



**City of Flowery Branch
City Council Meeting
Thursday, May 21, 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 and First Read to Consider Ordinance 784 for Rezoning of 4651 and 4665 Hog Mountain Road
- b. Public Hearing and First Read to Consider Ordinance 786 to Add a Definition for Mixed-Use Residential Over Business and add Mixed-Use Residential Over Building to Table 9.1

Unfinished Business - Work Session:

New Business - Work Session:

- a. Consider Resolution 26-010 Adopting the City of Flowery Branch Comprehensive Plan
- b. Alcohol Ordinance Discussion

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 Wine & Beer License for Rarora Business LLC DBA: McEver Food Mart
- b. Consider Mayor McClellan April 2026 Per Diem
- c. Consider Council Member Mezzanotte April 2026 Per Diem
- d. Consider May 4, 2026 Special Called City Council Meeting Minutes
- e. Consider May 6, 2026 Special Called City Council Meeting Minutes
- f. Consider May 7, 2026 City Council Meeting Minutes

Unfinished Business - Voting Session:

New Business - Voting Session:

- a. First Read to Consider Ordinance 784 for Rezoning of 4651 and 4665 Hog Mountain Road
- b. First Read to Consider Ordinance 786 to Add a Definition for Mixed-Use Residential Over Business and add Mixed-Use Residential Over Building to Table 9.1
- c. Consider Resolution 26-010 Adopting the City of Flowery Branch Comprehensive Plan

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.



Memorandum

To: City of Flowery Branch, City Manager, and City Council
From: Chris McCrary, Planning and Community Development Director
Date: May 21st, 2026
Subject: Rezoning

Applicant: City of Flowery Branch
5410 Pine Street
Flowery Branch, GA 30542
770-967-6371

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 Acres
Total Area: 19.398 Acres

Proposed Zoning:

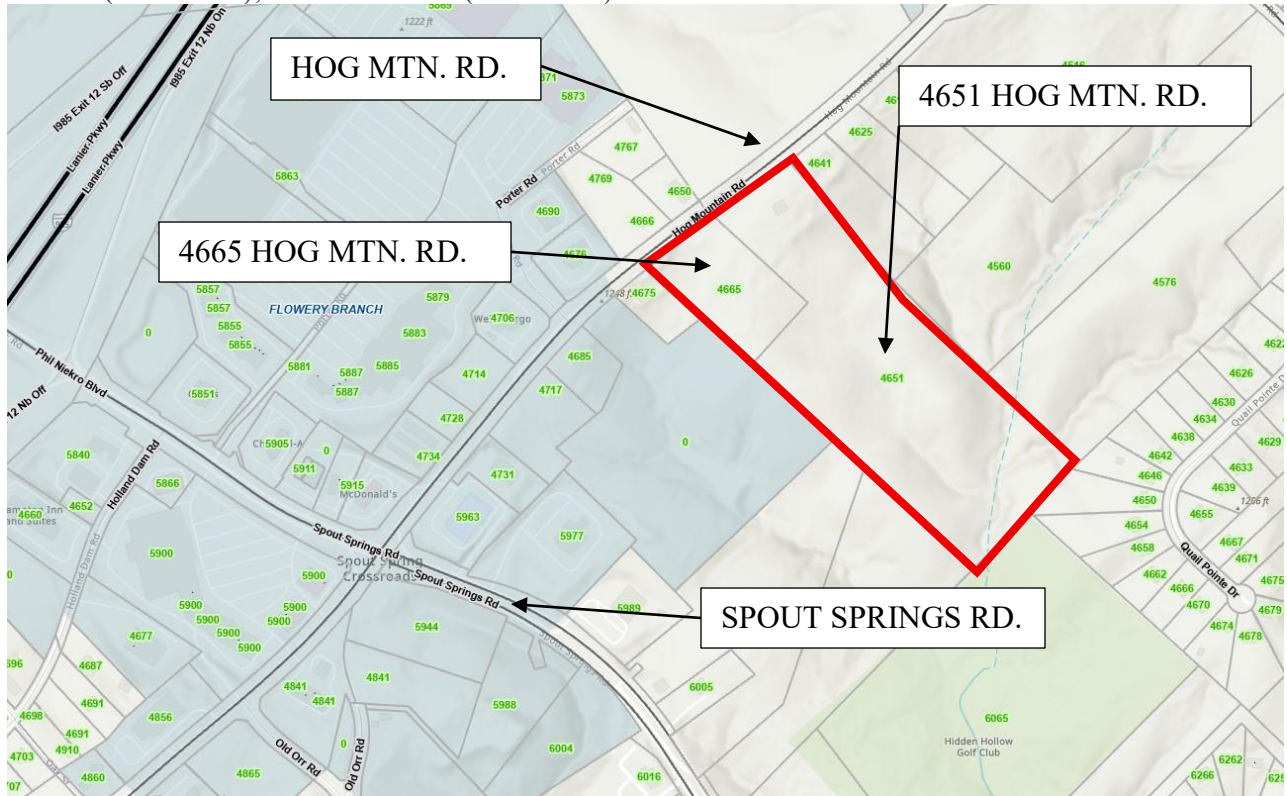
The project proposes to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

The project 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.



Location:

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





Site Plan:

The project 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 project 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, complete architectural drawings will be submitted 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.

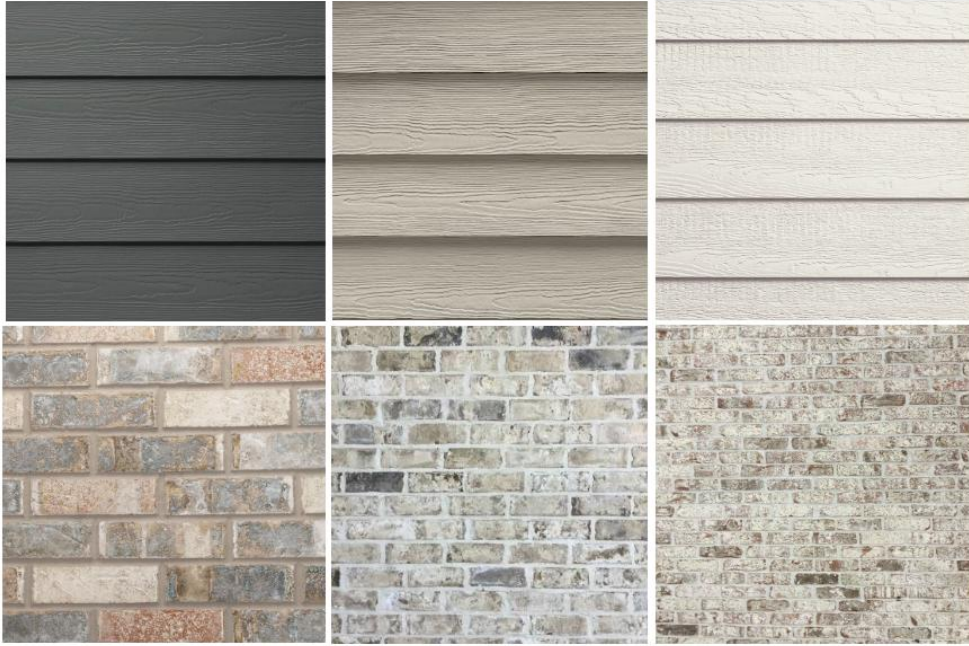


ARCHITECTURAL FEATURES:

The architecture 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 lists a total of 18.5% open space with location details shown on the site plan:

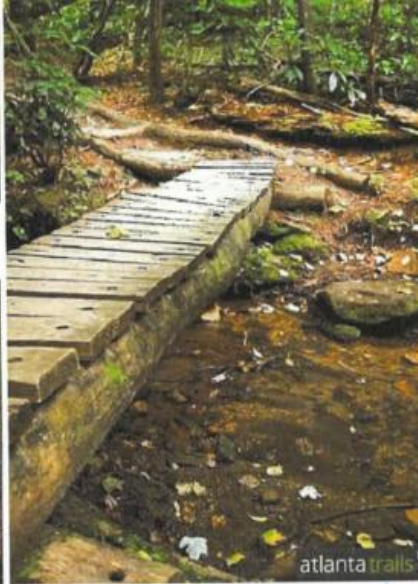


Site Data Table		Required	Provided
Civic Space		10% Min	10.9%
Amenity Space		5% Min	7.6%

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:



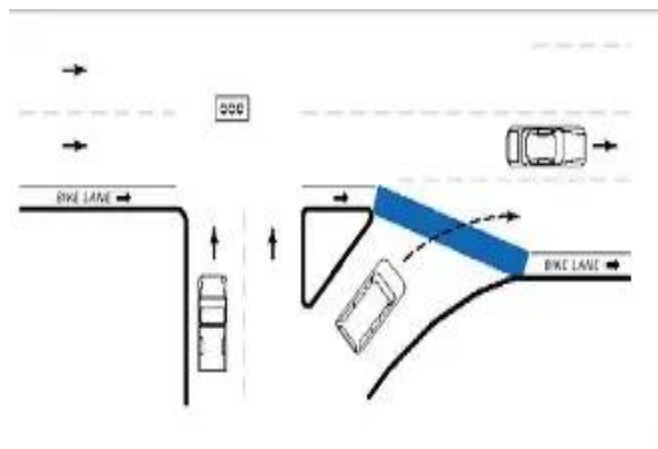
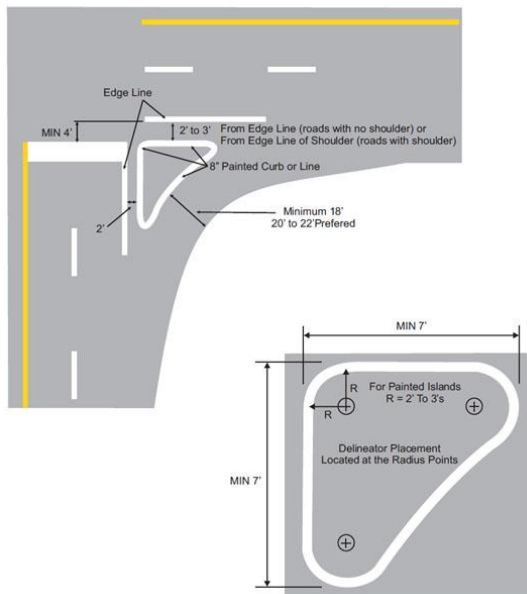


Traffic Impacts, Vehicular Flow, and Entrances/Exits

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 a right-out only dedicated lane with a 6" raised curb median to prohibit left turning exit. 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.



b. At exit of channelized right-turn roadway



- The sidewalk along Hog Mountain Road is to be extended south-west to terminate at the pedestrian crossing adjacent to Porter Road. Developer to extend the 5' sidewalk to the pedestrian crossing. Handicap ramp may need to be re-built.



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
1	Spout Springs Road @ Stonebridge Village West Driveway	B (18.2)	C (29.6)	C (27.4)	B (18.2)	C (29.9)
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)
2	Spout Springs Road @ Hog Mountain Road	D (35.4)	D (36.1)	D (37.6)	D (36.1)	D (36.3)
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)
3	Hog Mountain Road @ Stonebridge Village East Driveway	A (7.5)	B (14.5)	B (12.9)	A (7.5)	B (14.7)
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)
4	Hog Mountain Road @ Findley Drive / Cash Road	B (11.3)	B (11.7)	A (8.8)	B (11.6)	B (12.2)
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)
5	Hog Mountain Road @ Site Driveway	-	-	-	E (40.7)	D (33.0)
	-Westbound Approach	-	-	-	A (9.6)	A (9.2)
	-Southbound Left	-	-	-	-	D (34.2)
		-	-	-	-	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.

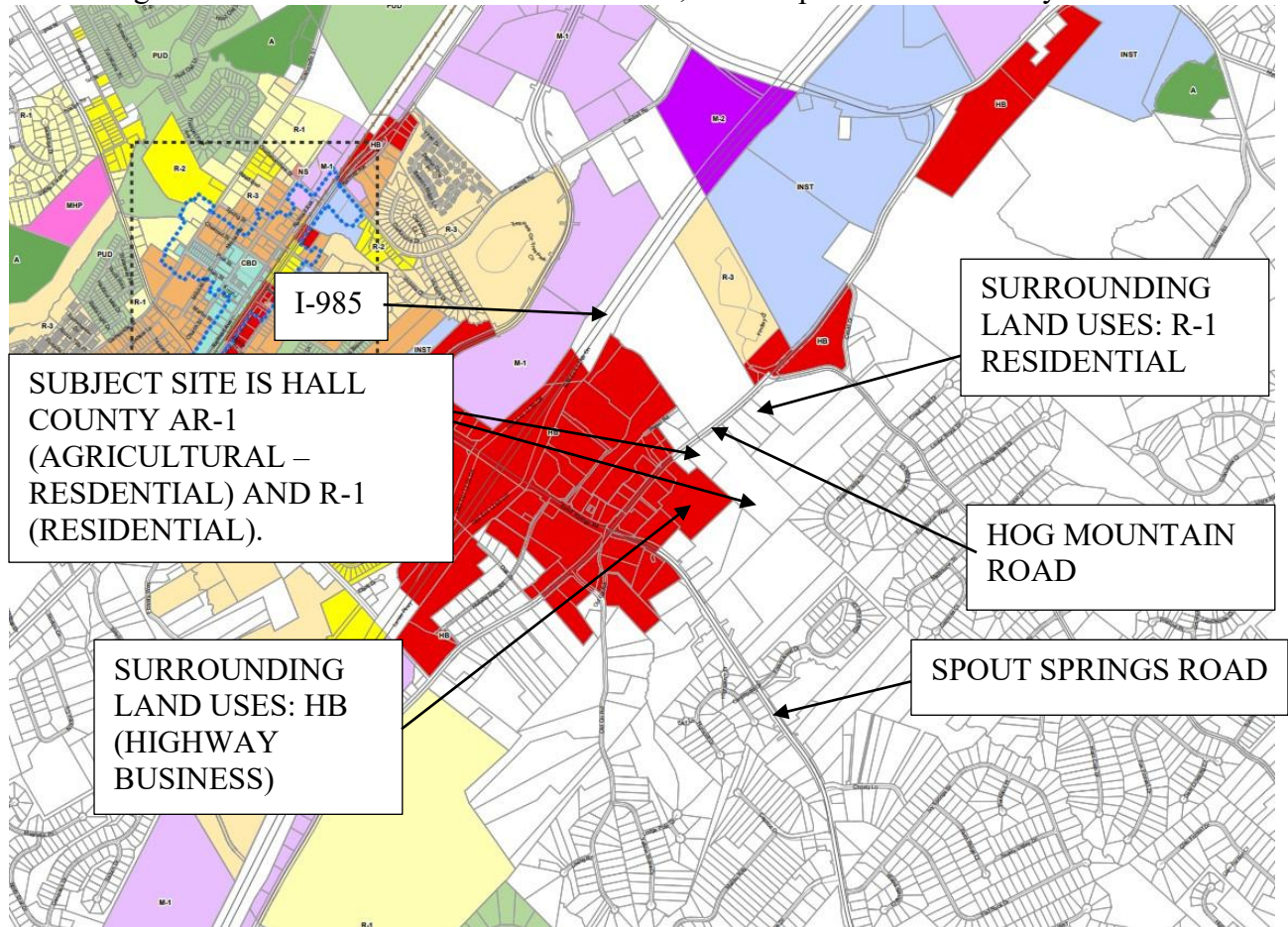
Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), 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

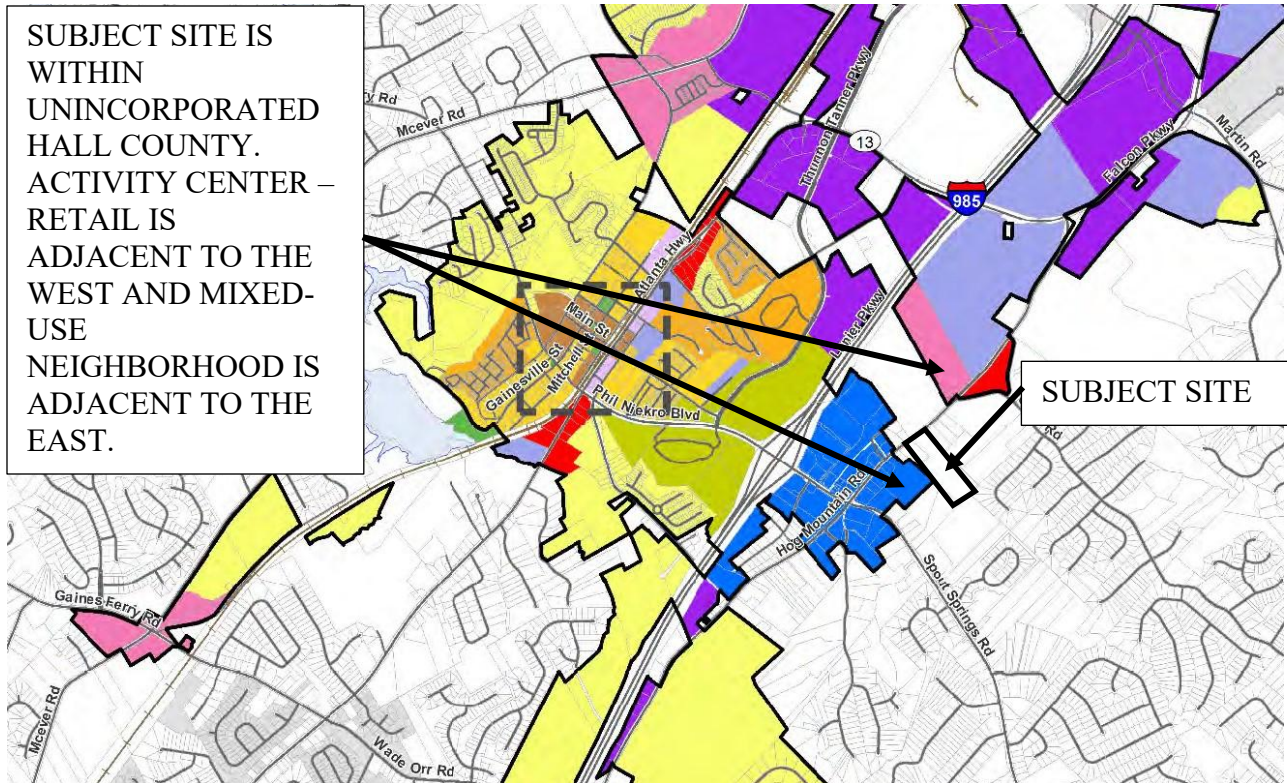
Zoning Districts

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



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.





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.

Staff recommends **approval of the 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 six (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 (2) 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 (1) 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 rested 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. The sidewalk network shall be extended south along Hog Mountain Road beyond the limits of the subject parcels, terminating at the pedestrian crossing located at Porter Road.
- d. All costs associated with the required road improvements shall be borne by the developer.
- e. 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 a dedicated right-out only lane with a 6" raised concrete movement control median. Final design to be approved by the City Engineer.
 - 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.
- f. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.

7. Variances

- a. 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.
- b. 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.
- c. 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:



- i. The developer 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.
- ii. The developer 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.

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.

ORDINANCE NO. 784

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”, AND 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 first reading at the meeting on May 21, 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 _____ day of _____, 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

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 (2) 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 (1) 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 wretsted 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.
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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. The sidewalk network shall be extended south along Hog Mountain Road beyond the limits of the subject parcels, terminating at the pedestrian crossing located at Porter Road.
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 - 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.
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 - iii. Exit shall include a dedicated right out only lane with a 6" raised concrete movement control median. Final design to be approved by the City Engineer.
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- f. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.

7. Variances

- a. 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.
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- c. 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:
 - i. 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.
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- 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.

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- 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.



REZONING APPLICATION

Date: 4/20/2026

Address of Request:

4651 & 4665 Hog Mountain Rd.

Tax Map # 15046 000008 & 15046 000008B Current Zoning: R-1 & Ar-1

Is this site located within the boundaries of the historic district? No

Currently a conforming use? N/A

Any conditions of zoning, CUP's, etc.? N/A

Applicant Information:

Name: City of Flowery Branch

Address: 5410 Pine St.

Flowery Branch, GA 30542

E-mail address: tonya@flowerybranchga.org

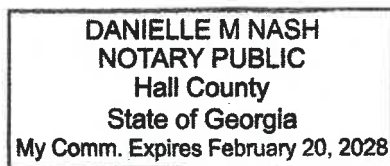
Phone number: 70-967-6371

Signature: [Handwritten Signature] Title (if applicable): City Manager

Print Name: TONYA D. PARRISH.

Notary Signature: [Handwritten Signature]

Notary Seal:





Please complete and attach the Property Owner Affidavit to this application.

Property Information:

Tax Map Number: 15046 000008 & 15046 000008B

Current Zoning: Hall County R-1 & AR 1 Total Acres: ~20

Is this property located within the city limits of Flowery Branch? No

Proposed City of Flowery Branch Zoning: SF-TH

Current Use: Undeveloped

Please provide copies of the Rezoning Completeness Checklist and all supplementary required documents listed therein to this application. Completeness Checklists can be found on the website, www.flowerybranchga.org, under the "Forms" section.

Conflict of Interest Disclosure:

Identify all members of the City Council of the City of Flowery Branch and Employees of the City of Flowery Branch Community Development Department who

Have a property interest in the real property affected by this request

No

Have a financial interest (direct ownership interest) of the total assets or capital stock of a business entity where such ownership interest is more than 10% in any business entity which has a property interest in the real property affected by this request

No



Have a member of the family (spouse, mother, father, brother, sister, son or daughter) having a property financial interest as herein defined, in the real property affected by this request

No

Disclosure of Campaign Contributions:

List below the names of local government officials of the City of Flowery Branch to whom campaign contributions were made, within two (2) years immediately preceding the filing of this application, which campaign contributions total \$250.00 or more or to whom gifts were made having a total value of \$250.00 or more.

Elected Officials Name	Amount of Description of Gift
------------------------	-------------------------------

N/A	
-----	--

N/A	
-----	--

CITY STAFF ONLY

Application Received By: [Signature]

Date: 4/21/26 Total Fee: N/A



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



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:

***Highpoint Development
1776 Peachtree Street NW
Atlanta, GA 30309***

Prepared By:



A&R Engineering Inc.

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

January 13, 2026
A & R Project # 25-081

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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.

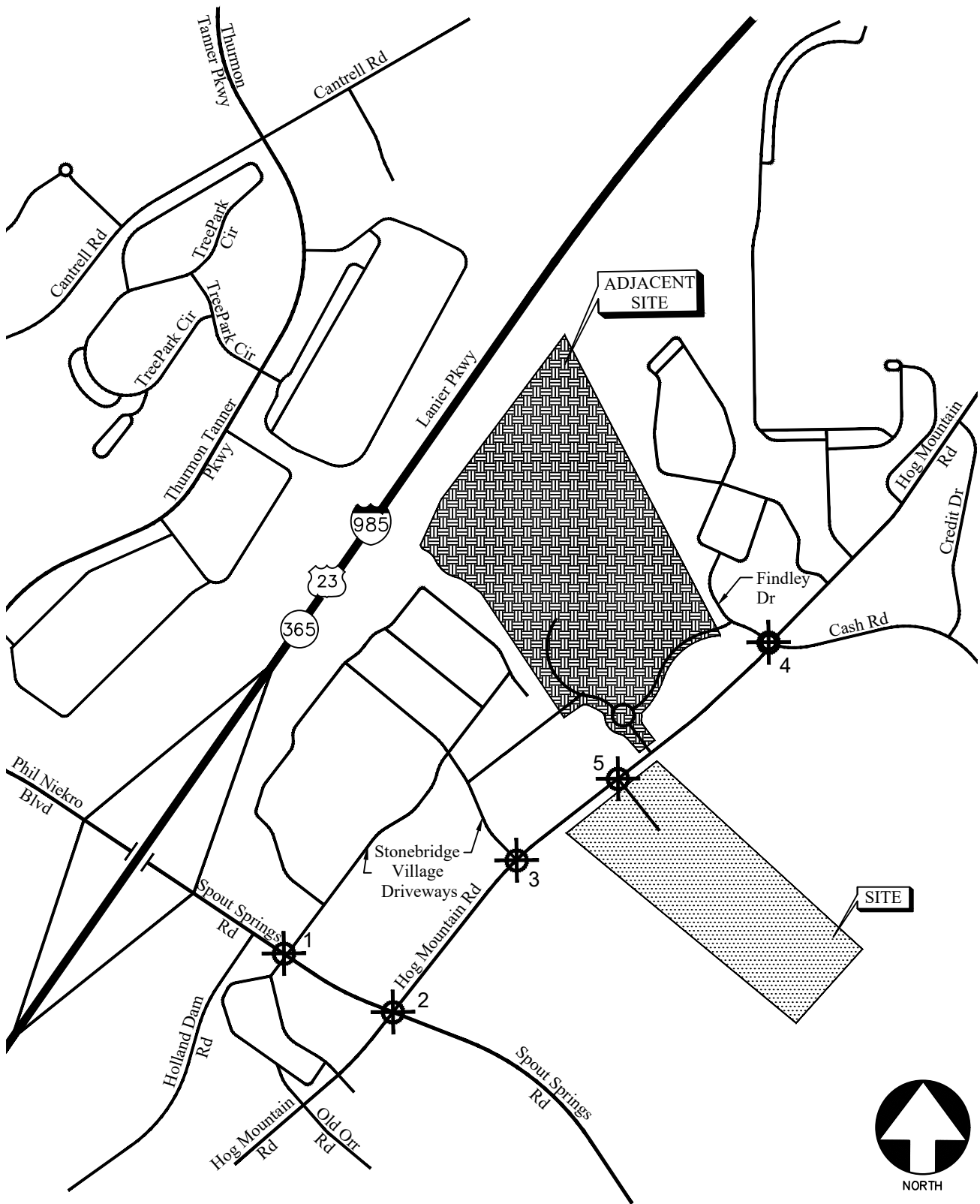


The AM, school dismissal, and PM peak hours have been analyzed in this study. In addition to the site access point, this study includes the evaluation of traffic operations at the intersections of:

- 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.

Study Intersection



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.

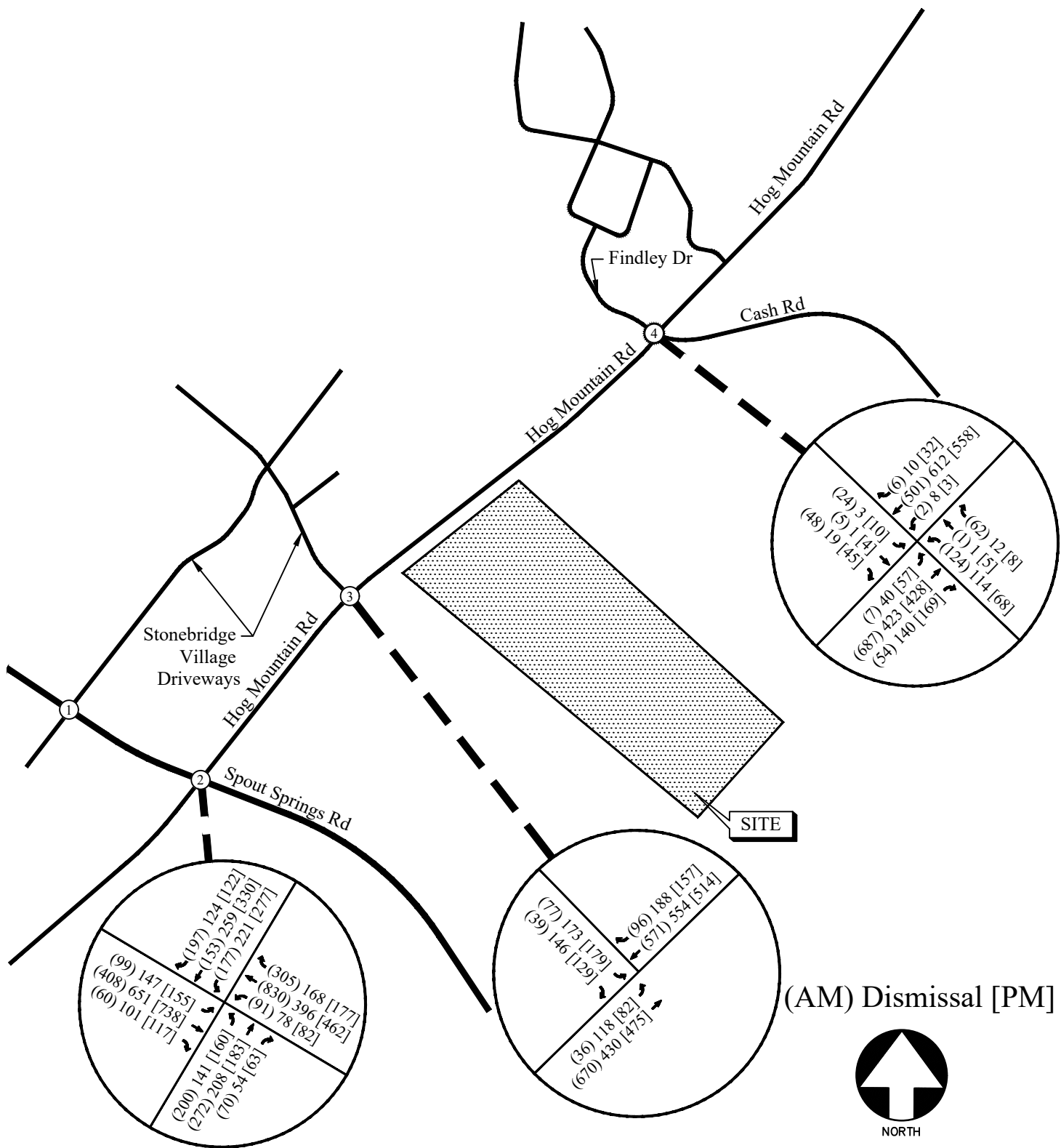
4.0 EXISTING 2026 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

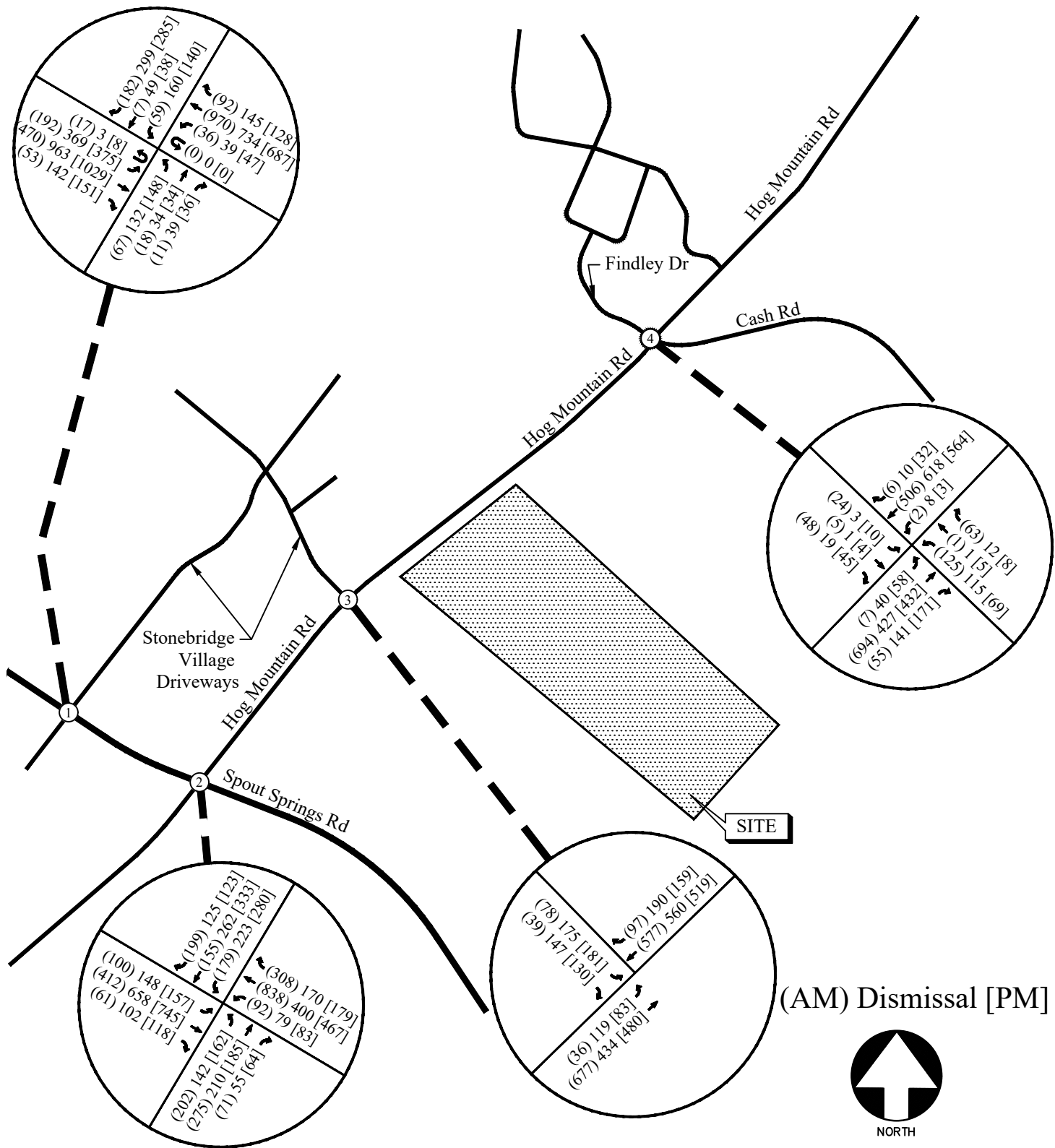
Existing traffic counts were obtained at the following study intersections:

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.



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

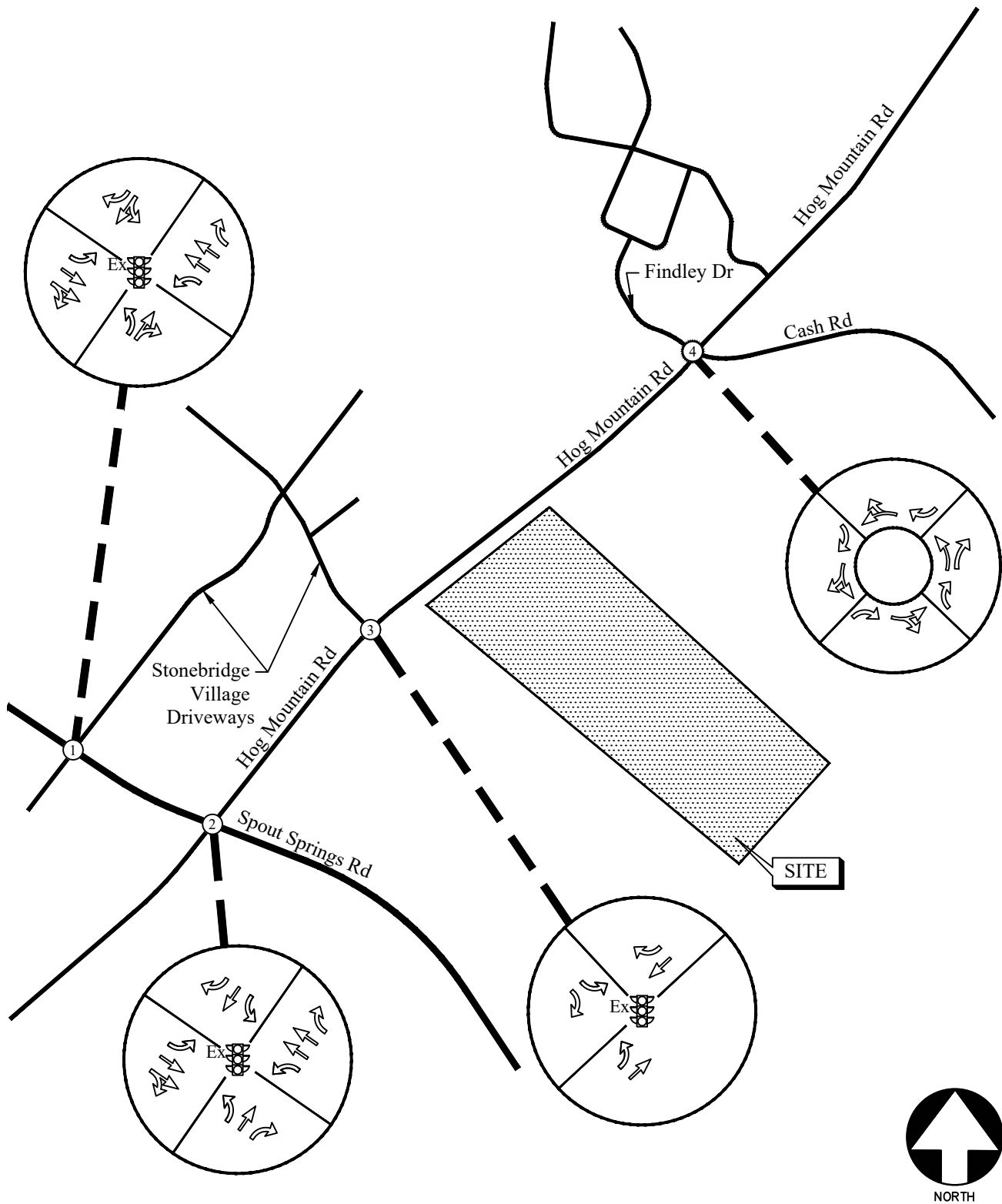


EXISTING WEEKDAY PEAK HOUR VOLUMES

FIGURE 3
A&R Engineering Inc.

LEGEND

- Existing Lane Geometry
- Ex Existing Traffic Signal
- Roundabout



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	<u>Spout Springs Road @ Stonebridge Village West Driveway</u>	Signalized	<u>B (17.9)</u>	<u>C (28.6)</u>	<u>C (26.8)</u>
	-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	<u>Spout Springs Road @ Hog Mountain Road</u>	Signalized	<u>C (34.3)</u>	<u>D (35.8)</u>	<u>D (37.0)</u>
	-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	<u>Hog Mountain Road @ Stonebridge Village East Driveway</u>	Signalized	<u>A (7.4)</u>	<u>B (14.5)</u>	<u>B (13.2)</u>
	-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	<u>Hog Mountain Road @ Findley Drive / Cash Road</u>	Roundabout	<u>B (10.4)</u>	<u>B (10.9)</u>	<u>A (8.4)</u>
	-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 conceptual in nature and is subject to change at owner's discretion.

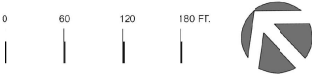


Figure 5 – Site Plan

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.

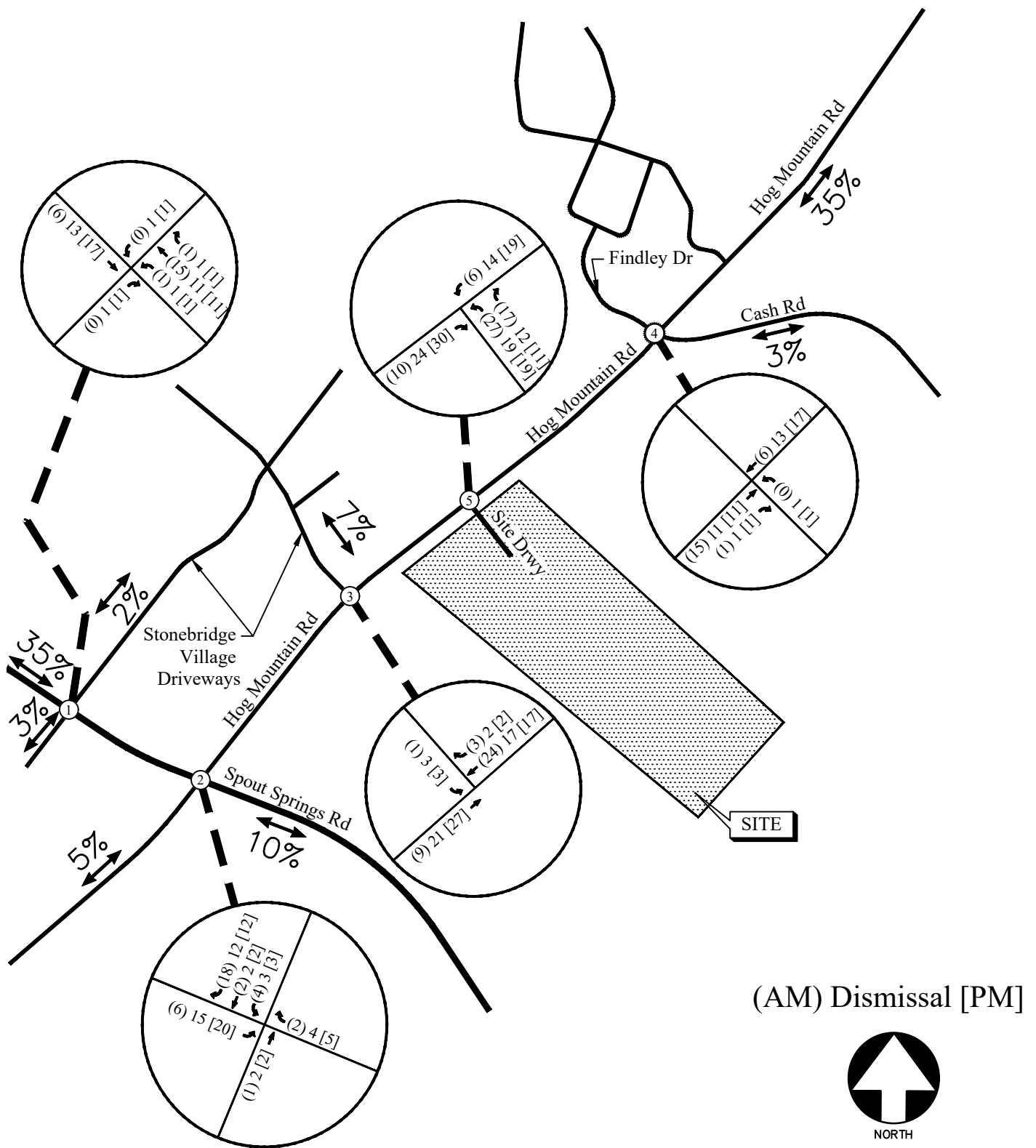
The calculated site-generated traffic volumes for this adjacent development are shown in Table 5, and its peak hour volumes passing through the study area are shown in Figure 7.

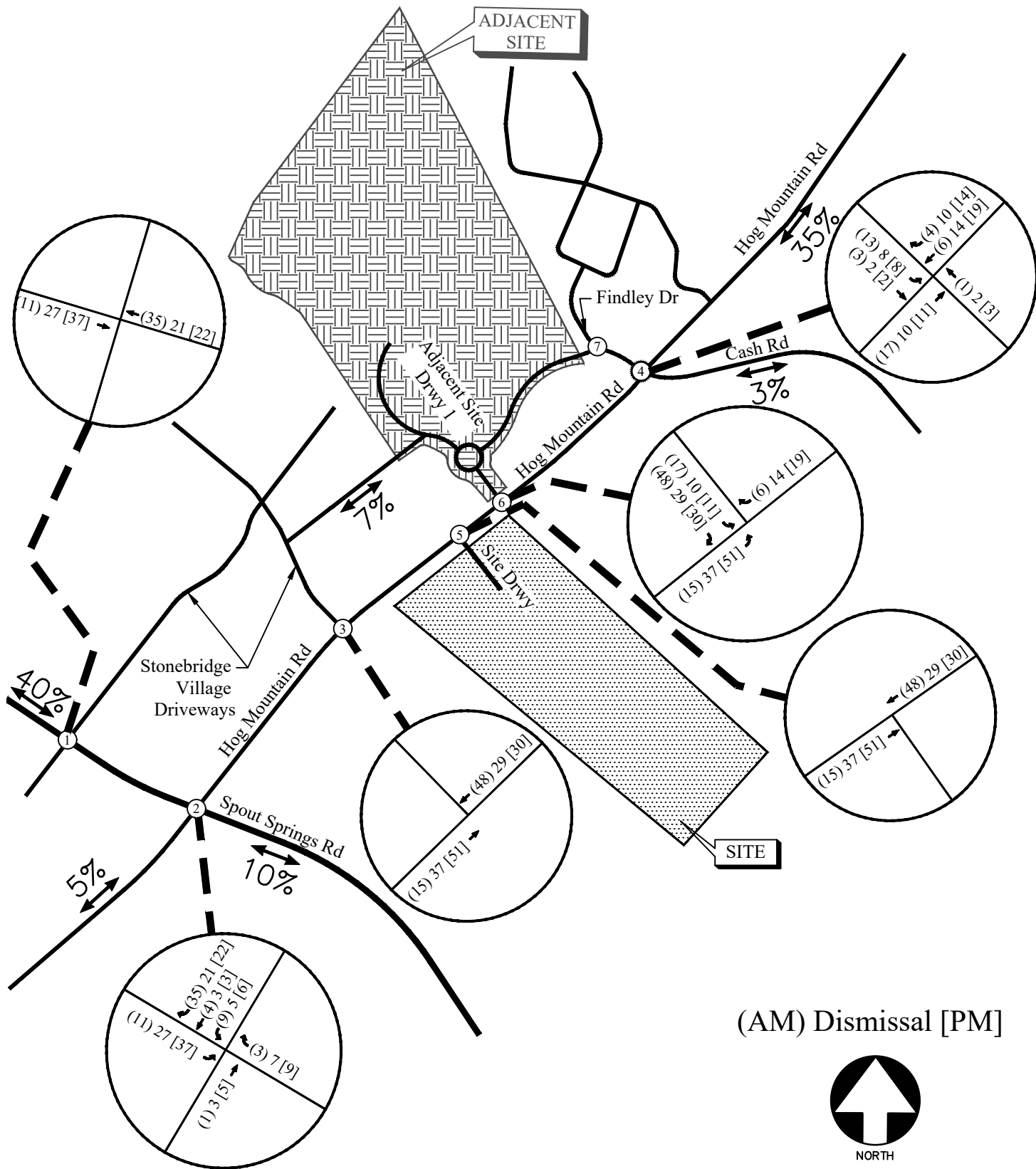
TABLE 5 — TRIP GENERATION (ADJACENT SITE)											
Land Use	Size	AM Peak Hour			PM Dismissal Peak*			PM Peak Hour			24 Hour
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	Two-Way
ITE 220 – Multifamily Housing (Low-Rise)	296 Units	28	87	115	68	52	120	93	55	148	1,973

* 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

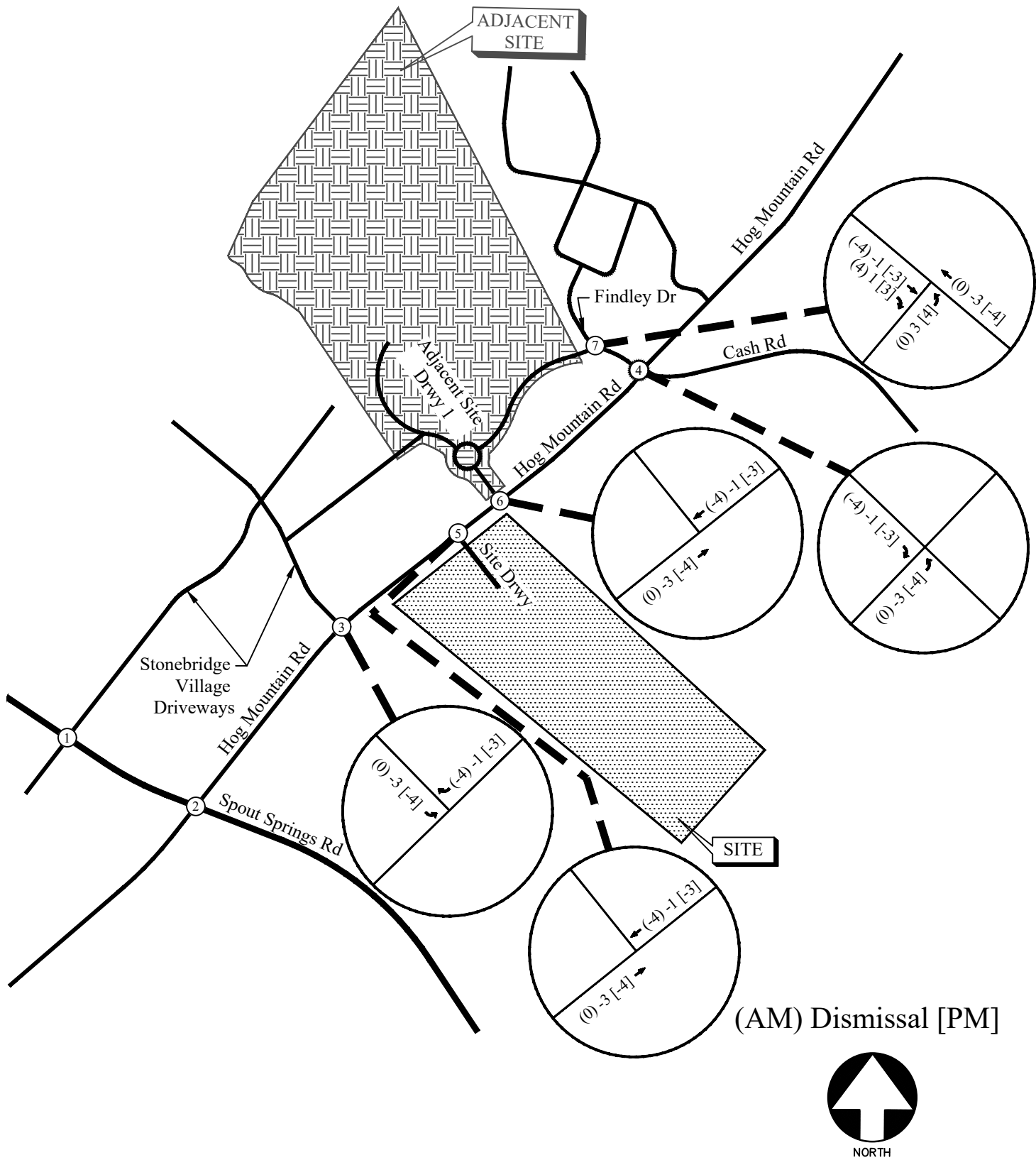
Since the adjacent development proposes access connections at Findley Drive to the north and at Stonebridge Village to the south, some residential traffic from the Folksong Apartments development on Findley Drive will be able to use these connections to travel directly between their apartments and the 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 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

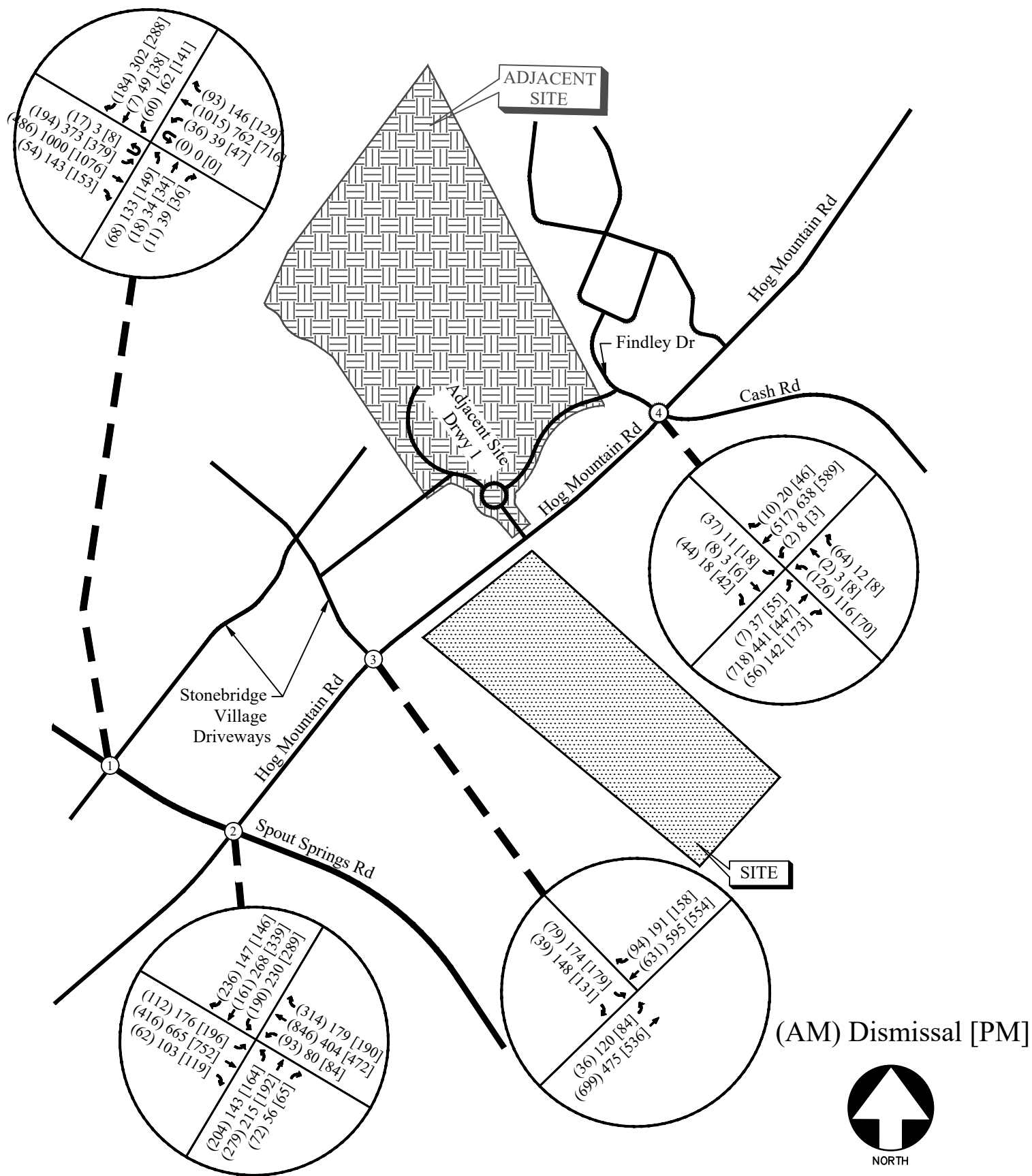
The “No-Build” (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The future “No-Build” volumes consist of the existing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

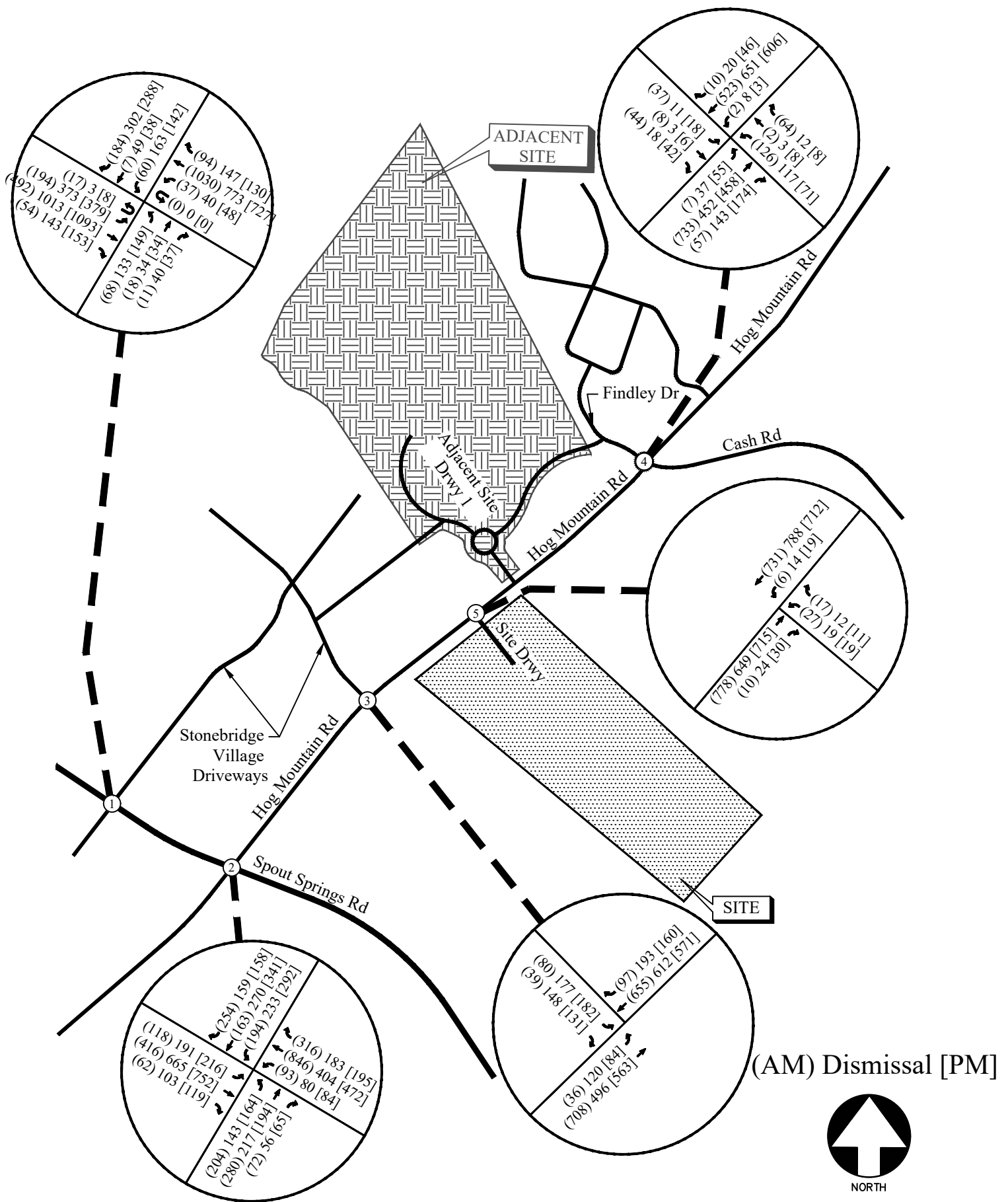
6.2 Future “Build” Conditions

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 $(\text{Total Trips}) \div 2 \times 0.38 =$ $(919) \div 2 \times 0.38 = 175$	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 $(\text{Total Trips}) \div 2 \times 0.62 =$ $(919) \div 2 \times 0.62 = 285$	45 mph / 2-Lane / > 6,000	75	Yes

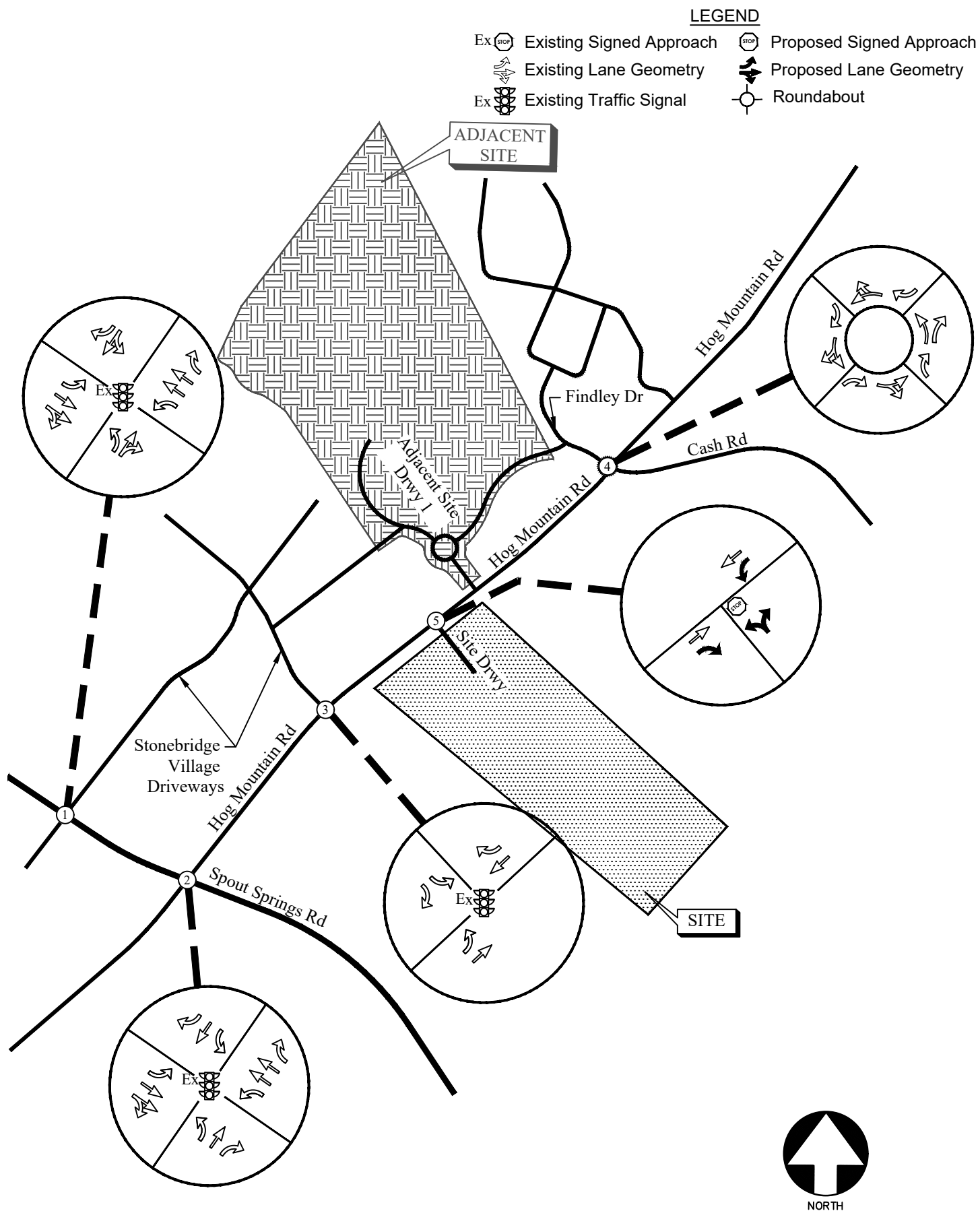
Based on GDOT standards, a right turn lane is warranted at the proposed site driveway.

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
1	<u>Spout Springs Road @ Stonebridge Village West Driveway</u>	<u>B (18.2)</u>	<u>C (29.6)</u>	<u>C (27.4)</u>	<u>B (18.2)</u>	<u>C (29.9)</u>
	-Eastbound Approach	A (10.0)	C (21.2)	C (20.9)	A (10.1)	C (21.5)
	-Westbound Approach	B (12.3)	C (23.5)	C (22.7)	B (12.4)	C (23.6)
	-Northbound Approach	D (51.6)	E (79.4)	E (61.4)	D (51.6)	F (81.7)
	-Southbound Approach	E (56.8)	D (45.7)	D (42.7)	E (56.8)	D (45.8)
2	<u>Spout Springs Road @ Hog Mountain Road</u>	<u>D (35.4)</u>	<u>D (36.1)</u>	<u>D (37.6)</u>	<u>D (36.1)</u>	<u>D (36.3)</u>
	-Eastbound Approach	C (29.2)	C (30.3)	C (32.1)	C (29.3)	C (30.1)
	-Westbound Approach	C (22.8)	B (18.9)	C (20.8)	C (23.2)	B (19.3)
	-Northbound Approach	D (50.2)	D (51.3)	D (51.3)	D (50.2)	D (51.3)
	-Southbound Approach	D (47.3)	D (46.9)	D (48.9)	D (49.2)	D (47.1)
3	<u>Hog Mountain Road @ Stonebridge Village East Driveway</u>	<u>A (7.5)</u>	<u>B (14.5)</u>	<u>B (12.9)</u>	<u>A (7.5)</u>	<u>B (14.7)</u>
	-Eastbound Approach	D (46.1)	D (43.2)	D (42.3)	D (46.1)	D (44.2)
	-Northbound Approach	A (4.2)	A (6.8)	A (5.2)	A (4.3)	A (7.0)
	-Southbound Approach	A (4.0)	A (6.7)	A (5.1)	A (4.2)	A (6.9)
4	<u>Hog Mountain Road @ Findley Drive / Cash Road</u>	<u>B (11.3)</u>	<u>B (11.7)</u>	<u>A (8.8)</u>	<u>B (11.6)</u>	<u>B (12.2)</u>
	-Eastbound Approach	A (7.9)	A (7.8)	A (6.6)	A (8.0)	A (8.0)
	-Westbound Approach	B (10.0)	A (7.0)	A (5.6)	B (10.3)	A (7.1)
	-Northbound Approach	B (13.2)	A (9.2)	A (8.5)	B (13.8)	A (9.4)
	-Southbound Approach	A (9.5)	C (15.2)	A (9.8)	A (9.6)	C (15.9)
5	<u>Hog Mountain Road @ Site Driveway</u>	-	-	-	E (40.7)	D (33.0)
	-Westbound Approach	-	-	-	A (9.6)	A (9.2)
	-Southbound Left	-	-	-	-	D (34.2)

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	

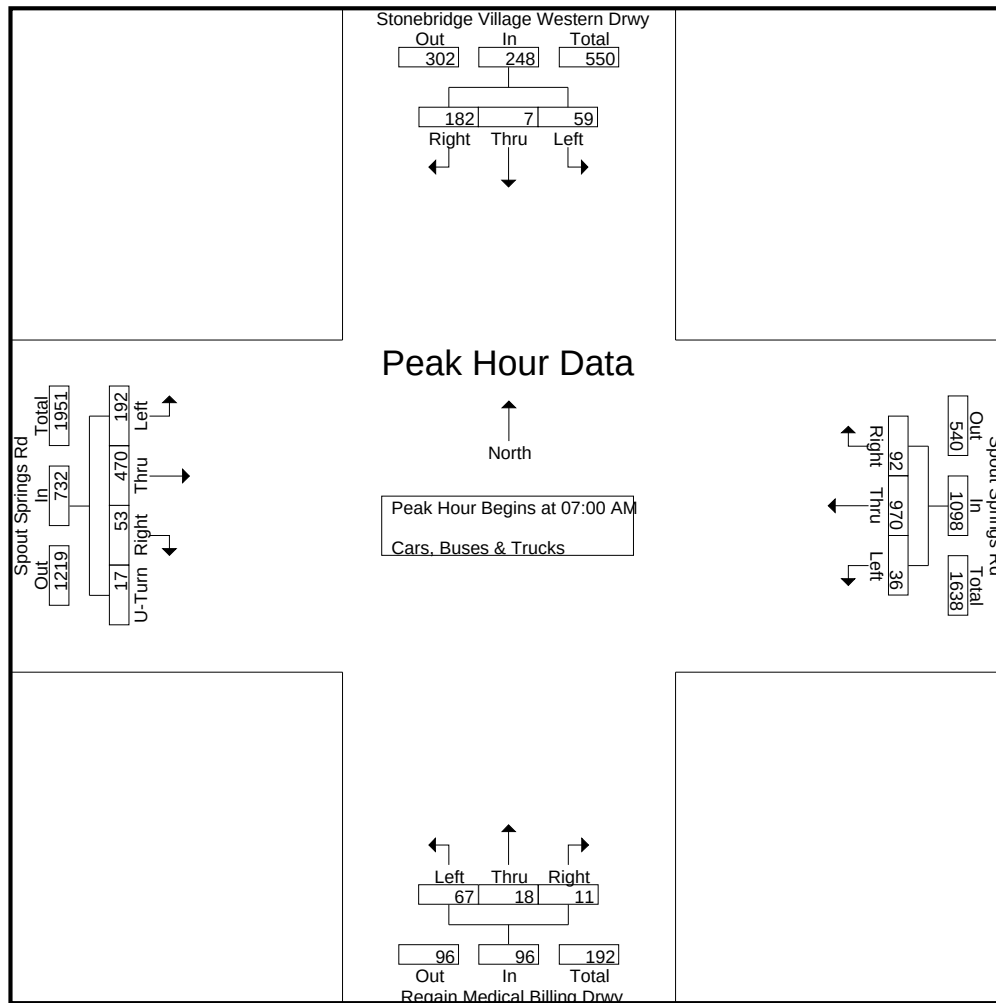
A & R Engineering, Inc.

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



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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

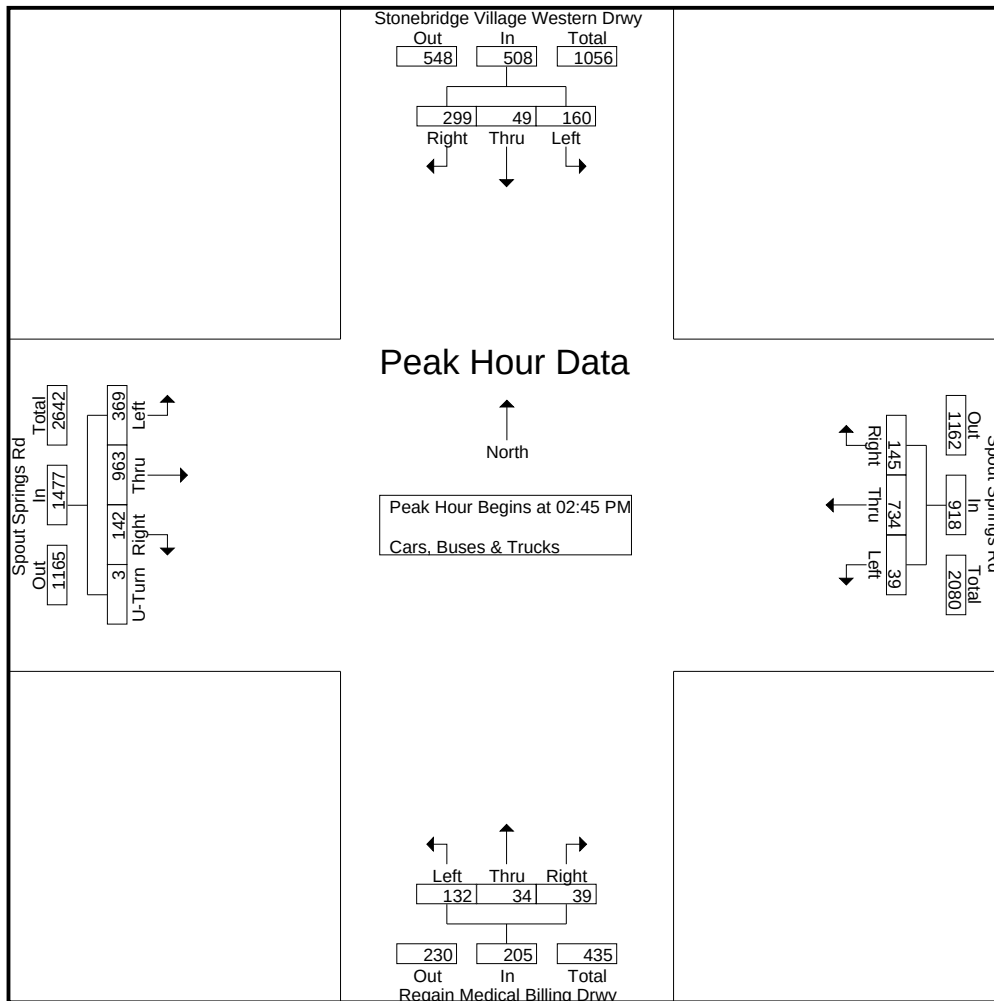
File Name : 20260002

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

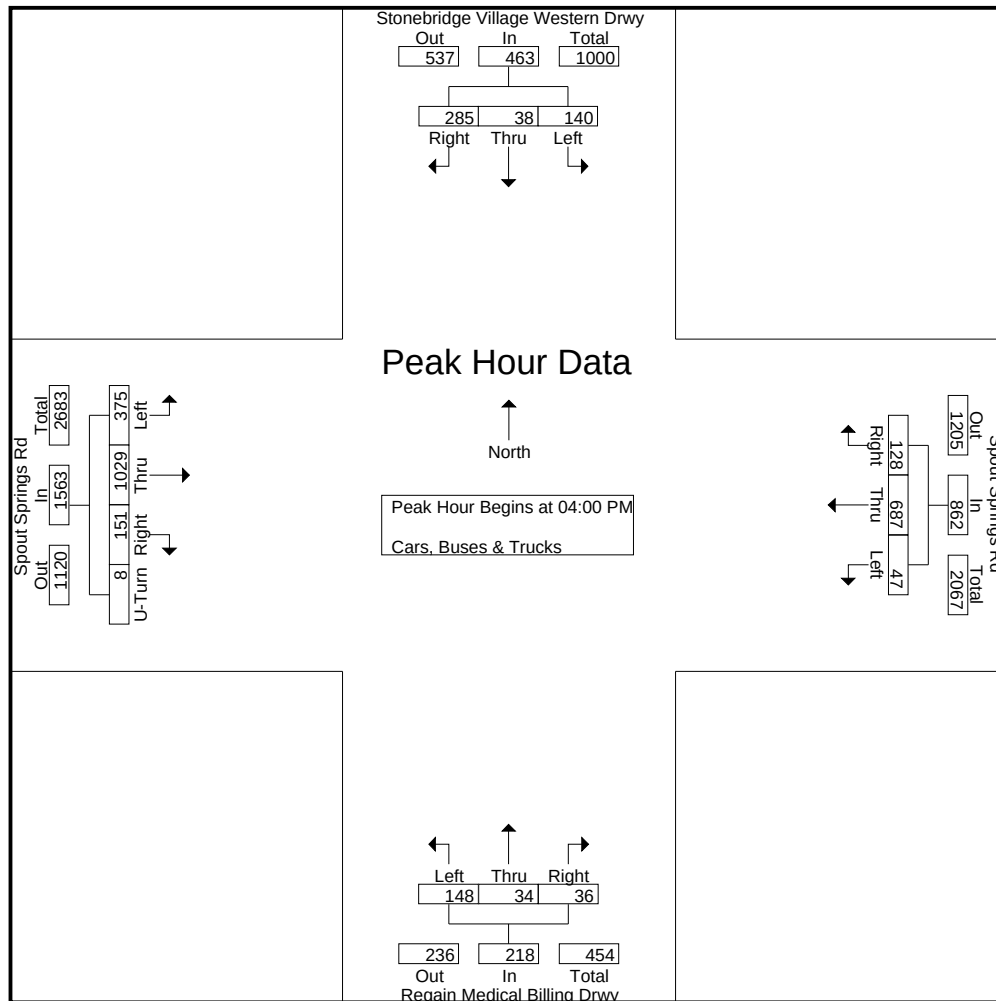
File Name : 20260002

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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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 : 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

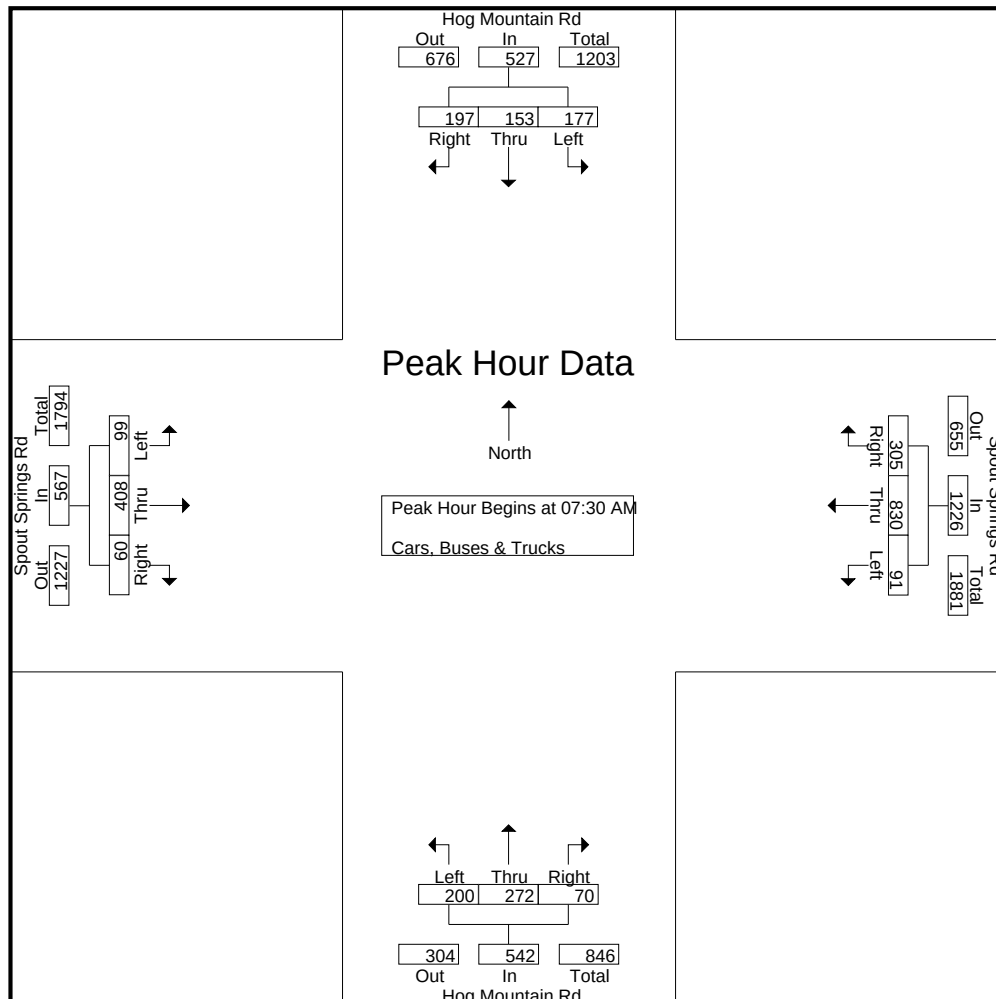
File Name : 20250060

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



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Marietta, GA 30067

TMC Data

Hog Mountain Rd @ Spout Springs Rd

7-9am | 2-4pm | 4-6pm

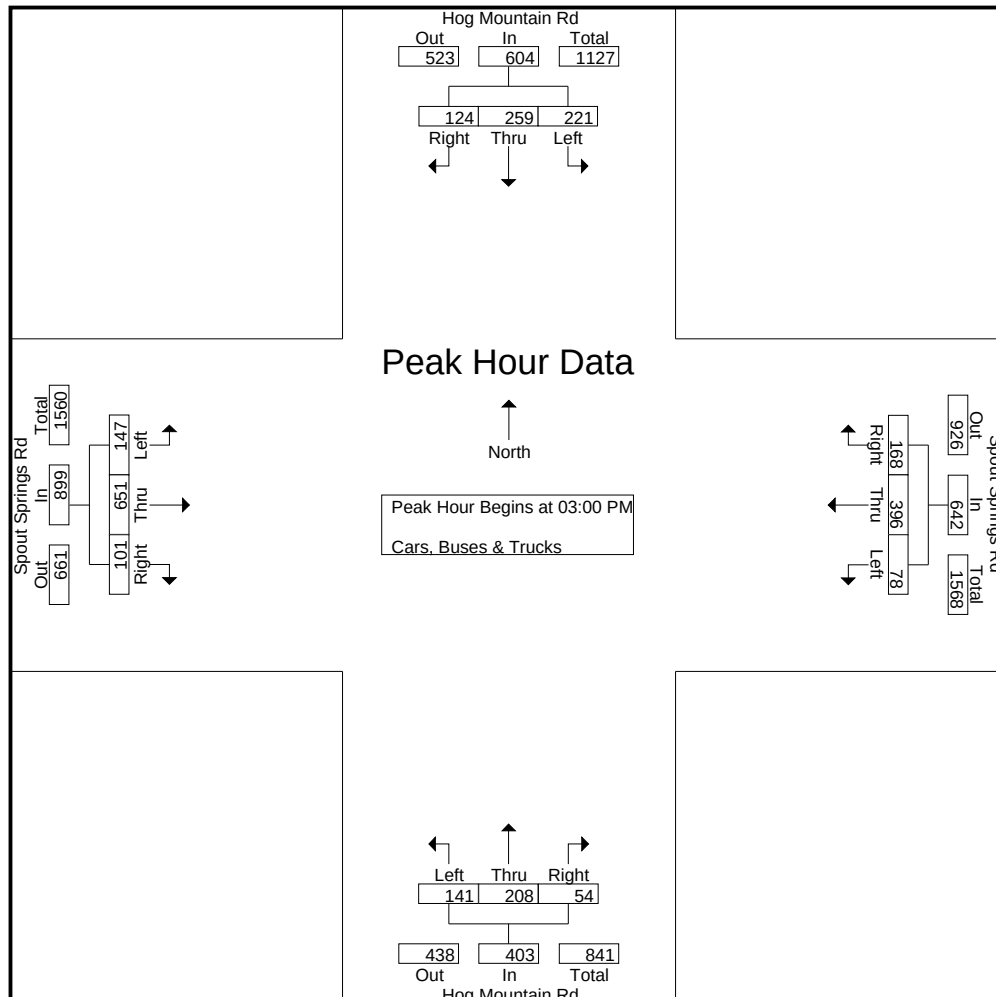
File Name : 20250060

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

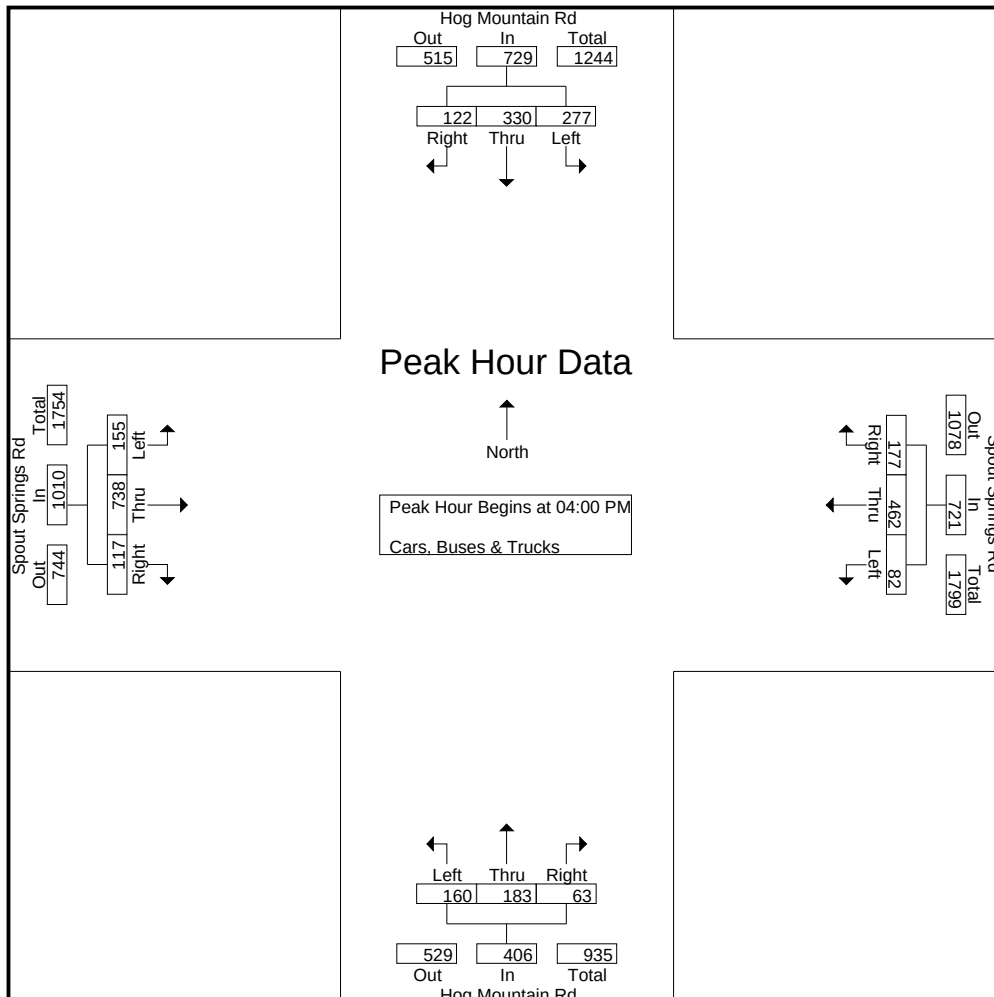
File Name : 20250060

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	

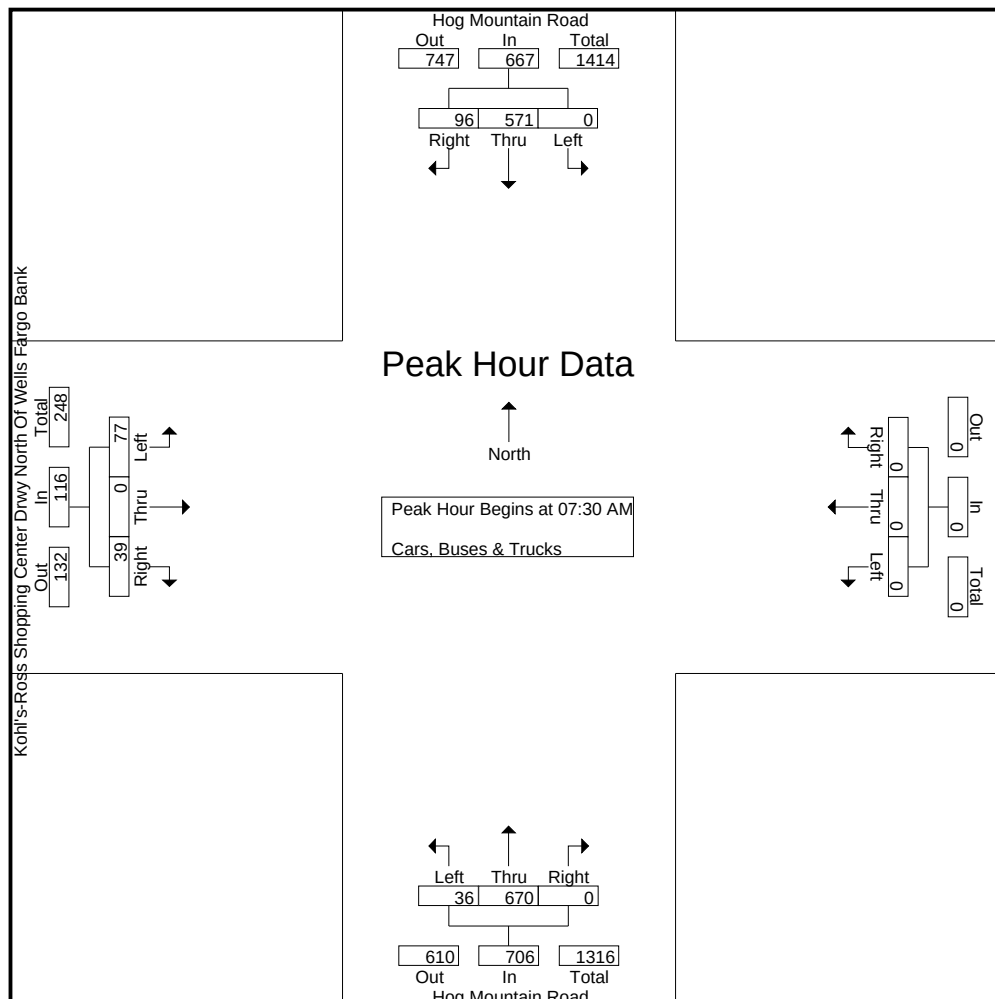
A & R Engineering, Inc.

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
Page No : 2

	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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TMC Data

Hog Mountain Rd @ Kohl's-Ross Shopping

Center Drwy North Of Wells Fargo Bank

7-9am | 2-4pm | 4-6pm

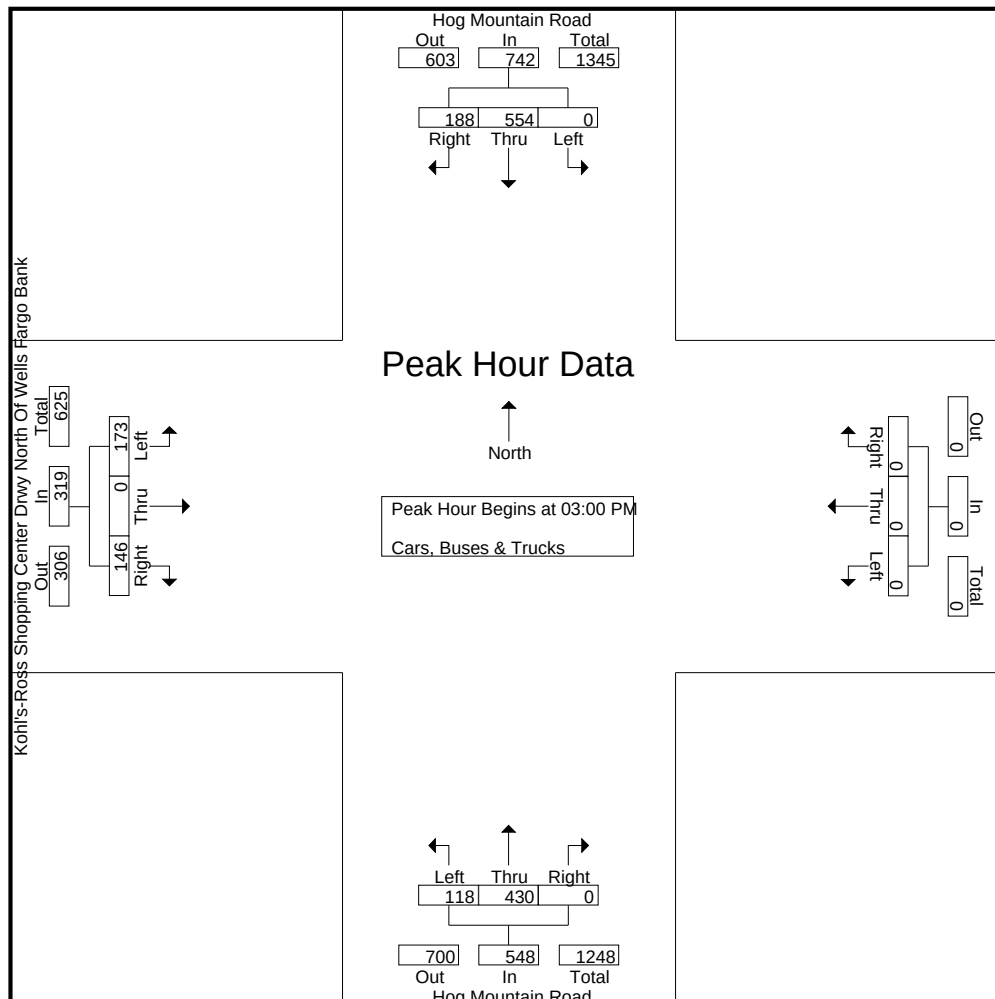
File Name : 20250059

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



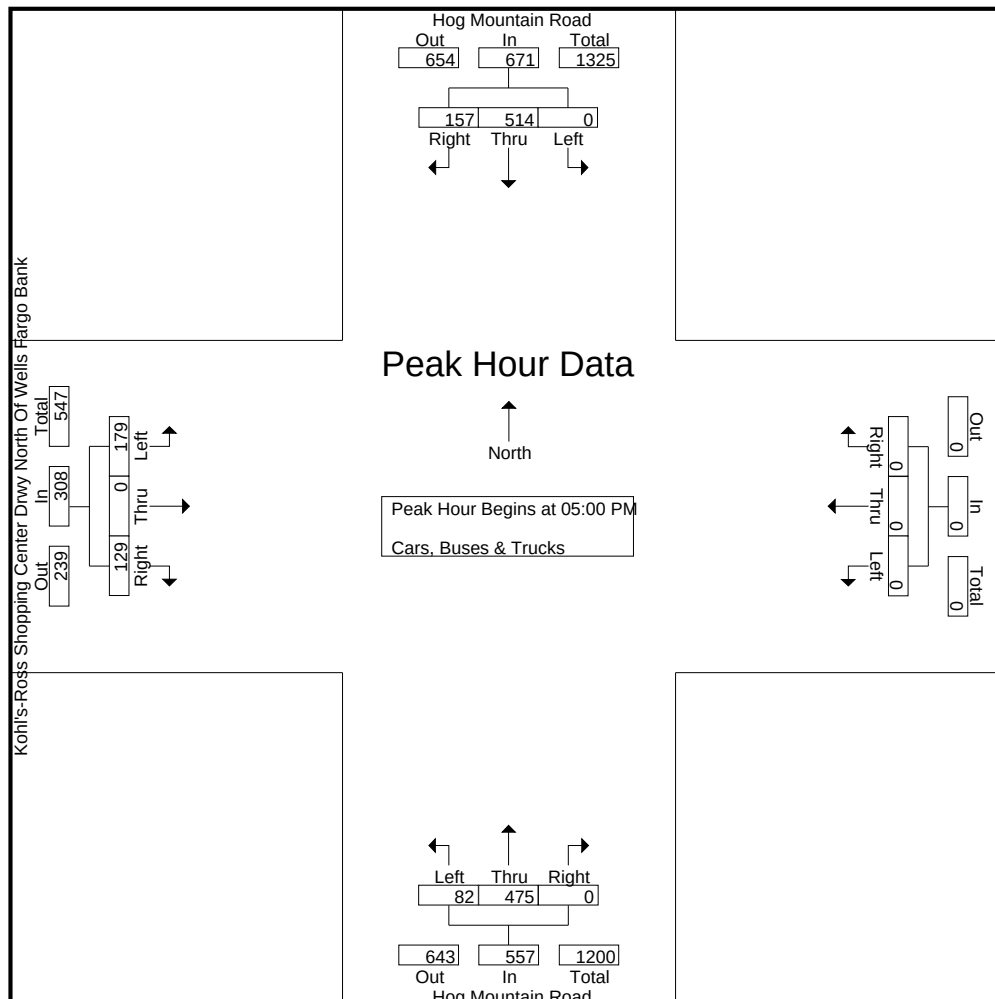
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TMC Data
Hog Mountain Rd @ Kohl's-Ross Shopping
Center Drwy North Of Wells Fargo Bank
7-9am | 2-4pm | 4-6pm

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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TMC Data

Hog Mountain Rd @ Findley Dr-Cash Road

7-9am | 2-4pm | 4-6pm

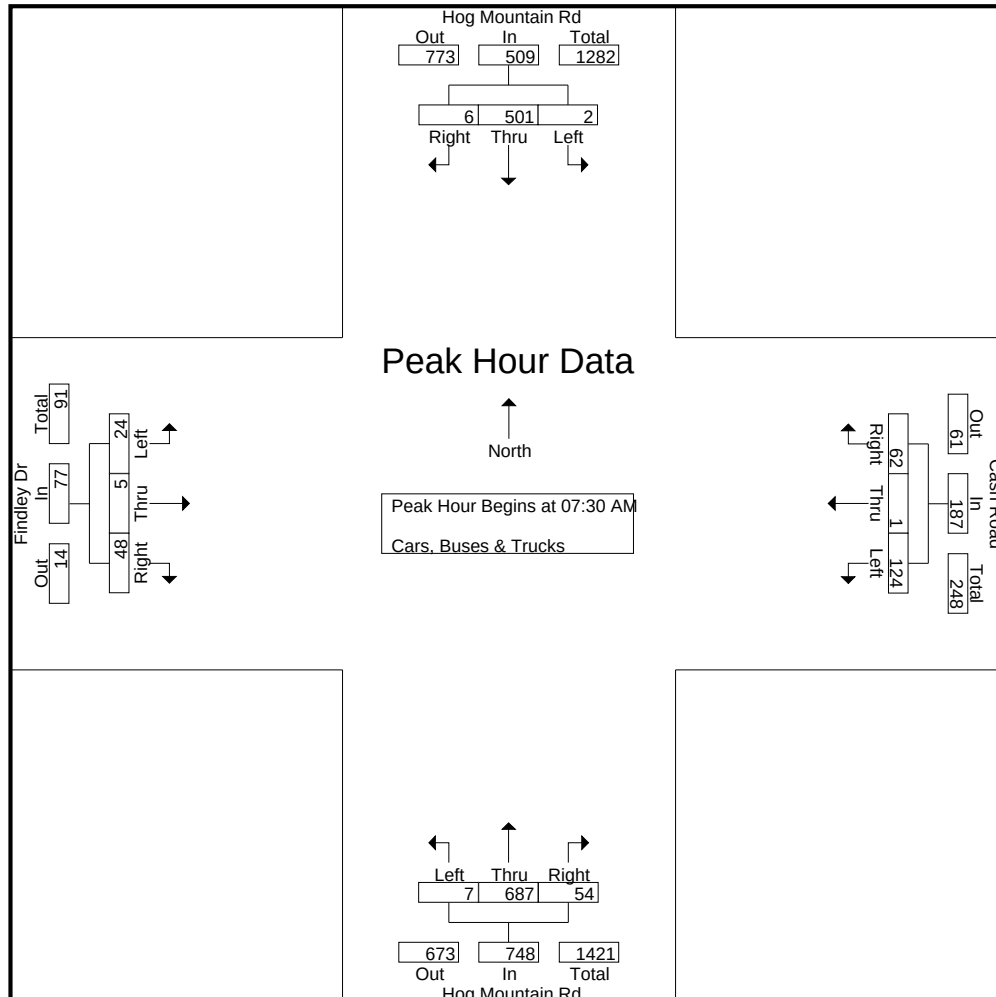
File Name : 20250058

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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TMC Data

Hog Mountain Rd @ Findley Dr-Cash Road

7-9am | 2-4pm | 4-6pm

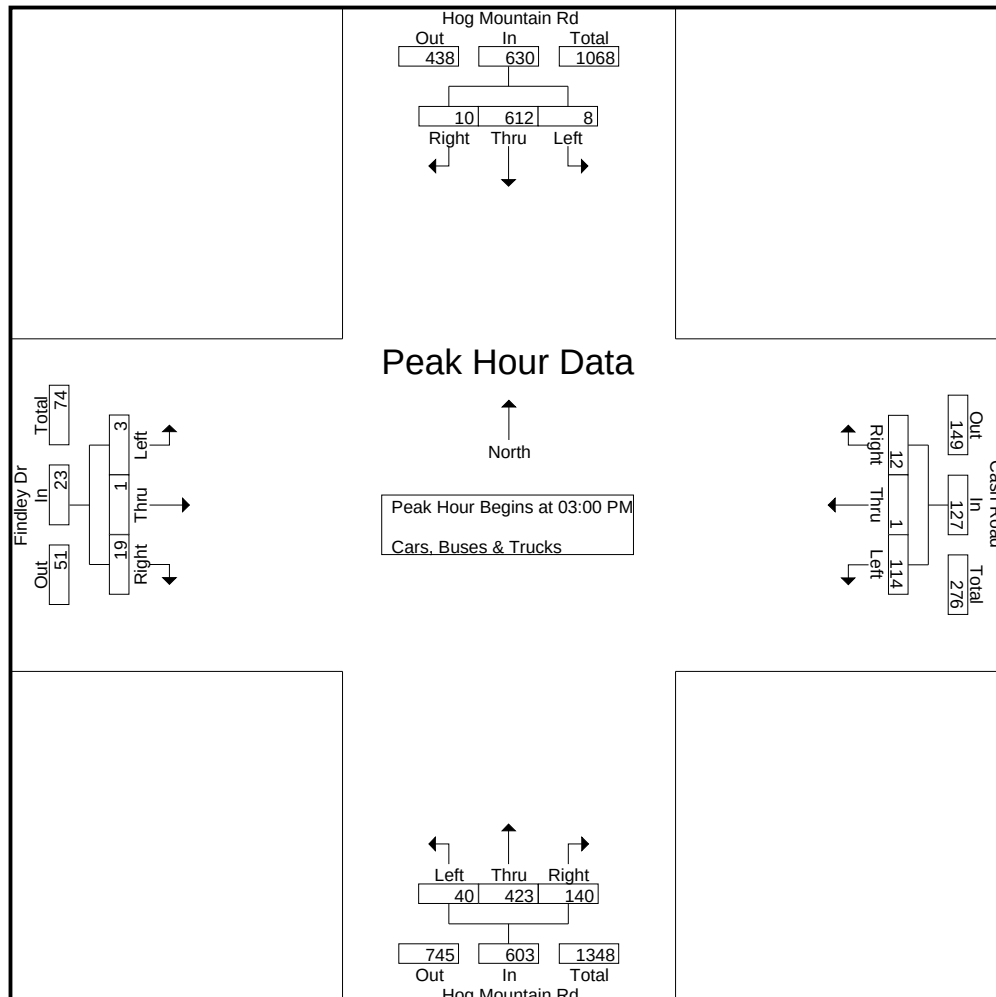
File Name : 20250058

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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TMC Data

Hog Mountain Rd @ Findley Dr-Cash Road

7-9am | 2-4pm | 4-6pm

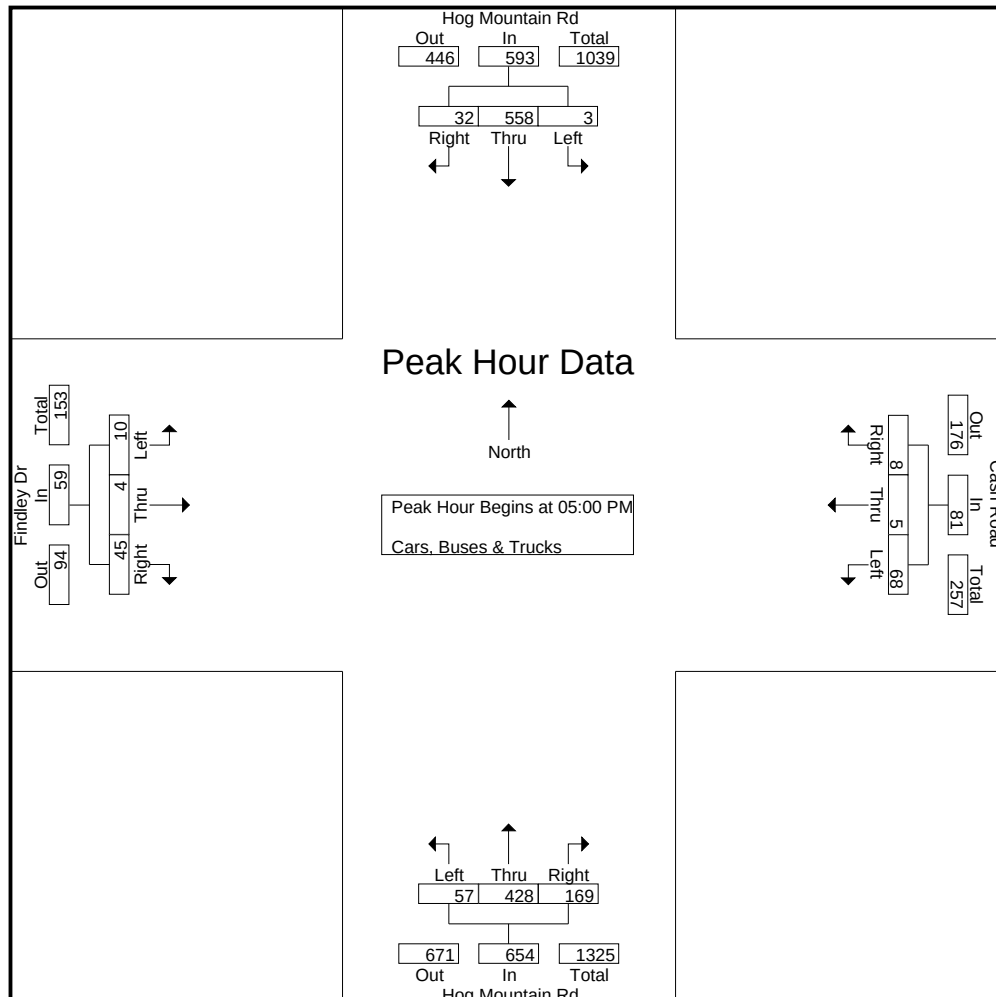
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Site Code : 20250058

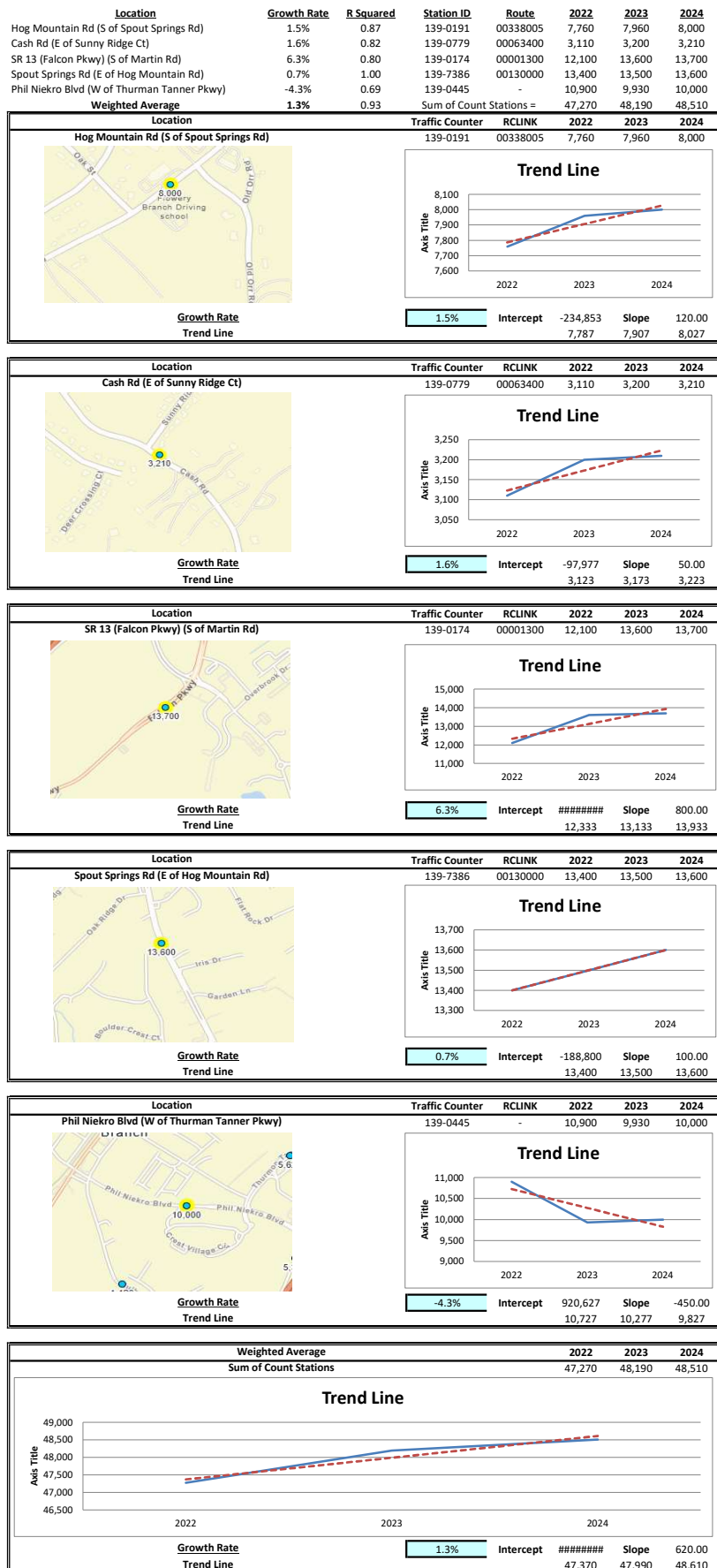
Start Date : 03-04-2025

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



EXISTING INTERSECTION ANALYSIS

Timings

1a. Existing 2026 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

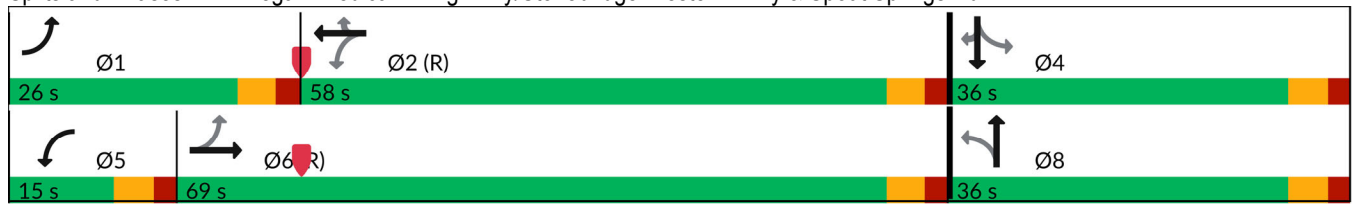
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

25-081 4665 Hog Mountain Road Residential Development - Flowery Branch, GA - TIS Page 1

HCM 7th Signalized Intersection Summary

1a. Existing 2026 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

1a. Existing 2026 AM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

1a. Existing 2026 AM
01/12/2026

												
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+l1), 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.												

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

1a. Existing 2026 AM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

1a. Existing 2026 AM
01/12/2026

						
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+l1), 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

Timings

1b. Existing 2026 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

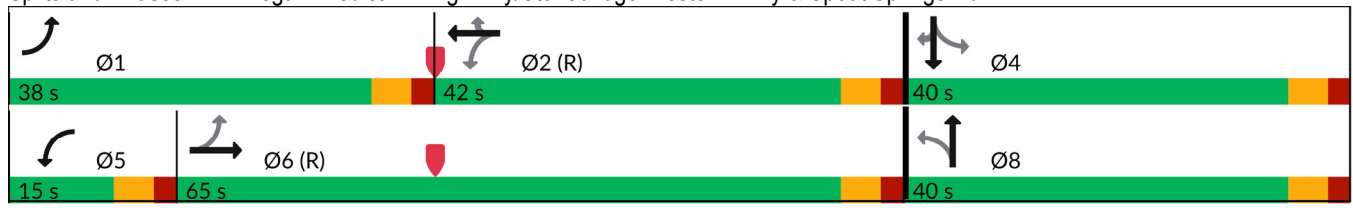
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



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Synchro 11 Report

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HCM 7th Signalized Intersection Summary

1b. Existing 2026 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

1b. Existing 2026 Dismissal
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

1b. Existing 2026 Dismissal
01/12/2026

												
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.												

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

1b. Existing 2026 Dismissal
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

1b. Existing 2026 Dismissal
01/12/2026

						
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+l1), 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

Timings

1c. Existing 2026 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

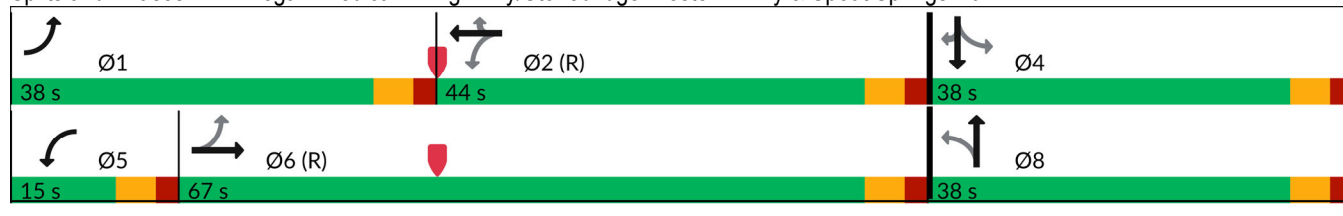
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

1c. Existing 2026 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

1c. Existing 2026 PM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

1c. Existing 2026 PM
01/12/2026

												
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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

1c. Existing 2026 PM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

1c. Existing 2026 PM
01/12/2026

						
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+l1), 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

Timings

2a. No-Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

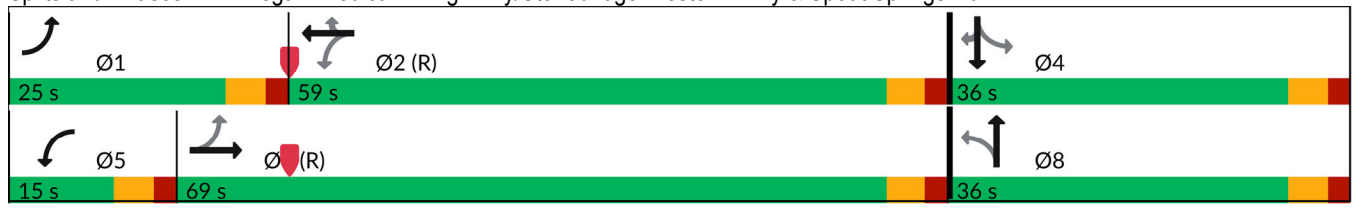
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



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Synchro 11 Report

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HCM 7th Signalized Intersection Summary

2a. No-Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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											

Timings
2: Hog Mountain Rd & Spout Springs Rd

2a. No-Build 2027 AM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary 2: Hog Mountain Rd & Spout Springs Rd

2a. No-Build 2027 AM
01/12/2026

												
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+l1), 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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

2a. No-Build 2027 AM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

2a. No-Build 2027 AM
01/12/2026

						
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+l1), 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

Timings

2b. No-Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

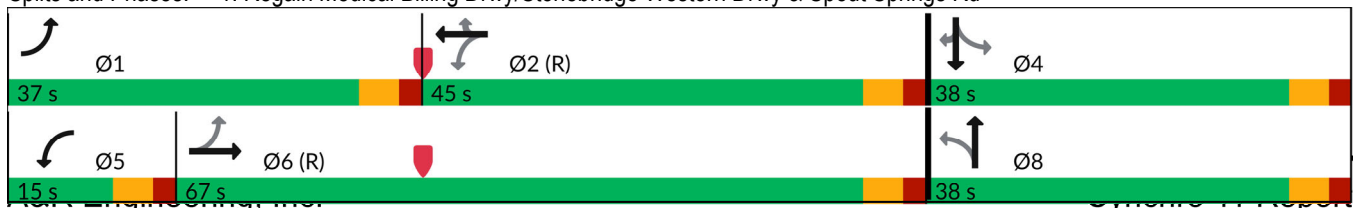
Control Type: Actuated-Coordinated

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



HCM 7th Signalized Intersection Summary

2b. No-Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

2b. No-Build 2027 Dismissal
01/12/2026

											
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

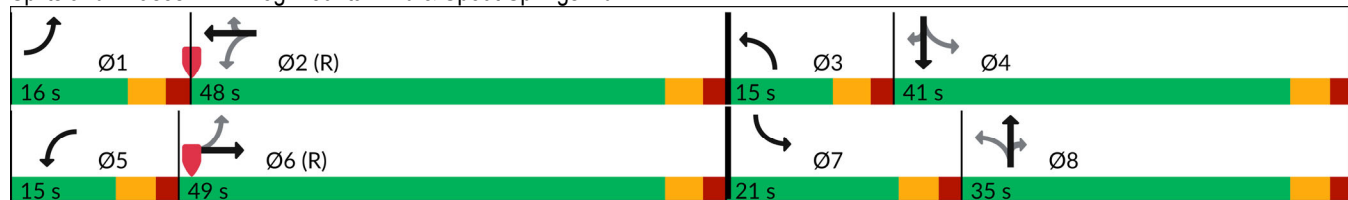
Actuated Cycle Length: 120

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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

2b. No-Build 2027 Dismissal
01/12/2026

												
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.												

Timings 3: Hog Mountain Rd & Stonebridge Village Drwy

2b. No-Build 2027 Dismissal
01/12/2026

						
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



HCM 7th Signalized Intersection Summary 3: Hog Mountain Rd & Stonebridge Village Drwy

2b. No-Build 2027 Dismissal
01/12/2026

						
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

Timings

2c. No-Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

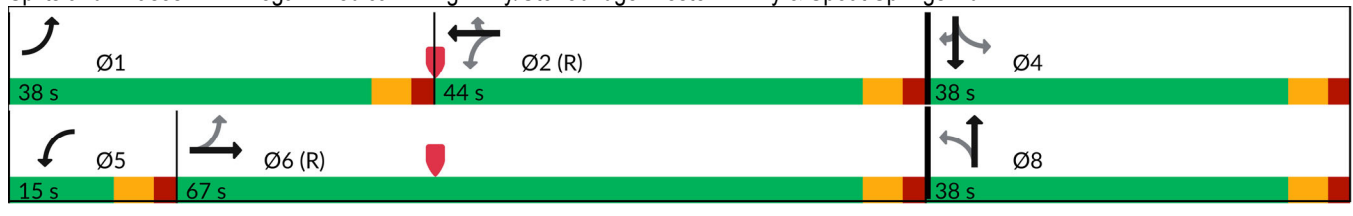
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

2c. No-Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

2c. No-Build 2027 PM
01/12/2026

											
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



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HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

2c. No-Build 2027 PM
01/12/2026

												
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			
Approach Delay, s/veh	32.1				20.8				51.3			
Approach LOS	C				C				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+l1), 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.

Timings 3: Hog Mountain Rd & Stonebridge Village Drwy

2c. No-Build 2027 PM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

2c. No-Build 2027 PM
01/12/2026

						
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+l1), 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

Timings

3a. Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

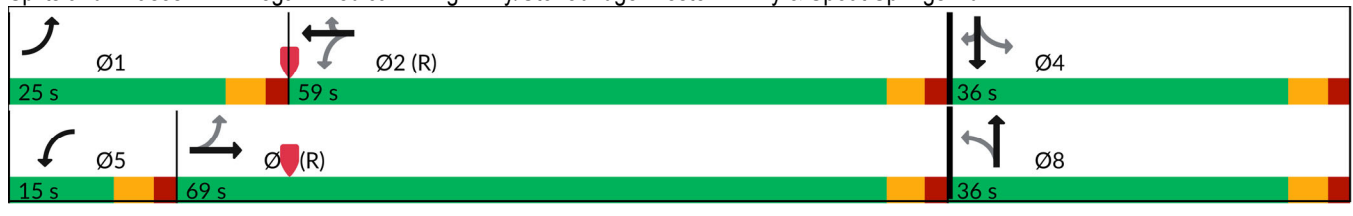
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

3a. Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

3a. Build 2027 AM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary 2: Hog Mountain Rd & Spout Springs Rd

3a. Build 2027 AM
01/12/2026

												
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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

3a. Build 2027 AM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary 3: Hog Mountain Rd & Stonebridge Village Drwy

3a. Build 2027 AM
01/12/2026

						
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	NBRWBLn1	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	-	

Timings

3b. Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026



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

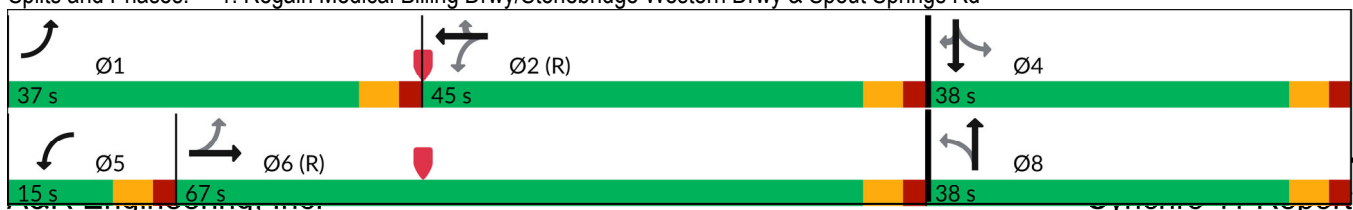
Control Type: Actuated-Coordinated

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



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HCM 7th Signalized Intersection Summary

3b. Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

3b. Build 2027 Dismissal
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

3b. Build 2027 Dismissal
01/12/2026

												
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+l1), 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.												

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

3b. Build 2027 Dismissal
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

3b. Build 2027 Dismissal
01/12/2026

						
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+l1), 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	NBRWBLn1	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	-	

Timings

3c. Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026



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

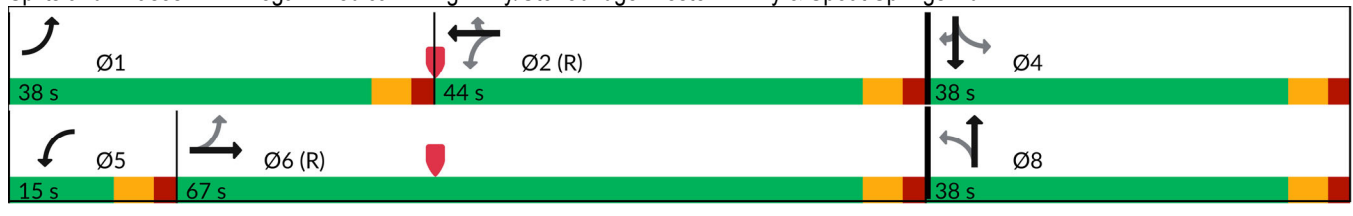
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

3c. Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

3c. Build 2027 PM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

3c. Build 2027 PM
01/12/2026

												
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+l1), 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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

3c. Build 2027 PM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

3c. Build 2027 PM
01/12/2026

						
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+l1), 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	NBRWBLn1	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

Condition	Regan Medical Billing Driveway					Stonebridge Village East Driveway					Spout Springs Road					Spout Springs Road				
	Northbound					Southbound					Eastbound					Westbound				
	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

Condition	Regan Medical Billing Driveway					Stonebridge Village East Driveway					Spout Springs Road					Spout Springs Road				
	Northbound					Southbound					Eastbound					Westbound				
	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

Condition	Regain Medical Billing Driveway Northbound					Stonebridge Village East Driveway Southbound					Spout Springs Road Eastbound					Spout Springs Road Westbound				
	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

Condition	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Spout Springs Road Eastbound				Spout Springs Road Westbound							
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	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	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

Condition	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Spout Springs Road Eastbound				Spout Springs Road Westbound							
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	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	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				Hog Mountain Road				Spout Springs Road				Spout Springs Road							
	Northbound				Southbound				Eastbound				Westbound							
Condition	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	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	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(F)

A.M. Peak Hour

Condition	Hog Mountain Road				Hog Mountain Road				Stonebridge Village East Driveway				Westbound			
	Northbound				Southbound				Eastbound				Westbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Existing 2025 Traffic Counts:	0	36	670	0	706	0	0	571	96	667	0	77	0	39	116	0
Projected 2026 Volumes:	0	36	677	0	713	0	0	577	97	674	0	78	0	39	117	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
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	-4	-4	-4	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
Total New Trips:	0	0	9	0	9	0	0	24	3	27	0	1	0	0	1	0
Future 2027 Traffic Volumes:	0	36	708	0	744	0	0	655	97	752	0	80	0	39	119	0

School Dismissal Peak Hour

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

P.M. Peak Hour

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

School Dismissal Peak Hour

Condition	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Firefly Drive Eastbound				Cash Road Westbound							
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	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	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

P.M. Peak Hour

Condition	Hog Mountain Road Northbound					Hog Mountain Road Southbound					Findley Drive Eastbound					Cash Road Westbound				
	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

	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Findley Drive Eastbound				Cash Road Westbound							
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot				
Condition																				
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	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

Condition	Hog Mountain Road				Hog Mountain Road				Eastbound				Site Driveway Westbound			
	Northbound				Southbound				-				-			
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot
Existing 2025 Traffic Counts:	0	0	748	0	748	0	748	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	755	0	755	0	755	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	15	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	778	0	778	0	778	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	10	10	0	0	10	0	0	0	0	0	27	0	17
Future 2027 Traffic Volumes:	0	0	778	10	788	0	788	10	0	0	0	0	0	27	0	17
	0	0	778	10	788	0	788	10	0	0	0	0	0	27	0	17

School Dismissal Peak Hour

Condition	Hog Mountain Road				Hog Mountain Road				Eastbound				Site Driveway Westbound			
	Northbound				Southbound				-				-			
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot
Existing 2025 Traffic Counts:	0	0	603	0	603	0	603	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	609	0	609	0	609	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	37	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	-3	0	-3	0	-3	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	649	0	649	0	649	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	24	24	0	0	24	0	0	0	0	0	19	0	12
Future 2027 Traffic Volumes:	0	0	649	24	673	0	673	24	0	0	0	0	0	19	0	12
	0	0	649	24	673	0	673	24	0	0	0	0	0	19	0	12

P.M. Peak Hour

Condition	Hog Mountain Road				Hog Mountain Road				Eastbound				Site Driveway Westbound			
	Northbound				Southbound				-				-			
	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot	U	L	T	Tot
Existing 2025 Traffic Counts:	0	0	654	0	654	0	654	0	0	0	0	0	0	0	0	0
Projected 2026 Volumes:	0	0	661	0	661	0	661	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	51	0	0	0	0	0	0	0	0	0
Adjacent Site Shifted Traffic :	0	0	-4	0	-4	0	-4	0	0	0	0	0	0	0	0	0
No-Build 2027 Volumes:	0	0	715	0	715	0	715	0	0	0	0	0	0	0	0	0
Total New Trips:	0	0	0	30	30	0	0	30	0	0	0	0	0	19	0	11
Future 2027 Traffic Volumes:	0	0	715	30	745	0	745	30	0	0	0	0	0	19	0	11
	0	0	715	30	745	0	745	30	0	0	0	0	0	19	0	11













ORDINANCE NO. 786

AN ORDINANCE AMENDING THE ZONING ORDINANCE OF THE CITY OF FLOWERY BRANCH, GEORGIA, ORDINANCE NO. 786, TO ADD A DEFINITION FOR MIXED-USE RESIDENTIAL OVER BUSINESS TO ARTICLE 2. – DEFINITIONS AND INTERPRETATIONS, SECTION 2.1 - USE DEFINITIONS OF APPENDIX C- ZONING ORDINANCE, AND ADD MIXED-USE RESIDENTIAL OVER BUSINESS TO ARTICLE 9 – NONRESIDENTIAL ZONING DISTRICTS, TABLE 9.1, 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.

Add a definition for Mixed-Use Residential Over Business to Article 2 – Definitions and Interpretations, Section 2.1 – Use Definition of Appendix C- Zoning Ordinance and add

Public Hearing Published 04/29/2026
Public Hearing 05/21/2026

First Reading 05/21/2026
Second Reading 06/04/2026

Mixed-Use Residential Over Building to Article 9 – Nonresidential Zoning Districts, Table 9.1 of Appendix C – Zoning Ordinance as a use permitted in the CBD district only upon the granting of a Conditional Use Permit, to read as is shown on attached Exhibit “A”.

SECTION 2. 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 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 2. DEFINITIONS AND INTERPRETATIONS

Sec. 2.1. Use Definitions.

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.

Mixed-Use Residential Over Business (MU-ROB): A development type or land use in which commercial retail uses are located on the ground floor of a building and residential dwelling units are located on one or more upper floors, integrated within the same structure.

A. Purpose and Intent

The Mixed-Use Residential Over Business (MU-ROB) is established to allow and regulate vertically integrated mixed-use development within the Old Town Character Area while preserving the intent of the CBD zoning district.

The MU-ROB is intended to:

1. Activate CBD streets through ground-floor commercial uses;
2. Encourage residential development above business uses;
3. Support a compact, walkable downtown environment;
4. Provide housing opportunities in close proximity to employment, services, and civic spaces;
5. Ensure coordinated, high-quality urban design through master planning; and
6. Mitigate potential land use conflicts through tailored development and design standards.

B. Applicability

1. MU-ROB developments shall be permitted only on properties located within the Central Business District zoning classification and only upon approval of a Conditional Use Permit by the City Council.
2. MU-ROB developments shall require approval of a Master Development Plan (MDP).
3. Where the standards of the MU-ROB use shall be in harmony with the CBD district, design standards of site development, landscape, architecture and open space.

C. Permitted Uses

1. Ground-Floor Uses: MU-ROB Uses, are permitted on the ground floor by right, provided they are oriented to a public street, plaza, or pedestrian way:

- a) Retail stores and shops;
 - b) Restaurants, cafés, and food service establishments (excluding drive-throughs);
 - c) Professional and administrative offices;
 - d) Financial institutions without drive-through facilities;
 - e) Galleries, studios, and artisan uses with on-site retail;
 - f) Civic, cultural, and community facilities.
 - g) Ground-floor residential dwelling units are prohibited along primary CBD street frontages unless specifically approved as part of the Master Development Plan.
2. Floors Above Business Uses (Overlay Allowance): The following uses are permitted above the business uses:
- a) Multifamily residential dwelling units;
 - b) Live-work units;
 - c) Residential amenity spaces accessory to dwelling units.
3. Conditional Uses: The following uses may be approved as part of the Conditional Use Permit for the MU-ROB:
- a) Hotels or boutique lodging;
 - b) Entertainment and assembly uses;
 - c) Structured parking as a principal use on ground-floor or upper-floor;
 - d) Childcare centers;
- D. Prohibited Uses: In addition to uses prohibited in the CBD district, the following uses are in an MU-ROB development:
- 1. Standalone single-use residential buildings;
 - 2. Auto-oriented uses and vehicle-dependent services;
 - 3. Outdoor storage as a principal use;
 - 4. Heavy industrial or warehousing uses.
 - 5. Tattoo, Micro-blading and Piercing Shops.
 - 6. Massage Parler.
- E. Master Development Plan (MDP)
- MU-ROB developments within the CBD shall require approval of a Master Development Plan demonstrating coordinated development of the site.
- The MDP shall include:
- 1. Site and Building Layout
 - a) Building footprints, heights, and massing;
 - b) Relationship of buildings to streets and public spaces.
 - 2. Land Use Mix
 - a) Location and square footage of ground-floor nonresidential uses;
 - b) Number and type of residential units.
 - 3. Circulation
 - a) Pedestrian, bicycle, and vehicular circulation;
 - b) Connectivity to surrounding blocks and streets.
 - 4. Parking Strategy
 - a) On-street, shared, and structured parking;
 - b) Parking reductions or shared parking calculations, if applicable.

- 5. Open Space and Public Realm
 - a) Plazas, courtyards, rooftop spaces, or pedestrian passages;
 - b) Streetscape improvements consistent with CBD standards.
- 6. Phasing
 - a) Development phases, if applicable.
- F. Development Standards
 - 1. Building Height
 - a) Minimum height: Two (2) stories.
 - b) Maximum height: As allowed in the Table 9.2 district or as modified through the approved Master Development Plan.
 - 2. Residential Density
 - a) Residential density shall not be subject to maximum dwelling unit limits, provided that:
 - i. All residential units are located above ground-floor nonresidential uses (or as modified through the approved Master Development Plan); and
 - ii. Adequate infrastructure and services are demonstrated.
 - 3. Building Placement
 - a) Buildings shall be located at or near the front property line to frame public streets.
 - b) Ground-floor façades shall maintain a continuous street wall along primary Old Town Character Area streets.
 - 4. Ground-Floor Design Standards
 - a) Ground-floor commercial space shall have a minimum floor-to-ceiling height suitable for retail or restaurant use.
 - b) A minimum percentage of transparent glazing shall be required along street-facing façades.
 - c) Primary entrances shall face public streets or plazas.
 - 5. Residential Compatibility
 - a) Residential entries shall be clearly defined and secured.
 - b) Noise, lighting, loading, and refuse areas shall be designed to minimize impacts on residential units.
 - c) Separate access for residential and nonresidential uses is encouraged but not required.
- G. Parking and Loading
 - 1. Parking reductions may be approved due to shared parking, proximity to transit, or on-street parking availability.
 - 2. Shared parking between residential and commercial uses is encouraged.
 - 3. Loading areas shall be located to minimize conflicts with pedestrians and public spaces.
- H. Administration and Approval
 - 1. Approval of the MU-ROB shall require:
 - a) Mayor and City Council approval; and
 - b) Approval of the Master Development Plan.
 - 2. Minor modifications to an approved MDP may be approved administratively.
 - a) A minor modification to an approved Master Development Plan (MDP) is a change that does not materially alter the approved development concept or increase overall

impacts, and remains consistent with the intent, conditions, and key parameters of the approved MDP.

- i. Modest shifts in building siting/footprints that still meet required setbacks and do not change the overall site organization
- ii. Minor façade/material/design refinements consistent with the approved architectural approach
- iii. Adjustments to internal circulation/drive aisles, sidewalk alignments, or landscaping that maintain connectivity and required standards
- iv. Minor parking layout changes that do not reduce required parking (or do so only where already allowed)
- v. Utility/stormwater plan refinements that do not change the approved approach or worsen off-site impacts
- vi. Phasing or construction sequencing adjustments that don't change final buildout or required public improvements.

3. Major modifications shall require Planning and Community Development review and City Council approval.

- a) A major modification is any change that materially alters the approved MDP, including changes that affect the approved land use mix, intensity, external impacts, required public improvements, or conditions of approval, or that otherwise represents a substantial deviation from what City Council approved.
 - i. Change in use mix (e.g., adding/removing a conditional use component, shifting commercial/residential in a meaningful way)
 - ii. Increase in development intensity (e.g., more dwelling units, more nonresidential floor area, taller buildings, greater massing) beyond what the MDP approved
 - iii. Changes that reduce required open space/public realm commitments or substantially redesign them
 - iv. Material changes to access points, circulation concept, or connectivity to surrounding streets/blocks
 - v. Parking strategy changes that increase impacts (e.g., meaningful reduction in parking without an approved basis, major relocation of structured parking affecting streetscape).

ARTICLE 9. NONRESIDENTIAL ZONING DISTRICTS

Table 9.1. Permitted and Conditional Uses in Nonresidential Zoning Districts

Use	O-P	INST	NS	HB	CBD	M-1	M-2
Mixed-Use residential over business	X	X	X	X	C	X	X

Executive Summary (For City Council)

Mayor and City Council, this document establishes a proposed Mixed-Use Residential Over Business (MU-ROB) development framework for properties within the Central Business District (CBD), focused on the Old Town Character Area. The intent is to support a walkable, economically active downtown by requiring ground-floor commercial activity while allowing residential units above, with project-specific review through a Conditional Use Permit and an approved Master Development Plan (MDP).

What This Policy Enables

- **Active, pedestrian-oriented streets:** Ground-floor commercial uses oriented to streets, plazas, or pedestrian ways.
- **More housing where services already exist:** Multifamily and live-work units permitted above business uses, supporting a compact downtown pattern.
- **Coordinated site planning and urban design:** Requires an MDP that addresses layout, circulation, parking approach, open space/public realm, and (if applicable) phasing.
- **Clear guardrails to reduce conflicts:** Standards address building placement, ground-floor design, residential compatibility, and parking/loading to manage impacts.

City Council Role and Required Actions

- **Conditional Use Permit (CUP) approval is required** for MU-ROB on CBD-zoned properties.
- **Master Development Plan (MDP) approval is required** to document the coordinated development concept (building placement/massing, land use mix, circulation, parking strategy, open space/public realm, and phasing as applicable).
- **Minor MDP modifications** may be approved administratively when they do not materially alter the approved concept or increase impacts (e.g., modest footprint shifts, minor facade refinements, circulation/landscaping adjustments, minor parking layout changes, utility refinements, or sequencing adjustments that do not change final buildout).
- **Major MDP modifications** require Planning and Community Development review and **City Council approval** when changes materially alter land use mix, intensity, external impacts, public improvements/commitments, access/connectivity, or conditions of approval.

High-Level Use Summary

- **Ground floor (by right, when oriented to a public street/plaza/pedestrian way):** Retail, restaurants/cafes (no drive-throughs), offices, financial institutions (no drive-throughs), galleries/studios with on-site retail, and civic/cultural/community facilities.

- **Above the ground-floor business uses:** Multifamily dwelling units, live-work units, and residential amenity spaces.
- **Potential conditional uses (via CUP):** Hotels/boutique lodging, entertainment/assembly uses, structured parking as a principal use, and childcare centers.
- **Key prohibitions (in addition to CBD prohibitions):** Standalone single-use residential buildings; auto-oriented/vehicle-dependent services; outdoor storage as a principal use; heavy industrial/warehousing; tattoo/micro-blading/piercing shops; and massage parlors.

This framework is designed to retain the intent of the CBD district while providing a predictable, enforceable pathway for vertically mixed-use projects that strengthen downtown vitality. By pairing clear use permissions with an MDP-based review and defined thresholds for administrative vs. Council-level changes, the City can encourage investment while maintaining public realm quality, compatibility, and accountability for impacts.

Architectural design and style are governed by **Article 40**, which is already codified. For any development in the CBD, staff must present the required architectural review and accompanying staff report the City Council for approval.

The code draft is written below:

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-
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 - i. Change in use mix (e.g., adding/removing a conditional use component, shifting commercial/residential in a meaningful way)
 - ii. Increase in development intensity (e.g., more dwelling units, more nonresidential floor area, taller buildings, greater massing) beyond what the MDP approved
 - iii. Changes that reduce required open space/public realm commitments or substantially redesign them
 - iv. Material changes to access points, circulation concept, or connectivity to surrounding streets/blocks
 - v. Parking strategy changes that increase impacts (e.g., meaningful reduction in parking without an approved basis, major relocation of structured parking affecting streetscape)
 - vi. Changes that would require amending conditions of approval or re-evaluating adopted findings (compatibility, traffic, utilities, etc.)

Table 9.1
Permitted and Conditional Uses in Nonresidential Zoning Districts
(P = Permitted Use C = Conditional Use X = Prohibited)

Use	O-P	INST	NS	HB	CBD	M-1	M-2
Accessory building, structure, or use	P	P	P	P	P	P	P
Adaptive reuse of a detached single-family dwelling for a personal service establishment or enclosed retail establishment	C	C	P	P	P	X	X
Adult business (see Adult Entertainment of Code of Ordinances No. 360)	X	X	X	X	X	P	P
Agricultural processing	X	X	X	X	X	X	C
Aircraft landing area	X	X	X	X	X	X	C
Animal hospital or veterinary clinic	P	P	P	P	X	X	X
Animal rendering, slaughtering, and recycling plant	X	X	X	X	X	X	X
Animal shelter	X	P	X	C	X	P	P
Apparel manufacturing	X	X	X	X	X	P	P
Art gallery	P	P	P	P	P	X	X
Asphalt plant	X	X	X	X	X	X	C
Auction house or auction yard (excluding livestock)	X	X	X	X	X	P	P
Auction house or auction yard (including livestock)	X	X	X	X	X	X	P
Automated teller machines (accessory use)	P	P	P	P	X	P	P
Automobile sales and service establishment	X	X	X	P	X	X	X
Automobile sales without service	X	X	X	P	X	X	X
Automobile service establishment without sales	X	X	X	P	X	P	P
Bank or financial institution	P	P	P	P	P	X	X
Batching plant	X	X	X	X	X	X	C
Bed and breakfast inn	P	P	P	P	P	X	X
Big box commercial building	X	X	X	C	X	C	C
Borrow site	X	C	X	C	X	X	P
Botanical garden	P	P	P	C	X	X	X
Bottling or canning plant	X	X	X	X	X	C	P
Brew pub	X	C	P	P	P	P	P
Brewery or distillery	X	X	X	X	X	P	P
Broadcasting studio	P	P	P	P	X	P	P
Building material sales	X	X	X	C	X	P	P
Building sales establishment	X	X	X	C	X	P	P
Bulk Storage	X	X	X	X	X	X	P
Business service establishment, not exceeding 2,500 square feet of gross floor area	C	C	P	P	P	P	P
Business service establishment, more than 2,500 square feet of gross floor area	X	X	X	P	P	P	P
Camp or campground	X	C	X	C	X	X	X
Car wash	X	X	X	C	X	P	P
Caretaker's residence	X	X	X	C	C	P	P
Carnival	X	X	X	C	X	X	P
Cemetery or mausoleum	X	P	X	C	X	P	P

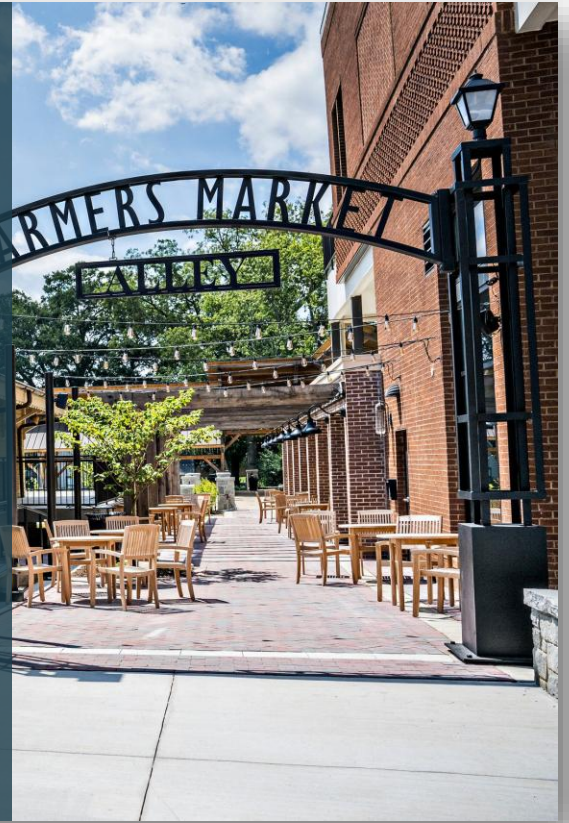
Church, temple, synagogue, or place of worship, including specified accessory uses (see Section 14.3) (Ord. 348-11)	C	P	C	C	X	C	C
Clinic	P	P	P	P	X	X	X
Club or lodge, nonprofit, sponsored by a civic or similar organization	C	P	C	C	X	C	C
Club, private (Ord. 348-11)	X	C	X	C	X	X	X
Cold storage plant or frozen food locker	X	X	X	X	X	P	P
Co-generation facility	X	X	X	X	X	C	C
College or university (Ord. 348-11)	C	P	X	C	X	C	C
Commercial recreational facility, indoor (Ord. 348-11)	X	X	C	P	X	C	C
Commercial recreational facility, outdoor	X	X	X	C	C	C	C
Communication tower and antenna	P	P	X	P	X	P	P
Community recreation area	P	P	P	P	P	P	P
Composting facility	X	X	X	X	X	X	P
Conservation areas and passive recreational facilities	P	P	P	P	P	P	P
Construction field office and/or yard (temporary use)	X	P	X	P	X	P	P
Continuing care retirement community	C	P	X	P	C	X	X
Contractor's establishment	X	X	X	P	X	P	P
Convenience store, with or without gasoline pumps	X	X	X	C	X	X	X
Cottage industry	P	P	P	P	P	P	P
Crematorium in conjunction with a funeral home or mortuary (Ord. 348-13)	X	C	X	C	X	P	P
Crematorium not in conjunction with a funeral home or mortuary (Ord. 348-13)	X	X	X	X	X	X	P
Crisis center	C	P	X	P	X	P	P
Custom order shop	X	X	P	P	P	P	P
Day care center serving no more than 17 persons	P	P	P	P	X	C	C
Day care center serving 18 persons or more	X	P	C	P	X	C	C
Distribution center, including truck terminals	X	X	X	C	X	P	P
Dry cleaning plant	X	X	X	C	X	P	P
Dwelling, single-family detached, fee-simple	X	X	X	X	C	X	X
Dwelling, single-family detached, condominium	X	X	X	X	C	X	X
Dwelling, townhome (single-family attached fee-simple)	X	X	X	X	C	X	X
Dwelling, multi-family	X	X	X	X	C	X	X
Dwelling, two-family (duplex)	X	X	X	X	X	X	X
Dwelling, located within a building containing a nonresidential principal use	X	X	X	X	X	X	X
Explosives storage	X	X	X	X	X	X	C
Exterminating and pest control business or disinfecting service	X	X	C	P	X	P	P
Extraction and removal of sand, gravel, top soil, clay, dirt, precious metals, gems, and minerals	X	X	X	X	X	X	C
Fairgrounds	X	P	X	X	C	P	P
Farm Winery Tasting Rooms	X	X	X	C	P	X	X

Finance, insurance, and real estate establishment, 2,500 square feet or less of gross floor area per establishment	P	P	P	P	P	P	P
Finance, insurance, and real estate establishment, more than 2,500 square feet of gross floor area per establishment	P	P	P	P	P	X	X
Food processing plant	X	X	X	X	X	X	P
Fuel oil distributor	X	X	X	X	X	P	P
Funeral home or mortuary	X	X	X	C	X	P	P
Gas tank sales	X	X	X	C	X	X	P
Greenhouse (commercial)	X	X	X	P	X	P	P
Group home	C	P	X	P	X	X	X
Growler	X	X	X	P	P	X	X
Gym or exercise facility, not open 24 hours a day	P	P	P	P	P	P	P
Gym or exercise facility open 24 hours a day	P	P	X	P	P	P	P
Hazardous waste receiving, handling, and/or disposal facility, or volatile organic liquid handling and storage	X	X	X	X	X	X	C
Health spa	X	X	X	P	P	P	P
Hospital	C	P	X	P	C	C	C
Incinerator	X	X	X	X	X	X	C
Institutional residential living and care facility, serving no more than 17 persons	P	P	P	P	X	X	X
Institutional residential living and care facility, serving 18 persons or more	C	P	X	P	X	X	X
Junk/salvage yard	X	X	X	X	X	X	C
Kennel	X	X	X	P	X	P	P
Laboratory	P	P	C	P	X	P	P
Landfill (sanitary, construction/demolition, inert waste)	X	X	X	X	X	X	C
Landscaping company	X	X	X	P	X	P	P
Live/work unit	C	X	C	C	P	P	P
Lodging service (hotel, motel, motor hotel, inn)	X	C	X	P	P	X	X
Logging yard	X	X	X	X	X	X	P
Lumber yard	X	X	X	C	X	P	P
Machine shop	X	X	X	P	X	P	P
Manufactured home, "Class A"	X	X	X	X	X	X	X
Manufactured home other than "Class A"	X	X	X	X	X	X	X
Manufactured home park	X	X	X	X	X	X	X
Manufacturing, ceramics	X	X	X	X	X	C	P
Manufacturing, cosmetics or toiletries	X	X	X	X	X	P	P
Manufacturing, coating of cans, coils, fabrics, vinyl, metal furniture, appliance surfaces, wire, paper, and flat wood paneling	X	X	X	X	X	C	C
Manufacturing, electronics, camera, or photographic or communication equipment	X	X	X	X	X	P	P
Manufacturing, instrument assembly	X	X	X	X	X	P	P
Manufacturing, metal products	X	X	X	X	X	C	P

Manufacturing, pharmaceuticals and medical supplies	X	X	X	X	X	P	P
Manufacturing, textiles	X	X	X	X	X	P	P
Manufacturing, wood products	X	X	X	X	X	P	P
Manufacturing, processing, and assembling, within buildings, not otherwise specified	X	X	X	X	X	C	C
Marina	X	C	X	P	X	X	X
Materials recovery facility	X	X	X	X	X	X	C
Micro-brewery	X	X	X	X(1)	C	X	X
Micro-distillery	X	X	X	X(1)	C	X	X
Mixed-Use residential over business	X	X	X	X	C	X	X
Museum	P	P	P	P	P	P	P
Office	P	P	P	P	P	P	P
Office-warehouse	X	X	X	C	X	P	P
Open air business	X	X	X	P	C	C	C
Open storage yard (principal use)	X	X	X	C	X	P	P :
Package store	X	X	X	P	X	X	X
Parking deck or structures, on-site or off-site	C	C	X	P	C	C	C
Parking lot, off-site	P	P	P	P	C	P	P
Personal service establishment	C	C	P	P	P	P	P
Petroleum bulk storage site	X	X	X	X	X	X	P
Power plant, private	X	X	X	X	X	X	C
Public or semi-public use	P	P	P	P	P	P	P
Rail yard	X	C	X	X	X	X	P
Railroad freight terminal	X	C	X	X	X	X	P
Recreational vehicle park	X	X	X	C	X	X	X
Recovered materials processing facility	X	X	X	X	X	X	C
Recycling center	X	X	X	X	X	C	C
Restaurant, excluding drive-ins or drive through facilities and fast-food restaurants as defined	X	C	P	P	P	P	P
Restaurant, including drive-ins or drive through facilities and fast-food restaurants as defined	X	X	X	P	X	C	C
Retail trade establishment, enclosed	X	X	P	P	P	P	P
Retreat center	P	P	X	P	X	X	X
Riding academy or equestrian center	X	X	X	P	X	C	C
Rooming or boarding house	C	X	X	C	X	X	X
Sawmill	X	X	X	C	X	X	P
School for the arts (Ord. 348-10; Ord. 348-11)	P	P	C	P	C	C	C
School, private, elementary, middle, or high (Ord. 348-11)	P	P	C	C	X	C	C
School, professional (Ord. 348-11)	P	P	C	P	X	C	C
School, special (Ord. 348-11)	P	P	X	X	X	C	C
School, trade (Ord. 348-11)	C	C	X	X	X	C	C
Self-service storage facility (mini-warehouse)	X	X	X	C	X	P	P
Service and fuel-filling station	X	X	X	P	X	P	P
Showroom .	X	X	X	X	X	P	P
Slaughterhouse	X	X	X	X	X	X	C
Solid waste handling and/or transfer facility	X	X	X	X	X	X	C
Special event facility (Ord. 348-11)	C	P	C	P	X	X	X

Taxi cab and limousine service	X	X	X	X	X	X	X
Temporary use approved by the Zoning Administrator	P	P	P	P	P	P	P
Therapeutic camp	X	C	X	X	X	X	X
Tow service	X	X	X	P	X	C	P
Truck stop or truck terminal	X	X	X	C	X	X	P
Utility company	P	P	X	P	X	P	P
Utility company substation	P	P	P	P	P	P	P
Vehicle emission testing facility	X	X	X	P	X	P	P
Warehouse or storage building	X	X	X	C	X	P	P
Water plant or wastewater treatment facility	X	X	X	X	X	X	X
Wholesale trade establishment	X	X	X	C	C	P	P
Wireless telecommunications equipment	X	C	X	C	X	C	C
Wireless telecommunications facility	X	C	X	C	X	C	C
Wrecked motor vehicle compound	X	X	X	C	X	X	P
Yoga Studio	P	P	P	P	P	P	P

GROWING THOUGHTFULLY PROTECTING WHAT MATTERS



2026 Comprehensive Plan Update City of Flowery Branch

ACKNOWLEDGEMENTS

FLOWERY BRANCH CITY COUNCIL

- Oliver McClellan, Mayor
- Chris Mundy, Post 1
- Joseph Mezzanotte, Post 2
- William McDaniel, Post 3
- Charles Vanderbilt, Post 4
- Pete Lena, Post 5

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- Sarah Collins, Resident
- Michael Lancaster, Board of Directors for Chamber of Commerce and business owner
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- John Nagy, City Engineer
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- Jack Probst, Committee Chair and resident
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- Jerry Smith, Resident
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- Bailey Ramsey, Coordinator of Fun

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CHAPTER 1. INTRODUCTION

Purpose of the Comprehensive Plan

The *Flowery Branch Comprehensive Plan* is the City of Flowery Branch’s policy guide for growth and

development, as expressed by a vision statement, Future Development Map, character area policies, and supporting implementation strategies. The plan is most commonly used in the review and decision-making process by staff and City Council for rezoning requests when proposals are evaluated for consistency with the Future Development Map and supporting text in this document.

The Comprehensive Plan also outlines the overall strategy for achieving the City’s vision for future development by identifying a 5-year Community Work Program (CWP) with a prioritized ‘to-do’ list. The CWP should be consulted by staff and City Council on an annual basis when developing annual department-level work programs and the City budget.

In addition, this plan serves the purpose of meeting the intent and requirements of the Georgia Department of Community Affairs’ (DCA) “Standards and Procedures for Local Comprehensive Planning,” as amended on October 1, 2018. Preparation of a comprehensive plan in accordance with these standards is an essential requirement for maintaining status as a Qualified Local Government (QLG). QLG status allows Georgia cities and counties to be eligible for financial incentives from DCA, the Department of Natural Resources (DNR), the Georgia Environmental Finance Authority (GEFA), and the OneGeorgia Authority. This plan update allows the City of Flowery Branch to retain its QLG status.

The City’s first comprehensive plan was adopted in 2006 and was amended in 2011, 2016, and 2021 in accordance with DCA’s “Standards and Procedures for Local Comprehensive Planning” that were in effect at the time. This 2026 plan updates the 2021 plan that was prepared by Blue Cypress Consulting, LLC in conjunction with Hatley Plans, LLC, and ROSS+Associates and has been prepared to comply with the current standards, which require plans to be updated every five years and address specific topics identified below.

Scope

The *Flowery Branch Comprehensive Plan* is required to address the following topics, which are presented using the terminology in the Georgia Department of Community Affairs’ planning standards:

- Needs and Opportunities (see Chapter 3 of this plan)
- Land Use (see Chapter 4)
- Transportation (per DCA’s planning standards, the Gainesville-Hall Metropolitan Planning Organization’s [GHMPO] Regional Transportation Plan [adopted May 12, 2020], the South Hall Trail Study [2019] and the 2022 Highlands to Islands Design Guide [GHMPO] are substituted for the required Transportation element and are incorporated by reference in this plan; however, more detailed local needs are also addressed in Chapter 3 of this plan)
- Broadband Services (see Chapter 3)
- Community Goals (see Chapter 4)
- Community Work Program (see Chapter 5)

This plan update also considered both the **Metropolitan North Georgia Water Planning District’s Water Resource Management Plan** and the **Rules for Environmental Planning Criteria** (established and administered by the Department of Natural Resources pursuant to O.C.G.A. 12- 2-8), as required by DCA (see Chapter 3 of this plan).

Although Economic Development and Housing are not required to be addressed as planning topics by DCA's planning standards, they are discussed in Chapter 3. In addition, *the City of Flowery Branch Old Town Redevelopment Plan*, and the *City of Flowery Branch Redevelopment Plan for Tax Allocation District #1: Old Town and Commercial Gateways* are incorporated by reference in this plan.

Community Involvement

The process of updating the Comprehensive Plan included informational activities and opportunities for public input, as summarized below (see also Appendix C):

- Interactive project website
- Online survey for community feedback was open from December 2025 to April 2026 and 950 people responded. This was an increase from the 2021 update when 472 participants responded.
- Design and production of yard signs, flyers, and a banner to promote the survey
- Interactive Land Use input map
- Dedicated project page on City website
- 9 posts on City's social media pages
- 3 notifications via City Newsletter
- Insert with survey QR code in all utility bills for January
- 2 public workshops with interactive stations
- 5 meetings with an appointed Stakeholder Committee
- 3 public hearings: a kickoff meeting in December, public open house community forums in February, and final draft review meeting in May.



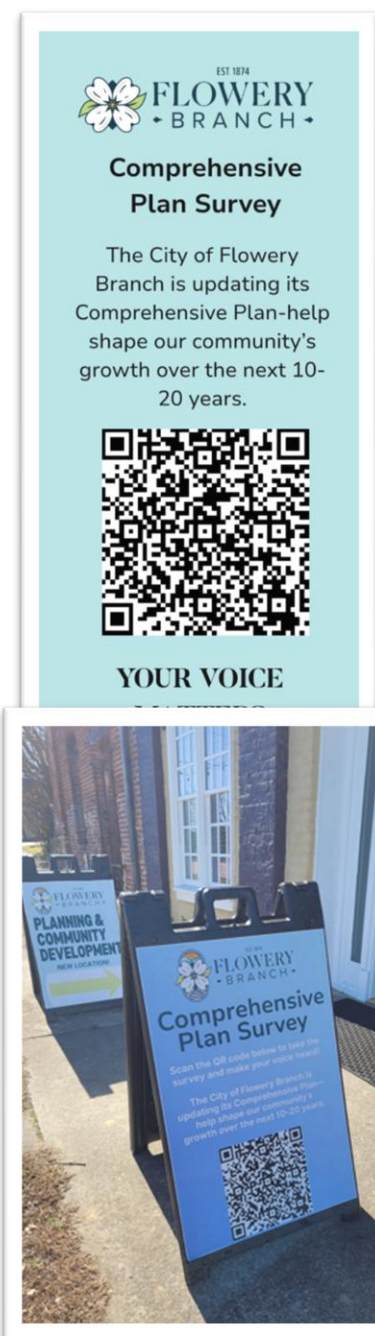
Outreach Efforts

People who live, work, and play in the City of Flowery Branch were the focal point for public outreach efforts throughout the life of the project. Efforts were made to reach as many individuals as possible via multiple engagement avenues; from flyers and signage to media postings in local newspapers, social media outreach campaigns, dedicated informational website pages, and open-house style public workshops. In an attempt to ensure that as many voices as possible could be heard, an insert containing the survey QR code was added to all utility bills mailed during the month of January 2026.

Public Meetings

As required by DCA's Minimum Standards and Procedures for Local Comprehensive Planning, two public hearings were conducted. One in December 2025 at the outset of the project and a second one in May of 2026 held prior to the transmittal of the draft document for regional and state review.

In addition to the public hearings, two open-house style workshops were held to engage the public and provide an opportunity for questions and collaboration. Meeting agendas, presentations, newspaper advertisements, and other supplemental documentation are included in Appendix C of this document.



Utility bill inserts and a-frame sign example (top and above); Interactive Land Use Map station and Welcome Station at Public Workshop (left)



Plan Organization

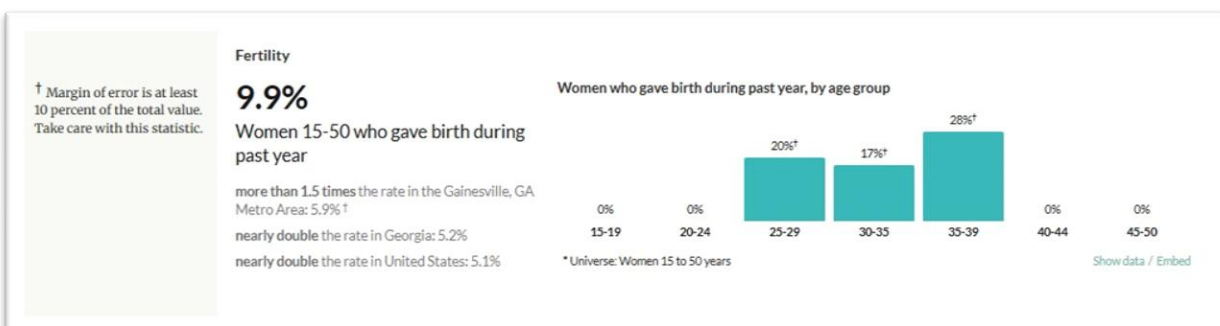
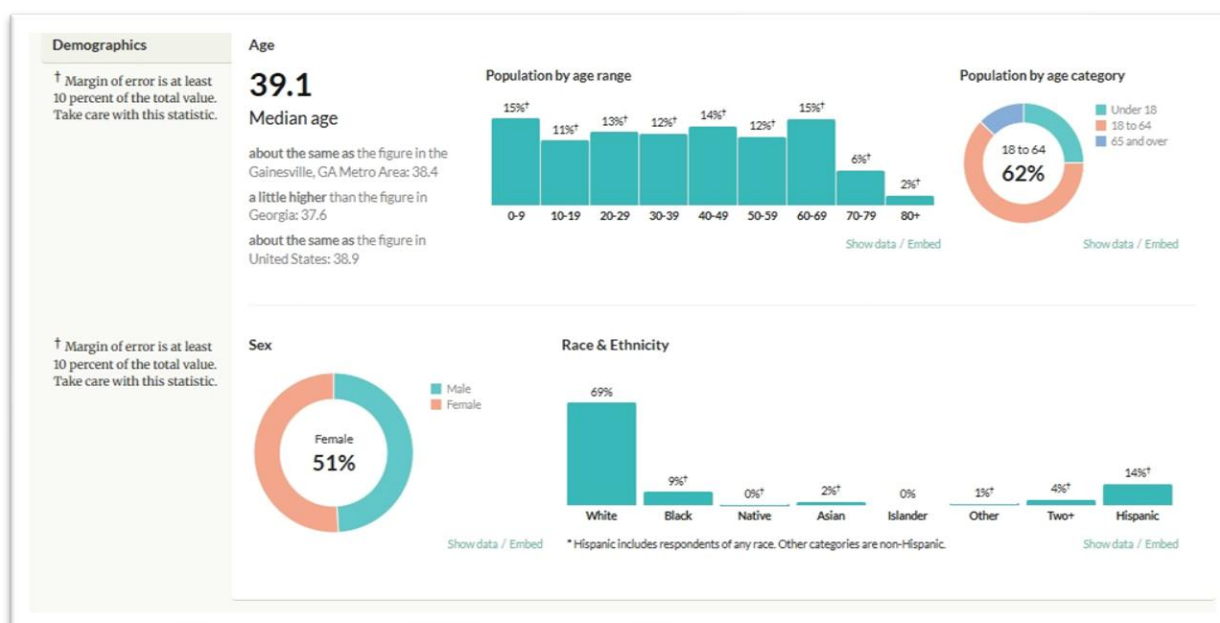
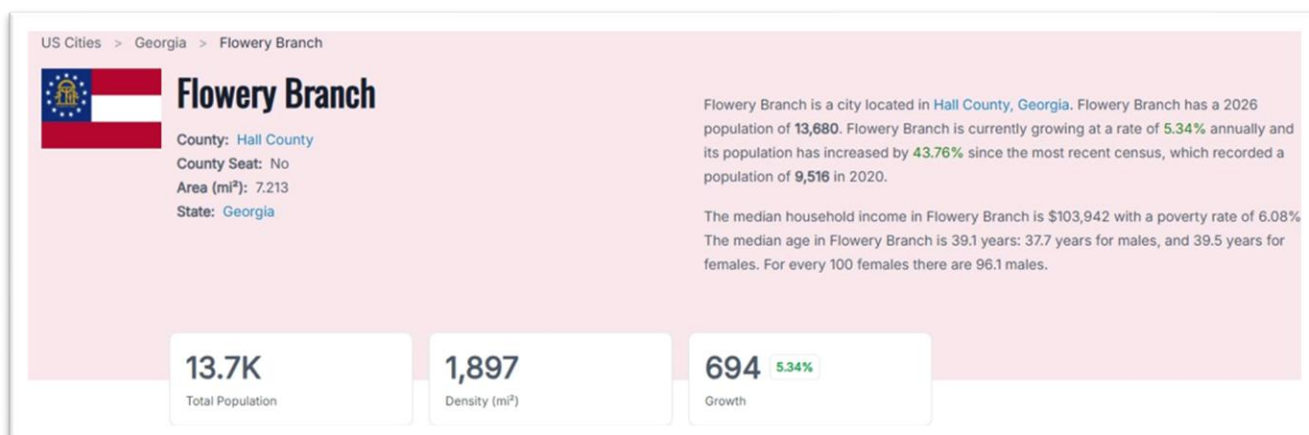
The Comprehensive Plan is organized into the following chapters:

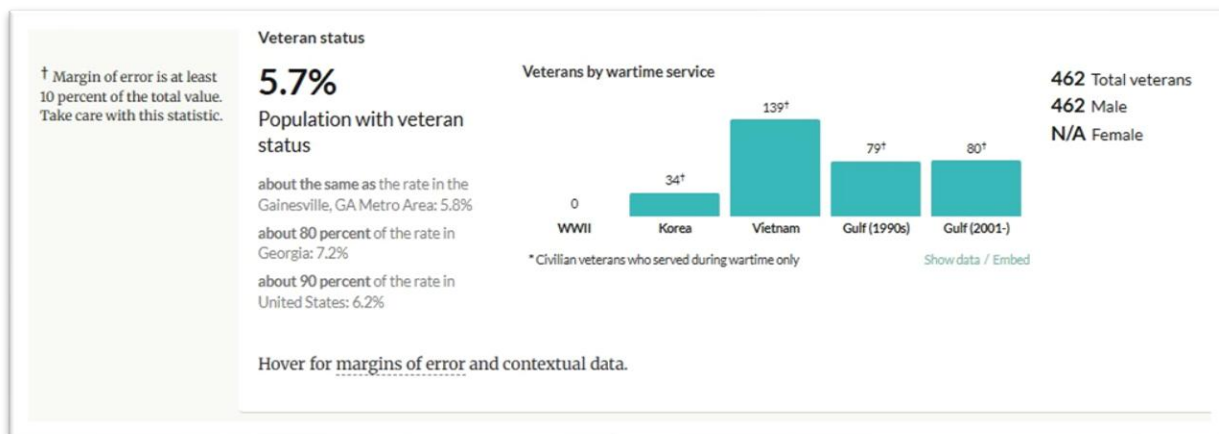
Chapter 1: Introduction

- Chapter 2: Community Context
- Chapter 3: Needs and Opportunities
- Chapter 4: Community Vision
- Chapter 5: Implementation Program
- Appendix A: Growth Area Policy Map
- Appendix B: Report of Accomplishments
- Appendix C: Public Involvement Documentation

CHAPTER 2. COMMUNITY CONTEXT

Flowery Branch enjoys location advantages due to its easy access to Interstate 985 which connects to Atlanta and the North Georgia Mountains. It is part of the Gainesville-Hall County metropolitan area and lies just north of Gwinnett County, south of Gainesville, and east of Lake Lanier. The city is home to the Atlanta Falcons football team's headquarters and training facility.





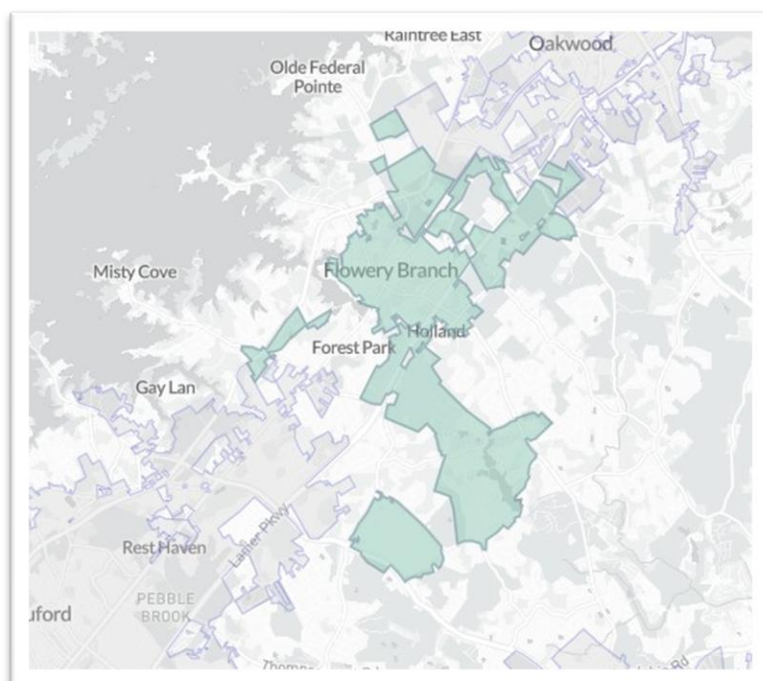
A History of Progress

According to available population estimates by the U.S. Census Bureau, Flowery Branch has seen its population explode more than four hundred percent from 2,071 in 2000 to 10,925 in 2024 and an estimated 13,660 residents at the time of this update. This growth is expected to continue as its historic downtown continues to redevelop, new housing construction proceeds, and annexations occur.

A Future of Growth

The pace set in the past is expected to continue in the coming decades.

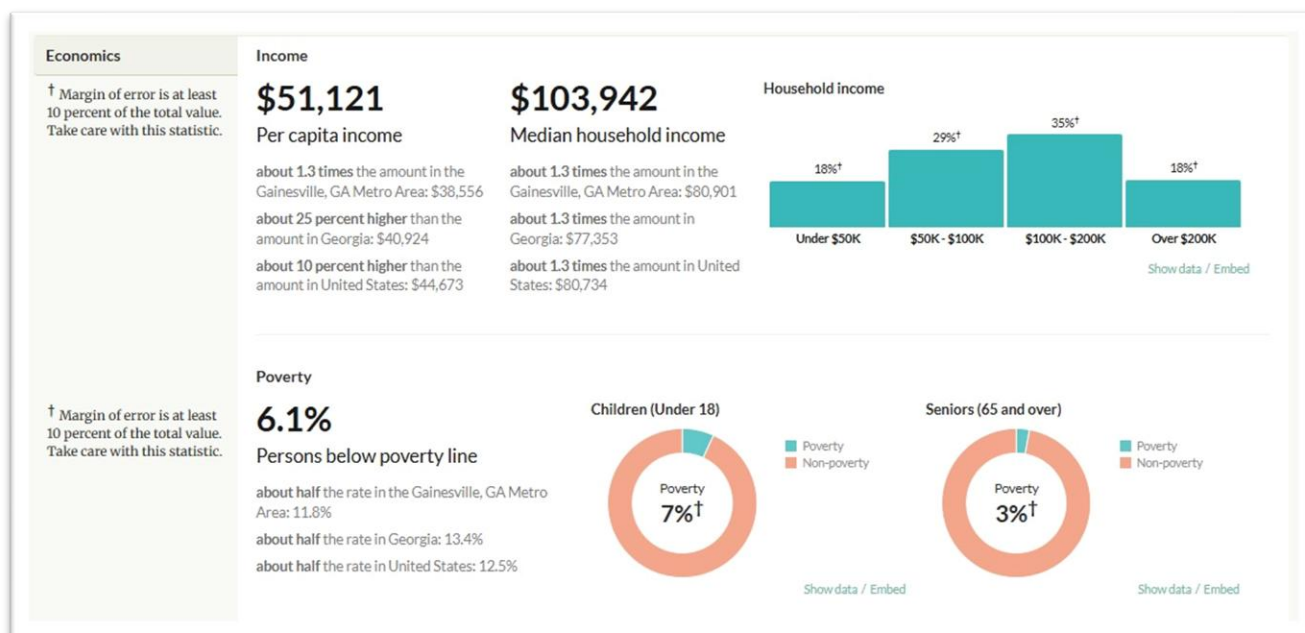
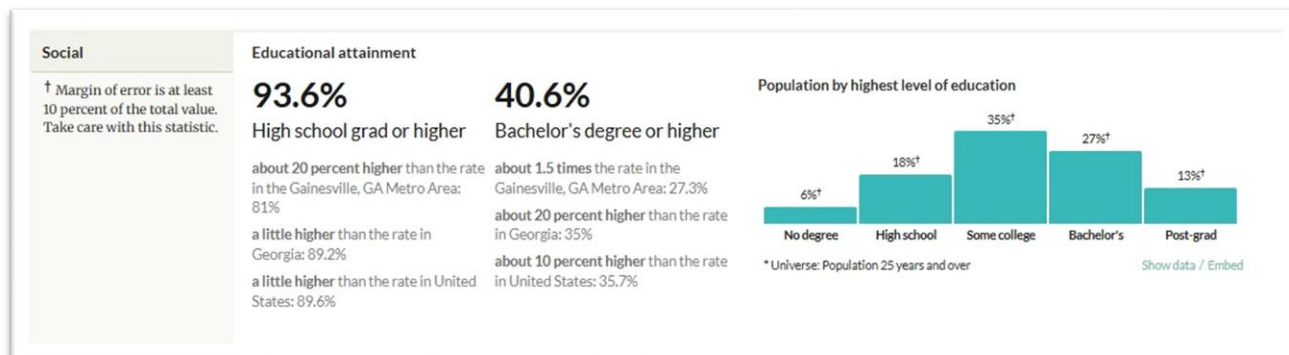
Building permits issued for new single-family house construction have increased (almost year-over-year) from 174 issued in 2016 to 477 in 2020 and 465 in 2025. Furthermore, there has been a growing increase in the number of annexation requests submitted for review, in particular along the Hog Mountain corridor as well as the areas in and around Thurmon Tanner Parkway, Falcon Parkway, and McEver Road. With multiple requests for annexations into the City limits for both residential and commercial development under consideration at the time of this update, there is increased potential for additional growth. Survey results indicate that residents favor a planned and balanced approach to growth and as such, a Future Growth Area Policy Map has been included in Appendix A to help guide the continued interest in bringing more area into the city limits for both residential and commercial development.

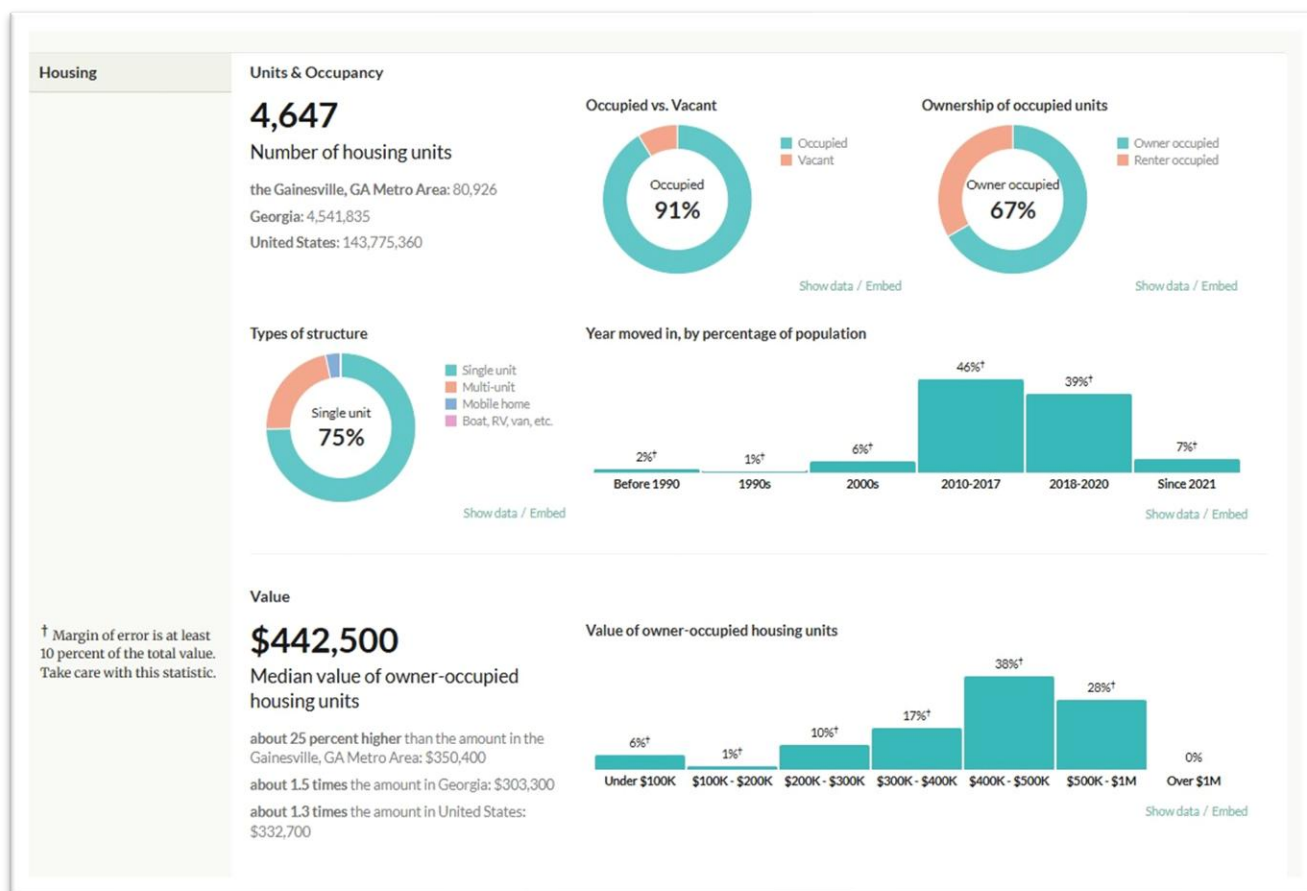


By the Numbers

Future Growth

The growth in the city's population reflects a continuation of trends established during the past decade, based on annual estimates provided by the U.S. Bureau of the Census. This is an "upward" trend as population growth has accelerated year-by-year, and past projections for the population in previous Comprehensive Plan updates have proved to be incorrect as the city grows faster due to its location, downtown, and statistics regarding the education, income, and housing demographics for Flowery Branch.





Current Development Capacity in the City

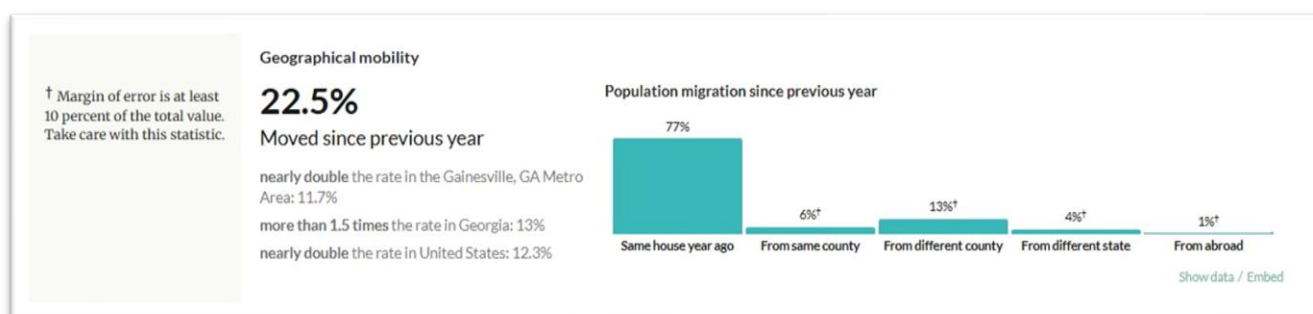
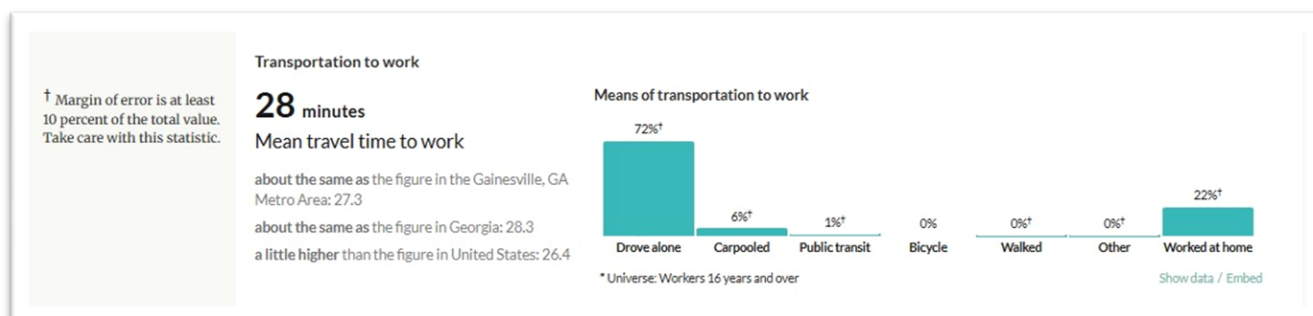
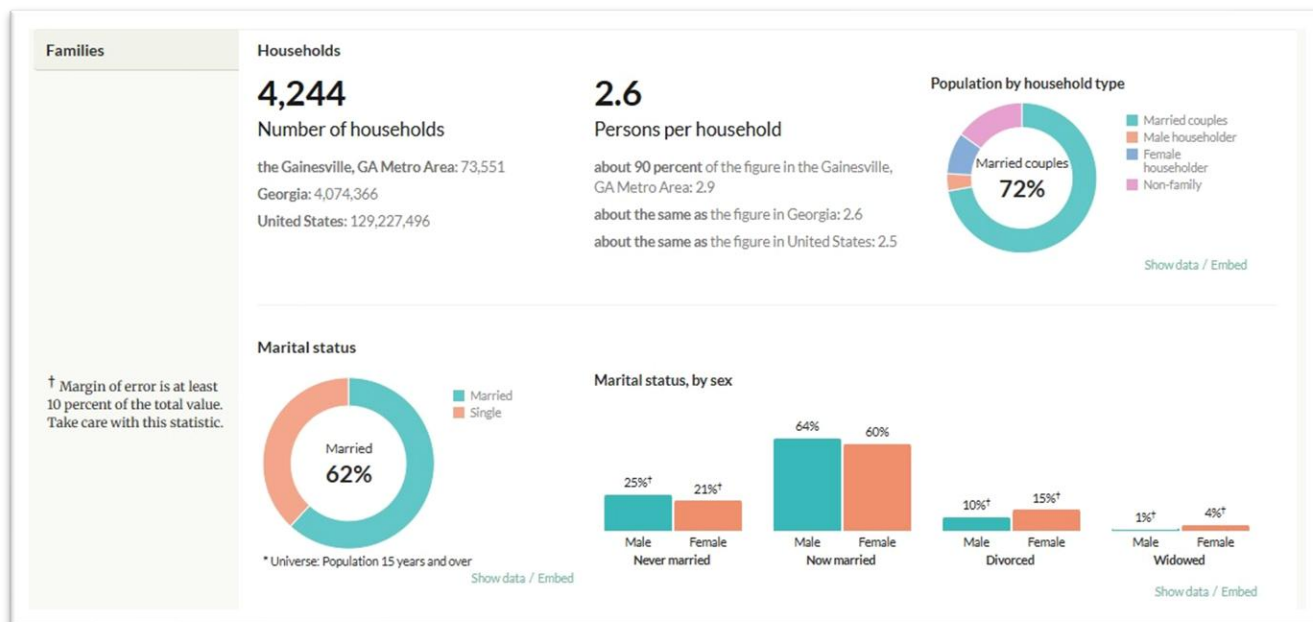
The approach to capacity is to look at the commitments that the City has made through development approvals in place along with the amount of additional vacant land currently zoned and physically capable for further development (i.e., dry land). This analysis assumes no additional rezonings or separate development approvals.

Residential Capacity

With regard to further residential development, the amount of developable vacant but uncommitted land already zoned for residential development has decreased since the previous update. The gross density for R-1, R-2, and TND subdivisions begins with the minimum lot size required and increases that to accommodate streets and minimal “wastage” (to account for cul-de-sac lots, corner lots, and other odd shapes). This results in a best-case scenario of how many lots could be expected under optimum conditions. Together, these zoning districts could accommodate a total of ~750 new housing units.

Next, the number of housing units approved or under construction as part of planned projects, including single-family homes, townhouses, and apartments, were totaled. This shows that 1,196 housing units are approved and/or under construction among these development projects. Together, the potential for new

housing unit construction on zoned but vacant land, plus the units included in approved development projects, would embrace a total of ~1,950 units added to the city's housing supply.



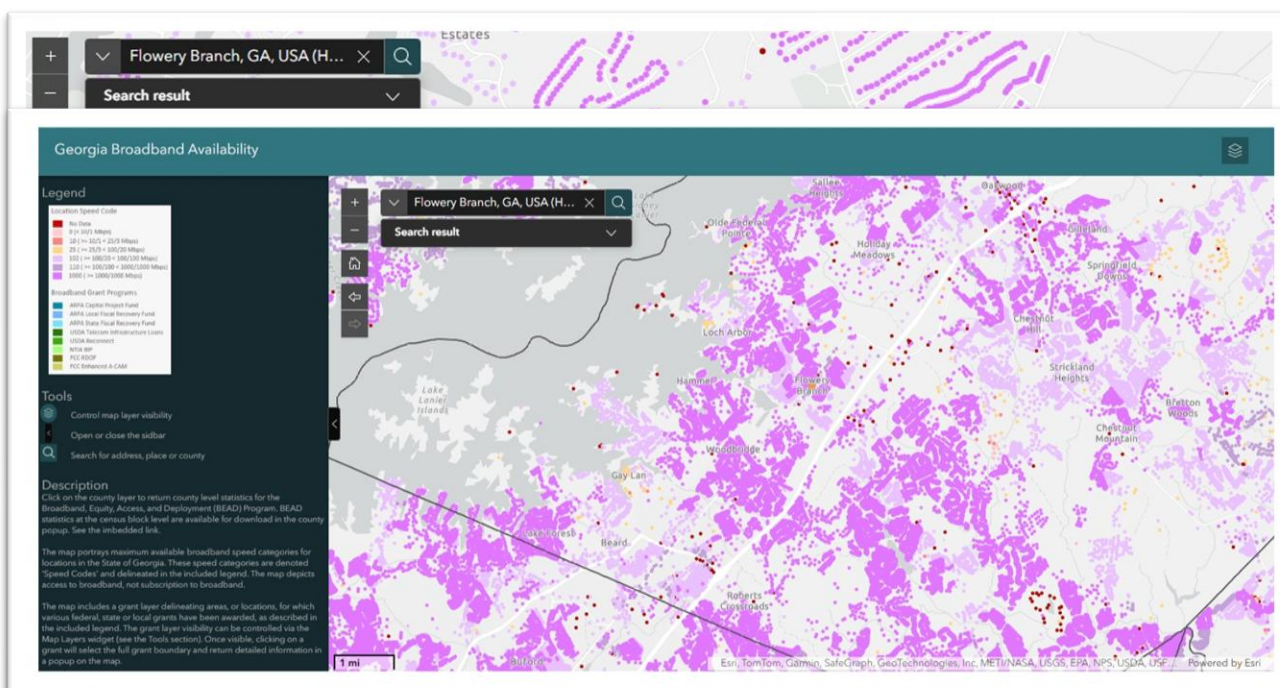
Nonresidential Capacity

As previously noted, the city's employment base is projected to increase along with population growth. Commercial developments currently under construction will bring an increase in employment opportunities, however, the current capacity to accommodate future private sector employees continues to exceed projections. Undeveloped properties currently zoned NS, HB, and M-1, along with continued development in the downtown area, represent the areas with the most potential for employment expansion. Considering that there remains an overage of acreage with commercial potential, the City could benefit from establishing an inventory of undeveloped commercial properties to help guide future commercial development.

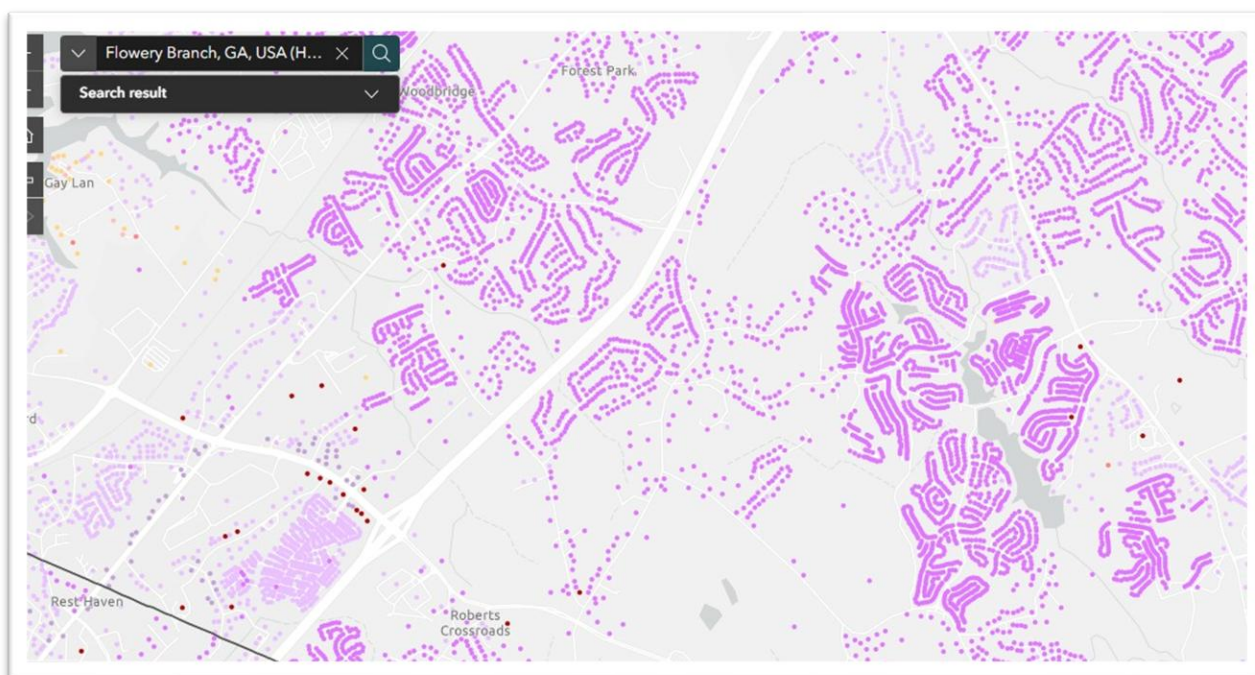
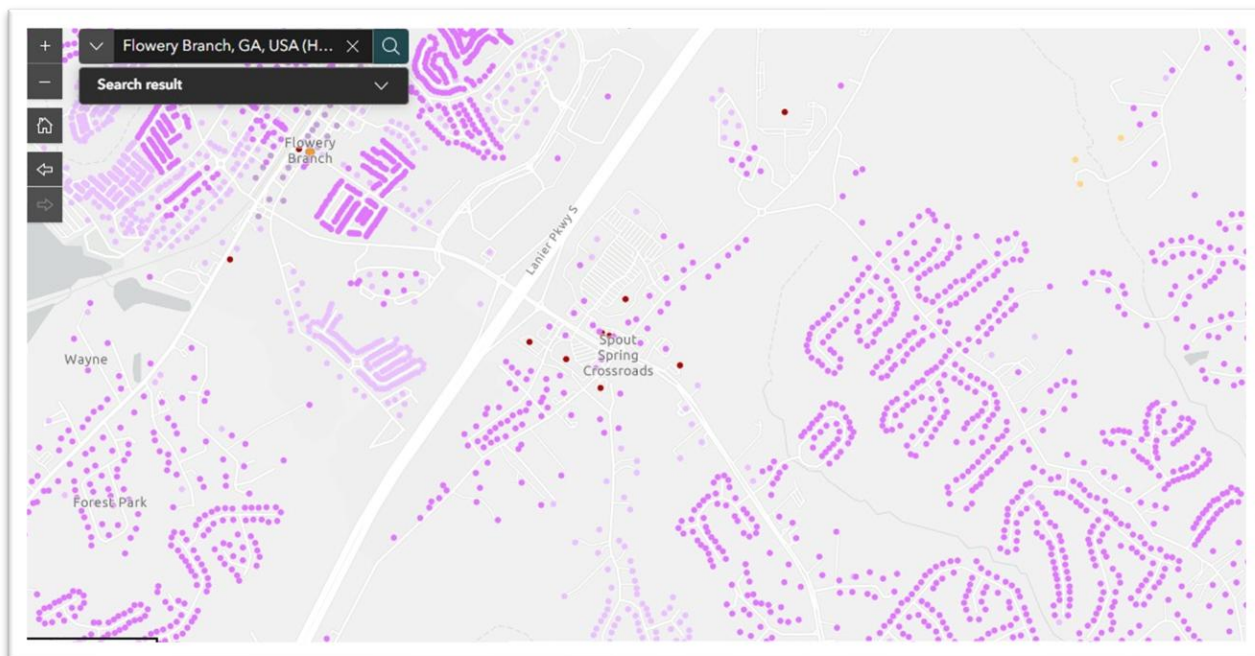
It should also be noted that community survey results indicate a strong emphasis on environmental protection and stewardship. The previous 2021 update cited the need for an increase in City staff in order to meet the regulatory needs of a growing city and that objective has been achieved at the time of this update. As such, the City is in a well-suited position to pursue a Memorandum of Agreement (MOA) with the Georgia Soil and Water Conservation Commission (GSWCC) which would give the City direct province over plan reviews, inspections, and enforcement for all land disturbance and development projects within City limits. Related Action Items can be found under the Natural Resources and Economic Development portions of the Needs and Opportunities section that follows.

Broadband Service & Availability in the City

In accordance with DCA's Minimum Standards and Procedure for Local Comprehensive Planning, local governments must address the **availability of broadband services** and the deployment of broadband services by service providers into unserved areas. According to the Federal Communications Commission (FCC) there are no unserved areas inside the city limits of Flowery Branch. The City will continue to **confirm**



broadband availability to areas and evaluate as necessary the steps promoted by the State to achieve certification as a Broadband Ready Community. See coverage maps below:



CHAPTER 3. NEEDS AND OPPORTUNITIES

Flowery Branch is a growing community with unique needs and opportunities related to its growth and development. This chapter summarizes, in narrative format, the primary local needs and opportunities that are addressed in this plan by recommended action items. These actions, or implementation strategies, are presented in this chapter by a variety of planning topics and are also consolidated into the overall 5-Year Community Work Program in Chapter 5. The topic of land use is addressed in detail in Chapter 4.

Identification of needs and opportunities was informed by an assessment of existing conditions as well as public input. In particular, community surveys and the open-house style public workshops proved particularly effective for gauging local priorities and issues. A public survey was developed for this Comprehensive Plan update, and its findings – combined with those from a previous City-administered survey that focused on downtown redevelopment – along with additional input received via the public workshops and stakeholder meetings developed for this project, were especially useful.

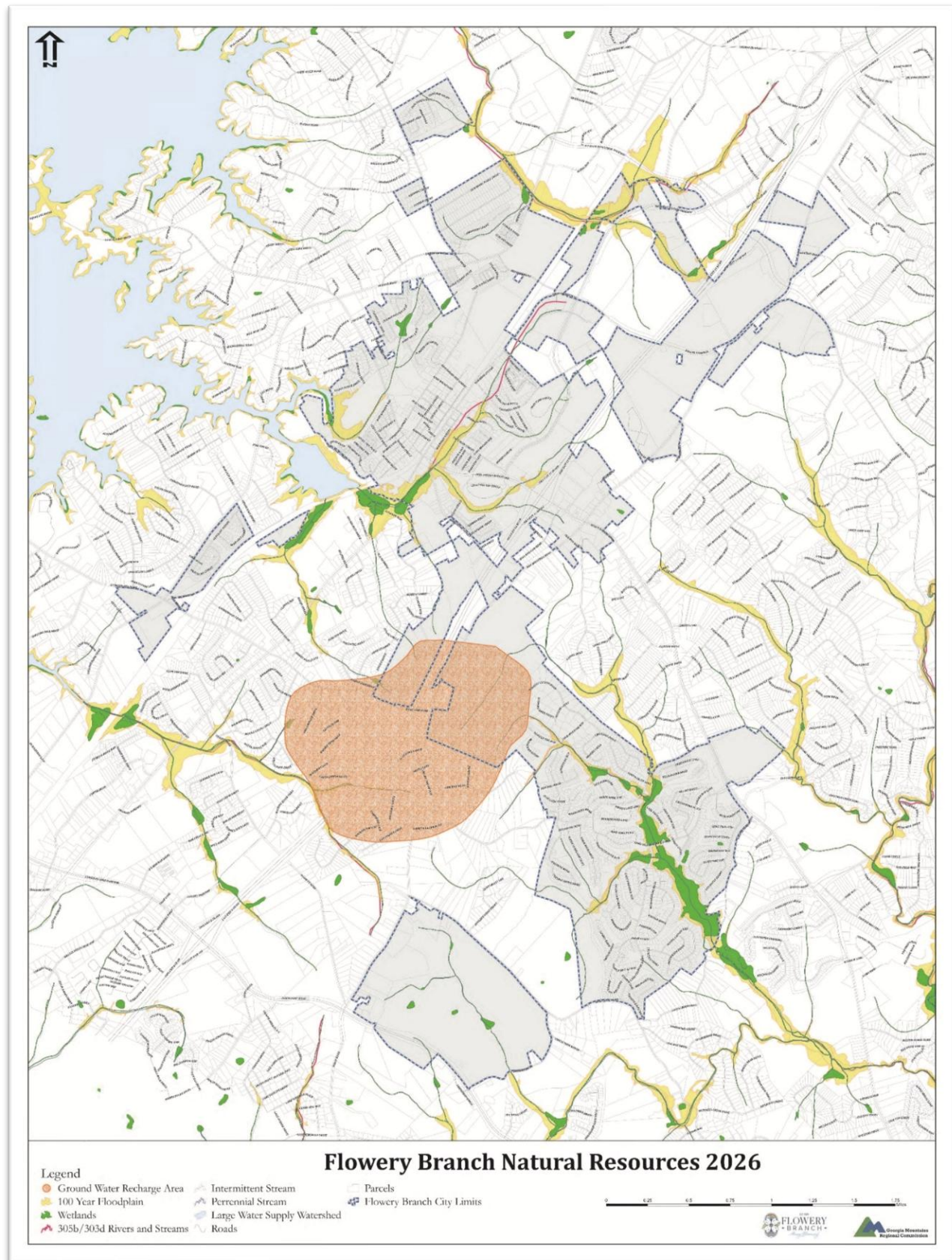
Natural Resources

To protect the state’s natural resources and environment, the Georgia Department of Natural Resources (DNR) developed *Rules for Environmental Planning Criteria* (Chapter 391-3-16). The Georgia Department of Community Affairs’ (DCA) Minimum Standards and Procedures for Local Comprehensive Planning (Chapter 110-2-1) require local governments to review DNR’s rules during the development of comprehensive plans to determine if there is need to adopt development regulations to address **protection of** the following natural resources: **water supply watershed, groundwater recharge areas, wetlands**, protected rivers, protected mountains.

Protected rivers and mountains, as defined by the State, are not found in Flowery Branch. As shown on the Natural Resources Map on the next page there are, however, scattered wetlands, a small groundwater recharge area of low pollution susceptibility (as delineated by the DNR in Hydrologic Atlas 18, 1989) in the southern portion of the city, and a large water supply watershed that generally falls west of I-985 within the boundary of the Upper Chattahoochee River Basin. Wetlands protection is currently addressed in the City’s adopted local ordinances, but protection of groundwater recharge areas and water supply watershed areas is not specifically addressed among the City’s 11 ordinances that relate to the environment.

DCA requirements also specify that local governments **review** their **regional water plan** to determine whether additional or modified actions are needed. The City of Flowery Branch is a member of the 15-county / 97-city Metropolitan North Georgia Water Planning District, which adopted a regional *Water Resource Management Plan* in 2022. The plan recommends specific measures for the use and management of the region’s water over the next 35 years to address: water resource management, water supply planning and conservation, wastewater, and watershed management. Flowery Branch provides water and wastewater (sewer) service and is working toward implementation of applicable management techniques identified in the Regional Water Plan. Expansion projects to increase capacity for both water and

wastewater (sewer) are currently underway at the time of this update.



The **preservation of the city's tree canopy** and **greenspace** was cited often by community survey respondents as being important, from both an environmental protection standpoint as well as contributing to the character of the Flowery Branch and quality of life. The City has a Buffer, Tree Protection and Landscaping Ordinance with tree retention guidelines and tree planting requirements, and the Zoning Ordinance includes **minimum open space requirements** by zoning district as well as clearing and grading standards. Upon completion of the previous Comprehensive Plan update, the City updated its Zoning Ordinance and Subdivision Ordinance to facilitate implementation of this plan; in doing so, open space requirements were strengthened to address local concerns.

An updated Buffer, Tree Protection and Landscaping Ordinance is underway and can also strengthen the City's **application package to Tree City USA**, which would further demonstrate its commitment to tree protection. Such a designation would require the appointment of a Tree Board, which would allow interested residents to participate in overseeing the planting and care of trees on City-owned properties.

Updated open space requirements assist with the local efforts to integrate multi-use trails into the City by allowing new developments to satisfy these requirements by granting a **conservation and trail easement** where a planned segment traverses the property. This has previously been achieved as a condition of zoning to help the City in the future to construct portions of trails that were identified in the 2019 South Hall Trail Study and has been codified as of this update.

Natural Resource Action Items

- Adopt DNR's model Water Supply Watershed Protection Ordinance, which will enhance buffer requirements along two small segments of Mud Creek and Flowery Branch (see map on previous page)
- Consider obtaining an MOA with GSWCC
- Amend as needed DNR's Groundwater Recharge Protection Area Ordinance, which will increase minimum lot size requirements for any property not on the City's sewer system in the southeast part of the city (see map)
- Amend Buffers, Tree Protection and Landscaping Ordinance to strengthen tree retention (including specimen trees) and planting requirements
- Submit Tree City USA application in concert with Buffer, Tree Protection and Landscaping Ordinance amendments
- Continue to implement Metropolitan North Georgia Water Planning District's Water Resource Management Plan, including 5-year updates to local Water Master Plan (underway) and Wastewater Master Plan (2023/24)
- Improve pedestrian connectivity between existing and future parks, neighborhoods, trails, and green spaces

Historic Resources

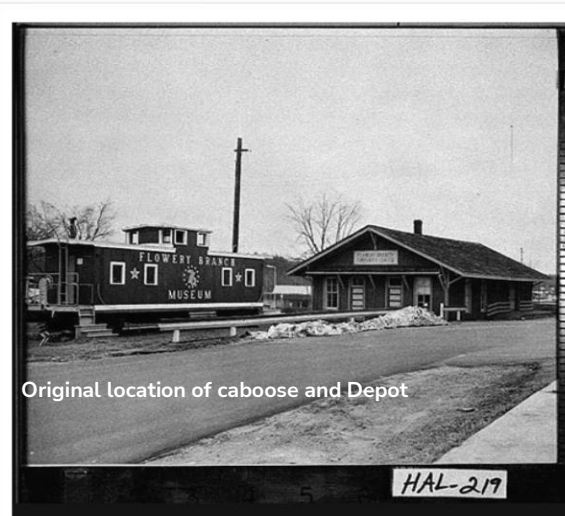
Preservation of historic resources was identified by survey respondents as an important factor in preserving the city's unique character and sense of place. As shown on the Historic Resources Map on the next page, the Flowery Branch Historic District encompasses properties in the downtown area as well as a smaller area that is listed on the National Register of Historic Places. The National Register District confers honorary status on an area or buildings and has no automatic restrictions on private development. It does allow property owners the potential to qualify for state and federal building rehabilitation tax credits.

The locally designated Flowery Branch Historic District requires review and approval of proposed new construction, exterior building alterations and additions, and demolition of existing buildings by a Council-appointed Historic Preservation Commission to ensure consistency with the architectural character of Old Town. Proposed changes are reviewed against a fairly general set of design guidelines that were included in the 2016 Comprehensive Plan and are provided in this document as an Appendix item. Proposed signs in the historic district must also be reviewed; these are regulated by a detailed Historic District Sign Ordinance.

As a Certified Local Government (CLG), the City is also eligible to apply to the federal **Historic Preservation Fund (HPF) Grant Program** to assist with rehabilitation projects for exterior materials such as wood, masonry or plaster, window repairs or structural and foundation stabilization for buildings, structures, or monuments. The CLG Program is administered by the National Park Service and



Aerial view of Main St.



Original location of caboose and Depot

HAL-219

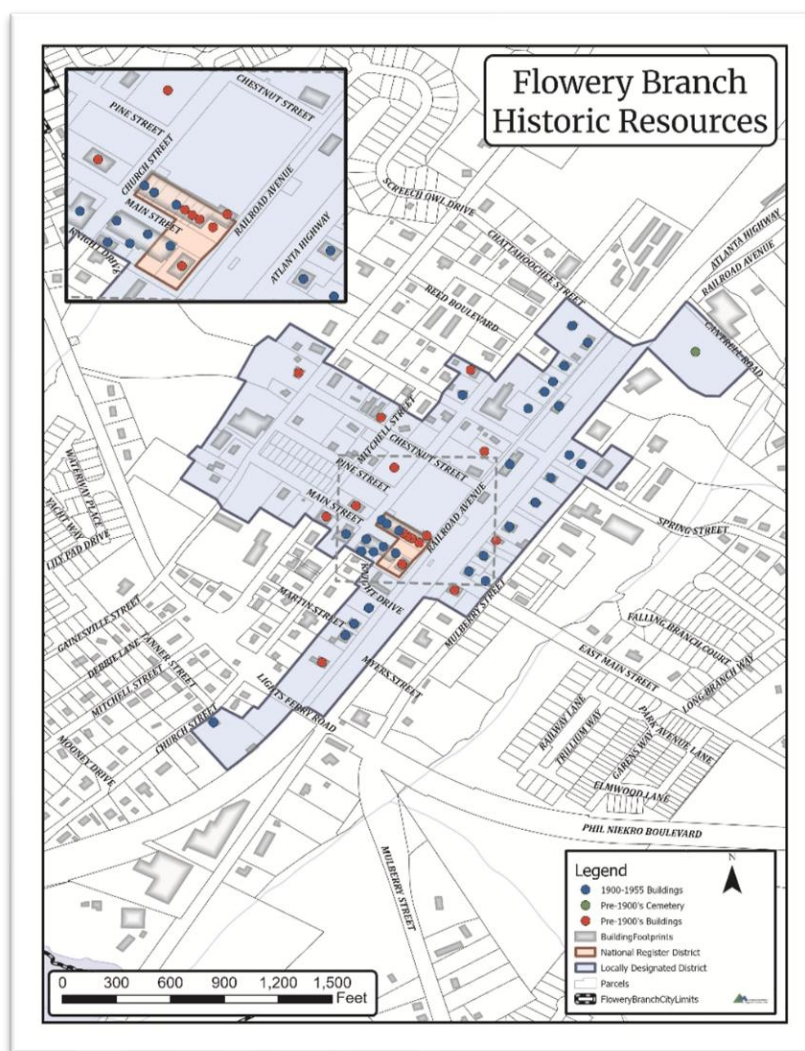


Current location of Depot with pedestrian path to the Farmer's Market Pavilion

the Georgia State Historic Preservation Office (SHPO) and includes communities that have a local Historic Preservation Ordinance and active Historic Preservation Commission in place.

HPF matching grants could assist with the maintenance of City-owned historic resources, similar to recent repairs that were made to the downtown Caboose (painting) and Depot (new windows). The funds can also be used for a variety of other uses, including the development of a tailored set of building and site design guidelines – which is needed for the Flowery Branch Historic District – and heritage tourism materials.

In order to qualify for the full array of HPF grant assistance, however, the City must update its historic resources survey, which is required of CLG communities with surveys that pre-date 2005. Until that occurs, the City may apply for grant assistance only toward the completion of the survey. Upon its completion, Flowery Branch is eligible to apply for additional financial assistance covering a variety of project types.



The Historic Resources Map also indicates the relative age of buildings that were re-surveyed in 2008 after a 2003 "historic resources survey" was conducted. An **update to the citywide historic resources survey** would allow the City to better assess the age and condition of its structures, which in turn would help with the identification of appropriate measures for building stabilization or rehabilitation or for property redevelopment. Such measures might include an application to the U.S. Department of Housing and Urban Development's Community Home Investment Program (CHIP), which awards grants to local governments, nonprofits, and public housing authorities to assist with the rehabilitation of owner-occupied homes.

Historic Resource Action Items

- Explore amending existing ordinances to expand criteria for membership on the Historic Preservation Commission
- Continue efforts to complete Phase II of the Downtown Redevelopment Plan
- Update citywide Historic Resources Survey, seeking Historic Preservation Fund grants to do so
- Codify general "Historic District Design Guidelines" from the 2016 Comprehensive Plan (to be used in

- conjunction with the Historic District Sign Guidelines) as a temporary measure
- Prepare tailored, stand-alone Historic District Design Guidelines to replace the guidelines currently in effect

Housing

Survey comments related to housing can be categorized into two main themes: a desire to maintain the city's single-family character and also an emphasis on the desire for growth to be balanced, well-planned, and closely aligned with citizen needs and quality of life (i.e. connectivity, infrastructure support etc.). Expressed concerns included a change in the city's small-town character as well as impacts on local services and facilities such as roads and schools. Other themes that emerged from the survey results were an interest in more mixed-use developments, including additional residential over retail in the downtown area, as well as an increase in senior/aging-in-place housing options.

As described in Chapter 2, residential development has continued to increase in recent years. Approved developments reflect a variety of housing types to meet varying needs or demands, from in-town apartments to senior-oriented housing. Over 1,196 residential units are approved or under construction, comprised of over 700 single-family dwellings and approximately 450 town homes. In the 2016 Comprehensive Plan, a carry-over housing policy from a previous plan update was included, which established an appropriate mix of dwelling types across the city as 60% single-family/20% apartments/15% townhomes/5% manufactured homes. With the support of City Council, these ratios were revised in the 2021 update and carried over for this update to 70% detached single-family/15% townhomes/15% multi-family and are referenced when rezoning applications are evaluated.

The Future Development Map (FDM) and character area policies in Chapter 4 describe appropriate locations for single-family residential development, consistent with the prevailing character of the City. The FDM also identifies opportunities for future higher density uses in the downtown area and in targeted areas where neighborhood-oriented commercial uses are currently concentrated or can be supported in the future. To better understand the City's specific housing needs, a citywide housing study could be prepared. Such a study analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential that may prove a more useful resource when assessing proposed rezonings.

Since completion of the 2021 Comprehensive Plan Update, the City has amended its Architectural Design Standards to apply to all buildings, whether commercial or residential, establishing minimum standards that all development must meet. Furthermore, the City also amended the Zoning Code to require design review by staff for all proposed developments prior to the issuance of any building permit.

Housing Action Items

- Continue implementing the City's Architectural Design Standards to address residential uses
- Continue tracking citywide housing ratios with rezoning applications against updated 'housing mix policy' of 70% single-family/15% townhomes/15% multi-family

- Consider adjusting housing ratios to account for residential over commercial mixed-use housing options
- Prepare a citywide Housing Study that analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential needs
- Explore additions of workforce housing, alternative construction practices and building materials, and incentives for green housing options

Economic Development

Numerous survey responses indicated a need for an increase in, and **variety of, local restaurants and businesses** as well as the **revitalization of the downtown** area. The City has actively been revitalizing Old Town in accordance with the recommendations from the 2014 Old Town Redevelopment Plan and with funding support for redevelopment activities through the adopted Old Town and Commercial Gateways Tax Allocation District (TAD).

The Old Town Redevelopment Plan's recommendations (see Concept Plan below) are intended to identify specific projects that City can initiate and lead to spur development and economic activity in the downtown. Examples of significant projects that have been implemented to date include construction of the new Farmer's Market Pavilion, covered Markey Alley, Pine Street Amphitheater, and Church Street improvements as well as expanded public parking along Railroad Avenue.

Additional Redevelopment Plan implementation projects initiated by the City include downtown park projects, the planned addition of more parking spaces off Main Street and Railroad Avenue, public-private ventures to develop additional mixed-use (retail and upper floor residential) space and townhomes, and coordination with Hall County and US Army Corps of Engineers to improve the western portion of Mitchell Street to improve access to Flowery Branch City Park and nearby properties and development opportunities. Based on comments received via the survey as well as at the open-house style Comprehensive Plan workshops, **many residents are not aware of the progress¹** being made in Old Town.

¹ Examples include downtown streetscaping, Farmer's Market pavilion with additional parking, ½ acre park featuring an amphitheater, infrastructure improvements/expansions, and development of an Old Town bike-pedestrian path connecting surrounding neighborhoods to the downtown area.

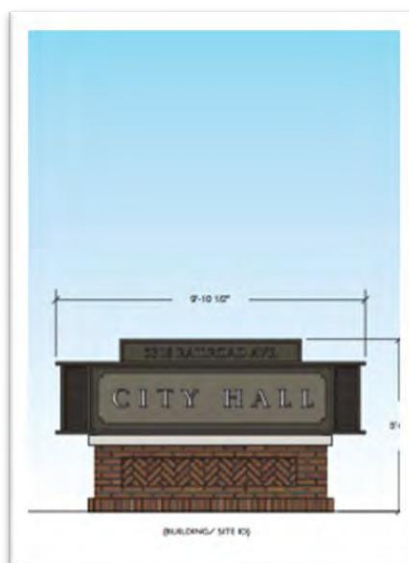
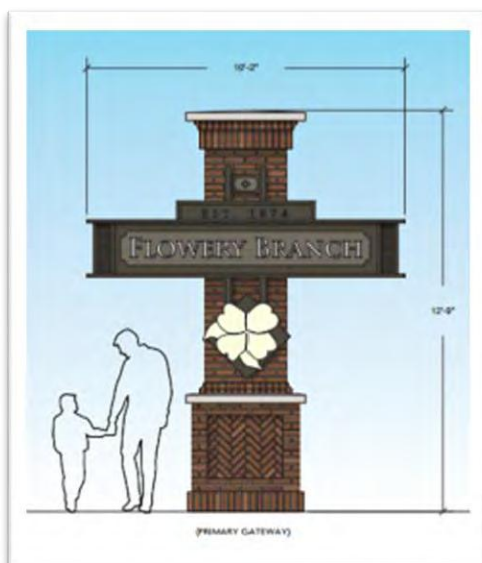
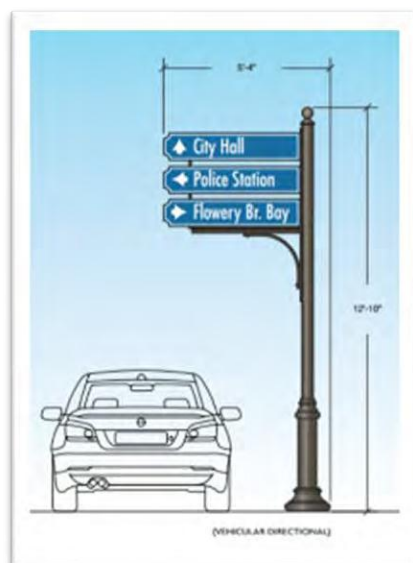
To sustain the momentum of redevelopment activity in the downtown, the City would benefit from an **update to the 2014 Redevelopment Plan**. The update would identify additional development and redevelopment opportunities and would help facilitate administration of the CBD - Central Business District Zoning District by identifying acceptable land use types and densities.

To assist with the recruitment of desired businesses in the downtown, the City has a leasing contract with a realtor for the city-owned retail spaces. Outside of the downtown, the Future Development Map (see Chapter 4) identifies locations suitable for additional commercial development, ranging from smaller scale 'neighborhood commercial' uses to larger shopping destinations. In addition, the Gainesville-Hall Chamber of Commerce posts on-line information about available industrial buildings and sites. The City also participates in the Gainesville-Hall Economic Development Council. The City could benefit from exploring partnerships with other business associations or a small business incubator to increase commercial and employment development. To assist with **wayfinding and branding**, the 2005 Comprehensive Plan Update originally recommended "gateway improvements" whereby the following primary corridors that act as gateways to the city be enhanced and maintained:

- Entry into the city of Flowery Branch from I-985 at Spout Springs Road;
- Entry into the city of Flowery Branch from Atlanta Highway into the downtown area;
- Entry into the city of Flowery Branch from the intersection of McEver Road and Gainesville Street;
- Other primary corridors that are identified (such as Exit 14, the new interchange at I-985); and
- Additional suggestions in the Old Town Redevelopment Plan for downtown gateway projects

To that end, the City has prepared designs for citywide signage projects to be implemented in phases (phase II underway at the time of this update), completed signs are pictured below their respective conceptual images.





Economic Development

Action Items

- Update 2014 Old Town Redevelopment Plan to guide continued downtown revitalization efforts
- Coordinate with developers to ensure Phase II of Downtown Redevelopment Plan includes diversity of retail and restaurant options
- Continue to implement Citywide Signage Project
- Explore paths and partnerships with small business associations and/or a business incubator for small business growth
- Consider creating an inventory of available and undeveloped commercial parcels within the City
- Explore adding an economic development position to City staff

Community Facilities and Services (includes Transportation)

As mentioned under the Housing section, survey respondents expressed concerns about the **impacts of residential growth on public facilities and services**. These include water, wastewater (sewer), stormwater, parks, and transportation facility needs.

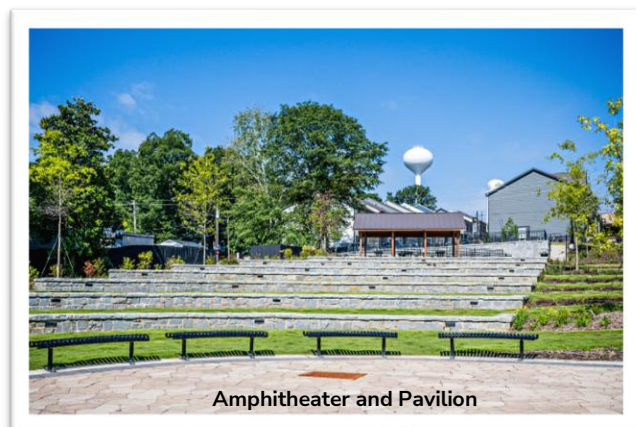
In order to meet current and future demands, the City has plans to meet **water and wastewater system needs** over the next five years. In 2020 the City was awarded \$23,300,000 in Georgia Environmental Financing Authority (GEFA) financing to update its water reclamation system to increase wastewater treatment capacity and \$5,710,000 in GEFA financing to purchase a new well system to increase water supply to the city. The wastewater treatment plant expansion will double the plant's capacity to serve approved and future residential, commercial, and industrial development and is currently under construction.

Stormwater infrastructure needs in the downtown area were cited as an issue in the 2016 Comprehensive Plan update. The City has undertaken, or is in the process of, stormwater improvement projects downtown and on East Main Street and Lights Ferry Road. However, there is **not a comprehensive stormwater management program** with additional identified project needs and dedicated funding to repair and maintain a stormwater system for the long term.

The **need for additional parks and green space** was identified by survey respondents, in particular in the Old Town area. As part of the overall downtown revitalization efforts that have also been identified by the public as an important initiative, the City has been working toward **adding park space to Old Town**. In addition to the Dean Jones Family Park at the downtown roundabout, construction has been completed for the following new parks and open spaces:

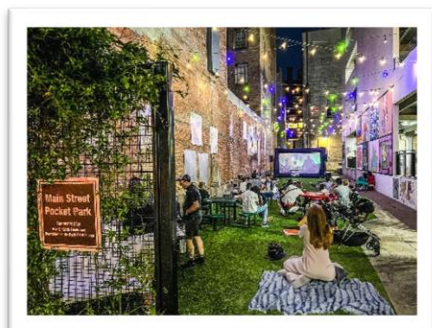
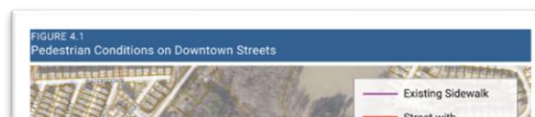
- *Farmer's Market Pavilion Park* – a covered pavilion behind the Depot between Main Street and Knight Drive, with a 20-space parking lot adjacent to the railroad
- *Market Alley Breezeway* – a covered pedestrian connection from Main St. to the Market Pavilion with passive seating areas, seasonal displays, and gathering spaces
- *Pine Street Park* – amphitheater and picnic pavilion; Church Street as a curbless, pedestrian style plaza in the style of the Dutch “woonerf” or “living street”.





As part of an update to the 2014 Old Town Redevelopment Plan that is recommended in the Economic Development section above, improvements to Flowery Branch City Park can be addressed. The park's waterfront location and its proximity to downtown and residential areas make it a unique asset; however, the extent of current pedestrian and vehicular accessibility, and the fact that it is not owned by the City, prove more challenging for the park to readily realize its full potential. Additionally, Phase II of downtown redevelopment initiatives should incorporate meaningful and intentional green space that maximizes pedestrian access and safety as well as enhancing connectivity (see conceptual examples below).

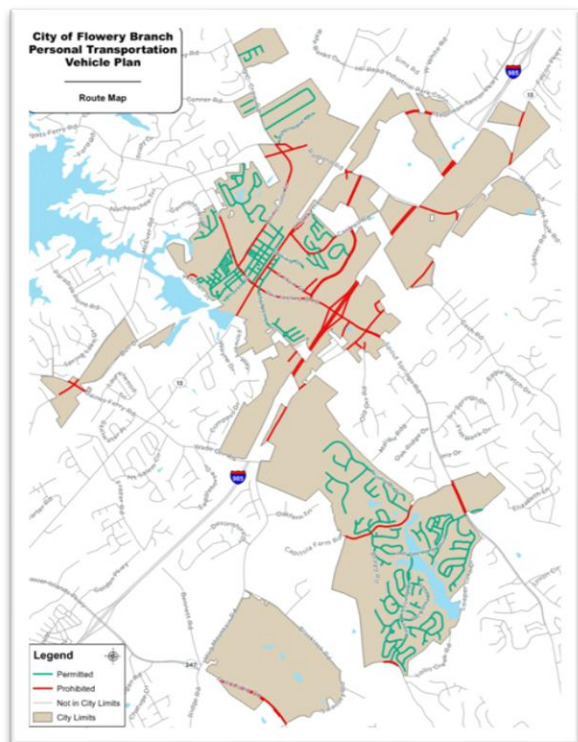
In addition to park space, other recreation-related amenities



Improvement recommendations from
2024 Parking & Mobility Study

that also can provide needed connectivity are **sidewalks, multi-purpose trails, bike lanes, and golf cart paths**. Survey responses indicated a desire for all of these. Sidewalks are required to be installed with new developments, and sidewalks are being expanded downtown as redevelopment projects continue. In collaboration with GHMPO, the City had a 2024 Parking and Mobility Study prepared, incorporated into this plan by reference, which identified areas for improvement in the downtown area.

The City has a Personal Transportation Vehicles (PTV) Plan that shows where PTVs (i.e., golf carts) are allowed in the City. It has recently been amended to include the Summit Lake subdivision.



Personal Transportation Vehicle Map (left); Overall trail system map for Highlands to Islands Trail System (below)



Organization (GHMPO) South Hall Trail Study recommended segments in Flowery Branch that form the framework for a comprehensive countywide multi-use trail system. In 2022, GHMPO published the Highlands to Islands Design Guide which provided comprehensive visual guidelines to assist local jurisdictions in the development of trail segments. The proposed trail system is a collaborative, multi-jurisdictional project to increase pedestrian safety, connectivity, and enhance the quality of life for residents and visitors alike.

In order to fund construction of a trail system in Flowery Branch, the City has the **potential to utilize development impact fees** that it collects for "Parks and Recreation" on behalf of Hall County as part of an almost 20-year intergovernmental agreement. However, the terms of the agreement do not give the City the ability to direct where the funds will be spent, and there is not a current list of City-specific park needs (which could include trails) that are incorporated into the County's Capital Improvements Element (CIE).

Road congestion was cited by numerous survey respondents as a significant issue in the city. As part of the federally designated

Gainesville-Hall Metropolitan Planning Organization (MPO) boundaries for long-range transportation planning, the city is addressed in the MPO's Regional Transportation Plan (TRP), which is updated every five years.

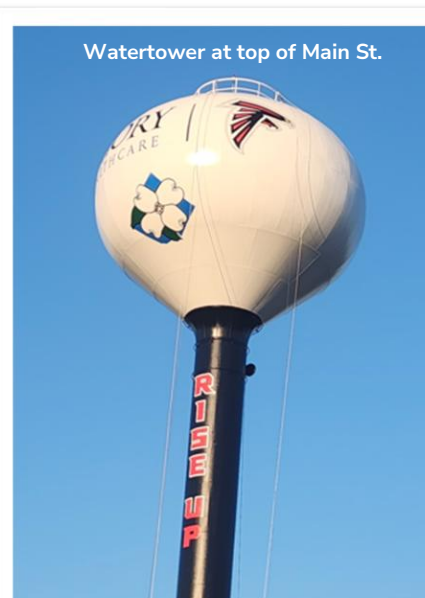
Due to the scope of the TRP, local needs are not addressed in detail. Projects that are included in that plan are long-range (not projected to be constructed for at least 10 years) due to lack of funding: Widening of SR 13/Atlanta Highway/Falcon Parkway from Radford Road to south of SR 53/Winder Highway (*project GH-033 at right*) and operational improvements at SR 13/Atlanta Highway/Falcon Parkway at I-985 & at CR 527/Thurmon Tanner Parkway (*project GH 129 above*). The plan no longer includes improvements at Exit 12 of I-985 that were anticipated with the planned widening of I- 985 that the Georgia Department of Transportation (GDOT) has determined is no longer necessary.



To address **congestion at major intersections** along McEver Road, the MPO recently completed the McEver Road Intersection Report (2021), which includes conceptual plans for roundabouts at the intersections inside the city limits: at Gaines Ferry Road and at Radford Road. Beyond these intersections, a holistic approach to addressing traffic is needed in the city. The MPO commissioned a Citywide Traffic Improvement Study for the City of Oakwood that evaluated conditions at 18 strategic locations in the city's road network and prepared improvement strategies and planning-level costs. Flowery Branch would benefit from the same type of study.

Community Facilities and Services Action Items

- Conduct a Stormwater Utility Feasibility Study to understand the City's stormwater needs, the timing of each needed project and associated costs, and the process of establishing a funding mechanism that could allow the City to become more proactive with maintenance and repairs
- Coordinate with Hall County to implement McEver Road roundabouts (@Gaines Ferry and Radford Roads)
- Explore conducting an Area of Improvement study and map to identify pedestrian crossings that could be improved
- Prepare a Citywide Traffic Improvement Study
- Expand passive recreation areas and green spaces downtown
- Apply for Safe Streets 4 All (SS4A) grant to improve pedestrian connectivity and safety along Phil Niekro Blvd. and East Main St.
- Expand public parking capacity to better serve downtown businesses and events
- Improve connectivity between neighborhoods, parks, trails, and downtown via sidewalk expansion and multi-use trails
- Identify opportunities to establish EV charging stations for public use downtown
- Construct East Main Street trail (12' multi-use path from Thurmond Tanner Road to Flowery Branch City Park) that was identified in the Old Town Redevelopment Plan
- Coordinate with Hall County on the use of impact fees for parks and trails projects, and for applicable planning studies
- Explore a possible IGA (Intergovernmental agreement) with Hall County to provide Parks & Rec support for existing and proposed City parks and green spaces
- Explore the addition of City hotspots and/or Wi-Fi access downtown
- Confirm city-wide broadband availability and evaluate the steps promoted by the State to achieve certification as a Broadband Ready Community



Watertower at top of Main St.



Wastewater Expansion Project currently underway



Roundabout at Lights Ferry Rd.

CHAPTER 4. COMMUNITY VISION

While every component of the Comprehensive Plan is important, it is this chapter that is most influential in terms of everyday decision-making. The Future Development Map presented in this chapter is most often (and properly) cited in support or denial of zoning and other land use changes. It is preceded by a general vision statement, which is intended to paint a picture of what the community desires to become. Both the

Future Development Map and the Vision Statement have the 2016 and 2021 Comprehensive Plans as their foundation and are updated in this 2026 Comprehensive Plan.

Chapter 3 satisfies both the “Community Goals” element and the “Land Use Element” required by the Georgia of Community Affairs’ Planning Standards for Local Comprehensive Planning.

Vision Statement

A vision statement paints a vivid picture of the future a community is striving toward, capturing the spirit, aspirations, and character its residents hope to see realized. It functions as a guiding compass, unifying leaders, residents, and stakeholders around shared goals and helps guide decision-making throughout the planning process. Several vision statements, and accompanying taglines, were developed by the stakeholder committee and presented to the citizens of Flowery Branch via a public survey. The following vision statement and tag line are the result of that collaboration:



Future Development Map

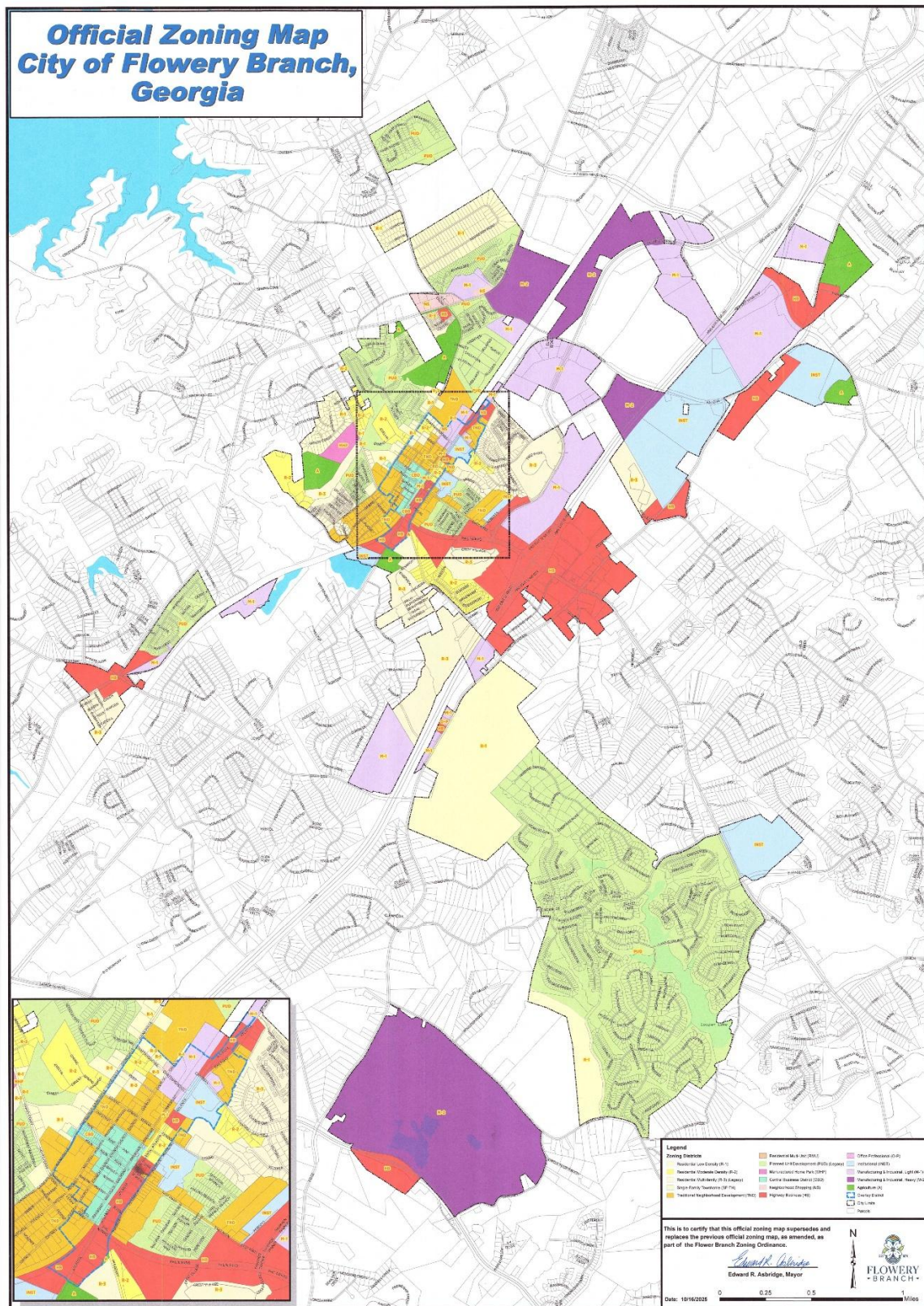
The most important illustrative graphic of the comprehensive plan is the Future Development Map, which is presented in this chapter. This map is intended to guide decision-making related to the physical location of certain land uses and where the most appropriate type and intensity of development should occur. Although the Future Development Map will be cited as an overall expression of the City’s land use policy, care must be taken to interpret the map with due regard to the City’s overall vision statement, character area policy, and other narratives provided in this comprehensive plan.

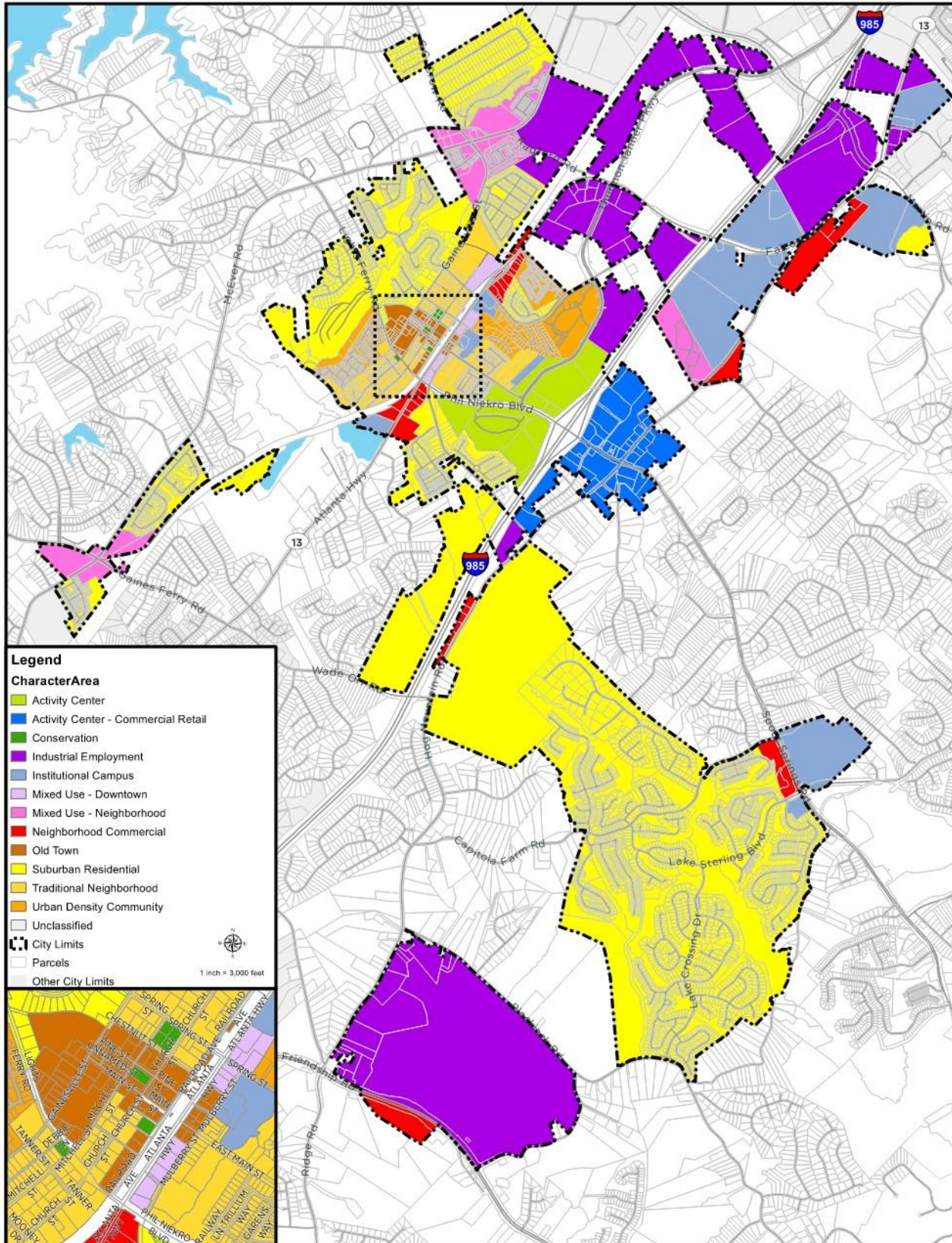
Character Areas

The Future Development Map shows the geographic location of unique character areas that describe the type of development desired for particular areas in a community. Every parcel in the City is included in a character area, and the boundary for each area generally follows parcel and/or street lines. The accompanying description of each character area is presented as a “character area policy” that summarizes the desired vision for each area, including appropriate: land uses, density or intensity of development, aesthetics, and zoning districts for each area. When applicable, implementation strategies are also provided, which are also carried over into the 5-Year Community Work Program in Chapter 5.

The following character areas are reflected on the Future Development Map and are described in this chapter:

- Conservation
- Suburban Residential
- Traditional Neighborhood
- Urban Residential Community
- Old Town
- Mixed-Use – Downtown
- Mixed-Use – Neighborhood
- Neighborhood Commercial
- Activity Center
- Activity Center – Commercial Retail
- Industrial Employment
- Institutional Campus





Conservation

Conservation areas include City-owned or maintained parks and open spaces.

Vision

Protect open space and environmentally sensitive areas for recreation and conservation purposes. Provide interconnected and meaningful greenspace for residents and visitors.

Design Principles

- Minimal impervious surface
- Site features, building placement and exterior materials should blend with the surrounding landscape
- Emphasis on pedestrian access and use

Land Uses

- Passive and active recreation
- Undeveloped areas in their natural state

Zoning

No zoning districts implement this character area, with the exception that City parks may be zoned INST, Institutional District. Private properties may be required to provide open space or recreational amenities based on their underlying zoning classification; in addition, properties are subject to environmental protection ordinances that also contribute to how a property may be used and developed.

Implementation Strategies

Actions items focus on implementing or amending local regulations intended to conserve tree cover and to enhance water quality. These are described in the Needs and Opportunities Chapter in the Natural Resources section.

Illustrative Photos



Suburban Residential

Illustrative Photos

Suburban Residential areas are located throughout the city and include locations where low- to moderate density single-family development exists or is likely to be proposed based on a property's zoning and surrounding uses.

Vision

Protect established single-family neighborhoods and create high-quality new residential construction at suburban densities.

Design Principles

- Larger lots (1/3 to 1 acre) with houses set back from the road
- Cul-de-sacs and curvilinear streets (that are relatively wide when compared to traditional neighborhoods) with sidewalks
- Use of high-quality exterior cladding materials (that are consistent on each level of the home)
- Diverse architectural styles are allowed, but there should be compatibility in overall neighborhood design such as roof pitch, building width, and level of ornamentation
- De-emphasized garage (recessed, side, or rear entry)
- Incorporation of meaningful open space, including shared areas for the benefit of residents

Land Uses

- Single-family detached dwellings
- Recreational uses integrated into a neighborhood

Zoning

- R-1 Detached Single-Family, Low-Density District
- R-2 Detached Single-Family, Moderate-Density District

Implementation Strategies

- Implement the City's Architectural Design Standards to address residential buildings
- Consider expanding City zoning designations to include a Master Planned Development option

Traditional Neighborhood



Illustrative Photos

The Traditional Neighborhood character area includes the in-town residential areas around the downtown core of Old Town.

Vision

Maintain the character and development pattern of the originally settled neighborhoods of Flowery Branch, with sensitive residential in-fill development and careful improvements where required including new sidewalks, street trees, and other pedestrian-friendly streetscape features.

Design Principles

- Little, if any, building setbacks from city streets
- Rectangular or square blocks and lots, and block lengths should not exceed 800 feet without intervening (mid-block) pedestrian footpaths
- Narrow streets in a grid-like pattern with shade trees
- Building facades emphasize porches
- Rear entry garage or detached rear garage
- Wide sidewalks
- Smaller lots/higher density than Suburban Residential
- Provision of public greens or common areas when new neighborhoods are created

Land Uses

- Primarily single-family detached dwellings
- Townhouses may be allowed
- Greens, plazas, and pocket parks incorporated into development plans

Zoning

- TND, Traditional Neighborhood Development

Implementation Strategies

- Implement the City's Architectural Design Standards to address residential buildings



Urban Density Community

Urban Density Community areas reflect existing townhouses and multi-family developments in the city.

Vision

Maintain higher density, urban living environments that contribute to housing options within the city.

Design Principles

- Densities range from 6 to 12 units per acre
- Master planned with high quality architecture and building materials, entrance landscaping, and recreational amenities (subject to design review and approval)

Land Uses

- Duplex
- Triplex
- Quadplex
- Apartment complexes
- Townhouses
- Retirement community / senior housing
- Manufactured home parks

Zoning

- SF-TH, Single-Family Townhome
- RMU, Residential Multi-Family

Implementation Strategies

Implement the City's Architectural Design Standards via reviews and inspections to address residential buildings

Illustrative Photos



Old Town

Old Town encompasses the historic central business district and includes a significant portion of the Old Town Redevelopment Plan (2014) boundary and the Flowery Branch Central Business District and overlays.

Vision

Protect and enhance downtown, making it a vibrant, pedestrian-friendly focal point of the City that integrates new development in a historic framework with a mix of uses, increased density at a comfortable scale, and open spaces and high-quality buildings that enhance the public realm.

Design Principles

- Small blocks; lots on narrow streets
- Pocket parks or greenspace as a part of mixed-use developments
- Architectural style and building materials that complement the historic fabric of the area (design review is required)
- Typically greater lot coverages, building heights, and building intensities and little or no front and side building setbacks when compared with other character areas
- Redevelopment must be consistent with principles and recommendations of the Old Town Redevelopment Plan

Land Uses

“Main Street”-style commercial and vertical mixed-use with retail and restaurants. Residential uses include upper floor dwelling units in mixed-use buildings, single-family dwellings, and limited townhome development.

Zoning

- CBD, Central Business District
- TND, Traditional Neighborhood Development

Implementation Strategies

Update the 2014 Old Town Redevelopment Plan to identify additional development/redevelopment opportunities (and their acceptable use types and densities) to facilitate administration of the CBD zoning district.

Mixed-Use - Downtown

The Mixed-Use - Downtown area includes parcels along the railroad that are adjacent to the Old Town and Traditional Neighborhood

Illustrative Photos



Illustrative Photos



character areas.

Vision

Promote development and adaptive reuse of buildings that support a mix of uses in a manner that complements the historic character and building scale of Old Town and is consistent with the intent of the Old Town Redevelopment Area.

Design Principles

- Densities range from 6 to 12 units per acre
- Master planned with high quality architecture and building materials, entrance landscaping, and recreational amenities (subject to design review and approval)

Land Uses

- Retail and service uses
- Residential as part of a mixed-use development
- Civic and institutional
- Open space and recreation

Zoning

- CBD, Central Business District
- NS, Neighborhood Shopping District

Implementation Strategies

- Implement existing Architectural Guidelines and Pedestrian Retail design standards
- Consider expanding CBD to parcels across Atlanta Highway
- Explore adding a zoning category to codify and define dimensions and uses for residential over retail options



Mixed-Use - Neighborhood

Mixed-Use – Neighborhood areas are located around the McEver Road intersections with Gaines Ferry Road, Gainesville Street, and Radford Road.

Vision

Commercial development at significant intersections that serves surrounding neighborhoods, with consideration given to mixed-use developments having commercial uses or open space/recreation that are oriented to existing public streets.

Design Principles

- Connectivity between uses and developments
- Automobile and pedestrian accessibility
- Enclosed buildings with no outside storage and limited outdoor display of goods and merchandise
- Integration of open space as an attractive design element and functional component of mixed-use development
- High quality building materials and site features

Land Uses

- Small-scale neighborhood commercial uses
- Residential in the context of a mixed-use development
- Open space / recreation

Zoning

- NS, Neighborhood Shopping District
- MU, Mixed-Use Development District

Implementation Strategies

Implement existing Architectural Guidelines and Pedestrian Retail design standards to ensure desired quality of development can be achieved.

Illustrative Photos



Neighborhood Commercial

Illustrative Photos

Neighborhood Commercial areas include the Atlanta Highway corridor beyond the limits of the Old Town and Mixed Use – Downtown character areas, as well as pockets of undeveloped property having the potential to serve nearby residential areas with boutique commercial uses.

Vision

Provide areas for limited, small-scale commercial uses serving nearby residential neighborhoods as opposed to a regional market.

Design Principles

- Attractive, non-auto related neighborhood businesses and services, with distinctive architectural features
- Buildings and developments are scaled to be compatible with and promote pedestrian activity
- Open space is presented as suburban plazas or small open spaces
- Entrances, frontages, and building façades are softened with landscaping and low-lying signs
- Buildings are enclosed with no outside storage and limited outdoor display of goods and merchandise
- Intensities are within a range of approximately 10,000 to 15,000 square feet per acre and shall not generally exceed 25,000 square feet in any one tenant space

Land Uses

- Small-scale neighborhood commercial uses
- Uses do not include automotive uses of any kind, including convenience stores with fuel pumps, or other types of more intensive highway business activities, or those uses that generate excessive traffic, noise, odor, pollution, safety hazards, or other adverse impacts which would detract from the desirability of adjacent properties for residential use

Zoning

- NS, Neighborhood Shopping District

Implementation Strategies

Implement existing Architectural Guidelines and Open Space requirements to ensure desired quality of development can be achieved.

Activity Center



Illustrative Photos

The Activity Center character area includes properties oriented around the west side of the interchange of Phil Neikro Boulevard and I-985.

Vision

Create an accessible, attractive center of retail businesses and services that can also serve as a residential feeder for Old Town.

Design Principles

- As far as practicable, buildings should not be separated from fronting streets by large parking lots
- Placement of outparcel buildings between a large parking lot and the street should be used to help define the streetscape and lessen the visual impact of the parking lot from the street
- Proper landscape buffers, streetscapes, and parking lot landscaping
- Perimeter and security fencing should be constructed of attractive materials which are compatible with the design and materials used throughout the project
- Accessory structures should be designed to provide a cohesive project site and be sited to not be directly visible as the primary view from the street into the project site
- Outside storage of merchandise, and/or equipment not intended for display for public rent, lease, or sale, should be screened from view from the right-of-way along the entire property frontage, except in areas where access crossings have been approved
- Pedestrian accessibility and connectivity

Land Uses

- Commercial uses
- Residential uses when part of a mixed-use development

Zoning

- HB, Highway Business District
- MU, Mixed-Use District

Implementation Strategies

- Implement amended uses to the HB zoning district
- Implement Architectural Standards and Open Space via review process to ensure requirements are met

Activity Center – Commercial Retail

The Activity Center-Retail character area includes properties oriented around the east side of the interchange of Spout Springs Road and I-985. The area includes Stonebridge Village and Village Shoppes of Flowery Branch.



Illustrative Photos



Vision

Expand opportunities for varied and larger-scale retail businesses and services in areas that are served by a network of collector and arterial roads.

Design Principles

- As far as practicable, buildings should not be separated from fronting streets by large parking lots
- Placement of outparcel buildings between a large parking lot and the street should be used to help define the streetscape and lessen the visual impact of the parking lot from the street
- Landscape buffers, streetscapes, and parking lot landscaping should enhance the aesthetics of a property, provide shade protection, screen vehicles, and reduce impervious surface through environmental design
- Perimeter and security fencing should be constructed of attractive materials which are compatible with the design and materials used throughout the project
- Accessory structures should be designed to provide a cohesive project site and be sited to not be directly visible as the primary view from the street into the project site
- Outside storage of merchandise, and/or equipment not intended for display for public rent, lease, or sale, should be screened from view from the right-of-way along the entire property frontage, except in areas where access crossings have been approved
- Pedestrian accessibility, connectivity, and safety

Land Uses

- Commercial uses

Zoning

- HB, Highway Business District

Implementation Strategies

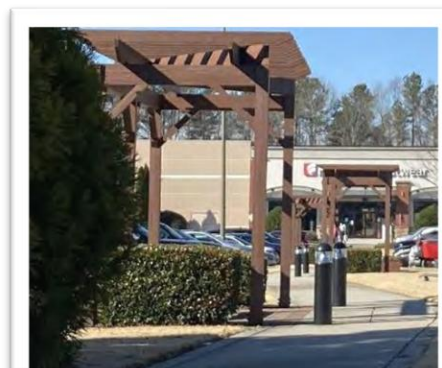
Implement existing Architectural Guidelines to ensure requirements support desired building materials, lighting, landscaping, and buffers.

Industrial Employment

Industrial Employment areas include existing industrial uses, industrial zoned properties, and undeveloped properties situated around Exit 14 of I-985.

Vision

Function as a concentration of employment and job activity, contributing heavily to the employment and economic base of the city.



Illustrative Photos



Design Principles

- Entrances, frontages, and building façades are softened with landscaping and low-lying signs
- Pedestrian access along road frontages
- High quality building materials and site design
- Adequate buffers adjacent to non-industrial uses or zoned properties
- Limit long uninterrupted wall planes that are visible from the public right-of-way

Land Uses

Light and heavy industries

Zoning

- M-1, Light Industrial District
- M-2, Heavy Industrial District

Implementation Strategies

Implement existing Architectural Guidelines to ensure requirements support desired building materials, lighting, landscaping, and buffers.



Institutional Campus

The Institutional Campus character area includes the Falcons Training Facility, public schools, large churches, County library, and some City- owned properties.

Vision

Accommodate single-function institutional uses where public access is controlled or limited.

Illustrative Photos



Design Principles

- Campus-style site planning
- Generous landscaping
- Internal pedestrian connectivity
- Relatively low intensities
- Uniform signage
- High quality building materials

Land Uses

- Primarily public and institutional
- Office buildings/parks

Zoning

- INST, Institutional District
- O-P, Office Professional District

Implementation Strategies

Implement building and site design standards for Office, Institutional, Business Parks, and Industrial Parks and Campus via the review and inspection process



CHAPTER 5. IMPLEMENTATION PROGRAM

Community Work Program

The Implementation Program identifies the specific measures to implement the Flowery Branch Comprehensive Plan. These measures are identified in a Community Work Program (CWP). The CWP identifies action items to be undertaken in the next five years. The CWP groups actions by type, including: regulations, processes and programs, inventories and assessments, detailed planning studies, and community improvements / infrastructure projects.

For each action, the CWP outlines the following information:

- Type of action or implementation strategy
- Brief description

- Timeframe for undertaking the activity (2026/27, 2028, 2029, 2030, 2031)
- Estimated cost
- Responsible party for implementing the activity
- Potential funding source:
 - GF = General Fund
 - SPLOST = Special Purpose Local Option Sales Tax
 - LRF = Local Resources Fund
 - TAD = Tax Allocation Revenue Bond Proceeds Fund
 - GEFA = Georgia Environmental Finance Authority Debt Proceeds Fund
 - TAP = Georgia Department of Transportation (GDOT) Transportation Alternatives Program

Action/Implementation Strategy	26 / 27	28	29	30	31	Cost Est.	Responsible Party	Funding Source
Regulations								
Prepare a Unified Development Code that updates, consolidates, and streamlines land use and development regulations and supports the goals of the Comprehensive Plan	✓					TBD based on project needs	Planning & Community Development	GF
Amend Buffers, Tree Protection, and Landscaping Ordinances to strengthen tree retention and planting requirements	✓					Staff Time	Planning & Community Development	GF
Explore amending existing Historical Preservation ordinances to expand criteria for membership on the Historic Preservation Committee				✓		Staff Time	Planning & Community Development	GF
Continue to implement the City's Architectural Design Standards for both residential and commercial buildings	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF

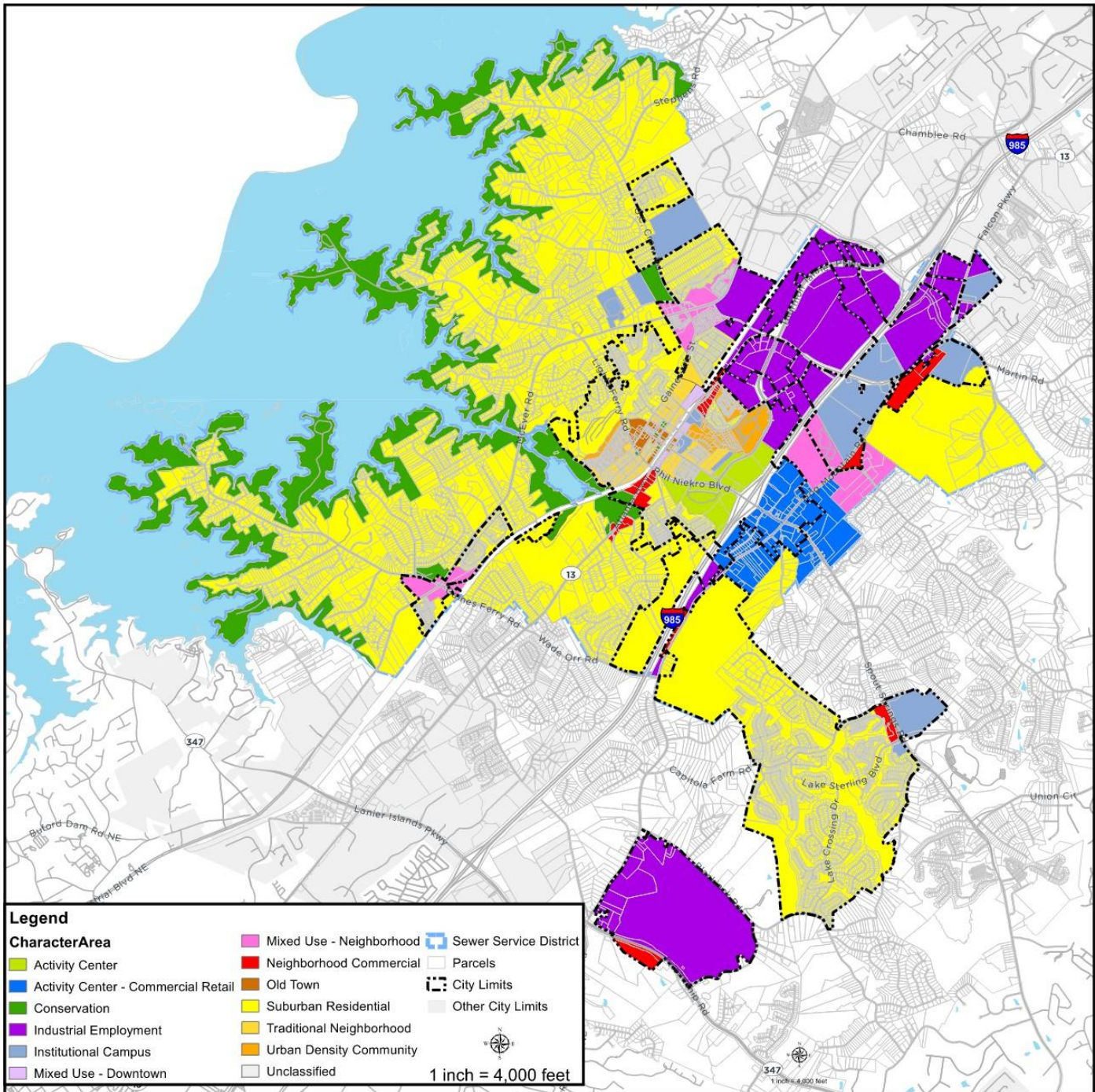
Consider expanding City zoning designations to include a Master Planned Development option	✓					Staff Time	Planning & Community Development	GF
Continue to implement existing Architectural Guidelines and Pedestrian Retail design standards in applicable zoning categories	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF
Evaluate expanding the Central Business District (CBD) to incorporate parcels fronting Atlanta Highway to grow the district and improve connectivity to Downtown	✓	✓				Staff Time	Planning & Community Development	GF
Amend City Zoning Ordinance to better regulate residential over retail mixed-use developments	✓					Staff Time	Planning & Community Development	GF
Asses building and site design standards to allow for alternative construction practices and building materials, low-impact development practices, and incentives for green housing options	✓					Staff Time	Planning & Community Development	GF
Evaluate Electric Vehicle Charging Stations standards to ensure requirements are adequate and explore the addition of incentives	✓					Staff Time	Planning & Community Development	GF
Strengthen Variance criteria to ensure requirements are met and are adequate for the protection of public safety, health, and welfare	✓					Staff Time	Planning & Community Development	GF
Amend as needed DNR's Groundwater Recharge Protection Area Ordinance to ensure that minimum lot size requirements are being met for any property not on the City's sewer system	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF
Assess residential zoning designations to explore the addition of workforce housing options	✓					Staff Time	Planning & Community Development	GF
Process/Program								
Launch new permitting software with dedicated citizen portal to streamline the permitting process and increase accessibility for citizens	✓					\$65,000	Planning & Community Development / Finance	GF
Submit Tree City USA application (in conjunction with updated Buffer, Tree Protection, and Landscaping Ordinance amendments)		✓				Staff Time	Planning & Community Development	GF
Create a dedicated Planning & Community Development social media account to enhance community engagement and outreach regarding planning activities and initiatives	✓					Staff Time	Planning & Community Development	GF
Continue to implement Metropolitan North Georgia Water Planning District's Water Resource Management Plan, including 5-year updates to local Water Master Plan and Wastewater Master Plan	✓	✓	✓	✓	✓	Staff Time	Public Works	GF
Implement required steps for the City to obtain its	✓	✓				Staff Time	Planning &	GF

Memorandum of Agreement (MOA) to conduct erosion control reviews to ensure proposed projects meet environmental standards							Community Development	
Continue to implement citywide signage project (for gateways, corridors, and Old Town)	✓	✓	✓			\$350,000	City Manager	SPLOST / LRF
Continue coordination efforts to initiate preliminary planning for Phase II of the Downtown Redevelopment Plan	✓	✓	✓	✓		Staff Time	Planning & Community Development / City Manager	TAD / GF
Inventory/Assessment								
Continue to track citywide housing ratios with rezoning applications against updated 'housing policy mix' of 70% single-family/15% townhome/15% multi-family	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF
Explore establishing a citywide inventory of undeveloped parcels available for commercial development	✓	✓				Staff Time	Planning & Community Development	GF
Assess opportunities for establishing and/or partnering with a business association or business incubator to encourage small business growth	✓	✓				Staff Time	Planning & Community Development / Department of Fun	GF
Detailed Planning Study								
Prepare a citywide Housing Market Analysis that analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential needs	✓					\$27,500	Planning & Community Development	GF
Prepare a citywide Traffic Improvement Study		✓				Costs to be determined based upon project needs	City Manager/ Hall-Gainesville MPO / Planning & Community Development	GF
Update and implement the 2024 Flowery Branch Parking and Mobility Study			✓			Costs to be determined based upon project needs	City Manager/ Hall-Gainesville MPO	TAD / GF
Explore preparing an Area of Improvement study and map to identify pedestrian crossings that could be improved		✓	✓			Costs to be determined based upon project needs	City Manager/ Hall-Gainesville MPO / Planning & Community Development	GF / Grant
Update the 2014 Old Town Redevelopment Plan	✓	✓				Costs to be determined	City Manager / Planning &	GF

						based upon project needs	Community Development	
Conduct a Stormwater Feasibility Study	✓					Costs to be determined based upon project needs	City Manager / Planning & Community Development	GF
Community Improvements / Infrastructure Projects								
Construct East Main Street Trail from Thurmon Tanner Road to Flowery Branch City Park	✓	✓	✓	✓	✓	\$5.6 million	City Manager / Planning & Community Development	TAP Grant / TAD / GF
Implement Phase II of Downtown Redevelopment (and related streetscape and parking improvements)		✓	✓	✓		Staff Time	Planning & Community Development	TAD / GF
Continue coordination with Hall County MPO to complete McEver Road roundabout and to implement the roundabout at Radford Road.	✓	✓	✓			Costs to be determined based upon project needs	City Manager	SPLOST
Complete water and sewer expansion projects to increase capacity and maintain levels of quality and service	✓	✓				\$28 million	Public Works	GEFA
Expand public parking capacity to better serve downtown businesses and events		✓	✓	✓		Staff Time	Planning & Community Development / City Manager	TAP Grant / TAD / GF
Improve connectivity between neighborhoods, parks, trails, and downtown via sidewalk expansion and multi-use trails	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development / City Manager	TAP / Grant / TAD / GF
Coordinate with Hall County on the use of impact fees for local trails and park projects, consistent with the 2004 Intergovernmental Agreement, as well as supporting plan studies	✓	✓	✓	✓	✓	Staff Time	City Manager	GF
Continuing planning initiatives for the Highlands to Islands trail system	✓	✓	✓	✓	✓	Costs to be determined based upon project needs	Planning & Community Development / City Manager	TAP Grant / TAD / GF
Establish passive recreation areas and green spaces downtown		✓	✓	✓		Staff Time	Planning & Community Development	GF
Explore the addition of City hotspots and/or Wi-Fi access downtown		✓				Staff Time	Planning & Community Development	Grant / GF

							/ City Manager	
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Appendix A: Growth Area Policy Map



Appendix B: 2021 – 2026 Report of Accomplishments

Color Code: **Green** – Complete; **Yellow** – Underway; **Red** – Cancelled

Activity	Complete	Underway	Cancelled	Comments
Regulations				
1. Prepare a Unified Development Code that updates, consolidates and streamlines land use and development regulations and supports the goals of the Comprehensive Plan.		✓		The UDC will be started in Q1/Q2 2026. The exercise has been funded. The Request for Qualifications has been released. Included in Community Work Plan for years: 26/27
2. Adopt Water Supply Watershed Protection Ordinance.	✓			The City has adopted the Georgia Stormwater Manual including updates. To push it further, staff are working on stormwater infiltration requirements and incentives to implement green infrastructure and low impact development (LID) methods.
3. Adopt Groundwater Recharge Protection Area Ordinance.		✓		Ordinance underway, tied to the above stormwater infiltration requirements and incentives. Included in Community Work Plan for years: 26-31
4. Amend Buffers, Tree Protection and Landscaping Ordinance to strengthen tree retention and planting requirements.		✓		As part of the UDC update, the City will adopt a fully revised Tree Protection and Replacement Ordinance. Staff have completed the draft ordinance, and it is ready for integration into the UDC. A key priority of this update is the identification and preservation of specimen trees and the protection of the community's overall tree canopy. Existing density requirements will be maintained, and the removal of any specimen tree will trigger substantial recompense measures to promote preservation and responsible development. Included in Community Work Plan for years: 26/27
5. Evaluate the effectiveness of minimum open space requirements in all zoning districts and identify potential amendments, as necessary.	✓			Done and adopted into code for all zoning districts.

6. Amend clearing and grading requirements to clearly delineate requirements vs. guidelines.	✓			Done. There is not a clearing and grading only permit. Clearing and grading is only allowed through a fully engineered civil site set for LDP (land disturbance permit).
7. Amend 'Architectural Design' standards in the Zoning Ordinance to include residential dwelling types.	✓			Done and adopted.
8. Codify general 'Historic District Design Guidelines from the 2016 Comprehensive Plan.	✓			Done and adopted. However, the City repealed the Historic District Appendix due to the inability to maintain a Historic Preservation Committee Review Board. The requirements for building, renovating, or changing the existing buildings are still housed in the Central Business District Zoning category. Amending to expand criteria for committee membership is a current action item.
9. Prepare tailored, stand-alone Flowery Branch Historic District Design Guidelines document.	✓			See above.
10. Assess 'Pedestrian Retail' design standards in the Zoning Ordinance to ensure desired design is supported and identify potential amendments, as necessary.	✓			Incorporated into Article 10. We have also applied for and implemented many pedestrian-oriented projects and are working on funding much more.
11. Amend HB zoning district to limit uses to those that are solely commercial in nature.	✓			Done and adopted. The use chart still had residential residual language and has since been cleaned up in 2025.

12. Amend Planning Unit Development (PUD) requirements to enhance open space and site design requirements.	✓			Done and adopted. However, Mayor and City Council voted to disband PUD zoning and make it a legacy zoning district, currently it is not used for any new projects.
13. Evaluate zoning buffer standards to ensure they are sufficient where industrial uses abut residential properties and identify potential amendments, as necessary.	✓			Completed and implemented. The Director is authorized to conduct a full landscape plan review. As a registered Landscape Architect, I ensure that required buffers are maintained using existing vegetation, where feasible, or restored with native species. These plantings incorporate a diverse mix of evergreen trees and shrubs to provide an effective, year-round visual screen.
14. Evaluate 'Architectural Design' standards in the Zoning Ordinance to ensure requirements for industrial buildings include desired building materials, lighting, and landscaping.	✓			Completed and implemented. Every review goes through the stringent design review process.
15. Strengthen building and site design standards for 'Office, Institutional, Business Parks, and Industrial Parks and Campus' in the Zoning Ordinance by more clearly delineating requirements vs. guidelines.	✓			Done but also needs revamping. Staff will present text amendment to council in Q1 2026.
16. Expand criteria for triggering a Traffic Impact Study with development proposals	✓			Most developments will require TIA's as a study required by the Director and City Engineer. Code authorizes the Director to add additional documents as needed.
Process/Program				
1. Evaluate development review and permitting processes to assess the ease of doing business in Flowery Branch.	✓			Staff has placed completeness checklists, guidance documents, and applications on-line. We hold resubmittal meetings and in Q2 of 2026, all applications will be submitted through a guided Civic Access portal.

2. Submit Tree City USA application (in conjunction with updated Buffer, Tree Protection and Landscaping Ordinance).		✓		Application for Tree City USA will happen after the tree preservation and planting code is re-written. Included in Community Work Plan for years: 28
3. Expand local code enforcement capability by increasing full-time personnel.	✓			Full-time code enforcement officer is on staff.
4. Enhance community outreach capability /promote local initiatives, events and programs (both citywide and downtown oriented) by adding dedicated staff positions.	✓			Department of fun programs, ribbon cuttings, and downtown events. Full-time staff are in place and operate at a high level.
5. Implement citywide signage project (for gateways, corridors and Old Town).		✓		Several signs are in place and gateway signs are underway at time of update. Included in Community Work Plan for years: 26/27
6. Continue to implement Metropolitan North Georgia Water Planning District's Water Resource Management Plan, including 5-year updates to local Water Master Plan (underway) and Wastewater Master Plan (2023/24).	✓			Done and implemented. Staff provide EPD with annual reports on water resources and management.
Inventory/Assessment				
1. Update Citywide Historic Resources Survey.	✓			Survey complete.
2. Track citywide housing ratios with rezoning applications against updated 'housing mix policy' of 70% single-family/15% townhomes/15% multi-family	✓			This is continually tracked by planning staff with each new development.

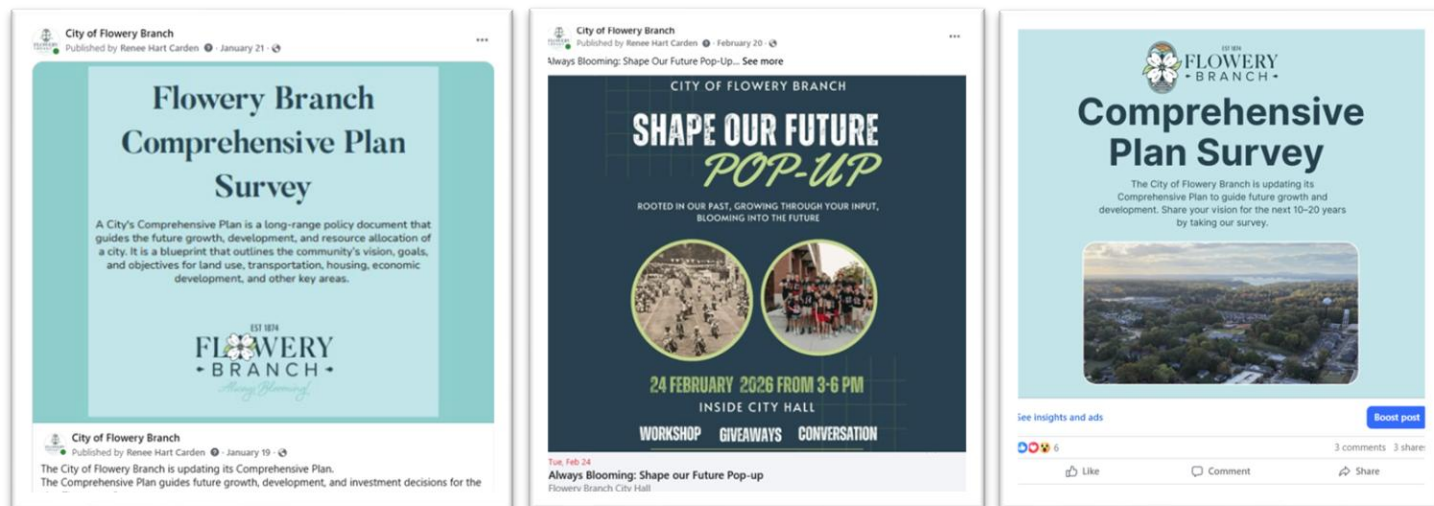
3. Evaluate steps promoted by the State to achieve certification as a Broadband Ready Community.	✓			The City has franchise agreements with broadband companies for installation of fiber optic lines in right-of-way.
Detailed Planning Study				
1. Prepare a citywide Housing Market Analysis that analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential needs.		✓		This was not done since the previous comprehensive plan update and has carried over. Included in Community Work Plan for years: 26/27
2. Update the 2014 Old Town Redevelopment Plan.		✓		Olde Town Phase 2 is coming next. Included in Community Work Plan for years: 26/27, 28
3. Conduct a Stormwater Utility Feasibility Study.		✓		Underway but not completed. Included in Community Work Plan for years: 26/27
4. Prepare a citywide Traffic Improvement Study.		✓		A traffic improvement study and plan was completed for the downtown area, an expanded citywide study has carried over. Included in Community Work Plan for years: 28
5. Prepare a citywide Bicycle and Pedestrian Plan.	✓			Done. 2022 GHMPO Highlands to Islands / 2024 GHMPO Parking and Mobility Study
Community Improvements / Infrastructure Projects				
1. Construct Farmer's Market Pavilion Park and Pine Street Park (and related streetscape and parking improvements).	✓			Done.
2. Construct Chestnut Street Park.			✓	The site is no longer available for a park.

3. Construct East Main Street Trail from Thurmond Tanner Road to Flowery Branch City Park.		✓		Underway with our trail system funding at time of update. Included in Community Work Plan for years: 26/27 - 31
4. Construct water and sewer capacity expansion projects, including expansion of the Water Quality Reclamation Facility to double its wastewater treatment capacity.		✓		Wastewater Expansion Project and construction on Wells #4 & #5 underway at time of update. Included in Community Work Plan for years: 26/27
5. Coordinate with GDOT to evaluate signalization timing at Atlanta Highway / Phil Niekro Blvd.	✓			Done, grading improvements completed as well.
6. Coordinate with Hall County on the use of impact fees for local trail and park projects, consistent with the 2004 Intergovernmental Agreement, as well as supporting planning studies.	✓			City of Flowery Branch and Hall County are working on the Highlands to Islands trail project together. The City helps collect Hall County Impact fees.
7. Coordinate with Hall County MPO to implement McEver Road roundabouts Gaines Ferry and Radford Roads.		✓		1 under construction and 1 slated for 2028 pre-engineering . Included in Community Work Plan for years: Gaines Ferry – 26/27 Radford Rd – 29/30

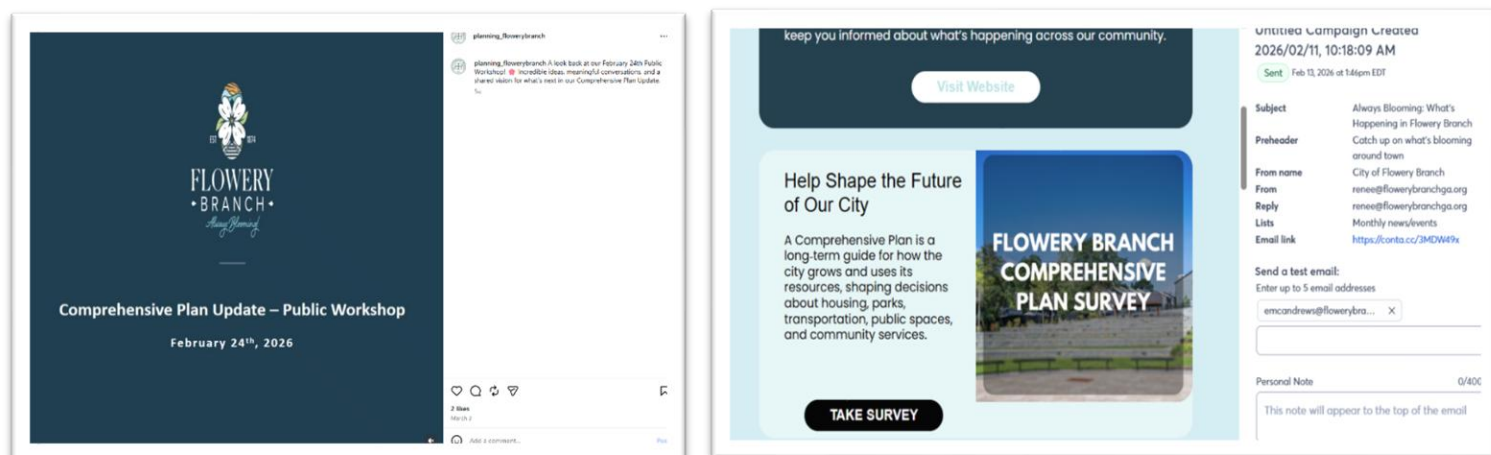
Appendix C: Community Outreach Documentation

Social Media/Web-Based Outreach:

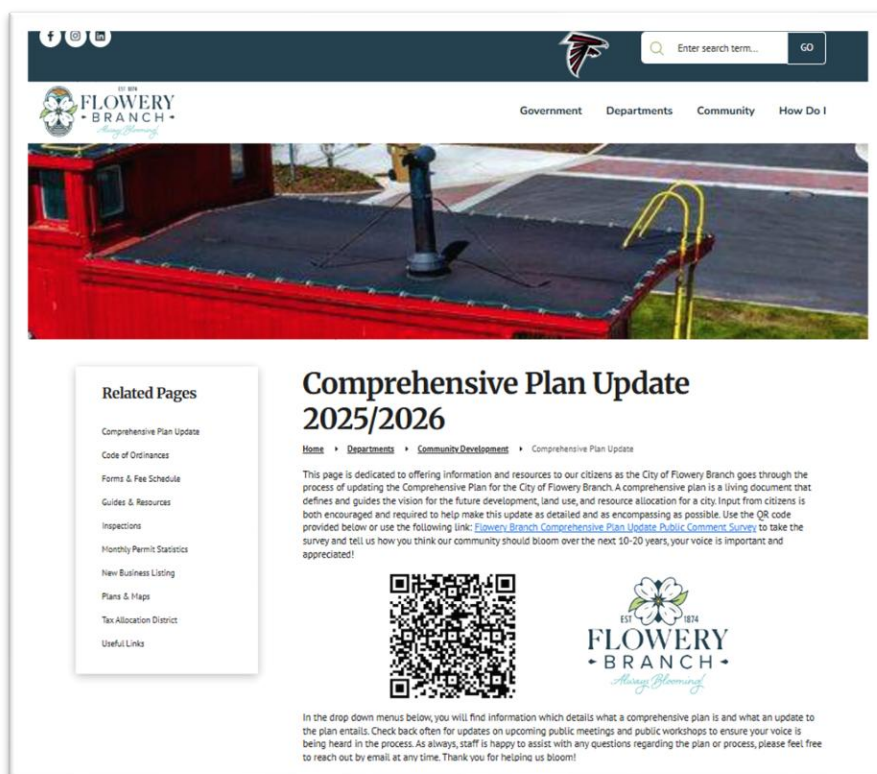
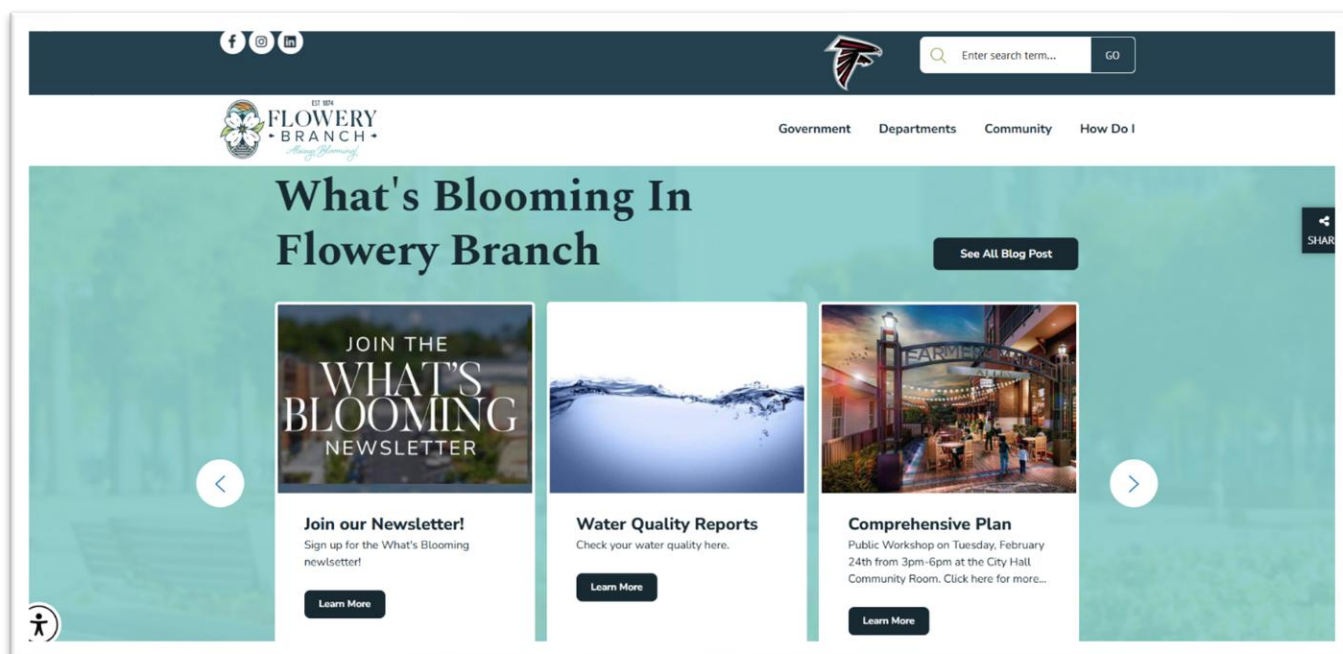
Social media posts were utilized to increase public awareness and participation in the survey and Comprehensive Plan update process. The Department of Fun also distributes an electronic Newsletter which ran multiple campaigns that included information regarding the survey and public workshops. Several examples of posts and newsletter campaigns from across the City's social media accounts are provided below.



Examples above: Various social media posts from City accounts



Examples above: A recap social media post (left) and screenshot from newsletter campaign (right)



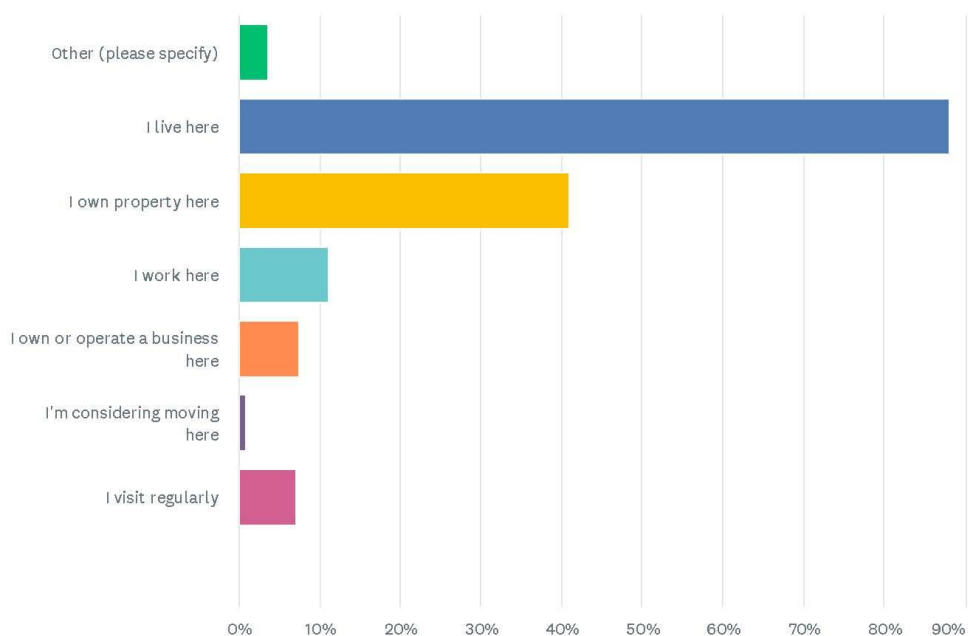
Link to dedicated Plan Update Page on City homepage (top); Dedicated Plan Update Page (left)

Survey Monkey Public Comment Survey:

Flowery Branch Comprehensive Plan Update Public Comment Survey

Q1 How would you describe your connection to Flowery Branch? (Select all that apply)

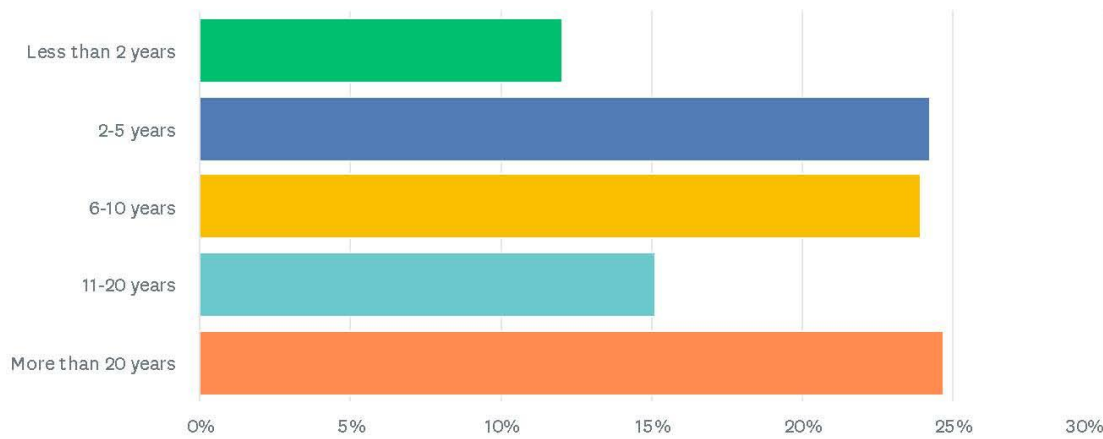
Answered: 947 Skipped: 3



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q2 How long have you been connected to Flowery Branch?

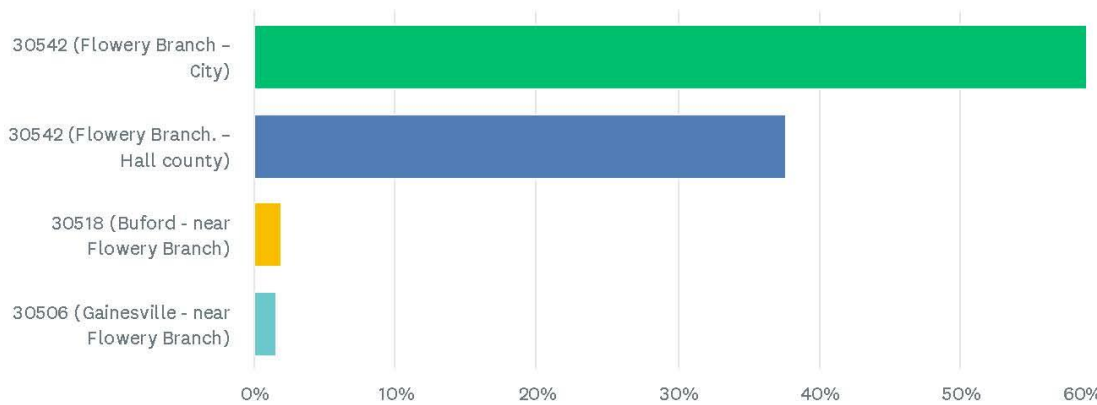
Answered: 948 Skipped: 2



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q3 What is your ZIP code?

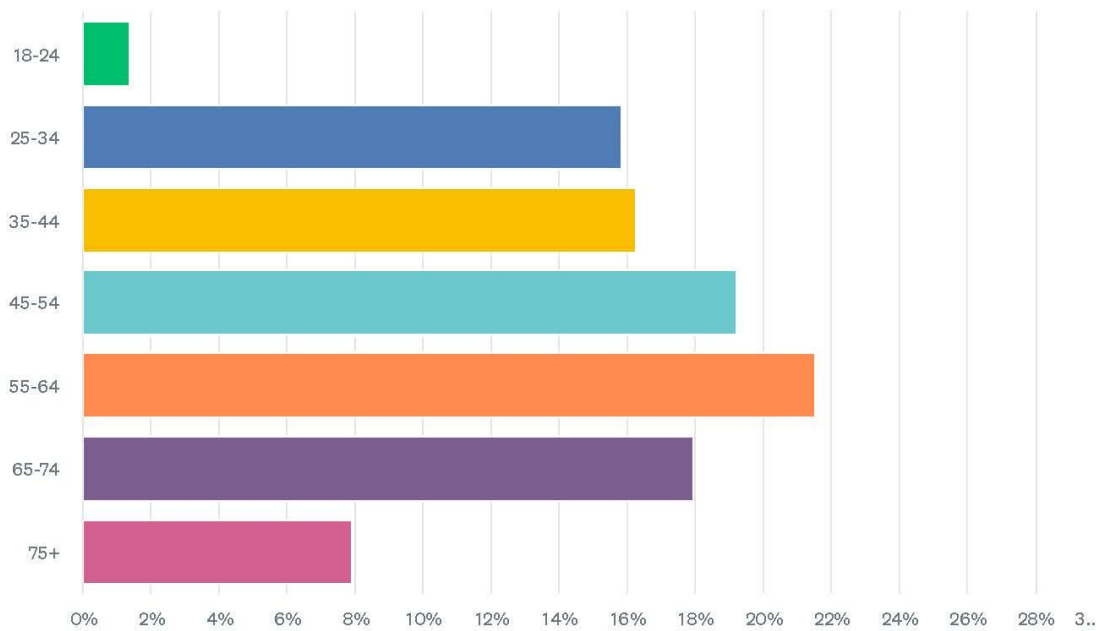
Answered: 904 Skipped: 46



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q4 What is your age range?

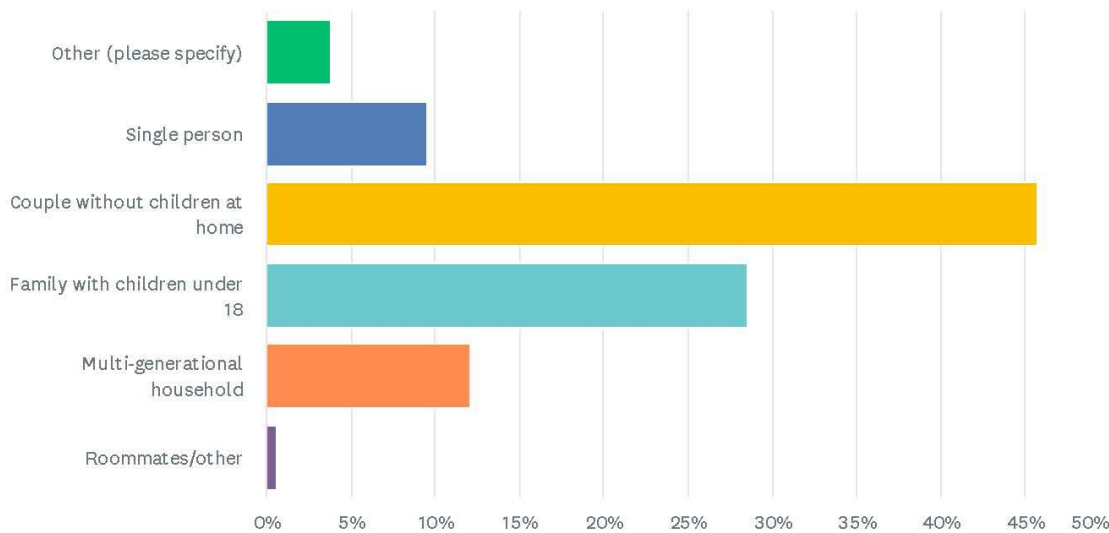
Answered: 948 Skipped: 2



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q5 Which best describes your household?

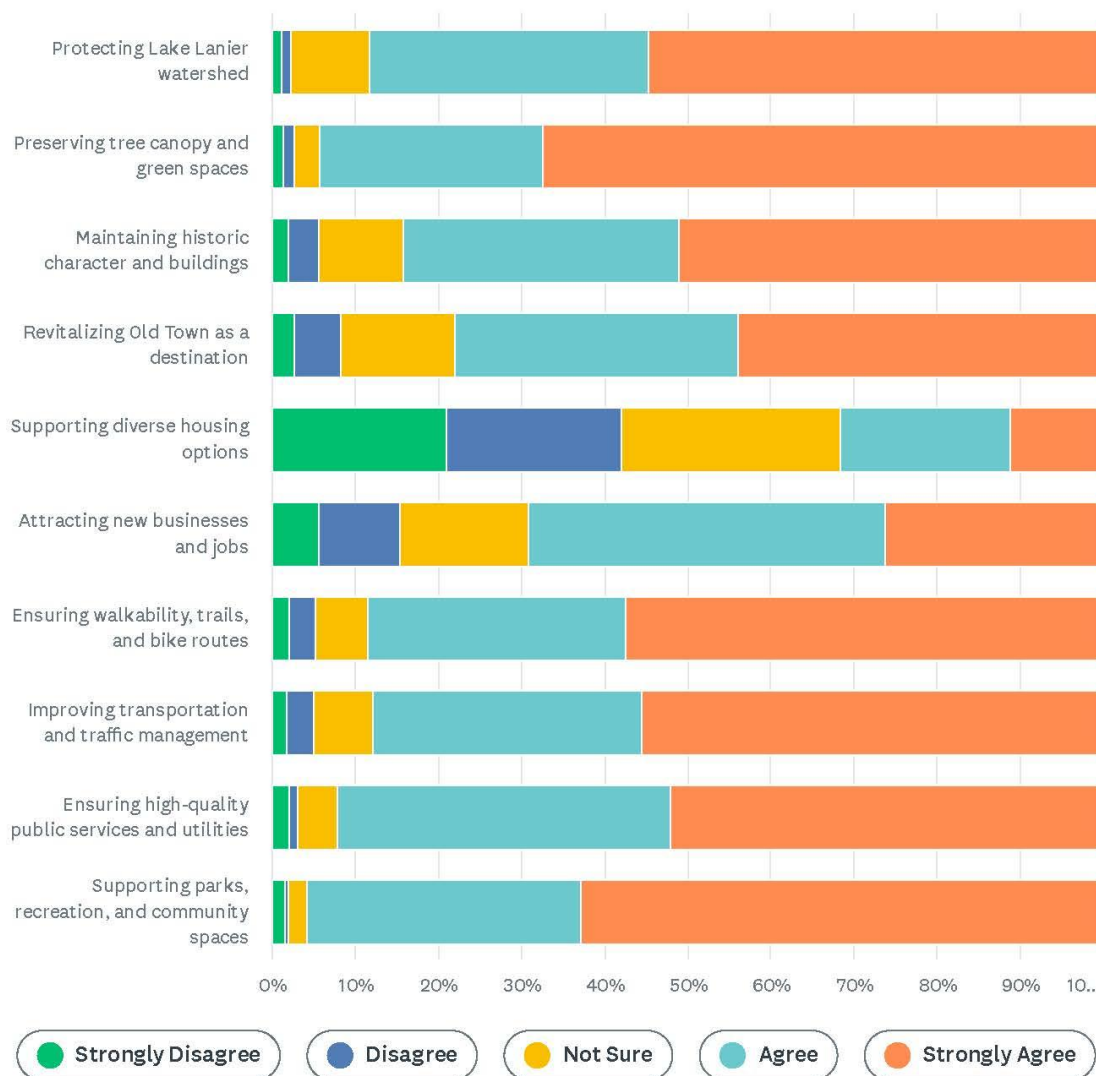
Answered: 948 Skipped: 2



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q6 How important are the following in shaping the city's future? (1 - Strongly Disagree → 5 -Strongly Agree)

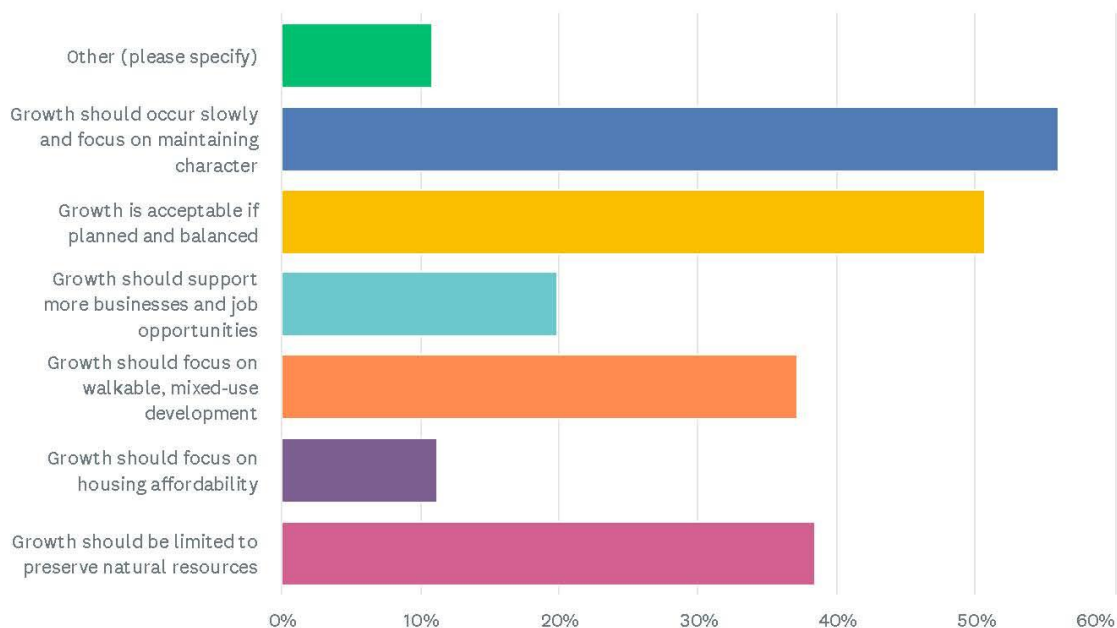
Answered: 753 Skipped: 197



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q7 Which statements best match your preference for Future Development? (Select all that apply)

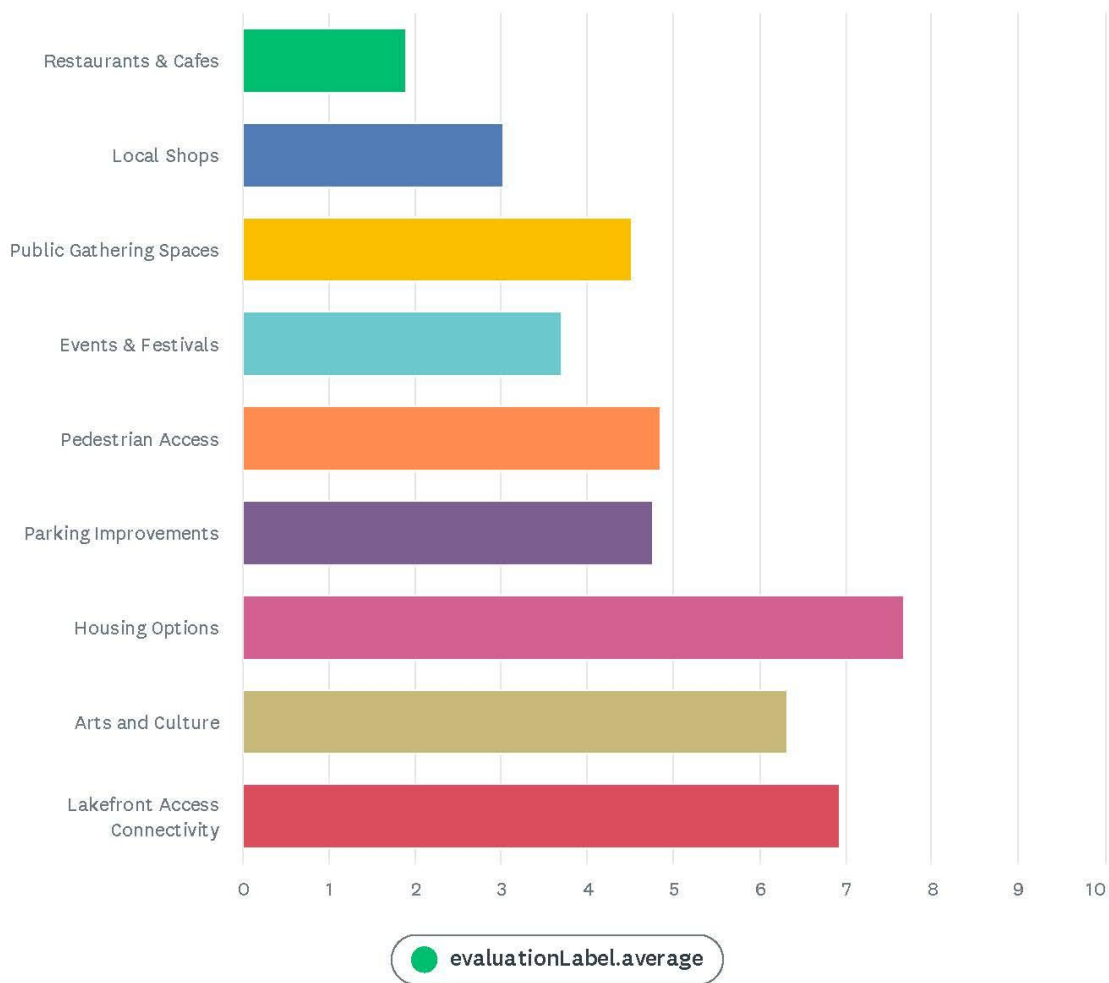
Answered: 749 Skipped: 201



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q8 Rank the top 3 features that would motivate you to spend more time Downtown:

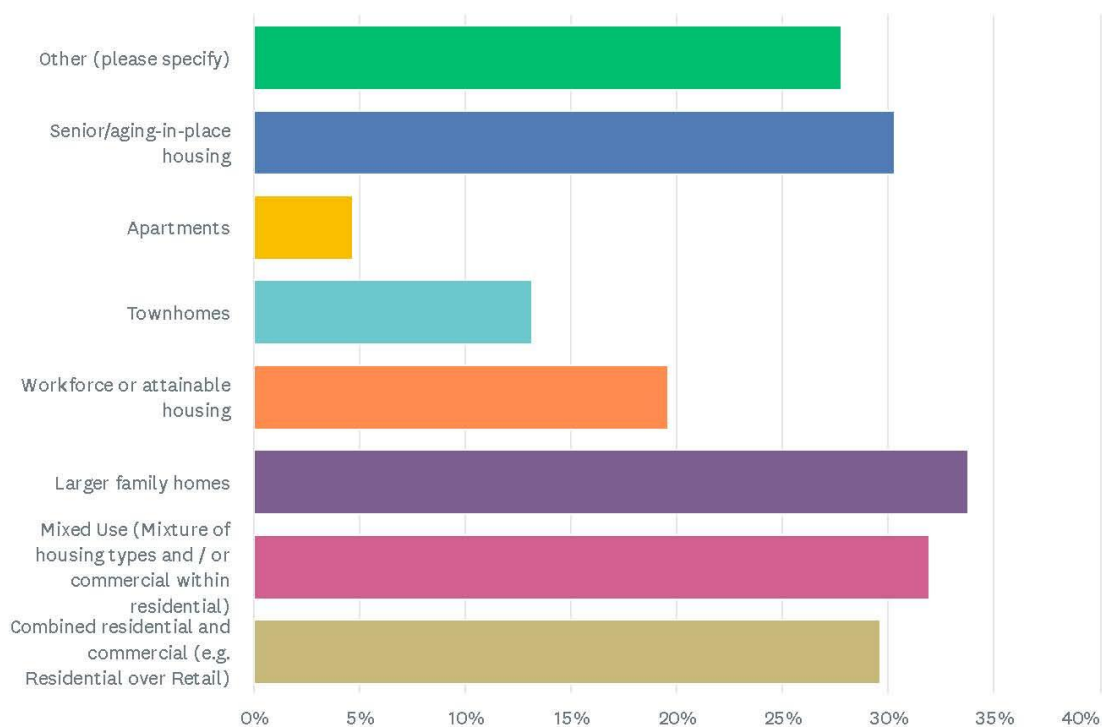
Answered: 747 Skipped: 203



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q10 Select all you believe Flowery Branch needs for Housing:

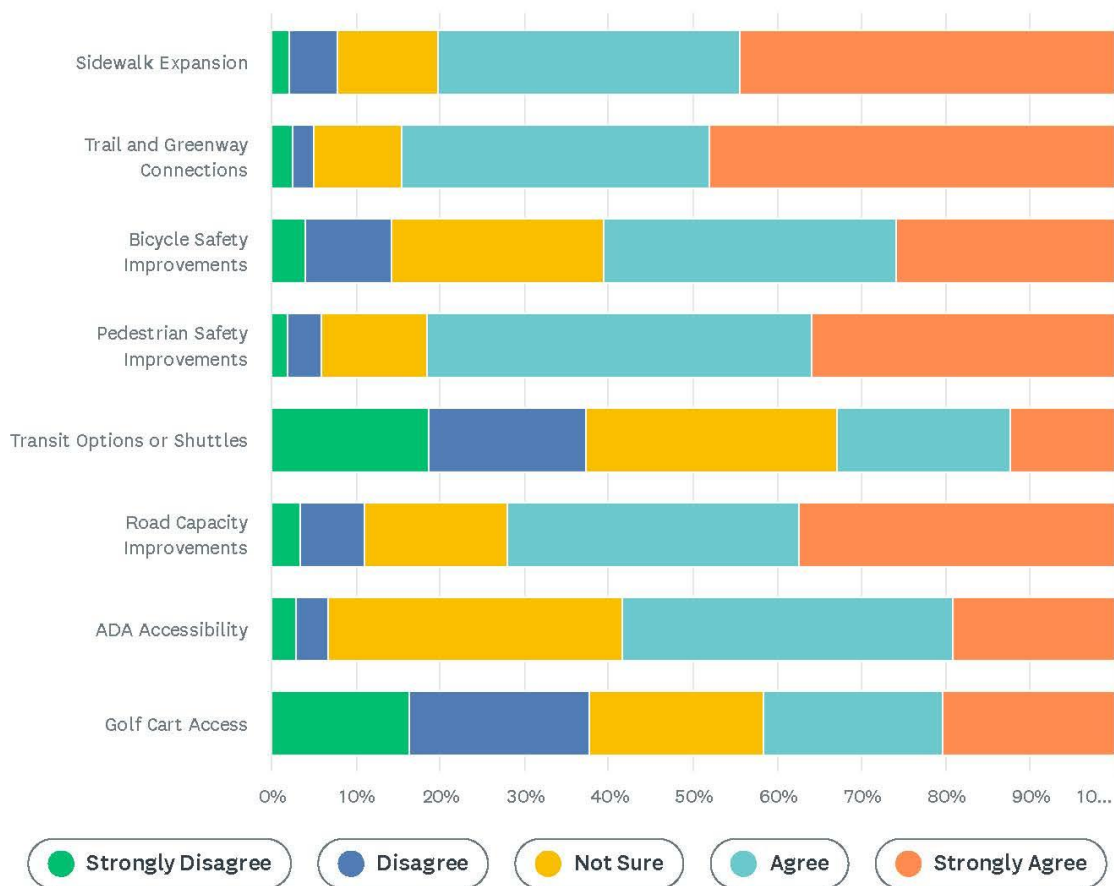
Answered: 719 Skipped: 231



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q11 Rate the following Mobility and Transportation Improvements: (1 - Strongly Disagree → 5 - Strongly Agree)

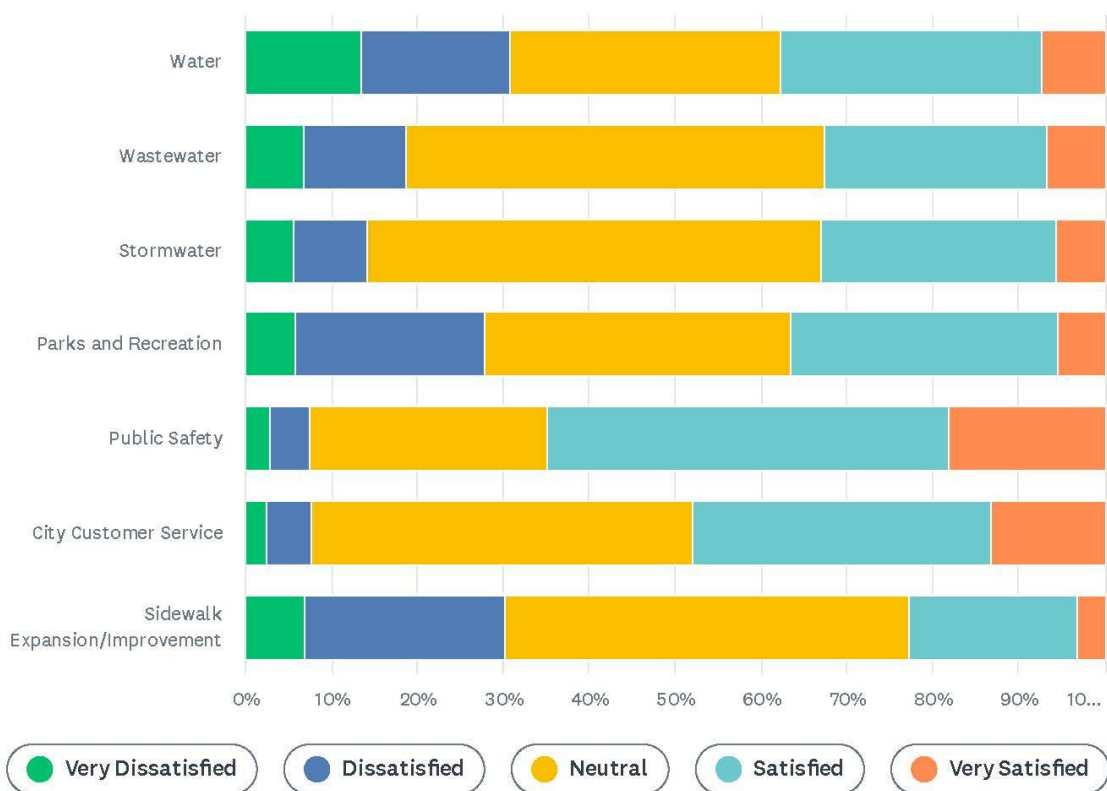
Answered: 751 Skipped: 199



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q12 Rate the following Public Services and Infrastructure Improvements:
(1 - Very Dissatisfied → 5 -Very Satisfied)

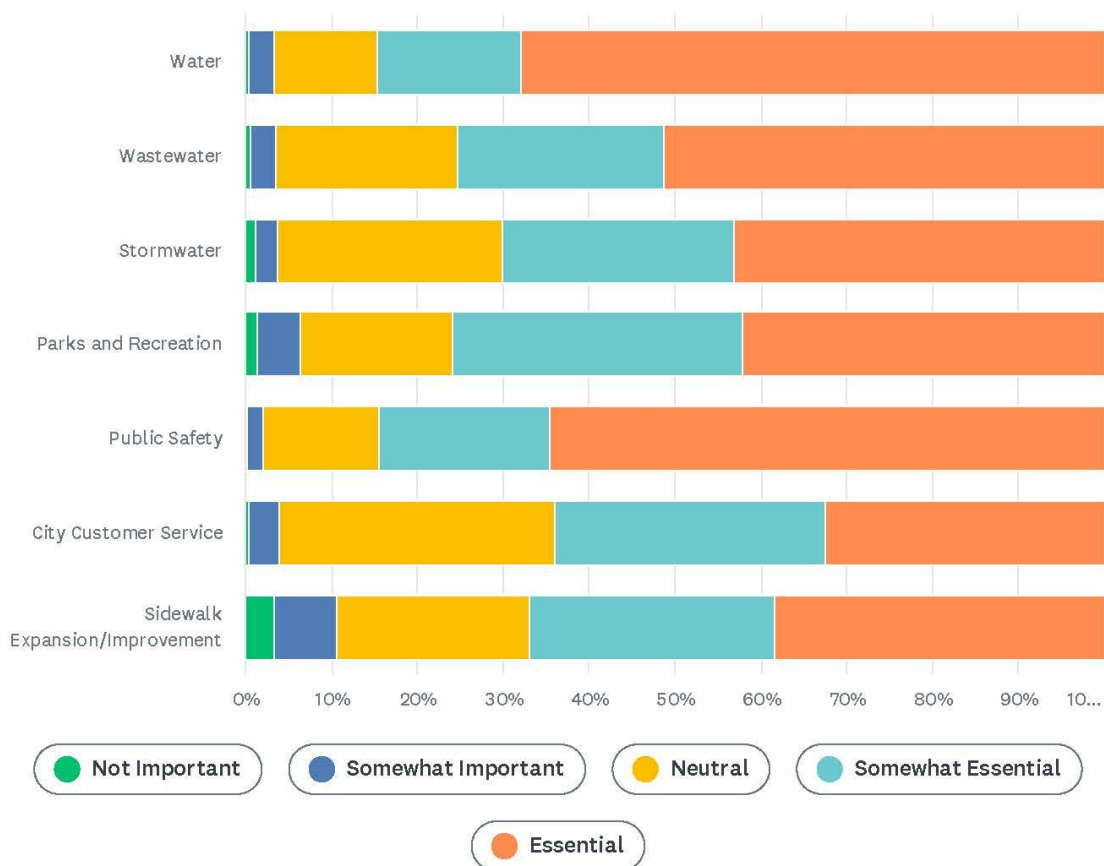
Answered: 747 Skipped: 203



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q13 Rate the future priorities for Public Services & Infrastructure: (1 - Not Important → 5 -Essential)

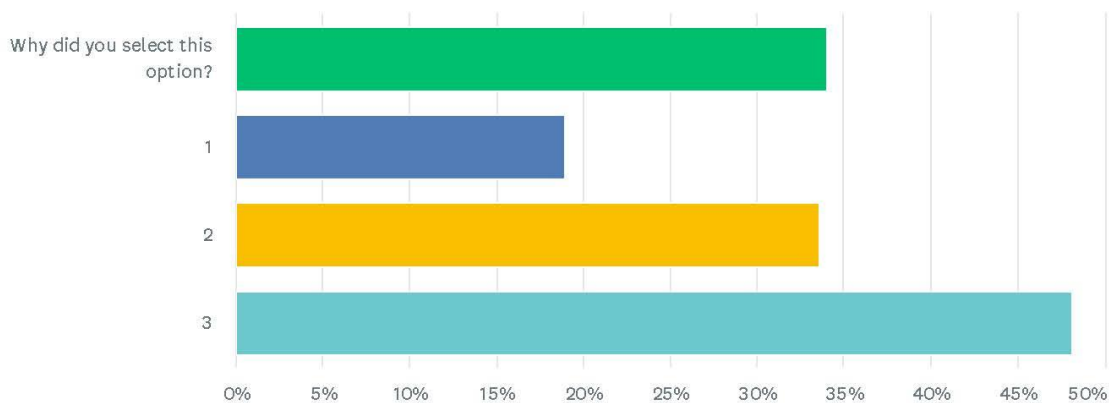
Answered: 742 Skipped: 208



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q14 For the Three Vision Statement options, what would you select:

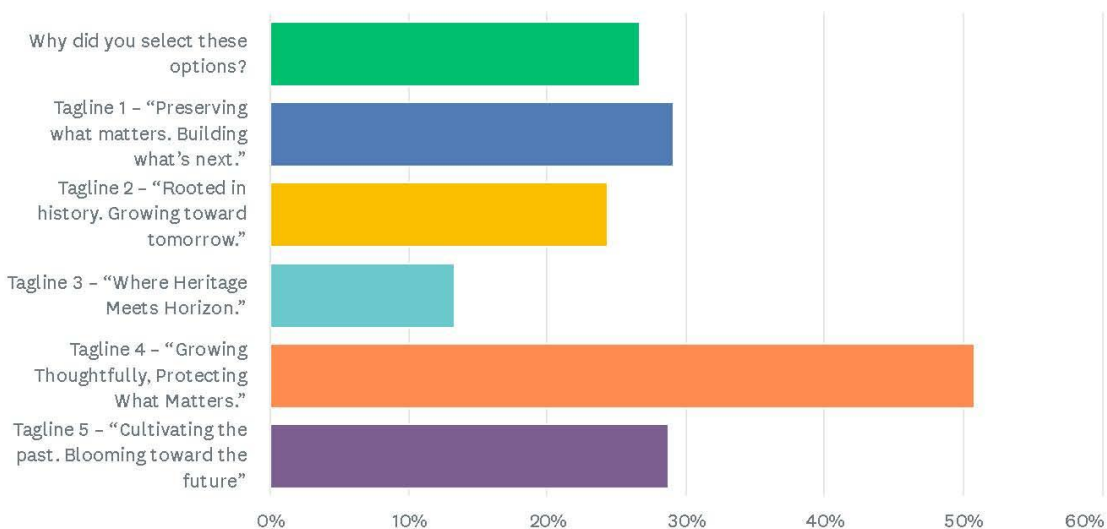
Answered: 735 Skipped: 215



Flowerly Branch Comprehensive Plan Update Public Comment Survey

Q15 Please chose two Taglines:

Answered: 724 Skipped: 226



Community Survey Findings Analysis:

The following executive summary and analysis of the community survey data was prepared by the Steering Committee Chair, Jack Probst.

Purpose

This expanded summary provides additional interpretation of the major findings from the Community Survey supporting the evolving Flowery Branch Comprehensive Plan. The analysis emphasizes not only the strongest themes that emerged from the survey, but also the demographic and sentiment patterns that help explain why those findings appeared. The intent is to provide City Council and the community with a clearer understanding of how residents view the City's future and where meaningful differences in opinion emerged.

Vision & Community Direction

Survey responses continued to demonstrate strong alignment around a vision of Flowery Branch as a distinctive lake-oriented community that protects its natural and historic resources while growing intentionally. The strongest support consistently favored a future that balances preservation with reinvestment rather than rapid expansion. Respondents repeatedly associated quality of life with environmental stewardship, small-town character, walkability, and Old Town vitality.

Long-term residents were more likely to frame environmental protection and character preservation as reasons to moderate growth, while newer residents were more likely to support investment and amenities when growth was well planned and infrastructure supported. Despite these differences, both groups largely agreed that unmanaged growth would weaken the community's identity.

Key Survey Findings & Patterns:

Environmental Protection Emerged as the Strongest Unifying Theme.

Likert-scale responses consistently ranked environmental priorities—including tree canopy, watershed protection, and preservation of green space—among the highest-rated issues in the survey. Open-ended comments frequently referenced Lake Lanier, natural scenery, and the desire to retain the community's distinctive character.

Environmental Protection - Demographic Pattern: Long-term residents and older respondents were most likely to connect environmental protection with limiting or conditioning future growth. Younger and mid-tenure residents also strongly supported environmental stewardship but were somewhat more open to growth when environmental safeguards were clearly integrated into development decisions.

Old Town Revitalization Was Viewed as Both an Economic and Community Priority

Survey comments repeatedly referenced restaurants, cafés, walkability, festivals, and gathering spaces as desired improvements in Old Town. Residents consistently described downtown as the symbolic and cultural center of the City.

Old Town Revitalization Demographic Pattern: Residents under age 45 and newer residents were especially likely to emphasize restaurants, entertainment, and activity. Long-term residents generally supported revitalization as well, but emphasized preservation of historic character, parking management, and maintaining a small-town atmosphere.

Infrastructure Capacity Strongly Influences Support for Growth

Respondents consistently linked opinions about growth to concerns regarding roads, sidewalks, stormwater, water and

wastewater capacity, and traffic. Support for development increased noticeably when comments framed growth as occurring only after infrastructure improvements were in place.

Infrastructure Capacity Demographic Pattern: Families with children and mid-career households were especially likely to prioritize sidewalks, transportation safety, and infrastructure reliability. Older residents more frequently referenced traffic congestion and preservation of neighborhood stability.

Walkability and Connectivity Were Viewed as Quality-of-Life Investments

Likert-scale ratings and comment patterns showed broad support for sidewalks, trails, pedestrian safety, and connections between neighborhoods, parks, schools, and Old Town.

Walkability and Connectivity Demographic Pattern: Younger residents and households with children most strongly framed walkability as an everyday necessity. Older residents and retirees tended to view trails and sidewalks more as recreational and health amenities, though support remained high across groups.

Growth Is Accepted When It Fits the Community

One of the strongest sentiment patterns throughout the survey was that residents generally do not reject growth outright. Instead, respondents repeatedly emphasized that development should align with Flowery Branch's scale, character, environmental assets, and infrastructure capacity.

Growth Demographic Pattern: Support for thoughtful reinvestment and targeted development was relatively broad across demographic groups. The primary difference was not whether growth should occur, but rather how quickly, where, and under what conditions.

Expanded Key Areas of Divergence:

Housing Density & Residential Growth

The greatest divergence of opinion involved apartments, townhomes, and higher-density residential development.

Primary Drivers Behind Divergence:

- Concern over traffic, school impacts, infrastructure strain, and loss of small-town character
- Different perceptions of what constitutes 'appropriate' growth
- Tension between preserving existing neighborhood patterns and accommodating future housing needs

Key Population Segments:

- Long-term residents (15+ years) and older respondents were significantly more skeptical of higher-density housing.
- Younger households and workforce-age residents were more supportive of housing variety, especially when framed around affordability, workforce housing, or aging in place.

Pace & Intensity of Downtown Revitalization

Respondents generally agreed that Old Town should become more active, but differed on how quickly and intensely redevelopment should occur.

Primary Drivers Behind Divergence:

- Desire for restaurants, events, and activity balanced against concerns regarding traffic, parking, and noise
- Concern that redevelopment could become overly commercialized or lose historic authenticity

Key Population Segments:

- Newer residents and younger families were more likely to prioritize dining, entertainment, and increased activity.
- Long-term residents more frequently emphasized preserving character and avoiding over-commercialization.

Transportation Priorities

Although support for transportation improvements was widespread, respondents differed on which investments should receive priority.

Primary Drivers Behind Divergence:

- Some residents emphasized sidewalks, trails, and pedestrian connectivity.
- Others focused more heavily on congestion, roadway improvements, and traffic flow.

Key Population Segments:

- Families with children and younger residents most strongly emphasized sidewalks and pedestrian safety.
- Longer-tenured and older residents were more likely to emphasize congestion management and roadway capacity.

Environmental Protection vs. Development Flexibility

While environmental protection received strong support overall, differences emerged regarding how aggressively growth should be limited to achieve it.

Primary Drivers Behind Divergence:

- Different comfort levels regarding growth pressure and redevelopment
- Concern over balancing economic opportunity with long-term stewardship

Key Population Segments:

- Long-term residents were more likely to support stricter growth controls tied to environmental protection.
- Newer residents were somewhat more open to development when environmental protections and infrastructure safeguards were clearly articulated.

Planning Implications for Council

The survey results suggest that the strongest path forward for the Comprehensive Plan is not to ‘split the difference’ between competing viewpoints, but to develop conditional and context-sensitive policies that respond directly to the concerns residents expressed. The findings strongly support policies that:

- Protect environmental and historic assets
- Tie growth to infrastructure readiness
- Strengthen Old Town through walkability and local-scale activity
- Encourage targeted housing solutions tied to local needs
- Improve mobility and pedestrian safety without undermining community character

The survey findings also suggest that transparency and visible implementation progress will be essential to maintaining public trust as the Comprehensive Plan moves into execution.

Public Meetings & Workshops:

As required by DCA's Minimum Standards and Procedures for Local Comprehensive Planning, two public hearings were conducted. In addition to the public hearings, two open-house style workshops were held to engage the public and provide an opportunity for questions and collaboration. The workshops included an interactive Land Use Map station as well as multiple informational and project focused stations. Meeting agendas, presentations, newspaper advertisements, and other supplemental documentation are included below:

Comprehensive Plan Public Kick Off Meeting – 5410 Pine St., Flowery Branch, GA, 30542

An introductory meeting and stakeholder committee meeting for the City of Flowery Branch Comprehensive Plan will be held to receive public input and share information regarding the 2025/2026 update. The meeting is scheduled for Thursday, December 4, 2025, at 5:00 p.m. in the City of Flowery Branch Community Room, located at 5410 Pine Street, Flowery Branch, GA 30542. Interested parties may contact the Community Development Department at 770.967.6378 for more information.

154467 12/3

Comprehensive Plan Public Workshop & Meeting – 5410 Pine St., Flowery Branch, GA, 30542

A public workshop and stakeholder committee meeting for the City of Flowery Branch Comprehensive Plan will be held to receive public input and share information regarding the 2025/2026 update. The meeting is scheduled for Tuesday, February 24th, 2026, from 2:00-6:00 p.m. in the City of Flowery Branch Community Room, located at 5410 Pine Street, Flowery Branch, GA 30542. Interested parties may contact the Community Development Department at 770.967.6378 for more information.

156419 2/4, 2/11

Comprehensive Plan Public Meeting – 5410 Pine St., Flowery Branch, GA, 30542

A meeting for the public concerning a draft presentation for the 2025/2026 update to the City of Flowery Branch Comprehensive Plan will take place on Thursday, May 7th, 2026, at 6:00pm in the City Hall conference room located at 5410 Pine St., Flowery Branch GA, 30542. Interested parties may contact Community Development at 770.967.6378.

159254 4/29

Informational boards developed for the open-house style public workshops



What Is a Comprehensive Plan?

A city's Comprehensive Plan is a long-range policy document that guides the future growth, development, and resource allocation of a city. It functions as a strategic blueprint that outlines the community's vision, long-term goals, and objectives for land use, transportation, housing, economic development, grant opportunities, and other key areas over a 20-year period and is updated every 5 to 10 years.

How Is a Comprehensive Plan Used?

- Becomes the primary planning tool for the City
- Used to identify local planning priorities & projects
- Aids in identifying and competing for grants & economic development opportunities
- Aids in creating Urban Redevelopment Plans
- Specialized planning projects/master plans regarding downtown revitalization, development opportunities, greenspaces, bicycle & pedestrian mobility, streetscape improvements, beautification etc.



Done, Adopted or Completed - On-going or in design - Not started or no longer a project

2016 – 2021 NEEDS AND OPPORTUNITIES

- Prepare a Unified Development Code that updates, consolidates and streamlines land use and development regulations and supports the goals of the Comprehensive Plan.
 - **The UDC will be starting in Q1 2026. The Request for Qualifications is ready to be released. Call for teams, review RFQ's, short list, pick the finalist, negotiate proposal.**
- Adopt Water Supply Watershed Protection Ordinance.
 - **The City has adopted the Georgia Stormwater Manual including updates. To push it further, staff is working on stormwater infiltration requirements and incentives to implement green infrastructure and low impact development (LID) methods.**
- Prepare a Unified Development Code that updates, consolidates and streamlines land use and development regulations and supports the goals of the Comprehensive Plan.
 - **The UDC will be starting in Q1 2026. The exercise has been funded. The Request for Qualifications is ready to be released. Call for teams, review RFQ's, short list, pick the finalist, negotiate proposal.**
- Adopt Groundwater Recharge Protection Area Ordinance.
 - **Adopted Chapter 26, Article III Groundwater Reuse.**
- Amend Buffers, Tree Protection and Landscaping Ordinance to strengthen tree retention and planting requirements.
 - **As part of the UDC update, the City will adopt a fully revised Tree Protection and Replacement Ordinance. Staff has completed the draft ordinance, and it is ready for integration into the UDC. A key priority of this update is the identification and preservation of specimen trees and the protection of the community's overall tree canopy. Existing density requirements will be maintained, and the removal of any specimen tree will trigger substantial recompense measures to promote preservation and responsible development.**
- Evaluate the effectiveness of minimum open space requirements in all zoning districts and identify potential amendments, as necessary.
 - **Done and adopted into code for all zoning districts.**
- Amend 'Architectural Design' standards in the Zoning Ordinance to include residential dwelling types.



Downtown Parking & Street Improvement Studies



Develop Concept Scope

- Utilize Conversion of Streets from Two-Way to One-Way
- Organize Traffic Flow
- Add Space for More Parking
- Driveway Closures - Some Areas Not Possible
- Frequent Driveways Reduce Usable Space
- Non-Parking Sidewalk Projects
- Improve Walkability
- Beautify Downtown
- Improve Drainage



Wastewater Expansion Project



CURRENT PHASE



The expanded plant will serve Flowerly Branch and portions of Oakwood and unincorporated Hall County

Stoplight System

For Future Land Use Map



Red - Current land use should be changed

Yellow - Current land use may need revision

Green - Current land use should remain

Always Blooming!





FLOWERY • BRANCH •



Comprehensive Plan Update Public Meeting Sign In

Name	Email Address	Add me to the newsletter	Contact me for volunteer opportunities
CHRIS MCCLARY	CMCCLARY@FLOWERYBRANCHGA.ORG	No	No
Logan Witter	LOGANWITTER@AOL.COM	-	-
Mary Willis	mary@bluemarker.net	Yes	—
Ron Buckley	rbuckley05@gmail.com	Yes	No
BOB Hill	rjh116032@gmail.com	YES	NO
Linda Terry Ryan	lindaryanreelstere@gmail.com	yes	ok
Scott Soracco	ssoracco@hotmail.com	yes	No
Janet Lennox	janlen1@comcast.net	yes	ok
Palmer Griffin		No	No
Amanda Gnoerer	amandagnoerer13@gmail.com	N/A	N/A
IVAN DESROSIERS			
Janet Upchurch			
Gail & Kevin Tomlinson			



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Comprehensive Plan Update Public Meeting Sign In

Name	Email Address	Add me to the newsletter	Contact me for volunteer opportunities
Greg Bonadies	gabonadies@gmail.com	✓	✓
Debbie Bonadies	gabonadies@gmail.com	✓	✓
Charles Thompson	hyperiums@gmail.com	✓	✓
Lauren Yeste	lhardyeste@yahoo.com	✓	
John Yeste			
Amy Beth Durham	ABSBOX@me.com	✓	✓
Tatiana Chaskin	Tatiana.Monzon93@gmail.com	✓	✓
Deni Nzsh	dnzsh@FB.org	✓	✓
John Nagy	JNagy@FB.org	✓	✓



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Comprehensive Plan Update Public Meeting Sign In

Name	Email Address	Add me to the newsletter	Contact me for volunteer opportunities
Marki Dolores Parr	parrhome@bellsouth.net	✓	
Audrey Duke	adukedawg1@bellsouth.net		
Andrea (Champagne) Smith	tcsmith13@aol.com	✓	
Gary Nix	garynix@redogma1.com		
Ari & Katrina Naukkarinen	naukkarinens@yahoo.com		
Gerry Metzger	Metzgerj@bellsouth.net	✓	
Rp Altford	ryaltford@mindspring.com		

Stakeholder Committee Meetings: Agendas and Supporting Documentation

The Stakeholder Committee was instrumental in the development of the public survey, in public engagement in general, and in the open-house style public workshops. The committee met five times over the life of the project. Their dedication and input helped shape both the process and the final product. Agendas and supporting documentation included below:

AGENDA

FLOWERY BRANCH COMPREHENSIVE PLAN UPDATE

STAKEHOLDER MEETING

CITY HALL

2:00 – 4:00 PM-Thursday November 13, 2025

DISCUSSION/ACTION:

- 1.) Comp Plan Overview: Update Process, Schedule, and Components**
- 2.) Vision Statement Review (p 25)**
- 3.) Public Comment Survey Review for Survey Monkey (p 61-65)**
- 4.) Next meeting date:**
Dec __: Needs and Opportunities Assessment (Chapter 3, p 12 - 24),
SWOT analysis. Please review these prior to the December meeting.
- 5.) Adjournment.**



Comprehensive Plan Stakeholder Committee Meeting Agenda

12/9/2025

New Business:

- Consider having Jack Probst chair the Stakeholder Committee

Old Business:

- Review initial planning framework for discussion. Document attached email.
- **Vision Statement:** Review Options and develop a Vision Statement and Tag Line
- **Survey Questions:** Review survey questions and finalize the survey.
- **Communication Strategy:** Website link [Comprehensive Plan Update 2025/2026](#) can also be accessed from the splash page bottom left box. Renee to discuss social media posts and other ways of communication.



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Comprehensive Plan Stakeholder's Committee Meeting Agenda January 7th, 2026

- ❖ Welcome & Update – Chris McCrary
- ❖ Review of current survey participation – Joe Rothwell
- ❖ Analysis of the data gathered so far – Jack Probst
- ❖ Survey Says! Review survey results regarding Vision Statement & Tag Line and finalize decision – Joe Rothwell
- ❖ Review previous Needs & Opportunities – Joe Rothwell
- ❖ Needs & Opportunities Committee discussion, what should remain?
- ❖ Introduction to Land Use & Character Areas
- ❖ Dates for next committee meeting & frequency of meetings
- ❖ Committee Discussion Points for Upcoming Meetings:
 - What Needs & Opportunities need to change?
 - Land Use & Character Areas
 - Planning of Public Workshops
- ❖ Public Input Session for any attendees not on the Stakeholder Committee
 - Two minutes per speaker
- ❖ Final questions or comments
- ❖ Adjourn



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Comprehensive Plan Stakeholder's Committee Meeting Agenda February 10th, 2026

- ❖ Welcome & Update – Dani Nash
- ❖ Review of current Needs & Opportunities – Joe Rothwell
- ❖ Analysis of the survey data in reference to Needs & Opportunities – Jack Probst
- ❖ Discuss updated Needs & Opportunities
- ❖ Review of current Land Use & Character Areas
- ❖ Committee Discussion Points for Upcoming Public Meeting:
 - Stations
 - Supplies Needed
 - SMEs (subject matter experts)
- ❖ Public Input Session for any attendees not on the Stakeholder Committee
 - Two minutes per speaker
- ❖ Set date for next committee meeting
- ❖ Final questions or comments
- ❖ Adjourn



FLOWERY ♦ BRANCH ♦



Comprehensive Plan Stakeholder's Committee Meeting Agenda March 12th, 2026

- ❖ Welcome & Update – Dani Nash
- ❖ Review Needs & Opportunities – Joe Rothwell
- ❖ Discuss updated Needs & Opportunities – Committee
- ❖ Review Land Use & Character Areas – Joe Rothwell
- ❖ Discuss updates to Land Use & Character Areas – Committee
- ❖ Dates for Public Hearing draft presentation
- ❖ Final questions or comments
- ❖ Adjourn

RESOLUTION 26-010
ADOPTING THE CITY OF FLOWERY BRANCH
COMPREHENSIVE PLAN

WHEREAS; The City of Flowery Branch has prepared a comprehensive plan update, and said plan has been approved by the Georgia Department of Community Affairs as having met the minimum planning standards of the Georgia Planning Act of 1989; and

WHEREAS; The Flowery Branch City Council recognizes the value of having a coordinated overview of the problems, needs and opportunities growth and change will create. The City Council further recognizes that the Comprehensive Plan is not a final and absolute answer to all of the many matters of policies, programs, and facilities contained therein. Constant community change, further identification of needs, more detailed planning, limitations of resources, and other changing conditions undoubtedly will require periodic review of the Plan's objectives. Therefore, it is essential that the plan be systematically re-evaluated and updated at regular intervals to reflect major changes that have a bearing on the city's development objectives;

Now, therefore, BE IT RESOLVED, and IT IS HEREBY RESOLVED, by the Flowery Branch City Council, that the City of Flowery Branch Comprehensive Plan 2026 is hereby adopted, along with accompanying, maps, policies, goals, objectives, strategies and programs, as a general guide for the future growth, change and development in Flowery Branch, Georgia.

Adopted this _____ day of May, 2026.

_____, Mayor

City Clerk

(Seal)

FLOWERY BRANCH CITY COUNCIL
EXECUTIVE SUMMARY

SUBJECT: Consider wine & beer license for Rarora Business LLC DBA: McEver Food Mart

DATE: May 21st, 2026

☒ **RECOMMENDATION**

☐ **POLICY DISCUSSION**

BUDGET INFORMATION:

☐ **STATUS REPORT**

ANNUAL-

☐ **OTHER**

CAPITAL-

COUNCIL ACTION REQUESTED ON: May 21st, 2026

PURPOSE: To allow Rarora Business LLC. DBA: McEver Food Mart to sell packaged beer and wine at 5512 McEver Road Suite 104.

HISTORY: Mcever Food Mart is a long-standing neighborhood convenience store serving the Flowery Branch community. In 2026, the business was purchased by the applicant from WBJ Global Indemnity Inc.

FACTS AND ISSUES: Applicant Rahim Virani has applied to sell packaged beer and wine.

The application has been reviewed and processed by the Chief of Police.

OPTIONS: Approve or Deny

RECOMMENDED SAMPLE MOTION: No motion required- on the Consent Agenda.

DEPARTMENT: Police Department

Prepared by: Kelsey Cash



City of Flowery Branch
Mayor & Council Attendance Sheet Per Diem Pay

Name: Oliver McClellan Month/Year: April 2026

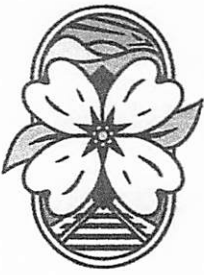
	Meeting Date	Description of Meeting
1.	April 26th	GHCC Board of Directors Meeting
2.		
3.		
4.		
5.		
6.		
7.		
8.		

My signature certifies that I am eligible to be paid for 1 meeting dates, a maximum of 8 per month, in accordance with the Per Diem Pay as described in Ordinance 736, approved on April 3, 2025, and at a rate of \$100.00 per meeting.

Total of \$ 100.00

Oliver McClellan

Signature



City of Flowery Branch
Mayor & Council Attendance Sheet Per Diem Pay

Name: Joseph Mezzanotte Month/Year: April/2026

	Meeting Date	Description of Meeting
1.	4/1	9:00 South Hall Small Business
2.	4/4	8:30 South Hall Roundtable
3.	4/21	9:00 South Hall Business Coalition
4.	4/22	9:00 South Hall Issues - Airport
5.	4/23	12 ⁰⁰ GHCC - Board Meeting
6.		
7.		
8.		

My signature certifies that I am eligible to be paid for 5 meeting dates, a maximum of 8 per month, in accordance with the Per Diem Pay as described in Ordinance 736, approved on April 3, 2025, and at a rate of \$100.00 per meeting.

Total of \$ 500.00


Signature



**City of Flowery Branch
Special Called City Council Meeting
Monday, May 4, 2026, 6:00 PM
5302 Railroad Avenue
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 Chris Mundy, Joseph Mezzanotte, Charles Vanderbilt and Pete Lena.

Also present were City Manager Tonya Parrish, City Clerk Shelia Cooper, Public Utilities Director Peter Woerner, Fun Director Renee Carden, Public Works Director Bill Whidden, and Police Chief Chris Hulsey.

Absent: Council Member William McDaniel and City Attorney Ted Baggett

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: Chris Mundy
Second: Pete Lena
Ayes: Chris Mundy, Joseph Mezzanotte, Charles Vanderbilt, Pete Lena
Nays: None
Result: passed

New Business - Work Session:

a. Welcome and Process Overview

Mayor McClellan welcomed citizens to the night's meeting and explained the process for the meeting.

b. Downtown Redevelopment Plan & Comprehensive Plan Discussion

Director McCrary presented a downtown redevelopment/comprehensive plan update, noting that Flowery Branch has pursued downtown revitalization for about 20 years through coordinated public policy, investments, economic development, grant funding, and long-range planning. Since 2006, multiple plans (Comprehensive Plans, the TAD Old Town & Commercial Gateways Redevelopment Plan, the 2014 Old Town Redevelopment Plan, and related infrastructure, trail, and mobility studies) have worked together—guided by ongoing public input—to advance a shared community vision and launch the next phase of that

effort. A Tax Allocation District (TAD) supports the infrastructure necessary to make an underutilized area attractive to private development, at no additional cost to local taxpayers. It does not create a tax increase for the community, nor does it reduce current tax revenues the community currently receives.

c. Concept Presentation

Mr. Penn Hodge introduced Michael Streger, who developed a concept plan connecting Downtown Flowery Branch with City Hall, parking, and the Farmers Market. Mr. Streger presented four design concepts and several supporting ideas. Chris Kacena of KJA Architecture then presented a mixed-use concept plan featuring retail and residential space anchored by a parking garage.

d. Public Comments

Jack Probst, 7038 Boathouse Way, Flowery Branch, Georgia.

Mr. Probst gave an overview of the comprehensive plan survey results. Mr. Probst said his comments are based on the comprehensive survey results. He appreciates the input on the comprehensive plan and said several things came out of the survey that relate to downtown and preserving the downtown's character, keeping it warm and inviting, and adding more restaurants.

Eric McBrayer, 5570 Spring Street, Flowery Branch, Georgia.

Mr. McBrayer said he's excited about Phase II and supports Flowery Branch's vision, trusting Council to continue smart growth. He noted that sidewalks are key to managing growth, but the sidewalks are currently limited and sometimes unsafe.

Joan Scales, 6223 Germantown Drive, Flowery Branch, Georgia.

Ms. Scales supports growth overall but opposes high-rise apartments because she feels they would take away from the community's small, county lake-town character.

Alicia Grizzle, 5744 Newberry Point Drive, Flowery Branch, Georgia.

Ms. Grizzle said there were a few things in the presentation she did not like, including the use of the word "trending." She said she wants Flowery Branch to keep a small-town feel. She added that the proposed townhomes and apartments did not sit well with her, and she does not want more people moving to Flowery Branch. She also questioned how often the city would need that many parking spaces each year.

Nick St. Clair, 6550 Misty Harbor Court, Flowery Branch, Georgia.

Mr. St. Clair said he owns a couple of restaurants in the community and is excited about the city's growth. He added that people are excited coming downtown—and that the city needs more of that energy.

Mary Willis, 6219 Spring Lake Drive, Flowery Branch, Georgia

Mrs. Willis said she does not support the project, noting that the site is two acres of city-owned land and the city has full control over what is built there. She said the surrounding streets are historic and that the proposed apartments are the problem. She added that the building is too tall, will look out of place, and that she would prefer something that fits the look of Buford.

Tammi Duckworth, 5422 Long Branch Way, Flowery Branch, Georgia.

Ms. Duckworth noted there is approximately 213 homes off East Main Street, with the potential for further development nearby. She and her husband value local businesses but would like sidewalks installed along their side of Atlanta Highway. She emphasized the importance of preserving the tree canopy. If preservation is not possible, a realistic plan to restore vegetation should be implemented, as excessive impervious surfaces cause long-term harm to waterways.

Laura Hardy-Yeste, 5502 Chestnut Street, Flowery Branch, Georgia.

Mrs. Hardy-Yeste has no objections to the parking garage itself. However, she is deeply concerned about the destruction of the large trees, which will eliminate privacy and significantly diminish the quality of life for those living nearby. She suggests that a two-story building would be a better alternative.

e. Developer Response

Mr. Hodge extended his thanks for the opportunity to work with the City.

f. Closing Remarks

Mayor McClellan closed the meeting by thanking the residents for coming out and he assured the citizens that all comments would be taken into consideration.

Executive Session: There was no executive session held.

Adjournment:

There was a motion made to adjourn the meeting at 7:07 p.m.

Motion:	Pete Lena
Second:	Charles Vanderbilt
Ayes:	Chris Mundy, Joseph Mezzanotte, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

Oliver McClellan
Mayor

Date

Shelia Cooper
City Clerk



**City of Flowery Branch
Special Called City Council Meeting
Wednesday, May 6, 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 Chris Mundy, 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, Public Works Director Bill Whidden, Public Utilities Director Peter Woerner, Fun Director Renee Carden, Planning & Community Development Director Chris McCrary, Police Chief Chris Hulsey.

Absent: City Attorney Ted Baggett

Council Member Vanderbilt left the meeting at 6:47 p.m.

Pledge of Allegiance:

Mayor McClellan led the Pledge of Allegiance.

Adoption of Agenda:

There was a motion made to adopt the agenda.

Motion:	Chris Mundy
Second:	William McDaniel
Ayes:	Chris Mundy, Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

New Business - Work Session:

a. FY27 Budget Review

Director Hamby presented the FY2027 budget review, which is designed to sustain the City's key priorities: public safety, infrastructure improvements, internal controls, financial stability, and economic development. Notable items in the proposed budget include full implementation of the Classification and Compensation Study, up to a 3% merit increase tied to annual reviews, and two proposed positions—an Assistant City Manager and a shared position supporting Human Resources and the City Clerk's Office.

On the revenue side, property tax revenue remains uncertain, so estimates assume 3% growth over FY2026 actuals. Local Option Sales Tax is projected to remain flat due to expectations of a slowing economy, while other revenue lines are projected to increase slightly or hold steady based on historic trends and approved housing growth. Fund balance is expected to decline due to reduced transfers to capital projects. Water and Sewer Fund revenues are projected to rise due to growth and approved rate increases, and the Employee Benefits Fund is projected to increase to support proposed staffing.

Expenditures across multiple departments are projected to increase primarily due to proposed positions, the compensation study, and merit adjustments. The City Manager, Finance, City Clerk, and HR budgets reflect increases tied to staffing and IT-related costs, while the Planning Department budget is reduced due to eliminating the use of a third-party inspector. The Water and Sewer Fund includes higher costs for wastewater expansion debt payments, and the Employee Benefits Fund increases slightly to reflect additional positions.

The Public Hearing is scheduled for June 4, 2026, and the adoption is scheduled for June 18, 2026.

Council held a discussion with Director Hamby, Director McCrary, and City Manager Parrish.

b. Per Diem Discussion

Mayor McClellan led a discussion regarding per diem eligibility requirements.

Council held a discussion with City Manager Parrish.

Mayor McClellan asked City Manager Parrish whether an additional item could be added to the agenda for Council discussion.

City Manager Parrish advised that an item may be added with a motion and vote.

There was a motion made to add an item to the agenda for discussion of TAD Allocation.

Motion:	Chris Mundy
Second:	Pete Lena
Ayes:	Chris Mundy, Joseph Mezzanotte, William McDaniel, Charles Vanderbilt, Pete Lena
Nays:	None
Result:	passed

Council Member Vanderbilt raised concerns about the proposed TAD Allocation and expressed reservations about proceeding with the TAD Advisory Committee.

Council held a discussion regarding the TAD Advisory Committee.

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 6:47 p.m.

Motion: Chris Mundy
Second: Joseph Mezzanotte
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: Charles Vanderbilt
Result: passed

Council Member Vanderbilt left the meeting at 6:47 p.m.

There was a motion made to exit the executive session at 7:26 p.m.

Motion: Chris Mundy
Second: William McDaniel
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

Adjournment:

There was a motion made to adjourn the meeting at 7:26 p.m.

Motion: Chris Mundy
Second: William McDaniel
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: adjourn

Oliver McClellan
Mayor

Date

Shelia Cooper
City Clerk



**City of Flowery Branch
City Council Meeting
Thursday, May 7, 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 Chris Mundy, Joseph Mezzanotte, William McDaniel, and Pete Lena.

Also present were City Manager Tonya Parrish, City Clerk Shelia Cooper, Finance Director Matthew Hamby, Human Resources Director Krystle Hightower, Public Works Director Bill Whidden, Public Utilities Director Peter Woerner, Planning & Community Development Director Chris McCrary, Budget & Purchasing Manager Nancy Rodriguez, and City Attorney Ted Baggett.

Absent: Council Member Charles Vanderbilt

Pledge of Allegiance:

Mayor McClellan led the Pledge of Allegiance.

Adoption of Agenda:

Mayor McClellan announced that the developer had withdrawn the applications in regard to Ordinances 780, 781, 782. He further advised the developer had withdrawn the application in regard to Ordinance 783. As a result, there would be no public hearing for Ordinances 780, 781, 782, and 783.

There was a motion made to adopt the agenda as presented, removing Ordinances 780, 781, 782, 783 from the Public Hearing.

Motion:	Chris Mundy
Second:	William McDaniel
Ayes:	Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays:	None
Result:	passed

City Attorney Baggett advised that the motion should be amended to remove Ordinances 780, 781, 782, 783 from the voting session.

There was a motion made to amend the adoption of the agenda by removing Ordinance 780, 781, 782, and 783 from the Public Hearing Section and by removing Ordinance 780, 781, 782 and 783, from the New Business - Voting Session.

Motion: Chris Mundy
Second: William McDaniel
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

Awards & Recognitions:

Mayor McClellan introduced Rev. Charles Dickey of the Flowery Branch VFW and invited him to introduce the organization's members. He then thanked the members of the Flowery Branch VFW for their service.

Mayor McClellan also presented former Mayor Edward Asbridge with the National Day of Prayer Proclamation.



Mayor McClellan presented City Clerk Shelia Cooper with the proclamation recognizing the 57th Municipal Clerk's Week.



Public Hearing:

- a. Public Hearing and Second Read to Consider Proposed Amendments to the Planned Unit Development (PUD) Conditions, for Purposes of Clarification, Applicable to the Commercial Use Section of Sterling on the Lake, Pursuant to Ordinance 239-N / 240-N.

Director McCrary presented a proposed amendment to the Sterling on the Lake Planned Unit Development (PUD) Ordinance with the intent of clarifying the permitted uses of the commercial outparcels that are a part of the Sterling on the Lake Master Plan. Staff have attended past meetings with developers interested in the development of the subject parcels for proposals that included convenience stores. Per the approved ordinance, the parcels are limited to uses consistent with the Neighborhood Shopping (NS) zoning district. The current Neighborhood Shopping (NS) zoning code prohibits convenience stores, with or without fuel pump stations; however, such uses were not prohibited at the time the previously amended PUD ordinance was adopted (2008). This amendment clarifies that convenience stores, with or without fuel pumps, are not permitted on the subject properties. Staff recommend approving the amendment to Ordinance 239-N and 240-N.

City Clerk Cooper read the caption for Ordinance 239-N and 240-N.

There being none for or against, Mayor McClellan closed the public hearing at 6:14 p.m.

- b. Public Hearing and First Read of Ordinance 780 for the Annexation and Rezoning at 0 Sasser Road; Tax Parcel Identification Number 15044 000040 (95.842 acres) Rezoning from Hall County Planned Residential Development (PRD) to City of Flowery Branch Single Family Townhome (SF-TH). - This item was removed from the agenda.
- c. Public Hearing and First Read of Ordinance 781 for the Consideration of a Variance Associated with 0 Sasser Road for the Reduction of Minimum Lot Area for Attached Townhomes, Article 6, Table 6.2 from 3,500 square feet to 2,600 square feet. - This item was removed from the agenda.
- d. Public Hearing and First Reading of Ordinance 782 to Consider a Variance for Property Located at 0 Sasser Road from the Requirements of Zoning Ordinance §10.21(c), Which Mandates That Streets Exceeding 360 feet in Length Incorporate a Minimum of Twenty-Five (25) feet of Lateral Deviation from a Straight Alignment. Variance Request is to Eliminate the Required 25-foot Lateral Deviation. - This item was removed from the agenda.
- e. Public Hearing and First Read of Ordinance 783 for the Rezoning of Parcel 08099 000004 (0 McEver Road) From M-1 (Light Manufacturing and Industrial) and N-S (Neighborhood Shopping) to M-1 (Light Manufacturing and Industrial). - This item was removed from the agenda.

Unfinished Business - Work Session:

- a. Public Presentation by Joe Rothwell with Georgia Mountains Regional Commission of the Draft Comprehensive Plan Before Draft Submittal to DCA.

Mr. Joe Rothwell, Georgia Mountains Regional Commission presented the draft Comprehensive Plan that will be submitted to the Department of Community Affairs. The plan is a long-range policy document that guides the city's future growth, development, and resource allocation. It serves as a strategic blueprint for the community's vision, long-term goals, and objectives in areas such as land use, transportation, housing, economic development, grant opportunities, and other priorities over a 20-year period, with updates every five to ten years. Comprehensive planning is required by the Georgia Planning Act of 1989 and is developed in coordination with the Department of Community Affairs, which certifies that the plan meets required standards. The plan also affects eligibility for state and federal funding, including Quality Local Government status, supports land use policy, and strengthens grant applications.

The update process included informational outreach and opportunities for public input, including community open house forums. According to available population estimates by the U.S. Census Bureau, Flowery Branch has seen its population explode more than four hundred percent from 2,071 in 2000 to 10,925 in 2024 and an estimated 13,660 residents at the time of this update in 2026. Growth is expected to continue as downtown redevelopment, new housing construction, and annexations move forward. This trend is reflected in single-family building permits, which increased from 174 in 2016 to 477 in 2020 and 465 in 2025.

The pace set in the past is expected to continue in the coming decades. Building permits issued for new single-family house construction have increased (almost year-over-year) from 174 issued in 2016 to 477 in 2020 and 465 in 2025. Annexation requests have also risen,

particularly along the Hog Mountain corridor and near Thurmon Tanner Parkway, Falcon Parkway, and McEver Road. With additional residential and commercial annexations under consideration, the city is likely to see continued growth. Survey results show that residents support a planned and balanced approach to managing that growth.

The vision statement paints a vivid picture of the future a community is striving toward, capturing the spirit, aspirations, and character its residents hope to see realized. It functions as a guiding compass, unifying leaders, residents, and stakeholders around shared goals and helps guide decision-making throughout the planning process. Several vision statements, and accompanying taglines, were developed by the stakeholder committee and presented to the citizens of Flowery Branch via a public survey. The new vision statement and tag line are the result of that collaboration with the public.

- b. Consider Authorizing the Appropriation of Funds from the Remaining GEFA Drinking Water Loan and Water and Sewer Fund Reserves, and Executing the Construction Contract with Sol Construction, LLC for the Groundwater Wells #4 & #5 Reactivation Project.

Budget Manager Rodriguez presented a request to appropriate funds from the remaining GEFA Drinking Water Loan and Water and Sewer Fund reserves and to execute a construction contract with Sol Construction, LLC for the Groundwater Wells #4 and #5 Reactivation Project. The City owns two inactive groundwater wells at the corner of Atlanta Highway and Vireo Drive. The property was acquired from the State of Georgia so the wells could be reactivated to supplement the City's drinking water supply. The City retained ESG Engineering, Inc. to design and permit the work needed to reactivate the wells and connect them to the water system. Bids were publicly advertised and opened on January 29, 2026, at which time Sol Construction, LLC was identified as the lowest responsive and responsible bidder. On February 19, 2026, City Council formally recognized Sol Construction, LLC as the lowest responsive, responsible bidder. On April 16, 2026, the contract was presented to Council and staff recommended postponing the award because funding had not yet been identified. The original Project Budget \$2,428,768.00. However, \$667,340.73 has been spent on the purchase of well property and site preparation. The available budget is now \$1,761,427.27, with additional funds needed of \$1,562,702.73. Staff has identified available funds and is requesting authorization to utilize \$950,000.00 from the remaining funds in the GEFA Drinking Water Loan and \$755,128.00 from Water and Sewer Fund reserves to fully fund the project. The construction contract documents have been finalized and compiled into the Conformed Set, which is now presented for Council's consideration.

Council held a discussion with Finance Director Hamby.

New Business - Work Session:

- a. Consider Resolution 26-008 to Join as Amicus Curiae in the Continuing Chang V. City of Milton Litigation Now Before the Georgia Court of Appeals

Clerk Cooper read the caption for Resolution 26-008.

Attorney Baggett presented Resolution 26-008 which considers joining as Amicus Curiae in the ongoing Chang v. City of Milton litigation currently before the Georgia Court of Appeals. The City of Milton has requested continued support from cities, including

Flowery Branch, that previously joined as amicus parties before the Georgia Supreme Court. In this next phase of appellate review, the amicus brief is expected to ask the Court to eliminate the current exception to sovereign immunity that applies only to cities, but not to the State or counties. A ruling in favor of Milton's position could help shield municipalities from potentially significant financial liability and would place cities on equal legal footing with counties and the State when performing the same functions related to road construction and maintenance.

- b. Consider Resolution 26-009, Third Quarter Amendment to the Budget for FY2026 as Previously Adopted on June 19, 2025.

Clerk Cooper read the caption for Resolution 26-009.

Budget Manager Rodriguez presented the third-quarter amendment to the FY2026 budget, originally adopted on June 19, 2025. The General Fund includes one adjustment transferring contingency funds to the Police Department for additional Flock cameras contracted technical services in August 2025. The Water/Wastewater Capital Projects Fund includes two adjustments; transferring funds from Oakwood Industrial Lift Station Project to the Wastewater Pump Station Modification Project and for establishing Waterline Repair Project. The SPLOST VII Capital Projects Fund also includes two adjustments; transferring General Fund appropriations from the Parks Property and Improvements Project to the Public Safety Land Purchase Project and appropriate SPLOST Funds to the Park Property Improvements Project as established by the SPLOST VIII referendum.

Council held a discussion with Finance Director Hamby.

Department Reports:

City Clerk Report:

City Clerk Cooper reported that she earned her Certified Municipal Clerk designation from the International Institute of Municipal Clerks, a credential requiring one hundred and sixty hours of education and local government experience. She also noted that she is one of fifty-four clerks in Georgia to achieve this certification among one hundred fifty-nine counties and five hundred thirty-six municipalities.

Department of Fun Report:

City Clerk Cooper noted upcoming events in the city.

Finance Department Report:

Director Hamby encouraged residents to view the city's financial reports and budget through the transparency portal on the city's website. He also noted that the City of Flowery Branch app is available for download from app stores and Google Play.

Human Resources Report:

Director Hightower provided a Human Resources update and noted that May is Mental Health Awareness Month. She reported that the Ramsey SmartDollar program launched on August 4, 2025, with 42 percent participation and positive financial outcomes, including debt reduction and increased savings. The department also participated in its first career fair at Lanier Tech and held a defensive driving class for 27 employees.

Director Hightower further reported that she earned the SHRM-CP designation on February 10, 2026. The four-hour exam consists of 134 questions covering organizational, people,

leadership, business, interpersonal, and workplace knowledge, as well as situational judgment. She also attended the Georgia SHRM Legal One Day Conference in May 2026. In addition, the department is implementing PowerDMS for policy management, training, compliance, and quizzes. Upcoming goals include standardized onboarding, providing annual employee training, and expanding on-site employee resources (ESS).

a. Council Report

Council Member Mezzanotte thanked Mr. Jack Probst for his time on the Comprehensive Committee.

Adjournment Work Session:

Mayor McClellan adjourned the work session at 7:24 p.m.

Voting Session Agenda

Call Voting Session to Order:

Mayor McClellan called the voting session to order at 7:24 p.m.

Public Comments:

Patrick Wright, 6490 Bell Drive, Flowery Branch, Georgia 30542

Mr. Wright, owner and manager of Van Pugh Boat Storage, requested a revision to the barrier plan on Gaines Ferry near the traffic circle at McEver and Gaines Ferry Road.

Reverend Charles Dickey, American Legion Post 328, Flowery Branch, Georgia 30542

Reverend Dickey spoke about the organization's mission of serving veterans, their families, youth, and the community. He noted that the post includes veterans from all branches of the service and ethnicities and that its members hope to become more active in the Flowery Branch community. He also said they are seeking guidance, assistance and support.

Frank Cowan, 6490 Bell Drive, Flowery Branch, Georgia 30542

Mr. Cowan requested modifications to the median at the McEver roundabout.

Mike Alan, Quality Marine, 6490 Bell Drive, Flowery Branch, Georgia 30542

Mr. Alan requested revisions to the roundabout plans to avoid eliminating the left turn onto Bell Drive.

Consent Agenda:

a. Consider April 16, 2026 City Council Meeting Minutes

There was a motion made to approve the consent agenda.

Motion: Chris Mundy

Second: Joseph Mezzanotte

Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena

Nays: None

Result: passed

Unfinished Business - Voting Session:

- a. Second Read to Consider Proposed Amendments to the Planned Unit Development (PUD) Conditions, for Purposes of Clarification, Applicable to the Commercial Use Section of Sterling on the Lake, Pursuant to Ordinance 239-N / 240-N.

City Clerk Cooper read the caption for Ordinance 239-N and 240-N.

There was a motion made to approve Ordinance 239-N and 240-N.

Motion: Joseph Mezzanotte
Second: William McDaniel
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

- b. Consider Authorizing the Appropriation of Funds from the Remaining GEFA Drinking Water Loan and Water and Sewer Fund Reserves, and Executing the Construction Contract with Sol Construction, LLC for the Groundwater Wells #4 & #5 Reactivation Project.

There was a motion made to authorize appropriation of funds from the remaining GEFA drinking water loan and water and sewer fund reserves and executing the Construction Contract with Sol Construction LLC for the Groundwater Wells #4 and #5 Reactivation Project.

Motion: Chris Mundy
Second: Joseph Mezzanotte
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

New Business - Voting Session:

- a. Consider the First Reading of Ordinance 780 for the Annexation and Rezoning at 0 Sasser Road; tax parcel identification number 15044 000040 (95.842 acres) Rezoning from Hall County Planned Residential Development (PRD) to City of Flowery Branch Single Family Townhome (SF-TH). - This item was removed from the agenda.
- b. Consider the First Reading of Ordinance 781 for a Variance Associated with 0 Sasser Road for the Reduction of Minimum Lot Area for Attached Townhomes, Article 6, Table 6.2 from 3,500 square feet to 2,600 square feet. - This item was removed from the agenda.
- c. Consider the First Reading of Ordinance 782 for a Variance for Property Located at 0 Sasser Road from the Requirements of Zoning Ordinance §10.21(c), Which Mandates that Streets Exceeding 360 feet in Length Incorporate a Minimum of Twenty-Five (25) feet of Lateral Deviation from a Straight Alignment. Variance Request is to Eliminate the Required 25-foot Lateral Deviation. - This item was removed from the agenda.
- d. Consider the First Reading of Ordinance 783 for the Rezoning of Parcel 08099 000004 (0 McEver Road) From M-1 (Light Manufacturing and Industrial) and N-S (Neighborhood Shopping) to M-1 (Light Manufacturing and Industrial). - This item was removed from the agenda.

- e. Consider Resolution 26-008 to Join as Amicus Curiae in the Continuing Chang V. City of Milton Litigation Now Before the Georgia Court of Appeals
City Clerk Cooper read the caption for Resolution 26-008.

There was a motion made to approve Resolution 26-008 to join as Amicus Curiae in the continuing Chang V. City of Milton Litigation.

Motion: Joseph Mezzanotte
Second: Pete Lena
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

- f. Consider Resolution 26-009, Third Quarter Amendment to the Budget for FY2026 as Previously Adopted on June 19, 2025.
City Clerk Cooper read the caption for Resolution 26-009.

There was a motion made to approve Resolution 26-009.

Motion: William McDaniel
Second: Chris Mundy
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

Executive Session:

There was a motion made to enter executive session for matters related to the acquisition/disposition or real estate, for matters related to certain personnel issues, and for matters related to pending or potential litigation at 7:41 p.m.

Motion: Pete Lena
Second: Chris Mundy
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

There was a motion made to exit the executive session at 8:27 p.m.

Motion: Chris Mundy
Second: William McDaniel
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: passed

Adjournment:

There was a motion made to adjourn the meeting at 8:27 p.m.

Motion: Chris Mundy
Second: William McDaniel
Ayes: Chris Mundy, Joseph Mezzanotte, William McDaniel, Pete Lena
Nays: None
Result: adjourn

Oliver McClellan
Mayor

Date

Shelia Cooper
City Clerk



Memorandum

To: City of Flowery Branch, City Manager, and City Council
From: Chris McCrary, Planning and Community Development Director
Date: May 21st, 2026
Subject: Rezoning

Applicant: City of Flowery Branch
5410 Pine Street
Flowery Branch, GA 30542
770-967-6371

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 Acres
Total Area: 19.398 Acres

Proposed Zoning:

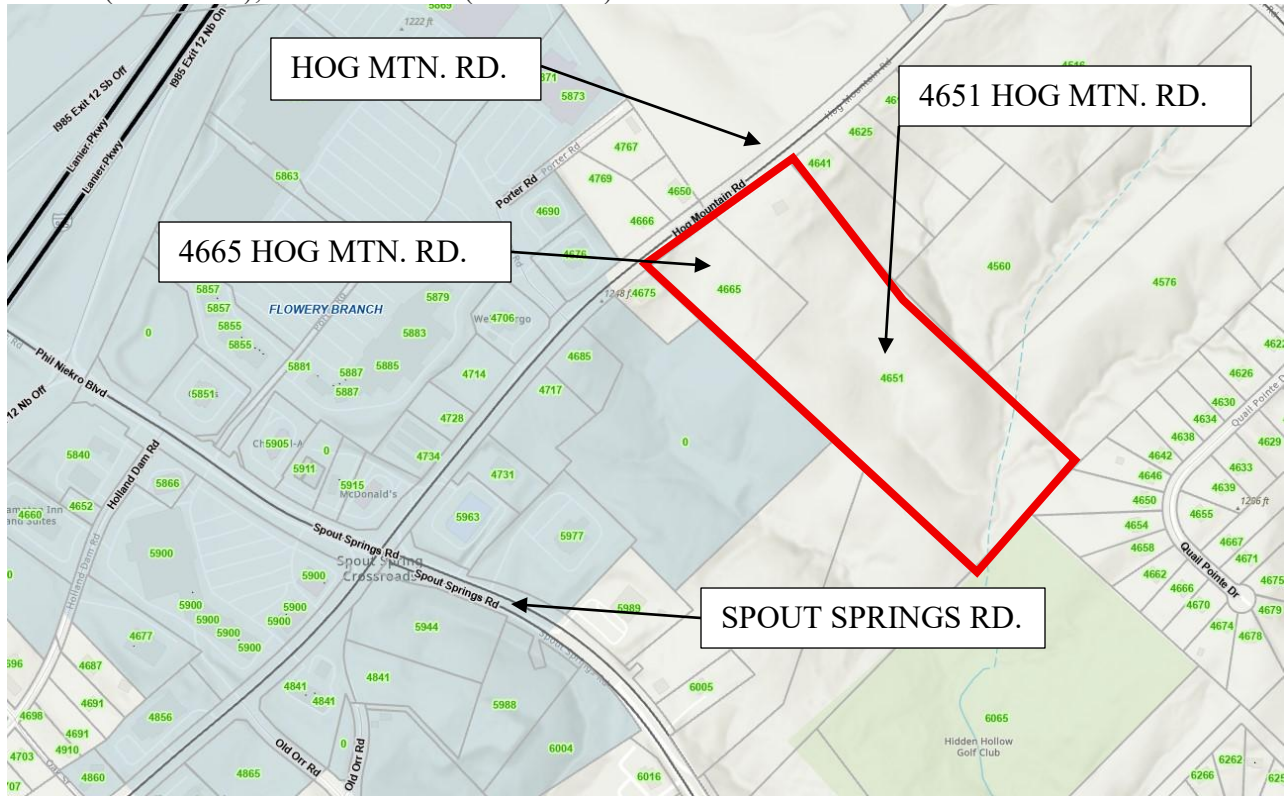
The project proposes to rezone the property from AR-1 (Agricultural-Residential) and R-1 (Residential) in unincorporated Hall County to Single-Family Townhome (SF-TH) in the City of Flowery Branch.

The project 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.



Location:

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





Site Plan:

The project 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 project 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, complete architectural drawings will be submitted 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.

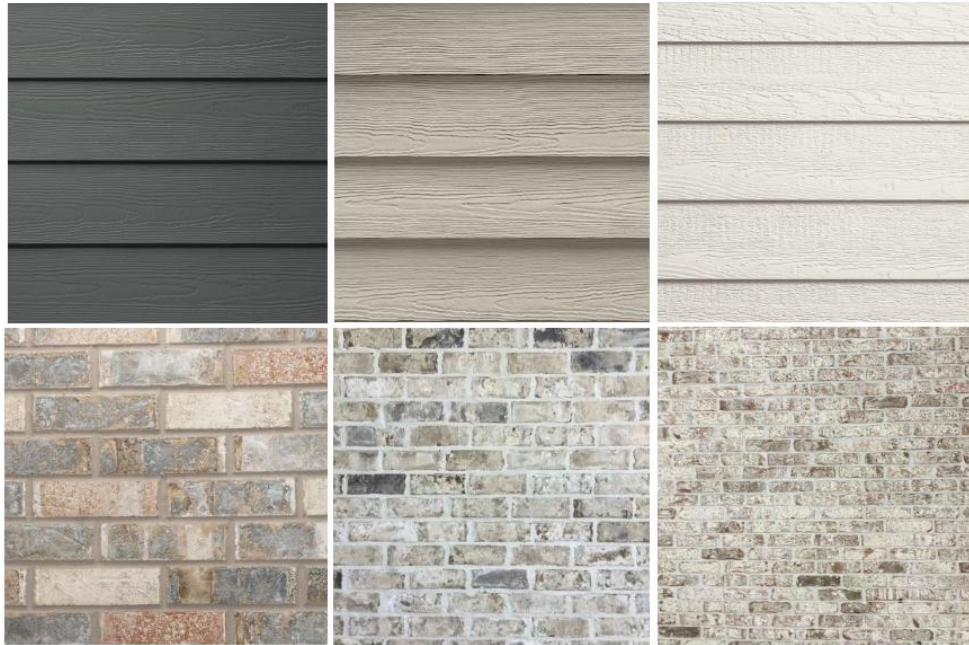


ARCHITECTURAL FEATURES:

The architecture 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 lists a total of 18.5% open space with location details shown on the site plan:

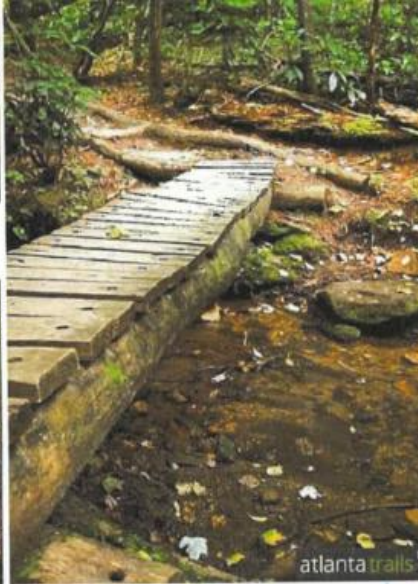


Site Data Table		Required	Provided
Civic Space		10% Min	10.9%
Amenity Space		5% Min	7.6%

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:



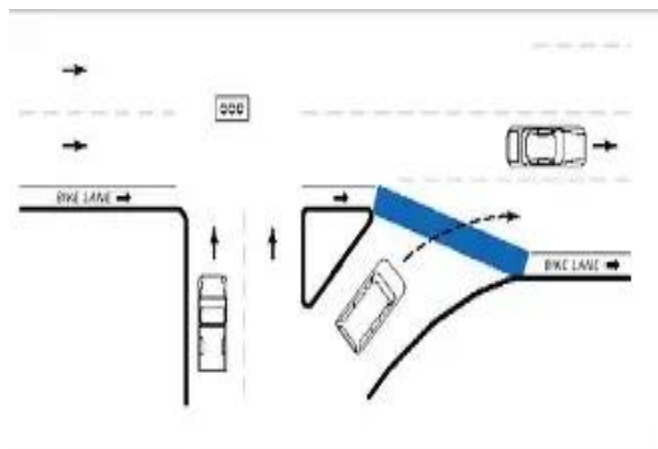
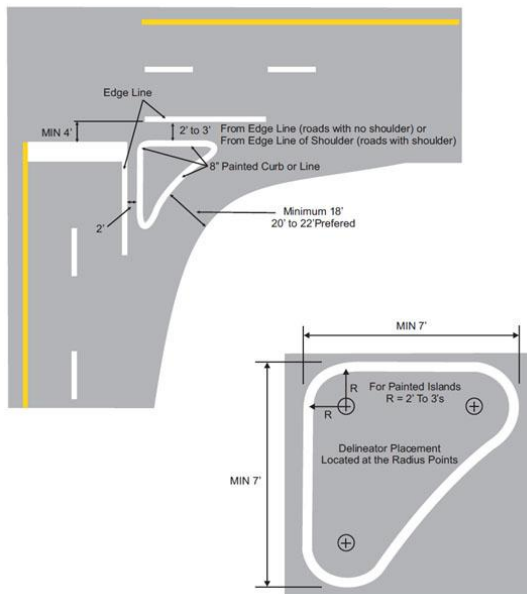


Traffic Impacts, Vehicular Flow, and Entrances/Exits

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 a right-out only dedicated lane with a 6" raised curb median to prohibit left turning exit. 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.



b. At exit of channelized right-turn roadway



- The sidewalk along Hog Mountain Road is to be extended south-west to terminate at the pedestrian crossing adjacent to Porter Road. Developer to extend the 5' sidewalk to the pedestrian crossing. Handicap ramp may need to be re-built.



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 <u>Spout Springs Road @ Stonebridge Village West Driveway</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	B (18.2) A (10.0) B (12.3) D (51.6) E (56.8)	C (29.6) C (21.2) C (23.5) E (79.4) D (45.7)	C (27.4) C (20.9) C (22.7) E (61.4) D (42.7)	B (18.2) A (10.1) B (12.4) D (51.6) E (56.8)	C (29.9) C (21.5) C (23.6) F (81.7) D (45.8)	C (27.6) C (21.2) C (22.8) E (62.3) D (42.7)
2 <u>Spout Springs Road @ Hog Mountain Road</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	D (35.4) C (29.2) C (22.8) D (50.2) D (47.3)	D (36.1) C (30.3) B (18.9) D (51.3) D (46.9)	D (37.6) C (32.1) C (20.8) D (51.3) D (48.9)	D (36.1) C (29.3) C (23.2) D (50.2) D (49.2)	D (36.3) C (30.1) B (19.3) D (51.3) D (47.1)	D (37.3) C (33.0) C (22.6) D (47.5) D (47.4)
3 <u>Hog Mountain Road @ Stonebridge Village East Driveway</u> -Eastbound Approach -Northbound Approach -Southbound Approach	A (7.5) D (46.1) A (4.2) A (4.0)	B (14.5) D (43.2) A (6.8) A (6.7)	B (12.9) D (42.3) A (5.2) A (5.1)	A (7.5) D (46.1) A (4.3) A (4.2)	B (14.7) D (44.2) A (7.0) A (6.9)	B (12.9) D (42.1) A (5.4) A (5.2)
4 <u>Hog Mountain Road @ Findley Drive / Cash Road</u> -Eastbound Approach -Westbound Approach -Northbound Approach -Southbound Approach	B (11.3) A (7.9) B (10.0) B (13.2) A (9.5)	B (11.7) A (7.8) A (7.0) A (9.2) C (15.2)	A (8.8) A (6.6) A (5.6) A (8.5) A (9.8)	B (11.6) A (8.0) B (10.3) B (13.8) A (9.6)	B (12.2) A (8.0) A (7.1) A (9.4) C (15.9)	A (9.1) A (6.7) A (5.7) A (8.7) B (10.2)
5 <u>Hog Mountain Road @ Site Driveway</u> -Westbound Approach -Southbound Left	- - -	- - -	- - -	E (40.7) A (9.6)	D (33.0) A (9.2)	D (34.2) 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.

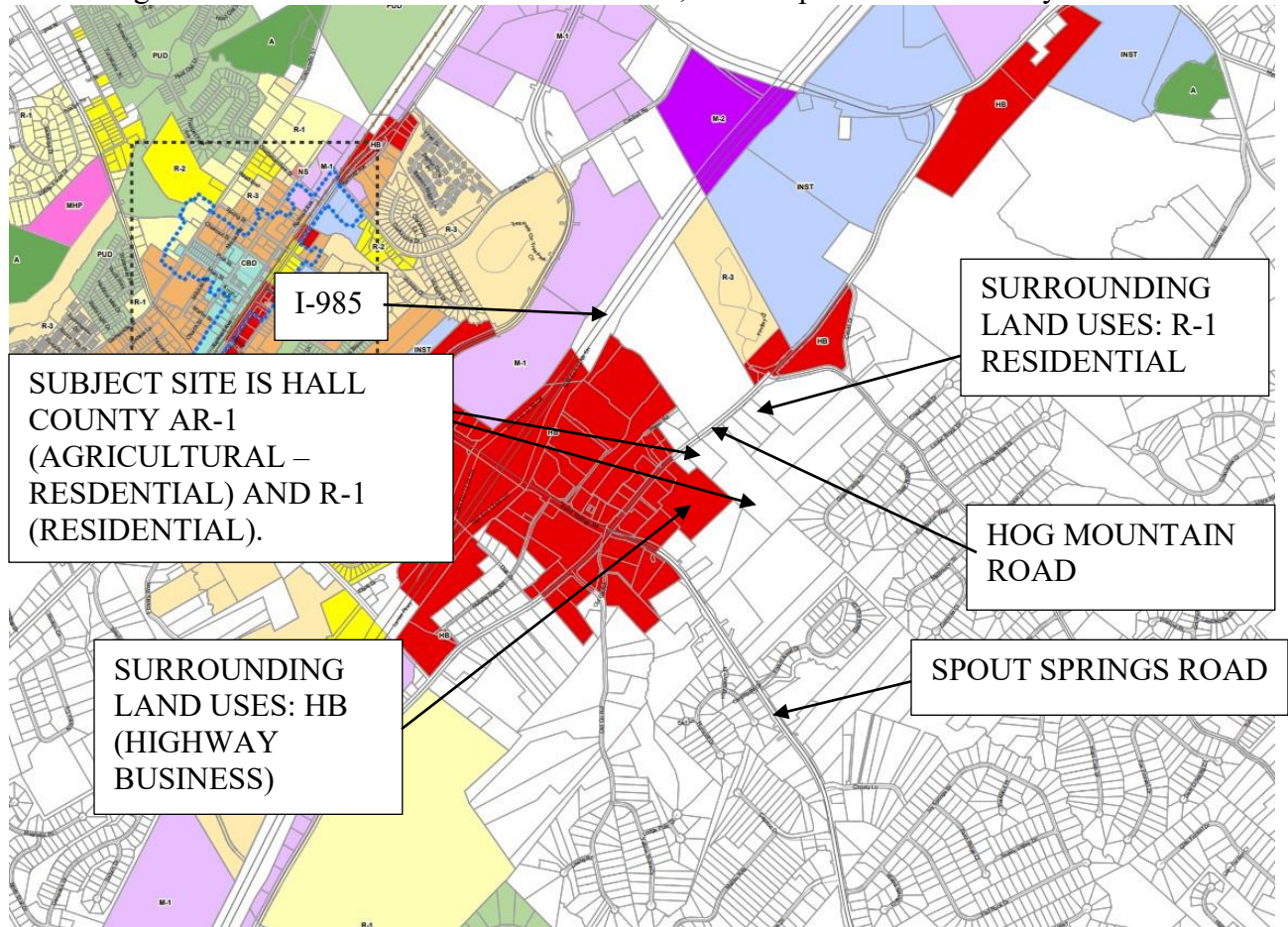
Because of the site's topographic constraints, one or more sanitary sewer lift stations will be required; the Engineer of Record must work closely with the Public Utility Department throughout the design process. All pump station plans must comply with Chapter 50 (Utilities), Article II (Standard Specifications), 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

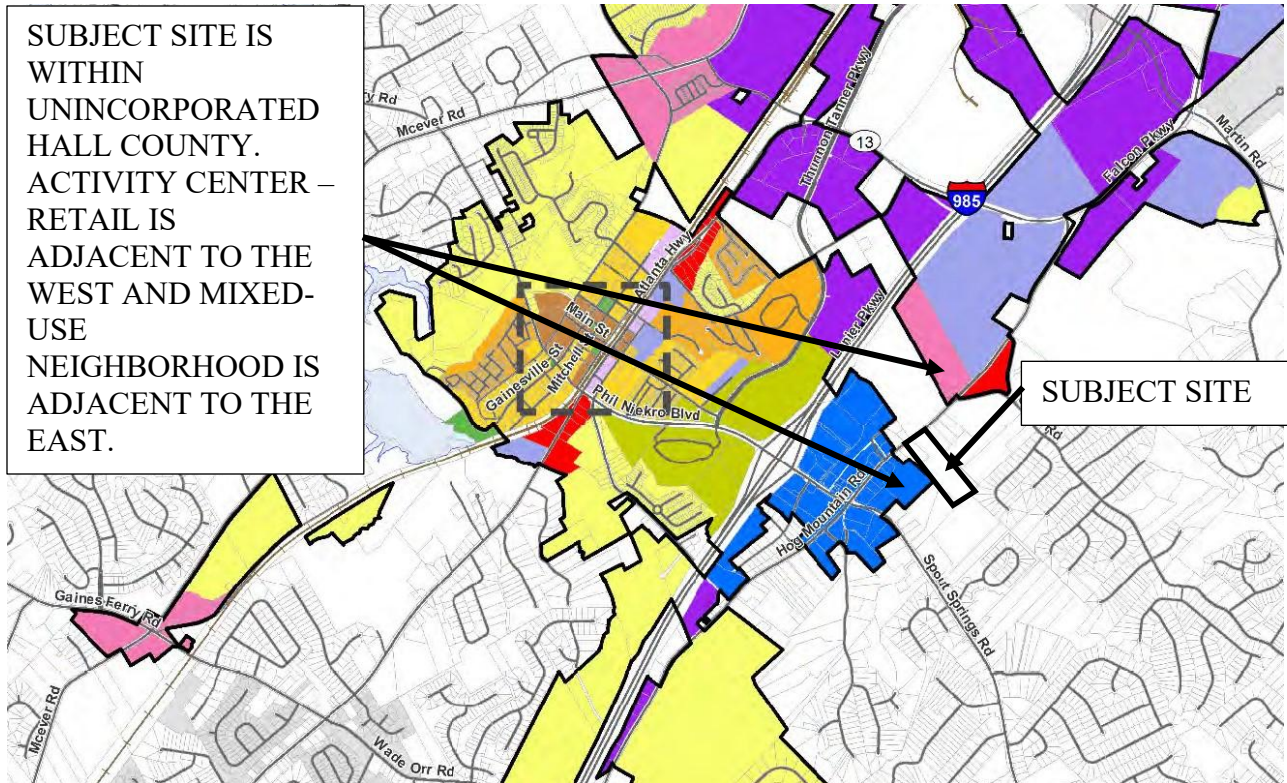
Zoning Districts

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





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.

Staff recommends **approval of the 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 six (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 (2) 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 (1) 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 rested 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. The sidewalk network shall be extended south along Hog Mountain Road beyond the limits of the subject parcels, terminating at the pedestrian crossing located at Porter Road.
- d. All costs associated with the required road improvements shall be borne by the developer.
- e. 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 a dedicated right-out only lane with a 6" raised concrete movement control median. Final design to be approved by the City Engineer.
 - 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.
- f. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.

7. Variances

- a. 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.
- b. 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.
- c. 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:



- i. The developer 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.
- ii. The developer 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.

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.

ORDINANCE NO. 784

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”, AND 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 first reading at the meeting on May 21, 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 _____ day of _____, 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

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 (2) 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 (1) 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 wreted 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. The sidewalk network shall be extended south along Hog Mountain Road beyond the limits of the subject parcels, terminating at the pedestrian crossing located at Porter Road.
- d. All costs associated with the required road improvements shall be borne by the developer.
- e. 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 a dedicated right out only lane with a 6" raised concrete movement control median. Final design to be approved by the City Engineer.
 - 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.
- f. Sidewalks shall be located on both sides of the internal streets and along the road frontage of Hog Mountain Road.

7. Variances

- a. 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.
- b. 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.
- c. 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:
 - i. 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.
 - ii. 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.

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.



REZONING APPLICATION

Date: 4/20/2026

Address of Request:

4651 & 4665 Hog Mountain Rd.

Tax Map # 15046 000008 & 15046 000008B Current Zoning: R-1 & Ar-1

Is this site located within the boundaries of the historic district? No

Currently a conforming use? N/A

Any conditions of zoning, CUP's, etc.? N/A

Applicant Information:

Name: City of Flowery Branch

Address: 5410 Pine St.

Flowery Branch, GA 30542

E-mail address: tonya@flowerybranchga.org

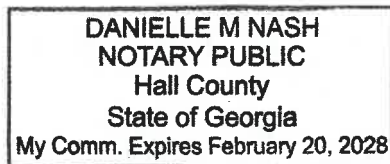
Phone number: 70-967-6371

Signature: *Tonya Parrish* Title (if applicable): City Manager

Print Name: TONYA D. PARRISH.

Notary Signature: *Danielle M. Nash*

Notary Seal:





Please complete and attach the Property Owner Affidavit to this application.

Property Information:

Tax Map Number: 15046 000008 & 15046 000008B

Current Zoning: Hall County R-1 & AR 1 Total Acres: ~20

Is this property located within the city limits of Flowery Branch? No

Proposed City of Flowery Branch Zoning: SF-TH

Current Use: Undeveloped

Please provide copies of the Rezoning Completeness Checklist and all supplementary required documents listed therein to this application. Completeness Checklists can be found on the website, www.flowerybranchga.org, under the "Forms" section.

Conflict of Interest Disclosure:

Identify all members of the City Council of the City of Flowery Branch and Employees of the City of Flowery Branch Community Development Department who

Have a property interest in the real property affected by this request

No

Have a financial interest (direct ownership interest) of the total assets or capital stock of a business entity where such ownership interest is more than 10% in any business entity which has a property interest in the real property affected by this request

No



Have a member of the family (spouse, mother, father, brother, sister, son or daughter) having a property financial interest as herein defined, in the real property affected by this request

No

Disclosure of Campaign Contributions:

List below the names of local government officials of the City of Flowery Branch to whom campaign contributions were made, within two (2) years immediately preceding the filing of this application, which campaign contributions total \$250.00 or more or to whom gifts were made having a total value of \$250.00 or more.

Elected Officials Name	Amount of Description of Gift
------------------------	-------------------------------

N/A	
-----	--

N/A	
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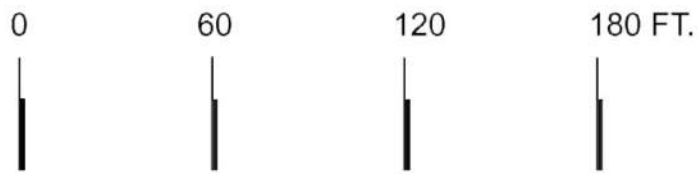
CITY STAFF ONLY

Application Received By: [Signature]

Date: 4/21/26 Total Fee: N/A



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



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:

***Highpoint Development
1776 Peachtree Street NW
Atlanta, GA 30309***

Prepared By:



A&R Engineering Inc.

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

January 13, 2026
A & R Project # 25-081

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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.

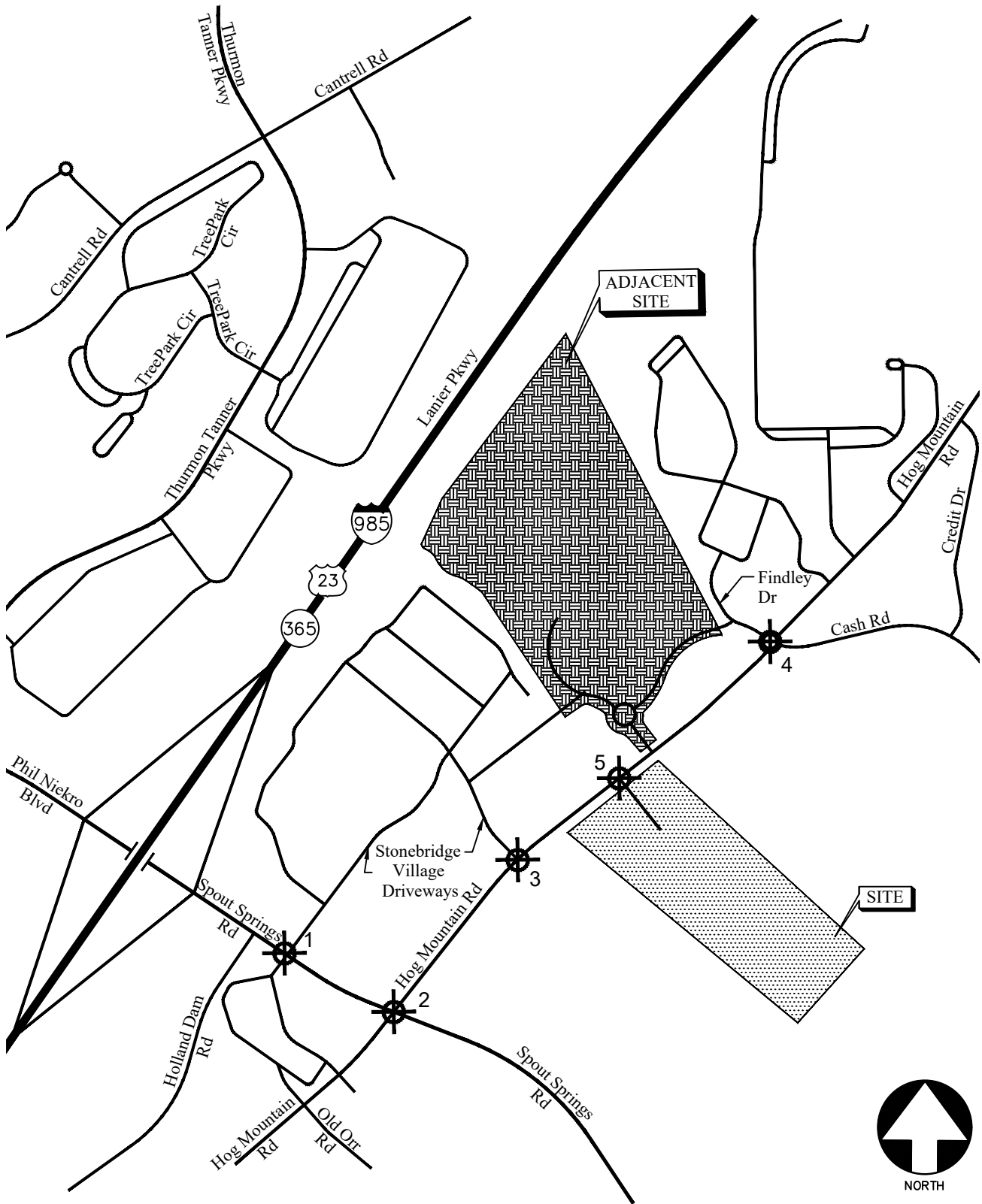


The AM, school dismissal, and PM peak hours have been analyzed in this study. In addition to the site access point, this study includes the evaluation of traffic operations at the intersections of:

- 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.

Study Intersection



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.

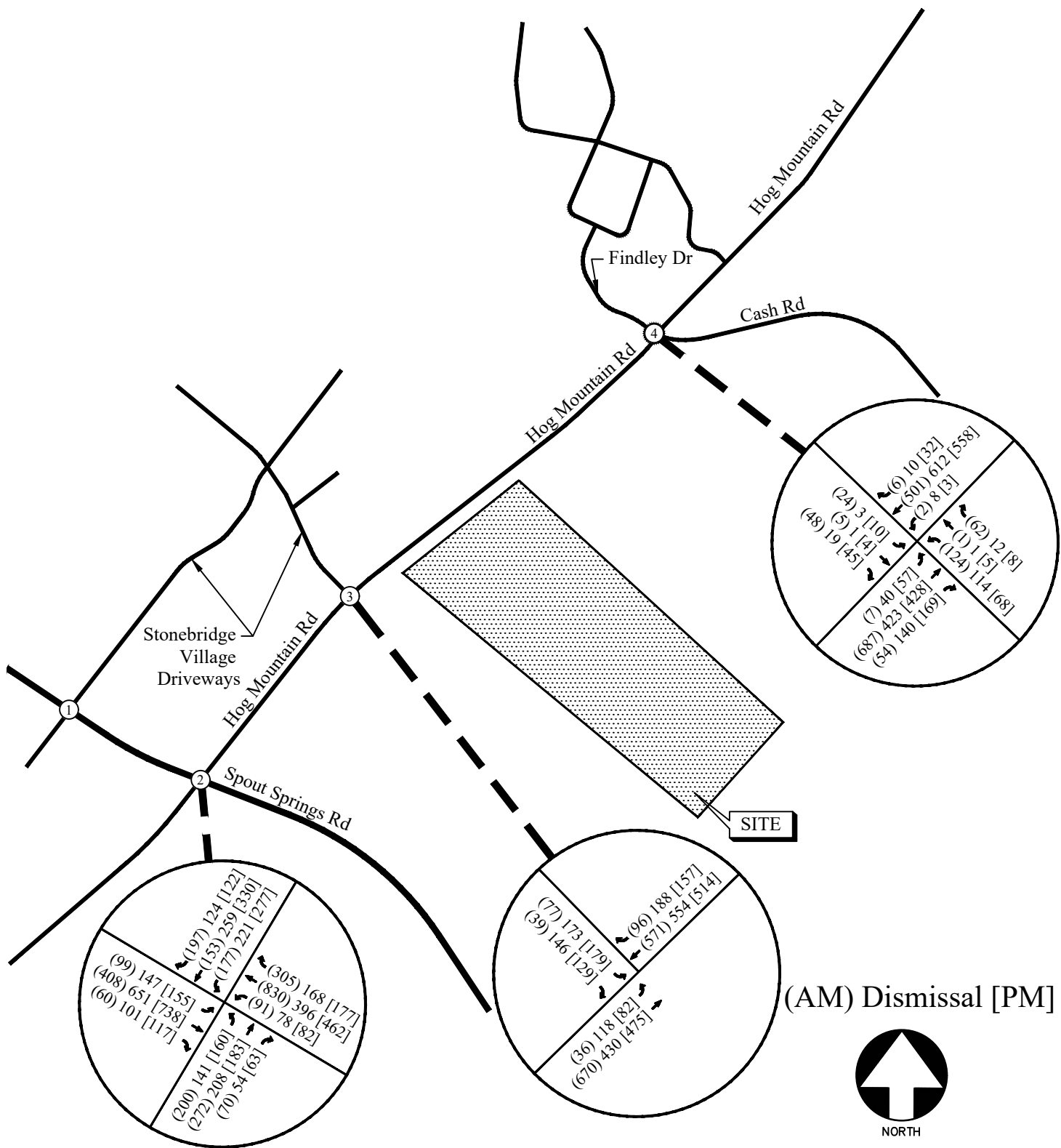
4.0 EXISTING 2026 TRAFFIC ANALYSIS

4.1 Existing Traffic Volumes

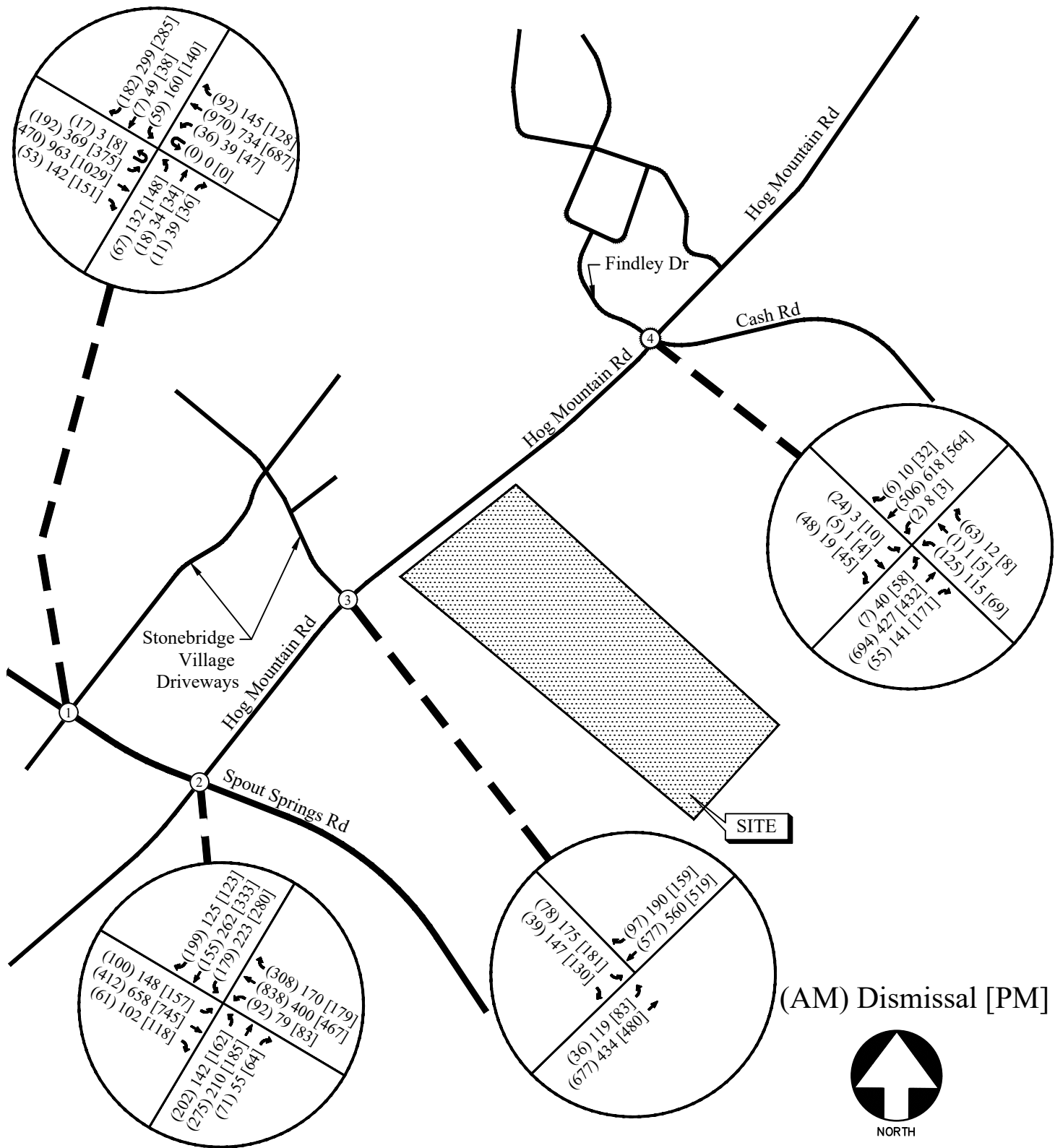
Existing traffic counts were obtained at the following study intersections:

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.



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

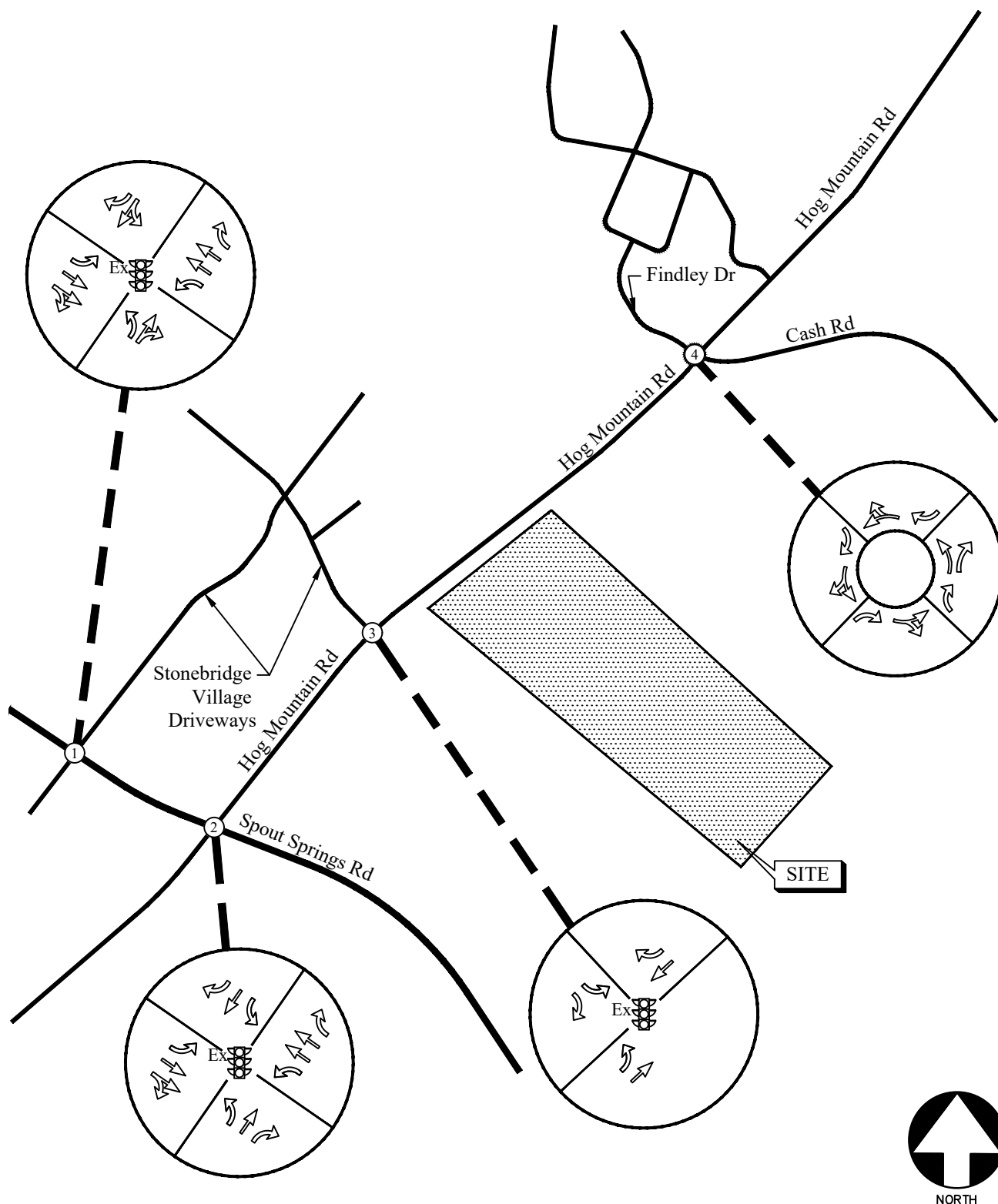


EXISTING WEEKDAY PEAK HOUR VOLUMES

FIGURE 3
A&R Engineering Inc.

LEGEND

- Existing Lane Geometry
- Ex Existing Traffic Signal
- Roundabout



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	<u>Spout Springs Road @ Stonebridge Village West Driveway</u>	Signalized	<u>B (17.9)</u>	<u>C (28.6)</u>	<u>C (26.8)</u>
	-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	<u>Spout Springs Road @ Hog Mountain Road</u>	Signalized	<u>C (34.3)</u>	<u>D (35.8)</u>	<u>D (37.0)</u>
	-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	<u>Hog Mountain Road @ Stonebridge Village East Driveway</u>	Signalized	<u>A (7.4)</u>	<u>B (14.5)</u>	<u>B (13.2)</u>
	-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	<u>Hog Mountain Road @ Findley Drive / Cash Road</u>	Roundabout	<u>B (10.4)</u>	<u>B (10.9)</u>	<u>A (8.4)</u>
	-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 conceptual in nature and is subject to change at owner's discretion.



Figure 5 – Site Plan

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.

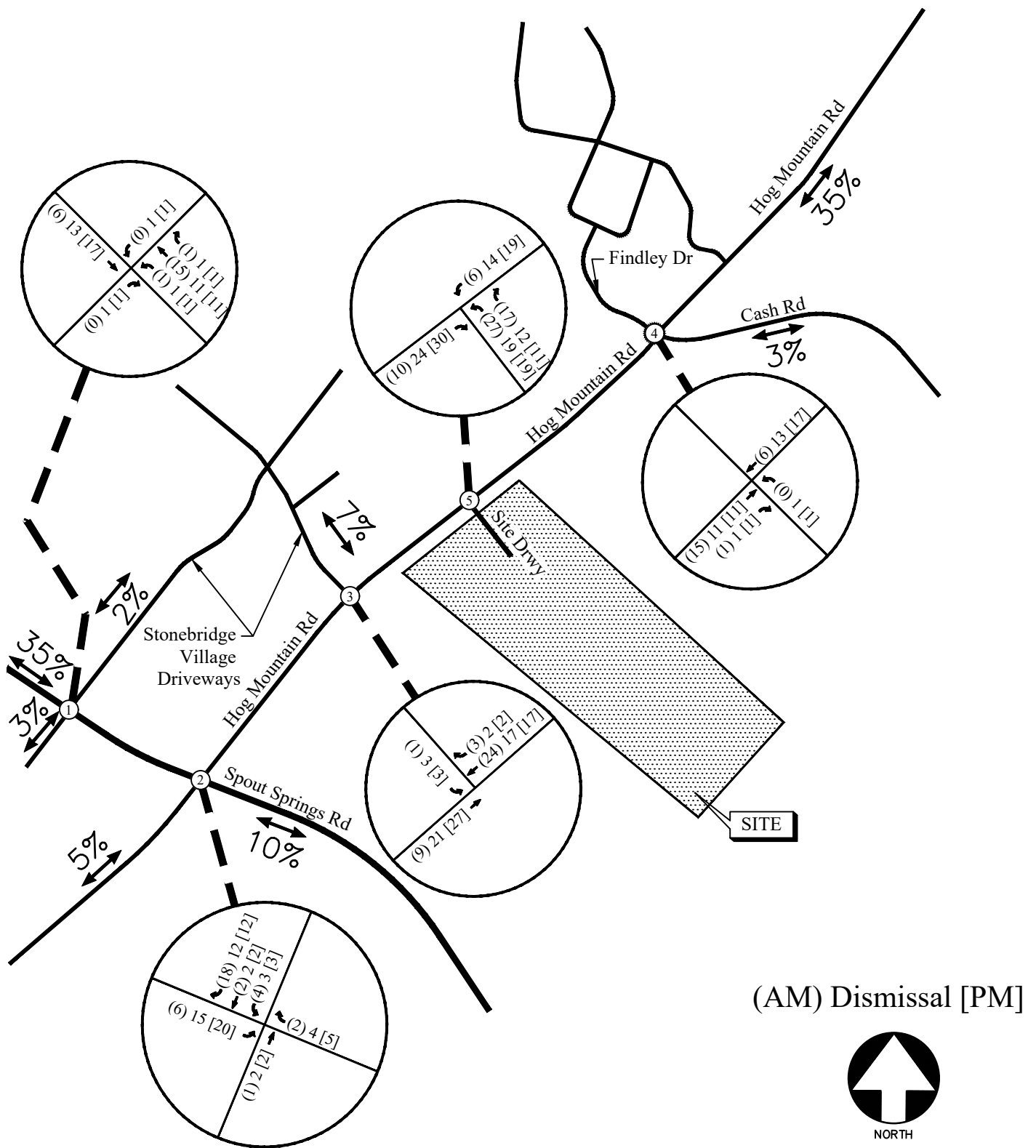
The calculated site-generated traffic volumes for this adjacent development are shown in Table 5, and its peak hour volumes passing through the study area are shown in Figure 7.

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

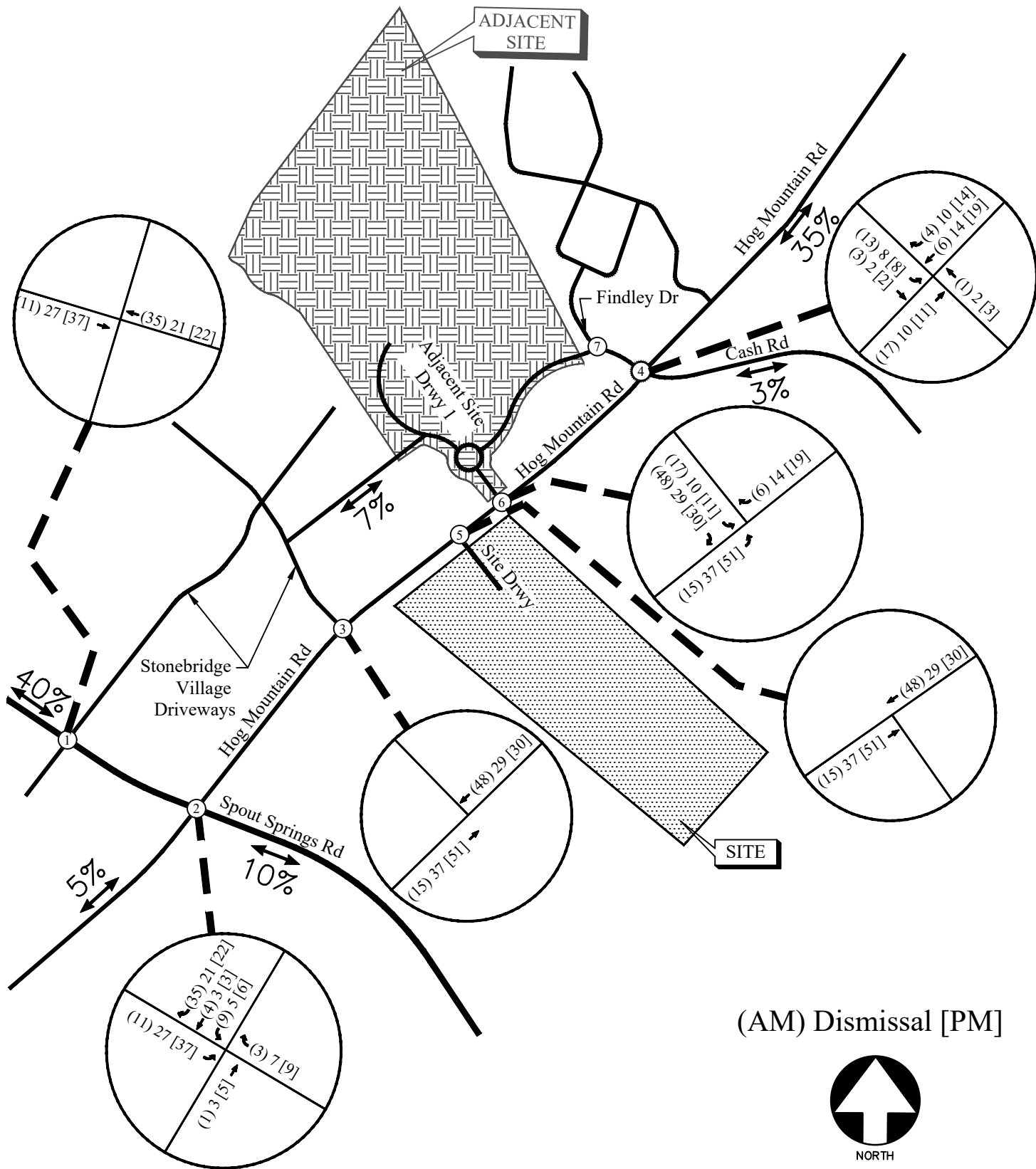
5.3.1 Shifted Findley Drive Traffic

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.



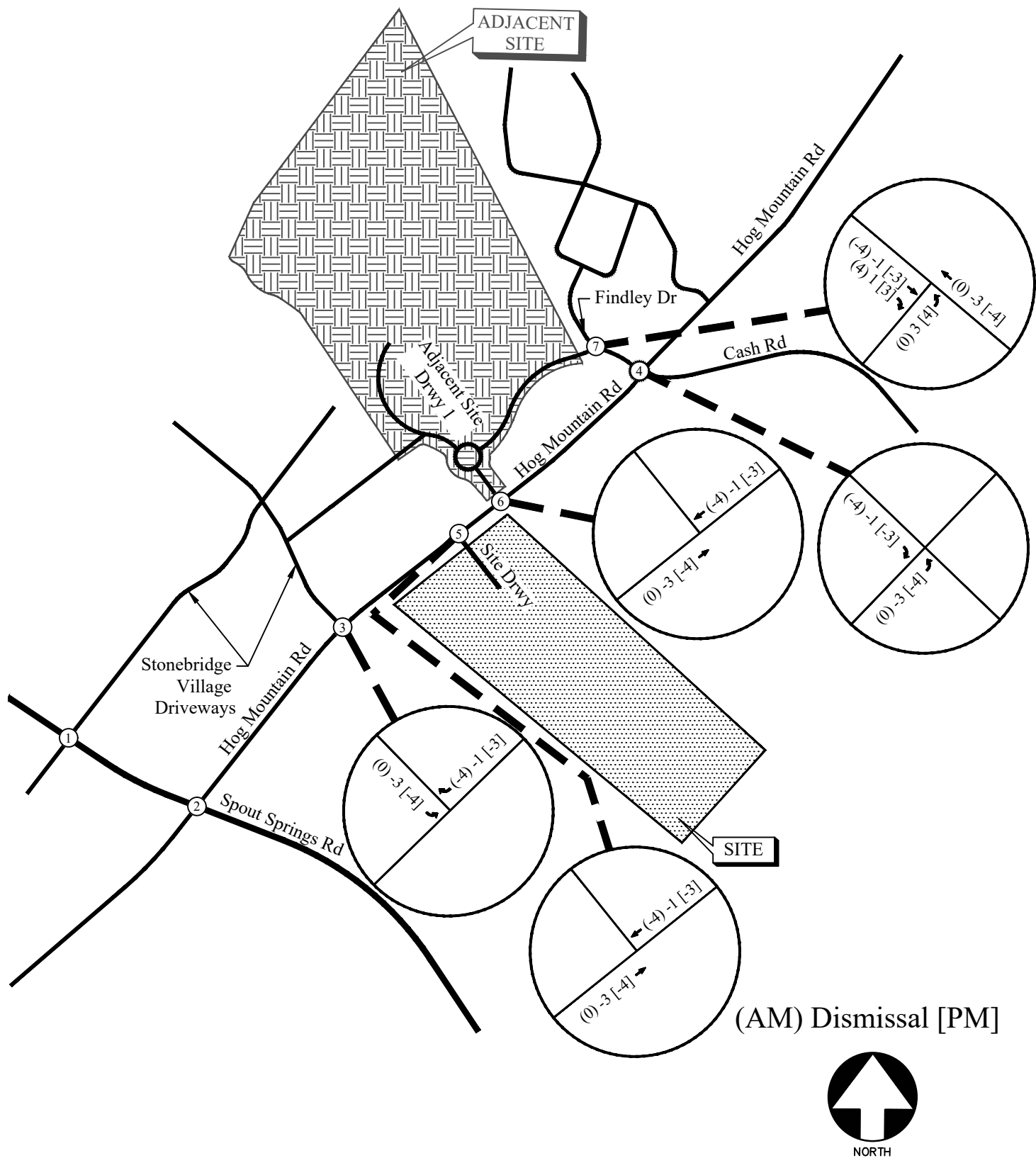
TRIP DISTRIBUTION AND SITE-GENERATED
PEAK HOUR VOLUMES (PROPOSED SITE)

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

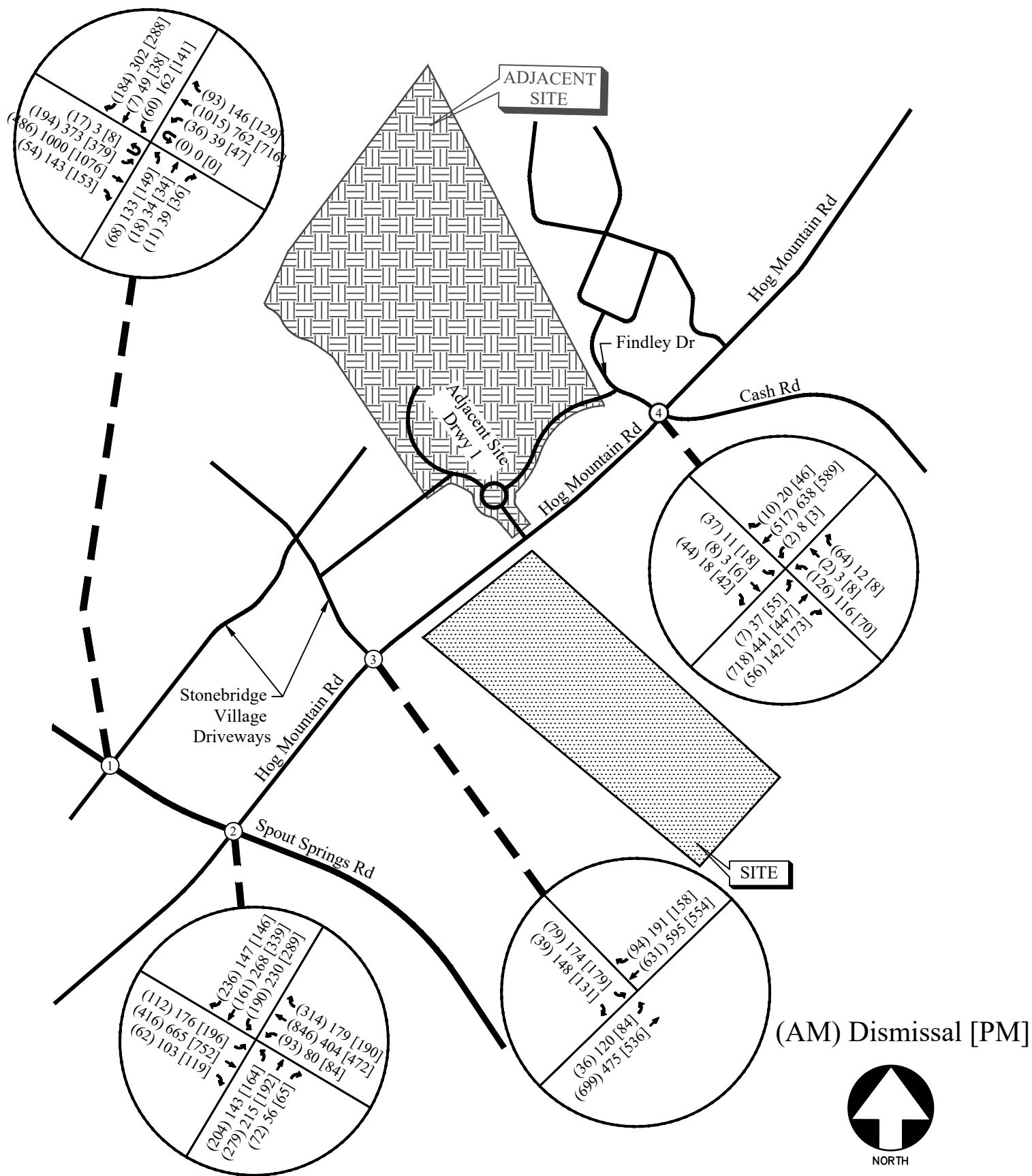
The “No-Build” (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The future “No-Build” volumes consist of the existing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

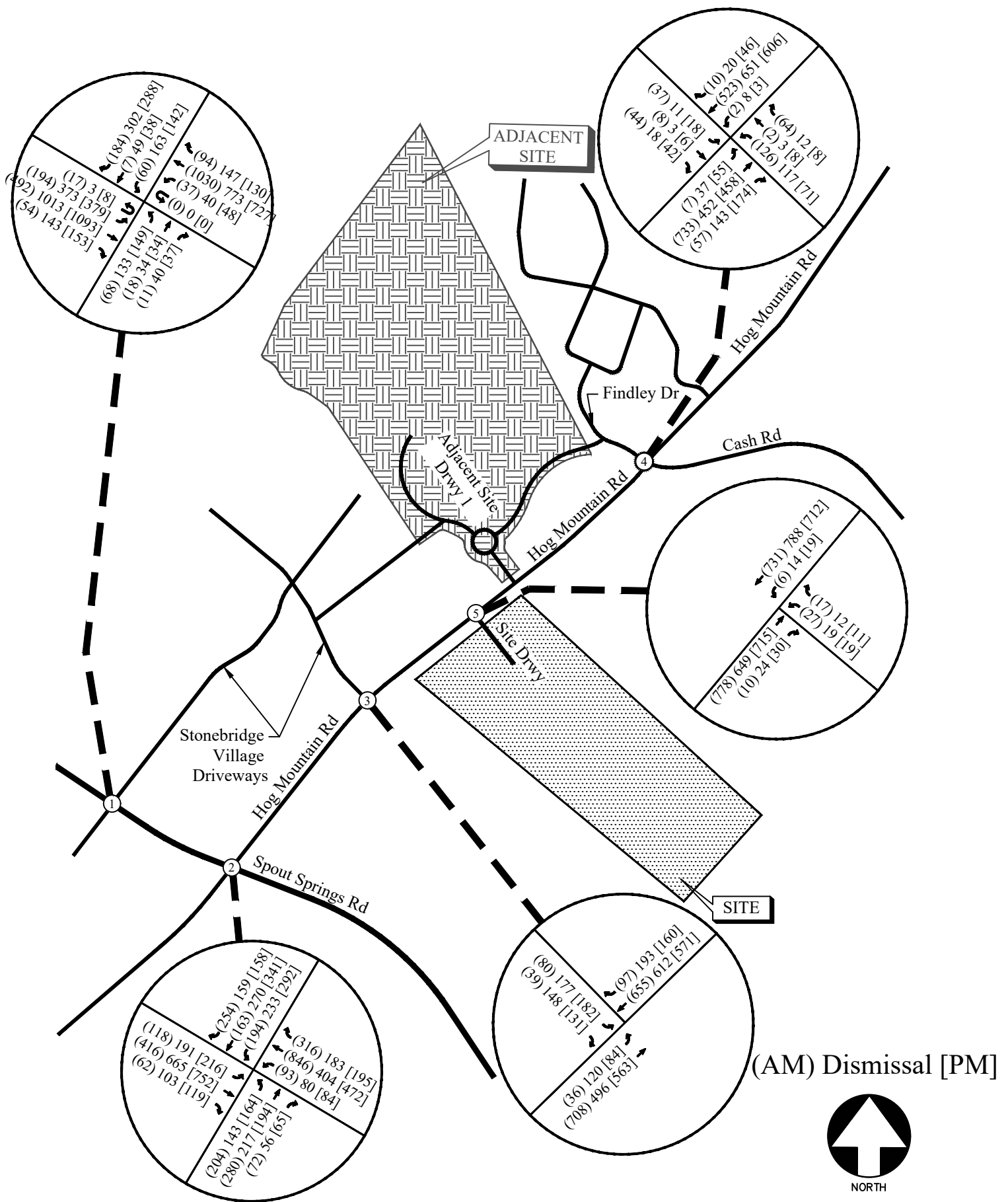
6.2 Future “Build” Conditions

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 $(\text{Total Trips}) \div 2 \times 0.38 =$ $(919) \div 2 \times 0.38 = 175$	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 $(\text{Total Trips}) \div 2 \times 0.62 =$ $(919) \div 2 \times 0.62 = 285$	45 mph / 2-Lane / > 6,000	75	Yes

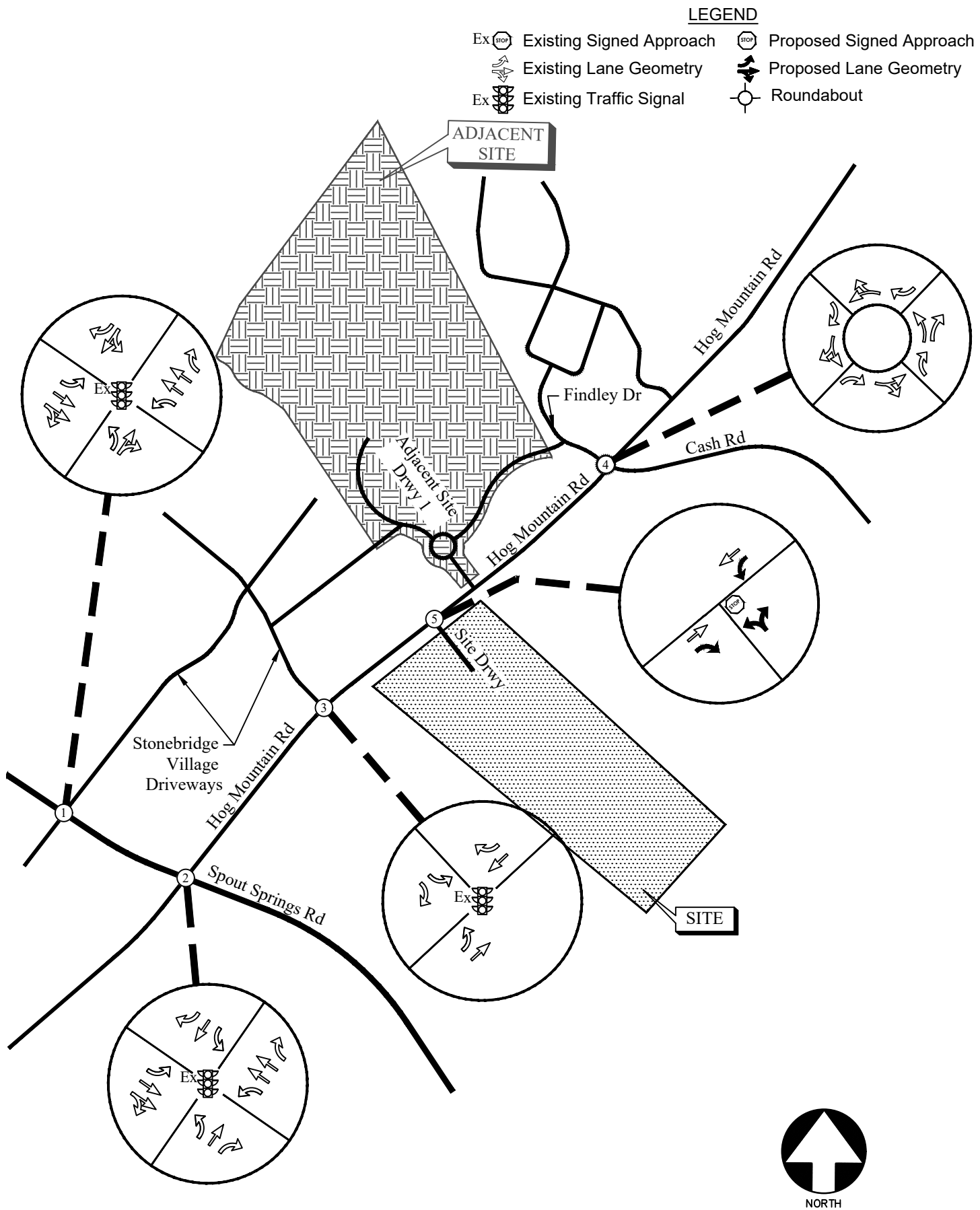
Based on GDOT standards, a right turn lane is warranted at the proposed site driveway.

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	<u>Spout Springs Road @ Stonebridge Village West Driveway</u>	<u>B (18.2)</u>	<u>C (29.6)</u>	<u>C (27.4)</u>	<u>B (18.2)</u>	<u>C (29.9)</u>	<u>C (27.6)</u>
	-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	<u>Spout Springs Road @ Hog Mountain Road</u>	<u>D (35.4)</u>	<u>D (36.1)</u>	<u>D (37.6)</u>	<u>D (36.1)</u>	<u>D (36.3)</u>	<u>D (37.3)</u>
	-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	<u>Hog Mountain Road @ Stonebridge Village East Driveway</u>	<u>A (7.5)</u>	<u>B (14.5)</u>	<u>B (12.9)</u>	<u>A (7.5)</u>	<u>B (14.7)</u>	<u>B (12.9)</u>
	-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	<u>Hog Mountain Road @ Findley Drive / Cash Road</u>	<u>B (11.3)</u>	<u>B (11.7)</u>	<u>A (8.8)</u>	<u>B (11.6)</u>	<u>B (12.2)</u>	<u>A (9.1)</u>
	-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	<u>Hog Mountain Road @ Site Driveway</u>						
	-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	

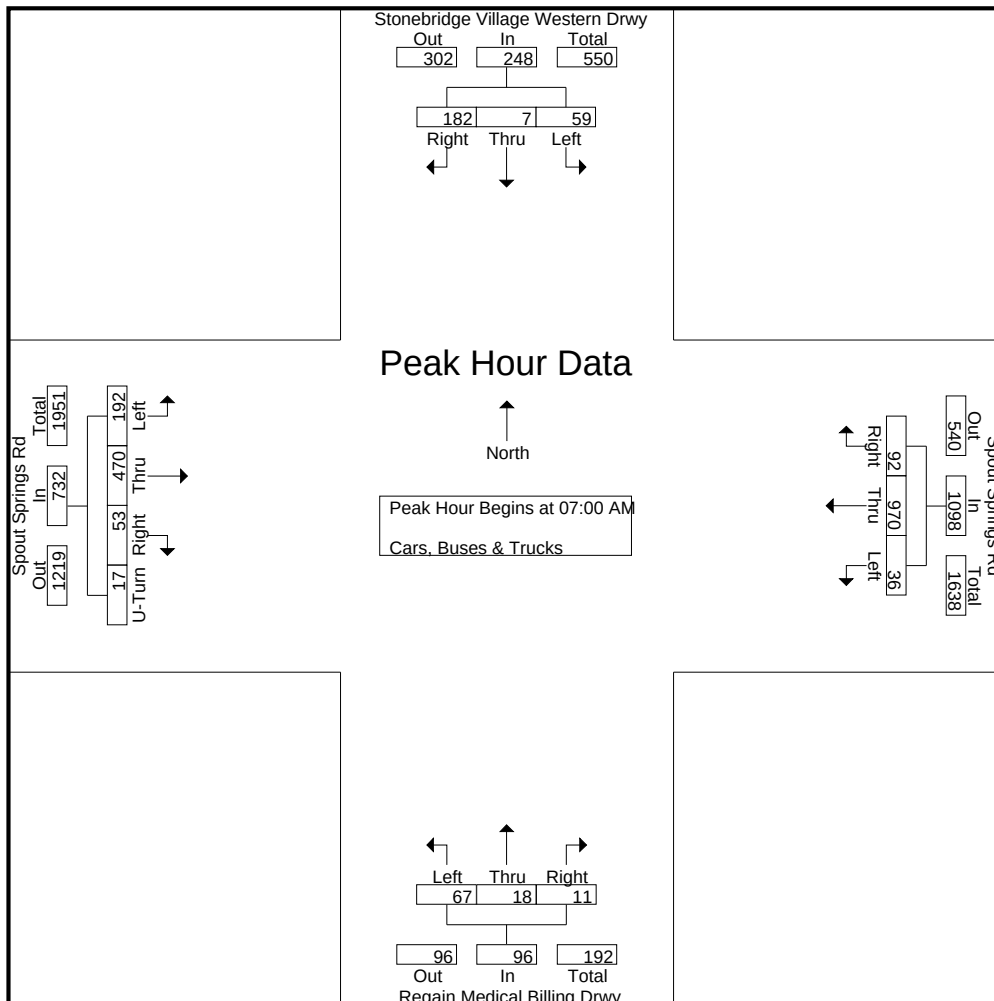
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Marietta, GA 30067

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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Spout Springs Road @ Stonebridge Village

W Drwy / Regain Medical Billing Drwy

7-9 am | 2-4 pm | 4-6 pm

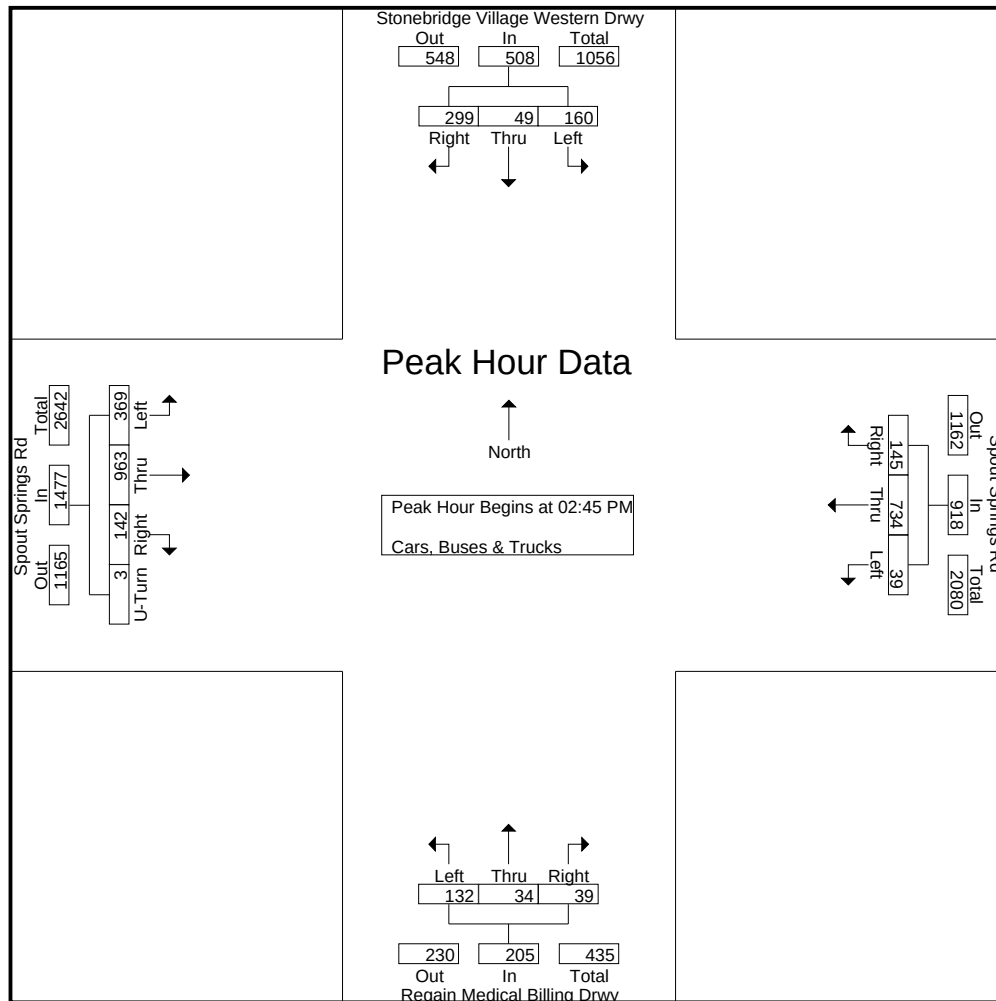
File Name : 20260002

Site Code : 20260002

Start Date : 01-08-2026

Page No : 3

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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

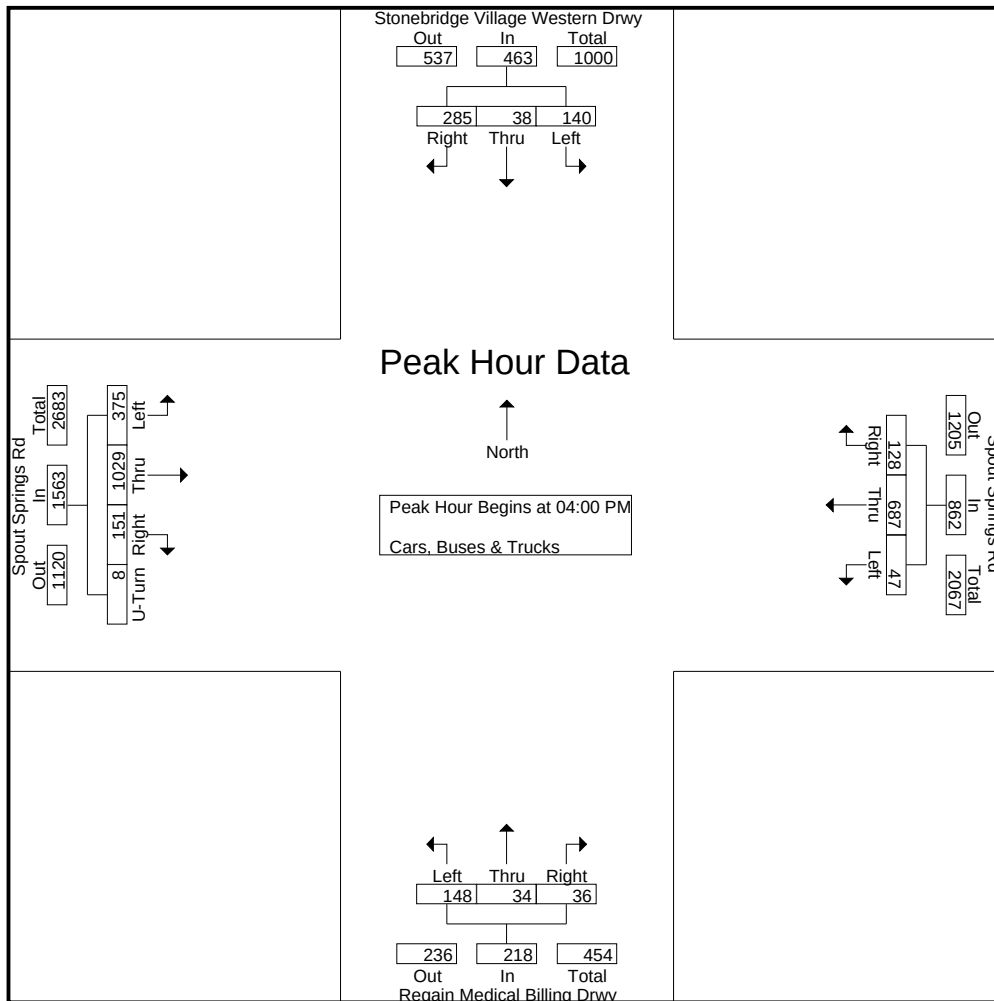
File Name : 20260002

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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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'
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TMC Data

Hog Mountain Rd @ Spout Springs Rd

7-9am | 2-4pm | 4-6pm

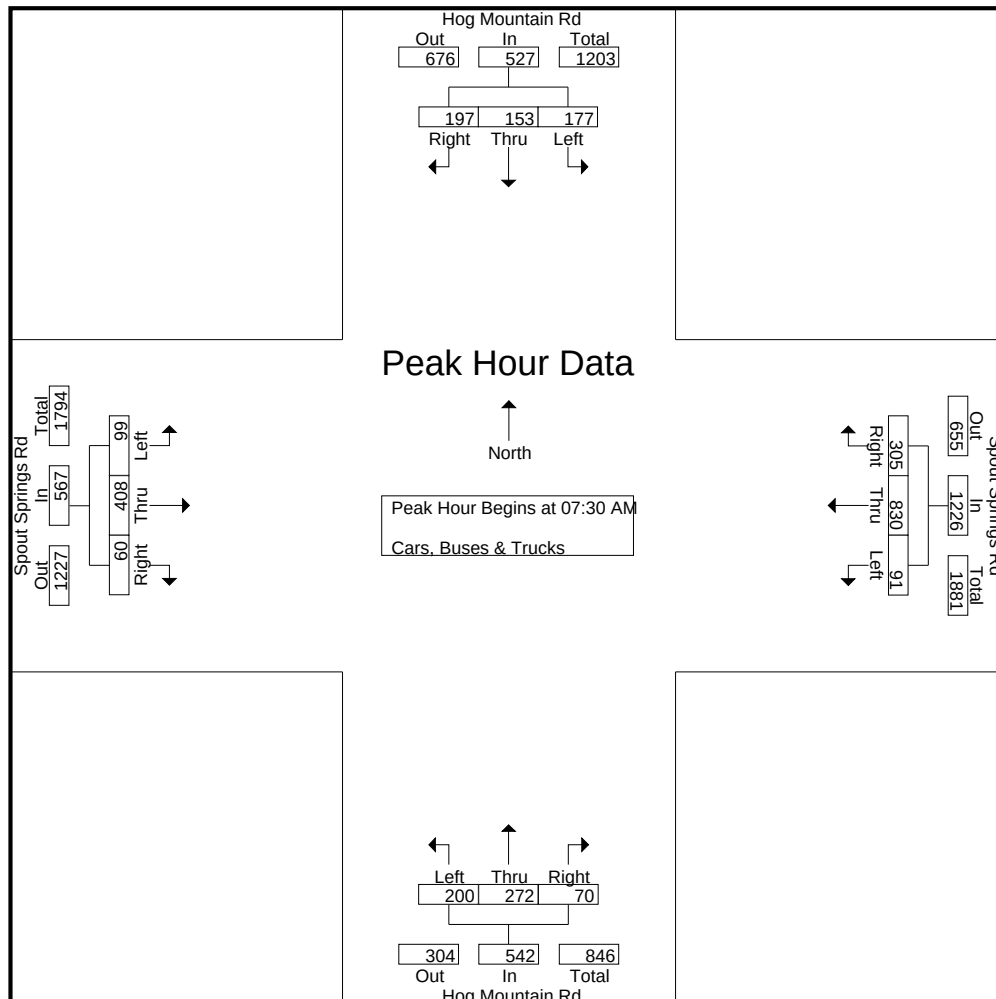
File Name : 20250060

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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TMC Data

Hog Mountain Rd @ Spout Springs Rd

7-9am | 2-4pm | 4-6pm

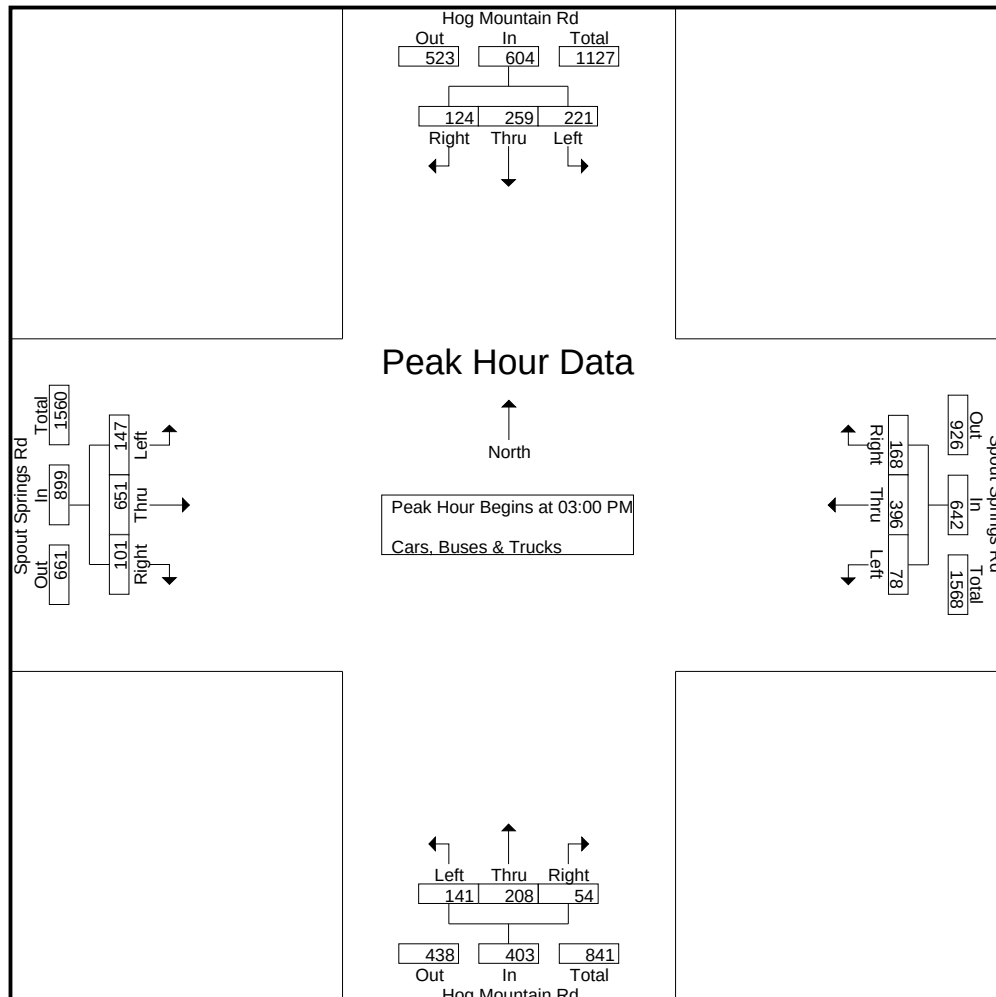
File Name : 20250060

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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TMC Data

Hog Mountain Rd @ Spout Springs Rd

7-9am | 2-4pm | 4-6pm

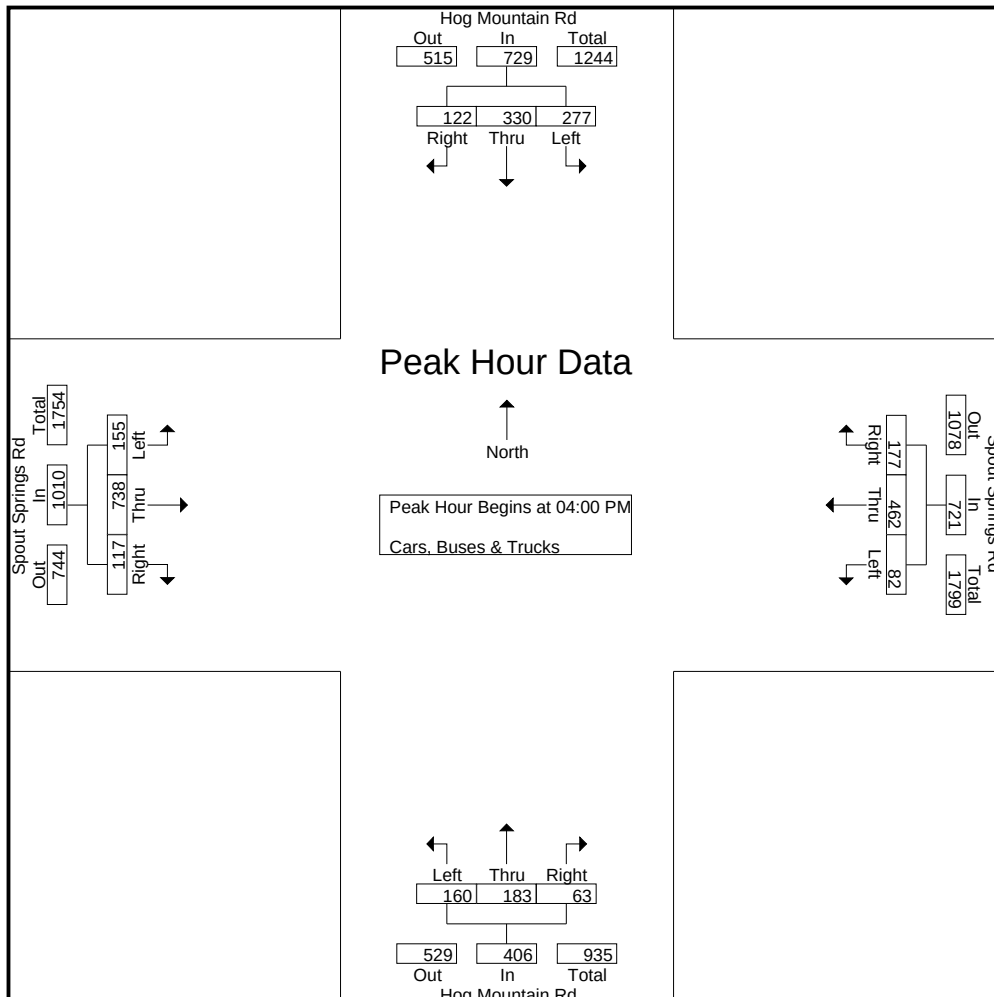
File Name : 20250060

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	

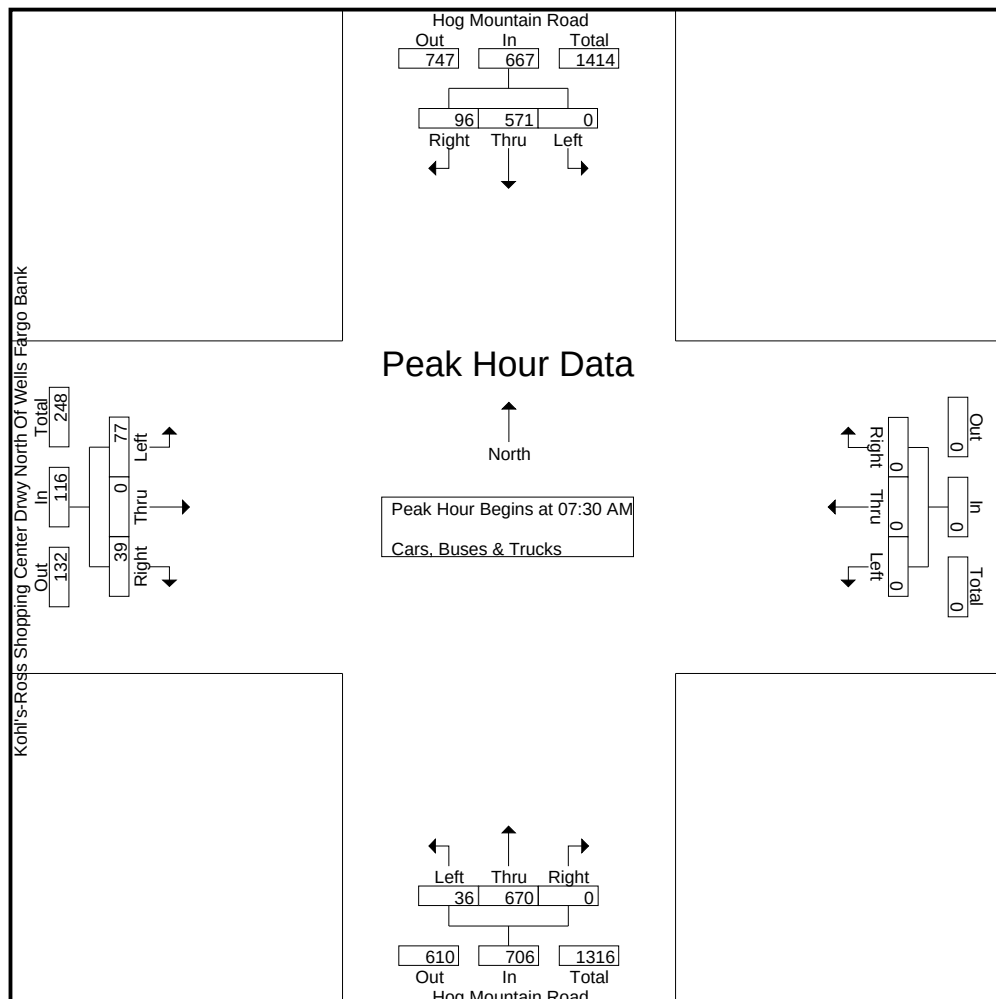
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2160 Kingston Court Suite 'O'
Marietta, GA 30067

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 : 2

	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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TMC Data

Hog Mountain Rd @ Kohl's-Ross Shopping

Center Drwy North Of Wells Fargo Bank

7-9am | 2-4pm | 4-6pm

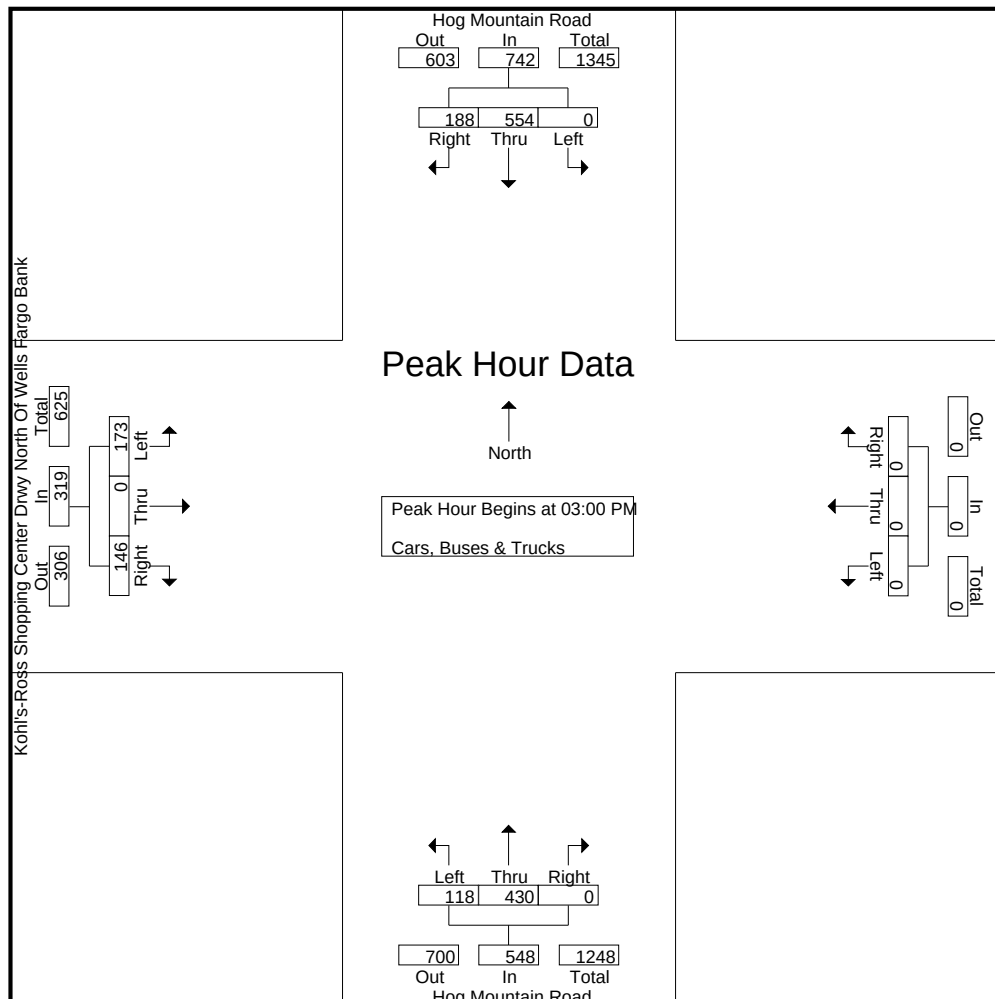
File Name : 20250059

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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TMC Data

Hog Mountain Rd @ Kohl's-Ross Shopping

Center Drwy North Of Wells Fargo Bank

7-9am | 2-4pm | 4-6pm

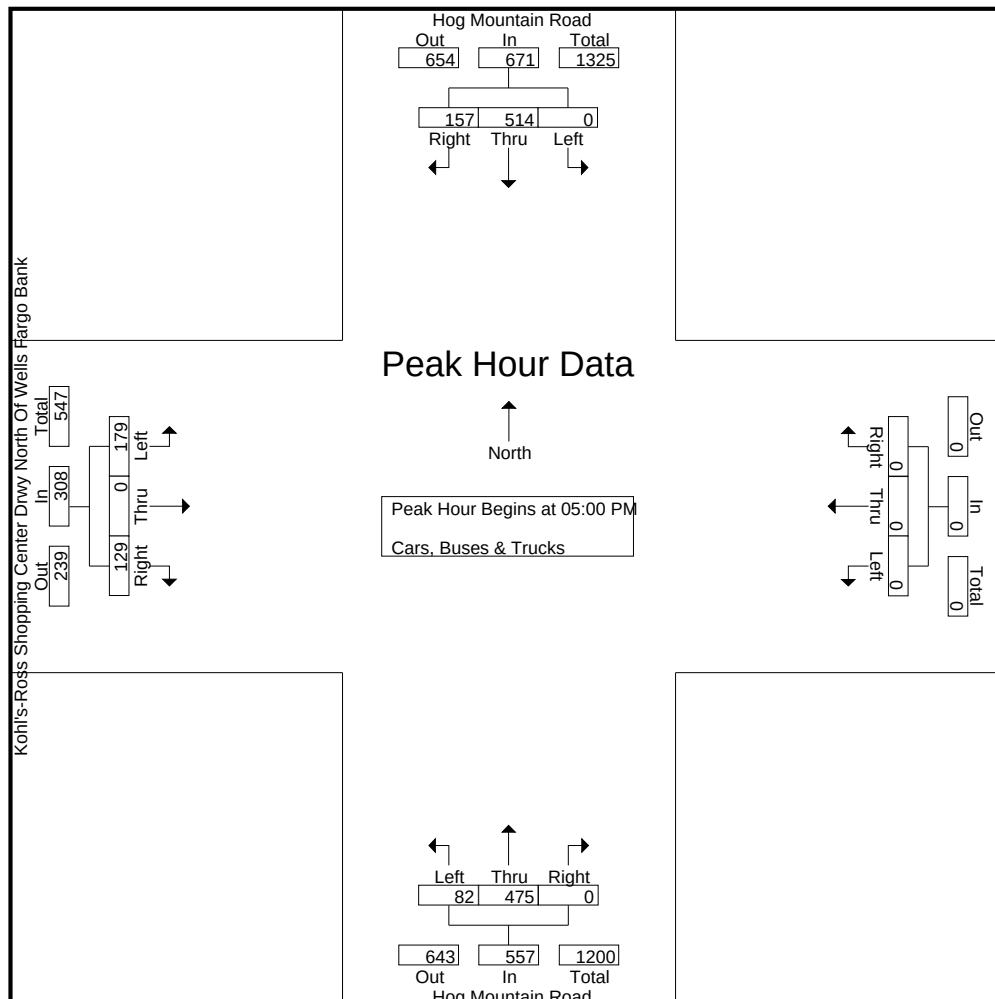
File Name : 20250059

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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TMC Data

Hog Mountain Rd @ Findley Dr-Cash Road

7-9am | 2-4pm | 4-6pm

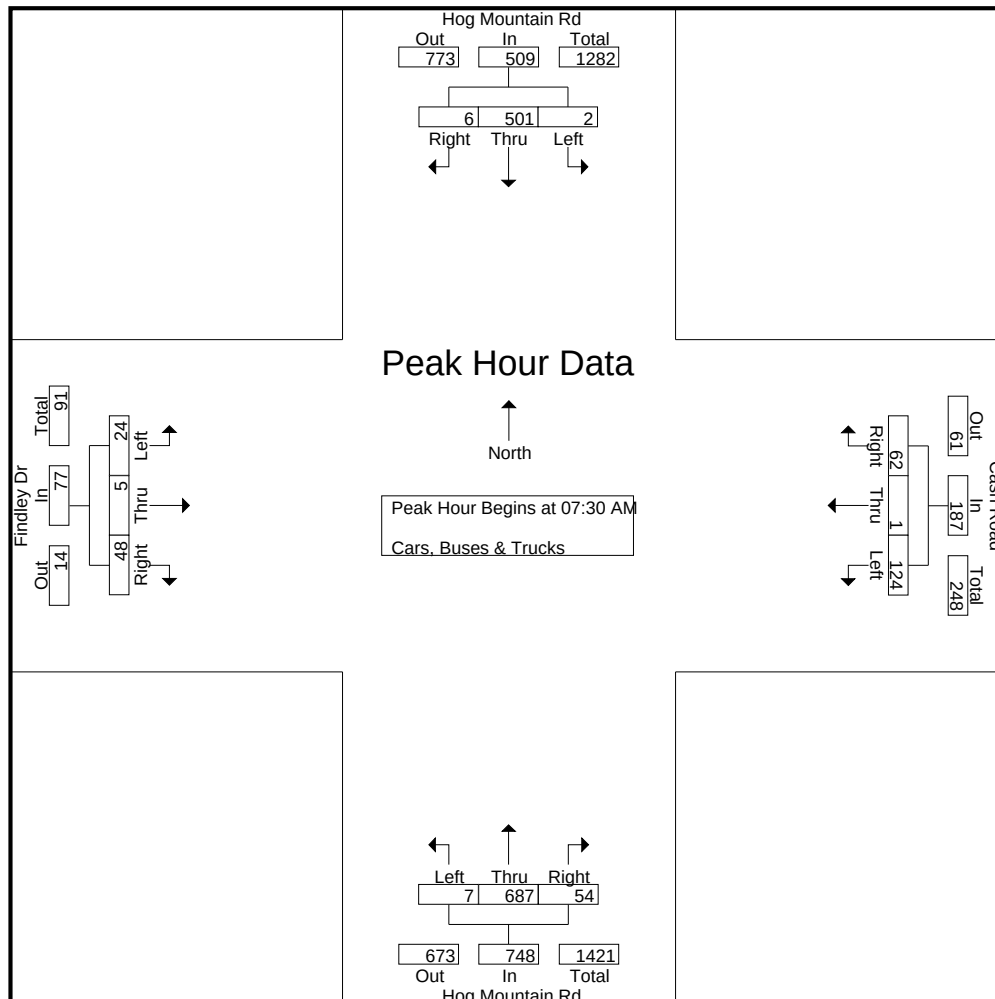
File Name : 20250058

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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TMC Data

Hog Mountain Rd @ Findley Dr-Cash Road

7-9am | 2-4pm | 4-6pm

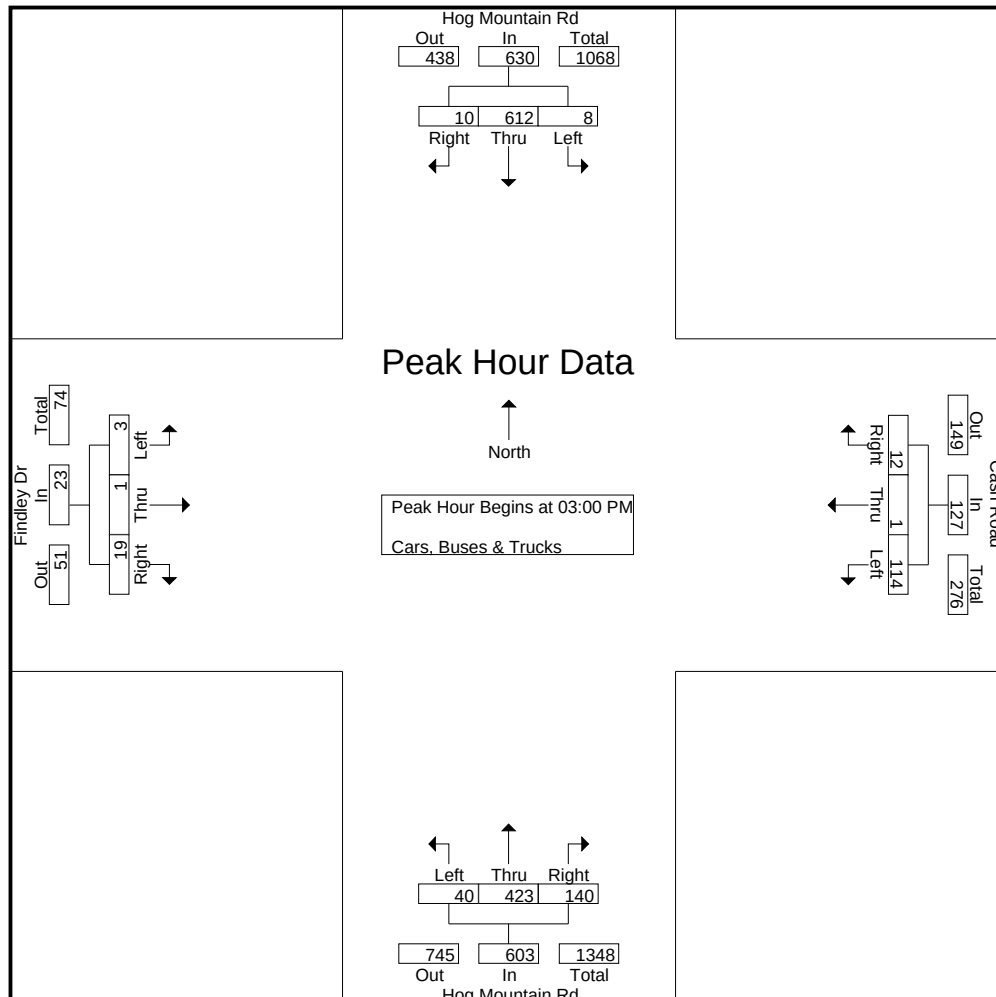
File Name : 20250058

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



A & R Engineering, Inc.

2160 Kingston Court Suite 'O'
Marietta, GA 30067

TMC Data

Hog Mountain Rd @ Findley Dr-Cash Road

7-9am | 2-4pm | 4-6pm

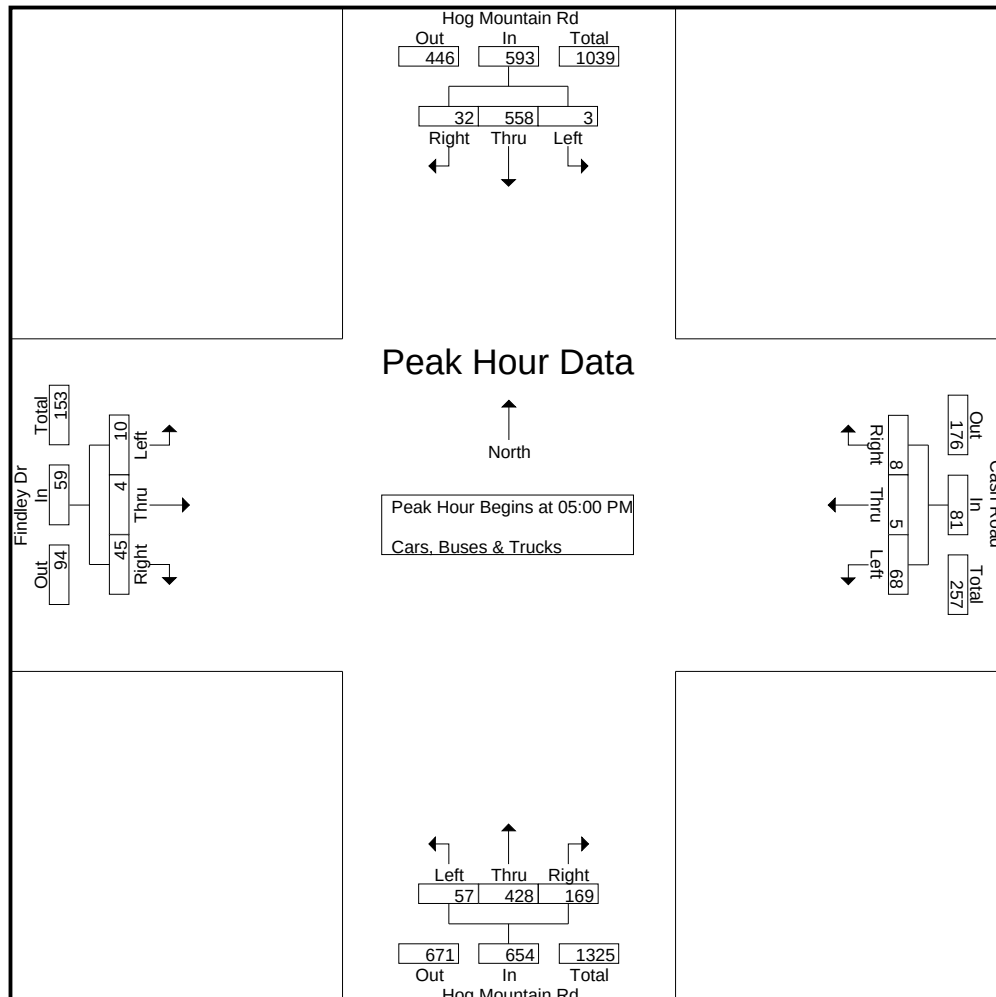
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Site Code : 20250058

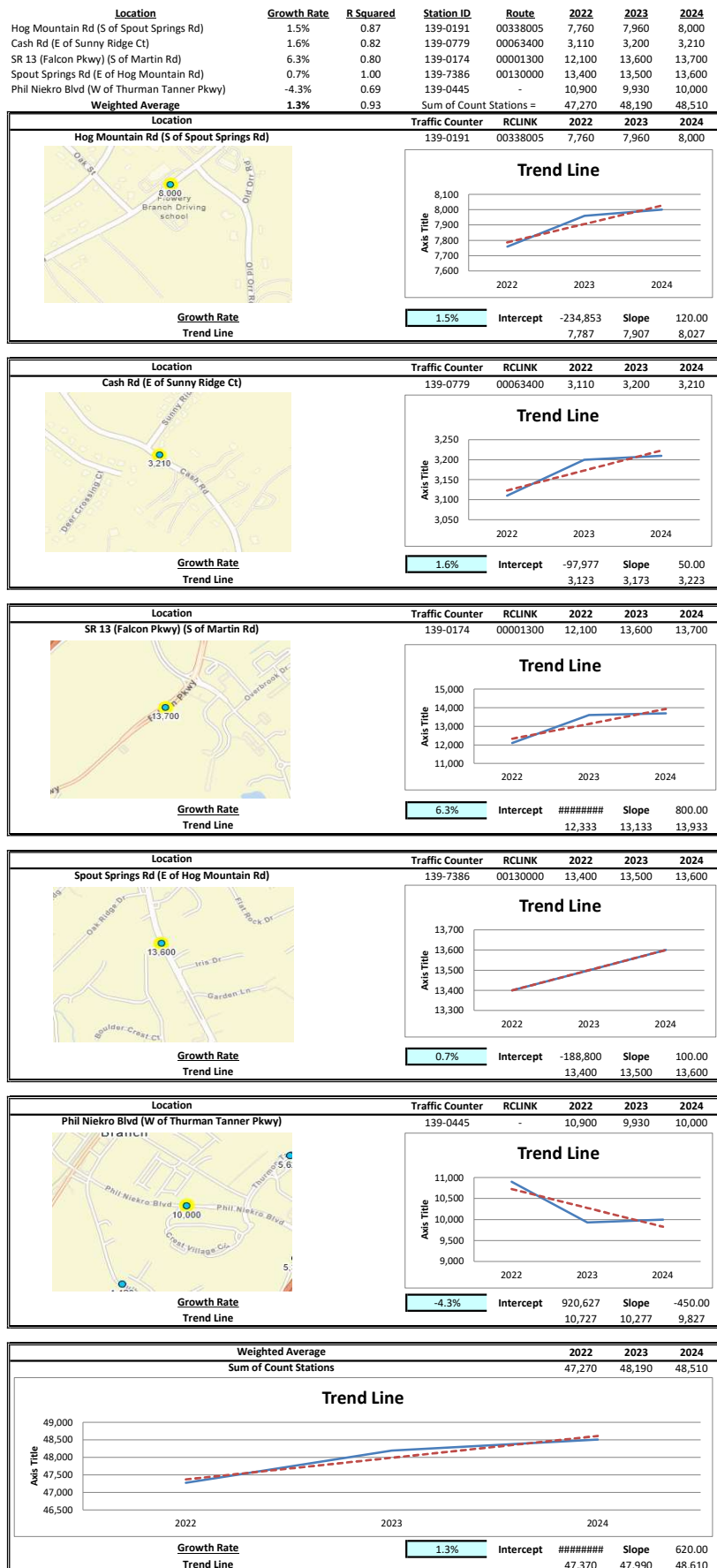
Start Date : 03-04-2025

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



EXISTING INTERSECTION ANALYSIS

Timings

1a. Existing 2026 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

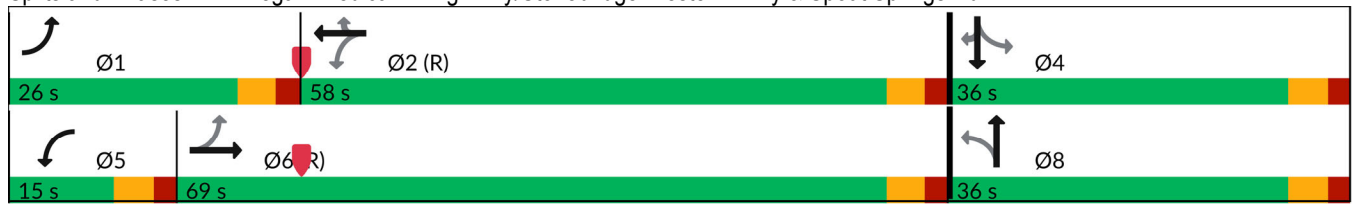
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

1a. Existing 2026 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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											

Timings
2: Hog Mountain Rd & Spout Springs Rd

1a. Existing 2026 AM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary 2: Hog Mountain Rd & Spout Springs Rd

1a. Existing 2026 AM
01/12/2026

												
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+l1), 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.												

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

1a. Existing 2026 AM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

1a. Existing 2026 AM
01/12/2026

						
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

Timings

1b. Existing 2026 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

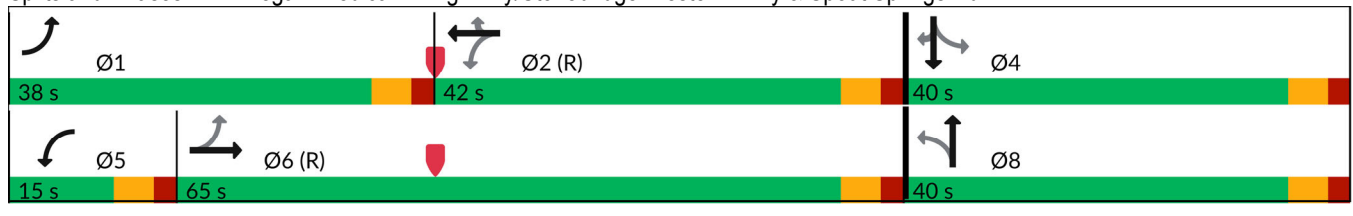
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

1b. Existing 2026 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

1b. Existing 2026 Dismissal
01/12/2026

											
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



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HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

1b. Existing 2026 Dismissal
01/12/2026

												
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.												

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

1b. Existing 2026 Dismissal
01/12/2026

						
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



HCM 7th Signalized Intersection Summary 3: Hog Mountain Rd & Stonebridge Village Drwy

1b. Existing 2026 Dismissal
01/12/2026

						
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+l1), 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

Timings

1c. Existing 2026 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

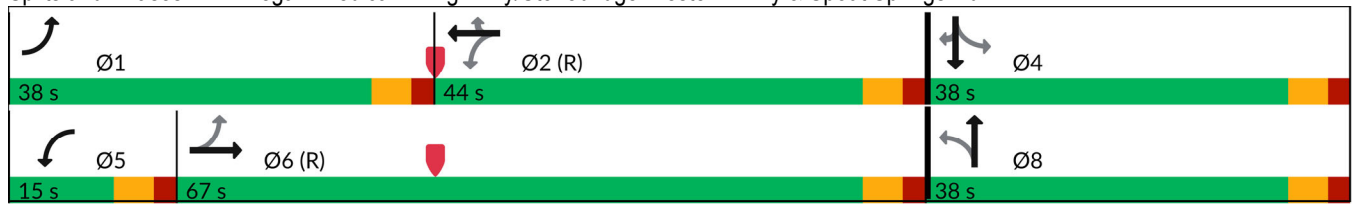
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

1c. Existing 2026 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

1c. Existing 2026 PM
01/12/2026

											
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



HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

1c. Existing 2026 PM
01/12/2026

												
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+l1), 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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

1c. Existing 2026 PM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

1c. Existing 2026 PM
01/12/2026

						
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+l1), 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

Timings

2a. No-Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

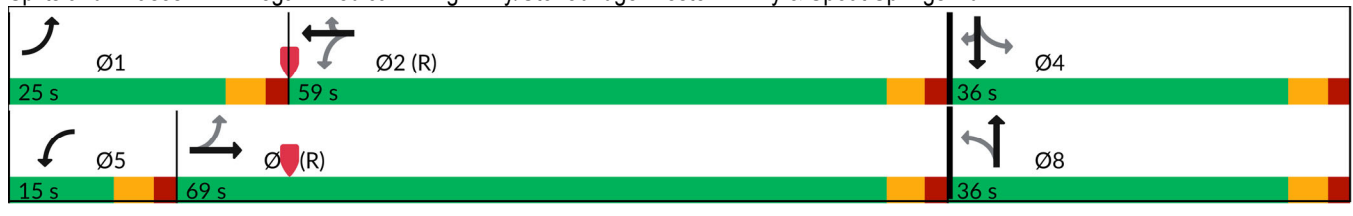
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

2a. No-Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

2a. No-Build 2027 AM
01/12/2026

											
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



HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

2a. No-Build 2027 AM
01/12/2026

												
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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

2a. No-Build 2027 AM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

2a. No-Build 2027 AM
01/12/2026

						
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+l1), 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

Timings

2b. No-Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

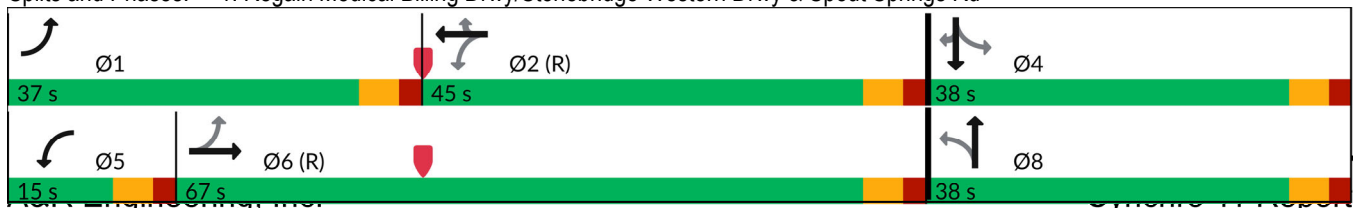
Control Type: Actuated-Coordinated

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



HCM 7th Signalized Intersection Summary

2b. No-Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

2b. No-Build 2027 Dismissal
01/12/2026

											
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



HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

2b. No-Build 2027 Dismissal
01/12/2026

												
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.

Timings 3: Hog Mountain Rd & Stonebridge Village Drwy

2b. No-Build 2027 Dismissal
01/12/2026

						
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



HCM 7th Signalized Intersection Summary 3: Hog Mountain Rd & Stonebridge Village Drwy

2b. No-Build 2027 Dismissal
01/12/2026

						
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+l1), 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

Timings

2c. No-Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

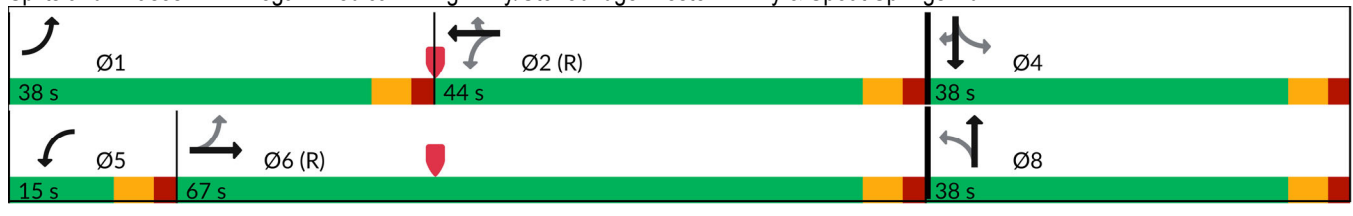
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

2c. No-Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

2c. No-Build 2027 PM
01/12/2026

											
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



HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

2c. No-Build 2027 PM
01/12/2026

												
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+l1), 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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

2c. No-Build 2027 PM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

2c. No-Build 2027 PM
01/12/2026

						
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+l1), 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

Timings

3a. Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026



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

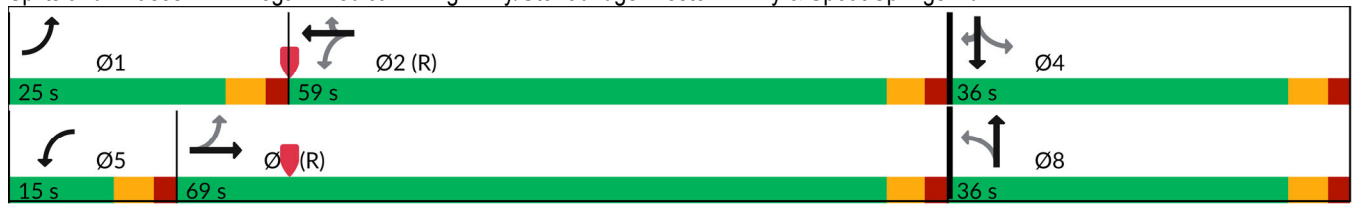
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

3a. Build 2027 AM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

3a. Build 2027 AM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary 2: Hog Mountain Rd & Spout Springs Rd

3a. Build 2027 AM
01/12/2026

												
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.

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

3a. Build 2027 AM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary 3: Hog Mountain Rd & Stonebridge Village Drwy

3a. Build 2027 AM
01/12/2026

						
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+l1), 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
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	NBRWBLn1	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

Timings

3b. Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026



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

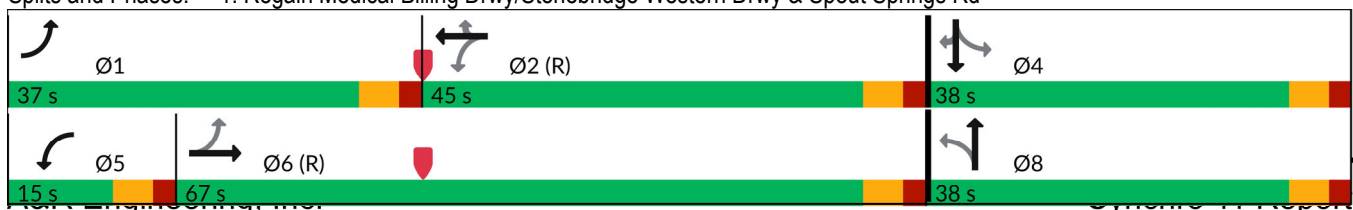
Control Type: Actuated-Coordinated

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



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HCM 7th Signalized Intersection Summary

3b. Build 2027 Dismissal

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

3b. Build 2027 Dismissal
01/12/2026

											
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



HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

3b. Build 2027 Dismissal
01/12/2026

												
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.												

Timings
3: Hog Mountain Rd & Stonebridge Village Drwy

3b. Build 2027 Dismissal
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

3b. Build 2027 Dismissal
01/12/2026

						
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	NBRWBLn1	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	-	

Timings

3c. Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

										
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

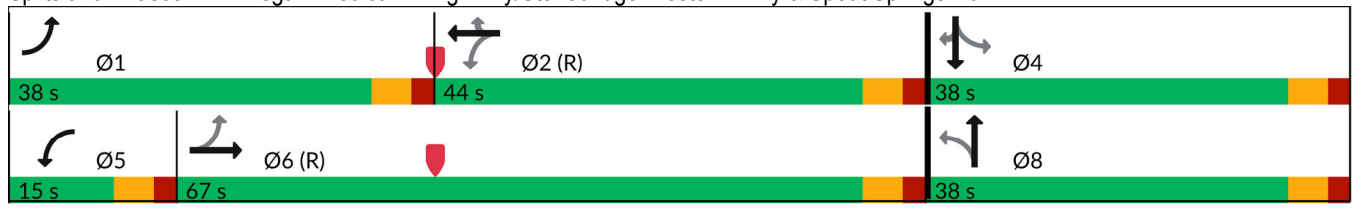
Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

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



A&R Engineering, Inc.

Synchro 11 Report

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HCM 7th Signalized Intersection Summary

3c. Build 2027 PM

1: Regain Medical Billing Drwy/Stonebridge Western Drwy & Spout Springs Rd 01/12/2026

												
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								

Timings
2: Hog Mountain Rd & Spout Springs Rd

3c. Build 2027 PM
01/12/2026

											
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



A&R Engineering, Inc.

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Synchro 11 Report

HCM 7th Signalized Intersection Summary
2: Hog Mountain Rd & Spout Springs Rd

3c. Build 2027 PM
01/12/2026

												
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+l1), 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.

Timings 3: Hog Mountain Rd & Stonebridge Village Drwy

3c. Build 2027 PM
01/12/2026

						
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



HCM 7th Signalized Intersection Summary
3: Hog Mountain Rd & Stonebridge Village Drwy

3c. Build 2027 PM
01/12/2026

						
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	NBRWBLn1	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

Condition	Regan Medical Billing Driveway					Stonebridge Village East Driveway					Spout Springs Road					Spout Springs Road				
	Northbound					Southbound					Eastbound					Westbound				
	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

Condition	Regan Medical Billing Driveway					Stonebridge Village East Driveway					Spout Springs Road					Spout Springs Road				
	Northbound					Southbound					Eastbound					Westbound				
	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

Condition	Regain Medical Billing Driveway					Stonebridge Village East Driveway					Spout Springs Road					Spout Springs Road				
	Northbound					Southbound					Eastbound					Westbound				
	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

Condition	Hog Mountain Road Northbound				Hog Mountain Road Southbound				Spout Springs Road Eastbound				Spout Springs Road Westbound							
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R				
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	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-Built 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				Hog Mountain Road				Spout Springs Road				Spout Springs Road							
	Northbound				Southbound				Eastbound				Westbound							
Condition	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R				
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	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				Hog Mountain Road				Spout Springs Road				Spout Springs Road							
	Northbound				Southbound				Eastbound				Westbound							
Condition	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R				
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	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(F)

A.M. Peak Hour

Condition	Hog Mountain Road				Hog Mountain Road				Stonebridge Village East Driveway				Westbound			
	Northbound				Southbound				Eastbound				Westbound			
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	Tot
Existing 2025 Traffic Counts:	0	36	670	0	706	0	0	571	96	667	0	77	0	39	116	0
Projected 2026 Volumes:	0	36	677	0	713	0	0	577	97	674	0	78	0	39	117	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
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	-4	-4	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
Total New Trips:	0	0	9	0	9	0	0	24	3	27	0	1	0	0	1	0
Future 2027 Traffic Volumes:	0	36	708	0	744	0	0	655	97	752	0	80	0	39	119	0

School Dismissal Peak Hour

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

P.M. Peak Hour

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

Condition	Hog Mountain Road				Hog Mountain Road				Findley Drive				Cash Road			
	Northbound				Southbound				Eastbound				Westbound			
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	Tot
Existing 2025 Traffic Counts:	0	7	687	54	748	0	2	501	6	509	0	24	5	48	77	187
Projected 2026 Volumes:	0	7	694	55	756	0	2	506	6	514	0	24	5	48	77	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	1
Adjacent Site Shifted Traffic :	0	0	0	0	0	0	0	0	0	0	0	0	0	-4	-4	0
No-Build 2027 Volumes:	0	7	718	56	781	0	2	517	10	529	0	37	8	44	89	192
Total New Trips:	0	0	15	1	16	0	0	6	0	6	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	192

School Dismissal Peak Hour

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

P.M. Peak Hour

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

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

School Dismissal Peak Hour

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

P.M. Peak Hour

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













ORDINANCE NO. 786

AN ORDINANCE AMENDING THE ZONING ORDINANCE OF THE CITY OF FLOWERY BRANCH, GEORGIA, ORDINANCE NO. 786, TO ADD A DEFINITION FOR MIXED-USE RESIDENTIAL OVER BUSINESS TO ARTICLE 2. – DEFINITIONS AND INTERPRETATIONS, SECTION 2.1 - USE DEFINITIONS OF APPENDIX C- ZONING ORDINANCE, AND ADD MIXED-USE RESIDENTIAL OVER BUSINESS TO ARTICLE 9 – NONRESIDENTIAL ZONING DISTRICTS, TABLE 9.1, 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.

Add a definition for Mixed-Use Residential Over Business to Article 2 – Definitions and Interpretations, Section 2.1 – Use Definition of Appendix C- Zoning Ordinance and add

Public Hearing Published 04/29/2026
Public Hearing 05/21/2026

First Reading 05/21/2026
Second Reading 06/04/2026

Mixed-Use Residential Over Building to Article 9 – Nonresidential Zoning Districts, Table 9.1 of Appendix C – Zoning Ordinance as a use permitted in the CBD district only upon the granting of a Conditional Use Permit, to read as is shown on attached Exhibit “A”.

SECTION 2. 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 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 2. DEFINITIONS AND INTERPRETATIONS

Sec. 2.1. Use Definitions.

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.

Mixed-Use Residential Over Business (MU-ROB): A development type or land use in which commercial retail uses are located on the ground floor of a building and residential dwelling units are located on one or more upper floors, integrated within the same structure.

A. Purpose and Intent

The Mixed-Use Residential Over Business (MU-ROB) is established to allow and regulate vertically integrated mixed-use development within the Old Town Character Area while preserving the intent of the CBD zoning district.

The MU-ROB is intended to:

1. Activate CBD streets through ground-floor commercial uses;
2. Encourage residential development above business uses;
3. Support a compact, walkable downtown environment;
4. Provide housing opportunities in close proximity to employment, services, and civic spaces;
5. Ensure coordinated, high-quality urban design through master planning; and
6. Mitigate potential land use conflicts through tailored development and design standards.

B. Applicability

1. MU-ROB developments shall be permitted only on properties located within the Central Business District zoning classification and only upon approval of a Conditional Use Permit by the City Council.
2. MU-ROB developments shall require approval of a Master Development Plan (MDP).
3. Where the standards of the MU-ROB use shall be in harmony with the CBD district, design standards of site development, landscape, architecture and open space.

C. Permitted Uses

1. Ground-Floor Uses: MU-ROB Uses, are permitted on the ground floor by right, provided they are oriented to a public street, plaza, or pedestrian way:

- a) Retail stores and shops;
 - b) Restaurants, cafés, and food service establishments (excluding drive-throughs);
 - c) Professional and administrative offices;
 - d) Financial institutions without drive-through facilities;
 - e) Galleries, studios, and artisan uses with on-site retail;
 - f) Civic, cultural, and community facilities.
 - g) Ground-floor residential dwelling units are prohibited along primary CBD street frontages unless specifically approved as part of the Master Development Plan.
2. Floors Above Business Uses (Overlay Allowance): The following uses are permitted above the business uses:
- a) Multifamily residential dwelling units;
 - b) Live-work units;
 - c) Residential amenity spaces accessory to dwelling units.
3. Conditional Uses: The following uses may be approved as part of the Conditional Use Permit for the MU-ROB:
- a) Hotels or boutique lodging;
 - b) Entertainment and assembly uses;
 - c) Structured parking as a principal use on ground-floor or upper-floor;
 - d) Childcare centers;
- D. Prohibited Uses: In addition to uses prohibited in the CBD district, the following uses are in an MU-ROB development:
- 1. Standalone single-use residential buildings;
 - 2. Auto-oriented uses and vehicle-dependent services;
 - 3. Outdoor storage as a principal use;
 - 4. Heavy industrial or warehousing uses.
 - 5. Tattoo, Micro-blading and Piercing Shops.
 - 6. Massage Parler.
- E. Master Development Plan (MDP)
- MU-ROB developments within the CBD shall require approval of a Master Development Plan demonstrating coordinated development of the site.
- The MDP shall include:
- 1. Site and Building Layout
 - a) Building footprints, heights, and massing;
 - b) Relationship of buildings to streets and public spaces.
 - 2. Land Use Mix
 - a) Location and square footage of ground-floor nonresidential uses;
 - b) Number and type of residential units.
 - 3. Circulation
 - a) Pedestrian, bicycle, and vehicular circulation;
 - b) Connectivity to surrounding blocks and streets.
 - 4. Parking Strategy
 - a) On-street, shared, and structured parking;
 - b) Parking reductions or shared parking calculations, if applicable.

- 5. Open Space and Public Realm
 - a) Plazas, courtyards, rooftop spaces, or pedestrian passages;
 - b) Streetscape improvements consistent with CBD standards.
- 6. Phasing
 - a) Development phases, if applicable.
- F. Development Standards
 - 1. Building Height
 - a) Minimum height: Two (2) stories.
 - b) Maximum height: As allowed in the Table 9.2 district or as modified through the approved Master Development Plan.
 - 2. Residential Density
 - a) Residential density shall not be subject to maximum dwelling unit limits, provided that:
 - i. All residential units are located above ground-floor nonresidential uses (or as modified through the approved Master Development Plan); and
 - ii. Adequate infrastructure and services are demonstrated.
 - 3. Building Placement
 - a) Buildings shall be located at or near the front property line to frame public streets.
 - b) Ground-floor façades shall maintain a continuous street wall along primary Old Town Character Area streets.
 - 4. Ground-Floor Design Standards
 - a) Ground-floor commercial space shall have a minimum floor-to-ceiling height suitable for retail or restaurant use.
 - b) A minimum percentage of transparent glazing shall be required along street-facing façades.
 - c) Primary entrances shall face public streets or plazas.
 - 5. Residential Compatibility
 - a) Residential entries shall be clearly defined and secured.
 - b) Noise, lighting, loading, and refuse areas shall be designed to minimize impacts on residential units.
 - c) Separate access for residential and nonresidential uses is encouraged but not required.
- G. Parking and Loading
 - 1. Parking reductions may be approved due to shared parking, proximity to transit, or on-street parking availability.
 - 2. Shared parking between residential and commercial uses is encouraged.
 - 3. Loading areas shall be located to minimize conflicts with pedestrians and public spaces.
- H. Administration and Approval
 - 1. Approval of the MU-ROB shall require:
 - a) Mayor and City Council approval; and
 - b) Approval of the Master Development Plan.
 - 2. Minor modifications to an approved MDP may be approved administratively.
 - a) A minor modification to an approved Master Development Plan (MDP) is a change that does not materially alter the approved development concept or increase overall

impacts, and remains consistent with the intent, conditions, and key parameters of the approved MDP.

- i. Modest shifts in building siting/footprints that still meet required setbacks and do not change the overall site organization
- ii. Minor façade/material/design refinements consistent with the approved architectural approach
- iii. Adjustments to internal circulation/drive aisles, sidewalk alignments, or landscaping that maintain connectivity and required standards
- iv. Minor parking layout changes that do not reduce required parking (or do so only where already allowed)
- v. Utility/stormwater plan refinements that do not change the approved approach or worsen off-site impacts
- vi. Phasing or construction sequencing adjustments that don't change final buildout or required public improvements.

3. Major modifications shall require Planning and Community Development review and City Council approval.

- a) A major modification is any change that materially alters the approved MDP, including changes that affect the approved land use mix, intensity, external impacts, required public improvements, or conditions of approval, or that otherwise represents a substantial deviation from what City Council approved.
 - i. Change in use mix (e.g., adding/removing a conditional use component, shifting commercial/residential in a meaningful way)
 - ii. Increase in development intensity (e.g., more dwelling units, more nonresidential floor area, taller buildings, greater massing) beyond what the MDP approved
 - iii. Changes that reduce required open space/public realm commitments or substantially redesign them
 - iv. Material changes to access points, circulation concept, or connectivity to surrounding streets/blocks
 - v. Parking strategy changes that increase impacts (e.g., meaningful reduction in parking without an approved basis, major relocation of structured parking affecting streetscape).

ARTICLE 9. NONRESIDENTIAL ZONING DISTRICTS

Table 9.1. Permitted and Conditional Uses in Nonresidential Zoning Districts

Use	O-P	INST	NS	HB	CBD	M-1	M-2
Mixed-Use residential over business	X	X	X	X	C	X	X

Executive Summary (For City Council)

Mayor and City Council, this document establishes a proposed Mixed-Use Residential Over Business (MU-ROB) development framework for properties within the Central Business District (CBD), focused on the Old Town Character Area. The intent is to support a walkable, economically active downtown by requiring ground-floor commercial activity while allowing residential units above, with project-specific review through a Conditional Use Permit and an approved Master Development Plan (MDP).

What This Policy Enables

- **Active, pedestrian-oriented streets:** Ground-floor commercial uses oriented to streets, plazas, or pedestrian ways.
- **More housing where services already exist:** Multifamily and live-work units permitted above business uses, supporting a compact downtown pattern.
- **Coordinated site planning and urban design:** Requires an MDP that addresses layout, circulation, parking approach, open space/public realm, and (if applicable) phasing.
- **Clear guardrails to reduce conflicts:** Standards address building placement, ground-floor design, residential compatibility, and parking/loading to manage impacts.

City Council Role and Required Actions

- **Conditional Use Permit (CUP) approval is required** for MU-ROB on CBD-zoned properties.
- **Master Development Plan (MDP) approval is required** to document the coordinated development concept (building placement/massing, land use mix, circulation, parking strategy, open space/public realm, and phasing as applicable).
- **Minor MDP modifications** may be approved administratively when they do not materially alter the approved concept or increase impacts (e.g., modest footprint shifts, minor facade refinements, circulation/landscaping adjustments, minor parking layout changes, utility refinements, or sequencing adjustments that do not change final buildout).
- **Major MDP modifications** require Planning and Community Development review and **City Council approval** when changes materially alter land use mix, intensity, external impacts, public improvements/commitments, access/connectivity, or conditions of approval.

High-Level Use Summary

- **Ground floor (by right, when oriented to a public street/plaza/pedestrian way):** Retail, restaurants/cafes (no drive-throughs), offices, financial institutions (no drive-throughs), galleries/studios with on-site retail, and civic/cultural/community facilities.

- **Above the ground-floor business uses:** Multifamily dwelling units, live-work units, and residential amenity spaces.
- **Potential conditional uses (via CUP):** Hotels/boutique lodging, entertainment/assembly uses, structured parking as a principal use, and childcare centers.
- **Key prohibitions (in addition to CBD prohibitions):** Standalone single-use residential buildings; auto-oriented/vehicle-dependent services; outdoor storage as a principal use; heavy industrial/warehousing; tattoo/micro-blading/piercing shops; and massage parlors.

This framework is designed to retain the intent of the CBD district while providing a predictable, enforceable pathway for vertically mixed-use projects that strengthen downtown vitality. By pairing clear use permissions with an MDP-based review and defined thresholds for administrative vs. Council-level changes, the City can encourage investment while maintaining public realm quality, compatibility, and accountability for impacts.

Architectural design and style are governed by **Article 40**, which is already codified. For any development in the CBD, staff must present the required architectural review and accompanying staff report the City Council for approval.

The code draft is written below:

Mixed-Use Residential Over Business (MU-ROB): A development type or land use in which commercial retail uses are located on the ground floor of a building and residential dwelling units are located on one or more upper floors, integrated within the same structure.

A. Purpose and Intent

The Mixed-Use Residential Over Business (MU-ROB) is established to allow and regulate vertically integrated mixed-use development within the Old Town Character Area while preserving the intent of the CBD zoning district.

The MU-ROB is intended to:

1. Activate CBD streets through ground-floor commercial uses;
2. Encourage residential development above business uses;
3. Support a compact, walkable downtown environment;
4. Provide housing opportunities in close proximity to employment, services, and civic spaces;
5. Ensure coordinated, high-quality urban design through master planning; and
6. Mitigate potential land use conflicts through tailored development and design standards.

B. Applicability

1. MU-ROB developments shall be permitted only on properties located within the Central Business District zoning classification and only upon approval of a Conditional Use Permit by the City Council.
2. MU-ROB developments shall require approval of a Master Development Plan (MDP).
3. Where the standards of the MU-ROB use shall be in harmony with the CBD district, design standards of site development, landscape, architecture and open space.

C. Permitted Uses

1. Ground-Floor Uses: MU-ROB Uses, are permitted on the ground floor by right, provided they are oriented to a public street, plaza, or pedestrian way:

-
- a) Retail stores and shops;
 - b) Restaurants, cafés, and food service establishments (excluding drive-throughs);
 - c) Professional and administrative offices;
 - d) Financial institutions without drive-through facilities;
 - e) Galleries, studios, and artisan uses with on-site retail;
 - f) Civic, cultural, and community facilities.
 - g) Ground-floor residential dwelling units are prohibited along primary CBD street frontages unless specifically approved as part of the Master Development Plan.
2. Floors Above Business Uses (Overlay Allowance): The following uses are permitted above the business uses:
- a) Multifamily residential dwelling units;
 - b) Live-work units;
 - c) Residential amenity spaces accessory to dwelling units.
3. Conditional Uses: The following uses may be approved as part of the Conditional Use Permit for the MU-ROB:
- a) Hotels or boutique lodging;
 - b) Entertainment and assembly uses;
 - c) Structured parking as a principal use on ground-floor or upper-floor;
 - d) Childcare centers;
- D. Prohibited Uses: In addition to uses prohibited in the CBD district, the following uses are in an MU-ROB development:
- 1. Standalone single-use residential buildings;
 - 2. Auto-oriented uses and vehicle-dependent services;
 - 3. Outdoor storage as a principal use;
 - 4. Heavy industrial or warehousing uses.
 - 5. Tattoo, Micro-blading and Piercing Shops.
 - 6. Massage Parler.
- E. Master Development Plan (MDP)
- MU-ROB developments within the CBD shall require approval of a Master Development Plan demonstrating coordinated development of the site.
- The MDP shall include:
- 1. Site and Building Layout
 - a) Building footprints, heights, and massing;
 - b) Relationship of buildings to streets and public spaces.
 - 2. Land Use Mix
 - a) Location and square footage of ground-floor nonresidential uses;
 - b) Number and type of residential units.
 - 3. Circulation
 - a) Pedestrian, bicycle, and vehicular circulation;
 - b) Connectivity to surrounding blocks and streets.
 - 4. Parking Strategy
 - a) On-street, shared, and structured parking;

-
- b) Parking reductions or shared parking calculations, if applicable.
 - 5. Open Space and Public Realm
 - a) Plazas, courtyards, rooftop spaces, or pedestrian passages;
 - b) Streetscape improvements consistent with CBD standards.
 - 6. Phasing
 - a) Development phases, if applicable.
 - F. Development Standards
 - 1. Building Height
 - a) Minimum height: Two (2) stories.
 - b) Maximum height: As allowed in the Table 9.2 district or as modified through the approved Master Development Plan.
 - 2. Residential Density
 - a) Residential density shall not be subject to maximum dwelling unit limits, provided that:
 - i. All residential units are located above ground-floor nonresidential uses (or as modified through the approved Master Development Plan); and
 - ii. Adequate infrastructure and services are demonstrated.
 - 3. Building Placement
 - a) Buildings shall be located at or near the front property line to frame public streets.
 - b) Ground-floor façades shall maintain a continuous street wall along primary Old Town Character Area streets.
 - 4. Ground-Floor Design Standards
 - a) Ground-floor commercial space shall have a minimum floor-to-ceiling height suitable for retail or restaurant use.
 - b) A minimum percentage of transparent glazing shall be required along street-facing façades.
 - c) Primary entrances shall face public streets or plazas.
 - 5. Residential Compatibility
 - a) Residential entries shall be clearly defined and secured.
 - b) Noise, lighting, loading, and refuse areas shall be designed to minimize impacts on residential units.
 - c) Separate access for residential and nonresidential uses is encouraged but not required.
 - G. Parking and Loading
 - 1. Parking reductions may be approved due to shared parking, proximity to transit, or on-street parking availability.
 - 2. Shared parking between residential and commercial uses is encouraged.
 - 3. Loading areas shall be located to minimize conflicts with pedestrians and public spaces.
 - H. Administration and Approval
 - 1. Approval of the MU-ROB shall require:
 - a) Mayor and City Council approval; and
 - b) Approval of the Master Development Plan.
 - 2. Minor modifications to an approved MDP may be approved administratively.
 - a) A minor modification to an approved Master Development Plan (MDP) is a change that does not materially alter the approved development concept or increase overall impacts, and remains consistent with the intent, conditions, and key parameters of the approved MDP.

-
- i. Modest shifts in building siting/footprints that still meet required setbacks and do not change the overall site organization
 - ii. Minor façade/material/design refinements consistent with the approved architectural approach
 - iii. Adjustments to internal circulation/drive aisles, sidewalk alignments, or landscaping that maintain connectivity and required standards
 - iv. Minor parking layout changes that do not reduce required parking (or do so only where already allowed)
 - v. Utility/stormwater plan refinements that do not change the approved approach or worsen off-site impacts
 - vi. Phasing or construction sequencing adjustments that don't change final buildout or required public improvements.
3. Major modifications shall require Planning and Community Development review and City Council approval.
- a) A major modification is any change that materially alters the approved MDP, including changes that affect the approved land use mix, intensity, external impacts, required public improvements, or conditions of approval, or that otherwise represents a substantial deviation from what City Council approved.
 - i. Change in use mix (e.g., adding/removing a conditional use component, shifting commercial/residential in a meaningful way)
 - ii. Increase in development intensity (e.g., more dwelling units, more nonresidential floor area, taller buildings, greater massing) beyond what the MDP approved
 - iii. Changes that reduce required open space/public realm commitments or substantially redesign them
 - iv. Material changes to access points, circulation concept, or connectivity to surrounding streets/blocks
 - v. Parking strategy changes that increase impacts (e.g., meaningful reduction in parking without an approved basis, major relocation of structured parking affecting streetscape)
 - vi. Changes that would require amending conditions of approval or re-evaluating adopted findings (compatibility, traffic, utilities, etc.)

Table 9.1
Permitted and Conditional Uses in Nonresidential Zoning Districts
(P = Permitted Use C = Conditional Use X = Prohibited)

Use	O-P	INST	NS	HB	CBD	M-1	M-2
Accessory building, structure, or use	P	P	P	P	P	P	P
Adaptive reuse of a detached single-family dwelling for a personal service establishment or enclosed retail establishment	C	C	P	P	P	X	X
Adult business (see Adult Entertainment of Code of Ordinances No. 360)	X	X	X	X	X	P	P
Agricultural processing	X	X	X	X	X	X	C
Aircraft landing area	X	X	X	X	X	X	C
Animal hospital or veterinary clinic	P	P	P	P	X	X	X
Animal rendering, slaughtering, and recycling plant	X	X	X	X	X	X	X
Animal shelter	X	P	X	C	X	P	P
Apparel manufacturing	X	X	X	X	X	P	P
Art gallery	P	P	P	P	P	X	X
Asphalt plant	X	X	X	X	X	X	C
Auction house or auction yard (excluding livestock)	X	X	X	X	X	P	P
Auction house or auction yard (including livestock)	X	X	X	X	X	X	P
Automated teller machines (accessory use)	P	P	P	P	X	P	P
Automobile sales and service establishment	X	X	X	P	X	X	X
Automobile sales without service	X	X	X	P	X	X	X
Automobile service establishment without sales	X	X	X	P	X	P	P
Bank or financial institution	P	P	P	P	P	X	X
Batching plant	X	X	X	X	X	X	C
Bed and breakfast inn	P	P	P	P	P	X	X
Big box commercial building	X	X	X	C	X	C	C
Borrow site	X	C	X	C	X	X	P
Botanical garden	P	P	P	C	X	X	X
Bottling or canning plant	X	X	X	X	X	C	P
Brew pub	X	C	P	P	P	P	P
Brewery or distillery	X	X	X	X	X	P	P
Broadcasting studio	P	P	P	P	X	P	P
Building material sales	X	X	X	C	X	P	P
Building sales establishment	X	X	X	C	X	P	P
Bulk Storage	X	X	X	X	X	X	P
Business service establishment, not exceeding 2,500 square feet of gross floor area	C	C	P	P	P	P	P
Business service establishment, more than 2,500 square feet of gross floor area	X	X	X	P	P	P	P
Camp or campground	X	C	X	C	X	X	X
Car wash	X	X	X	C	X	P	P
Caretaker's residence	X	X	X	C	C	P	P
Carnival	X	X	X	C	X	X	P
Cemetery or mausoleum	X	P	X	C	X	P	P

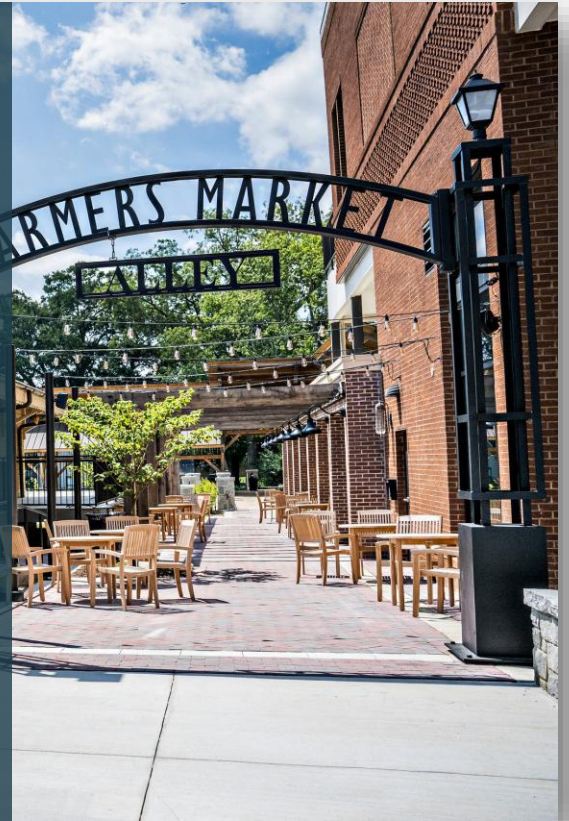
Church, temple, synagogue, or place of worship, including specified accessory uses (see Section 14.3) (Ord. 348-11)	C	P	C	C	X	C	C
Clinic	P	P	P	P	X	X	X
Club or lodge, nonprofit, sponsored by a civic or similar organization	C	P	C	C	X	C	C
Club, private (Ord. 348-11)	X	C	X	C	X	X	X
Cold storage plant or frozen food locker	X	X	X	X	X	P	P
Co-generation facility	X	X	X	X	X	C	C
College or university (Ord. 348-11)	C	P	X	C	X	C	C
Commercial recreational facility, indoor (Ord. 348-11)	X	X	C	P	X	C	C
Commercial recreational facility, outdoor	X	X	X	C	C	C	C
Communication tower and antenna	P	P	X	P	X	P	P
Community recreation area	P	P	P	P	P	P	P
Composting facility	X	X	X	X	X	X	P
Conservation areas and passive recreational facilities	P	P	P	P	P	P	P
Construction field office and/or yard (temporary use)	X	P	X	P	X	P	P
Continuing care retirement community	C	P	X	P	C	X	X
Contractor's establishment	X	X	X	P	X	P	P
Convenience store, with or without gasoline pumps	X	X	X	C	X	X	X
Cottage industry	P	P	P	P	P	P	P
Crematorium in conjunction with a funeral home or mortuary (Ord. 348-13)	X	C	X	C	X	P	P
Crematorium not in conjunction with a funeral home or mortuary (Ord. 348-13)	X	X	X	X	X	X	P
Crisis center	C	P	X	P	X	P	P
Custom order shop	X	X	P	P	P	P	P
Day care center serving no more than 17 persons	P	P	P	P	X	C	C
Day care center serving 18 persons or more	X	P	C	P	X	C	C
Distribution center, including truck terminals	X	X	X	C	X	P	P
Dry cleaning plant	X	X	X	C	X	P	P
Dwelling, single-family detached, fee-simple	X	X	X	X	C	X	X
Dwelling, single-family detached, condominium	X	X	X	X	C	X	X
Dwelling, townhome (single-family attached fee-simple)	X	X	X	X	C	X	X
Dwelling, multi-family	X	X	X	X	C	X	X
Dwelling, two-family (duplex)	X	X	X	X	X	X	X
Dwelling, located within a building containing a nonresidential principal use	X	X	X	X	X	X	X
Explosives storage	X	X	X	X	X	X	C
Exterminating and pest control business or disinfecting service	X	X	C	P	X	P	P
Extraction and removal of sand, gravel, top soil, clay, dirt, precious metals, gems, and minerals	X	X	X	X	X	X	C
Fairgrounds	X	P	X	X	C	P	P
Farm Winery Tasting Rooms	X	X	X	C	P	X	X

Finance, insurance, and real estate establishment, 2,500 square feet or less of gross floor area per establishment	P	P	P	P	P	P	P
Finance, insurance, and real estate establishment, more than 2,500 square feet of gross floor area per establishment	P	P	P	P	P	X	X
Food processing plant	X	X	X	X	X	X	P
Fuel oil distributor	X	X	X	X	X	P	P
Funeral home or mortuary	X	X	X	C	X	P	P
Gas tank sales	X	X	X	C	X	X	P
Greenhouse (commercial)	X	X	X	P	X	P	P
Group home	C	P	X	P	X	X	X
Growler	X	X	X	P	P	X	X
Gym or exercise facility, not open 24 hours a day	P	P	P	P	P	P	P
Gym or exercise facility open 24 hours a day	P	P	X	P	P	P	P
Hazardous waste receiving, handling, and/or disposal facility, or volatile organic liquid handling and storage	X	X	X	X	X	X	C
Health spa	X	X	X	P	P	P	P
Hospital	C	P	X	P	C	C	C
Incinerator	X	X	X	X	X	X	C
Institutional residential living and care facility, serving no more than 17 persons	P	P	P	P	X	X	X
Institutional residential living and care facility, serving 18 persons or more	C	P	X	P	X	X	X
Junk/salvage yard	X	X	X	X	X	X	C
Kennel	X	X	X	P	X	P	P
Laboratory	P	P	C	P	X	P	P
Landfill (sanitary, construction/demolition, inert waste)	X	X	X	X	X	X	C
Landscaping company	X	X	X	P	X	P	P
Live/work unit	C	X	C	C	P	P	P
Lodging service (hotel, motel, motor hotel, inn)	X	C	X	P	P	X	X
Logging yard	X	X	X	X	X	X	P
Lumber yard	X	X	X	C	X	P	P
Machine shop	X	X	X	P	X	P	P
Manufactured home, "Class A"	X	X	X	X	X	X	X
Manufactured home other than "Class A"	X	X	X	X	X	X	X
Manufactured home park	X	X	X	X	X	X	X
Manufacturing, ceramics	X	X	X	X	X	C	P
Manufacturing, cosmetics or toiletries	X	X	X	X	X	P	P
Manufacturing, coating of cans, coils, fabrics, vinyl, metal furniture, appliance surfaces, wire, paper, and flat wood paneling	X	X	X	X	X	C	C
Manufacturing, electronics, camera, or photographic or communication equipment	X	X	X	X	X	P	P
Manufacturing, instrument assembly	X	X	X	X	X	P	P
Manufacturing, metal products	X	X	X	X	X	C	P

Manufacturing, pharmaceuticals and medical supplies	X	X	X	X	X	P	P
Manufacturing, textiles	X	X	X	X	X	P	P
Manufacturing, wood products	X	X	X	X	X	P	P
Manufacturing, processing, and assembling, within buildings, not otherwise specified	X	X	X	X	X	C	C
Marina	X	C	X	P	X	X	X
Materials recovery facility	X	X	X	X	X	X	C
Micro-brewery	X	X	X	X(1)	C	X	X
Micro-distillery	X	X	X	X(1)	C	X	X
Mixed-Use residential over business	X	X	X	X	C	X	X
Museum	P	P	P	P	P	P	P
Office	P	P	P	P	P	P	P
Office-warehouse	X	X	X	C	X	P	P
Open air business	X	X	X	P	C	C	C
Open storage yard (principal use)	X	X	X	C	X	P	P :
Package store	X	X	X	P	X	X	X
Parking deck or structures, on-site or off-site	C	C	X	P	C	C	C
Parking lot, off-site	P	P	P	P	C	P	P
Personal service establishment	C	C	P	P	P	P	P
Petroleum bulk storage site	X	X	X	X	X	X	P
Power plant, private	X	X	X	X	X	X	C
Public or semi-public use	P	P	P	P	P	P	P
Rail yard	X	C	X	X	X	X	P
Railroad freight terminal	X	C	X	X	X	X	P
Recreational vehicle park	X	X	X	C	X	X	X
Recovered materials processing facility	X	X	X	X	X	X	C
Recycling center	X	X	X	X	X	C	C
Restaurant, excluding drive-ins or drive through facilities and fast-food restaurants as defined	X	C	P	P	P	P	P
Restaurant, including drive-ins or drive through facilities and fast-food restaurants as defined	X	X	X	P	X	C	C
Retail trade establishment, enclosed	X	X	P	P	P	P	P
Retreat center	P	P	X	P	X	X	X
Riding academy or equestrian center	X	X	X	P	X	C	C
Rooming or boarding house	C	X	X	C	X	X	X
Sawmill	X	X	X	C	X	X	P
School for the arts (Ord. 348-10; Ord. 348-11)	P	P	C	P	C	C	C
School, private, elementary, middle, or high (Ord. 348-11)	P	P	C	C	X	C	C
School, professional (Ord. 348-11)	P	P	C	P	X	C	C
School, special (Ord. 348-11)	P	P	X	X	X	C	C
School, trade (Ord. 348-11)	C	C	X	X	X	C	C
Self-service storage facility (mini-warehouse)	X	X	X	C	X	P	P
Service and fuel-filling station	X	X	X	P	X	P	P
Showroom .	X	X	X	X	X	P	P
Slaughterhouse	X	X	X	X	X	X	C
Solid waste handling and/or transfer facility	X	X	X	X	X	X	C
Special event facility (Ord. 348-11)	C	P	C	P	X	X	X

Taxi cab and limousine service	X	X	X	X	X	X	X
Temporary use approved by the Zoning Administrator	P	P	P	P	P	P	P
Therapeutic camp	X	C	X	X	X	X	X
Tow service	X	X	X	P	X	C	P
Truck stop or truck terminal	X	X	X	C	X	X	P
Utility company	P	P	X	P	X	P	P
Utility company substation	P	P	P	P	P	P	P
Vehicle emission testing facility	X	X	X	P	X	P	P
Warehouse or storage building	X	X	X	C	X	P	P
Water plant or wastewater treatment facility	X	X	X	X	X	X	X
Wholesale trade establishment	X	X	X	C	C	P	P
Wireless telecommunications equipment	X	C	X	C	X	C	C
Wireless telecommunications facility	X	C	X	C	X	C	C
Wrecked motor vehicle compound	X	X	X	C	X	X	P
Yoga Studio	P	P	P	P	P	P	P

GROWING THOUGHTFULLY PROTECTING WHAT MATTERS



2026 Comprehensive Plan Update City of Flowery Branch

ACKNOWLEDGEMENTS

FLOWERY BRANCH CITY COUNCIL

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- Joseph Mezzanotte, Post 2
- William McDaniel, Post 3
- Charles Vanderbilt, Post 4
- Pete Lena, Post 5

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CHAPTER 1. INTRODUCTION

Purpose of the Comprehensive Plan

The *Flowery Branch Comprehensive Plan* is the City of Flowery Branch’s policy guide for growth and

development, as expressed by a vision statement, Future Development Map, character area policies, and supporting implementation strategies. The plan is most commonly used in the review and decision-making process by staff and City Council for rezoning requests when proposals are evaluated for consistency with the Future Development Map and supporting text in this document.

The Comprehensive Plan also outlines the overall strategy for achieving the City’s vision for future development by identifying a 5-year Community Work Program (CWP) with a prioritized ‘to-do’ list. The CWP should be consulted by staff and City Council on an annual basis when developing annual department-level work programs and the City budget.

In addition, this plan serves the purpose of meeting the intent and requirements of the Georgia Department of Community Affairs’ (DCA) “Standards and Procedures for Local Comprehensive Planning,” as amended on October 1, 2018. Preparation of a comprehensive plan in accordance with these standards is an essential requirement for maintaining status as a Qualified Local Government (QLG). QLG status allows Georgia cities and counties to be eligible for financial incentives from DCA, the Department of Natural Resources (DNR), the Georgia Environmental Finance Authority (GEFA), and the OneGeorgia Authority. This plan update allows the City of Flowery Branch to retain its QLG status.

The City’s first comprehensive plan was adopted in 2006 and was amended in 2011, 2016, and 2021 in accordance with DCA’s “Standards and Procedures for Local Comprehensive Planning” that were in effect at the time. This 2026 plan updates the 2021 plan that was prepared by Blue Cypress Consulting, LLC in conjunction with Hatley Plans, LLC, and ROSS+Associates and has been prepared to comply with the current standards, which require plans to be updated every five years and address specific topics identified below.

Scope

The *Flowery Branch Comprehensive Plan* is required to address the following topics, which are presented using the terminology in the Georgia Department of Community Affairs’ planning standards:

- Needs and Opportunities (see Chapter 3 of this plan)
- Land Use (see Chapter 4)
- Transportation (per DCA’s planning standards, the Gainesville-Hall Metropolitan Planning Organization’s [GHMPO] Regional Transportation Plan [adopted May 12, 2020], the South Hall Trail Study [2019] and the 2022 Highlands to Islands Design Guide [GHMPO] are substituted for the required Transportation element and are incorporated by reference in this plan; however, more detailed local needs are also addressed in Chapter 3 of this plan)
- Broadband Services (see Chapter 3)
- Community Goals (see Chapter 4)
- Community Work Program (see Chapter 5)

This plan update also considered both the **Metropolitan North Georgia Water Planning District’s Water Resource Management Plan** and the **Rules for Environmental Planning Criteria** (established and administered by the Department of Natural Resources pursuant to O.C.G.A. 12- 2-8), as required by DCA (see Chapter 3 of this plan).

Although Economic Development and Housing are not required to be addressed as planning topics by DCA's planning standards, they are discussed in Chapter 3. In addition, *the City of Flowery Branch Old Town Redevelopment Plan*, and the *City of Flowery Branch Redevelopment Plan for Tax Allocation District #1: Old Town and Commercial Gateways* are incorporated by reference in this plan.

Community Involvement

The process of updating the Comprehensive Plan included informational activities and opportunities for public input, as summarized below (see also Appendix C):

- Interactive project website
- Online survey for community feedback was open from December 2025 to April 2026 and 950 people responded. This was an increase from the 2021 update when 472 participants responded.
- Design and production of yard signs, flyers, and a banner to promote the survey
- Interactive Land Use input map
- Dedicated project page on City website
- 9 posts on City's social media pages
- 3 notifications via City Newsletter
- Insert with survey QR code in all utility bills for January
- 2 public workshops with interactive stations
- 5 meetings with an appointed Stakeholder Committee
- 3 public hearings: a kickoff meeting in December, public open house community forums in February, and final draft review meeting in May.



Outreach Efforts

People who live, work, and play in the City of Flowery Branch were the focal point for public outreach efforts throughout the life of the project. Efforts were made to reach as many individuals as possible via multiple engagement avenues; from flyers and signage to media postings in local newspapers, social media outreach campaigns, dedicated informational website pages, and open-house style public workshops. In an attempt to ensure that as many voices as possible could be heard, an insert containing the survey QR code was added to all utility bills mailed during the month of January 2026.

Public Meetings

As required by DCA's Minimum Standards and Procedures for Local Comprehensive Planning, two public hearings were conducted. One in December 2025 at the outset of the project and a second one in May of 2026 held prior to the transmittal of the draft document for regional and state review.

In addition to the public hearings, two open-house style workshops were held to engage the public and provide an opportunity for questions and collaboration. Meeting agendas, presentations, newspaper advertisements, and other supplemental documentation are included in Appendix C of this document.



Utility bill inserts and a-frame sign example (top and above); Interactive Land Use Map station and Welcome Station at Public Workshop (left)



Plan Organization

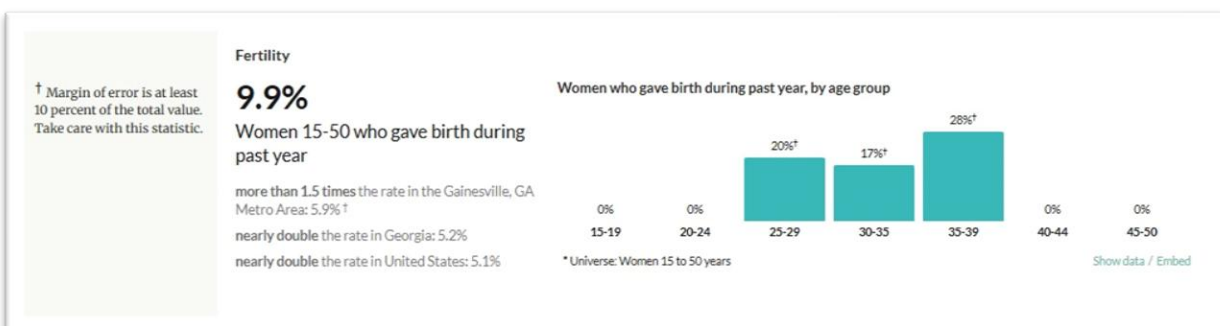
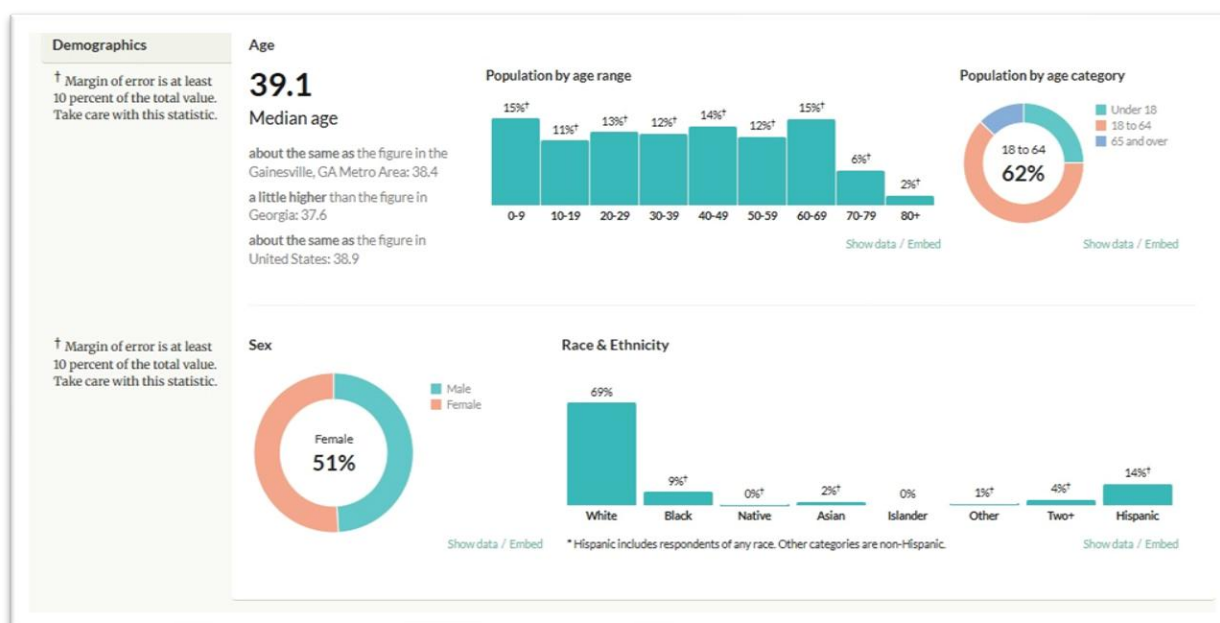
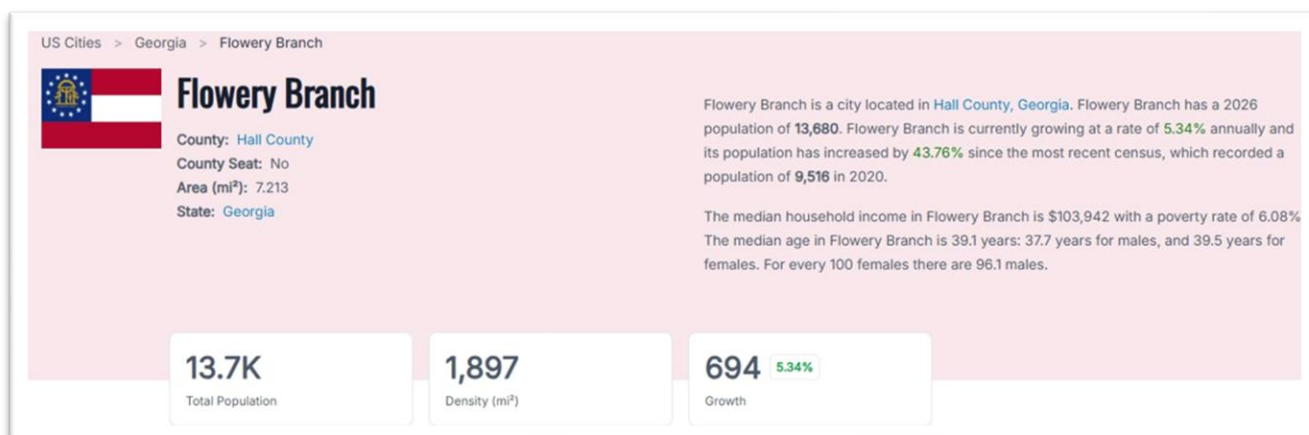
The Comprehensive Plan is organized into the following chapters:

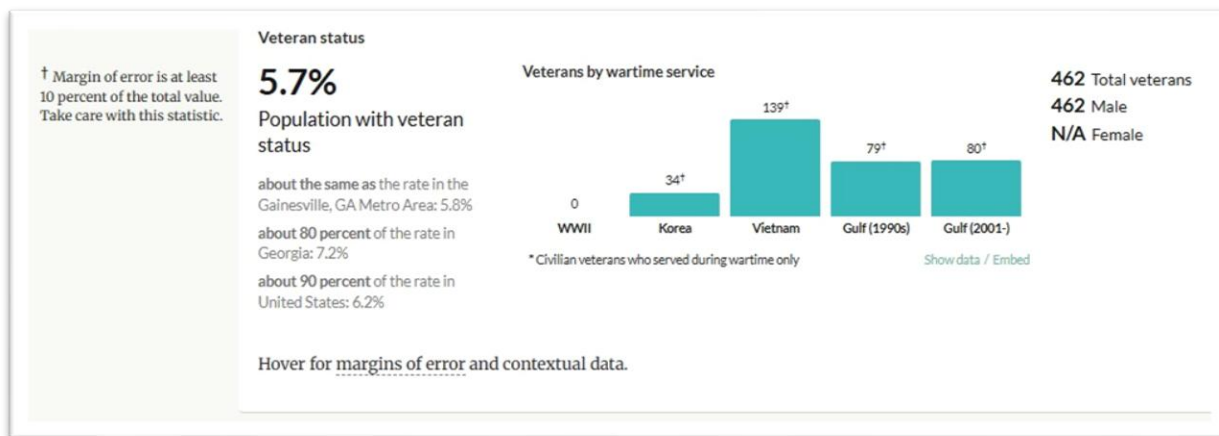
Chapter 1: Introduction

- Chapter 2: Community Context
- Chapter 3: Needs and Opportunities
- Chapter 4: Community Vision
- Chapter 5: Implementation Program
- Appendix A: Growth Area Policy Map
- Appendix B: Report of Accomplishments
- Appendix C: Public Involvement Documentation

CHAPTER 2. COMMUNITY CONTEXT

Flowery Branch enjoys location advantages due to its easy access to Interstate 985 which connects to Atlanta and the North Georgia Mountains. It is part of the Gainesville-Hall County metropolitan area and lies just north of Gwinnett County, south of Gainesville, and east of Lake Lanier. The city is home to the Atlanta Falcons football team's headquarters and training facility.





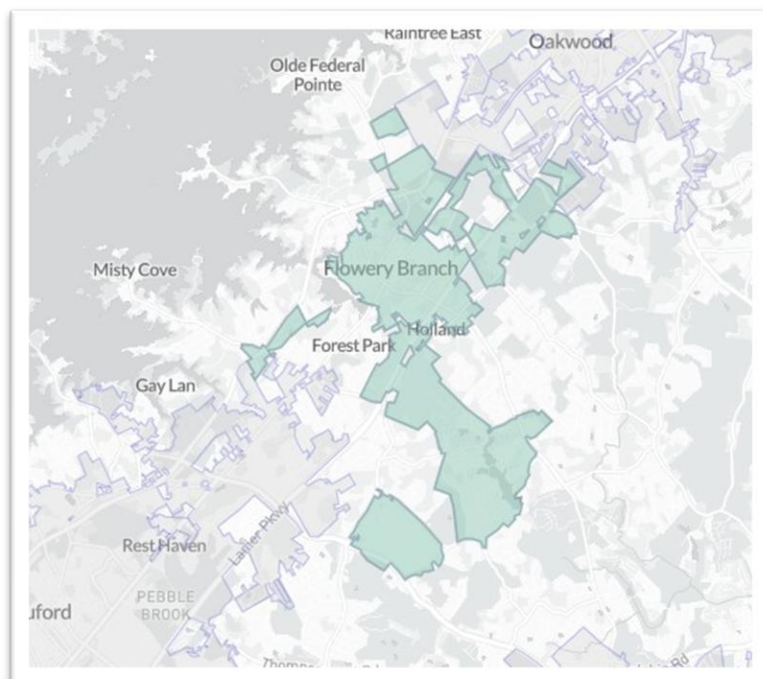
A History of Progress

According to available population estimates by the U.S. Census Bureau, Flowery Branch has seen its population explode more than four hundred percent from 2,071 in 2000 to 10,925 in 2024 and an estimated 13,660 residents at the time of this update. This growth is expected to continue as its historic downtown continues to redevelop, new housing construction proceeds, and annexations occur.

A Future of Growth

The pace set in the past is expected to continue in the coming decades.

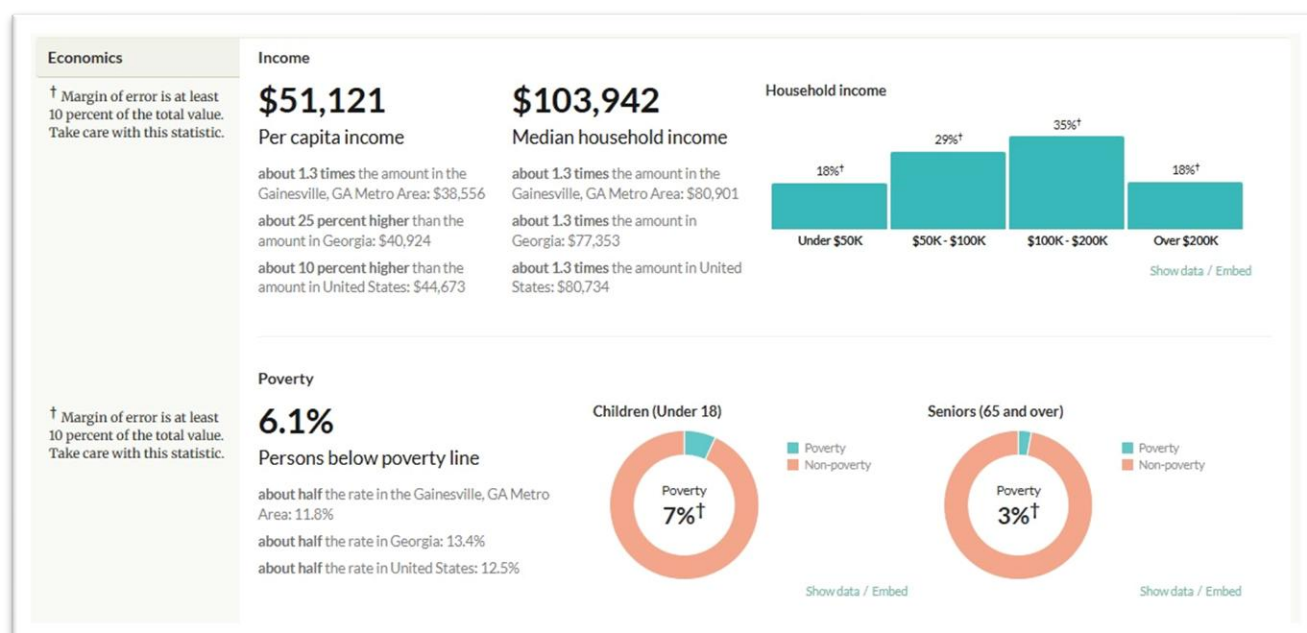
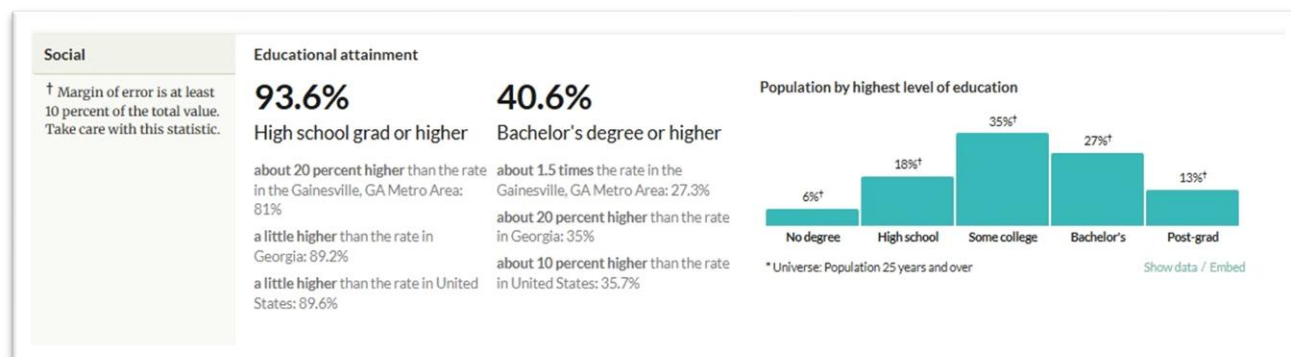
Building permits issued for new single-family house construction have increased (almost year-over-year) from 174 issued in 2016 to 477 in 2020 and 465 in 2025. Furthermore, there has been a growing increase in the number of annexation requests submitted for review, in particular along the Hog Mountain corridor as well as the areas in and around Thurmon Tanner Parkway, Falcon Parkway, and McEver Road. With multiple requests for annexations into the City limits for both residential and commercial development under consideration at the time of this update, there is increased potential for additional growth. Survey results indicate that residents favor a planned and balanced approach to growth and as such, a Future Growth Area Policy Map has been included in Appendix A to help guide the continued interest in bringing more area into the city limits for both residential and commercial development.

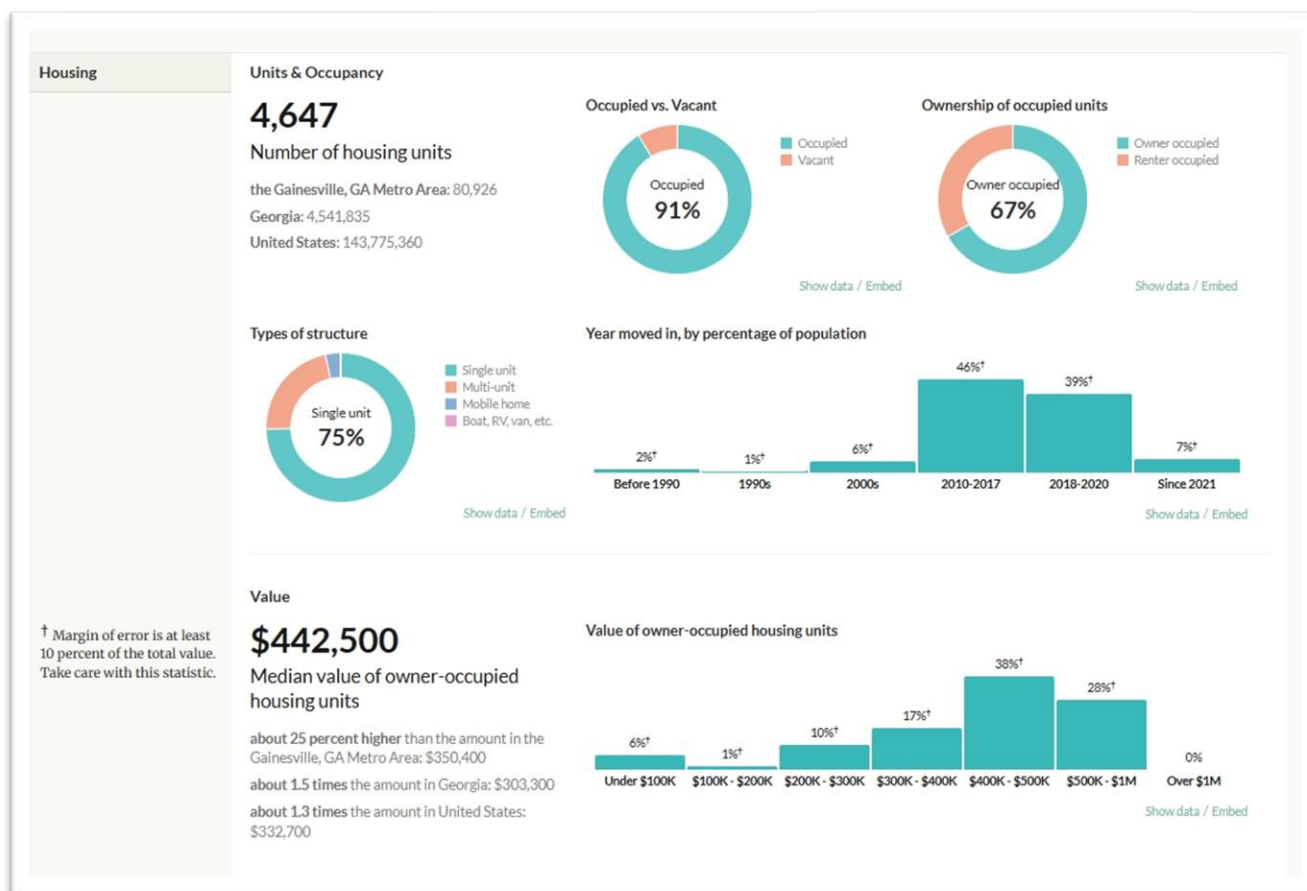


By the Numbers

Future Growth

The growth in the city's population reflects a continuation of trends established during the past decade, based on annual estimates provided by the U.S. Bureau of the Census. This is an "upward" trend as population growth has accelerated year-by-year, and past projections for the population in previous Comprehensive Plan updates have proved to be incorrect as the city grows faster due to its location, downtown, and statistics regarding the education, income, and housing demographics for Flowery Branch.





Current Development Capacity in the City

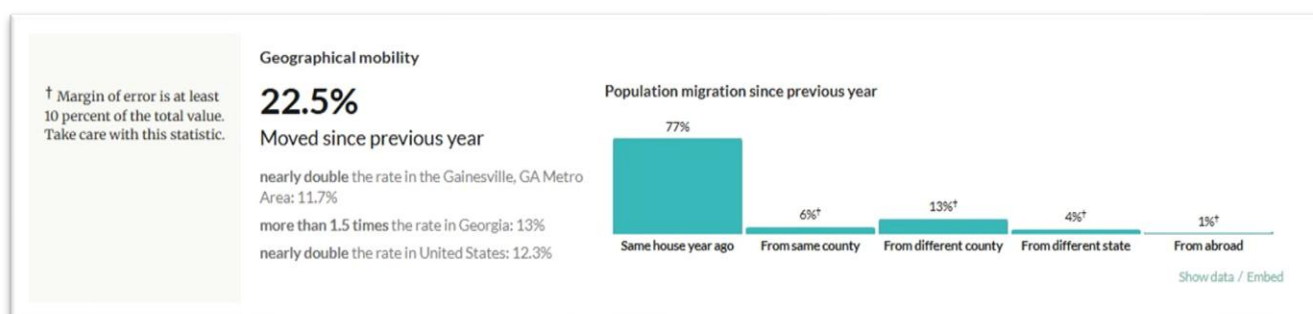
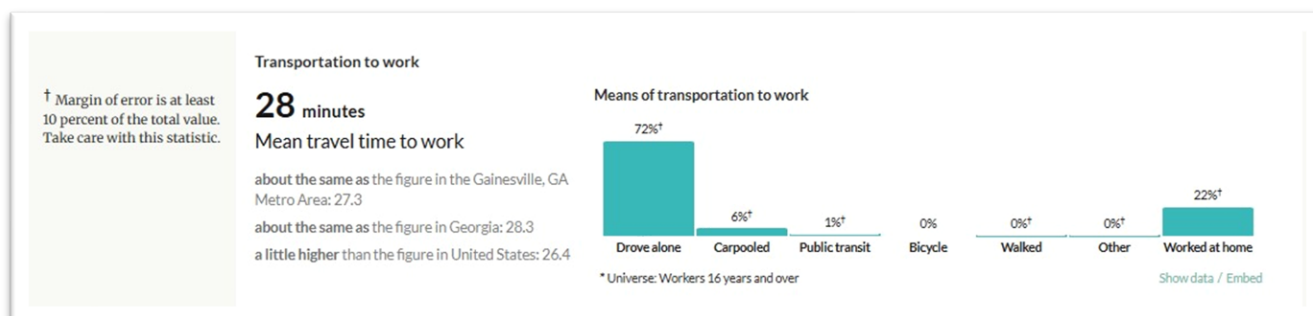
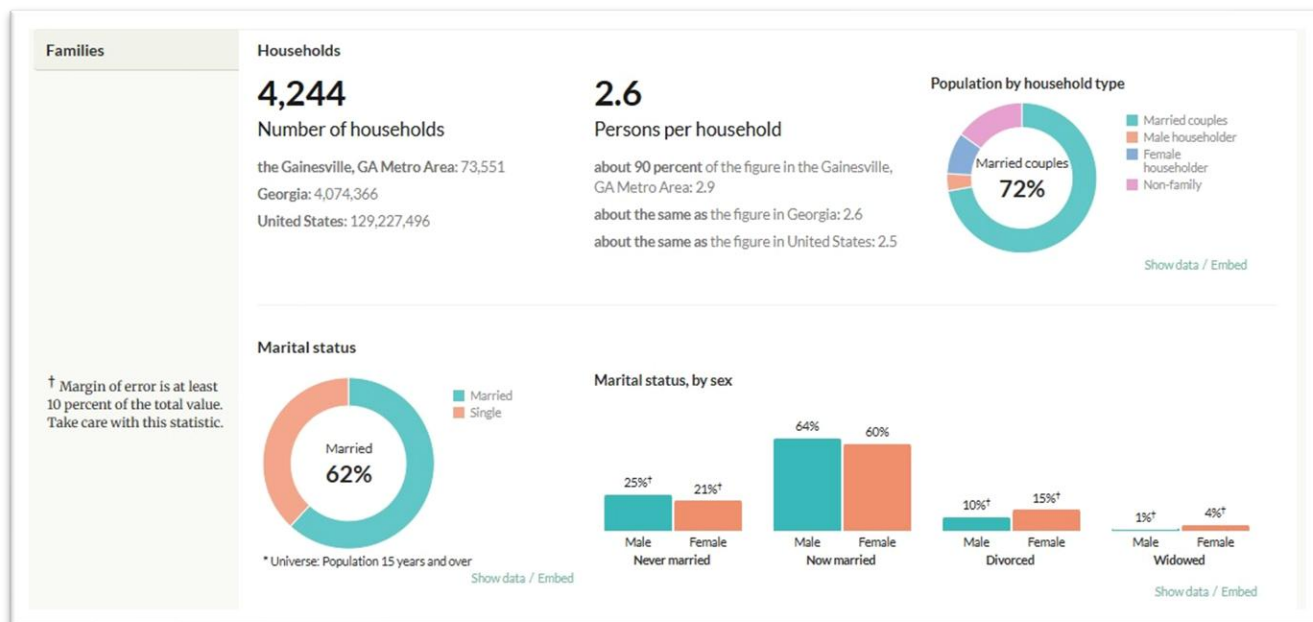
The approach to capacity is to look at the commitments that the City has made through development approvals in place along with the amount of additional vacant land currently zoned and physically capable for further development (i.e., dry land). This analysis assumes no additional rezonings or separate development approvals.

Residential Capacity

With regard to further residential development, the amount of developable vacant but uncommitted land already zoned for residential development has decreased since the previous update. The gross density for R-1, R-2, and TND subdivisions begins with the minimum lot size required and increases that to accommodate streets and minimal “wastage” (to account for cul-de-sac lots, corner lots, and other odd shapes). This results in a best-case scenario of how many lots could be expected under optimum conditions. Together, these zoning districts could accommodate a total of ~750 new housing units.

Next, the number of housing units approved or under construction as part of planned projects, including single-family homes, townhouses, and apartments, were totaled. This shows that 1,196 housing units are approved and/or under construction among these development projects. Together, the potential for new

housing unit construction on zoned but vacant land, plus the units included in approved development projects, would embrace a total of ~1,950 units added to the city's housing supply.



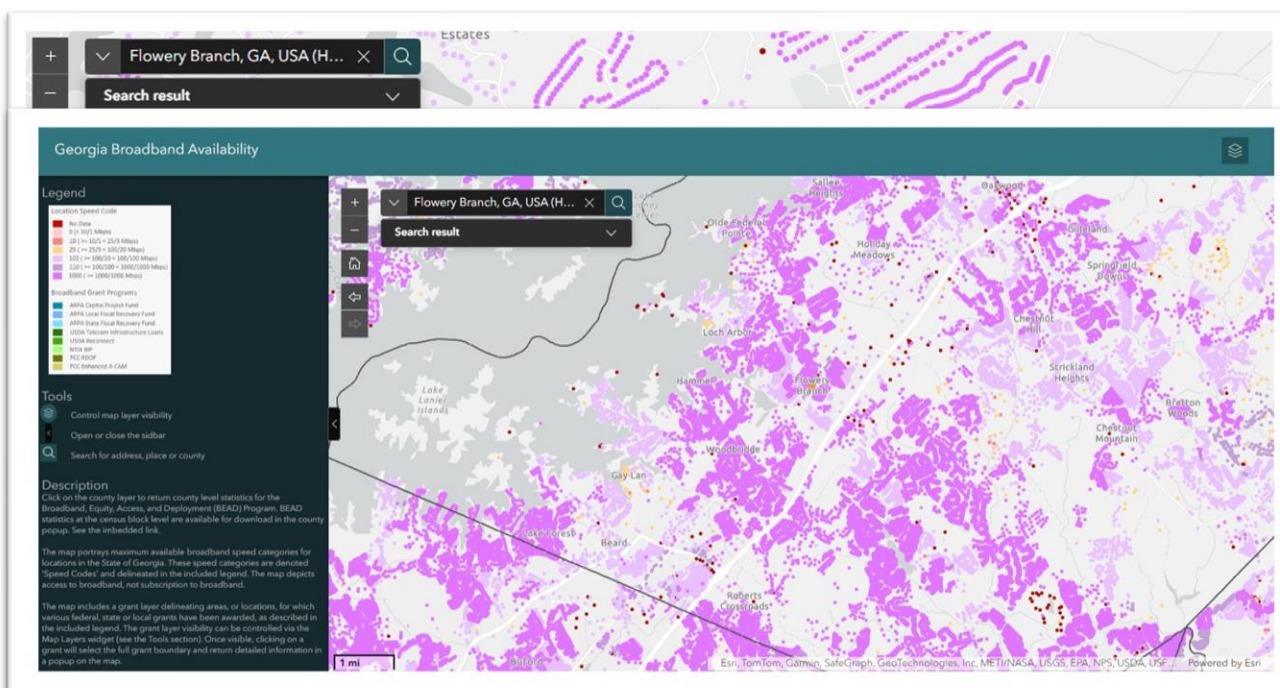
Nonresidential Capacity

As previously noted, the city's employment base is projected to increase along with population growth. Commercial developments currently under construction will bring an increase in employment opportunities, however, the current capacity to accommodate future private sector employees continues to exceed projections. Undeveloped properties currently zoned NS, HB, and M-1, along with continued development in the downtown area, represent the areas with the most potential for employment expansion. Considering that there remains an overage of acreage with commercial potential, the City could benefit from establishing an inventory of undeveloped commercial properties to help guide future commercial development.

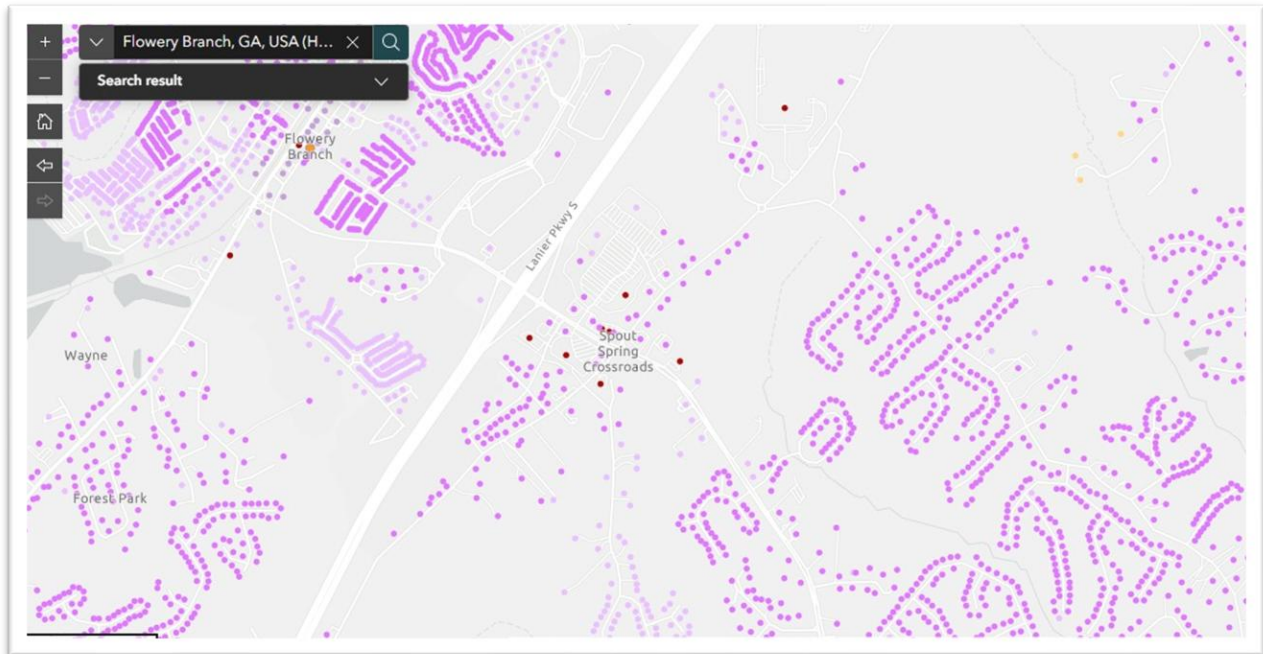
It should also be noted that community survey results indicate a strong emphasis on environmental protection and stewardship. The previous 2021 update cited the need for an increase in City staff in order to meet the regulatory needs of a growing city and that objective has been achieved at the time of this update. As such, the City is in a well-suited position to pursue a Memorandum of Agreement (MOA) with the Georgia Soil and Water Conservation Commission (GSWCC) which would give the City direct province over plan reviews, inspections, and enforcement for all land disturbance and development projects within City limits. Related Action Items can be found under the Natural Resources and Economic Development portions of the Needs and Opportunities section that follows.

Broadband Service & Availability in the City

In accordance with DCA's Minimum Standards and Procedure for Local Comprehensive Planning, local governments must address the **availability of broadband services** and the deployment of broadband services by service providers into unserved areas. According to the Federal Communications Commission (FCC) there are no unserved areas inside the city limits of Flowery Branch. The City will continue to **confirm**



broadband availability to areas and evaluate as necessary the steps promoted by the State to achieve certification as a Broadband Ready Community. See coverage maps below:



CHAPTER 3. NEEDS AND OPPORTUNITIES

Flowery Branch is a growing community with unique needs and opportunities related to its growth and development. This chapter summarizes, in narrative format, the primary local needs and opportunities that are addressed in this plan by recommended action items. These actions, or implementation strategies, are presented in this chapter by a variety of planning topics and are also consolidated into the overall 5-Year Community Work Program in Chapter 5. The topic of land use is addressed in detail in Chapter 4.

Identification of needs and opportunities was informed by an assessment of existing conditions as well as public input. In particular, community surveys and the open-house style public workshops proved particularly effective for gauging local priorities and issues. A public survey was developed for this Comprehensive Plan update, and its findings – combined with those from a previous City-administered survey that focused on downtown redevelopment – along with additional input received via the public workshops and stakeholder meetings developed for this project, were especially useful.

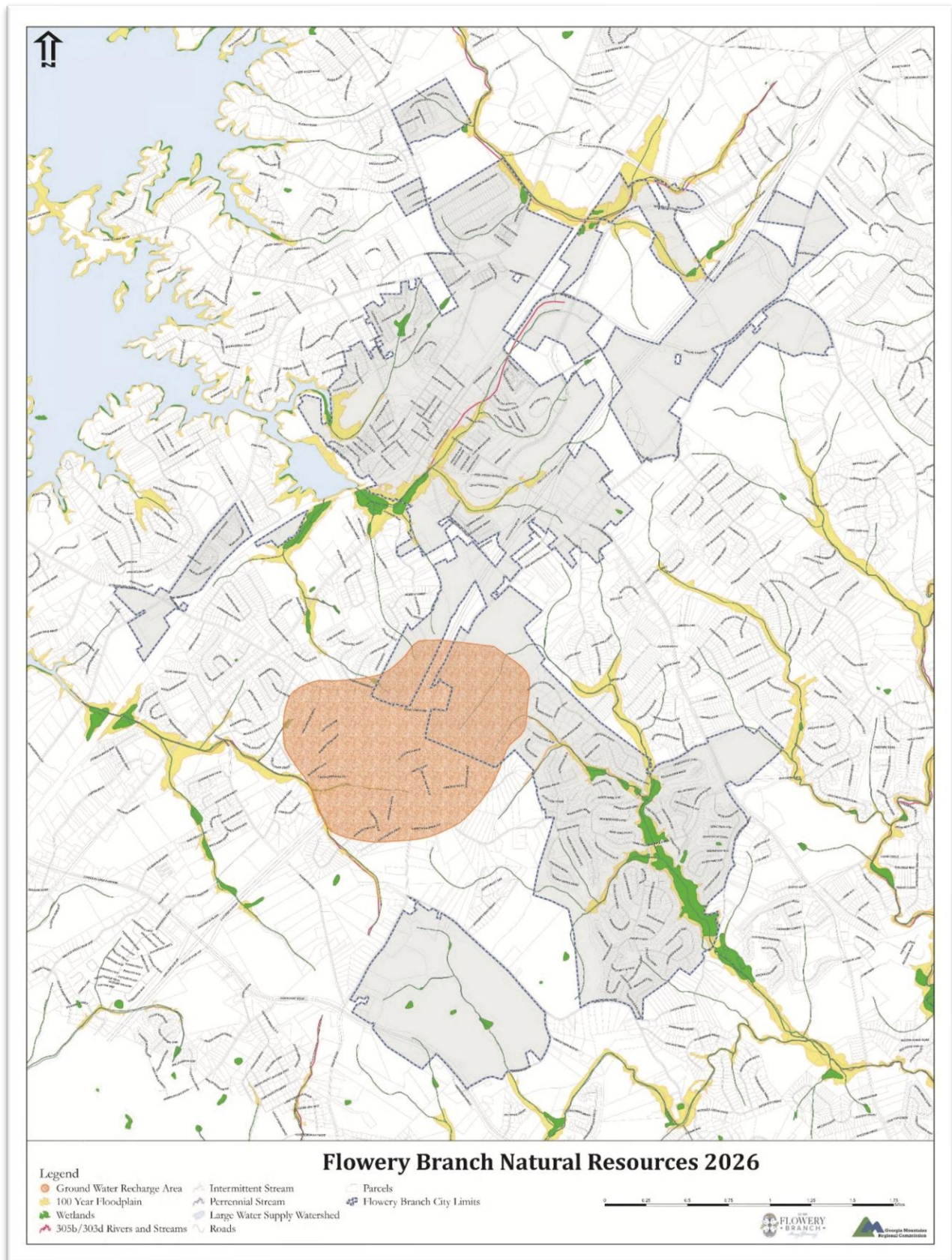
Natural Resources

To protect the state's natural resources and environment, the Georgia Department of Natural Resources (DNR) developed *Rules for Environmental Planning Criteria* (Chapter 391-3-16). The Georgia Department of Community Affairs' (DCA) Minimum Standards and Procedures for Local Comprehensive Planning (Chapter 110-2-1) require local governments to review DNR's rules during the development of comprehensive plans to determine if there is need to adopt development regulations to address **protection of** the following natural resources: **water supply watershed, groundwater recharge areas, wetlands**, protected rivers, protected mountains.

Protected rivers and mountains, as defined by the State, are not found in Flowery Branch. As shown on the Natural Resources Map on the next page there are, however, scattered wetlands, a small groundwater recharge area of low pollution susceptibility (as delineated by the DNR in Hydrologic Atlas 18, 1989) in the southern portion of the city, and a large water supply watershed that generally falls west of I-985 within the boundary of the Upper Chattahoochee River Basin. Wetlands protection is currently addressed in the City's adopted local ordinances, but protection of groundwater recharge areas and water supply watershed areas is not specifically addressed among the City's 11 ordinances that relate to the environment.

DCA requirements also specify that local governments **review** their **regional water plan** to determine whether additional or modified actions are needed. The City of Flowery Branch is a member of the 15-county / 97-city Metropolitan North Georgia Water Planning District, which adopted a regional *Water Resource Management Plan* in 2022. The plan recommends specific measures for the use and management of the region's water over the next 35 years to address: water resource management, water supply planning and conservation, wastewater, and watershed management. Flowery Branch provides water and wastewater (sewer) service and is working toward implementation of applicable management techniques identified in the Regional Water Plan. Expansion projects to increase capacity for both water and

wastewater (sewer) are currently underway at the time of this update.



The **preservation of the city's tree canopy** and **greenspace** was cited often by community survey respondents as being important, from both an environmental protection standpoint as well as contributing to the character of the Flowery Branch and quality of life. The City has a Buffer, Tree Protection and Landscaping Ordinance with tree retention guidelines and tree planting requirements, and the Zoning Ordinance includes **minimum open space requirements** by zoning district as well as clearing and grading standards. Upon completion of the previous Comprehensive Plan update, the City updated its Zoning Ordinance and Subdivision Ordinance to facilitate implementation of this plan; in doing so, open space requirements were strengthened to address local concerns.

An updated Buffer, Tree Protection and Landscaping Ordinance is underway and can also strengthen the City's **application package to Tree City USA**, which would further demonstrate its commitment to tree protection. Such a designation would require the appointment of a Tree Board, which would allow interested residents to participate in overseeing the planting and care of trees on City-owned properties.

Updated open space requirements assist with the local efforts to integrate multi-use trails into the City by allowing new developments to satisfy these requirements by granting a **conservation and trail easement** where a planned segment traverses the property. This has previously been achieved as a condition of zoning to help the City in the future to construct portions of trails that were identified in the 2019 South Hall Trail Study and has been codified as of this update.

Natural Resource Action Items

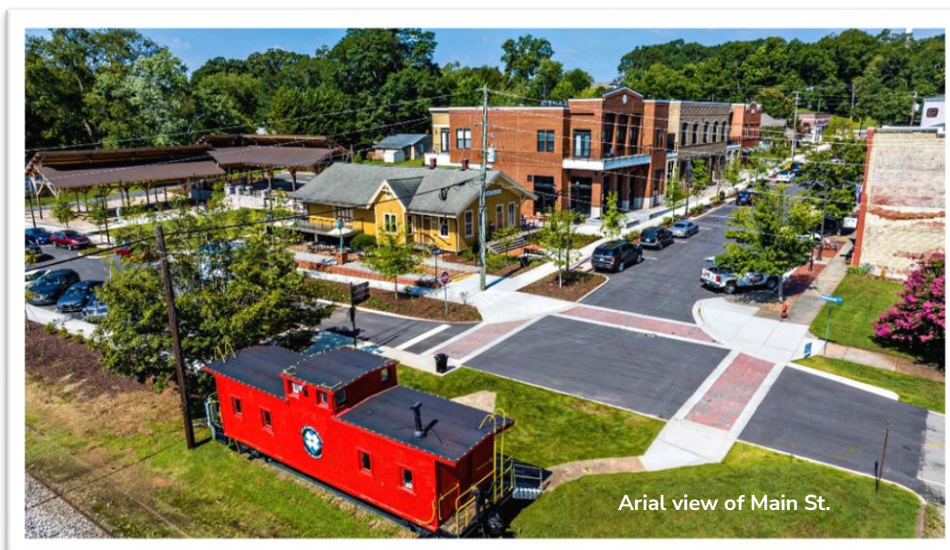
- Adopt DNR's model Water Supply Watershed Protection Ordinance, which will enhance buffer requirements along two small segments of Mud Creek and Flowery Branch (see map on previous page)
- Consider obtaining an MOA with GSWCC
- Amend as needed DNR's Groundwater Recharge Protection Area Ordinance, which will increase minimum lot size requirements for any property not on the City's sewer system in the southeast part of the city (see map)
- Amend Buffers, Tree Protection and Landscaping Ordinance to strengthen tree retention (including specimen trees) and planting requirements
- Submit Tree City USA application in concert with Buffer, Tree Protection and Landscaping Ordinance amendments
- Continue to implement Metropolitan North Georgia Water Planning District's Water Resource Management Plan, including 5-year updates to local Water Master Plan (underway) and Wastewater Master Plan (2023/24)
- Improve pedestrian connectivity between existing and future parks, neighborhoods, trails, and green spaces

Historic Resources

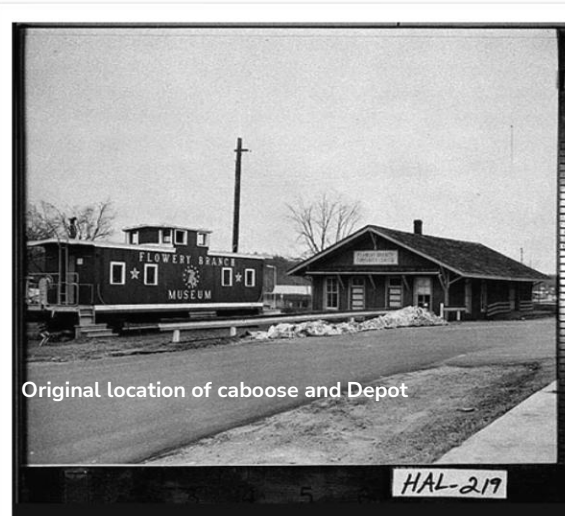
Preservation of historic resources was identified by survey respondents as an important factor in preserving the city's unique character and sense of place. As shown on the Historic Resources Map on the next page, the Flowery Branch Historic District encompasses properties in the downtown area as well as a smaller area that is listed on the National Register of Historic Places. The National Register District confers honorary status on an area or buildings and has no automatic restrictions on private development. It does allow property owners the potential to qualify for state and federal building rehabilitation tax credits.

The locally designated Flowery Branch Historic District requires review and approval of proposed new construction, exterior building alterations and additions, and demolition of existing buildings by a Council-appointed Historic Preservation Commission to ensure consistency with the architectural character of Old Town. Proposed changes are reviewed against a fairly general set of design guidelines that were included in the 2016 Comprehensive Plan and are provided in this document as an Appendix item. Proposed signs in the historic district must also be reviewed; these are regulated by a detailed Historic District Sign Ordinance.

As a Certified Local Government (CLG), the City is also eligible to apply to the federal **Historic Preservation Fund (HPF) Grant Program** to assist with rehabilitation projects for exterior materials such as wood, masonry or plaster, window repairs or structural and foundation stabilization for buildings, structures, or monuments. The CLG Program is administered by the National Park Service and



Aerial view of Main St.



Original location of caboose and Depot

HAL-219

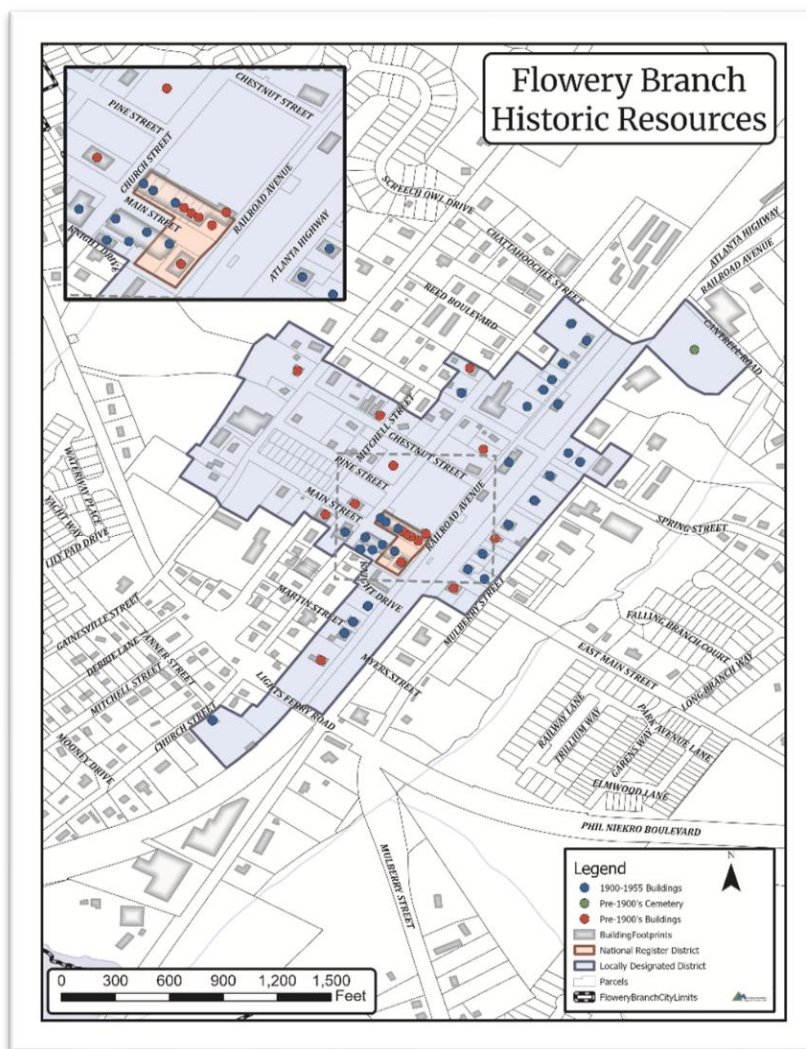


Current location of Depot with pedestrian path to the Farmer's Market Pavilion

the Georgia State Historic Preservation Office (SHPO) and includes communities that have a local Historic Preservation Ordinance and active Historic Preservation Commission in place.

HPF matching grants could assist with the maintenance of City-owned historic resources, similar to recent repairs that were made to the downtown Caboose (painting) and Depot (new windows). The funds can also be used for a variety of other uses, including the development of a tailored set of building and site design guidelines – which is needed for the Flowery Branch Historic District – and heritage tourism materials.

In order to qualify for the full array of HPF grant assistance, however, the City must update its historic resources survey, which is required of CLG communities with surveys that pre-date 2005. Until that occurs, the City may apply for grant assistance only toward the completion of the survey. Upon its completion, Flowery Branch is eligible to apply for additional financial assistance covering a variety of project types.



The Historic Resources Map also indicates the relative age of buildings that were re-surveyed in 2008 after a 2003 "historic resources survey" was conducted. An **update to the citywide historic resources survey** would allow the City to better assess the age and condition of its structures, which in turn would help with the identification of appropriate measures for building stabilization or rehabilitation or for property redevelopment. Such measures might include an application to the U.S. Department of Housing and Urban Development's Community Home Investment Program (CHIP), which awards grants to local governments, nonprofits, and public housing authorities to assist with the rehabilitation of owner-occupied homes.

Historic Resource Action Items

- Explore amending existing ordinances to expand criteria for membership on the Historic Preservation Commission
- Continue efforts to complete Phase II of the Downtown Redevelopment Plan
- Update citywide Historic Resources Survey, seeking Historic Preservation Fund grants to do so
- Codify general "Historic District Design Guidelines" from the 2016 Comprehensive Plan (to be used in

- conjunction with the Historic District Sign Guidelines) as a temporary measure
- Prepare tailored, stand-alone Historic District Design Guidelines to replace the guidelines currently in effect

Housing

Survey comments related to housing can be categorized into two main themes: a desire to maintain the city's single-family character and also an emphasis on the desire for growth to be balanced, well-planned, and closely aligned with citizen needs and quality of life (i.e. connectivity, infrastructure support etc.). Expressed concerns included a change in the city's small-town character as well as impacts on local services and facilities such as roads and schools. Other themes that emerged from the survey results were an interest in more mixed-use developments, including additional residential over retail in the downtown area, as well as an increase in senior/aging-in-place housing options.

As described in Chapter 2, residential development has continued to increase in recent years. Approved developments reflect a variety of housing types to meet varying needs or demands, from in-town apartments to senior-oriented housing. Over 1,196 residential units are approved or under construction, comprised of over 700 single-family dwellings and approximately 450 town homes. In the 2016 Comprehensive Plan, a carry-over housing policy from a previous plan update was included, which established an appropriate mix of dwelling types across the city as 60% single-family/20% apartments/15% townhomes/5% manufactured homes. With the support of City Council, these ratios were revised in the 2021 update and carried over for this update to 70% detached single-family/15% townhomes/15% multi-family and are referenced when rezoning applications are evaluated.

The Future Development Map (FDM) and character area policies in Chapter 4 describe appropriate locations for single-family residential development, consistent with the prevailing character of the City. The FDM also identifies opportunities for future higher density uses in the downtown area and in targeted areas where neighborhood-oriented commercial uses are currently concentrated or can be supported in the future. To better understand the City's specific housing needs, a citywide housing study could be prepared. Such a study analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential that may prove a more useful resource when assessing proposed rezonings.

Since completion of the 2021 Comprehensive Plan Update, the City has amended its Architectural Design Standards to apply to all buildings, whether commercial or residential, establishing minimum standards that all development must meet. Furthermore, the City also amended the Zoning Code to require design review by staff for all proposed developments prior to the issuance of any building permit.

Housing Action Items

- Continue implementing the City's Architectural Design Standards to address residential uses
- Continue tracking citywide housing ratios with rezoning applications against updated 'housing mix policy' of 70% single-family/15% townhomes/15% multi-family

- Consider adjusting housing ratios to account for residential over commercial mixed-use housing options
- Prepare a citywide Housing Study that analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential needs
- Explore additions of workforce housing, alternative construction practices and building materials, and incentives for green housing options

Economic Development

Numerous survey responses indicated a need for an increase in, and **variety of, local restaurants and businesses** as well as the **revitalization of the downtown** area. The City has actively been revitalizing Old Town in accordance with the recommendations from the 2014 Old Town Redevelopment Plan and with funding support for redevelopment activities through the adopted Old Town and Commercial Gateways Tax Allocation District (TAD).

The Old Town Redevelopment Plan's recommendations (see Concept Plan below) are intended to identify specific projects that City can initiate and lead to spur development and economic activity in the downtown. Examples of significant projects that have been implemented to date include construction of the new Farmer's Market Pavilion, covered Markey Alley, Pine Street Amphitheater, and Church Street improvements as well as expanded public parking along Railroad Avenue.

Additional Redevelopment Plan implementation projects initiated by the City include downtown park projects, the planned addition of more parking spaces off Main Street and Railroad Avenue, public-private ventures to develop additional mixed-use (retail and upper floor residential) space and townhomes, and coordination with Hall County and US Army Corps of Engineers to improve the western portion of Mitchell Street to improve access to Flowery Branch City Park and nearby properties and development opportunities. Based on comments received via the survey as well as at the open-house style Comprehensive Plan workshops, **many residents are not aware of the progress¹** being made in Old Town.

¹ Examples include downtown streetscaping, Farmer's Market pavilion with additional parking, ½ acre park featuring an amphitheater, infrastructure improvements/expansions, and development of an Old Town bike-pedestrian path connecting surrounding neighborhoods to the downtown area.

To sustain the momentum of redevelopment activity in the downtown, the City would benefit from an **update to the 2014 Redevelopment Plan**. The update would identify additional development and redevelopment opportunities and would help facilitate administration of the CBD - Central Business District Zoning District by identifying acceptable land use types and densities.

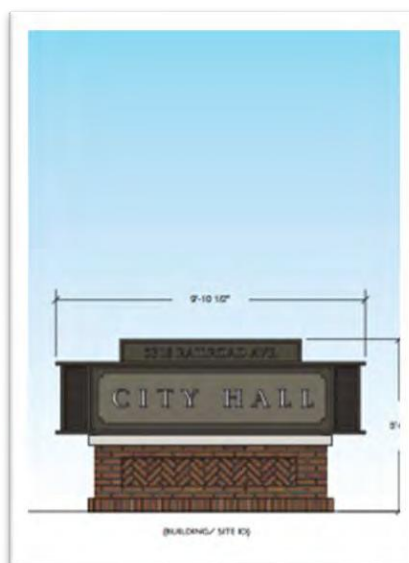
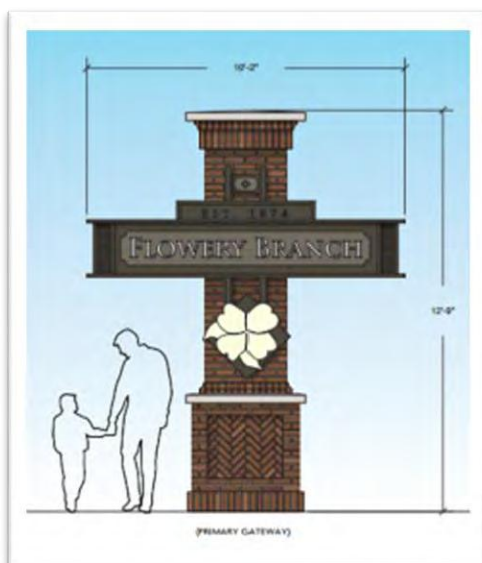
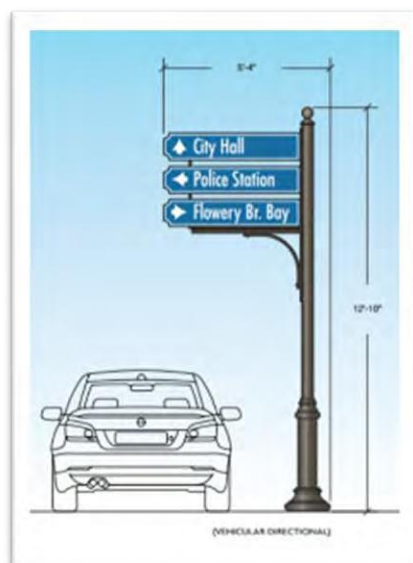
To assist with the recruitment of desired businesses in the downtown, the City has a leasing contract with a realtor for the city-owned retail spaces. Outside of the downtown, the Future Development Map (see Chapter 4) identifies locations suitable for additional commercial development, ranging from smaller scale 'neighborhood commercial' uses to larger shopping destinations. In addition, the Gainesville-Hall Chamber of Commerce posts on-line information about available industrial buildings and sites. The City also participates in the Gainesville-Hall Economic Development Council. The City could benefit from exploring partnerships with other business associations or a small business incubator to increase commercial and employment development.

To assist with **wayfinding and branding**, the 2005 Comprehensive Plan Update originally recommended "gateway improvements" whereby the following primary corridors that act as gateways to the city be enhanced and maintained:

- Entry into the city of Flowery Branch from I-985 at Spout Springs Road;
- Entry into the city of Flowery Branch from Atlanta Highway into the downtown area;
- Entry into the city of Flowery Branch from the intersection of McEver Road and Gainesville Street;
- Other primary corridors that are identified (such as Exit 14, the new interchange at I-985); and
- Additional suggestions in the Old Town Redevelopment Plan for downtown gateway projects

To that end, the City has prepared designs for citywide signage projects to be implemented in phases (phase II underway at the time of this update), completed signs are pictured below their respective conceptual images.





Economic Development

Action Items

- Update 2014 Old Town Redevelopment Plan to guide continued downtown revitalization efforts
- Coordinate with developers to ensure Phase II of Downtown Redevelopment Plan includes diversity of retail and restaurant options
- Continue to implement Citywide Signage Project
- Explore paths and partnerships with small business associations and/or a business incubator for small business growth
- Consider creating an inventory of available and undeveloped commercial parcels within the City
- Explore adding an economic development position to City staff

Community Facilities and Services (includes Transportation)

As mentioned under the Housing section, survey respondents expressed concerns about the **impacts of residential growth on public facilities and services**. These include water, wastewater (sewer), stormwater, parks, and transportation facility needs.

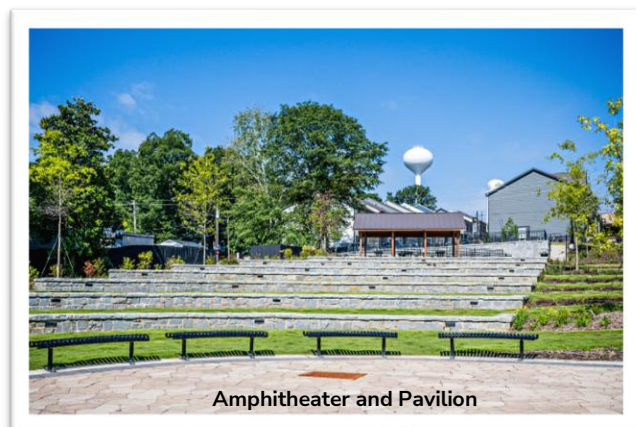
In order to meet current and future demands, the City has plans to meet **water and wastewater system needs** over the next five years. In 2020 the City was awarded \$23,300,000 in Georgia Environmental Financing Authority (GEFA) financing to update its water reclamation system to increase wastewater treatment capacity and \$5,710,000 in GEFA financing to purchase a new well system to increase water supply to the city. The wastewater treatment plant expansion will double the plant's capacity to serve approved and future residential, commercial, and industrial development and is currently under construction.

Stormwater infrastructure needs in the downtown area were cited as an issue in the 2016 Comprehensive Plan update. The City has undertaken, or is in the process of, stormwater improvement projects downtown and on East Main Street and Lights Ferry Road. However, there is **not a comprehensive stormwater management program** with additional identified project needs and dedicated funding to repair and maintain a stormwater system for the long term.

The **need for additional parks and green space** was identified by survey respondents, in particular in the Old Town area. As part of the overall downtown revitalization efforts that have also been identified by the public as an important initiative, the City has been working toward **adding park space to Old Town**. In addition to the Dean Jones Family Park at the downtown roundabout, construction has been completed for the following new parks and open spaces:

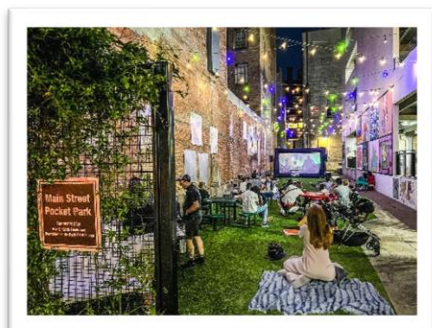
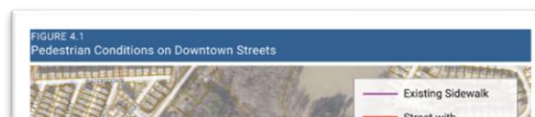
- *Farmer's Market Pavilion Park* – a covered pavilion behind the Depot between Main Street and Knight Drive, with a 20-space parking lot adjacent to the railroad
- *Market Alley Breezeway* – a covered pedestrian connection from Main St. to the Market Pavilion with passive seating areas, seasonal displays, and gathering spaces
- *Pine Street Park* – amphitheater and picnic pavilion; Church Street as a curbless, pedestrian style plaza in the style of the Dutch “woonerf” or “living street”.





As part of an update to the 2014 Old Town Redevelopment Plan that is recommended in the Economic Development section above, improvements to Flowery Branch City Park can be addressed. The park's waterfront location and its proximity to downtown and residential areas make it a unique asset; however, the extent of current pedestrian and vehicular accessibility, and the fact that it is not owned by the City, prove more challenging for the park to readily realize its full potential. Additionally, Phase II of downtown redevelopment initiatives should incorporate meaningful and intentional green space that maximizes pedestrian access and safety as well as enhancing connectivity (see conceptual examples below).

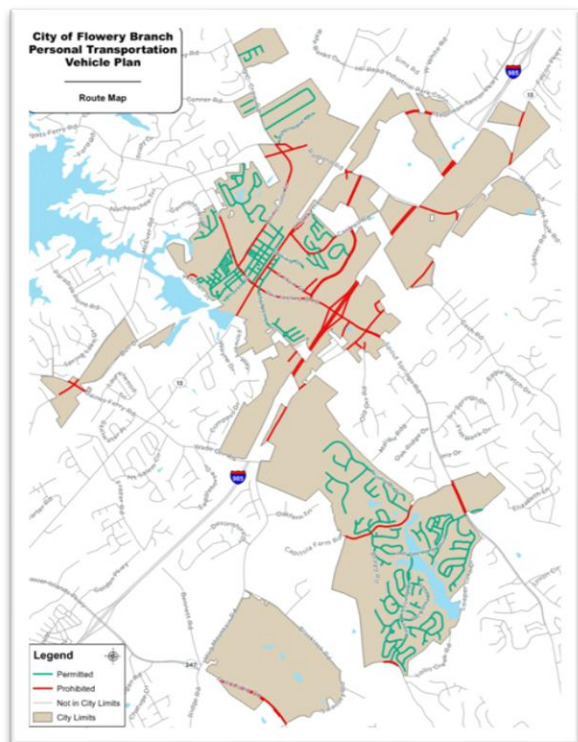
In addition to park space, other recreation-related amenities



Improvement recommendations from
2024 Parking & Mobility Study

that also can provide needed connectivity are **sidewalks, multi-purpose trails, bike lanes, and golf cart paths**. Survey responses indicated a desire for all of these. Sidewalks are required to be installed with new developments, and sidewalks are being expanded downtown as redevelopment projects continue. In collaboration with GHMPO, the City had a 2024 Parking and Mobility Study prepared, incorporated into this plan by reference, which identified areas for improvement in the downtown area.

The City has a Personal Transportation Vehicles (PTV) Plan that shows where PTVs (i.e., golf carts) are allowed in the City. It has recently been amended to include the Summit Lake subdivision.



Personal Transportation Vehicle Map (left); Overall trail system map for Highlands to Islands Trail System (below)



Organization (GHMPO) South Hall Trail Study recommended segments in Flowery Branch that form the framework for a comprehensive countywide multi-use trail system. In 2022, GHMPO published the Highlands to Islands Design Guide which provided comprehensive visual guidelines to assist local jurisdictions in the development of trail segments. The proposed trail system is a collaborative, multi-jurisdictional project to increase pedestrian safety, connectivity, and enhance the quality of life for residents and visitors alike.

In order to fund construction of a trail system in Flowery Branch, the City has the **potential to utilize development impact fees** that it collects for “Parks and Recreation” on behalf of Hall County as part of an almost 20-year intergovernmental agreement. However, the terms of the agreement do not give the City the ability to direct where the funds will be spent, and there is not a current list of City-specific park needs (which could include trails) that are incorporated into the County’s Capital Improvements Element (CIE).

Road congestion was cited by numerous survey respondents as a significant issue in the city. As part of the federally designated

Gainesville-Hall Metropolitan Planning Organization (MPO) boundaries for long-range transportation planning, the city is addressed in the MPO's Regional Transportation Plan (TRP), which is updated every five years.

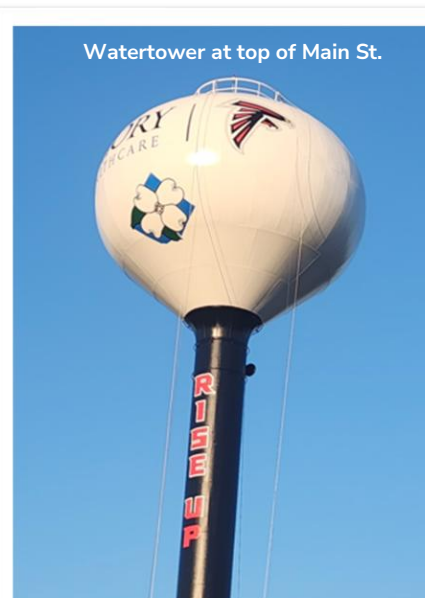
Due to the scope of the TRP, local needs are not addressed in detail. Projects that are included in that plan are long-range (not projected to be constructed for at least 10 years) due to lack of funding: Widening of SR 13/Atlanta Highway/Falcon Parkway from Radford Road to south of SR 53/Winder Highway (*project GH-033 at right*) and operational improvements at SR 13/Atlanta Highway/Falcon Parkway at I-985 & at CR 527/Thurmon Tanner Parkway (*project GH 129 above*). The plan no longer includes improvements at Exit 12 of I-985 that were anticipated with the planned widening of I- 985 that the Georgia Department of Transportation (GDOT) has determined is no longer necessary.



To address **congestion at major intersections** along McEver Road, the MPO recently completed the McEver Road Intersection Report (2021), which includes conceptual plans for roundabouts at the intersections inside the city limits: at Gaines Ferry Road and at Radford Road. Beyond these intersections, a holistic approach to addressing traffic is needed in the city. The MPO commissioned a Citywide Traffic Improvement Study for the City of Oakwood that evaluated conditions at 18 strategic locations in the city's road network and prepared improvement strategies and planning-level costs. Flowery Branch would benefit from the same type of study.

Community Facilities and Services Action Items

- Conduct a Stormwater Utility Feasibility Study to understand the City's stormwater needs, the timing of each needed project and associated costs, and the process of establishing a funding mechanism that could allow the City to become more proactive with maintenance and repairs
- Coordinate with Hall County to implement McEver Road roundabouts (@Gaines Ferry and Radford Roads)
- Explore conducting an Area of Improvement study and map to identify pedestrian crossings that could be improved
- Prepare a Citywide Traffic Improvement Study
- Expand passive recreation areas and green spaces downtown
- Apply for Safe Streets 4 All (SS4A) grant to improve pedestrian connectivity and safety along Phil Niekro Blvd. and East Main St.
- Expand public parking capacity to better serve downtown businesses and events
- Improve connectivity between neighborhoods, parks, trails, and downtown via sidewalk expansion and multi-use trails
- Identify opportunities to establish EV charging stations for public use downtown
- Construct East Main Street trail (12' multi-use path from Thurmond Tanner Road to Flowery Branch City Park) that was identified in the Old Town Redevelopment Plan
- Coordinate with Hall County on the use of impact fees for parks and trails projects, and for applicable planning studies
- Explore a possible IGA (Intergovernmental agreement) with Hall County to provide Parks & Rec support for existing and proposed City parks and green spaces
- Explore the addition of City hotspots and/or Wi-Fi access downtown
- Confirm city-wide broadband availability and evaluate the steps promoted by the State to achieve certification as a Broadband Ready Community



Watertower at top of Main St.



Wastewater Expansion Project currently underway



Roundabout at Lights Ferry Rd.

CHAPTER 4. COMMUNITY VISION

While every component of the Comprehensive Plan is important, it is this chapter that is most influential in terms of everyday decision-making. The Future Development Map presented in this chapter is most often (and properly) cited in support or denial of zoning and other land use changes. It is preceded by a general vision statement, which is intended to paint a picture of what the community desires to become. Both the

Future Development Map and the Vision Statement have the 2016 and 2021 Comprehensive Plans as their foundation and are updated in this 2026 Comprehensive Plan.

Chapter 3 satisfies both the “Community Goals” element and the “Land Use Element” required by the Georgia of Community Affairs’ Planning Standards for Local Comprehensive Planning.

Vision Statement

A vision statement paints a vivid picture of the future a community is striving toward, capturing the spirit, aspirations, and character its residents hope to see realized. It functions as a guiding compass, unifying leaders, residents, and stakeholders around shared goals and helps guide decision-making throughout the planning process. Several vision statements, and accompanying taglines, were developed by the stakeholder committee and presented to the citizens of Flowery Branch via a public survey. The following vision statement and tag line are the result of that collaboration:



Future Development Map

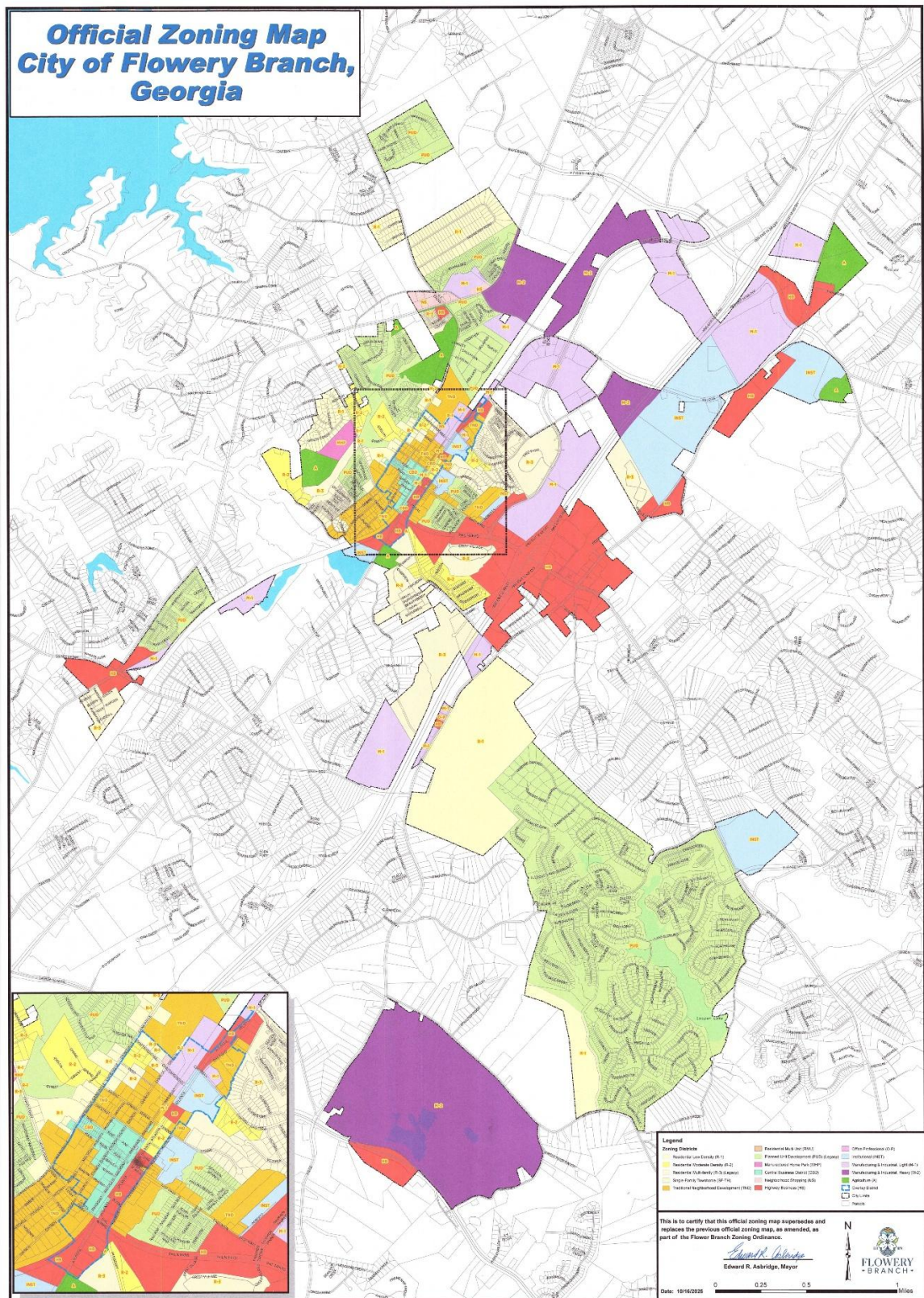
The most important illustrative graphic of the comprehensive plan is the Future Development Map, which is presented in this chapter. This map is intended to guide decision-making related to the physical location of certain land uses and where the most appropriate type and intensity of development should occur. Although the Future Development Map will be cited as an overall expression of the City’s land use policy, care must be taken to interpret the map with due regard to the City’s overall vision statement, character area policy, and other narratives provided in this comprehensive plan.

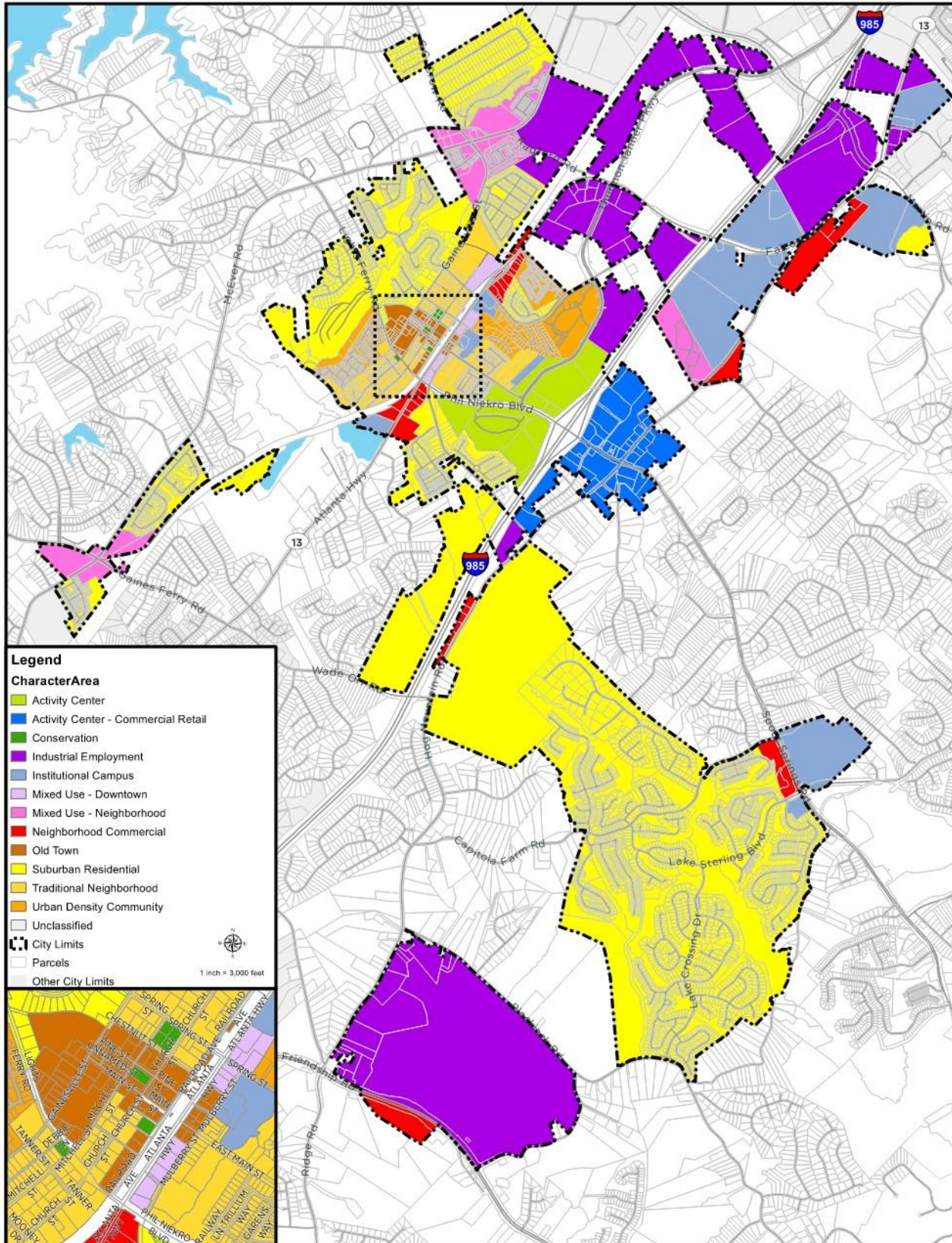
Character Areas

The Future Development Map shows the geographic location of unique character areas that describe the type of development desired for particular areas in a community. Every parcel in the City is included in a character area, and the boundary for each area generally follows parcel and/or street lines. The accompanying description of each character area is presented as a “character area policy” that summarizes the desired vision for each area, including appropriate: land uses, density or intensity of development, aesthetics, and zoning districts for each area. When applicable, implementation strategies are also provided, which are also carried over into the 5-Year Community Work Program in Chapter 5.

The following character areas are reflected on the Future Development Map and are described in this chapter:

- Conservation
- Suburban Residential
- Traditional Neighborhood
- Urban Residential Community
- Old Town
- Mixed-Use – Downtown
- Mixed-Use – Neighborhood
- Neighborhood Commercial
- Activity Center
- Activity Center – Commercial Retail
- Industrial Employment
- Institutional Campus





Conservation

Conservation areas include City-owned or maintained parks and open spaces.

Vision

Protect open space and environmentally sensitive areas for recreation and conservation purposes. Provide interconnected and meaningful greenspace for residents and visitors.

Design Principles

- Minimal impervious surface
- Site features, building placement and exterior materials should blend with the surrounding landscape
- Emphasis on pedestrian access and use

Land Uses

- Passive and active recreation
- Undeveloped areas in their natural state

Zoning

No zoning districts implement this character area, with the exception that City parks may be zoned INST, Institutional District. Private properties may be required to provide open space or recreational amenities based on their underlying zoning classification; in addition, properties are subject to environmental protection ordinances that also contribute to how a property may be used and developed.

Implementation Strategies

Actions items focus on implementing or amending local regulations intended to conserve tree cover and to enhance water quality. These are described in the Needs and Opportunities Chapter in the Natural Resources section.

Illustrative Photos



Suburban Residential

Illustrative Photos

Suburban Residential areas are located throughout the city and include locations where low- to moderate density single-family development exists or is likely to be proposed based on a property's zoning and surrounding uses.

Vision

Protect established single-family neighborhoods and create high-quality new residential construction at suburban densities.

Design Principles

- Larger lots (1/3 to 1 acre) with houses set back from the road
- Cul-de-sacs and curvilinear streets (that are relatively wide when compared to traditional neighborhoods) with sidewalks
- Use of high-quality exterior cladding materials (that are consistent on each level of the home)
- Diverse architectural styles are allowed, but there should be compatibility in overall neighborhood design such as roof pitch, building width, and level of ornamentation
- De-emphasized garage (recessed, side, or rear entry)
- Incorporation of meaningful open space, including shared areas for the benefit of residents

Land Uses

- Single-family detached dwellings
- Recreational uses integrated into a neighborhood

Zoning

- R-1 Detached Single-Family, Low-Density District
- R-2 Detached Single-Family, Moderate-Density District

Implementation Strategies

- Implement the City's Architectural Design Standards to address residential buildings
- Consider expanding City zoning designations to include a Master Planned Development option

Traditional Neighborhood



Illustrative Photos

The Traditional Neighborhood character area includes the in-town residential areas around the downtown core of Old Town.

Vision

Maintain the character and development pattern of the originally settled neighborhoods of Flowery Branch, with sensitive residential in-fill development and careful improvements where required including new sidewalks, street trees, and other pedestrian-friendly streetscape features.

Design Principles

- Little, if any, building setbacks from city streets
- Rectangular or square blocks and lots, and block lengths should not exceed 800 feet without intervening (mid-block) pedestrian footpaths
- Narrow streets in a grid-like pattern with shade trees
- Building facades emphasize porches
- Rear entry garage or detached rear garage
- Wide sidewalks
- Smaller lots/higher density than Suburban Residential
- Provision of public greens or common areas when new neighborhoods are created

Land Uses

- Primarily single-family detached dwellings
- Townhouses may be allowed
- Greens, plazas, and pocket parks incorporated into development plans

Zoning

- TND, Traditional Neighborhood Development

Implementation Strategies

- Implement the City's Architectural Design Standards to address residential buildings



Urban Density Community

Urban Density Community areas reflect existing townhouses and multi-family developments in the city.

Vision

Maintain higher density, urban living environments that contribute to housing options within the city.

Design Principles

- Densities range from 6 to 12 units per acre
- Master planned with high quality architecture and building materials, entrance landscaping, and recreational amenities (subject to design review and approval)

Land Uses

- Duplex
- Triplex
- Quadplex
- Apartment complexes
- Townhouses
- Retirement community / senior housing
- Manufactured home parks

Zoning

- SF-TH, Single-Family Townhome
- RMU, Residential Multi-Family

Implementation Strategies

Implement the City's Architectural Design Standards via reviews and inspections to address residential buildings

Illustrative Photos



Old Town

Old Town encompasses the historic central business district and includes a significant portion of the Old Town Redevelopment Plan (2014) boundary and the Flowery Branch Central Business District and overlays.

Vision

Protect and enhance downtown, making it a vibrant, pedestrian-friendly focal point of the City that integrates new development in a historic framework with a mix of uses, increased density at a comfortable scale, and open spaces and high-quality buildings that enhance the public realm.

Design Principles

- Small blocks; lots on narrow streets
- Pocket parks or greenspace as a part of mixed-use developments
- Architectural style and building materials that complement the historic fabric of the area (design review is required)
- Typically greater lot coverages, building heights, and building intensities and little or no front and side building setbacks when compared with other character areas
- Redevelopment must be consistent with principles and recommendations of the Old Town Redevelopment Plan

Land Uses

“Main Street”-style commercial and vertical mixed-use with retail and restaurants. Residential uses include upper floor dwelling units in mixed-use buildings, single-family dwellings, and limited townhome development.

Zoning

- CBD, Central Business District
- TND, Traditional Neighborhood Development

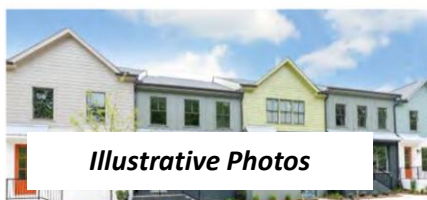
Implementation Strategies

Update the 2014 Old Town Redevelopment Plan to identify additional development/redevelopment opportunities (and their acceptable use types and densities) to facilitate administration of the CBD zoning district.

Mixed-Use - Downtown

The Mixed-Use - Downtown area includes parcels along the railroad that are adjacent to the Old Town and Traditional Neighborhood

Illustrative Photos



Illustrative Photos



character areas.

Vision

Promote development and adaptive reuse of buildings that support a mix of uses in a manner that complements the historic character and building scale of Old Town and is consistent with the intent of the Old Town Redevelopment Area.

Design Principles

- Densities range from 6 to 12 units per acre
- Master planned with high quality architecture and building materials, entrance landscaping, and recreational amenities (subject to design review and approval)

Land Uses

- Retail and service uses
- Residential as part of a mixed-use development
- Civic and institutional
- Open space and recreation

Zoning

- CBD, Central Business District
- NS, Neighborhood Shopping District

Implementation Strategies

- Implement existing Architectural Guidelines and Pedestrian Retail design standards
- Consider expanding CBD to parcels across Atlanta Highway
- Explore adding a zoning category to codify and define dimensions and uses for residential over retail options



Mixed-Use - Neighborhood

Mixed-Use – Neighborhood areas are located around the McEver Road intersections with Gaines Ferry Road, Gainesville Street, and Radford Road.

Vision

Commercial development at significant intersections that serves surrounding neighborhoods, with consideration given to mixed-use developments having commercial uses or open space/recreation that are oriented to existing public streets.

Design Principles

- Connectivity between uses and developments
- Automobile and pedestrian accessibility
- Enclosed buildings with no outside storage and limited outdoor display of goods and merchandise
- Integration of open space as an attractive design element and functional component of mixed-use development
- High quality building materials and site features

Land Uses

- Small-scale neighborhood commercial uses
- Residential in the context of a mixed-use development
- Open space / recreation

Zoning

- NS, Neighborhood Shopping District
- MU, Mixed-Use Development District

Implementation Strategies

Implement existing Architectural Guidelines and Pedestrian Retail design standards to ensure desired quality of development can be achieved.

Illustrative Photos



Neighborhood Commercial

Illustrative Photos

Neighborhood Commercial areas include the Atlanta Highway corridor beyond the limits of the Old Town and Mixed Use – Downtown character areas, as well as pockets of undeveloped property having the potential to serve nearby residential areas with boutique commercial uses.

Vision

Provide areas for limited, small-scale commercial uses serving nearby residential neighborhoods as opposed to a regional market.

Design Principles

- Attractive, non-auto related neighborhood businesses and services, with distinctive architectural features
- Buildings and developments are scaled to be compatible with and promote pedestrian activity
- Open space is presented as suburban plazas or small open spaces
- Entrances, frontages, and building façades are softened with landscaping and low-lying signs
- Buildings are enclosed with no outside storage and limited outdoor display of goods and merchandise
- Intensities are within a range of approximately 10,000 to 15,000 square feet per acre and shall not generally exceed 25,000 square feet in any one tenant space

Land Uses

- Small-scale neighborhood commercial uses
- Uses do not include automotive uses of any kind, including convenience stores with fuel pumps, or other types of more intensive highway business activities, or those uses that generate excessive traffic, noise, odor, pollution, safety hazards, or other adverse impacts which would detract from the desirability of adjacent properties for residential use

Zoning

- NS, Neighborhood Shopping District

Implementation Strategies

Implement existing Architectural Guidelines and Open Space requirements to ensure desired quality of development can be achieved.

Activity Center



Illustrative Photos

The Activity Center character area includes properties oriented around the west side of the interchange of Phil Neikro Boulevard and I-985.

Vision

Create an accessible, attractive center of retail businesses and services that can also serve as a residential feeder for Old Town.

Design Principles

- As far as practicable, buildings should not be separated from fronting streets by large parking lots
- Placement of outparcel buildings between a large parking lot and the street should be used to help define the streetscape and lessen the visual impact of the parking lot from the street
- Proper landscape buffers, streetscapes, and parking lot landscaping
- Perimeter and security fencing should be constructed of attractive materials which are compatible with the design and materials used throughout the project
- Accessory structures should be designed to provide a cohesive project site and be sited to not be directly visible as the primary view from the street into the project site
- Outside storage of merchandise, and/or equipment not intended for display for public rent, lease, or sale, should be screened from view from the right-of-way along the entire property frontage, except in areas where access crossings have been approved
- Pedestrian accessibility and connectivity

Land Uses

- Commercial uses
- Residential uses when part of a mixed-use development

Zoning

- HB, Highway Business District
- MU, Mixed-Use District

Implementation Strategies

- Implement amended uses to the HB zoning district
- Implement Architectural Standards and Open Space via review process to ensure requirements are met

Activity Center – Commercial Retail

The Activity Center-Retail character area includes properties oriented around the east side of the interchange of Spout Springs Road and I-985. The area includes Stonebridge Village and Village Shoppes of Flowery Branch.



Illustrative Photos



Vision

Expand opportunities for varied and larger-scale retail businesses and services in areas that are served by a network of collector and arterial roads.

Design Principles

- As far as practicable, buildings should not be separated from fronting streets by large parking lots
- Placement of outparcel buildings between a large parking lot and the street should be used to help define the streetscape and lessen the visual impact of the parking lot from the street
- Landscape buffers, streetscapes, and parking lot landscaping should enhance the aesthetics of a property, provide shade protection, screen vehicles, and reduce impervious surface through environmental design
- Perimeter and security fencing should be constructed of attractive materials which are compatible with the design and materials used throughout the project
- Accessory structures should be designed to provide a cohesive project site and be sited to not be directly visible as the primary view from the street into the project site
- Outside storage of merchandise, and/or equipment not intended for display for public rent, lease, or sale, should be screened from view from the right-of-way along the entire property frontage, except in areas where access crossings have been approved
- Pedestrian accessibility, connectivity, and safety

Land Uses

- Commercial uses

Zoning

- HB, Highway Business District

Implementation Strategies

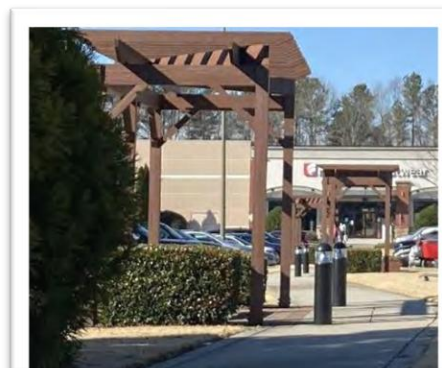
Implement existing Architectural Guidelines to ensure requirements support desired building materials, lighting, landscaping, and buffers.

Industrial Employment

Industrial Employment areas include existing industrial uses, industrial zoned properties, and undeveloped properties situated around Exit 14 of I-985.

Vision

Function as a concentration of employment and job activity, contributing heavily to the employment and economic base of the city.



Illustrative Photos



Design Principles

- Entrances, frontages, and building façades are softened with landscaping and low-lying signs
- Pedestrian access along road frontages
- High quality building materials and site design
- Adequate buffers adjacent to non-industrial uses or zoned properties
- Limit long uninterrupted wall planes that are visible from the public right-of-way

Land Uses

Light and heavy industries

Zoning

- M-1, Light Industrial District
- M-2, Heavy Industrial District

Implementation Strategies

Implement existing Architectural Guidelines to ensure requirements support desired building materials, lighting, landscaping, and buffers.



Institutional Campus

The Institutional Campus character area includes the Falcons Training Facility, public schools, large churches, County library, and some City- owned properties.

Vision

Accommodate single-function institutional uses where public access is controlled or limited.

Illustrative Photos



Design Principles

- Campus-style site planning
- Generous landscaping
- Internal pedestrian connectivity
- Relatively low intensities
- Uniform signage
- High quality building materials

Land Uses

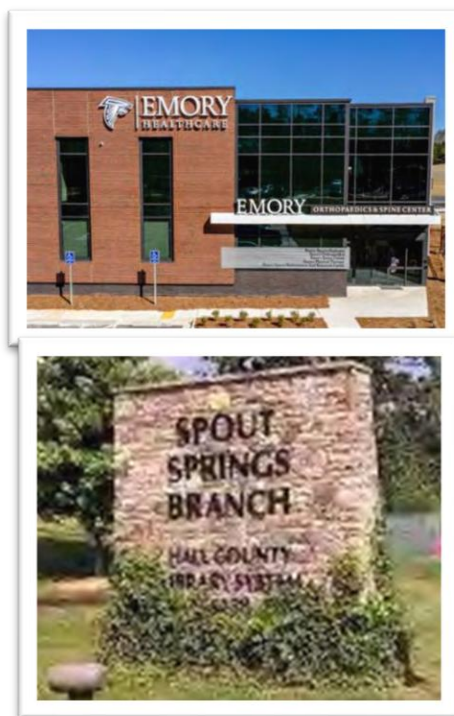
- Primarily public and institutional
- Office buildings/parks

Zoning

- INST, Institutional District
- O-P, Office Professional District

Implementation Strategies

Implement building and site design standards for Office, Institutional, Business Parks, and Industrial Parks and Campus via the review and inspection process



CHAPTER 5. IMPLEMENTATION PROGRAM

Community Work Program

The Implementation Program identifies the specific measures to implement the Flowery Branch Comprehensive Plan. These measures are identified in a Community Work Program (CWP). The CWP identifies action items to be undertaken in the next five years. The CWP groups actions by type, including: regulations, processes and programs, inventories and assessments, detailed planning studies, and community improvements / infrastructure projects.

For each action, the CWP outlines the following information:

- Type of action or implementation strategy
- Brief description

- Timeframe for undertaking the activity (2026/27, 2028, 2029, 2030, 2031)
- Estimated cost
- Responsible party for implementing the activity
- Potential funding source:
 - GF = General Fund
 - SPLOST = Special Purpose Local Option Sales Tax
 - LRF = Local Resources Fund
 - TAD = Tax Allocation Revenue Bond Proceeds Fund
 - GEFA = Georgia Environmental Finance Authority Debt Proceeds Fund
 - TAP = Georgia Department of Transportation (GDOT) Transportation Alternatives Program

Action/Implementation Strategy	26 / 27	28	29	30	31	Cost Est.	Responsible Party	Funding Source
Regulations								
Prepare a Unified Development Code that updates, consolidates, and streamlines land use and development regulations and supports the goals of the Comprehensive Plan	✓					TBD based on project needs	Planning & Community Development	GF
Amend Buffers, Tree Protection, and Landscaping Ordinances to strengthen tree retention and planting requirements	✓					Staff Time	Planning & Community Development	GF
Explore amending existing Historical Preservation ordinances to expand criteria for membership on the Historic Preservation Committee				✓		Staff Time	Planning & Community Development	GF
Continue to implement the City's Architectural Design Standards for both residential and commercial buildings	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF

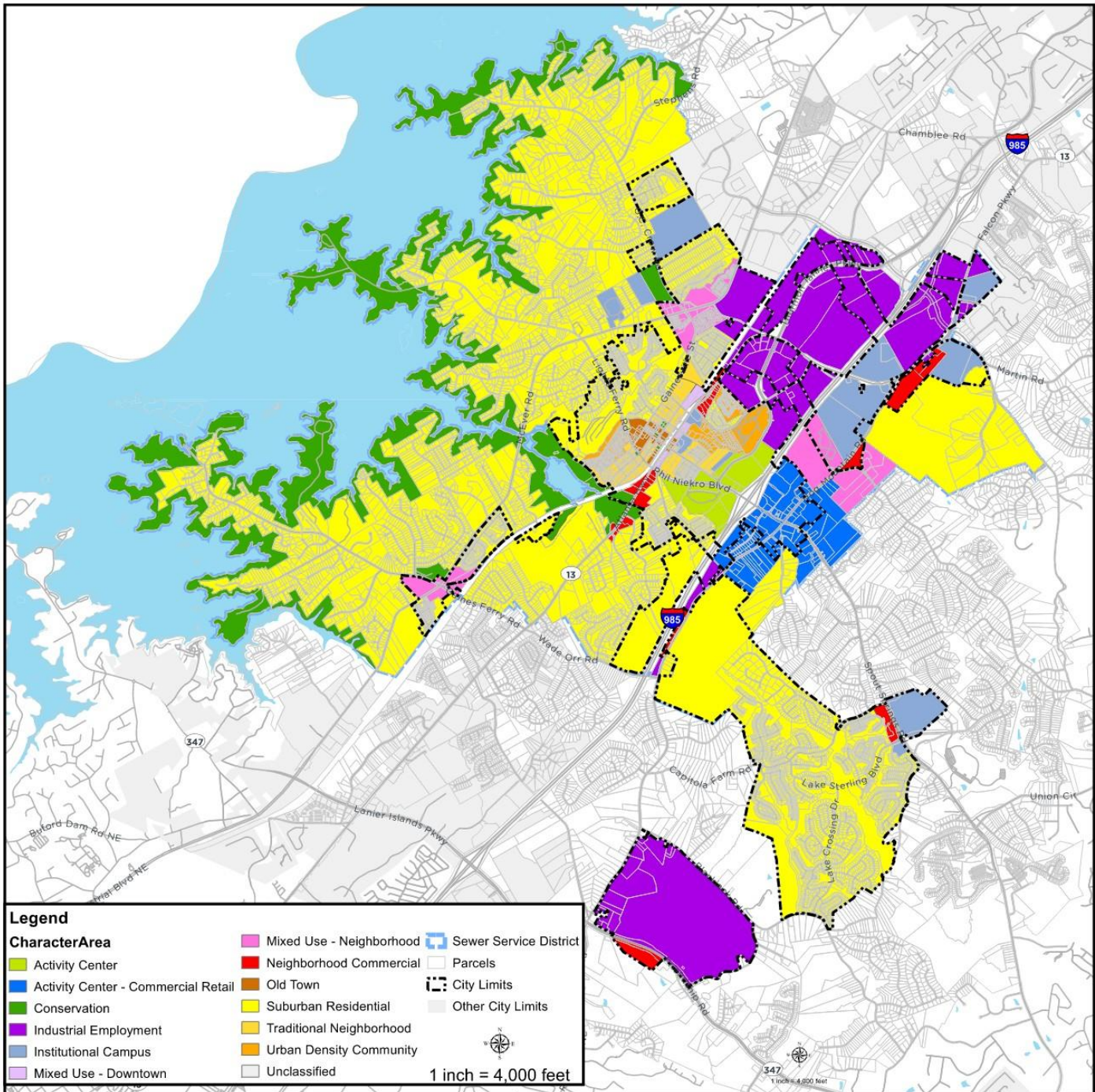
Consider expanding City zoning designations to include a Master Planned Development option	✓					Staff Time	Planning & Community Development	GF
Continue to implement existing Architectural Guidelines and Pedestrian Retail design standards in applicable zoning categories	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF
Evaluate expanding the Central Business District (CBD) to incorporate parcels fronting Atlanta Highway to grow the district and improve connectivity to Downtown	✓	✓				Staff Time	Planning & Community Development	GF
Amend City Zoning Ordinance to better regulate residential over retail mixed-use developments	✓					Staff Time	Planning & Community Development	GF
Asses building and site design standards to allow for alternative construction practices and building materials, low-impact development practices, and incentives for green housing options	✓					Staff Time	Planning & Community Development	GF
Evaluate Electric Vehicle Charging Stations standards to ensure requirements are adequate and explore the addition of incentives	✓					Staff Time	Planning & Community Development	GF
Strengthen Variance criteria to ensure requirements are met and are adequate for the protection of public safety, health, and welfare	✓					Staff Time	Planning & Community Development	GF
Amend as needed DNR's Groundwater Recharge Protection Area Ordinance to ensure that minimum lot size requirements are being met for any property not on the City's sewer system	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF
Assess residential zoning designations to explore the addition of workforce housing options	✓					Staff Time	Planning & Community Development	GF
Process/Program								
Launch new permitting software with dedicated citizen portal to streamline the permitting process and increase accessibility for citizens	✓					\$65,000	Planning & Community Development / Finance	GF
Submit Tree City USA application (in conjunction with updated Buffer, Tree Protection, and Landscaping Ordinance amendments)		✓				Staff Time	Planning & Community Development	GF
Create a dedicated Planning & Community Development social media account to enhance community engagement and outreach regarding planning activities and initiatives	✓					Staff Time	Planning & Community Development	GF
Continue to implement Metropolitan North Georgia Water Planning District's Water Resource Management Plan, including 5-year updates to local Water Master Plan and Wastewater Master Plan	✓	✓	✓	✓	✓	Staff Time	Public Works	GF
Implement required steps for the City to obtain its	✓	✓				Staff Time	Planning &	GF

Memorandum of Agreement (MOA) to conduct erosion control reviews to ensure proposed projects meet environmental standards							Community Development	
Continue to implement citywide signage project (for gateways, corridors, and Old Town)	✓	✓	✓			\$350,000	City Manager	SPLOST / LRF
Continue coordination efforts to initiate preliminary planning for Phase II of the Downtown Redevelopment Plan	✓	✓	✓	✓		Staff Time	Planning & Community Development / City Manager	TAD / GF
Inventory/Assessment								
Continue to track citywide housing ratios with rezoning applications against updated 'housing policy mix' of 70% single-family/15% townhome/15% multi-family	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development	GF
Explore establishing a citywide inventory of undeveloped parcels available for commercial development	✓	✓				Staff Time	Planning & Community Development	GF
Assess opportunities for establishing and/or partnering with a business association or business incubator to encourage small business growth	✓	✓				Staff Time	Planning & Community Development / Department of Fun	GF
Detailed Planning Study								
Prepare a citywide Housing Market Analysis that analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential needs	✓					\$27,500	Planning & Community Development	GF
Prepare a citywide Traffic Improvement Study		✓				Costs to be determined based upon project needs	City Manager/ Hall-Gainesville MPO / Planning & Community Development	GF
Update and implement the 2024 Flowery Branch Parking and Mobility Study			✓			Costs to be determined based upon project needs	City Manager/ Hall-Gainesville MPO	TAD / GF
Explore preparing an Area of Improvement study and map to identify pedestrian crossings that could be improved		✓	✓			Costs to be determined based upon project needs	City Manager/ Hall-Gainesville MPO / Planning & Community Development	GF / Grant
Update the 2014 Old Town Redevelopment Plan	✓	✓				Costs to be determined	City Manager / Planning &	GF

						based upon project needs	Community Development	
Conduct a Stormwater Feasibility Study	✓					Costs to be determined based upon project needs	City Manager / Planning & Community Development	GF
Community Improvements / Infrastructure Projects								
Construct East Main Street Trail from Thurmon Tanner Road to Flowery Branch City Park	✓	✓	✓	✓	✓	\$5.6 million	City Manager / Planning & Community Development	TAP Grant / TAD / GF
Implement Phase II of Downtown Redevelopment (and related streetscape and parking improvements)		✓	✓	✓		Staff Time	Planning & Community Development	TAD / GF
Continue coordination with Hall County MPO to complete McEver Road roundabout and to implement the roundabout at Radford Road.	✓	✓	✓			Costs to be determined based upon project needs	City Manager	SPLOST
Complete water and sewer expansion projects to increase capacity and maintain levels of quality and service	✓	✓				\$28 million	Public Works	GEFA
Expand public parking capacity to better serve downtown businesses and events		✓	✓	✓		Staff Time	Planning & Community Development / City Manager	TAP Grant / TAD / GF
Improve connectivity between neighborhoods, parks, trails, and downtown via sidewalk expansion and multi-use trails	✓	✓	✓	✓	✓	Staff Time	Planning & Community Development / City Manager	TAP / Grant / TAD / GF
Coordinate with Hall County on the use of impact fees for local trails and park projects, consistent with the 2004 Intergovernmental Agreement, as well as supporting plan studies	✓	✓	✓	✓	✓	Staff Time	City Manager	GF
Continuing planning initiatives for the Highlands to Islands trail system	✓	✓	✓	✓	✓	Costs to be determined based upon project needs	Planning & Community Development / City Manager	TAP Grant / TAD / GF
Establish passive recreation areas and green spaces downtown		✓	✓	✓		Staff Time	Planning & Community Development	GF
Explore the addition of City hotspots and/or Wi-Fi access downtown		✓				Staff Time	Planning & Community Development	Grant / GF

							/ City Manager	
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Appendix A: Growth Area Policy Map



Appendix B: 2021 – 2026 Report of Accomplishments

Color Code: **Green** – Complete; **Yellow** – Underway; **Red** – Cancelled

Activity	Complete	Underway	Cancelled	Comments
Regulations				
1. Prepare a Unified Development Code that updates, consolidates and streamlines land use and development regulations and supports the goals of the Comprehensive Plan.		✓		The UDC will be started in Q1/Q2 2026. The exercise has been funded. The Request for Qualifications has been released. Included in Community Work Plan for years: 26/27
2. Adopt Water Supply Watershed Protection Ordinance.	✓			The City has adopted the Georgia Stormwater Manual including updates. To push it further, staff are working on stormwater infiltration requirements and incentives to implement green infrastructure and low impact development (LID) methods.
3. Adopt Groundwater Recharge Protection Area Ordinance.		✓		Ordinance underway, tied to the above stormwater infiltration requirements and incentives. Included in Community Work Plan for years: 26-31
4. Amend Buffers, Tree Protection and Landscaping Ordinance to strengthen tree retention and planting requirements.		✓		As part of the UDC update, the City will adopt a fully revised Tree Protection and Replacement Ordinance. Staff have completed the draft ordinance, and it is ready for integration into the UDC. A key priority of this update is the identification and preservation of specimen trees and the protection of the community's overall tree canopy. Existing density requirements will be maintained, and the removal of any specimen tree will trigger substantial recompense measures to promote preservation and responsible development. Included in Community Work Plan for years: 26/27
5. Evaluate the effectiveness of minimum open space requirements in all zoning districts and identify potential amendments, as necessary.	✓			Done and adopted into code for all zoning districts.

6. Amend clearing and grading requirements to clearly delineate requirements vs. guidelines.	✓			Done. There is not a clearing and grading only permit. Clearing and grading is only allowed through a fully engineered civil site set for LDP (land disturbance permit).
7. Amend 'Architectural Design' standards in the Zoning Ordinance to include residential dwelling types.	✓			Done and adopted.
8. Codify general 'Historic District Design Guidelines from the 2016 Comprehensive Plan.	✓			Done and adopted. However, the City repealed the Historic District Appendix due to the inability to maintain a Historic Preservation Committee Review Board. The requirements for building, renovating, or changing the existing buildings are still housed in the Central Business District Zoning category. Amending to expand criteria for committee membership is a current action item.
9. Prepare tailored, stand-alone Flowery Branch Historic District Design Guidelines document.	✓			See above.
10. Assess 'Pedestrian Retail' design standards in the Zoning Ordinance to ensure desired design is supported and identify potential amendments, as necessary.	✓			Incorporated into Article 10. We have also applied for and implemented many pedestrian-oriented projects and are working on funding much more.
11. Amend HB zoning district to limit uses to those that are solely commercial in nature.	✓			Done and adopted. The use chart still had residential residual language and has since been cleaned up in 2025.

12. Amend Planning Unit Development (PUD) requirements to enhance open space and site design requirements.	✓			Done and adopted. However, Mayor and City Council voted to disband PUD zoning and make it a legacy zoning district, currently it is not used for any new projects.
13. Evaluate zoning buffer standards to ensure they are sufficient where industrial uses abut residential properties and identify potential amendments, as necessary.	✓			Completed and implemented. The Director is authorized to conduct a full landscape plan review. As a registered Landscape Architect, I ensure that required buffers are maintained using existing vegetation, where feasible, or restored with native species. These plantings incorporate a diverse mix of evergreen trees and shrubs to provide an effective, year-round visual screen.
14. Evaluate 'Architectural Design' standards in the Zoning Ordinance to ensure requirements for industrial buildings include desired building materials, lighting, and landscaping.	✓			Completed and implemented. Every review goes through the stringent design review process.
15. Strengthen building and site design standards for 'Office, Institutional, Business Parks, and Industrial Parks and Campus' in the Zoning Ordinance by more clearly delineating requirements vs. guidelines.	✓			Done but also needs revamping. Staff will present text amendment to council in Q1 2026.
16. Expand criteria for triggering a Traffic Impact Study with development proposals	✓			Most developments will require TIA's as a study required by the Director and City Engineer. Code authorizes the Director to add additional documents as needed.
Process/Program				
1. Evaluate development review and permitting processes to assess the ease of doing business in Flowery Branch.	✓			Staff has placed completeness checklists, guidance documents, and applications on-line. We hold resubmittal meetings and in Q2 of 2026, all applications will be submitted through a guided Civic Access portal.

2. Submit Tree City USA application (in conjunction with updated Buffer, Tree Protection and Landscaping Ordinance).		✓		Application for Tree City USA will happen after the tree preservation and planting code is re-written. Included in Community Work Plan for years: 28
3. Expand local code enforcement capability by increasing full-time personnel.	✓			Full-time code enforcement officer is on staff.
4. Enhance community outreach capability /promote local initiatives, events and programs (both citywide and downtown oriented) by adding dedicated staff positions.	✓			Department of fun programs, ribbon cuttings, and downtown events. Full-time staff are in place and operate at a high level.
5. Implement citywide signage project (for gateways, corridors and Old Town).		✓		Several signs are in place and gateway signs are underway at time of update. Included in Community Work Plan for years: 26/27
6. Continue to implement Metropolitan North Georgia Water Planning District's Water Resource Management Plan, including 5-year updates to local Water Master Plan (underway) and Wastewater Master Plan (2023/24).	✓			Done and implemented. Staff provide EPD with annual reports on water resources and management.
Inventory/Assessment				
1. Update Citywide Historic Resources Survey.	✓			Survey complete.
2. Track citywide housing ratios with rezoning applications against updated 'housing mix policy' of 70% single-family/15% townhomes/15% multi-family	✓			This is continually tracked by planning staff with each new development.

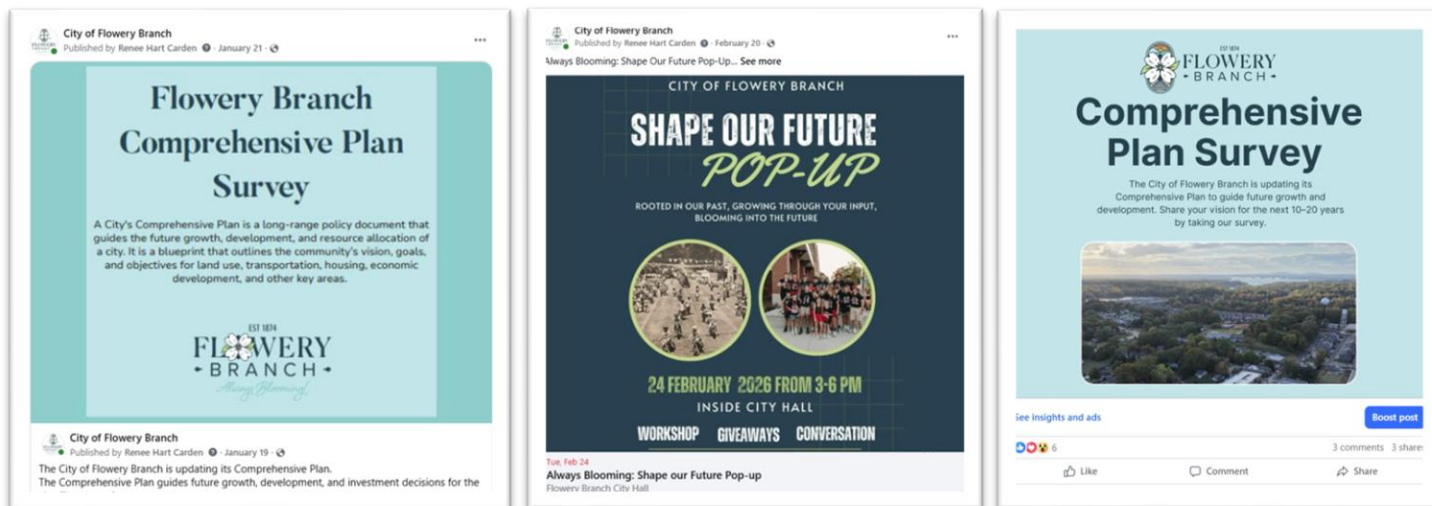
3. Evaluate steps promoted by the State to achieve certification as a Broadband Ready Community.	✓			The City has franchise agreements with broadband companies for installation of fiber optic lines in right-of-way.
Detailed Planning Study				
1. Prepare a citywide Housing Market Analysis that analyzes demographics, housing supply, market trends, and local input to develop a projection of future residential needs.		✓		This was not done since the previous comprehensive plan update and has carried over. Included in Community Work Plan for years: 26/27
2. Update the 2014 Old Town Redevelopment Plan.		✓		Olde Town Phase 2 is coming next. Included in Community Work Plan for years: 26/27, 28
3. Conduct a Stormwater Utility Feasibility Study.		✓		Underway but not completed. Included in Community Work Plan for years: 26/27
4. Prepare a citywide Traffic Improvement Study.		✓		A traffic improvement study and plan was completed for the downtown area, an expanded citywide study has carried over. Included in Community Work Plan for years: 28
5. Prepare a citywide Bicycle and Pedestrian Plan.	✓			Done. 2022 GHMPO Highlands to Islands / 2024 GHMPO Parking and Mobility Study
Community Improvements / Infrastructure Projects				
1. Construct Farmer's Market Pavilion Park and Pine Street Park (and related streetscape and parking improvements).	✓			Done.
2. Construct Chestnut Street Park.			✓	The site is no longer available for a park.

3. Construct East Main Street Trail from Thurmond Tanner Road to Flowery Branch City Park.		✓		Underway with our trail system funding at time of update. Included in Community Work Plan for years: 26/27 - 31
4. Construct water and sewer capacity expansion projects, including expansion of the Water Quality Reclamation Facility to double its wastewater treatment capacity.		✓		Wastewater Expansion Project and construction on Wells #4 & #5 underway at time of update. Included in Community Work Plan for years: 26/27
5. Coordinate with GDOT to evaluate signalization timing at Atlanta Highway / Phil Niekro Blvd.	✓			Done, grading improvements completed as well.
6. Coordinate with Hall County on the use of impact fees for local trail and park projects, consistent with the 2004 Intergovernmental Agreement, as well as supporting planning studies.	✓			City of Flowery Branch and Hall County are working on the Highlands to Islands trail project together. The City helps collect Hall County Impact fees.
7. Coordinate with Hall County MPO to implement McEver Road roundabouts Gaines Ferry and Radford Roads.		✓		1 under construction and 1 slated for 2028 pre-engineering . Included in Community Work Plan for years: Gaines Ferry – 26/27 Radford Rd – 29/30

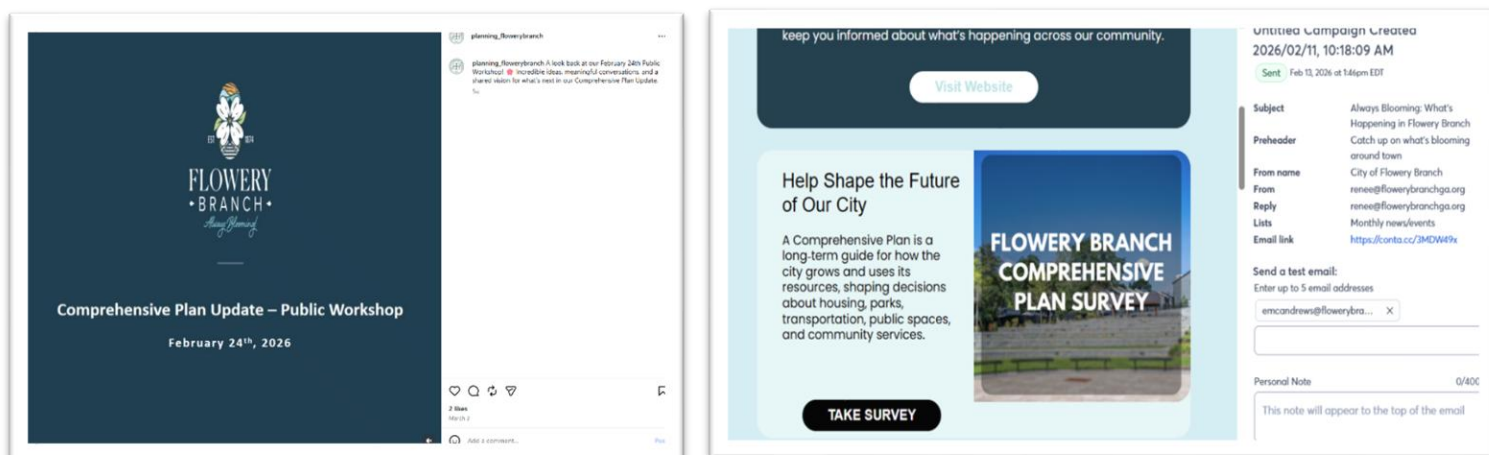
Appendix C: Community Outreach Documentation

Social Media/Web-Based Outreach:

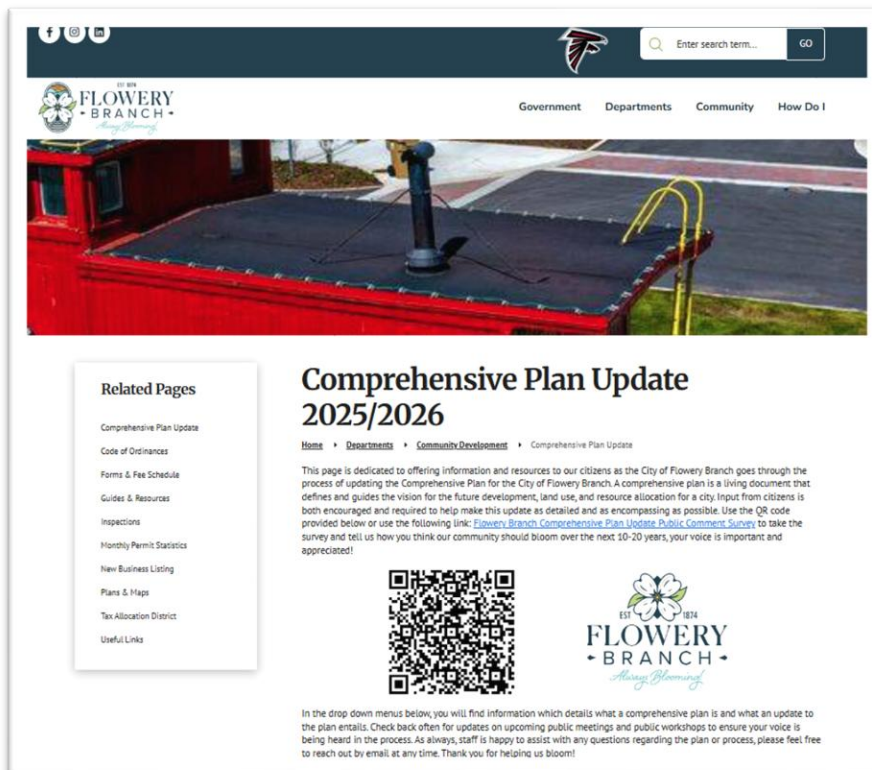
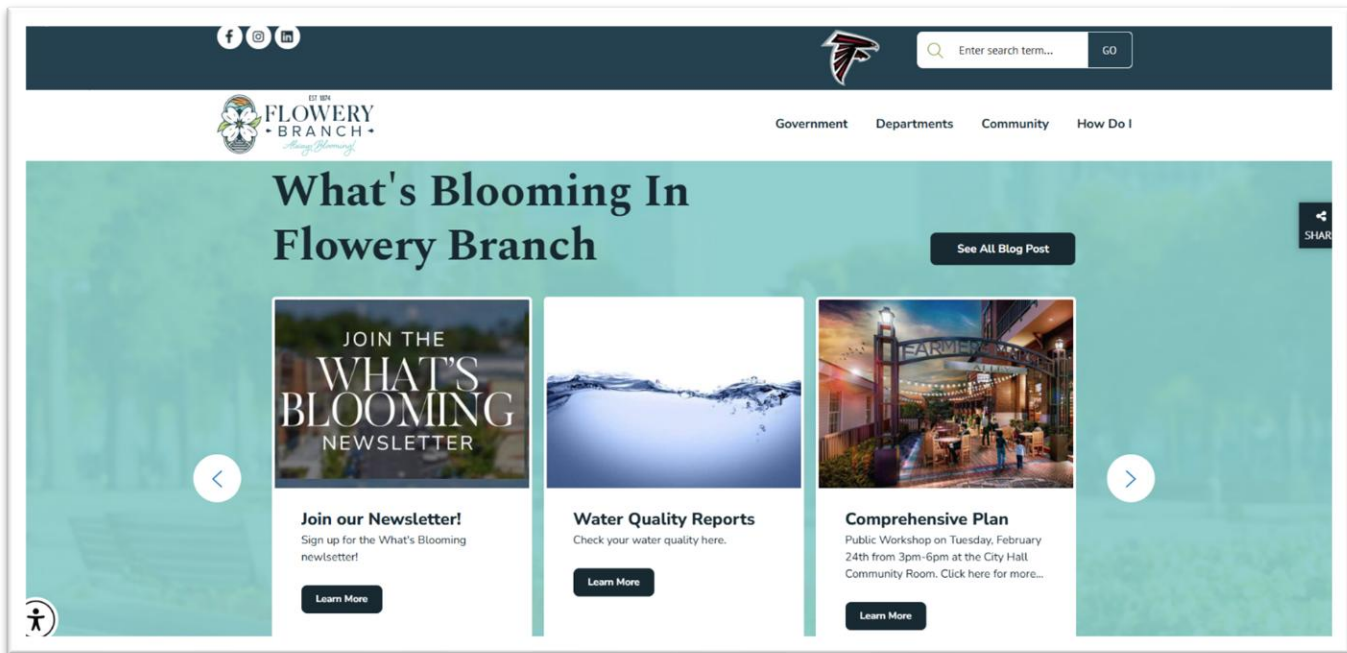
Social media posts were utilized to increase public awareness and participation in the survey and Comprehensive Plan update process. The Department of Fun also distributes an electronic Newsletter which ran multiple campaigns that included information regarding the survey and public workshops. Several examples of posts and newsletter campaigns from across the City's social media accounts are provided below.



Examples above: Various social media posts from City accounts



Examples above: A recap social media post (left) and screenshot from newsletter campaign (right)



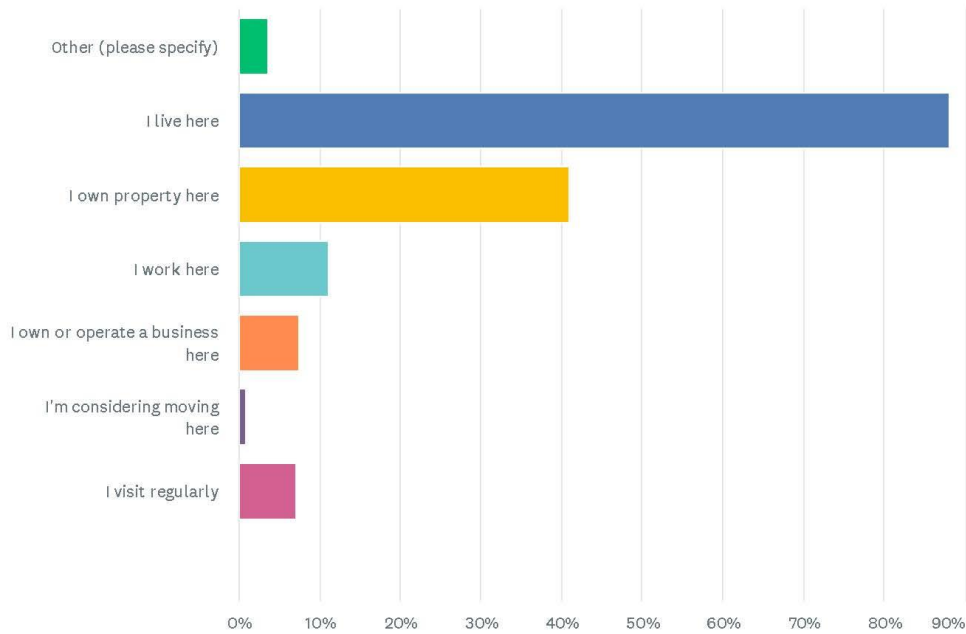
Link to dedicated Plan Update Page on City homepage (top); Dedicated Plan Update Page (left)

Survey Monkey Public Comment Survey:

Flowery Branch Comprehensive Plan Update Public Comment Survey

Q1 How would you describe your connection to Flowery Branch? (Select all that apply)

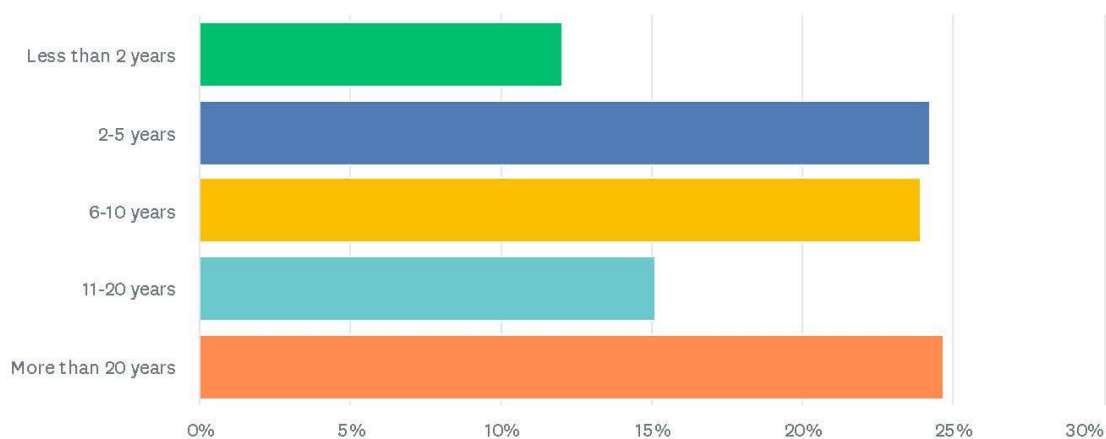
Answered: 947 Skipped: 3



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q2 How long have you been connected to Flowery Branch?

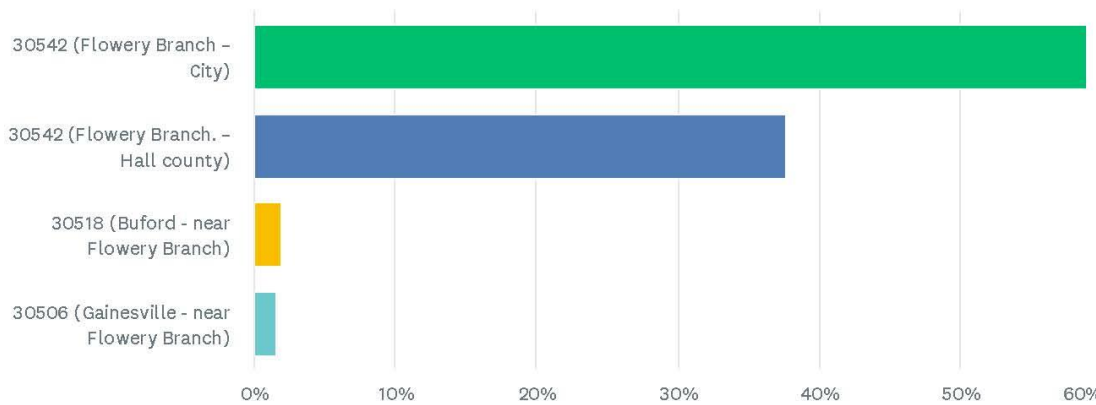
Answered: 948 Skipped: 2



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q3 What is your ZIP code?

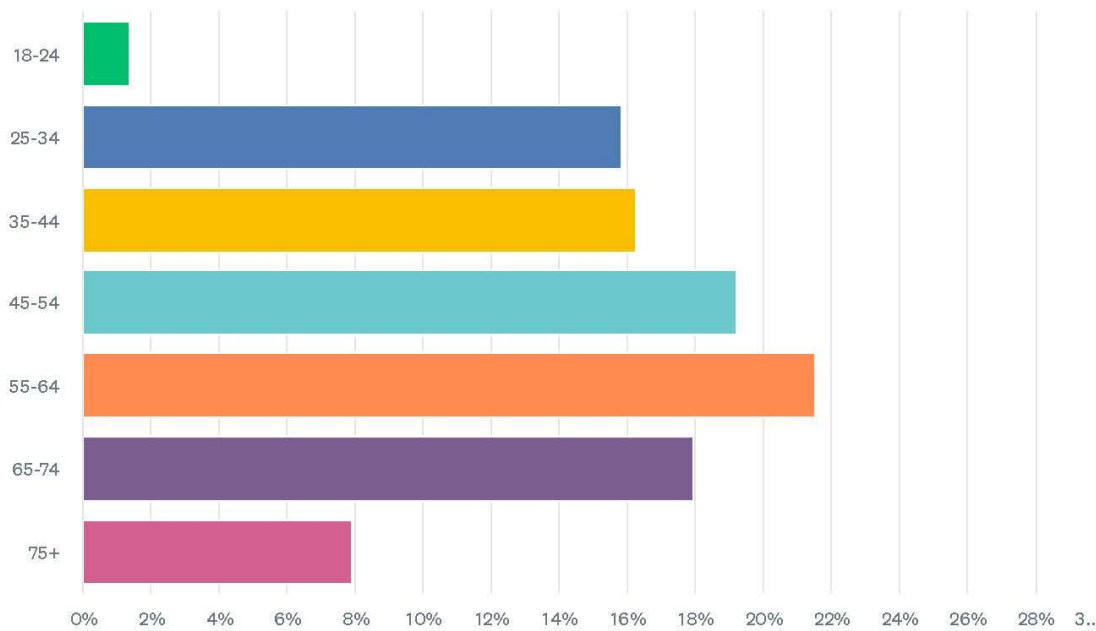
Answered: 904 Skipped: 46



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q4 What is your age range?

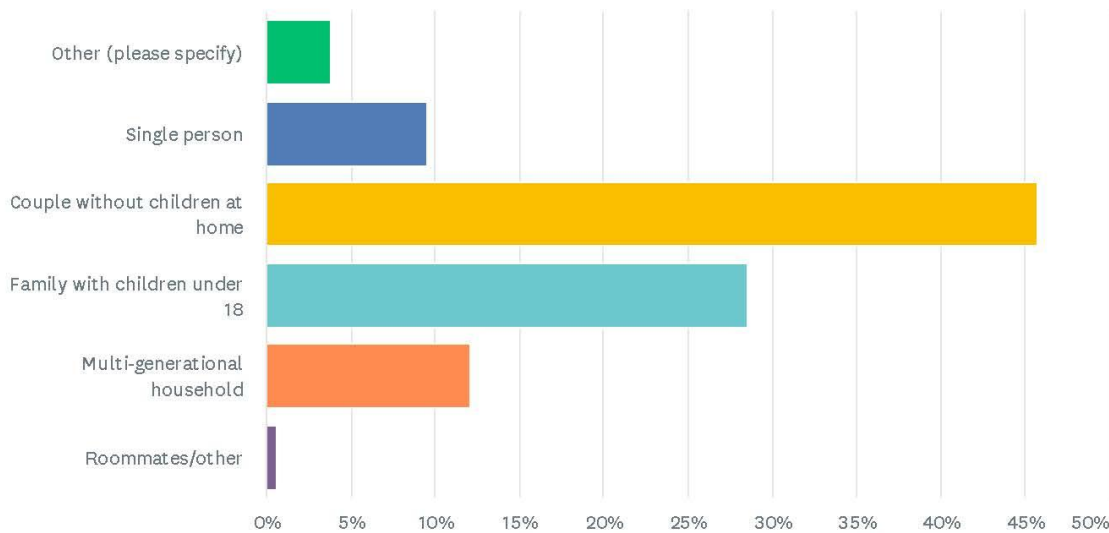
Answered: 948 Skipped: 2



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q5 Which best describes your household?

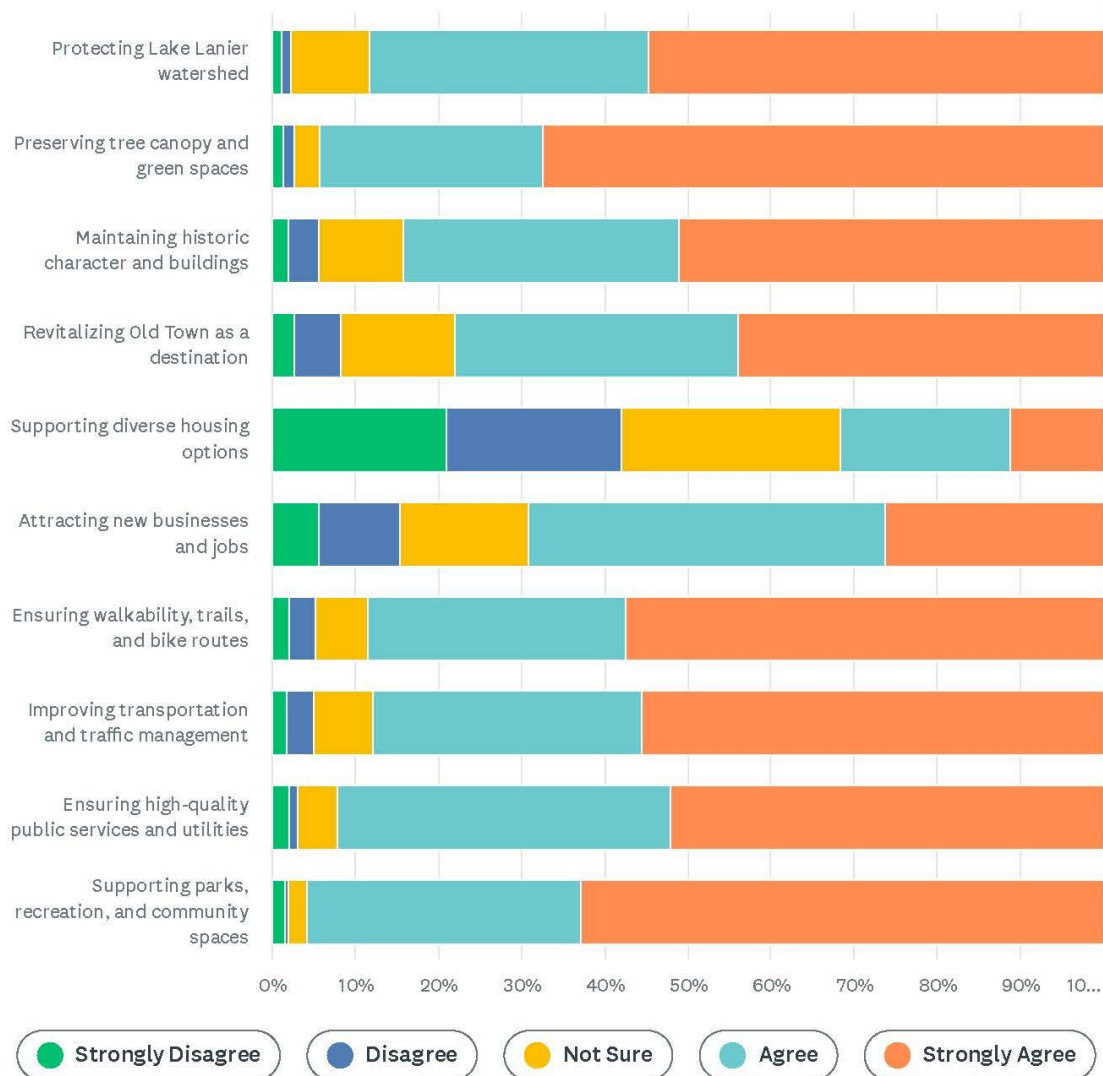
Answered: 948 Skipped: 2



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q6 How important are the following in shaping the city's future? (1 - Strongly Disagree → 5 -Strongly Agree)

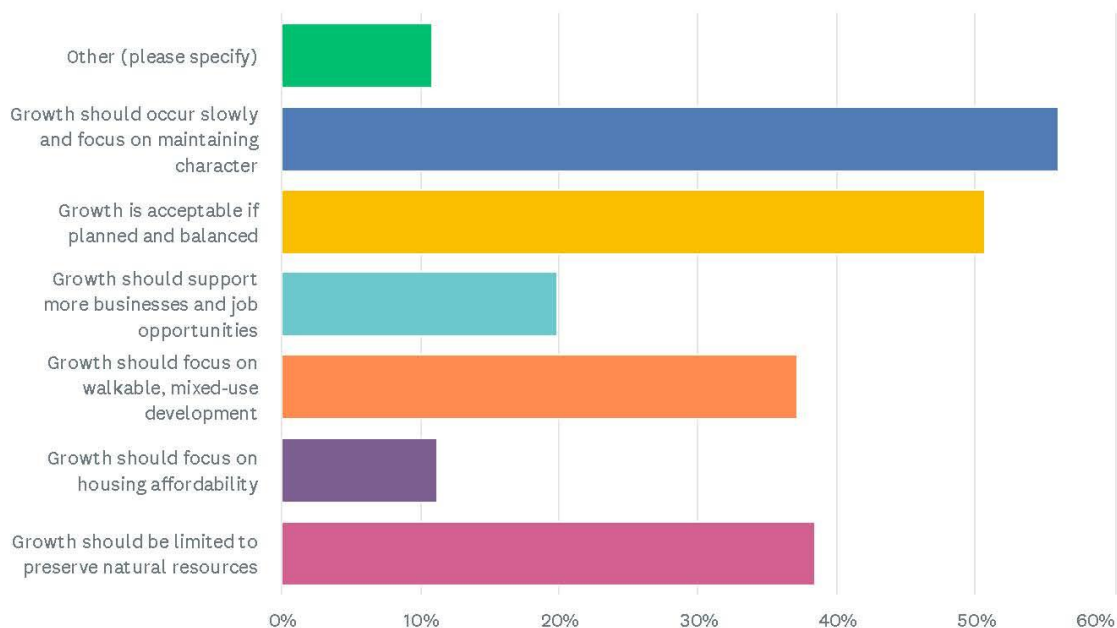
Answered: 753 Skipped: 197



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q7 Which statements best match your preference for Future Development? (Select all that apply)

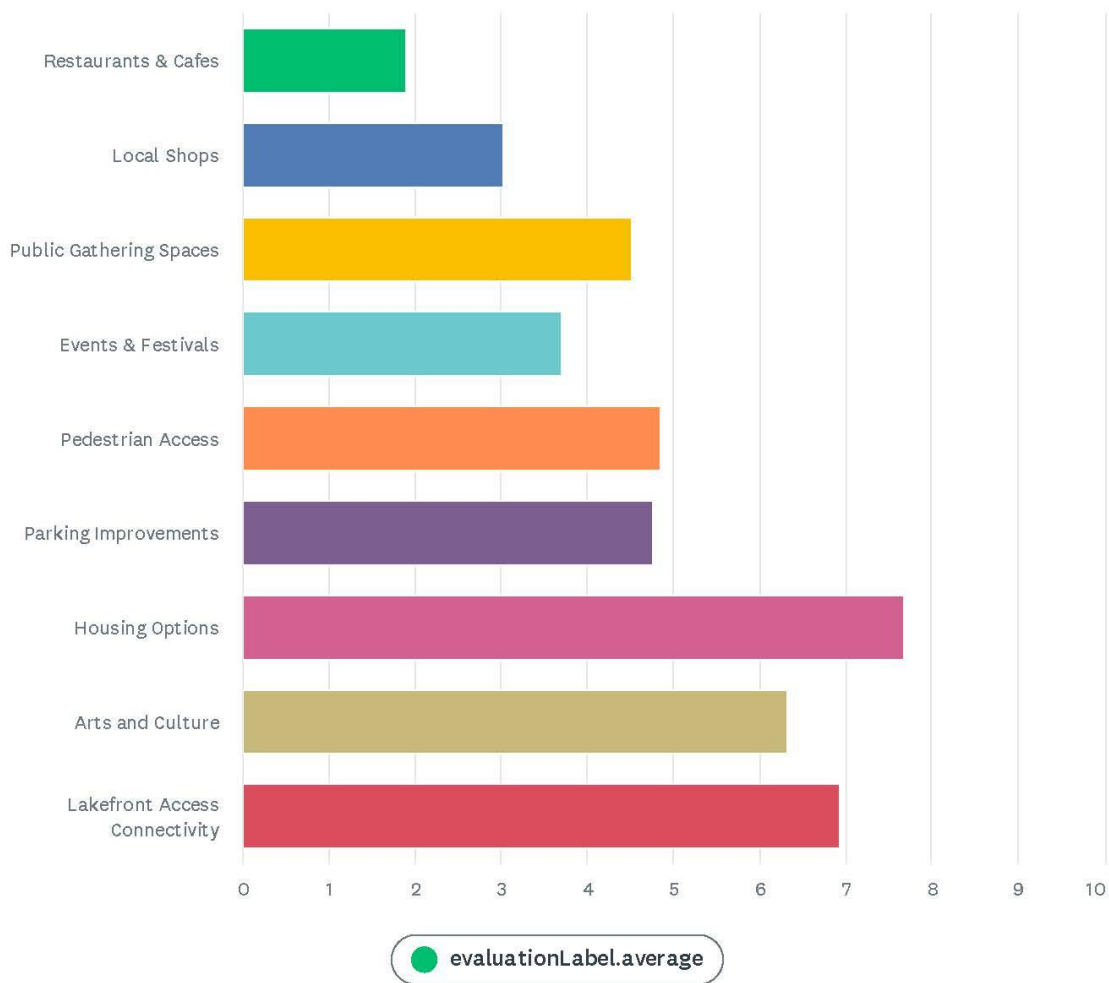
Answered: 749 Skipped: 201



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q8 Rank the top 3 features that would motivate you to spend more time Downtown:

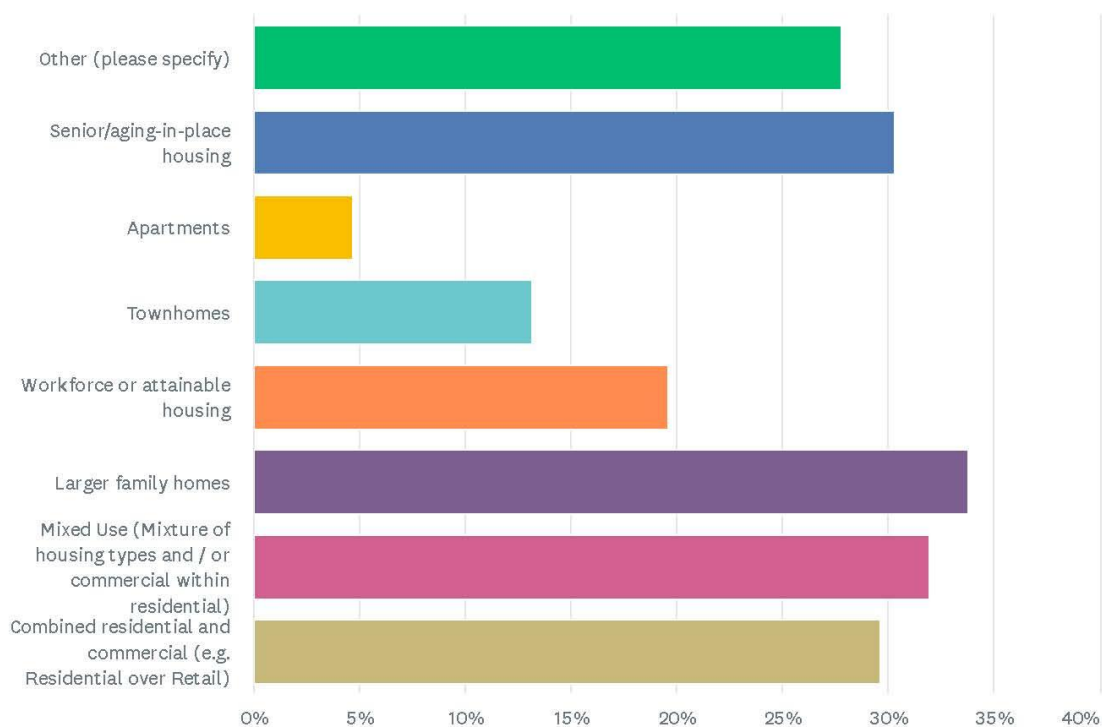
Answered: 747 Skipped: 203



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q10 Select all you believe Flowery Branch needs for Housing:

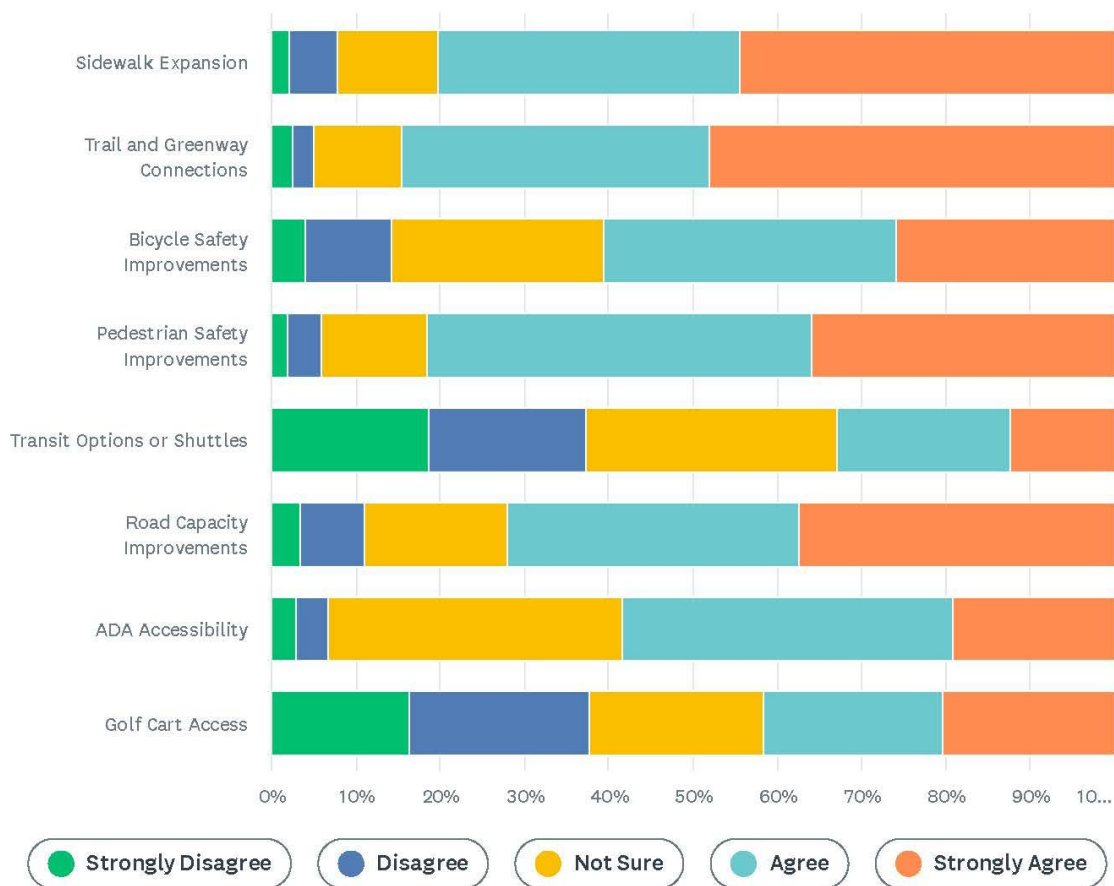
Answered: 719 Skipped: 231



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q11 Rate the following Mobility and Transportation Improvements: (1 - Strongly Disagree → 5 -Strongly Agree)

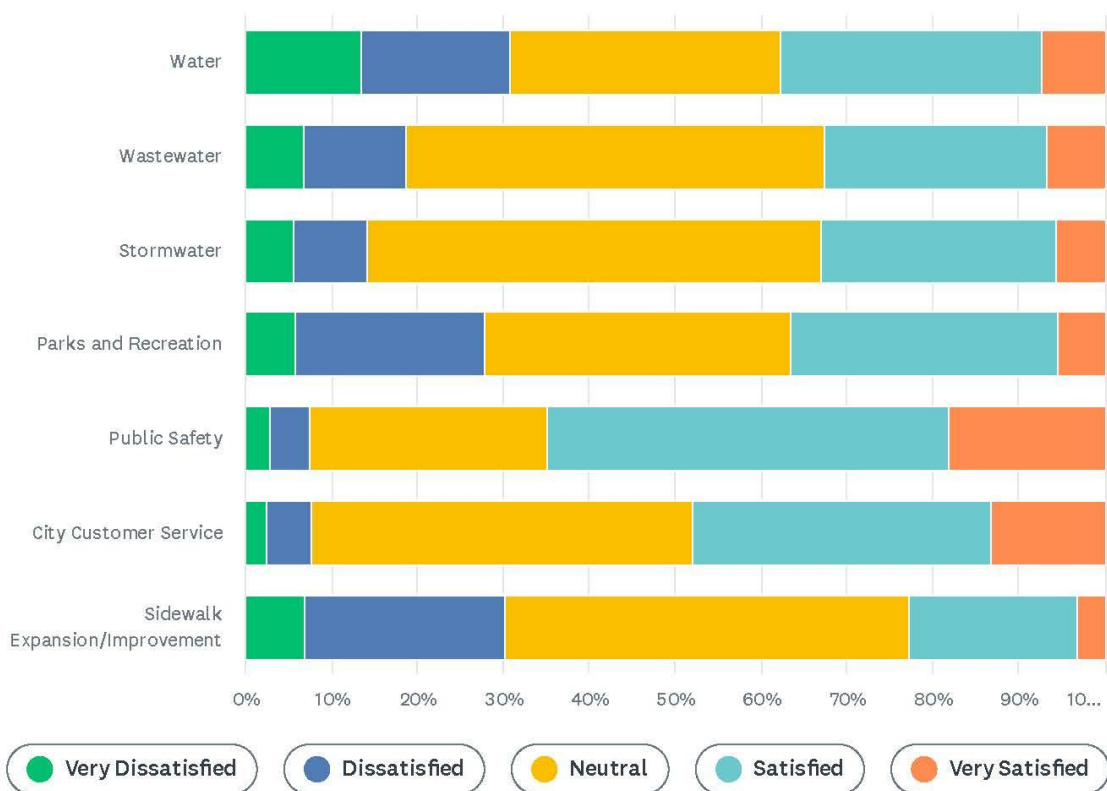
Answered: 751 Skipped: 199



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q12 Rate the following Public Services and Infrastructure Improvements: (1 - Very Dissatisfied → 5 -Very Satisfied)

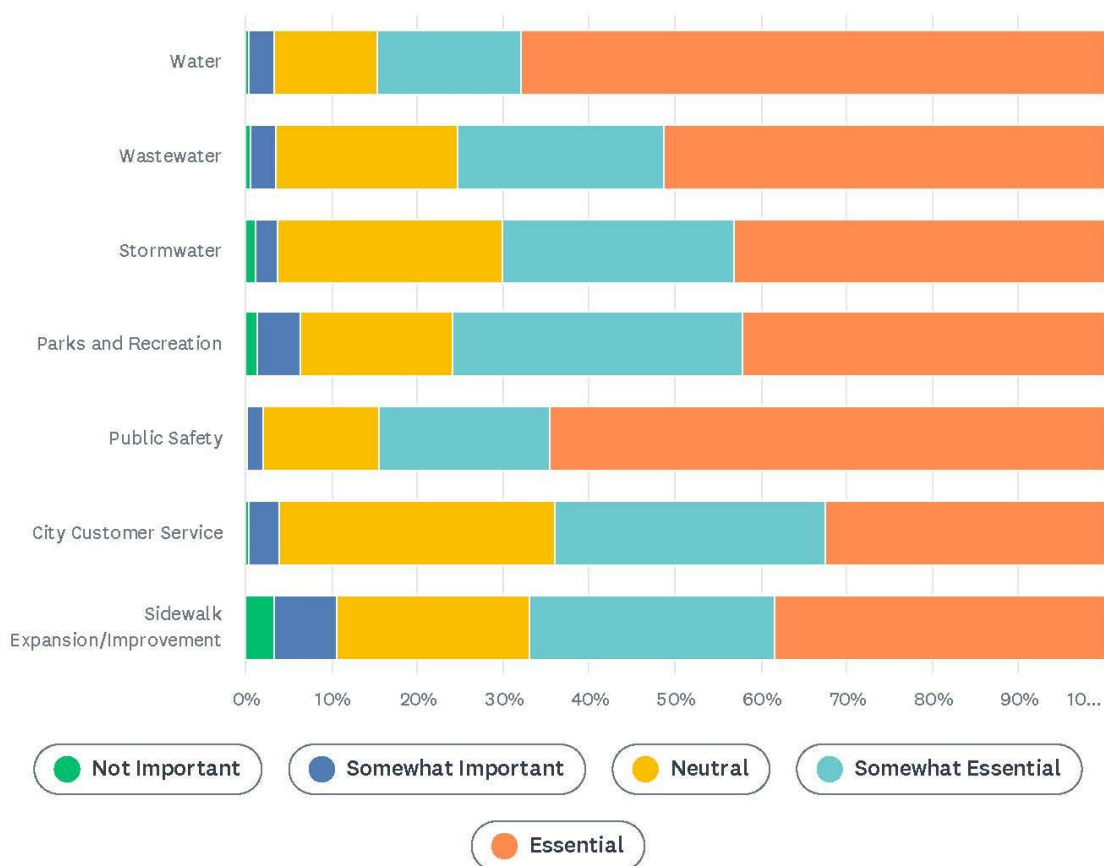
Answered: 747 Skipped: 203



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q13 Rate the future priorities for Public Services & Infrastructure: (1 - Not Important → 5 -Essential)

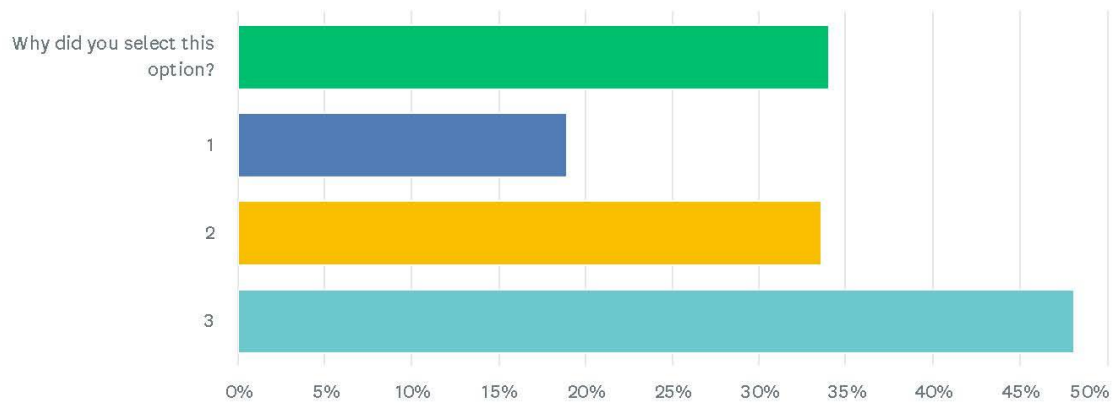
Answered: 742 Skipped: 208



Flowery Branch Comprehensive Plan Update Public Comment Survey

Q14 For the Three Vision Statement options, what would you select:

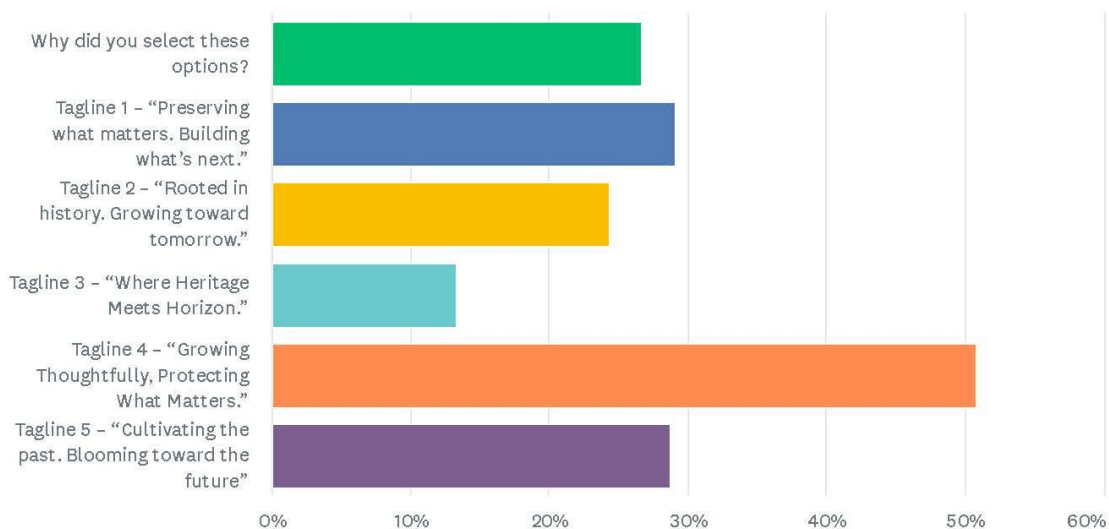
Answered: 735 Skipped: 215



Flowerly Branch Comprehensive Plan Update Public Comment Survey

Q15 Please chose two Taglines:

Answered: 724 Skipped: 226



Community Survey Findings Analysis:

The following executive summary and analysis of the community survey data was prepared by the Steering Committee Chair, Jack Probst.

Purpose

This expanded summary provides additional interpretation of the major findings from the Community Survey supporting the evolving Flowery Branch Comprehensive Plan. The analysis emphasizes not only the strongest themes that emerged from the survey, but also the demographic and sentiment patterns that help explain why those findings appeared. The intent is to provide City Council and the community with a clearer understanding of how residents view the City's future and where meaningful differences in opinion emerged.

Vision & Community Direction

Survey responses continued to demonstrate strong alignment around a vision of Flowery Branch as a distinctive lake-oriented community that protects its natural and historic resources while growing intentionally. The strongest support consistently favored a future that balances preservation with reinvestment rather than rapid expansion. Respondents repeatedly associated quality of life with environmental stewardship, small-town character, walkability, and Old Town vitality.

Long-term residents were more likely to frame environmental protection and character preservation as reasons to moderate growth, while newer residents were more likely to support investment and amenities when growth was well planned and infrastructure supported. Despite these differences, both groups largely agreed that unmanaged growth would weaken the community's identity.

Key Survey Findings & Patterns:

Environmental Protection Emerged as the Strongest Unifying Theme.

Likert-scale responses consistently ranked environmental priorities—including tree canopy, watershed protection, and preservation of green space—among the highest-rated issues in the survey. Open-ended comments frequently referenced Lake Lanier, natural scenery, and the desire to retain the community's distinctive character.

Environmental Protection - Demographic Pattern: Long-term residents and older respondents were most likely to connect environmental protection with limiting or conditioning future growth. Younger and mid-tenure residents also strongly supported environmental stewardship but were somewhat more open to growth when environmental safeguards were clearly integrated into development decisions.

Old Town Revitalization Was Viewed as Both an Economic and Community Priority

Survey comments repeatedly referenced restaurants, cafés, walkability, festivals, and gathering spaces as desired improvements in Old Town. Residents consistently described downtown as the symbolic and cultural center of the City.

Old Town Revitalization Demographic Pattern: Residents under age 45 and newer residents were especially likely to emphasize restaurants, entertainment, and activity. Long-term residents generally supported revitalization as well, but emphasized preservation of historic character, parking management, and maintaining a small-town atmosphere.

Infrastructure Capacity Strongly Influences Support for Growth

Respondents consistently linked opinions about growth to concerns regarding roads, sidewalks, stormwater, water and

wastewater capacity, and traffic. Support for development increased noticeably when comments framed growth as occurring only after infrastructure improvements were in place.

Infrastructure Capacity Demographic Pattern: Families with children and mid-career households were especially likely to prioritize sidewalks, transportation safety, and infrastructure reliability. Older residents more frequently referenced traffic congestion and preservation of neighborhood stability.

Walkability and Connectivity Were Viewed as Quality-of-Life Investments

Likert-scale ratings and comment patterns showed broad support for sidewalks, trails, pedestrian safety, and connections between neighborhoods, parks, schools, and Old Town.

Walkability and Connectivity Demographic Pattern: Younger residents and households with children most strongly framed walkability as an everyday necessity. Older residents and retirees tended to view trails and sidewalks more as recreational and health amenities, though support remained high across groups.

Growth Is Accepted When It Fits the Community

One of the strongest sentiment patterns throughout the survey was that residents generally do not reject growth outright. Instead, respondents repeatedly emphasized that development should align with Flowery Branch's scale, character, environmental assets, and infrastructure capacity.

Growth Demographic Pattern: Support for thoughtful reinvestment and targeted development was relatively broad across demographic groups. The primary difference was not whether growth should occur, but rather how quickly, where, and under what conditions.

Expanded Key Areas of Divergence:

Housing Density & Residential Growth

The greatest divergence of opinion involved apartments, townhomes, and higher-density residential development.

Primary Drivers Behind Divergence:

- Concern over traffic, school impacts, infrastructure strain, and loss of small-town character
- Different perceptions of what constitutes 'appropriate' growth
- Tension between preserving existing neighborhood patterns and accommodating future housing needs

Key Population Segments:

- Long-term residents (15+ years) and older respondents were significantly more skeptical of higher-density housing.
- Younger households and workforce-age residents were more supportive of housing variety, especially when framed around affordability, workforce housing, or aging in place.

Pace & Intensity of Downtown Revitalization

Respondents generally agreed that Old Town should become more active, but differed on how quickly and intensely redevelopment should occur.

Primary Drivers Behind Divergence:

- Desire for restaurants, events, and activity balanced against concerns regarding traffic, parking, and noise
- Concern that redevelopment could become overly commercialized or lose historic authenticity

Key Population Segments:

- Newer residents and younger families were more likely to prioritize dining, entertainment, and increased activity.
- Long-term residents more frequently emphasized preserving character and avoiding over-commercialization.

Transportation Priorities

Although support for transportation improvements was widespread, respondents differed on which investments should receive priority.

Primary Drivers Behind Divergence:

- Some residents emphasized sidewalks, trails, and pedestrian connectivity.
- Others focused more heavily on congestion, roadway improvements, and traffic flow.

Key Population Segments:

- Families with children and younger residents most strongly emphasized sidewalks and pedestrian safety.
- Longer-tenured and older residents were more likely to emphasize congestion management and roadway capacity.

Environmental Protection vs. Development Flexibility

While environmental protection received strong support overall, differences emerged regarding how aggressively growth should be limited to achieve it.

Primary Drivers Behind Divergence:

- Different comfort levels regarding growth pressure and redevelopment
- Concern over balancing economic opportunity with long-term stewardship

Key Population Segments:

- Long-term residents were more likely to support stricter growth controls tied to environmental protection.
- Newer residents were somewhat more open to development when environmental protections and infrastructure safeguards were clearly articulated.

Planning Implications for Council

The survey results suggest that the strongest path forward for the Comprehensive Plan is not to 'split the difference' between competing viewpoints, but to develop conditional and context-sensitive policies that respond directly to the concerns residents expressed. The findings strongly support policies that:

- Protect environmental and historic assets
- Tie growth to infrastructure readiness
- Strengthen Old Town through walkability and local-scale activity
- Encourage targeted housing solutions tied to local needs
- Improve mobility and pedestrian safety without undermining community character

The survey findings also suggest that transparency and visible implementation progress will be essential to maintaining public trust as the Comprehensive Plan moves into execution.

Public Meetings & Workshops:

As required by DCA's Minimum Standards and Procedures for Local Comprehensive Planning, two public hearings were conducted. In addition to the public hearings, two open-house style workshops were held to engage the public and provide an opportunity for questions and collaboration. The workshops included an interactive Land Use Map station as well as multiple informational and project focused stations. Meeting agendas, presentations, newspaper advertisements, and other supplemental documentation are included below:

Comprehensive Plan Public Kick Off Meeting – 5410 Pine St., Flowery Branch, GA, 30542

An introductory meeting and stakeholder committee meeting for the City of Flowery Branch Comprehensive Plan will be held to receive public input and share information regarding the 2025/2026 update. The meeting is scheduled for Thursday, December 4, 2025, at 5:00 p.m. in the City of Flowery Branch Community Room, located at 5410 Pine Street, Flowery Branch, GA 30542. Interested parties may contact the Community Development Department at 770.967.6378 for more information.

154467 12/3

Comprehensive Plan Public Workshop & Meeting – 5410 Pine St., Flowery Branch, GA, 30542

A public workshop and stakeholder committee meeting for the City of Flowery Branch Comprehensive Plan will be held to receive public input and share information regarding the 2025/2026 update. The meeting is scheduled for Tuesday, February 24th, 2026, from 2:00-6:00 p.m. in the City of Flowery Branch Community Room, located at 5410 Pine Street, Flowery Branch, GA 30542. Interested parties may contact the Community Development Department at 770.967.6378 for more information.

156419 2/4, 2/11

Comprehensive Plan Public Meeting – 5410 Pine St., Flowery Branch, GA, 30542

A meeting for the public concerning a draft presentation for the 2025/2026 update to the City of Flowery Branch Comprehensive Plan will take place on Thursday, May 7th, 2026, at 6:00pm in the City Hall conference room located at 5410 Pine St., Flowery Branch GA, 30542. Interested parties may contact Community Development at 770.967.6378.

159254 4/29

Informational boards developed for the open-house style public workshops



What Is a Comprehensive Plan?

A city's Comprehensive Plan is a long-range policy document that guides the future growth, development, and resource allocation of a city. It functions as a strategic blueprint that outlines the community's vision, long-term goals, and objectives for land use, transportation, housing, economic development, grant opportunities, and other key areas over a 20-year period and is updated every 5 to 10 years.

How Is a Comprehensive Plan Used?

- Becomes the primary planning tool for the City
- Used to identify local planning priorities & projects
- Aids in identifying and competing for grants & economic development opportunities
- Aids in creating Urban Redevelopment Plans
- Specialized planning projects/master plans regarding downtown revitalization, development opportunities, greenspaces, bicycle & pedestrian mobility, streetscape improvements, beautification etc.



Done, Adopted or Completed - On-going or in design - Not started or no longer a project

2016 – 2021 NEEDS AND OPPORTUNITIES

- Prepare a Unified Development Code that updates, consolidates and streamlines land use and development regulations and supports the goals of the Comprehensive Plan.
 - **The UDC will be starting in Q1 2026. The Request for Qualifications is ready to be released. Call for teams, review RFQ's, short list, pick the finalist, negotiate proposal.**
- Adopt Water Supply Watershed Protection Ordinance.
 - **The City has adopted the Georgia Stormwater Manual including updates. To push it further, staff is working on stormwater infiltration requirements and incentives to implement green infrastructure and low impact development (LID) methods.**
- Prepare a Unified Development Code that updates, consolidates and streamlines land use and development regulations and supports the goals of the Comprehensive Plan.
 - **The UDC will be starting in Q1 2026. The exercise has been funded. The Request for Qualifications is ready to be released. Call for teams, review RFQ's, short list, pick the finalist, negotiate proposal.**
- Adopt Groundwater Recharge Protection Area Ordinance.
 - **Adopted Chapter 26, Article III Groundwater Reuse.**
- Amend Buffers, Tree Protection and Landscaping Ordinance to strengthen tree retention and planting requirements.
 - **As part of the UDC update, the City will adopt a fully revised Tree Protection and Replacement Ordinance. Staff has completed the draft ordinance, and it is ready for integration into the UDC. A key priority of this update is the identification and preservation of specimen trees and the protection of the community's overall tree canopy. Existing density requirements will be maintained, and the removal of any specimen tree will trigger substantial recompense measures to promote preservation and responsible development.**
- Evaluate the effectiveness of minimum open space requirements in all zoning districts and identify potential amendments, as necessary.
 - **Done and adopted into code for all zoning districts.**
- Amend 'Architectural Design' standards in the Zoning Ordinance to include residential dwelling types.

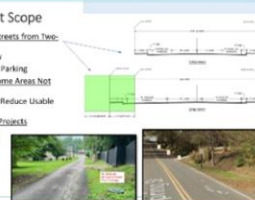


Downtown Parking & Street Improvement Studies



Develop Concept Scope

- Utilize Conversion of Streets from Two-Way to One-Way
- Organize Traffic Flow
- Add Space for More Parking
- Driveway Closures - Some Areas Not Feasible
- Frequent Driveways Reduce Usable Space
- Non-Parking Sidewalk Projects
- Improve Walkability
- Beautify Downtown
- Improve Drainage



Wastewater Expansion Project



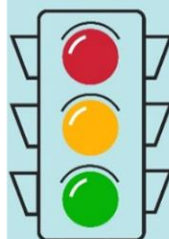
CURRENT PHASE



The expanded plant will serve Flowerly Branch and portions of Oakwood and unincorporated Hall County

Stoplight System

For Future Land Use Map



Red - Current land use should be changed

Yellow - Current land use may need revision

Green - Current land use should remain

Always Blooming!





FLOWERY • BRANCH •



Comprehensive Plan Update Public Meeting Sign In

Name	Email Address	Add me to the newsletter	Contact me for volunteer opportunities
CHRIS MCCLARY	CMCCLARY@FLOWERYBRANCHGA.ORG	No	No
Logan Witter	LOGANWITTER@AOL.COM	-	-
Mary Willis	mary@bluemarker.net	Yes	—
Ron Buckley	rbuckley05@gmail.com	Yes	No
BOB Hill	rjhill6032@gmail.com	YES	NO
Linda Terry Ryan	lindaryanreelstere@gmail.com	yes	ok
Scott Soracco	ssoracco@hotmail.com	yes	No
Janet Lennox	janlen1@comcast.net	yes	ok
Palmer Griffin		No	No
Amanda Gnoerer	amandagnoerer13@gmail.com	N/A	N/A
IVAN DESROSIERS			
Janet Upchurch			
Gail & Kevin Tomlinson			



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Comprehensive Plan Update Public Meeting Sign In

Name	Email Address	Add me to the newsletter	Contact me for volunteer opportunities
Greg Bonadics	gabonadics@gmail.com	✓	✓
Debbie Bonadics	dbonadics@gmail.com	✓	✓
Charles Thompson	hyperiums@gmail.com	✓	✓
Lauren Yest	lhardyest@yahoo.com	✓	
John Yest			
Amy Beth Durham	ABSBOX@me.com	✓	✓
Tatiana Chaskin	Tatiana.Monzon93@gmail.com	✓	✓
Deni Nzsh	dnzsh@FB.org	✓	✓
John Nagy	JNagy@FB.org	✓	✓



FLOWERY ♦ BRANCH ♦



Comprehensive Plan Update Public Meeting Sign In

Name	Email Address	Add me to the newsletter	Contact me for volunteer opportunities
Marki Dolores Parr	parrhome@bellsouth.net	✓	
Audrey Duke	adukedawg1@bellsouth.net		
Andrea (Champagne) Smith	tcsmith13@aol.com	✓	
Gary Nix	garynix@redogma1.com		
Ari & Katrina Naukkarinen	naukkarinens@yahoo.com		
Gerry Metzger	Metzgerj@bellsouth.net	✓	
Rp Altford	ryaltford@mindspring.com		

Stakeholder Committee Meetings: Agendas and Supporting Documentation

The Stakeholder Committee was instrumental in the development of the public survey, in public engagement in general, and in the open-house style public workshops. The committee met five times over the life of the project. Their dedication and input helped shape both the process and the final product. Agendas and supporting documentation included below:

AGENDA

FLOWERY BRANCH COMPREHENSIVE PLAN UPDATE STAKEHOLDER MEETING CITY HALL

2:00 – 4:00 PM-Thursday November 13, 2025

DISCUSSION/ACTION:

- 1.) Comp Plan Overview: Update Process, Schedule, and Components**
- 2.) Vision Statement Review (p 25)**
- 3.) Public Comment Survey Review for Survey Monkey (p 61-65)**
- 4.) Next meeting date:**
Dec __: Needs and Opportunities Assessment (Chapter 3, p 12 - 24),
SWOT analysis. Please review these prior to the December meeting.
- 5.) Adjournment.**



Comprehensive Plan Stakeholder Committee Meeting Agenda

12/9/2025

New Business:

- Consider having Jack Probst chair the Stakeholder Committee

Old Business:

- Review initial planning framework for discussion. Document attached email.
- **Vision Statement:** Review Options and develop a Vision Statement and Tag Line
- **Survey Questions:** Review survey questions and finalize the survey.
- **Communication Strategy:** Website link [Comprehensive Plan Update 2025/2026](#) can also be accessed from the splash page bottom left box. Renee to discuss social media posts and other ways of communication.



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Comprehensive Plan Stakeholder's Committee Meeting Agenda January 7th, 2026

- ❖ Welcome & Update – Chris McCrary
- ❖ Review of current survey participation – Joe Rothwell
- ❖ Analysis of the data gathered so far – Jack Probst
- ❖ Survey Says! Review survey results regarding Vision Statement & Tag Line and finalize decision – Joe Rothwell
- ❖ Review previous Needs & Opportunities – Joe Rothwell
- ❖ Needs & Opportunities Committee discussion, what should remain?
- ❖ Introduction to Land Use & Character Areas
- ❖ Dates for next committee meeting & frequency of meetings
- ❖ Committee Discussion Points for Upcoming Meetings:
 - What Needs & Opportunities need to change?
 - Land Use & Character Areas
 - Planning of Public Workshops
- ❖ Public Input Session for any attendees not on the Stakeholder Committee
 - Two minutes per speaker
- ❖ Final questions or comments
- ❖ Adjourn



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Comprehensive Plan Stakeholder's Committee Meeting Agenda February 10th, 2026

- ❖ Welcome & Update – Dani Nash
- ❖ Review of current Needs & Opportunities – Joe Rothwell
- ❖ Analysis of the survey data in reference to Needs & Opportunities – Jack Probst
- ❖ Discuss updated Needs & Opportunities
- ❖ Review of current Land Use & Character Areas
- ❖ Committee Discussion Points for Upcoming Public Meeting:
 - Stations
 - Supplies Needed
 - SMEs (subject matter experts)
- ❖ Public Input Session for any attendees not on the Stakeholder Committee
 - Two minutes per speaker
- ❖ Set date for next committee meeting
- ❖ Final questions or comments
- ❖ Adjourn



FLOWERY ♦ BRANCH ♦



Comprehensive Plan Stakeholder's Committee Meeting Agenda March 12th, 2026

- ❖ Welcome & Update – Dani Nash
- ❖ Review Needs & Opportunities – Joe Rothwell
- ❖ Discuss updated Needs & Opportunities – Committee
- ❖ Review Land Use & Character Areas – Joe Rothwell
- ❖ Discuss updates to Land Use & Character Areas – Committee
- ❖ Dates for Public Hearing draft presentation
- ❖ Final questions or comments
- ❖ Adjourn

RESOLUTION 26-010
ADOPTING THE CITY OF FLOWERY BRANCH
COMPREHENSIVE PLAN

WHEREAS; The City of Flowery Branch has prepared a comprehensive plan update, and said plan has been approved by the Georgia Department of Community Affairs as having met the minimum planning standards of the Georgia Planning Act of 1989; and

WHEREAS; The Flowery Branch City Council recognizes the value of having a coordinated overview of the problems, needs and opportunities growth and change will create. The City Council further recognizes that the Comprehensive Plan is not a final and absolute answer to all of the many matters of policies, programs, and facilities contained therein. Constant community change, further identification of needs, more detailed planning, limitations of resources, and other changing conditions undoubtedly will require periodic review of the Plan's objectives. Therefore, it is essential that the plan be systematically re-evaluated and updated at regular intervals to reflect major changes that have a bearing on the city's development objectives;

Now, therefore, BE IT RESOLVED, and IT IS HEREBY RESOLVED, by the Flowery Branch City Council, that the City of Flowery Branch Comprehensive Plan 2026 is hereby adopted, along with accompanying, maps, policies, goals, objectives, strategies and programs, as a general guide for the future growth, change and development in Flowery Branch, Georgia.

Adopted this _____ day of May, 2026.

_____, Mayor

City Clerk

(Seal)