an isolated zoning district unrelated to adjacent and nearby districts.*
There are no SF-TH zoning designations in the area. This zoning would create an isolated zoning district.

k) *Possible effects of the change in zoning district map, or change in use, on the character of a zoning district.*
The proposed use is not similar to nearby development.

l) *The possible impact on the environment, including but not limited to, drainage, soil erosion and sedimentation, flooding, air quality and water quality.*
The subsequent LDP will be required to be compliant with all erosion and stormwater regulations.

m) *The relation that the proposed map amendment or conditional use bears to the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance*.

The proposed rezoning will have impacts on the purpose of the overall zoning scheme and the purposes of this Zoning Ordinance due to the isolated zoning to SF-TH in this area.

Sec. 37.5. - Criteria for Granting Variances.

Any applicant requesting consideration of a variance to any provision of the zoning ordinance shall provide a written justification that one or more of the following condition(s) exist. The City Council shall not approve a variance application unless it shall have adopted findings that one or more of the following conditions exist:

(a) There are extraordinary and exceptional conditions or practical difficulties pertaining to the particular piece of property in question because of its size, shape or topography that are not applicable to other lands or structures in the same district;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Topography could be considered a hardship. The variance request could be considered for approval with an alternative solution such as three-way stops at intersections and a two-way stop at the smallest radius curve. Alternatives shall be approved by the City Engineer.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 sq.ft. to 5,500 sq.ft. The applicant states the shape of the lot (lot width) limits the depth of lots across the parcel and the topography limits the placement of deeper lots. Topography and parcel shapes are legitimate hardships for a Variance.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course: Topography could be considered a hardship. The applicant proposes installing several speed tables and offsetting each home by five feet from adjacent homes to help break up the straight sight lines.

(b) A literal interpretation of the provisions of this ordinance would effectively deprive the applicant of rights commonly enjoyed by other properties of the district in which the property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The shape of the parcel is deeper than it is wide. The shape of the parcel requires two turns to be less than 275-foot radius to make the directional change. The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The literal interpretation of the provisions of this ordinance would effectively deprive the applicant to develop as proposed.

(c) Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: Granting the variance requested will not confer upon the property of the applicant any special privileges that are denied to other properties of the district in which the applicant's property is located.

(d) The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The requested variance will be in harmony with the purpose and intent of this ordinance and will not be injurious to the neighborhood or to the general welfare.

(e) The special circumstances are not the result of the actions of the applicant;

1. Variance Request **Section 1014, Table 10.1** radius of curvature: The special circumstances are not the result of the actions of the applicant.
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size: The special circumstances are not the result of the actions of the applicant.
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation: The special circumstances are not the result of the actions of the applicant.

(f) The variance requested is the minimum variance that will make possible the proposed use of the land, building, or structure in the use district proposed; and

1. Variance Request **Section 1014, Table 10.1** radius of curvature:
2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size:
3. Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation:

Staff has worked with the applicant over time to get the plans to a point where it's reasonable to believe that each variance request is the minimum variance that will make possible the proposed use of land, building or structure in the use district proposed.

(g) The variance shall not permit a use of land, buildings or structures, which is not permitted by right in the zoning district or overlay district involved.
With annexation and rezoning to the proper zoning category, residential dwellings would be permitted uses.

Variance Details:

1. Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48'. The applicant states the hardship for the centerline radius curvature is due to topography. A GIS review of the site confirms the site is an undeveloped wooded site with significant topography. The variance request could be considered for approval with an alternative solution approved by the City Engineer.

2. Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet in the SF-TH zoning category. The application requests a reduction to a minimum lot size of 5,500 square feet. Many lots are above the minimum lot area with an average lot size 6,852 square feet. The width of the parcel with two parallel streets limits the depth of some lots and the shape of a parcel can be considered a hardship.

   Variance **to Sec. 1021.c** Residential Street Design with streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course. The applicant seeks to remove the 25-foot deviation from straight course requirements. The applicant's

site plan indicated locations speed table / pedestrian crossings to slow speeds in straight runs of the road. The applicant is also proposing offsetting each home by five feet from adjacent homes to help break up the straight sight lines. Staff believe these alternatives maintain the intent of this code section.

Staff Recommendation for Annexation, Rezoning, and Variances

Recommendation:

There are three applications proposed at 4651 and 4665 Hog Mountain Road, parcels **15046 000008B** (3.39 acres); **15046 000008** (16.0 acres). The first consideration for the City Council is the proposed annexation of both parcels. With annexation, the subject site must be rezoned from Hall County AR-1 – Agricultural & Residential - R-1- Residential to a Flowery Branch zoning category. The applicant is proposing to rezone the property to Single-Family Townhome Development (SF-TH).

Variance Recommendations for Ordinance 776:

Staff recommends **approval** of Ordinance 776 for three Variances with the following conditions:

1. A Variance from **Section 1014, Table 10.1** radius of curvature of the center line from 275' to 48' is recommended for approval with a condition that two-way stops at the curves requiring variances be placed and the intersection is a three-way stop. Final traffic design shall be approved by the City Engineer.

2. A Variance **to Sec. 7.4 Tabel 7.2** a reduction to the minimum lot size from 6,700 square feet to no less than 5,500 square feet with a condition that the average lot size be not less than 6,850 square feet overall.

3. A Variance to remove the requirement in **Sec. 1021.c** Residential Street Design to have streets more than 360 feet in length shall have at least 25 feet of lateral deviation from a straight course is recommended for approval the following conditions:

    1. The applicant is to construct speed tables / pedestrian crossings to slow speeds in straight runs of the road. The type of speed table and the locations are to be approved by the City Engineer.
    2. The applicant shall offset the front of each home by five feet from neighboring homes. Final house location plans shall be approved by the Director of Planning and Community Development.

Staff recommends **approval of the Annexation and Rezoning** applications with the conditions provided.

Recommended Conditions of Approval of Annexation and Rezoning:

Please find below the proffered conditions for the proposed rezoning, organized by discipline and drafted to ensure consistency with the submitted concept materials and to protect the public interest:

1. **General Development**
    a. Building Locations and Scope:
    The total number of residential lots within the detached townhome development shall not exceed 75.
    b. Density Measurement:
    Density shall be calculated on a net basis, in accordance with the definition of *Net Density* set forth in Article 2, Section 2.2 (Design-Related Definitions). The applicant is to provide the areas of wetlands, state water buffer zones, flood hazard or electric / gas transmission easements or right-of-way.
    c. Maximum net density shall not exceed 6 units per acre.
    d. The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
        i. No more than ten percent (10%) of the total homes may be leased.
        ii. No more than two houses may be owned by one owner in the development, and the owner or the owner's immediate family member must reside at one of the two homes.
        iii. A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

2. **Civil Site Engineering**
    a. The final site-grading, stormwater, and utility plans shall be in substantial conformity with the Rezoning Concept Plan, including all delineated amenities, open spaces, and public gathering areas.
    b. No grading, filling, or earthmoving shall occur within the 75-foot impervious setback from state waters without prior approval of the Director of Planning & Community Development; such activities shall be minimized in accordance with Code § 27.6(b).
    c. Stream buffers are measured from the edge of the wrested vegetation and not the centerline of the stream. The buffer locations shall be approved by the City Engineer.
    d. No residential lot shall include stream buffers, impervious surface setbacks, or amenity trails unless such areas are clearly delineated by approved fencing and signage to identify limits of disturbance by current and future owners. The location, design, and specifications of all required fencing and signage shall be subject to review and approval by the Director of Planning and Community Development. The neighborhood covenants shall prohibit future homeowners from disturbing, altering, or encroaching upon any portion of the property beyond the limits established by the approved fencing and signage.
3. **Building Design**
    a. Exterior elevations shall comply with design requirements in Article 12 of the Flowery Branch Zoning Ordinance.
    b. Where brick veneer is shown, only authentic brick or natural stone shall be utilized.
    c. All building facades shall be approved through the Design Review process per Article 40 and shall meet the design requirements in Article 10 and Article 12.
4. **Streets, Sidewalks & Stormwater Facilities**
    a. All internal streets and sidewalks shall be public to City design standards and be dedicated at the conclusion of the Final Plat. Stormwater management systems shall remain private and be maintained at the HOA's expense.
5. **Signage, Landscaping & Lighting**
    a. An overall signage program, a detailed landscape plan sealed by a Georgia-registered landscape architect, and a comprehensive site-lighting plan shall be submitted to the Department of Community Development for review and approval.
    b. The landscape plan shall include high-quality treatments for open spaces, trails, pathways, entrances, and amenities.

6. **Transportation Improvements**
    a. The developer will prepare and implement a Transportation Improvement Plan to address impacts on Hog Mountain Road. The Transportation Improvement Plan shall be approved by the City Engineer.
    b. The developer will be required to improve Hog Mountain Road along the entire property frontage to meet the current Flowery Branch roadway section—including a 12-foot asphalt travel lane, 2-foot curb and gutter, 3-foot landscape strip, 5-foot sidewalk, and associated storm drainage.
    c. All costs associated with the required road improvements shall be borne by the developer.
    d. The entrance on Hog Mountain Road shall include:
        i. A right-turn deceleration lane, designed per GDOT Driveway Manual Table 4-8 for 45 mph (175 ft full-width storage plus 100 ft taper), constructed at no cost to the City.
        ii. A left-turn lane into the site, built to GDOT Driveway & Encroachment Control Manual standards, also at no cost to the City.
        iii. Exit shall include dedicated lanes for both left and right turns.
        iv. Dedication of all necessary right-of-way for these improvements, conveyed by the developer at no cost.
        v. Relocation of any utilities currently beneath the proposed deceleration lane, at the developer's expense.
    e. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.
7. **Variances**
    a. Approval of the annexation, rezoning and variance applications shall not constitute the granting of any variance from applicable local, state, or federal standards, except as expressly described in Ordinance 776.
8. **Public Utilities**
    a. Because of the site's topographic constraints, sanitary sewer lift station(s) are likely required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), Division 2 (Construction), Subdivision VII (Pump Stations), as well as any additional criteria established by the Director of Public Utilities.
    b. The lift station force main will be required to connect to the City's gravity sewer system. The Developer shall be responsible for obtaining any easement required for the sanitary sewer/force main connection as well as any cost associated with the connection.

9. **Open Space**
    a. All Open Space requirements shall meet the minimum requirements of Section 10.22.
    b. The open space components shall be substantially similar to the examples provided in the application and shown in the staff report.
    c. All walking trail surfaces are to be mulch, compacted crushed rock, or other material approved by the director and be maintained in safe conditions by the HOA.
    d. All trails are to maintain a minimum width of 48-inches.
    e. A clearly visible sign shall be installed at each point where the amenity trails connect to the public sidewalks, stating that the trail amenity is not designed or constructed to ADA standards.
    f. Any portion of the amenity trail located within a fee simple lot shall be encumbered by access and maintenance easements, which shall be dedicated at the time of final plat recording and reflected in the covenants, granting the homeowners' association the right to access, maintain, repair, and replace such trails.

Project Narrative for Hog Mountain Road Tract

LOCATION – 4651 & 4665 Road, Flowery Branch, GA 30542
ACREAGE – 19.398 acres +/-
APPLICANT – Highpoint Development
PROPOSED ZONING – SFTH

Summary

The accompanying application seeks annexation and zoning district change from AR-I in Hall County to SFTH in Flowery Branch for a 19.398-acre tract, consisting of Parcel #'s 15046 000008 & 15046 000008B. The property appears to have been vacant for a number of years. The location is on Hog Mountain Road in south Hall approximately 1300 LF north of Spout Springs Road. The intent is to develop up to 75 units of quality housing (single-family) along with an extensive amount of undeveloped natural area. At least 15% of the site will be maintained as open space. Although not specifically identified, the property is located adjacent to the "Retail Activity Center" Character Area of the 2041 Comprehensive Plan. We believe this property could serve as a transitional use from the retail area to south and the lower density subdivisions to the north and east.

Site Description

The property has approximately 640 LF of frontage along Hog Mountain Road, rectangular and approximately 1,500 LF deep. The site is undeveloped with several dilapidated out buildings and contains a mix of trees and vegetation. A jurisdictional stream (Lott Creek) is located near the rear of the property and appears to be a tributary of Mulberry Creek. Domestic water (24") is provided by the City of Gainesville and is located on the northwest side of Hog Mountain Road. Flowery Branch will provide sanitary Sewer through a new, on-site pump station and force main to nearby gravity lines located within the Stonebridge Village retail center. All other dry utilities are located within a reasonable distance for service extensions.

Adjacencies

The property is surrounded by Hall County residential zonings, AR-III, PRD and R-1 and a small HB property on the west side of Hog Mountain Road. Adjacent Flowery Branch zoning is HB.

Access

Access to the property is proposed from a driveway on Hog Mountain Road approximately 1,800 LF north of Spout Springs Road. The nearest cross street is Cash Road, located approximately 900 LF northeast of the property.

Proximity to Other Uses

- Nearest distance to undeveloped commercial property – parcel #15046 000151-zoned HB located adjacent to southwestern boundary.
- Nearest distance to developed commercial property – parcel #08096 000014 zoned H-B, directly across at 4650 Hog Mountain Road.

- Nearest distance to a single-family home – a single-family home at 4641 Hog Mountain Road is located within 40’ of the northeastern boundary.
- Nearest distance to a subdivision – Hunters Landing S/D is located 0.6 miles away.

Aerial View



Comprehensive Plan Consistency

Since the subject property is currently located in unincorporated Hall County, the Flowery Branch Comprehensive Plan does not specifically identify the future land use for this property. With Retail/Commercial uses directly to the south of the subject property and lower density residential uses to the north, it would be reasonable to assume that the subject property could provide a transitional use and density between the uses identified. Although this specific property is not included in the Comprehensive Plan Future Development Map, it does lie adjacent to the "Activity Center – Retail" character area. It is our opinion that the slightly higher densities offered under the SFTH zoning district, and the specific use for attached single-family homes, would be applicable for this property.

Traffic Impact Study

A Traffic Impact Study has been requested by the City and included for review. The following recommendations were made:

- One entering lane and one exiting lane
- Stop sign controlled on the driveway approach with Hog Mountain Rd remaining free flow
- A right turn lane for entering traffic
- A left turn lane in for entering traffic accounting for the intersection in front of the Chic-fil-A along Spout Springs Rd

Development Strategy

The Concept Plan includes traditional front entry single family homes. The architectural style of the homes will be influenced by the mountain bungalow style to feel more rooted in the community and within the SFTH design intent. The single-family homes located along the Hog Mountain Road frontage will be facing interior to the development and we will have elevated facades on the rear of these homes to provide a grand appearance along Hog Mountain Rd. We will provide a desirable streetscape for the project's entrance including a professionally landscaped monument sign. The single-family homes will all have front-loaded garages. The community will have amenities including walking trails, a creek bridge crossing, and a centralized amenity area including a community gathering pavilion, firepit communal area with chairs and a common area green space.

Architectural Materials & Site Improvements

Single-family homes will follow the requirements of Section 12.6.i at a minimum with a general design theme that would include:

- Two-car garages
- Front facades with a combination of masonry and hardi-plank siding materials
- Side & Rear facades with hardi-plank siding, glazing & trim
- Architectural weight shingles
- Sodded yards (4 sides)
- One tree per lot (minimum 2 ½" caliper)
- Variance Requested –
    - *Minimum Road Radius Variance –* Request for minimum at 48' with stop signed intersections past the first horizontal curve
    - *Removal of Street Deviation Variance –* Street deviation distance to be eliminated w/ concessions

- *Minimum Lot Size Variance –* Minimum lot size to be reduced
    - Overall average lot size of 6,700sf or greater (code minimum is 6,700sf /lot)
    - Minimum lot width – 40ft or greater (code minimum is 40ft)
    - Minimum lot area – 5,500sf
    - Total of 25% of lots will be between 5,500sf and 6,000sf
        - The remaining 75% of lots will exceed 6,000sf
        - Total average of all lots will be 6,700sf or above

Entrance Monumentation

The entrance may include the items listed below

- Masonry walls
- Wood or PVC fencing
- Illuminated Signage in accordance with the Flowery Branch Sign Ordinance
- Ornamental Sculpture
- Landscaping & Irrigation

Amenities

The community amenities, at a minimum, will contain the following items:

- Centralized amenity area w/
    - Community gathering pavilion
    - Communal firepit with seating
    - Common area greenspace
    - Central mail kiosk provided subject to USPS review/approval
- Walking Trails
    - Will include fence along rear of Lots 30-33 within stream buffer
    - Signage stating "TRAIL HEAD – No Land Disturbing Activities Allowed"
- Creek Crossing

Signage

The Developer and/or Builder shall be allowed to post permanent directional signs and monuments within the Community to direct traffic to sales and recreation centers and to identify differing residential areas. All permanent internal signage must be outside of any Right of Way or Utility Easement with a Landscape and Signage easement recorded on the Final Plat.

Temporary Sales and Marketing signs not exceeding 32 square feet per sign face and 8 feet in height may be used along Hog Mountain Road.

Model Home Permits

Applicant requests that up to twelve (12) model home permits be issued prior to Final Plat recording provided that hard surface (crusher run) access is provided and fire protection (functioning hydrant) is located within 500 feet of any structure under construction. However, no certificate of occupancy permits (CO) will be issued prior to final plat recording.

Sales and Construction Trailers

Applicant is requesting permission to install one sales trailer and one construction trailer with associated parking areas in locations to be determined at the time of street paving and possible ahead of final plat approval.

Homeowner's Association

A Homeowner's Association will be created in order to administer the covenants, conditions and restrictions that will be placed on the property by the Developer. The HOA will manage the overall management of the property including maintenance, architectural controls and financial management.

HOA Language requested by the City to be included in HOA Formation Documents as stated below:

- The development shall be fee-simple homes for sale and the homeowner's association covenants must contain the following provisions:
    - No more than ten percent (10%) of the total homes may be leased
    - No more than two houses may be owned by one owner in the development and the owner or the owner's immediate family member must reside at one of the two homes
    - A homeowner may apply to the board of directors of the HOA for a "hardship" exception to exceed the 10% lease limit in the event the homeowner can demonstrate the need to lease their home due to extenuating circumstances. A lease permitted under the "hardship" exception shall not exceed one year, after which the owner must reapply for an exception. The granting of hardship exceptions shall be at the discretion of the HOA board of directors.

Annexation

Hall County has given verbal confirmation they would approve the annexation into Flowery Branch assuming the adjacent parcels are not attempting to annex at the same time.

Conceptual Master Plan

The development of the community shall be controlled by the Conceptual Master Plan (the "Plan") attached as exhibit "A". The plan is considered conceptual in nature, and as such may require minor modifications during the engineering and development process. Modifications to the locations and arrangement of lots, roads, amenities, and other improvements that do not conflict with specific standards and requirements of these conditions may be made by the Developer, so long as such modifications do not change the land use, increase the overall density of the project or reduce any established exterior buffers or setbacks.

Project Dimensional Standards

Site Data Table	Required	Provided
Acres	-	19.398
Gross Density	-	4.18
Net Density	6	4.29
Exterior Buffer	-	N/A
Sidewalks	5', One Side	5', Two Side
Parking	2-Enclosed	2-Enclosed
Minimum Lot Area	6700	5500
Average Lot Area	6700 min.	6852
Minimum Lot Width	40	40
Minimum Lot Depth	80	106
Minimum Heated Floor Area Per Dwelling Unit (SF)	1200	2200
Minimum Front Yard Setback from Lot Line (FT)	0	0
Minimum Side Setback, Interior Lot Line or Corner Lot, All Principle Buildings (FT)	5	5
Minimum Rear Setback, All Principle Buildings (FT)	25	25
Maximum Coverage of Impervious Surface (Percent of Lot)	45	Less than 45
Civic Space	10% Min	10.9%
Amenity Space	5% Min	7.6%

GROSS DENSITY = 75 UNITS / 19.4398 AC = 3.86 Lots/AC
NET AREA = GROSS AREA - 50% OF STREAM BUFFERS = 18.873 AC
NET DENSITY = 75 UNITS / 18.873 AC = 3.97 Lots/AC



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE
AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026



NOTE: This plan is conceptional in nature and is subject to change at owner's discretion.

0 60 120 180 FT.

THE RIDGE
AT LOTT CREEK

Flowery Branch, Hall County, Georgia

Highpoint Development

February 17, 2026

Justification for Sole-Source Procurement: Trimble X9 Laser Scanner

DATE: March 27, 2026

FROM: Chief Chris Hulsey, Flowery Branch Police Department

TO: City of Flowery Branch City Council

SUBJECT: Purchase Approval – Trimble X9 Forensic Laser Scanner

PURPOSE
This letter is submitted to request City Council approval for the sole source purchase of a Trimble X9 3D Laser Scanner and Trimble T110 Tablet for use by the Flowery Branch Police Department's crime scene and collision reconstruction units.

After evaluating available 3D laser scanning systems, including the Leica RTC360 and FARO Focus Core 100m, the Police Department has determined that only the Trimble X9 system meets all mission-critical operational, forensic, and evidentiary requirements. Due to unique capabilities not offered by competing systems, competition is not practicable.

ESSENTIAL OPERATIONAL CAPABILITIES
1. Forensic Integrity Through Automated Calibration
The Trimble X9 automatically performs internal calibration prior to scanning, verifying accuracy at the time evidence is collected. Competing scanners require periodic factory calibration, creating potential gaps that may be challenged in court. The Leica and Faro scanners require with yearly calibration that would cost additional thousands per year.

2. Rapid Setup and Officer Safety (Self-Leveling)
Crime scenes often occur on uneven terrain. The Trimble X9 self-levels over a wide range, allowing fast deployment without manual adjustment, reducing scene time and officer exposure to traffic and hazardous conditions.

3. Environmental Durability
The Trimble X9 is designed to operate in rain, dust, and freezing temperatures, allowing forensic operations to continue regardless of weather conditions. Competing systems have more limited environmental tolerances.

4. Forensic-Specific Software
The Trimble X9 integrates with Trimble Forensics Reveal software, which is purpose-built for law enforcement and includes tools for collision reconstruction and bullet

trajectory analysis. Competing software platforms are primarily designed for engineering or construction use.

5. Real-Time Field Verification
When paired with the Trimble T110 Tablet, large forensic datasets can be processed and verified at the scene, ensuring data completeness before a scene is cleared and preventing the need for unsafe or impractical return visits.

WHY COMPETITION IS NOT PRACTICABLE
While other manufacturers produce laser scanning equipment, none provide the same combination of automated calibration, ease of use, forensic analysis capability, environmental reliability, and real-time field processing required for law enforcement operations. Selecting an alternative system would increase legal risk, training burden, scene time, and long-term costs.

CONCLUSION
The Trimble X9 Laser Scanner and T110 Tablet represent the only solution that fully meets the Flowery Branch Police Department's operational and forensic needs. This purchase qualifies as a sole source procurement, and approval by City Council is respectfully requested.

Respectfully submitted,

C. S. Hulsey

Chief Chris Hulsey
Flowery Branch Police Department

FLOWERY BRANCH CITY COUNCIL

EXECUTIVE SUMMARY

SUBJECT: Consider purchase of Trimble X9 Scanner

DATE: April 2nd, 2026

(X) RECOMMENDATION
( ) POLICY DISCUSSION
( ) STATUS REPORT
( ) OTHER

BUDGET INFORMATION:
ANNUAL-
CAPITAL- $75,000.00

COUNCIL ACTION REQUESTED ON:

PURPOSE: The Trimble X9 is a high-precision 3D laser scanning system designed to enhance the accuracy, speed, and reliability of scene documentation across multiple city functions. For crash reconstruction and crime scene investigations, the X9 captures complete, court-defensible measurements in minutes, reducing scene-closure time while preserving every detail for later analysis. For public works and infrastructure projects, it provides accurate spatial data to support planning, design, and asset management.

HISTORY: The Trimble X9 is the latest evolution of Trimble's 3D laser-scanning technology, built on the proven foundation of the earlier X7 model. Developed to meet growing demands for faster, more accurate scene documentation, the X9 delivers improved range, speed, and imaging performance. Its advanced self-calibrating and self-leveling capabilities reflect Trimble's continued commitment to creating reliable, high-precision tools for public safety, forensics, and municipal operations.

FACTS AND ISSUES:

We evaluated three leading terrestrial laser-scanning systems: Trimble X9, FARO, and Leica. All three are capable scanners, but they differ significantly in workflow efficiency, calibration requirements, durability, and long-term operational reliability.

Why the Trimble X9 Is a sole source device and software:

1. Forensic Integrity via Auto-Calibration
2. Fast, Simple Field Workflow
3. Environmental Durability
4. Superior Multi-Department Use
5. Integrated Imaging Options
6. Specialized Forensic Analysis
7. Unrivaled Field Processing

Two Trimble X9 configurations were evaluated:

- **X9 Core (Short-Range Model):** Effective scanning range up to **200 feet**.
- **X9 Premium (Long-Range Model):** Extended scanning range up to **500 feet**, allowing coverage of larger intersections, multi-lane highways, and expansive public works areas.

The Police Department has secured $15,000 in external funding through the Norfolk Southern Safety First Grant.

Options:

1. Approve purchase of the Trimble X9 scanner
2. Do not approve purchase of the Trimble X9 scanner

RECOMMENDED SAMPLE MOTION:

I make motion to approve the purchase of the Trimble X9 scanner from Duncan Parnell, utilizing $15,000 in grant funding and $60,000.00 from excess funds from IT equipment upgrades annual program.

DEPARTMENT: Police Department

Prepared by: Kelsey Cash

Trimble Inc.
10368 Westmoor Drive
Westminster, CO 80021
USA

December 1, 2025

To Whom it May Concern:

This letter is to confirm that the Trimble Forensics X9 solution and equipment being offered provides functionality and capabilities unique to Trimble.

The Trimble X9 Scanner is controlled using the T110 tablet with the Trimble Forensics Capture software. **These solutions offer unique patented technology and workflows proprietary to Trimble.**

- Real-time on scene data registration
- Auto calibration and diagnostic reporting for every scan
- Automatic survey grade self-leveling accuracy
- An ingress protection rating of IP55 for dust and water protection
- Single shot data capture ability for reference and validation purposes
- Ability to capture data from typically hard to scan objects like black vehicles

The equipment and solutions being referenced are only available through authorized Trimble Forensics partners or distributors.

Please feel free to contact me with any questions

Keegan Kinney



Channel Manager
Trimble Inc.
(250) 574-0188
keegan_kinney@trimble.com

Duncan Parnell
Successful Projects Start Here

Quote

Quote Number: Q-65863
Quote Date: 3/31/2026
Quote Expires: 5/1/2026

Bill To:
Flowery Branch Police Dept.
5270 Railroad Avenue
Flowery Branch, GA 30542

Ship To:
Flowery Branch Police Dept.
5270 Railroad Avenue
Flowery Branch, GA 30542

Prepared By:
Duncan-Parnell, Inc.
1208 Copeland Oaks Dr
Morrisville, North Carolina 27560

Requested By: Todd Templeton
PH: (770) 967-6336 Cell:
toddt@flowerybranchga.org

Customer P21 Account:
Customer ID:
Ship-To ID:

Sales Rep: Daniel Detwiler
(689) 312-0330
daniel.detwiler@duncan-parnell.com

X9 Premium - Perpetual

Line	Item ID	Item Description	Qty	Optional	Unit Price	Extended Price
1	FOR-X9-LR-PERP	Forensic X9 Long Range Kit Perpetual	1	No	$67,729.50	$67,729.50
2	X9-100-01-GEO	Trimble X9 Instrument Pack Configurable	1	No	Included	$0.00
3	X9-CFG-001-150	Trimble X9 Premium Perp Config	1	No	Included	$0.00
4	101070-00-01	Dual Battery Charger w/Power Supply Cord	1	No	Included	$0.00
5	X9-T10X-ACC-01	Trimble X9 T110 Tablet Accessory Kit	1	No	Included	$0.00
6	114050-50	T110 Tablet Full Pack Out	1	No	Included	$0.00
7	114111	Trimble T10 Battery 8000mAHr	1	No	Included	$0.00
8	114113	Trimble T10 Battery Charger Kit Single	1	No	Included	$0.00
9	131932	Trimble T10 Shoulder Strap	1	No	Included	$0.00
10	90574-QR	Quick Release Adapter - X-Series Scanner	1	No	Included	$0.00
11	90574-TR	Carbon Fiber Tripod - X-Series Scanner	1	No	Included	$0.00
12	X7-BP-01	Trimble X9 Backpack	1	No	Included	$0.00
13	131922-01-BLK-GEO	65w USB Type C Charger	1	No	Included	$0.00
14	140100-00-GEO	USB3.1 Type C to Type C Charge Sync	1	No	Included	$0.00
15	FOR-CAP-WIN-P	Forensics Capture w/Perspective Software	1	No	Included	$0.00
16	PER-CORE	Trimble Perspective SW Perpetual Core Li	1	No	Included	$0.00
17	FOR-PERSP-TO-CAP	Upg Perspective to TF Capture w/X7 Mod	1	No	Included	$0.00
18	121718-BLK-GEO	USB C Vehicle Charger	1	No	Included	$0.00
19	ADLS-SCAN	TPP X9 Hardware Warranty 5 Yrs	1	No	$6,900.00	$6,900.00
20	FORENSICS HARDWARE DISCOUNT	Forensics Customer Hardware Discount	1	No	$-9,767.12	$-9,767.12
21	UPSFEDUSPSFRT	UPS/FED-EX/POSTAGE/DHL/FREIGHT	1	No	$137.62	$137.62
					X9 Premium - Perpetual Pre-Tax Total:	$65,000.00

Computer Software

Line	Item ID	Item Description	Qty	Optional	Unit Price	Extended Price
22	FOR-03-0313-NR	Trimble ForensicSuite (Reveal+Realworks)	1	No	$500.00	$500.00
(1) Year Subscription License for (1) User Login TLM: Todd Templeton toddt@flowerybranchga.org						
					Computer Software Pre-Tax Total:	$500.00

Training

Line	Item ID	Item Description	Qty	Optional	Unit Price	Extended Price
23	FOR-30000	Training Public Safety Onsite	5	No	$1,900.00	$9,500.00
(5) Days of in person training. This will be hands on covering proper deployment of the X9 scanner for crime scenes & crash scenes. Students will learn basic diagram skills and scan processing skills using the Trimble Forensics Reveal Software. Up to 8 students can be accommodated for this course. Computers will be provided.						
					Training Pre-Tax Total:	$9,500.00

Subtotal	$75,000.00
Estimated Tax Amount	
Grand Total	$75,000.00
	Do not pay from quote

Delivery Instructions:

TERMS AND CONDITIONS:

- Optional Items are not included in Pre-Tax Total
- SALES TAX AND SHIPPING CHARGES ARE ESTIMATED. **DO NOT PAY FROM QUOTE.**

ACCEPTED BY: _____ DATE: _____ PO:

We withhold the right to adjust prices of these products if we receive a tariff charge from the Manufacturer before this quotation expires. If you have any questions, please let us know. We are here to help.
Online payment options are available upon receipt of invoice or by making a down payment request.
Avoid a credit card surcharge by making an ACH payment online.
Ask your sales rep today about PayNOW with Duncan-Parnell.