Planning and Appeals Board Meeting Agenda
Tuesday, November 12, 2024, 5:30 PM
Public Safety Complex, Municipal Court Room
701 Queen City Parkway, Gainesville, GA 30501

CALL TO ORDER

MINUTES

A. Minutes of September 10, 2024

OLD BUSINESS

NEW BUSINESS

A. Annexation

1) Request from **Grand Communities, LLC** to annex a 2.559± acres tract located on the east side of Crystal Drive, between Mountain View Drive and Springview Drive (a/k/a **1936 Crystal Drive**) and to establish a zoning of Planned Unit Development (P-U-D).

Ward Number:	One
Tax Parcel Number(s):	00-090-002-001
Request:	53 single-family detached homes and 88 single-family attached townhomes

B. Rezoning

1) Request from **Grand Communities, LLC** to rezone a 33.82± acres tract located on the west side of Thompson Bridge Road, between Mountain View Drive and Springview Drive (a/k/a **0, 1799, 1805, 1825, 1829 and 1981 Thompson Bridge Road, NW**) from Residential-I (R-I) to Planned Unit Development (P-U-D).

Ward Number:	One
Tax Parcel Number(s):	00-090-002-021, 022, 023, 024 and 032; 01-090-002-021
Request:	53 single-family detached homes and 88 single-family attached townhomes

C. Code Amendment

1) Request from the **City of Gainesville** to amend Chapter 9-21-1, entitled "Planning and Appeals Board, to include amendments to Section 9-21-1-1 entitled "Establishment and Continuation" and Section 9-21-1-2 entitled "Appointments, Terms of Office and Vacancies" of the Unified Land Development Code for the City of Gainesville, Georgia.

Ward Number:
Tax Parcel Number(s):
Request:

MISCELLANEOUS

ADJOURNMENT

CITY OF GAINESVILLE

Planning and Appeals Board
Agenda Request

Item Created: October 15, 2024

Date Submitted: October 17, 2024

Final Approval Date: October 17, 2024

Presenter:

Item of Business: Minutes of September 10, 2024

Meeting Date: November 12, 2024

Purpose of Request:
The purpose of this request is to allow the Planning and Appeals Board to approve the minutes from the referenced meeting.

Facts & Issues / History & Background:
The draft minutes were reviewed by the Office & Records Coordinator and the Community & Economic Development Deputy Director.

Department Recommendation:
Approval of the minutes as presented.

Department Director:

If funding is involved, are funds approved within the current budget? No

Amount Requested: **Sources of Funds:**

Finance Comments:

Administrative Comments:

Attachments:

1. 2024-09-10 PAB DRAFT minutes

GAINESVILLE PLANNING AND APPEALS BOARD
DRAFT MINUTES OF MEETING
SEPTEMBER 10, 2024

CALL TO ORDER Chairman Doug Carter at 5:30 p.m.

Members Present: Chairman Doug Carter, Vice-Chair Ryan Thompson and Board Members Jane Fleming, Kelvin Simmons and Rick Young

Members Absent: Board Members Eddie Martin and Rick Young

Staff Present: Community & Economic Director Rusty Ligon, Community & Economic Deputy Director Matt Tate and Recording Secretary Gwen Fleming

Others Present: Council Member Barbara Brooks

MINUTES OF JULY 9, 2024

There was a motion to approve the minutes as presented.

Motion made by Vice Chair Thompson
Motion seconded by Board Member Fleming
Vote – 4 favor, 2 absent (Martin, Young), 1 vacant

OLD BUSINESS

NEW BUSINESS

A. <u>Variance Request</u>

1) Request from **Raven Residential Group, LLC** to vary the Midtown Overlay Zone residential density requirements and parking requirements on a 0.75± acre tract located on the east side of Grove Street, south of the intersection of Grove Street and Summit Street (a/k/a **762 Grove Street, SW**), having a zoning of Heavy Industrial (H-I)**.**
   Ward Number: Three
   Tax Parcel Number(s): 01-017-001-010
   Request: 18 residential condominiums

Staff Presentation: Deputy Director Matt Tate gave the following staff presentation:

The applicant is proposing to vary the Midtown Overlay Zone requirements to increase the number of residential units allowed from 9 dwelling units (12 du/acre) to 18 dwelling units (24 du/acre). In addition, the applicant is proposing to vary the number of parking spaces required from 36 to 24 spaces.

The property is 0.75 acre in size and the adjacent uses include the Liberty Midland apartments, Blast All Sandblasting Services, Southern Baked Pie bakery and the Midland Park. The property contains two block buildings and two small sheds that are slated for demolition. The buildings were previously occupied for a concrete pumping business and an auto body repair shop.

The proposed "Trailside Cottages" detached condominiums consist of a mixture of two and three story units including <u>four</u> - 500 sf units, <u>eight</u> - 886 sf units and <u>six</u> - 1,170 sf units.

Access is proposed from Grove Street and 24 onsite parking spaces are planned. Amenities are to include a grilling station, green space and a pedestrian walkway that will provide access to the Midland Greenway.

The applicant states that if not for the limited size of the property, it is likely that a Planned Unit Development (P-U-D) zoning would be approved, allowing increased densities and believes the proposed redevelopment is more consistent with the City's vision for the Midtown Area.

The Planning Division staff is recommending **conditional approval** of this variance request based on the Comprehensive Plans support of residential development within the Midtown Overlay Zone and the need for intown, quality affordable housing.

Applicant Presentation: Dave Odom, 6632 Ben Parks Road, Murrayville with Raven Residential Group stated this would be their fourth project in the city limits and first project located along the greenway. The focus will be on owner occupied dwellings walkable to the amenities and targeting first time buyers, couples and young professionals without a family. The plan is to situate the project around a central courtyard and will be detached condominiums. The smaller units will be approximately 570 sq ft.

FAVOR: None

OPPOSE: None

Board Member Comments: Board Member Fleming asked what the price point would be and Mr. Odom answered he had hope to start at $299,000 and up but with development costs would possibly be low $300,000's and $400,000 for the larger units.

Chairman Carter asked Mr. Odom for his reasoning and thoughts for the variance regarding parking. Mr. Odom stated sales should not be affected regarding the limited parking. He spoke about his first projects with limited parking and discovered most only owned one vehicle. He advised this project was planned with one space per unit with six additional spaces for guests with on-street parking available.

Vice Chair Thompson asked about the location for trash, recycling and mail kiosk. Mr. Odom stated that had not been finalized but will have an area designated for it but was aware a dumpster will be needed along with a centralized mail kiosk.

Chairman Carter asked Deputy Director Tate if the dumpster and mail kiosk would be on the final site/development plan and he confirmed it would be.

Board Member Fleming commented that the Planning Staff had recommended a HOA and thankful for it along with restrictions on it which will be an asset rather than a liability.

There was a motion to conditionally approve the request to vary the Midtown Overlay Zone residential density and parking requirements for 18 residential condominiums having a zoning of Heavy Industrial (H-I) with the following conditions:

<u>Conditions</u>

1. **The development shall be substantially consistent with the site plan and architectural renderings submitted with this application and shall be subject to the approval of the Community & Economic Development Director. In addition, all roof**

structures shall be constructed with architectural shingles, and the front and sides of each condominium unit shall be constructed with a minimum 3-foot high watermark of brick or stone.

2. **The frontage landscape area along Grove Street shall be maintained and sodded with grass and shall include a minimum of two 3-inch caliper size deciduous trees subject to the approval of the Community & Economic Development Director.**
3. **A mandatory Homeowners Association (HOA) shall be required for the proposed development providing for the financial management, architectural controls, enforcement of community standards and management of all common areas. The Board will be established and operated by the developer until such time the powers are transferred to the HOA(s). A covenant shall be required to be recorded for the proposed development stating that no more than four (4) of the total residential units may be rented.**
4. **All access point design for the subject property shall be submitted for review by the Gainesville Public Works Director, and approval of said design shall be required prior to issuance of a building permit. All required access/traffic/sidewalk improvements associated with the proposed development shall be at the full expense of the developer/property owner.**
5. **An updated as-built boundary survey/plat of the subject property, indicating all improvements required for the proposed use, shall be recorded prior to obtaining a Certificate of Occupancy for the last condominium unit.**

Motion made by Vice Chair Thompson
Motion seconded by Board Member Simmons
Vote – 4 favor, 2 absent (Martin, Young), 1 vacant

B. <u>Zoning Amendment Request</u>

1) Request from **HadjPadj Technologies, LLC** to amend a zoning condition on a 1.37± acres tract located on the south side of Palmour Drive, west of the intersection of Palmour Drive and Queen City Parkway (a/k/a **1176 Palmour Drive, SW**), having a zoning of Heavy Industrial (H-I)**.**
Ward Number: Five
Tax Parcel Number(s): 15-035-000-015
Request: Data center

Staff Presentation: Deputy Director Matt Tate gave the following staff presentation:

In April of 2024, a conditional special use approval was given for the applicant to construct a maximum of two, 10’ x 18’ data center huts on the subject property. As you may remember, this originally came before this board in February, was tabled to the March public hearing and the PAB approved the request with 5 conditions.

The applicant is now proposing to amend his original request to allow up to six, 10’ x 40’ data huts, or a total of 2,400 square feet of data center space. According to the applicant, Georgia Power initially required no additional upgrades, but was notified after the zoning approval that significant upgrades were required at a substantial cost which no longer made the project feasible.

The property is zoned H-I, is currently undeveloped and is located within the Gainesville Industrial Park South and within the Airport Overlay Zone. Adjacent uses include Poly Enterprises manufacturing, Ace Hardware distribution center and Lee Gilmer Memorial Airport.

The Planning staff recommended denial of the original special use request and is recommending **denial** of this amended request.

If consideration is given by the Planning and Appeal Board, the following changes to the original zoning conditions are encouraged. The strikethroughs shown represent the text removed from the original zoning condition. The highlighted text represents the proposed amended and new zoning conditions.

Conditions

1. **The ~~subject property~~ proposal shall be limited to ~~the two 10' x 18'~~ four, 10' x 45' data center huts ~~as shown on the revised site/landscape plan and shall be oriented in the same manner.~~ or a total of 1,800 square feet of data center space and a storage facility limited in size to a typical storage container.**
2. **The proposed data center huts shall be screened on all sides by a sound barrier wall at a height sufficient to screen the data huts and storage facility from Palmour Drive and the adjacent properties. The location, type and architecture of the sound barrier wall shall be approved by the Community and Economic Development Director.**
3. **All improvements on the subject property shall be limited to a maximum height of 12-feet. Furthermore, a storage facility limited in size to a typical shipping container shall be allowed to be placed on the property in such location as approved by the Community and Economic Development Director.**
4. **The proposed data huts shall be sufficiently screened with existing and new vegetation and trees as depicted on the site/landscape plan, subject to the approval of the Community and Economic Development Director.**
5. **All new fencing shall be chain-link coated with black color vinyl.**
6. **All access point design for the subject property shall be submitted for review by the Gainesville Public Works Director, and approval of said design shall be required prior to issuance of a building permit. All required access/traffic/sidewalk improvements associated with the proposed development shall be at the full expense of the developer/property owner.**
7. **When measured 100 feet from the data huts, the sound level shall not exceed 65 dB(A) at any time.**

Applicant Presentation: Viral Chhadua, 2313 Crystal Court, stated the plan was to come before the board in early 2025 for the site build-out but had some issues with Georgia Power regarding cost of upgrades. Mr. Chhadua reviewed the conditions on the presentation and stated the request is for 1,800 square feet of data space along with a noise measurement limitation tool limiting noise no more than 65 db. He reviewed the economics for the project including quotes from for two data huts at approximately $347,000 and four data huts of $437,000 and decreases the per MW bases. Mr. Chhadua stated he had been working with the planning staff and agree on all conditions except for the sound barrier wall for the data huts and storage facility. He stated he believes it will be a waste of resources since the data huts are actually buildings built to electrical and building codes. He went over slides on the

presentation of other locations and stated the project will be screened with robust landscaping which will help mitigate noise. The project will have gravel or asphalt for ground covering. He also had an example of a server with an intake fan and exhaust fan and explained can get very hot without proper air flow which causes most noise. He stated he was concerned about proper air flow if walls are built around the huts and the cooler for the servers are, the quieter. The next slide he spoke about the elevations and will be below 12 feet for the sides of the data huts. He stated the site plan had been revised for added impervious space being a retention pond which will be hidden behind the landscape. He spoke about the tax revenue for the City and Hall County. Mr. Chhadua handed the board members a copy of an example and stated he would like to propose louvered style walls instead of a chain-link fence which would provide more security and further screening. He stated it will look better and possibly have brick columns which will allow for proper air flow and run quieter at a conversation level.

FAVOR: None

OPPOSE: None

Board Member Comments: Vice Chair Thompson stated his concern was there were several questions in the beginning and then was narrowed down to two units but now a much larger project is being proposed.

Mr. Chhadua stated he had met with the local engineer in January and was told verbally the two huts could be serviced without upgrades and did not want to go through the process of what their cost would be since the project had not been approved. He then explained after the approval in April he received the actual cost for the project but he failed to get it in writing back in January. He explained without any guarantee to expand in the future then it will not make it feasible with the economics.

Chairman Carter stated when the proposed project was presented, he still believes that it's important to get things right when its new and different and the scope of the project changed. He reminded the audience and board that the zoning amendment request will go forward to City Council for final decision.

Board Member Fleming expressed appreciation to the applicant for his work into the request and appreciates the planning staff's work on the project and agrees with the planning staff for recommended denial.

There was a motion to recommend denial of the zoning amendment request for a data center with Heavy Industrial (H-I) zoning.

Motion made by Board Member Fleming
Motion seconded by Board Member Simmons
Vote – 4 favor, 2 absent (Martin, Young), 1 vacant

ADJOURNMENT

There was a motion to adjourn the meeting at 6:03 p.m.

Motion made by Board Member Simmons
Motion seconded by Vice Chair Thompson
Vote – 4 favor, 2 absent (Martin, Young), 1 vacant

Respectfully submitted,

Doug Carter, Chairman

Gwen Fleming, Recording Secretary

CITY OF GAINESVILLE

Planning and Appeals Board Agenda Request

Item Created:	October 15, 2024
Date Submitted:	October 17, 2024
Final Approval Date:	October 25, 2024
Presenter:	Matt Tate, Community & Economic Development Dept Deputy Director
Item of Business:	Request from **Grand Communities, LLC** to annex a 2.559± acres tract located on the east side of Crystal Drive, between Mountain View Drive and Springview Drive (a/k/a **1936 Crystal Drive**) and to establish a zoning of Planned Unit Development (P-U-D).
Meeting Date:	November 12, 2024

Purpose of Request:
The applicant is proposing to annex the 2.559± acres subject property as part of an overall 36.38± acres tract with a zoning of Planned Unit Development (P-U-D). The property is currently zoned Residential-I (R-I) within unincorporated Hall County and is undeveloped with dense vegetation.

The proposal includes 141 for sale residential units consisting of 53 single-family homes and 88 townhomes and will be named “Sapphire Springs”. The single-family homes are a mixture of ranch and two-story homes ranging from 1,200 to 3,100 square feet in size with two car garages. The townhomes are two-stories ranging from 1,550 to 1,850 square feet in size with a mixture of 1 and 2 car garages. Amenities include a community clubhouse, pool, playground, mulch trail, common green space and mail kiosk, all of which will be maintained by a mandatory Homeowners Association (HOA). One access road is proposed from Thompson Bridge Road and a gated emergency access drive is proposed from Crystal Drive. The proposed streets will be public roads, water, sanitary sewer and solid waste pickup will be provided by the City of Gainesville.

The adjacent uses include single-family homes to the north, south and west. Commercial and multifamily uses are present on the east side of Thompson Bridge Road and include the Cielo At Thompson apartments, Chattahoochee shopping center, Brown Eyed Girl Upscale Resale, Pro Touch Landscapes, House Dressing Outdoor store and Cabinetry By Collier / Custom Kitchens.

Facts & Issues / History & Background:

Department Recommendation:
Planning staff recommended approval with seventeen conditions. See the Staff Recommendatoni report for details.

Department Director:
Rusty Ligon

If funding is involved, are funds approved within the current budget? No

Amount Requested: **Sources of Funds:**

Finance Comments:

Administrative Comments:

Attachments:

1. Staff Recommendation Report
2. Location maps
3. Narrative Report (Revised)
4. Reservation of Constitutional & Other Legal Rights (Revised)
5. Design Book
6. Site Plan
7. Concept - Green Space Plan
8. Open Space Plan
9. Land Use Plan
10. Detached Home Renderings
11. 2024-10-01 Traffic Impact Study - Sapphire Springs

GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION

Applicant	Grand Communities, LLC
Property Owners	See family estate property list
Location	1936 Crystal Drive; 0, 1799, 1805, 1825, 1829 and 1981 Thompson Bridge Road, NW
Request	Annex with P-U-D zoning Rezone from R-I to P-U-D zoning
Total Acres	Annexation: 2.56± acres Rezoning: 33.82± acres Total: 36.38± acres
Ward	One
Proposed Use	53 single-family detached homes and 88 single-family attached townhomes
Planning Division Staff Recommendation	**Approval, with conditions**
Date	November 12, 2024

- ***Applicant's Proposal and Background Information***

The applicant is proposing to annex 2.559± acres with a zoning of Planned Unit Development (P-U-D) and rezone 33.82± acres from Residential-I (R-I) to Planned Unit Development (P-U-D), for a total of 36.38± acres.

The 2.559± acres tract is currently zoned Residential-I (R-I) and is an unincorporated County island that is undeveloped with dense vegetation. The 33.82± acres tract is located within the city limits and consists of six parcels with four residential structures, of which two are occupied. This property is heavily wooded and contains a sanitary sewer line and stream that traverse the property. The subject property slopes downward from Thompson Bridge Road approximately 70 feet to Crystal Drive.

The proposed “Sapphire Springs” residential development includes 141 for sale residential units consisting of 53 single-family detached homes and 88 single-family attached townhomes. It is anticipated construction will occur over a period of 48 months (12 months developing the site and 36 months of home construction).

The single-family homes include a mixture of ranch and two-story homes ranging from 1,200 to 3,100 square feet in size with two-car garages. The townhomes are two-stories, ranging from 1,550 to 1,850 square feet in size with a mixture of 1 and 2 car garages. Amenities include a community club house, pool, playground, mulch trail, common green space and mail kiosk of which will be maintained by a mandatory Homeowners Association (HOA). According to the concept plan, part of proposed street A, a portion of the clubhouse parking lot and approximately 16 townhome lots encroach within the stream buffer.

A single access road is proposed from Thompson Bridge Road and a gated emergency access is proposed from Crystal Drive. Internal streets are intended to be public roads. Water, sanitary sewer and solid waste pick up will be provided by the City of Gainesville.

The development standards are as follows:

Total Acreage	36.38 Acres	
Minimum Open Space	20% (7.31 Acres)	
Total Density	3.87± Du/Ac	
	Single-Family Attached (SFA) (Townhomes)	**Single-Family Detached (SFD) (Dwellings)**
Permitted Uses	Up to 88 Attached Townhomes	Up to 53 Detached Homes
Max Lot Coverage	None	None
Min Lot Size	2,000 SF	7,000 SF
Min Lot Width	20 ft	60 ft
Unit Square Feet	1,550 sf to 1,850 sf	1,200 sf to 3,100+ sf
Min Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior Boundary: 20 ft Amenity Rec. Building: 20 ft	Front: 20 ft Rear 20 ft Side 5 ft (15 ft between structures) Exterior Boundary: 20 ft Amenity Rec. Building: 20 ft
Min Exterior Buffers	Standard: 20 ft natural/undisturbed + additional 20 ft buffer graded/ planted	Standard: 20 ft natural/undisturbed + additional 20 ft buffer graded/ planted
	Thompson Bridge Road: 25 ft natural/undisturbed + additional 25 ft buffer, graded/ planted	Thompson Bridge Road: 25 ft natural/undisturbed + additional 25 ft buffer, graded/ planted
Stream Buffers / Impervious Setbacks	50 ft / 75 ft stream bank, except 0 ft from stream bank where depicted on site plan	50 ft / 75 ft stream bank, except 0 ft from stream bank where depicted on site plan
Min Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Max Townhome per Bldg.	6 units	N/A
Max Bldg. Height	42 ft	42 ft
Max Bldg. Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives: 20 ft wide right-of-way and pavement, No curb	Emergency Access Drives: 20 ft wide right-of-way and pavement, No curb
	Internal Streets: 50 ft right-of-way with minimum 28 ft wide pavement back of curb to back of curb	Internal Streets: 50 ft right-of-way with minimum 28 ft wide pavement back of curb to back of curb
Street Improvements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No maximum cul-de-sac length	No maximum cul-de-sac length
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5	Minimum Community Rec Facility Parking Spaces: 5
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

- ***Adjacent Land Use and Zoning***

Location	Use	Zoning
North	Single-family homes	Residential- I (R-I) -City
South	Single-family homes	Residential-I (R-I) -City
East	Cielo At Thompson apartments, Chattahoochee shopping center, Brown Eyed Girl Upscale Resale, Pro Touch Landscapes, House Dressing Outdoors and Cabinetry By Collier / Custom Kitchens.	Residential-II (R-II) -City Neighborhood Business (N-B) -City Regional Business (R-B) -City
West	Single-family homes	Residential-I (R-I) -City Residential-I (R-I) -County

Other nearby uses include the Linwood Nature Preserve and the Linwood Water Treatment Plant which are located northwest of the property adjacent to Lake Lanier.

- ***Traffic Summary***

A Traffic Impact Study was conducted for the proposed development on October 1, 2024. A brief summary of the findings is provided below.

Studied intersections:

1. Thompson Bridge Road/SR 60 at River Cliff Drive (unsignalized)
2. Thompson Bridge Road/SR 60 at Linwood Drive / Sandridge Court (signalized)
3. Thompson Bridge Road/SR 60 at Springview Drive (unsignalized)
4. Thompson Bridge Road/SR 60 at Mountain View Road (unsignalized)
5. Thompson Bridge Road/SR 60 at Virginia Avenue / Oakland Drive (unsignalized)
6. Thompson Bridge Road/SR 60 at Lanier Avenue (unsignalized)
7. Proposed Subdivision Road at Thompson Bridge Road/SR 60 (unsignalized)

An average annualized growth rate of 1.3% was calculated using historical traffic data from the GDOT traffic count data base. The below table represents the anticipated project trip generation upon the development being built out.

	Total Trips	Inbound Trips	Outbound Trips
Daily	1,228	614	614
AM	85	24	61
PM	107	64	43

Currently, the approach experiencing the most delay is eastbound at SR 60 and Oakland Drive / Virginia Ave. The intersection with the next highest delay overall is north and south bound at SR 60 at Linwood Drive / Sandridge Court. However, no new intersections fail as a result of adding peak hour development traffic from the development. A sight distance analysis was also conducted for the development which revealed the following.

Intersection	Estimated Intersection Sight Distance		
	Left-turn from Subdivision Road Stop	Right-turn from Subdivision Road Stop	Left-turn from Thompson Bridge Road
New Access at Thompson Bridge Road	>500’	>565’	>450’

Based on the findings in this study, a southbound right turn lane along Thompson Bridge Rd/SR 60 at the access to the development is recommended. There were no other improvements recommended.

- ***Other Departmental Comments***

The Georgia Department of Transportation does not have any major objections to the proposal. However, coordination with GDOT is required and the development will be required to meet all requirements, provided in the Driveway and Encroachment Manual.

The following comments are from the Gainesville Public Works Department.

- Coordination with will be required for the proposed development access plan.
- The addition of a southbound right turn lane along Thompson Bridge Rd/SR 60 at access A shall be installed at the developer's expense.
- All streets within the development shall meet Gainesville Public Works requirements for acceptance. Any variances will need to be approved during plan review process.
- The intersection of street A and street B will need to be modified in order for the driveways not to create conflict.
- Alignment at street A and cul-de-sac need to be re-evaluated for efficient traffic flow.
- Amenity parking lot driveways will need to meet City of Gainesville distance standards from intersection.
- No parking to be allowed on the streets throughout the development (both single family and townhomes sections)
- Developer will be responsible for all signage (stop, street, no parking, etc.) throughout the development.

- ***Zoning History***

The following zoning actions have taken place in the immediate area during the last ten years:

2024 - A request by Outer Banks, LLC (Paul Brown) to rezone a 4.08+ acres tract located at 2590 and 2600 Old Thompson Bridge Road, NW from Residential-I (R-I) and General Business (G-B) to Residential-II (R-II) was conditionally approved for 42 residential townhomes.

2024 - A request by Constantino Gutierrez to rezone a 0.38+ acre tract located at 934 Etta Vesta Circle, NE from Neighborhood Business (N-B) to Residential-I (R-I) was approved for a single-family home.

2023 - A request by Eric Owens for site plan approval on a 0.34± acre tract zoned Residential and Office (R-O) located at 1714 Thompson Bridge Road was conditionally approved for an office building.

2022 - A request by Easto Construction to amend a 4.847± acres tract zoned Planned Unit Development (P-U-D) located at 2702 High Visa Point, NE was withdrawn to the City Council meeting for 50 residential townhomes.

2022 - A request by Mark D. Thebaut, D.D.S. to amend a 0.67± acre tract zoned Planned Unit Development (P-U-D) located at 1398 Thompson Bridge Road, NE was approved for a medical office or restaurant with drive-thru.

2020 - A request by Walker-Lanier, LLC to rezone a 0.50± acre tract located at 989 Lanier Avenue and 1437 Walker Street from Residential-I (R-I) to Residential-II (R-II) was approved with conditions for duplex homes.

2019 - A request by Fred Godbee to rezone a 0.5+ acre tract located at 1831 Thompson Bridge Road, NW from Residential-I (R-I) to Neighborhood Business (N-B) was conditionally approved for a security office.

2017 - A request by Adams & Copeland, LLC for a special use for a hair salon and office within the Office and Institutional (O-I) zoning district located at 1665 Thompson Bridge Road was approved with conditions.

2016 - A request by Jack Bailey to rezone a 0.61± acre tract located at 1665 Thompson Bridge Road, NW from Residential-I (R-I) to Office and Institutional (O-I) was approved with conditions for an insurance office.

2015 - A request by David P. Johnson to rezone a 1.458± acres tract located at 1537 and 1551 Thompson Bridge Road; and 135 Virginia Circle from Residential-I (R-I) to Neighborhood Business (N-B) with a special use for a restaurant with drive-thru and retail was denied.

2014 - A request by Polestar Development, LLC to rezone a 1.741± acres tract located at 1435 Thompson Bridge Road from Residential-II (R-II) to Regional Business (R-B) for a grocery store and fuel service station was approved with conditions.

- ***Staff Analysis***

(1) Is the proposed use suitable in view of the zoning and development of adjacent and nearby property?

The proposed use includes single-family detached homes and single-family attached townhomes with a zoning of Planned Unit Development (P-U-D). The adjacent and nearby properties consist of mostly single-family homes built in the 1950's, 60's and 70's. There are also multi-family apartments and various commercial uses which front along Thompson Bridge Road. These properties are primarily zoned Residential-I (R-I) with the exception of the nearby multi-family and commercial properties zoned Residential-II (R-II), Neighborhood Business (N-B), Regional Business (R-B), General Business (G-B). The following are some of the residential developments within the nearby area.

Neighborhood / Development	Acres	Units / Lots	Density (Du/Ac)
Sapphire Springs (Proposed)	**36.56±**	**141**	**3.86**
Mountain View Drive / Honeysuckle Road / Harbor Cove	145.9±	133	0.9
Springview Drive / Pinecrest Road / Crystal Drive *	20.2±	33	1.6
Woodlawn Avenue / Virginia Circle / Oakland Drive	58.6±	76	1.3
Etta Vesta	13.2±	25	1.9
Sandridge Commons Townhomes	4.5±	55	12.2
North Pointe Apartments	9.7±	106	10.9
Cielo at Thompson Apartments	5.1±	81	15.9
Linwood Apartments	9.6±	100	10.4

*Acres and Unit calculation does not include subject property or City owned property.

(2) Will the proposed use adversely affect the existing use or usability of adjacent or nearby property?

Aside from the four existing single-family homes fronting Thompson Bridge Road and an existing sanitary sewer easement, the subject property has remained as undeveloped green space.

The proposed development will change the living conditions of the adjacent and nearby residential uses both aesthetically and by increasing traffic on Thompson Bridge Road. Vehicle turning movements, specifically left turns, at the intersections of Thompson Bridge Road/Springview Drive, Thompson Bridge Road/Mountain View Drive and Thompson Bridge Road/Virginia Avenue can be difficult given the speed of northbound and southbound traffic.

From an environmental perspective, particular care to protect the existing stream on the property is paramount as it flows directly to Lake Lanier. While the proposed development provides for adequate stormwater run-off, water quality and sedimentation control measures, additional actions may be necessary to negate any impacts to the stream, Lake Lanier and adjacent properties.

The proposal anticipates the development will include three phases and will be built-out over a period of 4 years which will help integrate the residential growth.

(3) Is the proposed use compatible with the purpose and intent of the Comprehensive Plan?

The Future Land Use Map for the City of Gainesville places most of the property within the *General Mixed-Use* land use category and the smaller unincorporated area within the *Single-Family Residential* land use category.

The *General Mixed-Use* land use category includes areas containing or planned for a mixture of land uses including office, neighborhood retail, detached residential and attached residential.
The *Single-Family Residential* land use category includes areas containing or planned for single-family detached or semi-detached housing at densities ranging from two to four dwelling units per acre. The proposed residential density is 3.86 dwelling units per acre.

According to the Character Area map for the City of Gainesville, most of the subject property is located within the *Lake District* and a smaller portion of the property is located within the *Traditional Neighborhoods* Character Area.

The main character area driver of the *Lake District* is the presence of Lake Lanier and its distinctive rolling landscape. New housing will be a major source of growth for the area and should feature a wide range of product, from townhouses to high-end single-family detached homes. The area should maintain and advance a residential focus on both sides of the Lake Lanier bridge, combining traditional neighborhood development walkability. The character area can accommodate limited mixed-use and commercial growth, but it must be carefully planned to avoid suburban sprawl. Land uses allowed in the Lake District are Parks and recreation, single-family residential, limited multi-family residential, limited general mixed-use, limited commercial (retail and office) and public and institutional uses.

The *Traditional Neighborhoods Character Area* includes Parks and recreation, single-family residential, multi-family residential, limited general mixed-use, commercial (retail and office), and public and institutional uses. Although the area is mostly built-out, opportunities for infill development should be promoted as they arise and neighborhood-serving businesses are encouraged.

(4) Are there substantial reasons why the property cannot or should not be used as currently zoned?

The subject property is currently zoned Residential-I (R-I). As an infill residential development, a minimum lot size of 10,000 square feet is allowed and is restricted to single-family detached lots. Given there are 36.561 acres, the gross density would allow for up to 159 residential units. However, given the existing stream, sanitary sewer easement and required infrastructure, the actual number of lots would be lower.

The proposal includes a mixture of housing types, lot sizes and other development standards which are currently not approved within R-I zoning. Therefore, the applicant is proposing a zoning of Planned Unit Development (P-U-D) which is considered a site-specific zoning. A zoning of P-U-D is intended to provide for some flexibility of land uses that should include unique and innovative development of the land through a unified site design in order to meet the objectives of the comprehensive plan.

(5) Will the proposed use cause an excessive or burdensome use of public facilities or services, including but not limited to streets, schools, water or sewer utilities, and police or fire protection?

Since the land is mostly undeveloped, the proposal will increase the amount of traffic generated and turning movements from the proposed Thompson Bridge Road driveway location. The estimated trips include 1,228 daily trips, 85 AM Peak Hour trips and 107 PM Peak Hour trips. According to the traffic impact study, a southbound right turn lane along Thompson Bridge Road /SR60 at the access to the development is recommended and will be required by GDOT. Due to the number of residential units proposed, staff does not believe a traffic signal will be warranted by GDOT.

Water and sewer capacity are available to serve the development. Gainesville Fire and Police Departments currently respond to adjacent and nearby properties. Gainesville Fire Station #3 located off of Nancy Creek Road is approximately 2.65± miles from the subject property.

The applicant estimates there will be approximately 78 school age children within the development over a period of four years. The actual number of students who live in the proposed development may be more or less than this number, as the method of calculation uses the total number households citywide, with some households containing more than the average number of children and others comprised of zero children.

(6) Is the proposed use supported by new or changing conditions not anticipated by the Comprehensive Plan or reflected in the existing zoning on the property or surrounding properties?

The proposal is supported by changing conditions in the surrounding area. In recent years, development along Thompson Bridge Road has been somewhat slower than other major corridors and has centered around existing neighborhood commercial nodes near the Enota Avenue and Linwood Drive intersections. This is in part due to topographical challenges, Lake Lanier and the difficulty of assembling smaller parcels that front Thompson Bridge Road. Redevelopment of aging commercial properties has occurred, some of which include the Wal-Mart Neighborhood Market, Starbucks, Zaxby's, Clipper Petroleum, and the Sandridge Court mixed-use development. Depending on market conditions, it is anticipated that additional residential development would encourage commercial redevelopment opportunities along the corridor.

(7) Does the proposed use reflect a reasonable balance between the promotion of the public health, safety, morality, or general welfare and the right to unrestricted use of property?

The proposed use is consistent with the Future Land Use Map and Character Area Map within the Comprehensive Plan. The proposal, *with the recommended conditions*, appears to promote a reasonable balance between the interests of the city, the property owner, and neighboring residents and property owners.

- ***Staff Recommendation***

  The Planning Division staff is recommending **conditional approval** of this annexation and rezoning request with **P-U-D zoning** based on the Comprehensive Plan, the existing approved use for the property and the adjacent mixture of uses.

  Conditions

1. **The development standards within the applicant's narrative, site plans, and architectural renderings shall be made part of the zoning ordinance, and shall be subject to the Community and Economic Development Director approval. Any zoning conditions adopted as part of this zoning ordinance that conflict with the applicant's narrative, concept plan and architectural renderings shall take precedence over the applicant's development standards.**
2. **The total number of residential units shall not exceed 141 units. The maximum number of single-family attached townhomes shall be 88. Apartments are not an approved use for the property.**
3. **A mandatory Homeowners Association (HOA) shall be required for the proposed development providing for the financial management, architectural controls, enforcement of community standards and management of all common areas. The Board will be established and operated by the developer until such time the powers are transferred to the HOA(s). A covenant shall be required to be recorded for the proposed development stating that no more than 20% of the total residential units may be rented.**
4. **Any proposed single-family detached lots and attached townhome lots encroaching within the State 25-foot undisturbed stream buffer must first receive approval from the Environmental Protection Division (EPD) prior to the issuance of a land development permit for those lots.**
5. **Prior to permits being issued for the residential uses, each contractor/developer shall provide architectural renderings of the proposed single-family detached homes and attached townhomes for the review and approval of the Community and Economic Development Department Director.**
6. **All exterior wall front, sides, and rear of the single-family detached homes, townhomes, and multi-family units shall consist of a variety of building materials consistent with architectural themes and styles determined by the applicant. Foundation water tables of matching brick or stone material, that also covers all exposed foundation walls, will be used where architecturally compatible. Vinyl siding shall only be permitted on soffit areas.**

   Other architectural requirements will include:

   - **Carriage style garage doors with decorative hardware or other embellishments shall be used on all single-family detached homes and townhomes;**

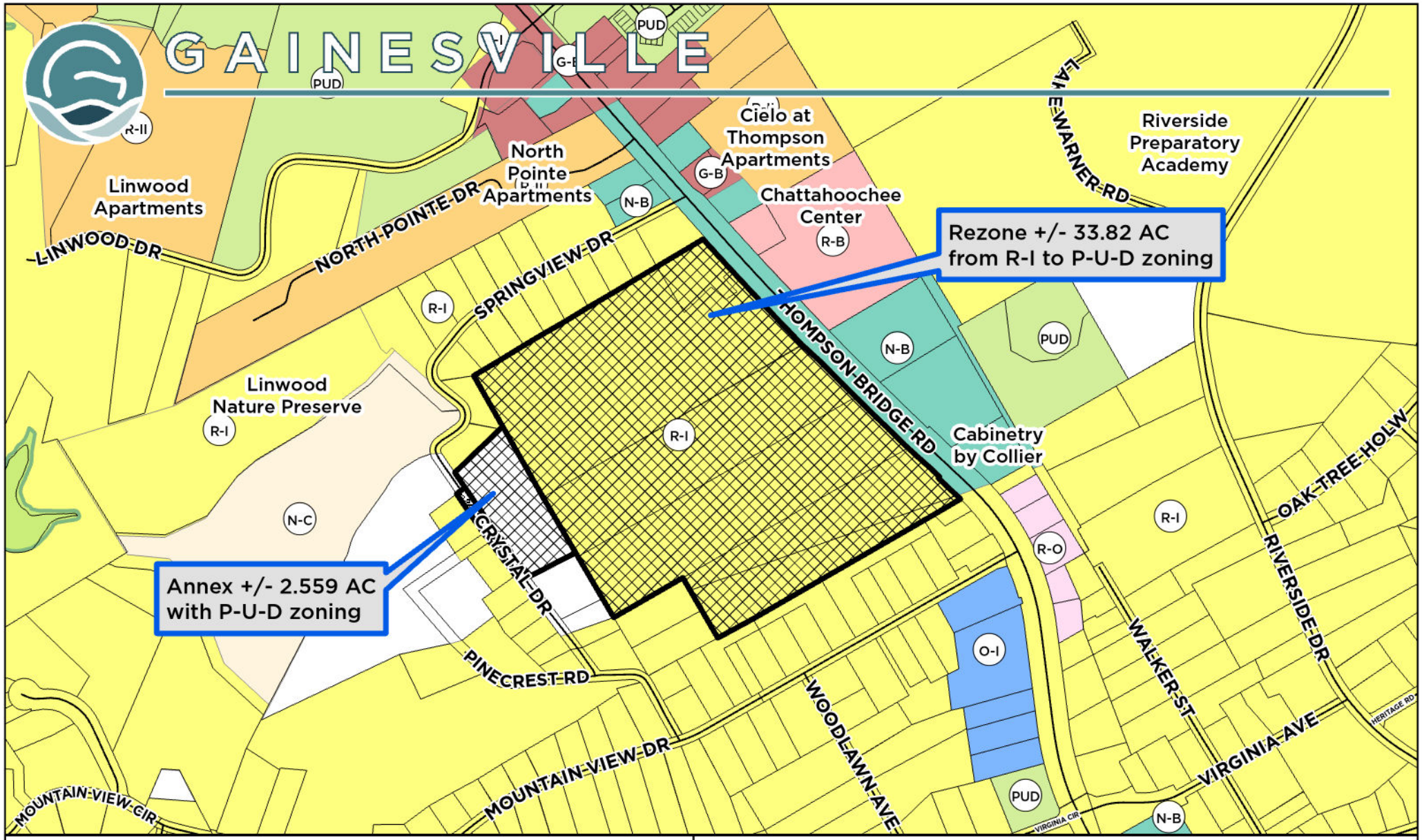
- **The roofing material used on all single-family detached homes and townhomes shall be 3-tab architectural/dimensional style asphalt shingles or metal as appropriate to the architectural style of each home as determined by the builder.**
- **All roofs and gables shall be of a pitch no less than 8/12. This condition shall not apply to dormers, porches, bay windows, and third floor retreats;**
- **All overhangs including gables and side gables will have a minimum of a 12-inch overhang on all sides;**
- **If dormers are included, they will not be taller than the main roof;**
- **All roof vents, pipes, and other roof equipment (except chimneys) shall be located on the rear elevations and shall be painted to match the color of the roof;**
- **The developer shall use a variety of techniques to avoid the monotonous appearance of identical single-family detached homes and attached townhome buildings. Such techniques may employ among others the use of differing front elevations, architectural styles, building exteriors, and other similar techniques so that no single-family detached house or townhome building is the same as any house or townhome building directly in front or on either adjacent side of the structure;**
- **The exterior materials for all homes shall consist of a mixture of brick, stone, fiber cement siding, cedar shake or wood siding to include at minimum a 3 foot architectural water table of brick or stone materials on the front and sides of the single-family detached homes and townhome buildings;**
- **No above-ground swimming pools shall be permitted;**
- **No window air conditioning unit may be installed;**
- **No exterior blank, windowless walls will be constructed;**
- **All single-family detached house plans will have front or side loaded two-car garages;**
- **All townhomes will have front or rear entry and a mixture of one and two garages;**
- **Street lighting will be provided throughout the development;**
- **All front porches of single-family detached homes shall have a minimum depth of 5';**
- **Windows are restricted to single hung or double hung windows.**

These requirements shall be included in the Covenants to be recorded against the property.

7. **All trash receptacles shall be screened from view from the road and adjacent properties.**
8. **Outdoor lighting used in this development shall be of non-spill design and placed in a manner so as to minimize direct visibility by the adjacent properties per Unified Land Development Code standards.**
9. **The proposed erosion control and water quality measures for the development shall at minimum meet the Georgia Storm Water Management Manual requirements. The developer shall also construct additional bioretention facilities within the development to help further remove contaminants and sedimentation from Lake Lanier, per the approval of the Gainesville Department of Water Resources.**
10. **A Uniform Sign Plan as identified within the Gainesville Unified Land Development Code shall be required from the developer and is subject to approval by the Gainesville Community and Economic Development Director. All signs shall be limited to indirect**

lighting. All signs shall be located outside of utility areas and shall not block visibility of vehicular traffic.

11. **The development shall include a minimum fifty foot (50') wide perimeter buffer fronting Thompson Bridge Road consisting of 25' natural/undisturbed buffer and a 25' wide planted buffer. In addition, a minimum forty foot (40') wide perimeter buffer consisting of a 20' natural/undisturbed buffer and a 20' wide planted buffer shall be required adjacent to all of the existing single-family communities and Crystal Drive. The planted portion of the buffers shall include at minimum a staggered row of evergreen trees consisting of a mixture of Cryptomeria, Arborvitae and Eastern Red Cedar trees at a minimum height of 10 feet. The location, spacing, size and type of trees planted shall be subject to the approval of the Community and Economic Development Department Director.**
12. **The front yard of each lot shall be sodded and planted with at least one 3" caliper in size hardwood tree.**
13. **All proposed detention ponds shall be fenced and landscaped in order to mitigate the view from all roads and adjacent properties. All fencing and landscaping materials shall be approved by the Community and Economic Development Department Director.**
14. **Access to the development shall be limited to Thompson Bridge Road except for a gated, emergency-only access road off of Crystal Drive. The proposed Thompson Bridge Road access shall be located more central to the development frontage upon Georgia Department of Transportation (GDOT) approving the intersection sight distance standards. All access point design for the subject property shall be submitted for review and approval by the Gainesville Public Works Director and GDOT.**
15. **Other than the development of the emergency-only access road at Crystal Drive, construction access shall be limited to Thompson Bridge Road.**
16. **All new streets shall meet the standards within the current Gainesville Unified Land Development Code, unless varied herein and approved by the Gainesville Public Works Department. All costs associated with the improvements shall be at the full expense of the developer.**
17. **Covenants shall be put in place by the developer restricting against the parking of boats, trailers, and campers within driveways or streets. In addition, no on street parking shall be permitted for vehicles.**



Applicant: GRAND COMMUNITIES, LLC

ANNEXATION & REZONING REQUEST

Request:
Annex +/- 2.559 AC and establish zoning as Planned Unit Development (P-U-D). Rezone +/- 33.82 AC from Residential I (R-I) to Planned Unit Development (P-U-D) for a residential development.

Subject Property Address:
0, 1799, 1805, 1825, 1829, 1981 Thompson Bridge Rd.;
1936 Crystal Dr.

Tax Parcel:
00-090-002-024, 01-090-002-021, 00-090-002-021, 00-090-002-022, 00-090-002-023, 00-090-002-032; 00-090-002-001

Subject Property

Right-of-way to be annexed

Meeting Date: 11/12/2024

Map Prepared: 10/01/2024

0 300 600 900 1,200 Feet

SCALE: 1:6,000

N W E S

Applicant: GRAND COMMUNITIES, LLC

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Aerial from 2023

Meeting Date: 11/12/2024

Map Prepared: 10/01/2024

0 300 600 900 1,200 Feet

SCALE: 1:6,000

N W E S

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NARRATIVE REPORT, LAND USES AND DEVELOPMENT SUMMARY, IMPROVEMENT REQUIREMENTS COMPARISON, AND COMMUNITY BENEFIT STATEMENT FOR ZONING APPLICATION

Applicant:	**Grand Communities, LLC**
Subject Property:	**36.561 Acres Designated as Hall County Tax Parcel(s): 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 00090 002001**
Current Zoning:	**R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County)**
Proposed Zoning:	**PUD – Planned Unit Development**
Proposed Use:	**53 Dwellings, Single-Family Detached; plus 88 Dwellings, Single-Family Attached;**
Application:	**Rezoning & Annexation**
ROW Access:	**Thomson Bridge Road (SR 60) and Crystal Drive**
Governing Jurisdiction:	**City of Gainesville**

This statement is intended to comply with the application procedures established by The City of Gainesville, GA for submittal of applications for annexation as required by the City of Gainesville Unified Land Development Code (the "ULDC"), City of Gainesville Public Hearing Application Requirements, and other City of Gainesville Ordinances and Standards and is intended to serve as the Narrative Report required by the ULDC. As part of this Narrative Report, the Applicant asserts the statements contained in the Application for Zoning Actions package, submitted herewith incorporated herein by reference, and as may be amended (the "Application"), describing justification for the requested zoning and for any request of variances, in any, as if such were fully stated herein.

The Applicant proposes to zone a total of 36.378 acres located within the City of Gainesville.

I. Land Uses and Development Summary

Specifically, the Applicant requests the following:

1. **The Annexation of parcel 00090 002001 into the City of Gainesville.**

2. **Rezone the Subject Property from R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County) to PUD – Planned Unit Development (City of Gainesville).**

The Applicant proposes to develop the Proposed Use on the Subject Property, consisting of the following:

- **53 Single-Family Detached Dwellings**

- **88 Single-Family Attached Dwellings**
- **Amenity Areas, clubhouse, playground, nature trail (mulch trail), pool**

The Subject Property is located between Thompson Bridge Road and Crystal Drive south of Lake Lanier. To the Subject Property's south is the Mountain View neighborhood zoned R-I and to the north is the Springview neighborhood also zoned R-I. To the east, nearby properties are zoned N-B and R-B and to the west, nearby property are zoned N-C and R-I.

The Proposed Use is consistent with the intent of the Comprehensive Plan. The Subject Property is located in the Lake District Character Area of the Gainesville 2040 Comprehensive Plan, which states, "New housing will be a major source of growth for the area and should feature a wide range of product, from townhouses to high-end single-family detached homes. The area should maintain and advance a residential focus on both sides of the Lake Lanier bridge, combining traditional neighborhood development (TND) walkability with the natural character of the Country Club." 2040 Comp. Plan, p. 168. Appropriate land uses and development types in this Character Area are:

- Single-family residential;
- Limited multi-family residential;
- Limited general mixed-use;
- Limited commercial (retail and office)

The PUD zoning district is listed as an appropriate zoning district under the 2040 Comprehensive Plan. *Id*. At 171. The Proposed Use will accomplish the goals of the 2040 Comprehensive Plan by providing a variety of housing types consisting of single-family detached and single-family attached housing.

The Subject Property is designated as "General Mixed Use" and "Single Family Residential" on the Future Land Use Map.

A. Zoning and Land Use.

The Applicant is proposing to rezone the Subject Property from R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County) to Planned Unit Development (PUD) (City of Gainesville). The Applicant proposes to subject the Subject Property to the land uses and performance standards stated below and as depicted on the Concept Plan and the Conceptual Master Plan, submitted concurrently with the Application and incorporated herein by reference.

	Single Family Attached (SFA) (Townhomes)	**Single Family Detached (SFD)**
Total Acreage	36.561 Acres	
Minimum Open Space	20% (7.31 acres)	
Total Density	±3.86 U/A	
Permitted Uses	Townhomes	Single Family Detached
Use Quantity	Up to 88 Units	Up to 53 Units

Maximum Lot Coverage	None	None
Minimum Lot Size	2,000 SF	7,000 sf
Minimum Lot Width	20 ft	60 ft
Minimum Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior: 20 ft Property line to Community Rec Facility: 20 ft	Front: 20 ft Rear: 20 ft Side: 5 ft, with 15 feet between detached structures Exterior: 20 ft Property line to Community Rec Facility: 20 ft
Minimum Exterior Buffers	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted
	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted
Minimum Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Maximum Townhome per Building	6 units	N/A
Stream Buffers / Impervious Setbacks	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.
Maximum Height	42 ft	42 ft
Maximum Building Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required
	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb

Street Improvement Requirements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No Maximum Cul-De-Sac Length	No Maximum Cul-De-Sac Length
	175 ft Minimum Radius Curvature of Center Line	175 ft Minimum Radius Curvature of Center Line
	Minimum tangent length - 50 ft	Minimum tangent length - 50 ft
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5 spaces	Minimum Community Rec Facility Parking Spaces: 5 spaces
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

B. Proposed Construction Phasing Schedule.

Construction will occur over approximately 48 months. Upon issuance of Land Disturbance Permit, which is estimated to require up to 12 months, the Applicant anticipates the project will be developed within 12 months thereafter, and houses to be constructed over the following 36 months.

The Applicant estimates there will be on average **1.8 occupants per unit**. Assuming this to be the case, the Applicant expects the population of the new development to be as follows:

Projected Subdivision Population			
Year	New Houses	Total New Households	Population of New Homes
1	0	0	0
2	47	47	85
3	47	94	170
4	47	141	254

C. Traffic Impact Analysis.

The Applicant also submits with this Narrative Report, and incorporates herein, a Trip Generation Report and Traffic Study Network Determination.

Permanent access to the development will be from the ROW Access. All of the development's interior streets and driveways will be privately-owned and maintained. In addition, such interior streets may be gated, at the election of the property owner.

Traffic generated from the development will be minimal and the entrance will be at a location where sight distance is sufficient. All curb cuts shall be coordinated and approved by the City of Gainesville and GDOT and acceleration and deceleration lanes will be installed as required. All streets within the development will be constructed to conform to standard requirements. Parking will be provided onsite as required by the ULDC.

D. School System.

The Table below estimates the number of school children expected to be generated by the project, based upon the ratio of the estimated number of school children in the Governing Jurisdiction (8,022) to the estimated number of households in the Governing Jurisdiction (14,619), then multiplying the quotient by the number of residential units in the Proposed Use. This factor is calculated to be 0.55 students per household.

Projected Student Population Impact: After calculating the first year add that amount to each year thereafter	
Year	**Total**
1	0
2	26
3	52
4	78

The numbers above are a planning factor used to project total student population and plan the need for new school facilities. However, the actual number of students who live in the proposed development may be more or less than the factor above, because the method of calculation uses a total number households citywide, with some households containing more than the average number of children and others comprised of zero children.

E. Utilities.

With regard to public utilities, water, sanitary sewer, electricity, and cable are available to the site. The development's water and sewer needs will be served by the City of Gainesville. The Applicant will install underground utility lines within the development to serve the project on an as-needed basis.

F. Environmental Impact.

The project should also have a minimal impact on the environment. There should be no impact on air quality. Drainage, soil erosion, and sedimentation controls will be extensively utilized on the site after obtaining all required approvals from the Soil Conservation Service and the City of Gainesville. Best management practices will be utilized to protect natural resources. The Applicant will submit plans detailing the development for approval by all applicable and appropriate governmental agencies, based on conformity with subdivision and zoning requirements, as well as other applicable ordinances, statutes, and regulations.

II. Improvement Requirements Comparison

	City Standards	Proposed Standards
Local Street ROW Widths	50 feet	50 feet
Pavement Widths	24 feet	28 feet
Sidewalk Width	4 feet	5 feet
Sidewalk Location	At least 1 side of each residential road	Both sides of internal streets.

III. Community Benefit Statement.

The community will benefit from the Proposed Use, which will provide high quality housing and amenity areas to the residents. The Proposed Use will have little impact on school attendance.

The Proposed Use will provide quality architectural designs, and extend utility services to areas currently unserved by water and sewer. The access design will mitigate the potential traffic impact to Thompson Bridge Road and Crystal Drive.

CONCLUSION

Approval of the Application will be in the best interest of the City. The Applicant respectfully requests that the Application, as requested by the Applicant, be approved. The Applicant also reserves the right to amend this statement and the Application by supplementing further responses and documents.

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RESERVATION OF CONSTITUTIONAL AND OTHER LEGAL RIGHTS

Applicant:	**Grand Communities, LLC**
Subject Property:	**36.561 Acres Designated as Hall County Tax Parcel(s): 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 00090 002001**
Current Zoning:	**R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County)**
Proposed Zoning:	**PUD – Planned Unit Development**
Proposed Use:	**53 Dwellings, Single-Family Detached; plus 88 Dwellings, Single-Family Attached;**
Application:	**Rezoning & Annexation**
ROW Access:	**Thomson Bridge Road (SR 60) and Crystal Drive**
Governing Jurisdiction:	**City of Gainesville**

This Reservation of Constitutional and Other Legal Rights ("the Reservation") is intended to supplement and form a part of the land use application (including any request for zoning, conditional use permit, site plan approval, and variances) (collectively, the "Application") of the Applicant and the owners of the Subject Property (collectively, the "Owner") and to put the Governing Jurisdiction on notice of the Applicant's assertion of its constitutional and legal rights.

The Applicant has filed a timely application, has provided all required information and has submitted the appropriate application fees. The Application meets all judicial and statutory requirements for approval.

The Applicant objects to the standing of any opponents who are not owners of land adjoining the Subject Property and to the consideration by the Governing Jurisdiction of testimony or evidence presented by any party without standing in making its decision regarding the Application. The Applicant also objects to the consideration of testimony or evidence that is hearsay, violates any applicable rules of procedure or evidence, or that is presented by any party who fails to comply with notice and campaign disclosure requirements.

The Current Zoning (and/or zoning conditions) of the Subject Property is unconstitutional and deprives the Subject Property and all viable economic use thereof. The Proposed Use is the only viable economic use of the Subject Property, and the Governing Jurisdiction has deemed this Application necessary to allow the Proposed Use. As such, the Applicant and Owner file this Application for the purpose of changing the Current Zoning (and/or zoning conditions and requesting variances) to facilitate the Proposed Use, and to exhaust administrative remedies in the event the Application is denied. As such, the filing of this application is not an admission of the need for any such approval of the Applicant's right to develop the property. The Applicant and Owner reserve the right to challenge the Current Zoning and any zoning conditions and other restrictions affecting the Subject Property.

Denial of the Application or approval of the Application in any form that is different than as requested by the Applicant will impose a disproportionate hardship on the Applicant and Owner of the Subject Property without benefiting any surrounding property owners. There is no reasonable use of the Subject Property other than as proposed by the Application and no resulting benefit to the public from denial of or modification to the Application.

Any provisions in the applicable land use, subdivision, and /or zoning ordinances (collectively the "Zoning Ordinance") that classify, or may classify, the Subject Property into any of the non-requested zoning or use classifications, including the Proposed Zoning District and Proposed Use at a density or intensity less than that requested by the Applicant, are unconstitutional in that they constitute a taking of the Applicant's and Owner's property rights without first paying fair, adequate, and just compensation for such rights in violation of Article I, Section III, Paragraph I of the Georgia Constitution of 1983, as amended and the Fifth and Fourteenth Amendments to the Constitution of the United States.

The Subject Property is suitable for development as proposed in the Application and it is not suitable for development under any other zoning classification, use, or at a density or intensity less than that requested by the Applicant. Failure to approve the Application as requested by the Applicant would be an unreasonable application of local land use authority, which bears no relationship to the public health, safety, morality or general welfare of the public and would constitute an arbitrary and capricious abuse of discretion in violation of Article I, Section I, Paragraph I of the Georgia Constitution of 1983, as amended and the Due Process Clause of the Fifth and Fourteenth Amendments to the Constitution of the United States.

A refusal by the Governing Jurisdiction to approve the Application as requested by the Applicant will prohibit the only viable economic use of the Subject Property, will be unconstitutional and will discriminate in an arbitrary, capricious and unreasonable manner between the Applicant and Owner and the owners of similarly situated properties in violation of Article I, Section I, Paragraph II of the Georgia Constitution of 1983, as amended, and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States.

A refusal by the Governing Jurisdiction to approve the Application as requested by the Applicant without the consent of persons elected to the governing body of the Governing Jurisdiction will amount to an unlawful delegation of the Governing Jurisdiction's authority, in violation of Article IX, Section II, Paragraph IV of the Georgia Constitution of 1983, as amended.

Furthermore, the Governing Jurisdiction cannot lawfully impose more restrictive standards on the Subject Property's development than are presently set forth in the Zoning Ordinance. Any conditions or other restrictions imposed on the Subject Property without the consent of the Applicant and Owner that do not serve to reasonably ameliorate the negative impacts of the development are invalid and void. The imposition of improvements or design requirements unnecessary to facilitate the proposed development constitute an illegal impact fee, an unconstitutional condemnation, or both. As such, the Applicant and Owner reserve the right to challenge any such conditions, restrictions, or design requirements.

The Applicant and Owner assert that each has expended substantial sums and significantly changed its economic position in reliance upon versions of the Zoning Ordinance that allow the development of the Subject Property as proposed by the Applicant. As such, the Applicant has acquired vested rights to develop the property and the filing of this Application shall not constitute a waiver of those vested rights.

Finally, the Applicant and Owner assert that the current Zoning Ordinance, Character Area Map, Future Development Map and Comprehensive Plan were not adopted in compliance with the laws or constitutions of the State of Georgia or of the United States, and a denial of the Applicant's request based upon provisions illegally adopted will deprive the Applicant and Owner of due process under the law.

By filing this Reservation, the Applicant reserves all rights and remedies available to it under the United States Constitution, the Georgia Constitution, all applicable federal, state, and local laws and ordinances, and in equity.

The Applicant and Owner respectfully request that the Application be approved as requested by the Applicant and in the manner shown on the Application, which is incorporated herein by reference. This Reservation forms an integral part of the Application, and we ask that this Reservation be included with the Applicant's other Application materials. The Applicant and Owner reserve the right to amend and supplement this Reservation at any time.

Sincerely,

Ethan Underwood

Ethan Underwood
Attorney for Applicant

SAPPHIRE SPRINGS

GAINESVILLE, GA

FISCHER HOMES

A PLANNED UNIT DEVELOPMENT | OCTOBER 31, 2024

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SAPPHIRE
SPRINGS

CONTACT INFORMATION

DEVELOPER:

FISCHER HOMES

KYLE TRELOAR (24 HOUR CONTACT)
3940 OLYMPIC BLVD, STE 400
ERLANGER, KY 41018
EMAIL: KTRELOAR@FISCHERHOMES.COM
T: 605-430-1783

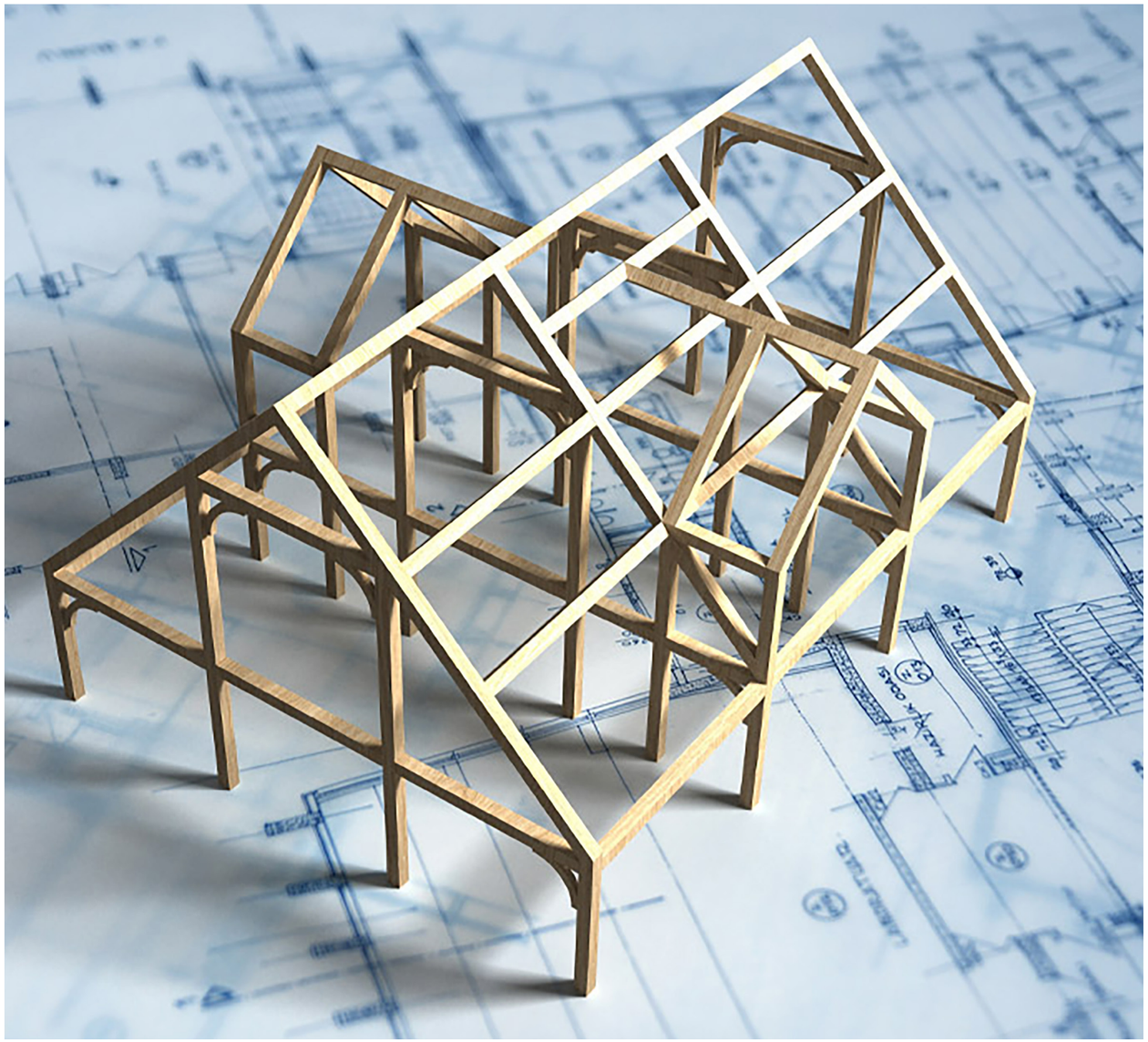
ENGINEER, LAND PLANNER, LANDSCAPE ARCHITECT

LJA ENGINEERING

299 SOUTH MAIN STREET, SUITE A
ALPHARETTA GA, 30005
WEBSITE: WWW.LJA.COM
T: 770-225-4730

DEVELOPER'S STORY

OF SAPPHIRE SPRINGS



HISTORY

Fischer Homes is a privately-owned home builder based in the Greater Cincinnati area. Fischer Homes was founded in 1980 as Henry Fischer Builder, Inc. on the belief that dreams were meant to become reality. Today, Fischer Homes is one of the largest builders in the nation; ranked 32nd (per the Home Builder Executive) of the Largest U.S. home builders. Fischer Homes is located in six other markets - Columbus, OH (2008), Indianapolis, IN (2009), Atlanta, GA (2013), Louisville, KY (2018), Dayton, OH (2020), St. Louis, MO (2021), and Northwest Florida (2023).

PHILOSOPHY

Create an Exceptional Customer Experience. From the company's beginning, the focus has been on our customers, and today the company is single-mindedly dedicated to this guiding principle. Through the years, Fischer Homes has been honored with many awards, but our high level of Customer Satisfaction is most important. Each homeowner has our commitment that building a home with us will be one of the most enjoyable experiences of their lives.

Thoughtful consideration is given to the communities which we choose to build, and we take special pride in the amount of forethought and planning that goes into each of our neighborhoods. We concentrate on creative and efficient communities that are easy for homeowners to enjoy and maintain. By providing residents with the proper tools and a solid community foundation, homeowners can enjoy life in a sustainable and beautiful setting to stand the test of time. Our legacy is important, and we set up our communities and homeowners to succeed over the long-term.

Our vision for our urban infill product is "to build exceptional urban homes in distinctive, walkable neighborhoods that appeal to a range of buyers and leverage our strengths in sales, construction, and operations."

MISSION

Our mission is to deliver the "best total new home solution."

- High-quality homes in highly desirable locations
- Thoughtful and caring approach to overall community design
- Believe the community is an extension - an integral part - of the home
- Continuous investment in home designs

LOCATION

OF SAPPHIRE SPRINGS

The future Sapphire Springs development is located approximately 3.5 miles north of I-985 at exit 22 and 2.5 miles north of downtown Gainesville. The site is situated along the southwest side of Thompson Bridge Road (Highway 60), between the intersections of Springview Drive and Mountain View Drive. The property is 0.3 miles from Lake Lanier. One unnamed stream exists on the property, which drains into an unnamed tributary that eventually flows into Lake Lanier.

The subject site includes seven tax parcels with Parcel IDs of 0090 002001, 00090 002021, 00090 002022, 00090 002023, 00090 002024, 00090 002032, and 01090 002021. Parcel 0090 002001 will be annexed into Gainesville city limits during the rezoning process for the project. The latitude and longitude coordinates for the site are 34.327675°N, -83.839448°W.

The property is surrounded by a variety of residential and commercial properties. Five existing home sites with houses are located within the northeastern property boundary along the southwest side of Thompson Bridge Road. Single-family residential properties are located along the northwestern, southern, and southeastern site boundaries. Multiple commercial properties are located on the northeast side of Thompson Bridge Road, within a shopping center. Many larger retail stores such as Walmart (just 0.4 miles south of the site) and Publix (0.7 miles south of the site) anchor Thompson Bridge Road. The Northeast Georgia Medical Center is located 2.7 miles south of the development via the Hwy 129 business route.

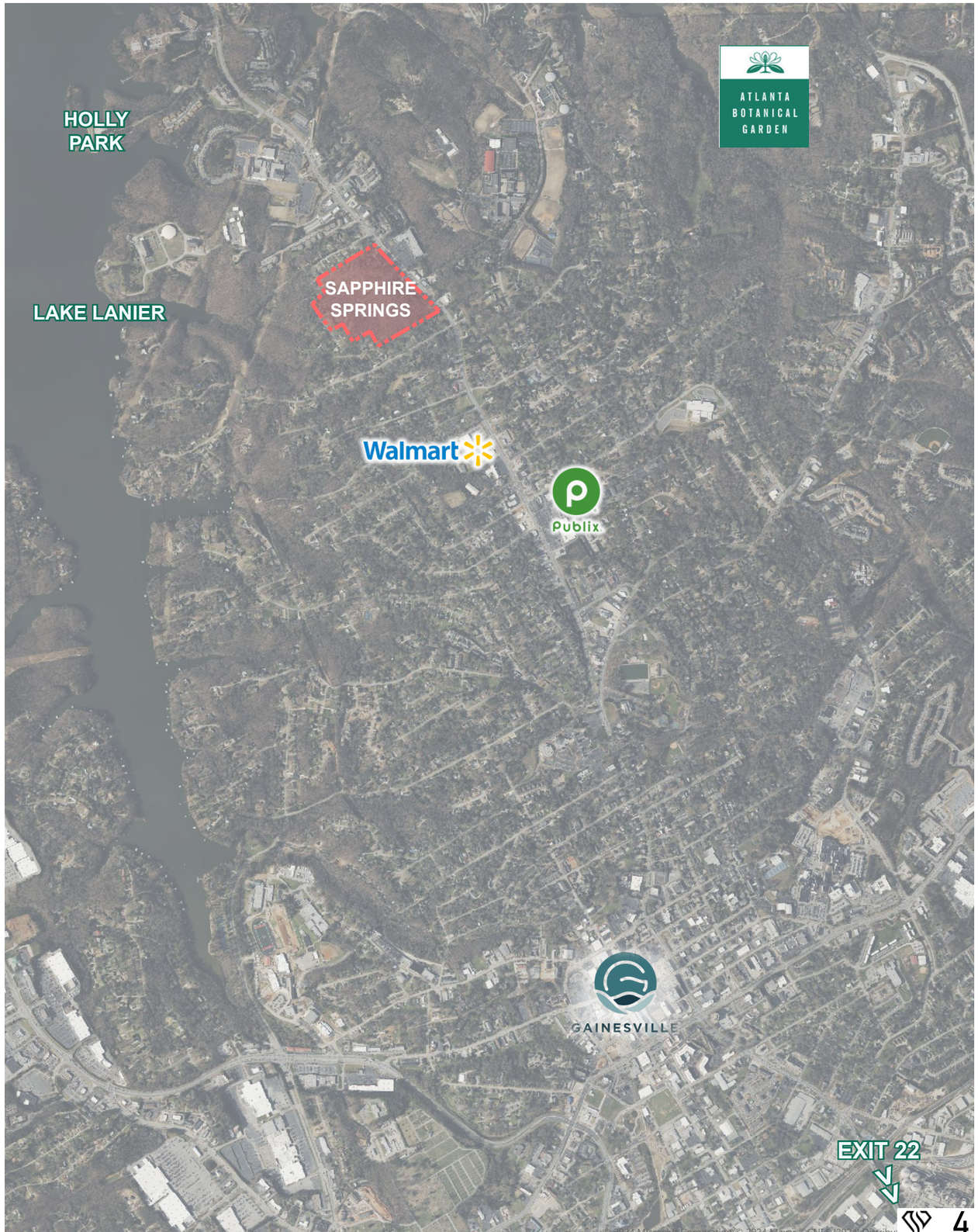
Additional Location Information

Proximity to Parks and Recreation: The site is close to several parks and recreational areas, including Holly Park, which is approximately 1.2 miles to the north and Laurel Park, which is approximately 1.5 miles northeast and offers amenities such as boat ramps, picnic areas, and sports facilities.

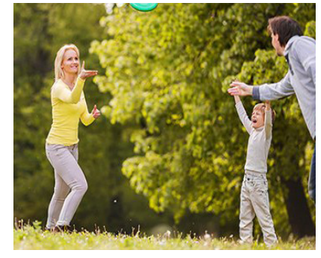
Educational Institutions: Nearby schools include Riverside Preparatory Academy, Enota Multiple Intelligences Academy and Gainesville High School, all within a 3-mile radius.

Transportation: The site is well-connected with major roads and highways, providing easy access to Atlanta (approximately 55 miles southwest via I-985 and I-85).

Economic Development: The area is experiencing growth of new residential developments, commercial developments and infrastructure improvements. The proximity to these existing locations enhances the overall appeal and accessibility for the future Sapphire Springs development.



PROJECT OVERVIEW AND CHARACTER



Sapphire Springs is a master planned community consisting of 141 homes / units on 36.561 acres with an overall density of 3.86 units per acre. The development will be separated into two housing options of single family detached homes and single family attached townhomes, catering to diverse needs and preferences. This mix consists of (53) 60' wide (minimum) single-family detached lots along with (44) single-family attached units of 24' townhomes and (44) 20' (minimum) single family attached units of townhomes. The variety of product types is intended to encompass different price points and accommodate the varying lifestyles of the residents.

The community is non gated with a dedicated amenity area that forms a gathering area between the two product pods. Social spaces like the clubhouse and mail kiosk area will foster a sense of community, encouraging interactions among residents. Additional opportunities for interaction include sidewalk connections and mulch walking trails.

The identity of Sapphire Springs would be deeply rooted in the area's natural beauty and recreational opportunities associated with Lake Lanier and the City of Gainesville. Lake Lanier, known for its expansive waters and scenic surroundings, would play a central role in shaping the development's identity with adjacent amenities such as boating, fishing, and hiking, creating a lifestyle that celebrates the lake's serene environment. Additionally, the proximity to Gainesville, with its rich history and vibrant downtown, would infuse the development with a sense of cultural heritage and local charm. The identity of this new area would be a blend of lakeside tranquillity and small-town warmth, offering residents a unique and appealing living experience.

The character of this new development would be one of inclusivity, relaxation, and a strong connection to nature, making it an inviting place to call home.

STREET SYSTEM

OF SAPPHIRE SPRINGS

Primary access to the future development will be from Thompson Bridge Road, also known as Highway 60, near the current driveway of a residential home site at 1981 Thompson Bridge Road. The entrance is positioned at a curb cut along Thompson Bridge Road, which is a four-lane road with a center turn lane, facilitating traffic flow and access to adjacent properties. Secondary emergency access will be west of the main entrance, from Crystal Drive.

Sapphire Springs will be a non-gated community with public roadways. Streets will typically be constructed to the City of Gainesville standards and will include a 5' sidewalks on both sides of the streets, street lights and cross walks where indicated. Multi-use paths or walking trails may be constructed of concrete, asphalt, gravel or mulch.

Some variations to street design standards are anticipated due to the existing stream buffer, which creates two pods within the site. These variations promote the slowing of vehicular traffic and provide a more creative approach to street design. Variations to the street standards include 1: cul-de-sacs may be non-standard as depicted on the site plan, 2: a reduction in the horizontal centerline radius from 275'R to 175'R, 3: no maximum cul-de-sac length, 4. minimum tangent length - 50 ft.

CONCEPTUAL RENDERING

SITE DEVELOPMENT

OF SAPPHIRE SPRINGS

MONUMENTATION AND SIGNAGE

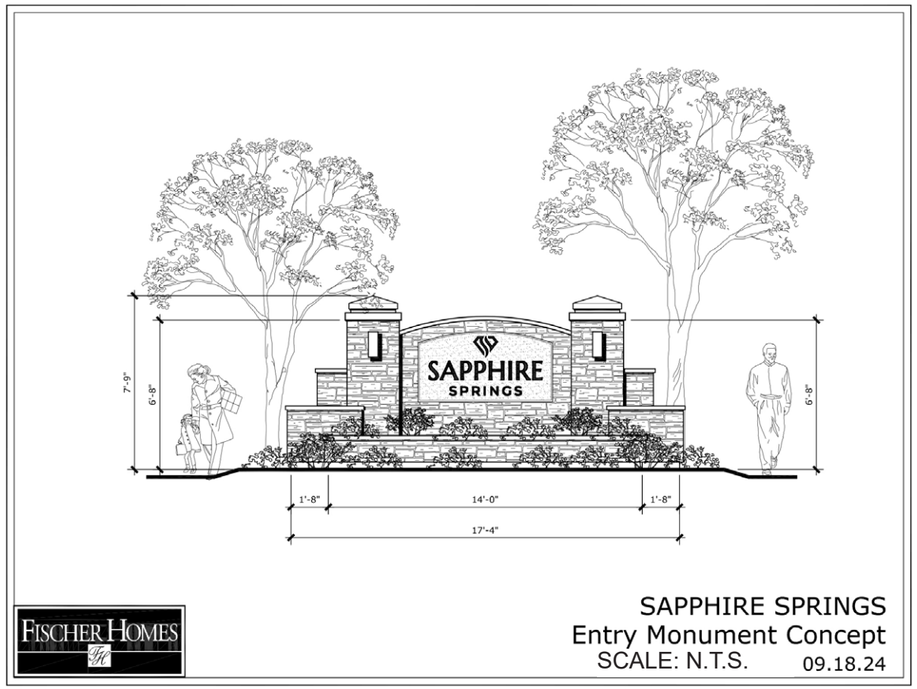
The primary entrance to Sapphire Springs is situated just beyond the intersection of Mountain View Drive and Thompson Bridge Road. This entrance serves as the main visual access point to the project, heralding the development. Given its importance in forming Sapphire Springs' first impression, the entrance will feature landscaping, signage, monumentation, and lighting to create a sense of place and a welcoming arrival point. The design of the monument sign will mirror the architectural and landscape style of the development. Additional signage within the development will identify amenities and residential streets.

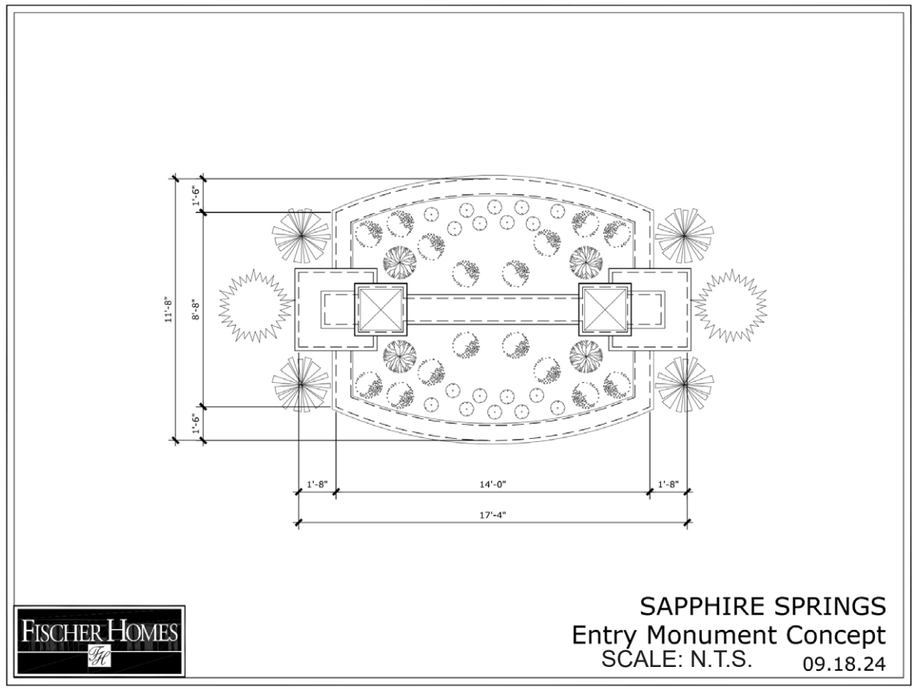
SECONDARY IDENTIFICATION

Signage and monumentation elements may be distributed throughout the development, maintaining a style consistent with the major project identification signs but on a smaller scale. Secondary identification may be placed on the interior streets of Sapphire Springs, indicating residential street names. Minor informational signs may also be used to guide visitors to various amenities and points of interest within Sapphire Springs. These signs might include event listings and other relevant community information.

LANDSCAPING

Alongside the infrastructure design, the thoughtful planning and design of outdoor spaces is critical in cultivating the desired atmosphere of Sapphire Springs. The overall landscape concept for this area plays a vital role in unifying the community, ensuring that residences and related improvements blend seamlessly with the existing scenic beauty and natural conditions. The development will respect the area's natural setting by preserving existing canopy and providing new plantings that harmonize with the existing environment and the landscape character of the region. The developer will establish a consistent landscape that responds to aesthetic concerns and helps establish a positive image within the development for years to come.





LANDSCAPING

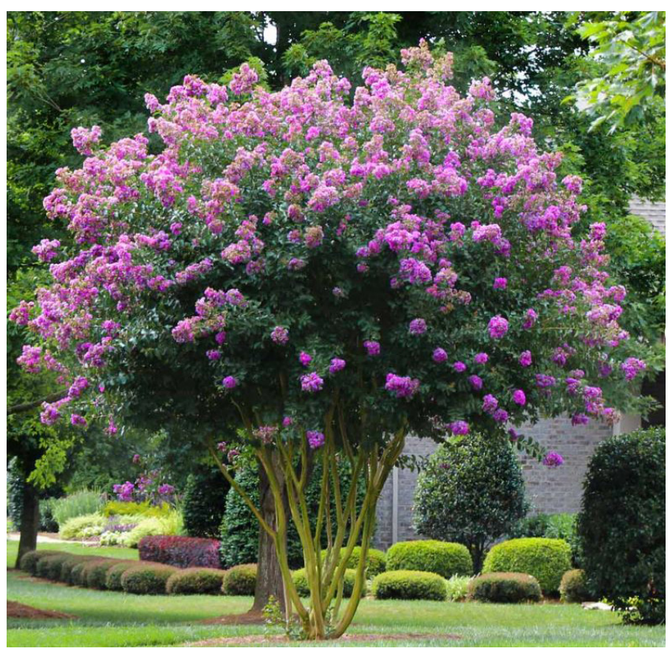
DOGWOOD

FLOWERING CHERRY

ELM

ARNOLD TULIP POPLAR

LEYLAND CYPRESS



CRAPE MYRTLE

OAK

REDBUD

RED MAPLE

Plant material may include, but is not limited to this palette

COMMUNITY STANDARDS

OF SAPPHIRE SPRINGS

MAINTENANCE AND OWNERSHIP OF STREETS AND OPENS SPACES
All the streets and sidewalks, including those within individual phases, are intended to be built as publicly maintained streets and turned over to the City for ownership. All interior open spaces and common elements (including structural slopes, walls, etc.) will be deeded to the master homeowners association for maintenance and operation.

The hoa(s) will maintain and manage all of the common areas of the development, including financial management and enforcement of community standards. Any modifications or new construction within the community must be approved by an architectural review board. The board will be established and operated by the developer until such time as the powers are transferred to the hoa(s).

WATER AND SEWER UTILITIES
Water and sewer utilities will be provided by City of Gainesville. There is an existing 8” waterline that runs along Thompson Bridge Road that Sapphire Springs will tie into. The site also has existing sewer that enters from the southeastern adjacent property and runs parallel to the existing stream before exiting. The existing sewer pipes are planned to be rerouted for development.

FENCES AND WALLS
Fences and walls should be designed and maintained in relationship with the character of the surrounding land uses and structures. Retaining walls will be constructed of concrete, architectural modular block, gabion material, or match the architectural character of the surroundings and site.

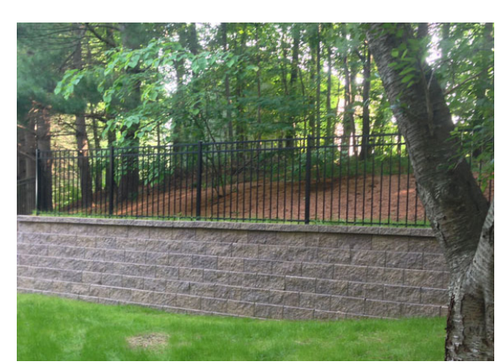
HOMEOWNERS ASSOCIATION
A mandatory Homeowners Association (HOA) or multiple associations will be formed for Sapphire Springs or portions thereof. The HOA(s) will maintain and manage all common areas of the development, including financial management, architectural controls, and enforcement of community standards. Any modifications or new construction within the community must be approved by an Architectural Review Board. The Board will be established and operated by the Developer until such time as the powers are transferred to the HOA(s).

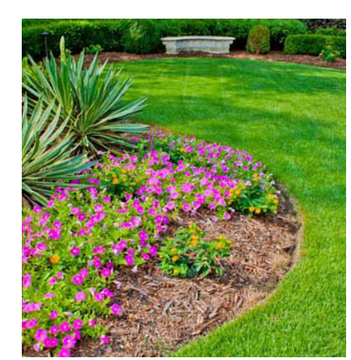
DRAINAGE AND STORMWATER MANAGEMENT
Highest elevations are in the northern and southern corners of the property, with gently sloping topography towards the intermittent stream in the central portion of the site, an overall drainage direction of west-northwest. The site drains into an unnamed tributary that eventually flows into Lake Lanier. Stormwater management facilities are planned at suitable stormwater pond management areas adjacent to the central drainage channel of the site, which reduces the amount of direct discharge into Lake Lanier.

USES
Land development for residential housing is dynamic because of the need to concurrently predict and respond to the local real estate market and national economic and demographic trends.
Approval of the Sapphire Springs Master Plan is intended to approve approximately 141 homes / units as the maximum number of units for the development. Housing products may be moved, combined, or reconfigured without limit within the development, provided the maximum number of units is not exceeded and the overall change will not increase impact to the roadway system at peak hours or increase the points of connection. Uses of a traditional, single-family residence for owner occupancy in this development are detached and attached forms of housing. Uses and standards described in the plan anticipate and describe single family residential construction. If the use and/or form of housing for a particular phase is not specifically described or detailed in the plan, such a use or form may be approved administratively by staff based on the existing approved standards of the City of Gainesville for such a form of construction on similar sites elsewhere in the incorporated areas of the city.

PHASING
The developer intends to construct Sapphire Springs in 3 separate phases. Phasing is generally sequential but may overlap. Lots of various sizes and ownership types may be under development concurrently in multiple portions of the overall site.

Phase 100: 31 Maple Street SFD residential units will be built (lots 1-29, 52, 53)
Phase 110: 28 Single family attached townhomes will be built (units 54-63, 126-141)
Phase 200: 22 The amenity area and Maple Street SFD residential units will be built (lots 30-51)
Phase 210: 32 Single family attached townhomes will be built (units 70-81, 110-117)
Phase 310: 28 Single family attached townhomes will be built (units 82-189)





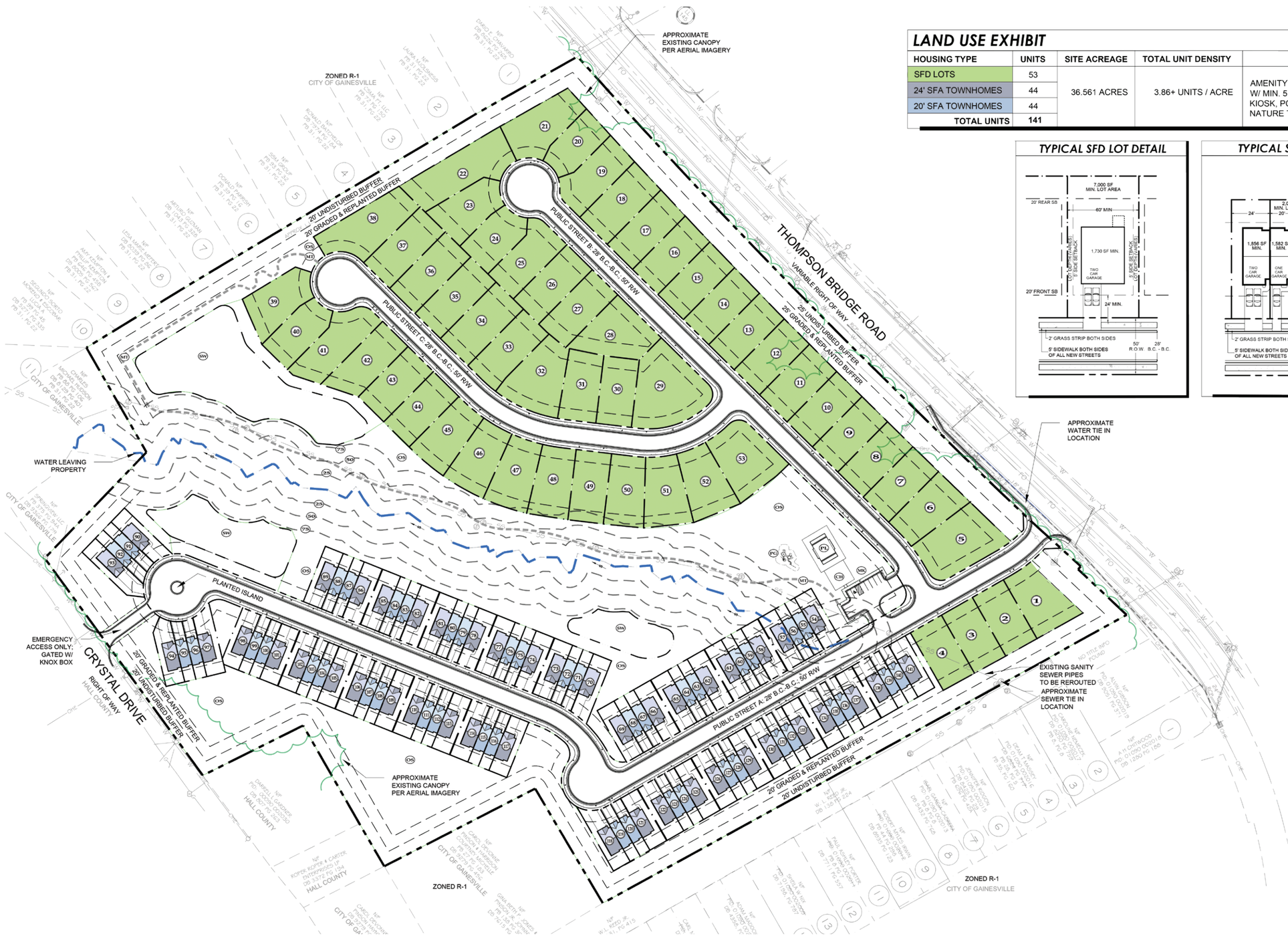
OPEN SPACE

OF SAPPHIRE SPRINGS

Sapphire Springs will have a minimum 20% (or 7.31 acres of the total acreage) of open space. The open space will surround the perimeter of the property, and will double as a natural and graded/replanted buffer. The open space will also include the preserved portion of the riparian corridor running through the middle of the site. Open spaces will provide areas for amenities including a clubhouse, pool, playground, and mulch walking trail running within the existing sanitary sewer easement. The undisturbed portion of open space will protect the natural beauty of the site as well as the environmentally sensitive areas.

Sapphire Springs is being developed with healthy lifestyle experiences in mind: lots of open spaces for passive recreation, a network of sidewalks, a mulch trail, and an active recreation area. This area will serve as the focal point when arriving from the main vehicular entrance, which will further foster a community central gathering area around open spaces.

LAND USE PLAN

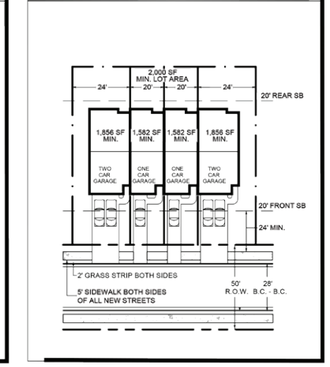


LAND USE EXHIBIT

HOUSING TYPE	UNITS	SITE ACREAGE	TOTAL UNIT DENSITY	FEATURES
SFD LOTS	53	36.561 ACRES	3.86+ UNITS / ACRE	AMENITY CLUBHOUSE (+/- 1,400 SF) W/ MIN. 5 PARKING SPACES, MAIL KIOSK, POOL, PLAYGROUND, & NATURE TRAIL
24' SFA TOWNHOMES	44			
20' SFA TOWNHOMES	44			
TOTAL UNITS	141			

TYPICAL SFD LOT DETAIL

TYPICAL SFA LOT DETAIL



CONCEPTUAL SITE PLAN

	Single Family Attached (SFA) (Townhomes)	Single Family Detached (SFD)
Total Acreage	36.561 Acres	
Minimum Open Space	20% (7.31 acres)	
Total Density	±3.86 U/A	
Permitted Uses	Townhomes	Single Family Detached
Use Quantity	Up to 88 Units	Up to 53 Units
Maximum Lot Coverage	None	None
Minimum Lot Size	2,000 SF	7,000 sf
Minimum Lot Width	20 ft	60 ft
Minimum Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior: 20 ft Property line to Community Rec Facility: 20 ft	Front: 20 ft Rear: 20 ft Side: 5 ft, with 15 feet between detached structures Exterior: 20 ft Property line to Community Rec Facility: 20 ft
Minimum Exterior Buffers	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted
	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted
Minimum Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Maximum Townhome per Building	6 units	N/A
Stream Buffers / Impervious Setbacks	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.
Maximum Height	42 ft	42 ft
Maximum Building Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required
	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb
Street Improvement Requirements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No Maximum Cul-De-Sac Length	No Maximum Cul-De-Sac Length
	175 ft Minimum Radius Curvature of Center Line	175 ft Minimum Radius Curvature of Center Line
	Minimum tangent length - 50 ft	Minimum tangent length - 50 ft
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5 spaces	Minimum Community Rec Facility Parking Spaces: 5 spaces
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

PROPERTY ADDRESS:
THOMPSON BRIDGE ROAD
GAINESVILLE, GA 30501

APPLICANT:
FISCHER HOMES
3940 OLYMPIC BLVD SUITE 400
ERLANGER, KY 41018
24 HR CONTACT - KYLE TRELOAR 605-430-1783

OWNERS
1. PARCEL NO: 00090 002021 - PINSON, BOBBIE S (CITY OF GAINESVILLE)
2. PARCEL NO: 01090 002021 - YAHNES, CAROL DEVONNE PINSON (CITY OF GAINESVILLE)
3. PARCEL NO: 00090 002022 - TURNER, ELANE L (CITY OF GAINESVILLE)
4. PARCEL NO: 00090 002023 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
5. PARCEL NO: 00090 002024 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
6. PARCEL NO: 00090 002032 - ROPER ROPER & CARTER ENTERPRISES LP (HALL COUNTY)
7. PARCEL NO: 00090 002001 - ROPER ROPER & CARTER ENTERPRISES LP (CITY OF GAINESVILLE)

SEWER NOTE:
EXISTING SEWER PIPES TO BE REROUTED ON SITE. SEWER PROVIDED BY CITY OF GAINESVILLE.

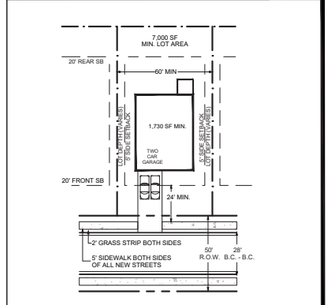
WATER NOTE:
WATER PROVIDED BY CITY OF GAINESVILLE.

STORMWATER NOTE:
STORMWATER WILL BE PROVIDED ON SITE.

FEMA NOTE:
ACCORDING TO FIRM NUMBER 13139C0179G DATED 04/04/2018 FOR HALL COUNTY GEORGIA, THE PROPERTY SHOWN DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA.

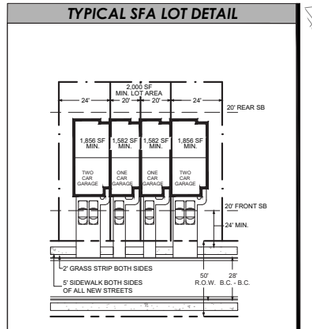
PHASING NOTE: THE DEVELOPMENT WILL HAVE 3 PHASES, WHICH INCLUDES 2 SUB-PHASES FOR THE SFD AND 3 SUB-PHASES FOR THE SFA.

TYPICAL SFD LOT DETAIL

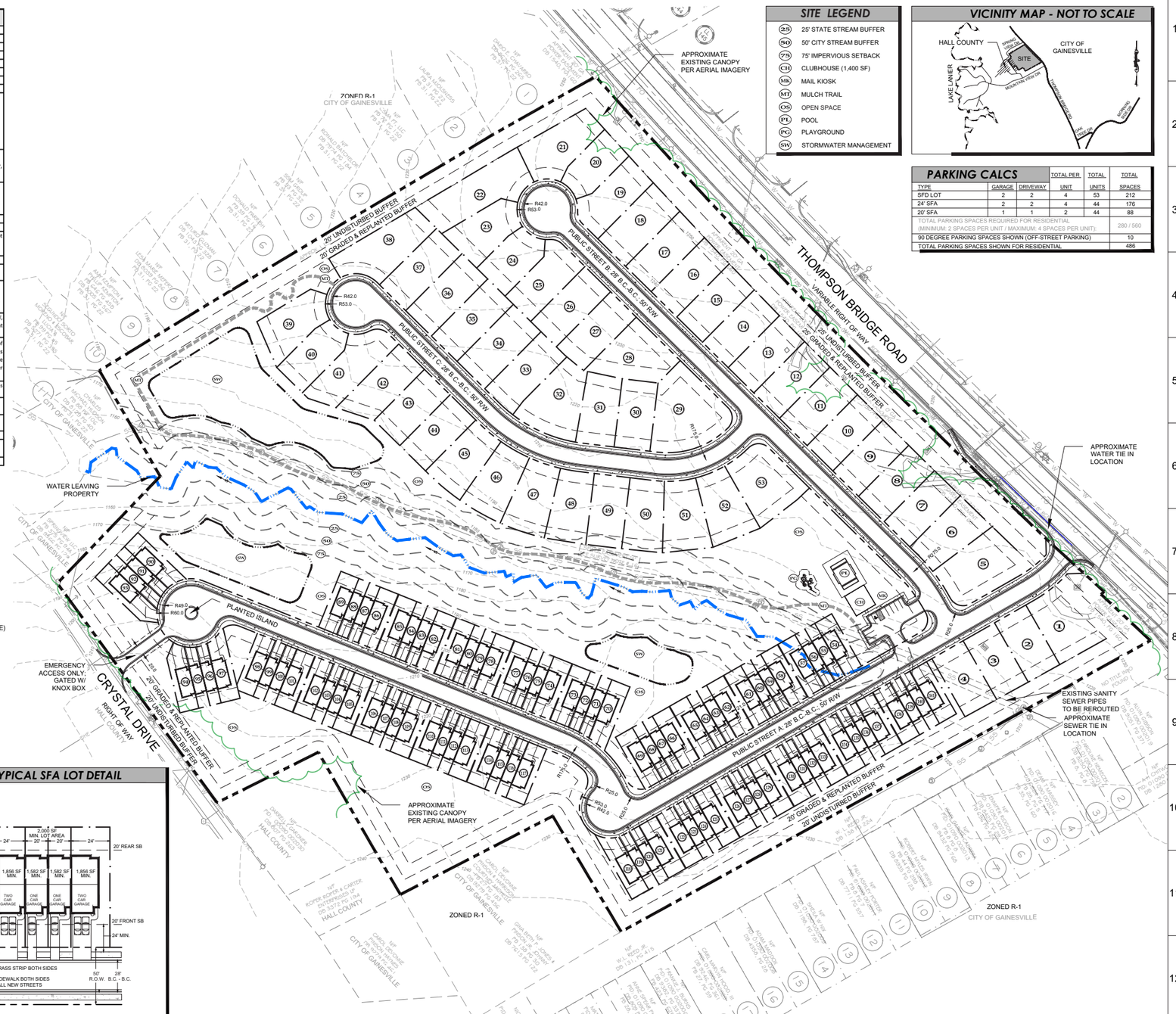


SCALE: 1"=40'-0"

TYPICAL SFA LOT DETAIL



SCALE: 1"=40'-0"



SITE LEGEND

25	25' STATE STREAM BUFFER
50	50' CITY STREAM BUFFER
75	75' IMPERVIOUS SETBACK
CH	CLUBHOUSE (1,400 SF)
MK	MAIL KIOSK
MT	MULCH TRAIL
OS	OPEN SPACE
PL	POOL
PG	PLAYGROUND
SW	STORMWATER MANAGEMENT

VICINITY MAP - NOT TO SCALE

PARKING CALCS

TYPE	GARAGE	DRIVEWAY	TOTAL PER UNIT	TOTAL UNITS	TOTAL SPACES
SFD LOT	2	2	4	53	212
24' SFA	2	2	4	44	176
20' SFA	1	1	2	44	88
TOTAL PARKING SPACES REQUIRED FOR RESIDENTIAL (MINIMUM 2 SPACES PER UNIT / MAXIMUM 4 SPACES PER UNIT):					280 / 560
90 DEGREE PARKING SPACES SHOWN (OFF-STREET PARKING)					10
TOTAL PARKING SPACES SHOWN FOR RESIDENTIAL					486

NO.	DATE	DESCRIPTION	BY	CHK	APV
1	10-31-24	ADD PERFERMANCE STANDARDS	###	###	###

NOT RELEASED FOR CONSTRUCTION

LJA ENGINEERING
299 S. MAIN STREET
ALPHARETTA, GA 30009
770-225-4730

FISCHER HOMES
3940 OLYMPIC BLVD.
SUITE 400
ERLANGER, KY 41018
OFFICE: 859.344.7261

SITE ZONING PLAN FOR SAPPHIRE SPRINGS

GAINESVILLE, GA 30501
LL 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
PARCEL # 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 0090 002001

NORTH

SCALE: 1"= 80'
0 80

PROJECT NUMBER
GA5481-2403

SHEET TITLE
ZONING PLAN

SHEET NUMBER
C-100

File Location: s:\sedropbox\ga5481-2403 - thompson bridge road - hall county, ga\02-design\drawings\01-concept\zoning_10-25-24

AMENITIES

OF SAPPHIRE SPRINGS

Sapphire Springs will have a minimum 20% (or 7.31 acres of the total acreage) of open space. The open space will surround the perimeter of the property, and will double as a natural and graded/replanted buffer. The open space will also include the preserved portion of the riparian corridor running through the middle of the site. Open spaces will provide areas for amenities including a clubhouse, pool, playground, and mulch walking trail running within the existing sanitary sewer easement. The undisturbed portion of open space will protect the natural beauty of the site as well as the environmentally sensitive areas.

Sapphire Springs is being developed with healthy lifestyle experiences in mind: lots of open spaces, a network of sidewalks, a mulch trail, and an active recreation area. The main amenity clubhouse area will include the mail kiosk and may include benches for passive observation. This area will serve as the focal point when arriving from the main vehicular entrance, which will further foster a community central gathering area around open spaces.

There is an existing sanitary sewer easement that has contributed to some clearing of the existing canopy running along the center portion of the site with an east/west orientation, along the existing stream's flow. This area provides the best opportunity to meander a mulch trail with minimal impact to existing vegetation, while also allowing for enhanced maintenance of the trail system.

SINGLE FAMILY DETACHED RESIDENTIAL PRODUCTS

SAPPHIRE
SPRINGS

Maple Street Product

The Maple Street Collection offers single-family homes that make the dream of becoming a homeowner affordable! Whether a customer is looking for more space or is a first-time homebuyer, this collection provides a variety of floorplan options and design choices. Floorplans range from 1,200 to over 3,100 square feet of finished space. Customers have the flexibility to choose structural options such as additional bedrooms, private office space, or larger windows. At our Lifestyle Design Center, customers can explore a Maple Street-crafted room with numerous options, including exterior colors, countertops, cabinets, flooring, and more, to personalize their new home.

GREENBRIAR
Maple Street Collection

welcome home.

Approximately 1983 sq ft

URBAN MODERN
(WITH OPTIONAL BRICK)

designed by: FH

HYDE PARK COTTAGE
(WITH OPTIONAL BRICK)

designed by: FH

COASTAL CLASSIC
(WITH OPTIONAL PORCH)

designed by: FH

URBAN MODERN

designed by: FH

Images & Options Available at **fischerhomes**.com

Our Plans Include You

YOSEMITE
Maple Street Collection

welcome home.

Approximately 2258 sq ft

MODERN FARMHOUSE

designed by: FH

AMERICAN CLASSIC

designed by: FH

MODERN FARMHOUSE
(WITH OPTIONAL BRICK)

designed by: FH

WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

designed by: FH

Images & Options Available at **fischerhomes**.com

FISCHER HOMES

WESLEY
Maple Street Collection

welcome home.

Approximately 1842 sq ft

URBAN MODERN
(WITH OPTIONAL BRICK)

designed by: FH

WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

designed by: FH

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designed by: FH

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(WITH OPTIONAL PORCH)

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Our Plans Include You

FISCHER HOMES

THE BRECKENRIDGE
MAPLE STREET COLLECTION

3,135-3,156 SQFT	2 Story	4-5 Bedrooms	2.5-3.5 Baths

Photos, Options, Virtual Tours & More

Modern Farmhouse

Western Craftsman

Urban Modern

Coastal Classic

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FISCHER HOMES

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welcome home.

Approximately 2794 sq ft

Western Craftsman
(WITH OPTIONAL BRICK)

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Modern Retreat
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American Classic
(WITH OPTIONAL BRICK & PORCH)

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Our Plans Include You

FISCHER HOMES

THE DAVINCI
MAPLE STREET COLLECTION

1,730-1,752 SQFT	1 Story	3 Bedrooms	2 Baths

Photos, Options, Virtual Tours & More

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Modern Farmhouse

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SINGLE FAMILY TOWNHOME RESIDENTIAL PRODUCTS

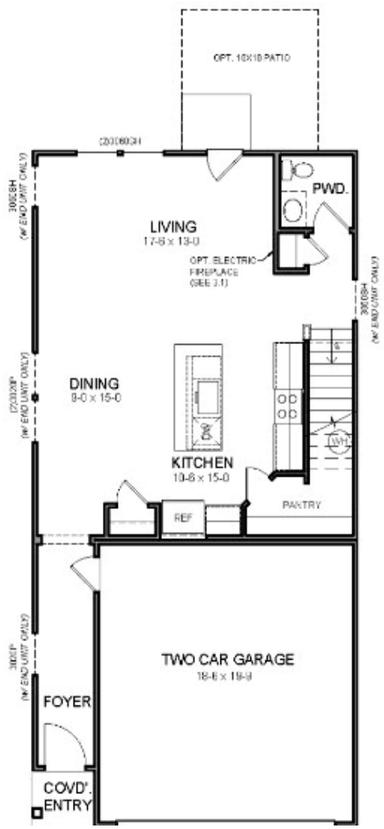
FISCHER HOMES

Wilder + Atlas Townhome Product

The Townhome Collection offers single-family, attached homes for first-time homebuyers, young professionals, or anyone looking for maintenance-free living. Residents will own their fee simple lots while enjoying the maintenance package established by the community HOA, freeing their time to be active participants in all of the shopping, dining, and other amenities Buckstone has to offer. Floorplans range from 1,550 to 1,850 square feet of finished space.

- Included 9ft first floor ceiling height
- Included 6ft privacy fence on rear of buildings between patios
- One and two car front entry

Wilder Townhome Floorplan

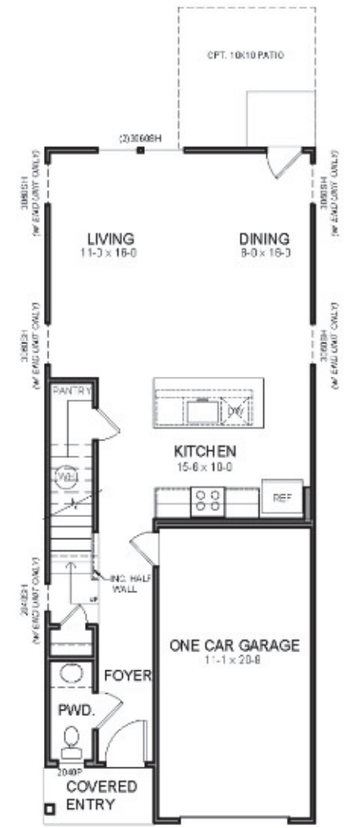


First Floor

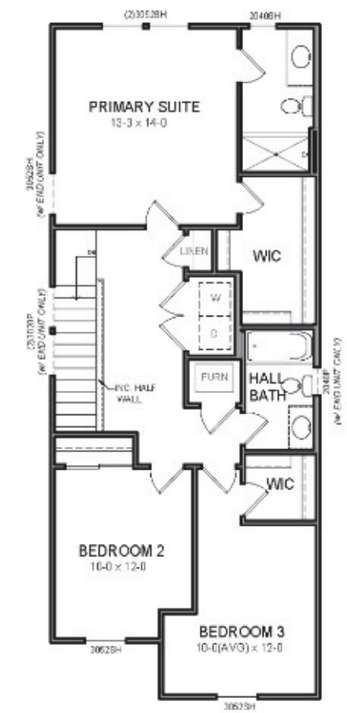
Second Floor

FISCHER HOMES

Atlas Townhome Floorplan



First Floor



Second Floor

FISCHER HOMES

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2-STORY TOWNHOME - (5 UNITS COMBINED)

NOT FOR CONSTRUCTION

	Single Family Attached (SFA) (Townhomes)	Single Family Detached (SFD)
Total Acreage	36.561 Acres	
Minimum Open Space	20% (7.31 acres)	
Total Density	±3.86 U/A	
Permitted Uses	Townhomes	Single Family Detached
Use Quantity	Up to 88 Units	Up to 53 Units
Maximum Lot Coverage	None	None
Minimum Lot Size	2,000 SF	7,000 sf
Minimum Lot Width	20 ft	60 ft
Minimum Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior: 20 ft Property line to Community Rec Facility: 20 ft	Front: 20 ft Rear: 20 ft Side: 5 ft, with 15 feet between detached structures Exterior: 20 ft Property line to Community Rec Facility: 20 ft
Minimum Exterior Buffers	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted
	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted
Minimum Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Maximum Townhome per Building	6 units	N/A
Stream Buffers / Impervious Setbacks	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.
Maximum Height	42 ft	42 ft
Maximum Building Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required
	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb
Street Improvement Requirements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No Maximum Cul-De-Sac Length	No Maximum Cul-De-Sac Length
	175 ft Minimum Radius Curvature of Center Line	175 ft Minimum Radius Curvature of Center Line
	Minimum tangent length - 50 ft	Minimum tangent length - 50 ft
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5 spaces	Minimum Community Rec Facility Parking Spaces: 5 spaces
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

PROPERTY ADDRESS:
THOMPSON BRIDGE ROAD
GAINESVILLE, GA 30501

APPLICANT:
FISCHER HOMES
3940 OLYMPIC BLVD SUITE 400
ERLANGER, KY 41018
24 HR CONTACT - KYLE TRELOAR 605-430-1783

OWNERS
1. PARCEL NO: 00090 002021 - PINSON, BOBBIE S (CITY OF GAINESVILLE)
2. PARCEL NO: 01090 002021 - YAHNES, CAROL DEVONNE PINSON (CITY OF GAINESVILLE)
3. PARCEL NO: 00090 002022 - TURNER, ELANE L (CITY OF GAINESVILLE)
4. PARCEL NO: 00090 002023 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
5. PARCEL NO: 00090 002024 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
6. PARCEL NO: 00090 002032 - ROPER ROPER & CARTER ENTERPRISES LP (HALL COUNTY)
7. PARCEL NO: 00090 002001 - ROPER ROPER & CARTER ENTERPRISES LP (CITY OF GAINESVILLE)

SEWER NOTE:
EXISTING SEWER PIPES TO BE REROUTED ON SITE. SEWER PROVIDED BY CITY OF GAINESVILLE.

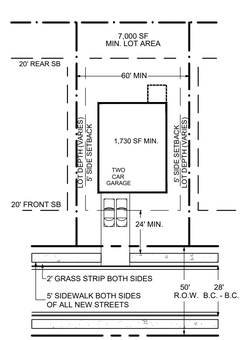
WATER NOTE:
WATER PROVIDED BY CITY OF GAINESVILLE.

STORMWATER NOTE:
STORMWATER WILL BE PROVIDED ON SITE.

FEMA NOTE:
ACCORDING TO FIRM NUMBER 13139C0179G DATED 04/04/2018 FOR HALL COUNTY GEORGIA, THE PROPERTY SHOWN DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA.

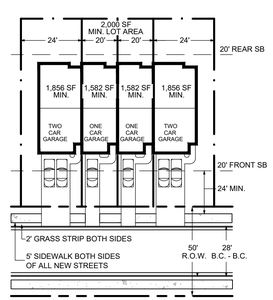
PHASING NOTE: THE DEVELOPMENT WILL HAVE 3 PHASES, WHICH INCLUDES 2 SUB-PHASES FOR THE SFD AND 3 SUB-PHASES FOR THE SFA.

TYPICAL SFD LOT DETAIL

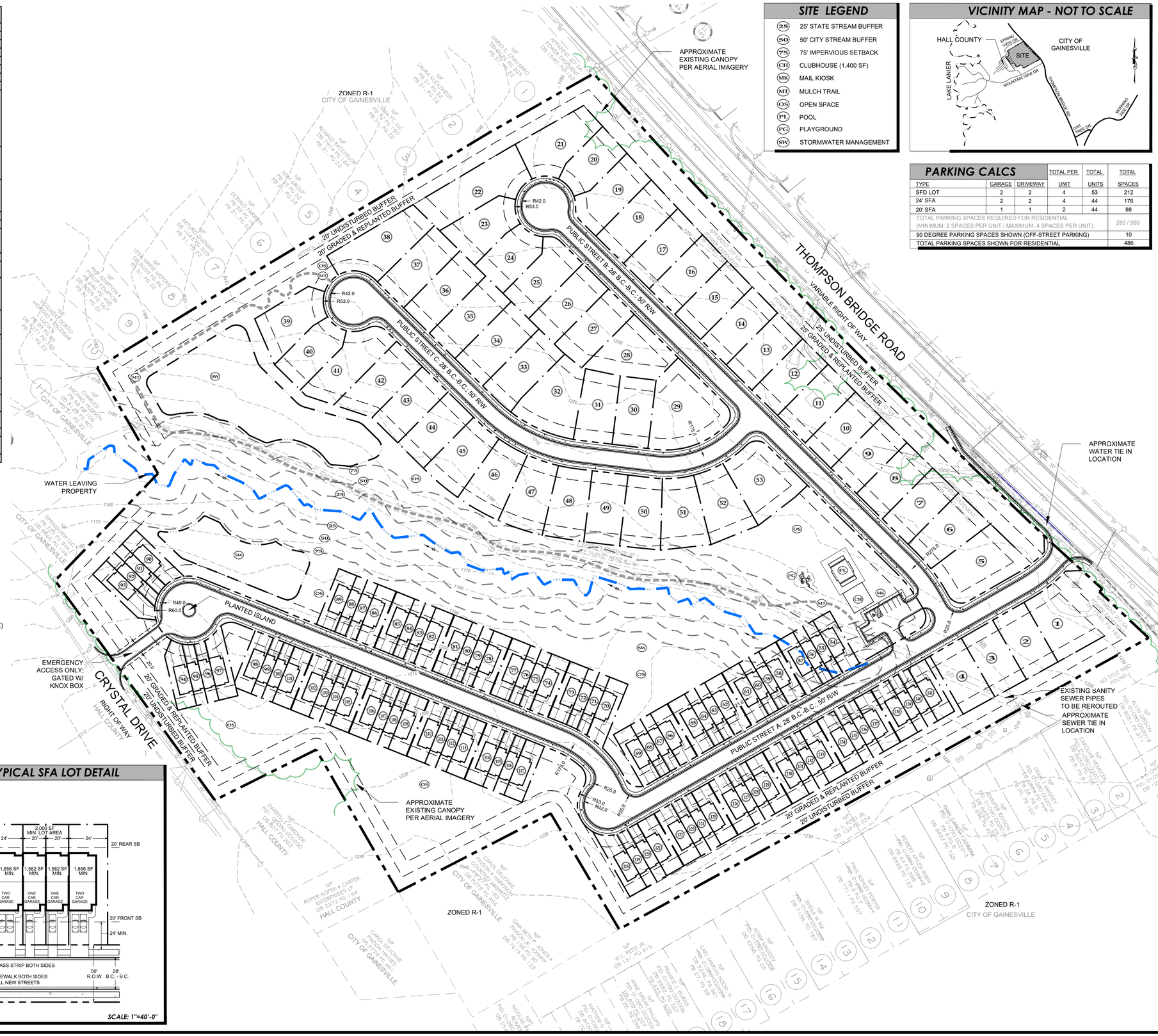


SCALE: 1"=40'-0"

TYPICAL SFA LOT DETAIL



SCALE: 1"=40'-0"



SITE LEGEND

25	25' STATE STREAM BUFFER
50	50' CITY STREAM BUFFER
75	75' IMPERVIOUS SETBACK
CH	CLUBHOUSE (1,400 SF)
MK	MAIL KIOSK
MT	MULCH TRAIL
OS	OPEN SPACE
PL	POOL
PG	PLAYGROUND
SW	STORMWATER MANAGEMENT

VICINITY MAP - NOT TO SCALE

PARKING CALCS

TYPE	GARAGE	DRIVEWAY	TOTAL PER UNIT	TOTAL UNITS	TOTAL SPACES
SFD LOT	2	2	4	53	212
24' SFA	2	2	4	44	176
20' SFA	1	1	2	44	88
TOTAL PARKING SPACES REQUIRED FOR RESIDENTIAL (MINIMUM: 2 SPACES PER UNIT / MAXIMUM: 4 SPACES PER UNIT):					280 / 560
90 DEGREE PARKING SPACES SHOWN (OFF-STREET PARKING)					10
TOTAL PARKING SPACES SHOWN FOR RESIDENTIAL					486

NO.	DATE	DESCRIPTION	BY	CHK	APV
1	10-25-24	PERFORMANCE STANDARDS ADDED	JW		
###					

NOT RELEASED FOR CONSTRUCTION

LJA ENGINEERING
299 S. MAIN STREET
ALPHARETTA, GA 30009
770-225-4730

FISCHER HOMES
3940 OLYMPIC BLVD.
SUITE 400
ERLANGER, KY 41018
OFFICE: 859.344.7261

SITE ZONING PLAN FOR SAPPHIRE SPRINGS

GAINESVILLE, GA 30501
LL 145 ~ DISTRICT 9TH
PARCEL # 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 0090 002001

NORTH

SCALE: 1"= 80'
0 80

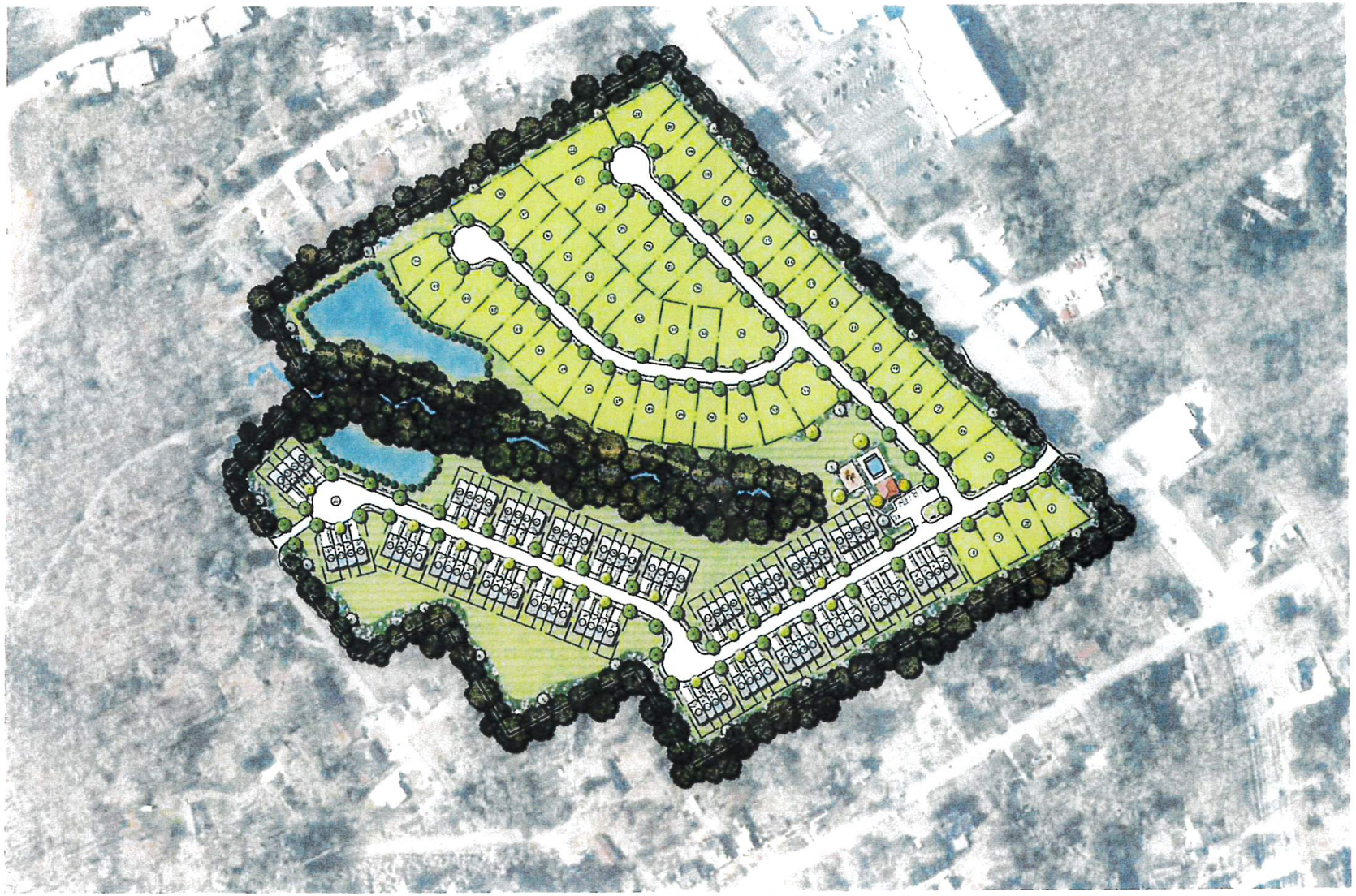
PROJECT NUMBER
GA5481-2403

SHEET TITLE
ZONING PLAN

SHEET NUMBER
C-100

File Location: s:\sesf\projects\ga5481-2403 - thompson bridge road - hall county, ga\02-design\drawings\01-concept\zoning_10-25-24

CONCEPTUAL RENDERING



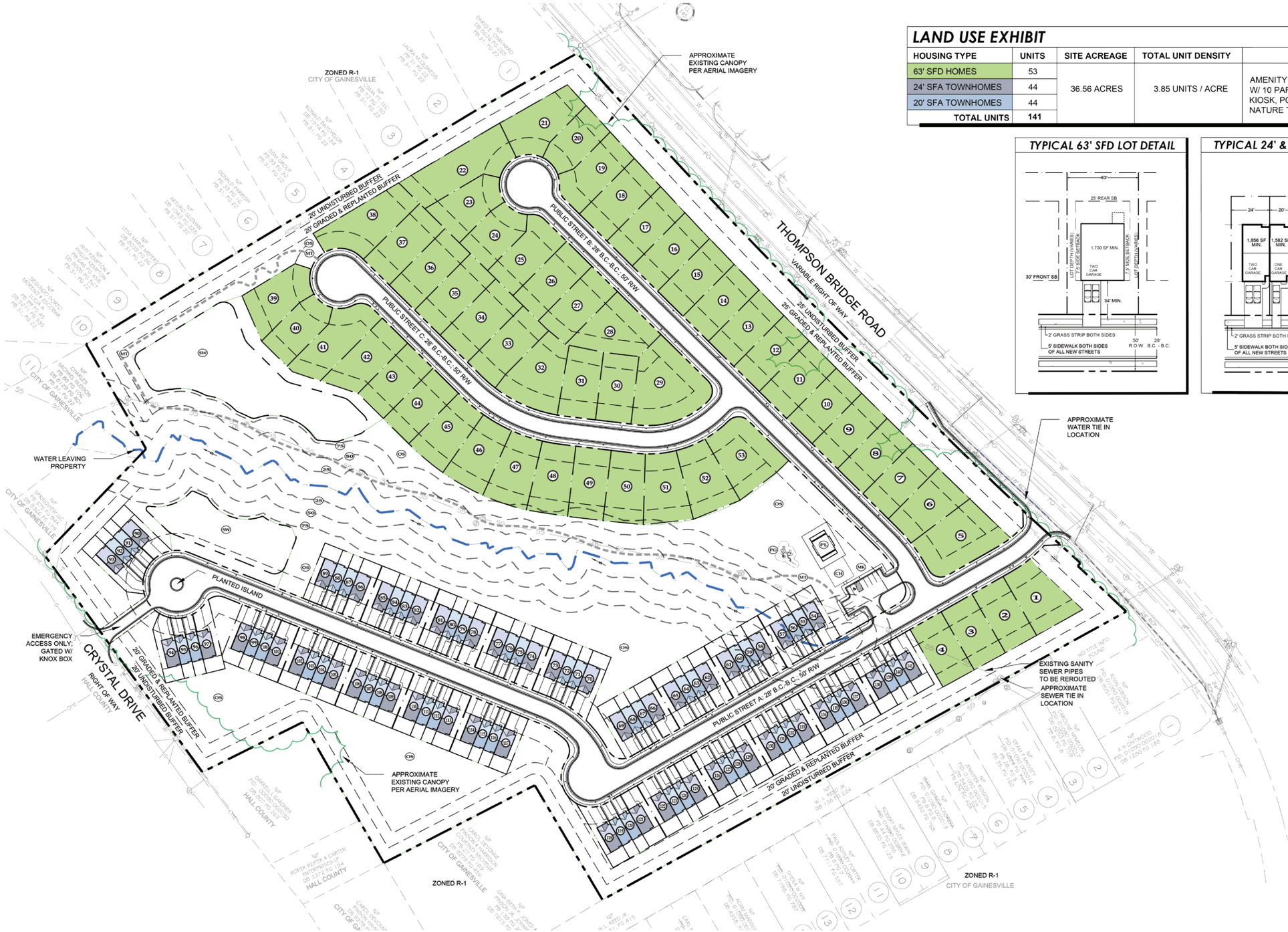
OPEN SPACE

OF SAPPHIRE SPRINGS

Sapphire Springs will have approximately 12.43 total acres (or 34% of the total acreage) of open space. The open space will surround the perimeter of the property, and will double as a natural and graded/replanted buffer. The open space will also include the preserved portion of the riparian corridor running through the middle of the site. Open spaces will provide areas for amenities including a clubhouse, pool, playground, and mulch walking trail running within the existing sanitary sewer easement. The undisturbed portion of open space will protect the natural beauty of the site as well as the environmentally sensitive areas.

Sapphire Springs is being developed with healthy lifestyle experiences in mind: lots of open spaces for passive recreation, a network of sidewalks, a mulch trail, and an active recreation area. This area will serve as the focal point when arriving from the main vehicular entrance, which will further foster a community central gathering area around open spaces.

LAND USE PLAN

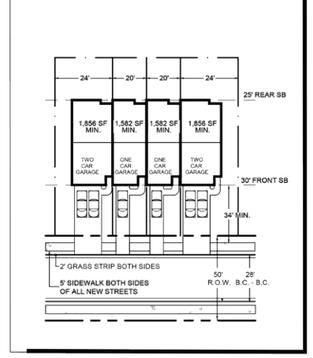


LAND USE EXHIBIT

HOUSING TYPE	UNITS	SITE ACREAGE	TOTAL UNIT DENSITY	FEATURES
63' SFD HOMES	53	36.56 ACRES	3.85 UNITS / ACRE	AMENITY CLUBHOUSE (+/- 1,400 SF) W/ 10 PARKING SPACES, MAIL KIOSK, POOL, PLAYGROUND, & NATURE TRAIL
24' SFA TOWNHOMES	44			
20' SFA TOWNHOMES	44			
TOTAL UNITS	141			

TYPICAL 63' SFD LOT DETAIL

TYPICAL 24' & 20' SFA LOT DETAIL



FISCHER HOMES

GREENBRIAR

Maple Street Collection

welcome home.

Approximately 1983 sq ft

URBAN MODERN
(WITH OPTIONAL BRICK)

designed by:

HYDE PARK COTTAGE
(WITH OPTIONAL BRICK)

designed by:

COASTAL CLASSIC
(WITH OPTIONAL PORCH)

designed by:

URBAN MODERN

designed by:

Images & Options Available at **fischerhomes**.com

FISCHER HOMES

YOSEMITE

Maple Street Collection

welcome home.

Approximately 2258 sq ft

MODERN FARMHOUSE

designed by:

AMERICAN CLASSIC

designed by:

MODERN FARMHOUSE
(WITH OPTIONAL BRICK)

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WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

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FISCHER HOMES

WESLEY

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Approximately 1842 sq ft

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WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

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MODERN FARMHOUSE

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THE BRECKENRIDGE

MAPLE STREET COLLECTION

3,135-3,156 SQFT	2 Story	4-5 Bedrooms	2.5-3.5 Baths

Photos, Options, Virtual Tours & More

Modern Farmhouse

Western Craftsman

Urban Modern

Coastal Classic

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(WITH OPTIONAL BRICK & PORCH)

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Modern Farmhouse
(WITH OPTIONAL BRICK)

designed by:

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RVSD 12/23

DATE

October 1, 2024

Zachary Vermillion, P.E.

SAPPHIRE SPRINGS TRAFFIC IMPACT STUDY

Gainesville, GA

LJA PN: 4221-2301

PREPARED BY:

LJA ENGINEERING, INC.

299 South Main Street Suite A
Alpharetta, GA 30009
770.225.4730
GA License PEF007392

PREPARED FOR:

Miles Hansford, LLC

178 South Main Street Suite 310
Alpharetta, GA 30009

SAPPHIRE SPRINGS
TRAFFIC IMPACT STUDY

Zachary S. Vermillion

October 1, 2024

299 South Main Street Suite A
Alpharetta, Georgia 30009
Phone: 770.225.4730
www.ljaengineering.com
GA License PEF007392

EXECUTIVE SUMMARY

This report presents the summary of findings for the Traffic Impact Study (TIS) prepared by LJA Engineering, Inc. (LJA) for the proposed Sapphire Springs development in Gainesville, GA.

This development will consist of 53 single-family homes and 94 townhomes. Construction for this development is expected to be completed in 2029. The objective of this study is to analyze the impacts of the traffic generated by the proposed development on the performance of the surrounding roadway network and to determine if mitigation measures to address any resulting deficiencies are recommended.

The study area for this TIS includes the street network located within a mile from the proposed development's access points and includes the following intersections:

1. Thompson Bridge Rd/Hwy 60 at River Cliff Dr
2. Thompson Bridge Rd/Hwy 60 at Linwood Dr/Sandridge Ct
3. Thompson Bridge Rd/Hwy 60 at Springview Dr
4. Thompson Bridge Rd/Hwy 60 at Mountainview Rd NW
5. Thompson Bridge Rd/Hwy 60 at Virginia Ave/Oakland Dr NW
6. Thompson Bridge Rd/Hwy 60 at Lanier Ave

Future development access points include:

7. Access A at Thompson Bridge Rd/Hwy 60

For this study, the AM and PM peak hours were analyzed for each of the following scenarios:

1. Existing conditions (2024)
2. Build-out year (2029) – background traffic only
3. Build-out year (2029) – combined traffic
4. Horizon year (2034) - background traffic only
5. Horizon year (2034) - background traffic

Peak hour traffic and 24-hour link data were collected on September 4, 2024. An average annualized growth rate of 1.3 percent was calculated using historical traffic data from the GDOT traffic count database. This growth rate was applied to the existing traffic volumes in order to determine the future background traffic volumes for the year 2029.

The overall proposed development is expected to add 1228 daily vehicle trips with 85 vehicle trips (24 in 61 out) during the AM peak hour and 107 vehicle trips (64 in 43 out) during the PM peak hour. These traffic volumes were distributed to the surrounding roadway network according to the existing travel patterns within the study area.

All analyses in this study were completed using standard traffic engineering practices based on the methodology outlined in the *Highway Capacity Manual - 6th Edition* (HCM6). Level of Service analyses for intersections were completed using Synchro 12 traffic analysis software.

Improvements Not Related to the Development

There are no planned improvements not related to the development according to the Georgia Department of Transportation project list, and no improvements are recommended in this study.

Development-Related Improvements

To comply with GDOT guidelines, the study recommends the following:

- Add southbound right turn lane along Thompson Bridge Rd/Hwy 60 at Access A.

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I. Introduction

This report presents the summary of findings for the Traffic Impact Study (TIS) prepared by LJA Engineering, Inc. (LJA) for the proposed Sapphire Springs development in Gainesville, GA. The objective of this study is to analyze the impacts of the traffic generated by the proposed development on the performance of the surrounding roadway network and to determine the recommended mitigation measures to address any resulting deficiencies.

This development will consist of 53 single-family homes and 94 proposed townhomes. A copy of the proposed site concept plan is in **Appendix A**.

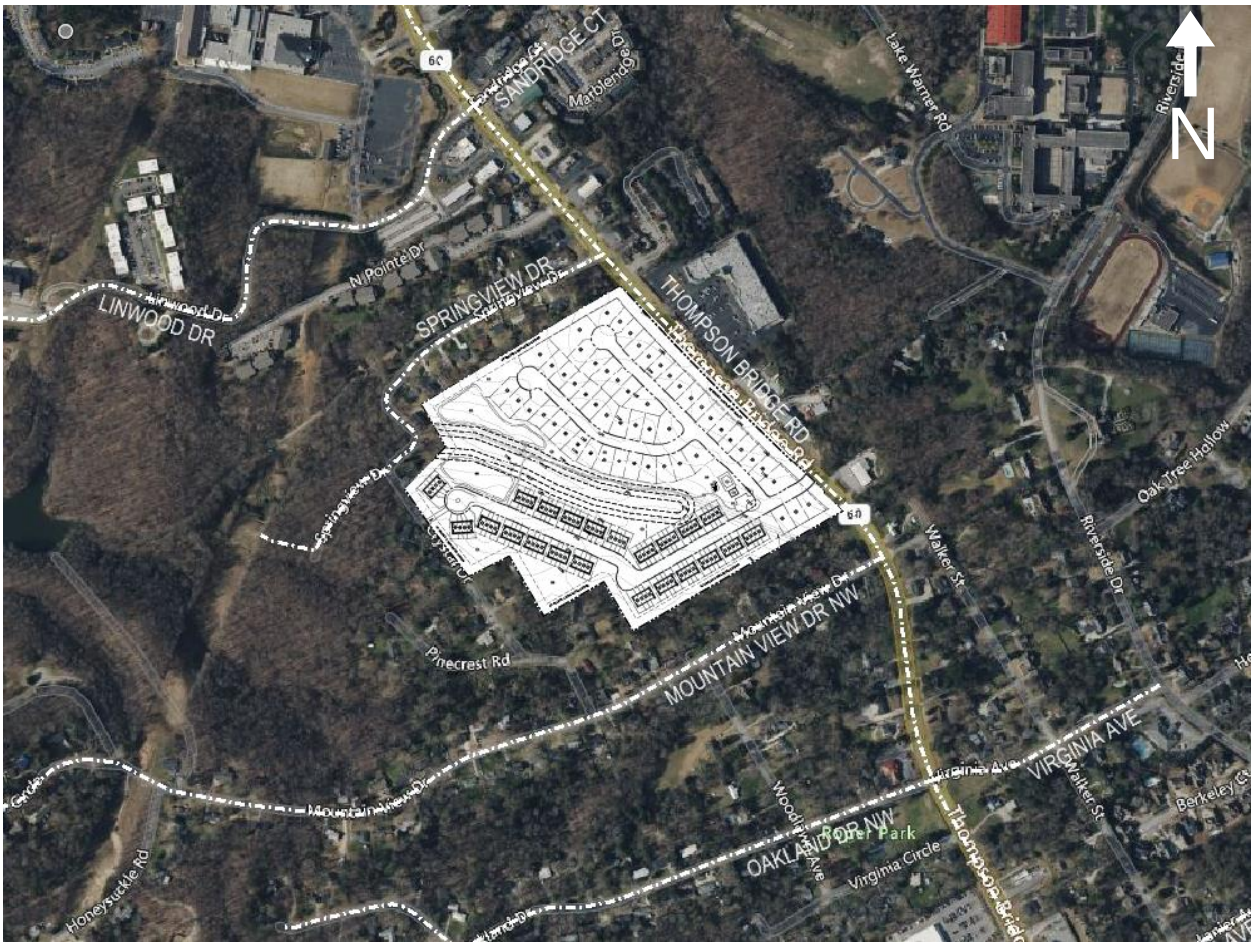


Figure 1 – Proposed Site Location

Construction build-out for this development is estimated to be completed in 2029. It should be noted that build-out of the residential development is based on market conditions.

1.1 Existing Area Conditions

1.1.1 Existing Roadway Configuration and Access

The proposed development is located along Thompson Bridge Road/Highway 60 south of Lake Lanier and north of Downtown Gainesville.

Thompson Bridge Rd/Hwy 60 is a 4-lane undivided roadway with a two-way left turn lane. It is 60 feet wide with a posted speed limit of 45 miles per hour. To the south of the development is Mountain View Dr NW, a 2-lane, 24-foot wide residential roadway with a posted speed limit of 30 miles per hour. To the north of the development is Springview Dr, which is also a 2-lane, 24-foot wide residential roadway with a posted speed limit of 30 miles per hour.

1.1.2 Study Area

The study area for this TIS includes the street network located within 0.5 miles from the proposed development's access points. Major intersections within the study area include:

1. Thompson Bridge Rd/Hwy 60 at River Cliff Dr
2. Thompson Bridge Rd/Hwy 60 at Linwood Dr/Sandridge Ct
3. Thompson Bridge Rd/Hwy 60 at Springview Dr
4. Thompson Bridge Rd/Hwy 60 at Mountainview Rd NW
5. Thompson Bridge Rd/Hwy 60 at Virginia Ave/Oakland Dr NW
6. Thompson Bridge Rd/Hwy 60 at Lanier Ave

1.2 Proposed Area Conditions

The proposed development will have access through two (2) different driveways: one is located along Thompson Bridge/Hwy 60, and the other one will on the southern end of the development and will be used for emergencies only. The current existing land use at the project site is classified as Agriculture/Forestry. The proposed development will be a high-density residential area once construction is completed. Per Gainesville-Hall County's Comprehensive Transportation Plan (CTP), there are no adjacent transportation projects or improvements in the vicinity of the Sapphire Springs development.

The proposed development will have one public access point:

1. Access A at Thompson Bridge Rd

II. Methodology

In order to evaluate the traffic impacts of the proposed development on the surrounding roadway network, future traffic conditions were analyzed with (combined traffic) and without (background only) the development's generated traffic. After the future traffic conditions were analyzed, mitigation measures were developed to address any resulting deficiencies in the performance of the surrounding street network due to the development related traffic. For this study, the AM and PM peak hours were analyzed for each of the following scenarios:

1. Existing conditions (2024)
2. Build-out year (2029) – background traffic only
3. Build-out year (2029) – combined traffic
4. Horizon year (2034) – background traffic only
5. Horizon year (2034) – combined traffic

For the build-out year, it was assumed that all residential development is in place.

2.1 Traffic Data and Existing Conditions

Peak hour traffic and 24-hour link data were collected on September 4th, 2024, and copies of the raw traffic count data are located in **Appendix B.**

Exhibit 1 in **Appendix C** shows the existing lane configurations at the study intersections and the existing traffic control is listed below.

1. Thompson Bridge Rd/Hwy 60 at River Cliff Dr – Two-Way Stop Control
2. Thompson Bridge Rd/Hwy 60 at Linwood Dr/Sandridge Ct – Signalized
3. Thompson Bridge Rd/Hwy 60 at Springview Dr – Two-Way Stop Control
4. Thompson Bridge Rd/Hwy 60 at Mountainview Rd NW – Two-Way Stop Control
5. Thompson Bridge Rd/Hwy 60 at Virginia Ave/Oakland Dr NW – Two-Way Stop Control
6. Thompson Bridge Rd/Hwy 60 at Lanier Ave – Two-Way Stop Control

Exhibit 2 in **Appendix C** shows existing peak hour traffic volumes at the study intersections.

2.1.1 Traffic Operation Analysis Requirements

For a Level 2 TIS, the existing condition operations have to be analyzed. An Intersection Control Evaluation (ICE) is required since the proposed driveway is along at least one roadway designated as a state route (state highway system) or as part of the National Highway System.

2.1.2 Background Traffic Growth

An average annualized growth rate of 1.3 percent was calculated using historical traffic data from the GDOT traffic count database. This growth rate was applied to the existing traffic volumes in order to determine the future background traffic volumes for the year 2029.

Table 1 - Background Growth Rate Calculation

Location	AADT Volume/Year		Volume Growth	Percentage Growth	Annual Growth
	2012	2022			
Thompson Bridge Rd N of Development	29010	33200	4190	14%	1.4%
	2012	**2022**			
Thompson Bridge Rd S of Development	24310	27900	3590	15%	1.4%
	2012	**2022**			
Oak Tree Dr E of Thompson Bridge Rd	3620	4690	1070	30%	2.6%
	2012	**2022**			
Riverside Dr E of Thompson Bridge Rd	15210	14800	-410	-3%	-0.3%
				Average Annual Growth	1.3%

Exhibit 3 in **Appendix C** shows the background traffic volumes for the year 2029 (build-out year) and **Exhibit 4** in **Appendix C** shows the background traffic volumes for the year 2034 (horizon year).

2.2 Trip Generation and Distribution

The amount of traffic a proposed development will generate depends on several factors including the nature, size, and location of the proposed development. Vehicle trips related to the proposed development are generated based on information contained in the *Trip Generation Manual – 11th Edition* which is published by the Institute of Transportation Engineers (ITE).

2.2.1 Trip Generation

Table 2 below shows the estimated amount of vehicle trips which will be generated by the proposed development using the fitted equations from the manual.

Table 2 - Vehicle Trip Generation Totals for Proposed Development

Land Use (ITE Code)	Units	AM Peak Trips (vph)			PM Peak Trips (vph)			Weekday 24-hour Trips
		In	Out	Total	In	Out	Total	
Single-Family Detached Housing (210)	53	11	31	42	34	20	55	563
Single-Family Attached Housing (215)	94	13	30	43	30	23	52	666
	Total	**24**	**61**	**85**	**64**	**43**	**107**	**1228**

The overall proposed development is expected to add 1228 daily vehicle trips with 85 vehicle trips (24 in 61 out) during the AM peak hour period and 107 vehicle trips (64 in 43 out) during the PM peak hour period. These traffic volumes were distributed to the surrounding roadway network according to the existing travel patterns within the study area.

2.2.2 Trip Distribution and Assignment

Generated traffic volumes were assigned to the study street network according to the routes that provide the shortest travel distance to their corresponding origins/destinations. Vehicle trip distribution percentages and development related vehicle trips are presented in **Exhibit 5** and **Exhibit 6** in **Appendix C**, respectively.

2.2.3 Internal Trip Capture

Internal trip capture (trips that stay within a development) occurs within developments that include complementary and interacting land uses. Examples include developments with office, retail, restaurants, entertainment, hotels and/or residential. Internal trip capture can be calculated using tables and information from the *ITE Trip Generation Manual – 11th Edition*. For this development, no internal trip capture was assumed.

2.2.4 Pass-by Trip Reduction

The total external trips of the generated traffic may be reduced by a Pass-By Reduction factor to account for the projected traffic that is already traveling along the roadways adjacent to the proposed development. Pass-by reduction methodologies are established by the Institute of Transportation Engineers (ITE) and only apply to certain types of development. Pass-by reduction was not considered in this analysis for this development.

2.2.5 Background plus Development Traffic Volumes.

The distributed development traffic volumes were then added to the background traffic volumes for the various scenarios. **Exhibit 7** and **Exhibit 8** in **Appendix C** show the combined background and development traffic volumes projected within the study area for 2029 (build-out year) and the horizon background and development traffic volumes for 2034, respectively.

III. Intersection Capacity Analysis

All analyses in this study were completed using standard traffic engineering practices based on the methodology outlined in the *Highway Capacity Manual - 6th Edition* (HCM6), which provides procedures used to evaluate the operations of all types of transportation facilities, including both signalized and unsignalized intersections. Level of Service analyses for intersections were completed using Synchro 12 traffic analysis software.

Levels of Service is represented by a letter grade between A and F. Generally, a LOS ranking of D or better is considered acceptable. A LOS ranking of E represents conditions where the traffic demand volume is approaching the maximum capacity for a movement or the overall intersection. A LOS ranking of F represents a condition where the traffic demand volume exceeds the capacity.

For signalized intersections and all-way stop controlled intersections, a LOS is calculated for each of the lane groups/approaches at the intersection and an overall LOS for the intersection is calculated by averaging the delays (weighted by traffic volume). For one-way and two-way stop-controlled intersections a LOS is calculated for each of the lane groups/approaches at the intersection. An overall LOS is calculated, but with some movements being free flow, it may not be representative of actual operations at stop or yield controlled approaches.

Table 3 shows the criteria for each of the levels of service as listed in the HCM for intersections and intersection lane groups for both unsignalized and signalized intersections. Complete Synchro analyses output files are presented in **Appendix D.**

Table 3 – Level of Service Criteria for Intersections and Intersection Lane Groups

Level of Service	Average Amount of Control Delay (sec/veh)	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	10 – 15	10 – 20
C	15 – 25	20 – 35
D	25 – 35	35 – 55
E	35 – 50	55 – 80
F	> 50	> 80

In the following tables, the level of service and average delay per vehicle for signalized and all-way stop intersections is shown as an overall measure for the intersection. For intersections that are two-way stop controlled, the LOS and average delay is given for the movements that are stop controlled.

3.1 Existing Conditions

Table 4 below summarizes the level of service for the existing conditions with existing traffic volumes for the AM and PM peak hours.

Table 4 – LOS Summary – Existing Conditions

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.1	A	0.3	A
		WB	23.64	C	72.64	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	117.2	F	140.1	F
		NB	14.4	B	203.7	F
		SB	169.7	F	34.1	C
		WB	21.7	C	17.3	B
		EB	11.4	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	20.69	C	18.69	C
Highway 60 & Mountainview Rd	TWSC	All	0.5	A	0.4	A
		EB	36.59	E	24.8	C
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	1.7	A	16.7	C
		WB	25.54	D	81.16	F
		EB	80.75	F	>500	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.7	A
		WB	13.88	B	36.34	E

Currently, the approach experiencing the most delay is eastbound at Highway 60 and Oakland Dr/Virginia Ave. The intersection with the highest delay overall is Highway 60 at Linwood Dr/Sandridge Ct.

3.2 Background and Background plus Development Scenarios

As discussed in the report, an annual growth rate was applied to the existing traffic volumes to generate background traffic volumes for the year 2029. Development trips were then generated, distributed on the study network, and combined with the background traffic volumes for both scenarios.

3.2.1 Year 2029 Analysis

Table 5 – LOS Summary – Year 2029 Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	25.9	D	93.11	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	142.4	F	167.6	F
		NB	15	B	243	F
		SB	207.5	F	42.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.46	C	20.01	C
Highway 60 & Mountainview Rd	TWSC	All	0.6	A	0.5	A
		EB	43.19	E	27.99	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.2	A	8.9	A
		WB	32.53	D	129.5	F
		EB	122.02	F	228.27	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.9	A
		WB	14.39	B	43.81	E

and Table 7 below summarize the level of service for the study intersections for the AM and PM peak for the year 2029 (build-out year).

Table 5 – LOS Summary – Year 2029 Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	25.9	D	93.11	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	142.4	F	167.6	F
		NB	15	B	243	F
		SB	207.5	F	42.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.46	C	20.01	C
Highway 60 & Mountainview Rd	TWSC	All	0.6	A	0.5	A
		EB	43.19	E	27.99	D

Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.2	A	8.9	A
		WB	32.53	D	129.5	F
		EB	122.02	F	228.27	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.9	A
		WB	14.39	B	43.81	E

As background traffic is scaled up according to the growth rate, delays increase to the point of failing during the PM peak. Compared to peak background traffic, there was a slight increase in delay for the intersections that already had a LOS of F.

Table 6 – LOS Summary – Year 2029 Background Plus Development

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	26.03	D	93.75	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	143	F	168.9	F
		NB	15.1	B	244.7	F
		SB	208.6	F	43.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.49	C	20.11	C
Highway 60 & Mountainview Rd	TWSC	All	0.7	A	0.5	A
		EB	46.6	E	29.33	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.4	A	10.6	B
		WB	36.01	E	154.77	F
		EB	148.09	F	310.11	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	1	A
		WB	14.53	B	47.84	E
Access A & Thompson Bridge/Hwy 60	TWSC	All	1	A	0.4	A
		EB	45.69	E	19.22	C

No new intersections fail as a result of adding peak hour development traffic.

3.2.2 Year 2029 Analysis

Table 5 – LOS Summary – Year 2029 Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	25.9	D	93.11	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	142.4	F	167.6	F
		NB	15	B	243	F
		SB	207.5	F	42.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.46	C	20.01	C
Highway 60 & Mountainview Rd	TWSC	All	0.6	A	0.5	A

		EB	43.19	E	27.99	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.2	A	8.9	A
		WB	32.53	D	129.5	F
		EB	122.02	F	228.27	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.9	A
		WB	14.39	B	43.81	E

and Table 9 below summarize the level of service for the study intersections for the AM and PM peak for the year 2029 (horizon year).

Table 7 – LOS Summary – Year 2029 Horizon Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.4	A
		WB	28.63	D	119.04	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	170	F	199.8	F
		NB	15.8	B	286.5	F
		SB	248.7	F	57	E
		WB	21.9	C	17.3	B
		EB	11.2	B	13	B
Highway 60 & Springview Dr	TWSC	All	0.1	A	0.1	A
		EB	24.7	C	24.7	C
Highway 60 & Mountainview Rd	TWSC	All	0.8	A	0.5	A
		EB	56.87	F	32.18	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	3	A	15	B
		WB	46.12	E	210.75	F
		EB	209.01	F	>500	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	1.3	A
		WB	14.97	B	59.97	F

As the background traffic is scaled up according to the growth rate, delays increase along approaches that are projected to fail in 2029 and two additional approaches: eastbound Mountainview Rd during the AM peak and westbound Lanier Ave during PM peak.

Table 8 – LOS Summary – Year 2029 Horizon Background Plus Development

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.1	A	0.4	A
		WB	23.64	C	119.9	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	117.2	F	201	F
		NB	14.4	B	287.9	F
		SB	169.7	F	58.3	E
		WB	21.7	C	17.3	B
		EB	11.4	B	13	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	20.69	C	21.66	C
Highway 60 & Mountainview Rd	TWSC	All	0.5	A	0.5	A
		EB	36.59	E	33.86	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	1.7	A	17.8	B
		WB	25.54	D	243.39	F
		EB	80.75	F	>500	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	1.3	A
		WB	13.88	B	66.84	F
Access A & Thompson Bridge/Hwy 60	TWSC	All	0	A	0.4	A
		EB	0	A	20.76	C

No new intersections fail as a result of adding peak hour development traffic.

3.3 Right and Left Turn Lane Analyses

Evaluations for right and left-turn lanes at the proposed development driveways were performed in accordance with the *City of Gainesville* guidelines.

3.3.1 Left-Turn Lanes

A two-way left turn lane is already in place along Thompson Bridge Rd/Hwy 60. Sufficient storage is available to accommodate the left turns into the development.

3.3.2 Right-turn Lanes

Based on Table 4-6 from the GDOT's Driveway Design Guidelines, a right turn deceleration lane is required for this development. The forecasted daily right turn volumes exceed 75 vehicles per day on a roadway with more than two lanes and an AADT greater than 10,000 vehicles per day.

3.4 Access Spacing

Based on the proposed development plan, the nearest driveway from Access A is Mountain View Dr, which is approximately 450 feet south of Access A. Approximately 1300 feet to the north of Access A is Springview Dr. The minimum driveway spacing along a roadway with a posted speed limit of 45 MPH is 230 feet.

3.5 Turning Radii

The turning radius for southbound right turns from Thompson Bridge Rd/Hwy 60 was analyzed using AutoTURN software. AutoTURN is a MicroStation program that is specifically designed for vehicle path analysis, allowing engineers and planners to simulate and analyze the movements of several types of vehicles (like trucks, buses, or cars) to ensure that roads, intersections, parking lots, and other infrastructure can accommodate them. Access A at Thompson Bridge Rd/Hwy 60 is a new driveway for the proposed Sapphire Springs development. Access A is designed to have a curb radius of 35 degrees, and a driveway throat width of 28 feet. While the proposed curb radius cannot accommodate right turns for the WB-67 design vehicle, it can accommodate a standard fire engine. Heavy truck restrictions are recommended for southbound turns into Access A.

3.6 Sight Distance Analysis

For new proposed driveway/roadways, the City of Gainesville requests the intersection sight distance (ISD) for the following three conditions be considered at the proposed connections. The horizontal and vertical curvature of Thompson Bridge Rd/Hwy 60 is relatively gentle and there are few obstructions to sight distance. Adequate ISD exists for all 3 conditions listed below.

- Left-turn from Stop (Case B1)
- Right-turn from Stop (Case B2)
- Left-turn from Major Road (Case F)

Table 9 – Estimated Intersection Sight Distance

Intersection	Estimated Intersection Sight Distance		
	Case B1	Case B2	Case F
Access A at Thompson Bridge/Hwy 60	>500’	>565’	>450’

3.7 HCM Vehicle Queues Analysis

HCM peak hour queues in the 95th percentile for the Background plus Development scenario during year 2029 (build-out) are summarized in the tables below. Approaches and movements with a LOS of C or better and values below 1.0 are not shown. The queuing along Thompson Bridge/Hwy 60 is not expected to exceed 1 vehicle during the PM peak hour.

Table 10 – LOS Summary – HCM Queue Summary - Build-out Year 2029 Background Plus Development

Study Intersection	Lane	AM	PM
		HCM 95th %tile Q(veh)	HCM 95th %tile Q(veh)
Access A at Thompson Bridge/Hwy 60	EBL	2	-
	EBT	-	-
	EBR	-	-
	WBL	-	-
	WBT	-	-
	NBL	-	-
	NBR	-	-

HCM peak hour queues in the 95th percentile for the Background plus Development scenario during year 2029 (horizon) are summarized in the tables below. Approaches and movements with a LOS of C or better and values below 1.0 are not shown. The queuing along Thompson Bridge/Hwy 60 is not expected to exceed 1 vehicle during the AM and PM peak hour.

Table 11 – LOS Summary – HCM Queue Summary – Horizon Build-out Year 2034 Background Plus Development

Study Intersection	Lane	AM	PM
		HCM 95th %tile Q(veh)	HCM 95th %tile Q(veh)
Access A at Thompson Bridge/Hwy 60	EBL	-	-
	EBT	-	-
	EBR	-	-
	WBL	-	-
	WBT	-	-
	NBL	-	-
	NBR	-	-

IV. Mitigation Measures

Mitigation measures can be broken down into two general categories. One is a physical capacity increase, such as additional lanes. The second is a change in traffic control that provides additional capacity.

The addition of development traffic does not cause the adjacent roadway network to fail at locations which are not already projected to fail in future years without the development. Therefore, no mitigation measures are recommended or required at this time.

V. Recommendations

Improvements Not Related to the Development

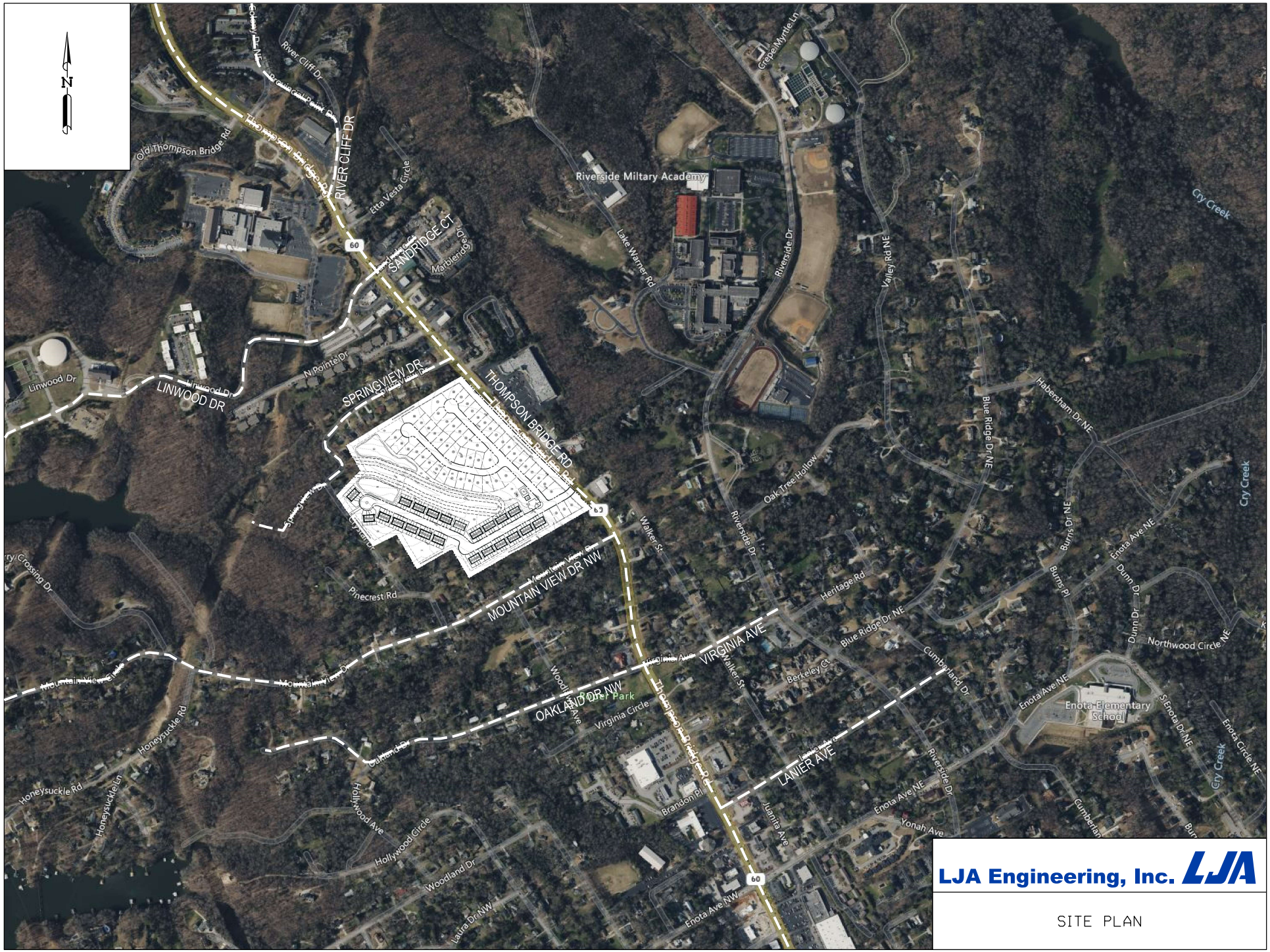
There are no planned improvements not related to the development according to the Georgia Department of Transportation project list, and no improvements are recommended in this study.

Development-Related Improvements

To comply with GDOT guidelines, the study recommends the following:

- Add southbound right turn lane along Thompson Bridge Rd/Hwy 60 at Access A.

Appendix A – Proposed Development Site Plan



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Appendix B – Traffic Count Data

Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Springview Dr

Peak Hour Turning Movement Count

ID: 24-180189-003
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SR 60/Thompson Bridge Rd — SOUTHBOUND

AM	1	1872	0	0	885	AM
NOON	0	0	0	0	0	NOON
PM	1	1131	0	0	2130	PM

Springview Dr — EASTBOUND

AM	NOON	PM	
2	0	9	
0	0	0	0
0	0	1	0
0	0	0	1
5	0	3	0
AM	NOON	PM	

Springview Dr — WESTBOUND

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
PM	NOON	AM	

Turning movements (clockwise): 0 2 0 0 — 0 0 2 0

CONTROL

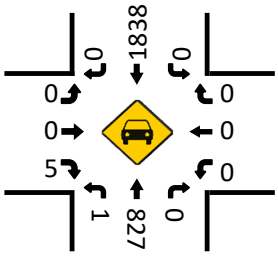
1-Way Stop(EB)

TEV	2764 AM	0 NOON	3273 PM
PHF	0.87		0.98

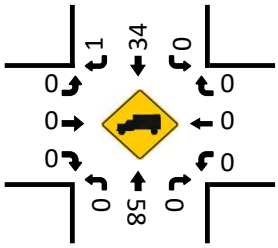
SR 60/Thompson Bridge Rd — NORTHBOUND

PM	1134	0	8	2129	0	PM
NOON	0	0	0	0	0	NOON
AM	1877	0	1	885	0	AM

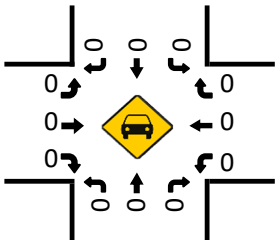
Cars (AM)



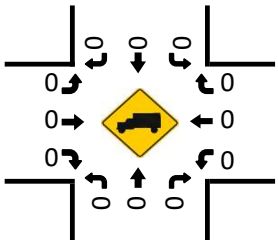
HT (AM)



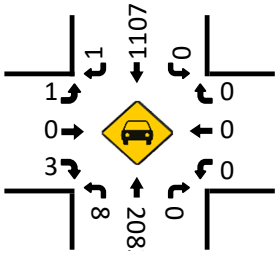
Cars (NOON)



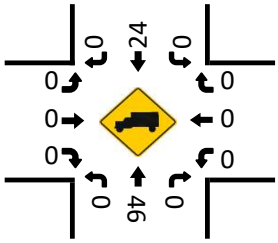
HT (NOON)



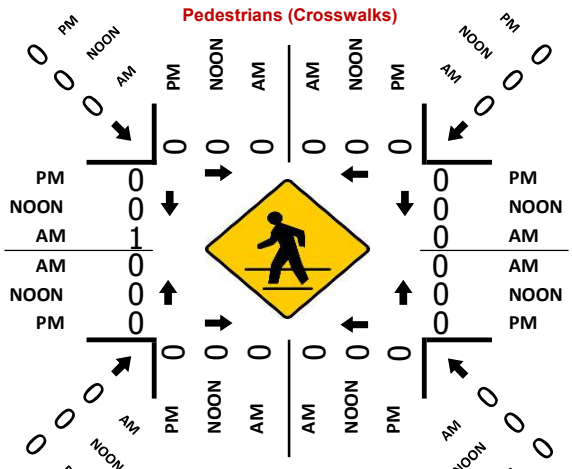
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



SR 60/Thompson Bridge Rd & Linwood Dr/Sandridge Ct

Peak Hour Turning Movement Count

ID: 24-180189-002
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS		COUNT PERIODS
AM	07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND — SR 60/Thompson Bridge Rd

	Right	Thru	Left	U-Turn	Departing
AM	50	1805	18	0	824
NOON	0	0	0	0	0
PM	23	1059	21	0	2063
Lanes	1	2	1	0	

EASTBOUND — Linwood Dr/Sandridge Ct

	AM	NOON	PM	Lanes
Departing	86	0	101	
U-Turn	0	0	0	0
Left	22	0	45	1
Thru	2	0	2	0.5
Right	32	0	20	0.5

WESTBOUND — Linwood Dr/Sandridge Ct

	PM	NOON	AM	Lanes
Right	33	0	9	0.5
Thru	4	0	2	0.5
Left	34	0	35	1
U-Turn	0	0	0	0
Departing	73	0	49	

NORTHBOUND — SR 60/Thompson Bridge Rd

	Departing	U-Turn	Left	Thru	Right
Lanes		0	1	2	1
PM	1113	0	74	1985	50
NOON	0	0	0	0	0
AM	1872	0	34	793	29

CONTROL

Signalized

	AM	NOON	PM
TEV	2831	0	3350
PHF	0.86		0.98

Cars (AM)

Approach	Left	Thru	Right
Southbound	18	1771	50
Eastbound	22	2	31
Westbound	35	1	9
Northbound	34	737	27

HT (AM)

Approach	Left	Thru	Right
Southbound	0	34	0
Eastbound	0	0	1
Westbound	0	1	0
Northbound	0	56	2

Cars (NOON)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

HT (NOON)

Approach	Left	Thru	Right
Southbound	0	0	0
Eastbound	0	0	0
Westbound	0	0	0
Northbound	0	0	0

Cars (PM)

Approach	Left	Thru	Right
Southbound	21	1035	23
Eastbound	44	2	20
Westbound	34	4	33
Northbound	73	194	50

HT (PM)

Approach	Left	Thru	Right
Southbound	0	24	0
Eastbound	1	0	0
Westbound	0	0	0
Northbound	1	44	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North (westbound direction)	0	0	0
North (eastbound direction)	0	0	0
South (eastbound direction)	0	0	0
South (westbound direction)	0	0	0
West (southbound direction)	0	0	0
West (northbound direction)	0	0	0
East (southbound direction)	0	0	0
East (northbound direction)	0	0	2
Northwest diagonal	0	0	0
Northeast diagonal	0	0	0
Southwest diagonal	0	0	0
Southeast diagonal	0	0	0

Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Lanier Ave

Peak Hour Turning Movement Count

ID: 24-180189-006
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND (SR 60/Thompson Bridge Rd)

AM	0	1813	13	0	884	AM
NOON	0	0	0	0	0	NOON
PM	0	1161	19	0	2079	PM

EASTBOUND (Lanier Ave)

AM	NOON	PM	
0	0	0	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 0
0	0	0	↷ 0
AM	NOON	PM	

WESTBOUND (Lanier Ave)

PM	NOON	AM	
50	0	14	0 ↰
0	0	0	1 ←
4	0	2	0 ↶
0	0	0	0 ↷
23	0	18	⇨
PM	NOON	AM	

NORTHBOUND (SR 60/Thompson Bridge Rd)

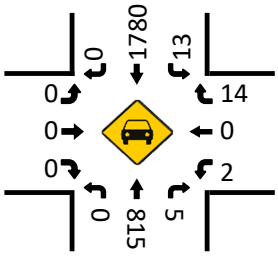
PM	1165	0	0	2029	4	PM
NOON	0	0	0	0	0	NOON
AM	1815	0	0	870	5	AM

Turning movements (red): ↲ 0, ↓ 2, ↳ 0, ↳ 0 ⇧ ↰ 0, ↶ 0, ↑ 2, ↱ 0

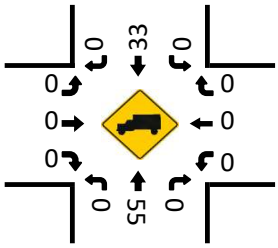
CONTROL: 1-Way Stop(WB)

	AM	NOON	PM
TEV	2717	0	3267
PHF	0.89		0.94

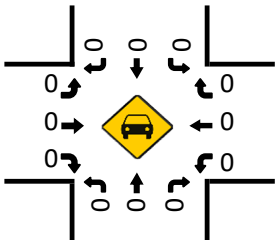
Cars (AM)



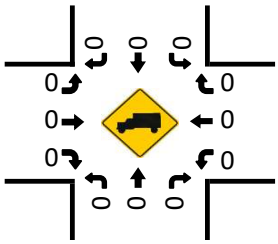
HT (AM)



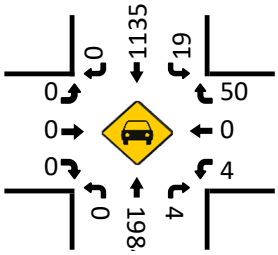
Cars (NOON)



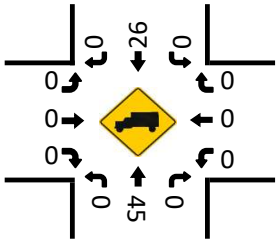
HT (NOON)



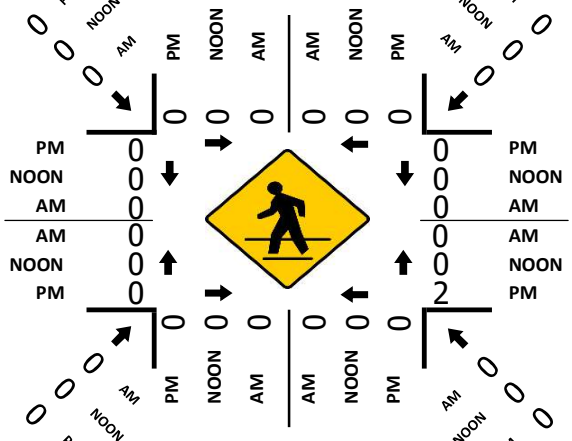
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Mountain View Dr NW/St. Francis of Assisi Anglican Catholic Church Dwy

Peak Hour Turning Movement Count

ID: 24-180189-004
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS		COUNT PERIODS
07:00 AM - 08:00 AM		6:00 AM - 08:00 AM
NONE		NONE
04:45 PM - 05:45 PM		4:00 PM - 06:00 PM

SOUTHBOUND — SR 60/Thompson Bridge Rd

AM	4	1947	0	0	931	AM
NOON	0	0	0	0	0	NOON
PM	14	1169	0	0	2120	PM

EASTBOUND — Mountain View Dr NW/St. Francis of Assisi Anglican Catholic Church Dwy

AM	NOON	PM	
22	0	44	⇦
0	0	0	↶ 0
6	0	13	↱ 0
0	0	0	→ 1
27	0	28	↳ 0
AM	NOON	PM	

WESTBOUND — Mountain View Dr NW/St. Francis of Assisi Anglican Catholic Church Dwy

PM	NOON	AM	
0	0	0	↲ 0
0	0	0	← 1
0	0	0	↰ 0
0	0	0	↰ 0
0	0	0	⇨
PM	NOON	AM	

Turning movements: 0 2 0 0 (SB); 0 0 2 0 (NB)

CONTROL

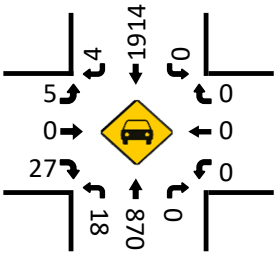
1-Way Stop(EB)

TEV	2927	0	3361
	AM	NOON	PM
PHF	0.87		0.97

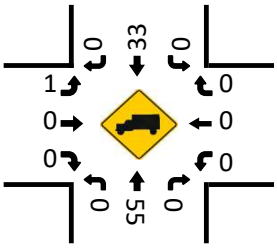
NORTHBOUND — SR 60/Thompson Bridge Rd

PM	1197	0	30	2107	0	PM
NOON	0	0	0	0	0	NOON
AM	1974	0	18	925	0	AM

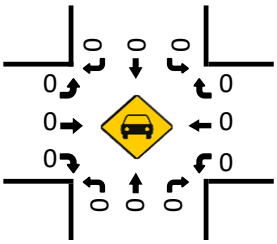
Cars (AM)



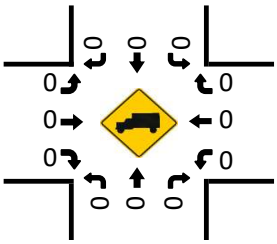
HT (AM)



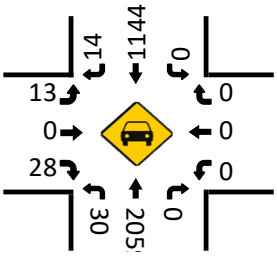
Cars (NOON)



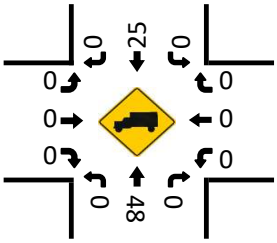
HT (NOON)



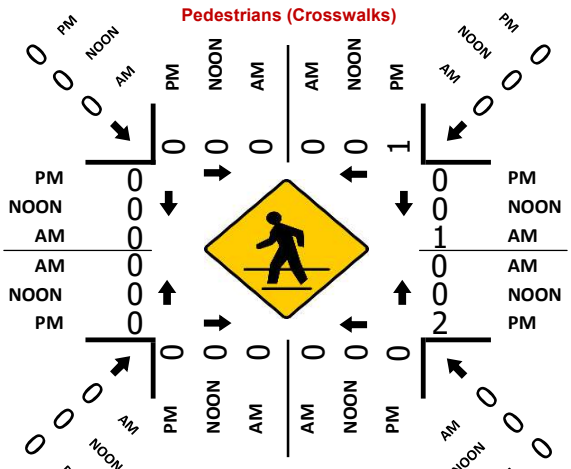
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Virginia Ave/Virginia Cir NW/Oakland Dr NW

Peak Hour Turning Movement Count

ID: 24-180189-005
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND (SR 60/Thompson Bridge Rd)

AM	3	1822	168	0	942	AM
NOON	0	0	0	0	0	NOON
PM	4	1098	92	0	2157	PM

EASTBOUND (Virginia Ave/Virginia Cir NW/Oakland Dr NW)

AM	NOON	PM	
5	0	13	
0	0	0	0
1	0	3	0
0	0	0	1
16	0	16	0

WESTBOUND (Virginia Ave/Virginia Cir NW/Oakland Dr NW)

PM	NOON	AM	
172	0	66	0
0	0	0	1
0	0	2	0
0	0	0	0
103	0	196	

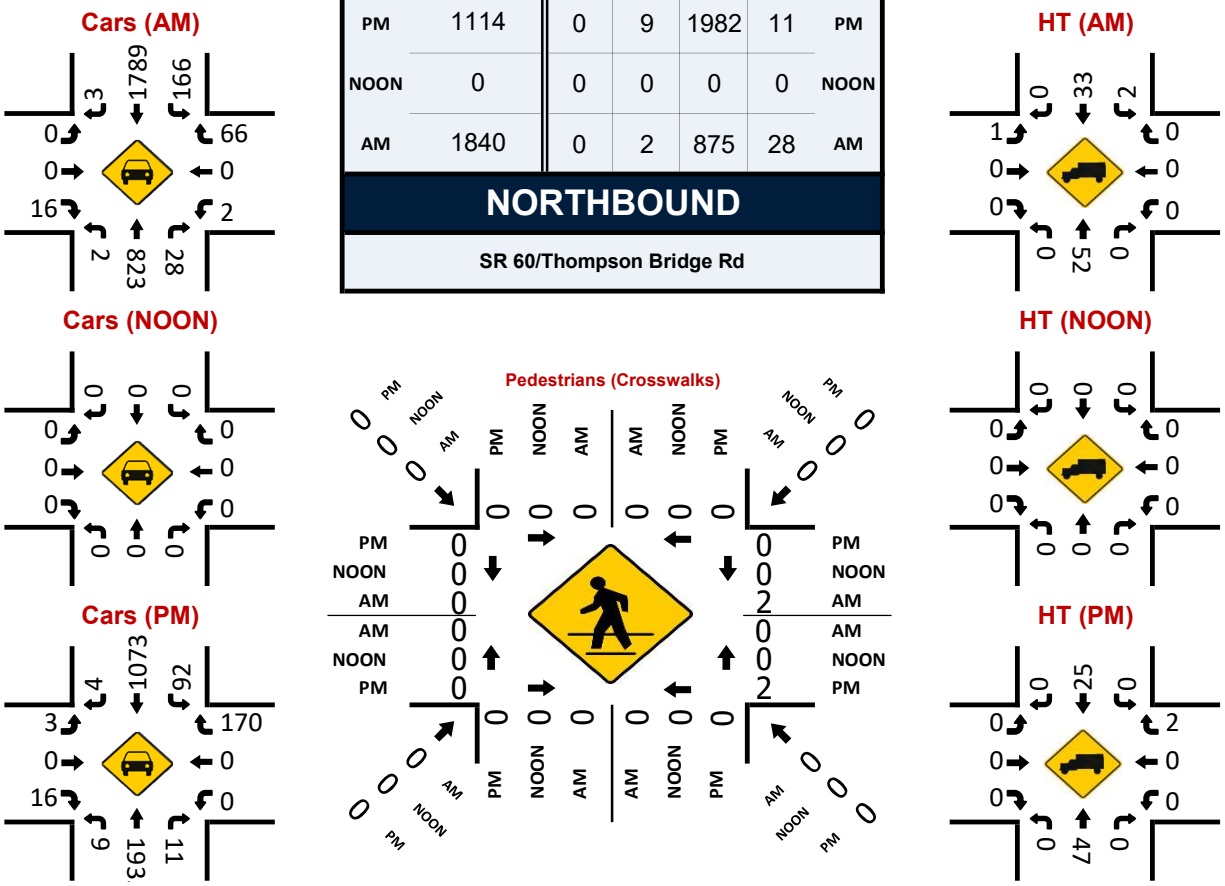
NORTHBOUND (SR 60/Thompson Bridge Rd)

PM	1114	0	9	1982	11	PM
NOON	0	0	0	0	0	NOON
AM	1840	0	2	875	28	AM

0	2	1	0
0	1	2	0

CONTROL: 2-Way Stop (EB/WB)

	AM	NOON	PM
TEV	2983	0	3387
PHF	0.88		0.99



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & River Cliff Dr/Lakewood Baptist Church Dwy

Peak Hour Turning Movement Count

ID: 24-180189-001
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS		COUNT PERIODS
07:00 AM - 08:00 AM		6:00 AM - 08:00 AM
NONE		NONE
04:45 PM - 05:45 PM		4:00 PM - 06:00 PM

SOUTHBOUND (SR 60/Thompson Bridge Rd)

	U-Turn	Left	Thru	Right		
AM	2	1848	0	0	799	AM
NOON	0	0	0	0	0	NOON
PM	4	1111	1	0	2046	PM

EASTBOUND (River Cliff Dr/Lakewood Baptist Church Dwy)

	AM	NOON	PM
U-Turn	2	0	4
Left	0	0	0
Thru	0	0	0
Right	0	0	0
Total	0	0	0

WESTBOUND (River Cliff Dr/Lakewood Baptist Church Dwy)

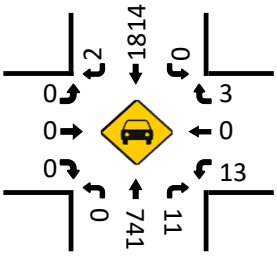
	PM	NOON	AM
U-Turn	2	0	3
Left	0	0	0
Thru	9	0	13
Right	0	0	0
Total	26	0	11

NORTHBOUND (SR 60/Thompson Bridge Rd)

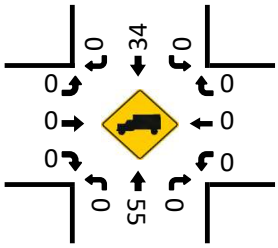
	U-Turn	Left	Thru	Right		
PM	1120	0	0	2044	25	PM
NOON	0	0	0	0	0	NOON
AM	1861	0	0	796	11	AM

CONTROL			
1-Way Stop(WB)			
TEV	2673	0	3196
	AM	NOON	PM
PHF	0.86		0.99

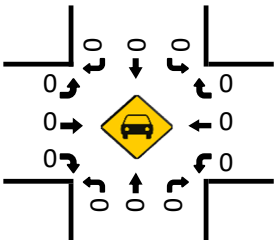
Cars (AM)



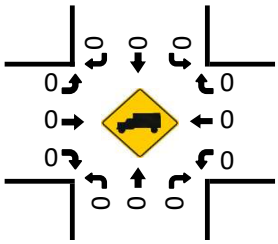
HT (AM)



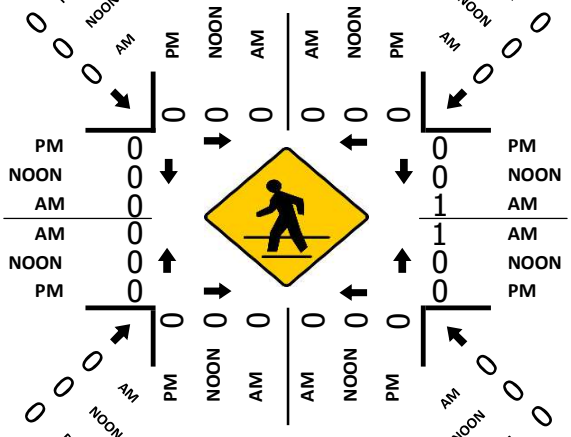
Cars (NOON)



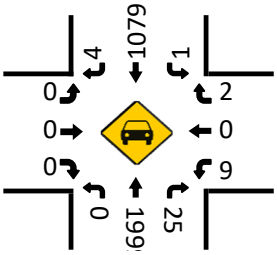
HT (NOON)



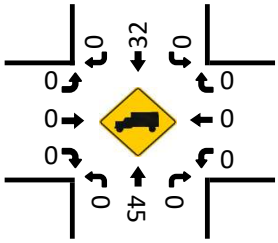
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Appendix C – Turning Volume and Lane Configuration Exhibits

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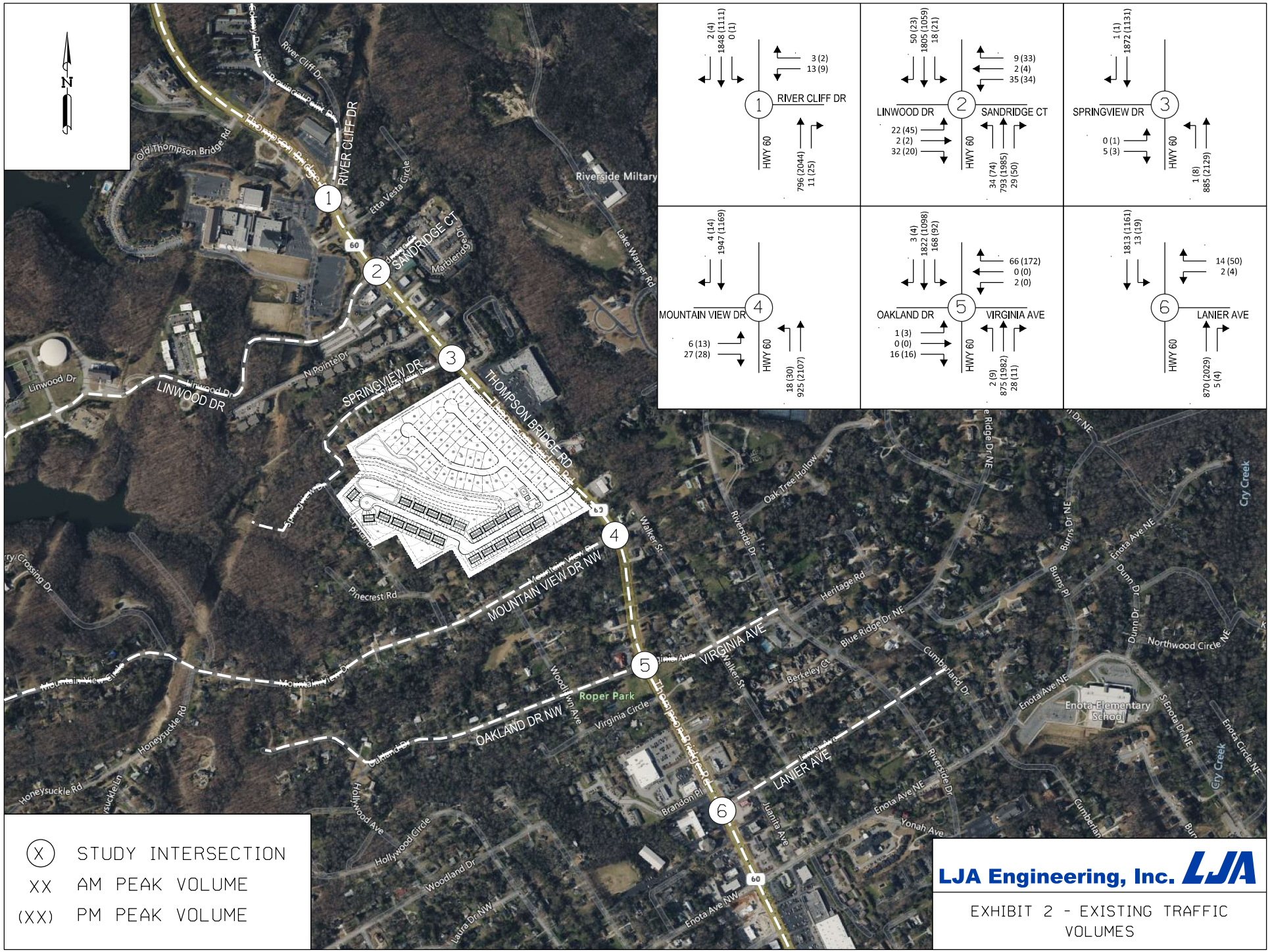

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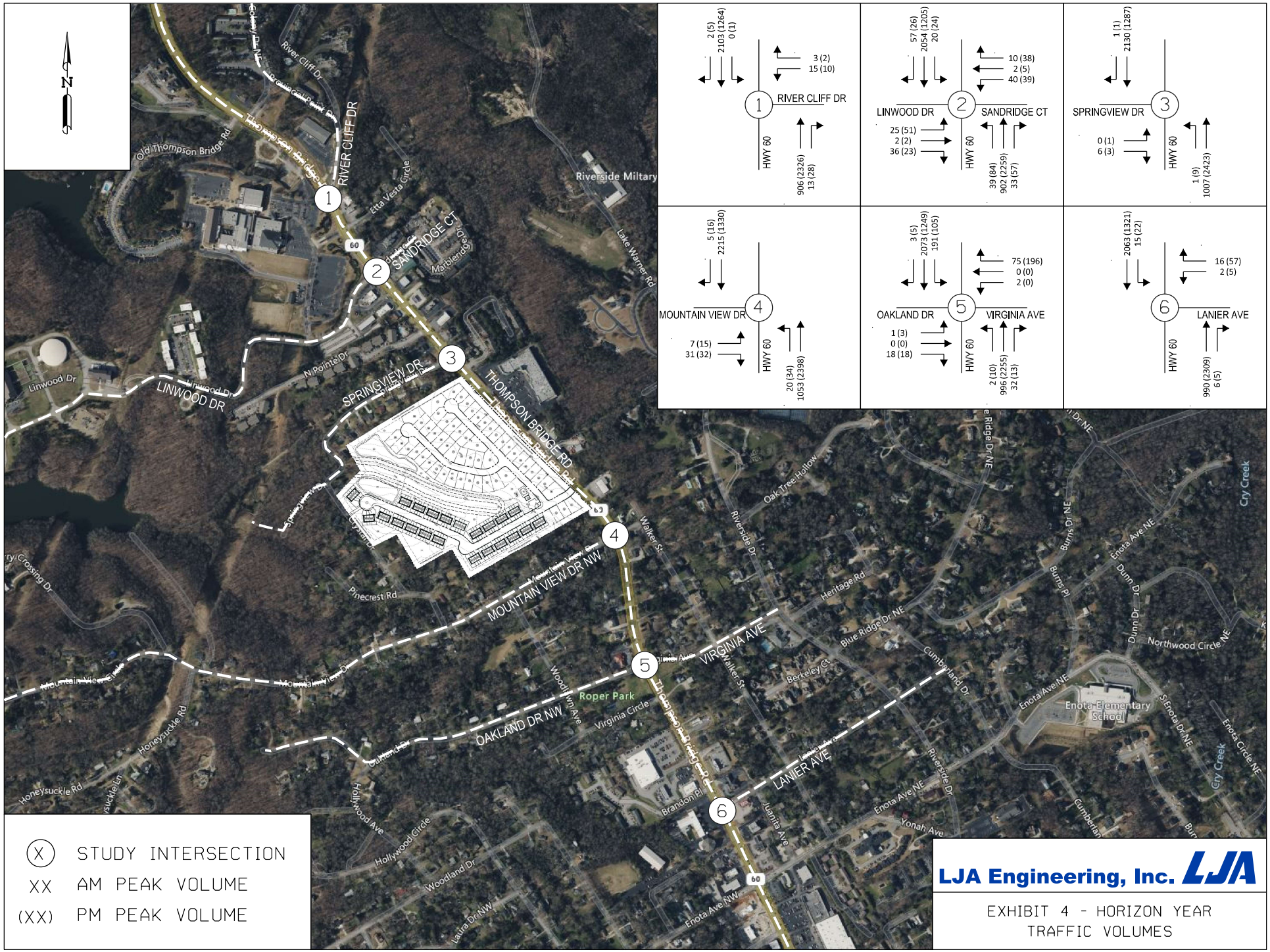

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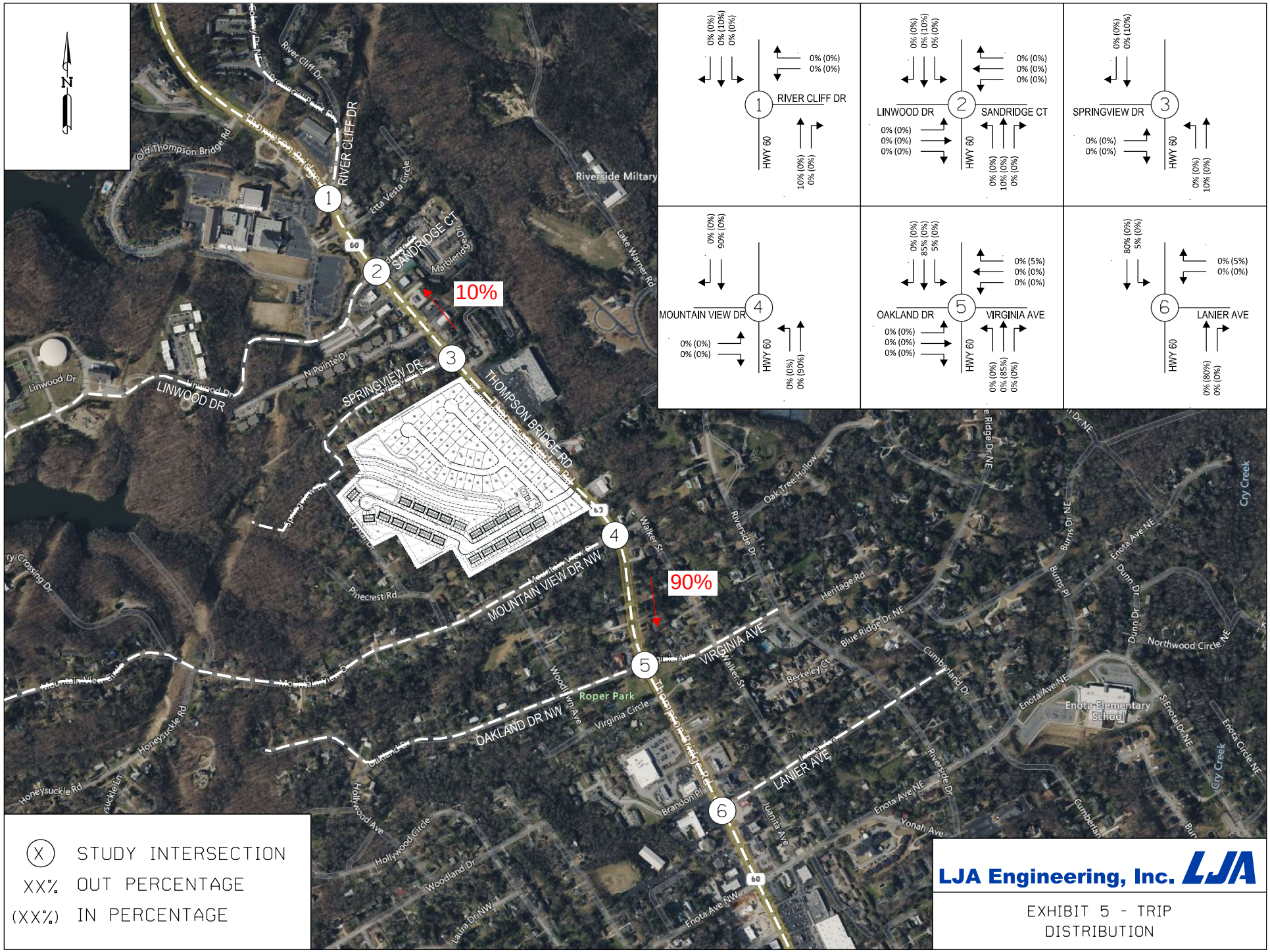

X STUDY INTERSECTION

XX% OUT PERCENTAGE

(XX%) IN PERCENTAGE

LJA Engineering, Inc. LJA

EXHIBIT 5 - TRIP DISTRIBUTION

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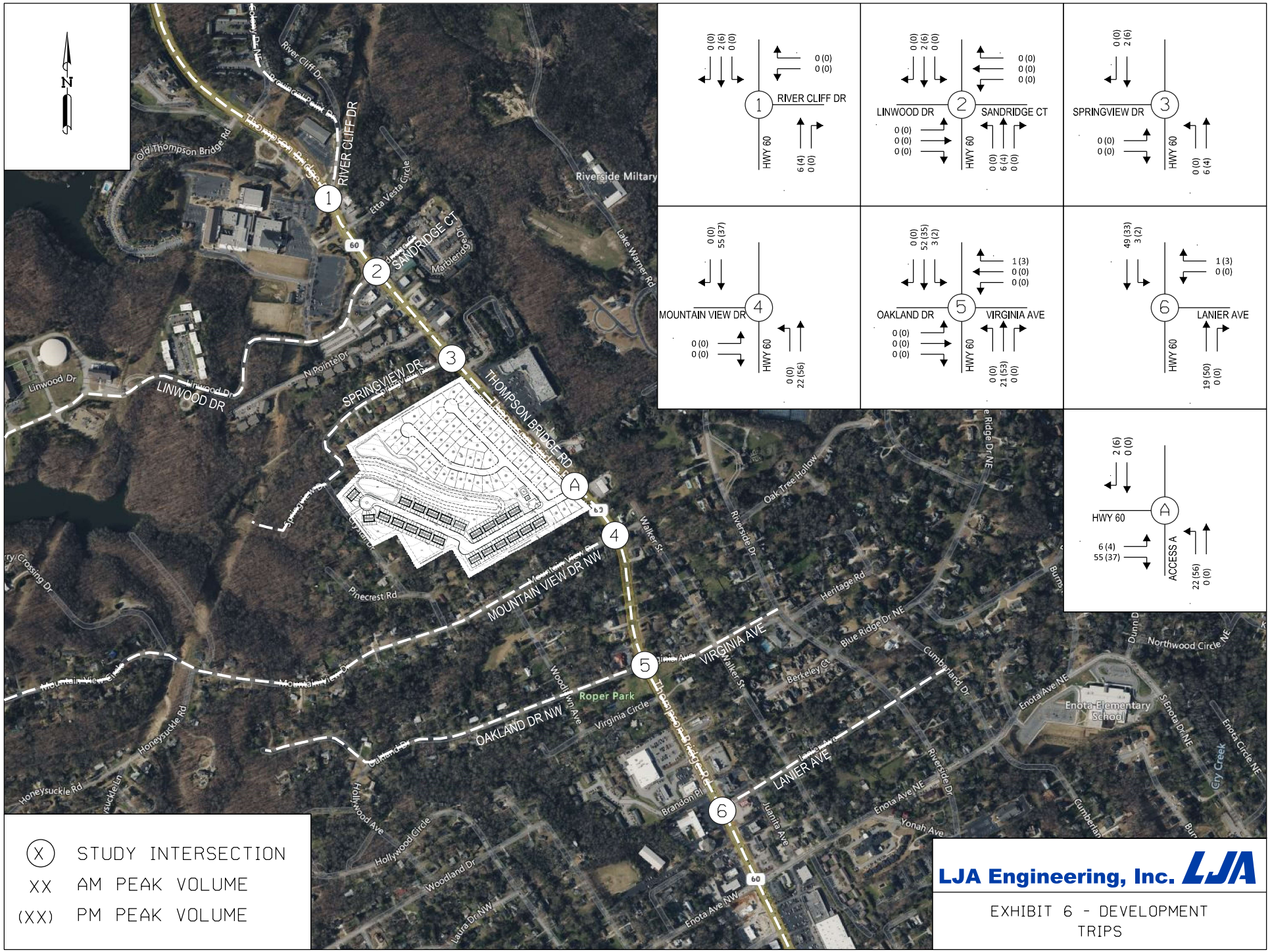

X STUDY INTERSECTION

XX AM PEAK VOLUME

(XX) PM PEAK VOLUME

LJA Engineering, Inc.

EXHIBIT 6 - DEVELOPMENT TRIPS

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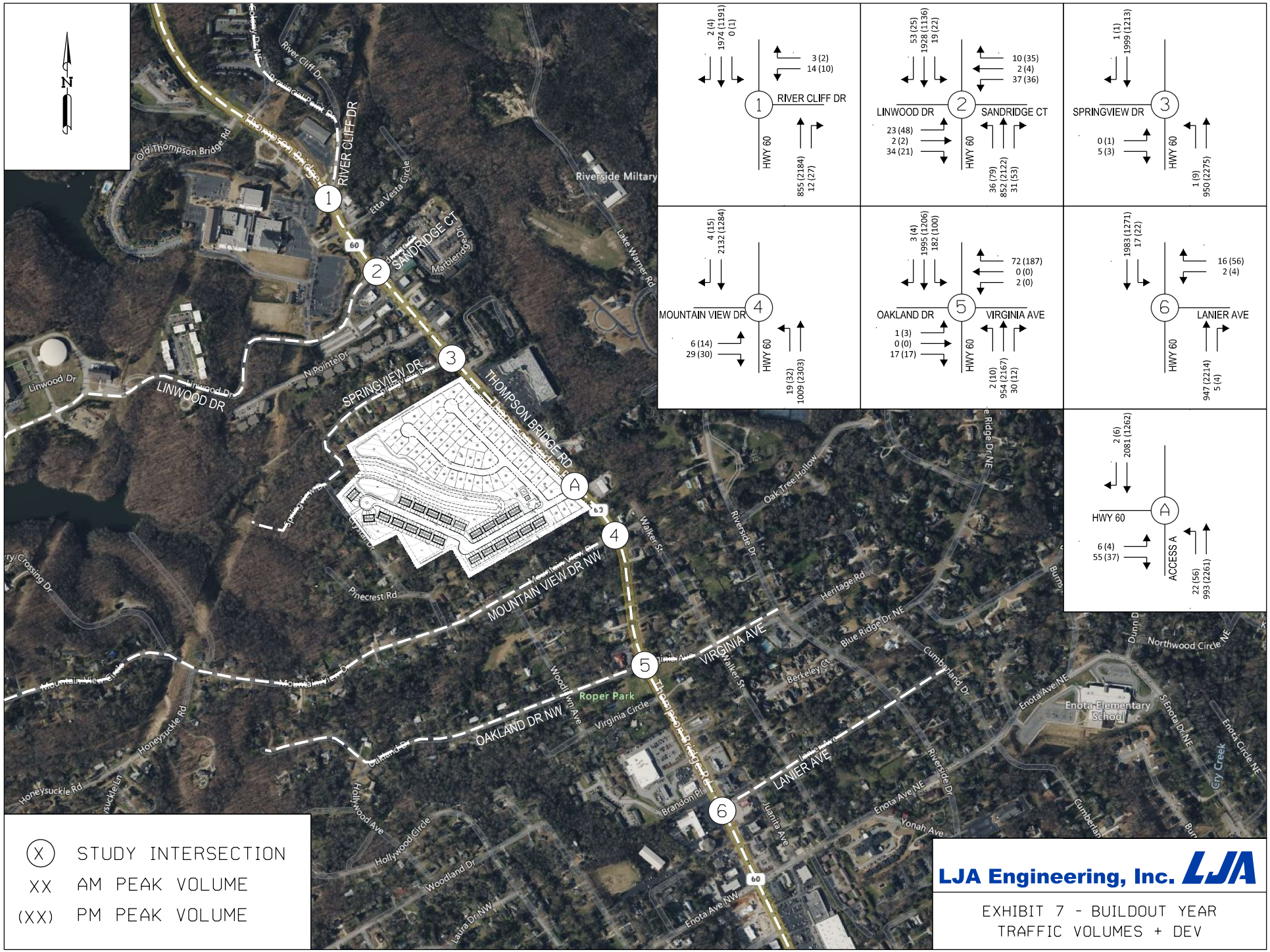

X STUDY INTERSECTION

XX AM PEAK VOLUME

(XX) PM PEAK VOLUME

LJA Engineering, Inc.

EXHIBIT 7 - BUILDOUT YEAR
TRAFFIC VOLUMES + DEV

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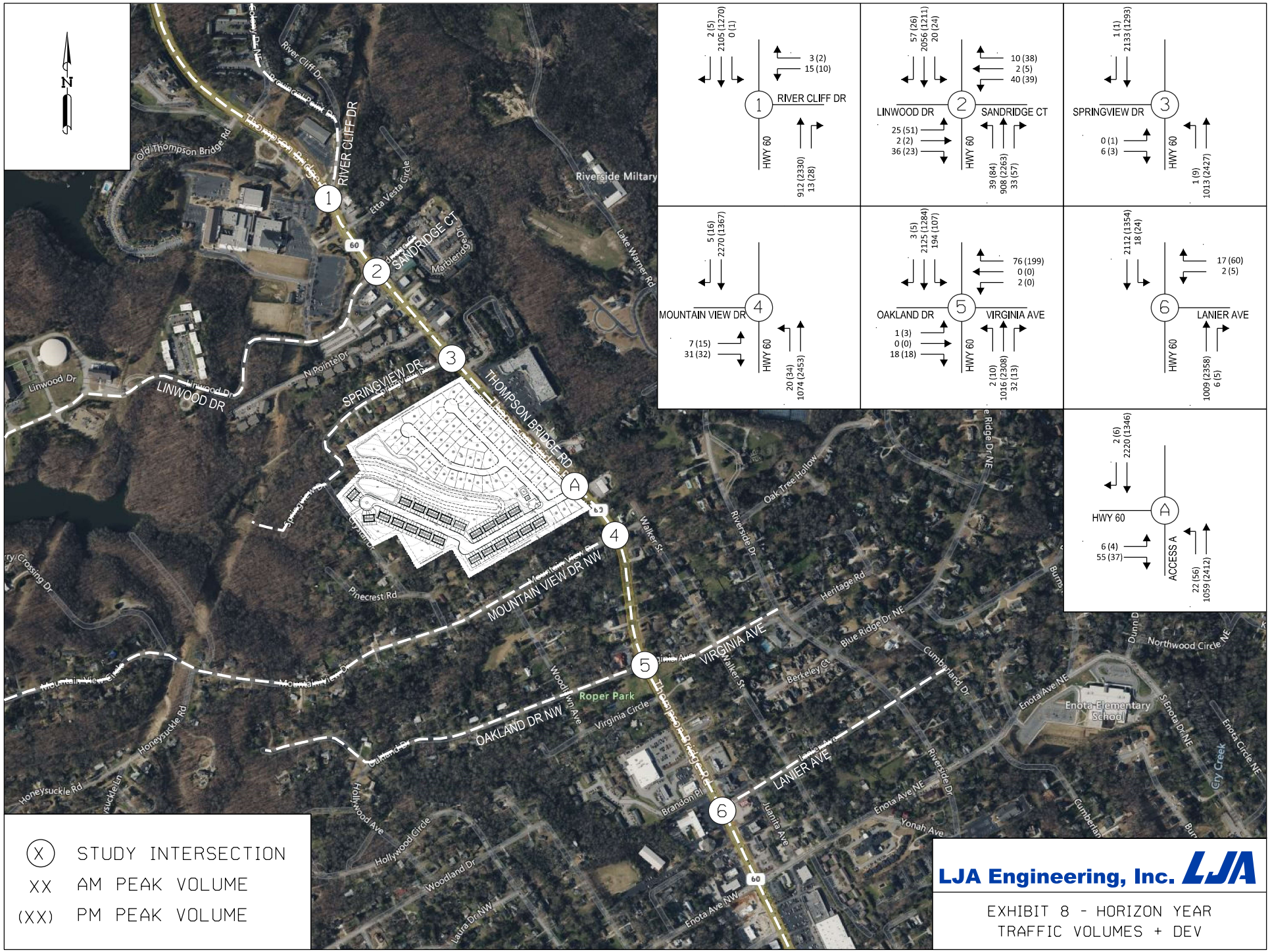

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Appendix D – Synchro Reports

AM and PM Peak Hour

Existing Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Future Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.976			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	3	0	865	12	0	2009	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	17	0	0	877	0	0	2011	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Future Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	0	3	0	865	12	0	2009	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1876	2882	439	-	0	0	877	0	0
Stage 1	871	871	-	-	-	-	-	-	-
Stage 2	1004	2011	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	63	16	566	0	-	-	766	-	-
Stage 1	370	367	-	0	-	-	-	-	-
Stage 2	315	102	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	63	0	566	-	-	-	766	-	-
Mov Cap-2 Maneuver	184	0	-	-	-	-	-	-	-
Stage 1	370	0	-	-	-	-	-	-	-
Stage 2	315	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	23.64	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	211	766	-	-
HCM Lane V/C Ratio	-	-	0.083	-	-	-
HCM Control Delay (s/veh)	-	-	23.6	0	-	-
HCM Lane LOS	-	-	C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	885	1872	1
Future Volume (vph)	0	5	1	885	1872	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	962	2035	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	962	2036	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	885	1872	1
Future Vol, veh/h	0	5	1	885	1872	1
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	-	250	-	-	-
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	0	5	1	962	2035	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2518	1018	2036	0	-	0
Stage 1	2035	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	23	235	274	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	235	274	-	-	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.69	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	274	-	235	-	-
HCM Lane V/C Ratio	0.004	-	0.023	-	-
HCM Control Delay (s/veh)	18.2	-	20.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	27	18	925	1947	4
Future Volume (vph)	6	27	18	925	1947	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.891					
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1643	0	1888	3539	3539	0
Flt Permitted	0.990		0.950			
Satd. Flow (perm)	1643	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	29	20	1005	2116	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	20	1005	2120	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	27	18	925	1947	4
Future Vol, veh/h	6	27	18	925	1947	4
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	-	250	-	-	-
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	7	29	20	1005	2116	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2660	1060	2121	0	-	0
Stage 1	2118	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	220	254	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	220	254	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	72	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	36.59	0.39	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	254	-	149	-	-
HCM Lane V/C Ratio	0.077	-	0.24	-	-
HCM Control Delay (s/veh)	20.4	-	36.6	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Future Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.869			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	17	2	0	72	2	951	30	183	1980	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	74	0	2	981	0	183	1983	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Future Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	17	2	0	72	2	951	30	183	1980	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2827	3333	992	2326	3320	491	1984	0	0	982	0	0
Stage 1	2347	2347	-	971	971	-	-	-	-	-	-	-
Stage 2	480	986	-	1355	2349	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	8	245	20	8	523	287	-	-	699	-	-
Stage 1	37	68	-	272	329	-	-	-	-	-	-	-
Stage 2	536	324	-	157	68	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	6	245	14	6	523	287	-	-	699	-	-
Mov Cap-2 Maneuver	5	6	-	14	6	-	-	-	-	-	-	-
Stage 1	27	50	-	269	327	-	-	-	-	-	-	-
Stage 2	459	322	-	108	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	80.75	25.54	0.04	1.01
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	287	-	-	65	248	699	-	-
HCM Lane V/C Ratio	0.008	-	-	0.283	0.298	0.261	-	-
HCM Control Delay (s/veh)	17.6	-	-	80.8	25.5	12	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1	1.2	1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	14	870	5	13	1813
Future Volume (vph)	2	14	870	5	13	1813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.881		0.999			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1631	0	3536	0	1888	3539
Flt Permitted	0.994				0.950	
Satd. Flow (perm)	1631	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	15	946	5	14	1971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	951	0	14	1971
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	14	870	5	13	1813
Future Vol, veh/h	2	14	870	5	13	1813
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	-	-	-	250	-
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	2	15	946	5	14	1971

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1962	476	0	0	951	0
Stage 1	948	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	55	536	-	-	718	-
Stage 1	337	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	54	536	-	-	718	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	305	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.88	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	718	-
HCM Lane V/C Ratio	-	-	0.041	0.02	-
HCM Control Delay (s/veh)	-	-	13.9	10.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	9	0	2	0	2044	25	1	1111	4
Future Volume (vph)	0	0	0	9	0	2	0	2044	25	1	1111	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.977			0.998				
Flt Protected					0.960					0.950		
Satd. Flow (prot)	0	0	0	0	1747	0	0	3532	0	1888	3539	0
Flt Permitted					0.960					0.950		
Satd. Flow (perm)	0	0	0	0	1747	0	0	3532	0	1888	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	10	0	2	0	2222	27	1	1208	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	12	0	0	2249	0	1	1212	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	9	0	2	0	2044	25	1	1111	4
Future Vol, veh/h	0	0	0	9	0	2	0	2044	25	1	1111	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	0	2	0	2222	27	1	1208	4

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2841	3449	1124	-	0	0	2249	0	0
Stage 1	2235	2235	-	-	-	-	-	-	-
Stage 2	606	1214	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	14	7	199	0	-	-	226	-	-
Stage 1	67	78	-	0	-	-	-	-	-
Stage 2	507	253	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	14	0	199	-	-	-	226	-	-
Mov Cap-2 Maneuver	56	0	-	-	-	-	-	-	-
Stage 1	67	0	-	-	-	-	-	-	-
Stage 2	505	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	72.64	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	65	226	-	-
HCM Lane V/C Ratio	-	-	0.184	0.005	-	-
HCM Control Delay (s/veh)	-	-	72.6	21	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	0.6	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Future Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.865				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1611	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1611	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			36				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2	22	37	4	36	80	2158	54	23	1151	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	24	0	37	40	0	80	2158	54	23	1151	25
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.6	22.5		10.1	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.14	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.08	0.05		0.15	0.22		0.29	1.42	0.07	0.09	0.90	0.04
Control Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.3			203.7			34.1	
Approach LOS		B			B			F			C	
Queue Length 50th (ft)	14	1		10	2		19	~683	0	5	279	0
Queue Length 95th (ft)	33	18		27	30		44	#998	0	18	#442	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	593	788		271	498		292	1517	782	294	1278	688
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03		0.14	0.08		0.27	1.42	0.07	0.08	0.90	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90
Actuated Cycle Length: 69.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.42
Intersection Signal Delay (s/veh): 140.1 Intersection LOS: F
Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Future Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.865				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1611	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1611	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			36				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2	22	37	4	36	80	2158	54	23	1151	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	24	0	37	40	0	80	2158	54	23	1151	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.6	22.5		10.1	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.14	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.08	0.05		0.15	0.22		0.29	1.42	0.07	0.09	0.90	0.04
Control Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.3			203.7			34.1	
Approach LOS		B			B			F			C	
Queue Length 50th (ft)	14	1		10	2		19	~683	0	5	279	0
Queue Length 95th (ft)	33	18		27	30		44	#998	0	18	#442	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	593	788		271	498		292	1517	782	294	1278	688
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03		0.14	0.08		0.27	1.42	0.07	0.08	0.90	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 140.1	Intersection LOS: F
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	8	2129	1131	1
Future Volume (vph)	1	3	8	2129	1131	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	9	2314	1229	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	9	2314	1230	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.9%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	8	2129	1131	1
Future Vol, veh/h	1	3	8	2129	1131	1
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	-	250	-	-	-
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	1	3	9	2314	1229	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2404	615	1230	0	-	0
Stage 1	1230	-	-	-	-	-
Stage 2	1174	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	28	434	562	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	27	434	562	-	-	-
Mov Cap-2 Maneuver	124	-	-	-	-	-
Stage 1	235	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	18.69	0.04	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	562	-	267	-	-
HCM Lane V/C Ratio	0.015	-	0.016	-	-
HCM Control Delay (s/veh)	11.5	-	18.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	28	30	2107	1169	14
Future Volume (vph)	13	28	30	2107	1169	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.908				0.998	
Flt Protected	0.984		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.984		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	30	33	2290	1271	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	33	2290	1286	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	28	30	2107	1169	14
Future Vol, veh/h	13	28	30	2107	1169	14
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	-	250	-	-	-
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	14	30	33	2290	1271	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2489	643	1286	0	-	0
Stage 1	1278	-	-	-	-	-
Stage 2	1210	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	24	416	535	-	-	-
Stage 1	225	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	416	535	-	-	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	212	-	-	-	-	-
Stage 2	245	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	24.8	0.17	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	535	-	226	-	-
HCM Lane V/C Ratio	0.061	-	0.197	-	-
HCM Control Delay (s/veh)	12.2	-	24.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	16	0	0	172	9	1982	11	92	1098	4
Future Volume (vph)	3	0	16	0	0	172	9	1982	11	92	1098	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.885			0.865			0.999			0.999	
Flt Protected		0.993					0.950			0.950		
Satd. Flow (prot)	0	1637	0	0	1611	0	1888	3536	0	1888	3536	0
Flt Permitted		0.993					0.950			0.950		
Satd. Flow (perm)	0	1637	0	0	1611	0	1888	3536	0	1888	3536	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	17	0	0	187	10	2154	12	100	1193	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	187	0	10	2166	0	100	1197	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 80.9%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	16.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	16	0	0	172	9	1982	11	92	1098	4
Future Vol, veh/h	3	0	16	0	0	172	9	1982	11	92	1098	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	17	0	0	187	10	2154	12	100	1193	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2492	3582	599	2977	3578	1083	1198	0	0	2166	0	0
Stage 1	1396	1396	-	2180	2180	-	-	-	-	-	-	-
Stage 2	1097	2186	-	797	1398	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	15	5	445	6	5	212	578	-	-	243	-	-
Stage 1	149	206	-	47	83	-	-	-	-	-	-	-
Stage 2	227	83	-	346	206	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 1	3	445	3	3	212	578	-	-	243	-	-
Mov Cap-2 Maneuver	~ 1	3	-	3	3	-	-	-	-	-	-	-
Stage 1	87	122	-	46	82	-	-	-	-	-	-	-
Stage 2	27	81	-	196	121	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	$ 2091.57	81.16	0.05	2.29
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	578	-	-	6	212	243	-	-
HCM Lane V/C Ratio	0.017	-	-	3.213	0.88	0.411	-	-
HCM Control Delay (s/veh)	11.3	-	-	$ 2091.6	81.2	29.7	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.8	6.9	1.9	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	50	2029	4	19	1161
Future Volume (vph)	4	50	2029	4	19	1161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.874					
Flt Protected	0.997				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.997				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	54	2205	4	21	1262
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	2209	0	21	1262
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	50	2029	4	19	1161
Future Vol, veh/h	4	50	2029	4	19	1161
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	-	-	-	250	-
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	4	54	2205	4	21	1262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2880	1105	0	0	2210	0
Stage 1	2208	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	13	205	-	-	234	-
Stage 1	69	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	12	205	-	-	234	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	69	-	-	-	-	-
Stage 2	427	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	36.34	0	0.35
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	172	234	-
HCM Lane V/C Ratio	-	-	0.341	0.088	-
HCM Control Delay (s/veh)	-	-	36.3	21.9	-
HCM Lane LOS	-	-	E	C	-
HCM 95th %tile Q(veh)	-	-	1.4	0.3	-

AM and PM Peak Hour

Year 2029 Background Volumes Only

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	3	0	849	12	0	1971	2
Future Volume (vph)	0	0	0	14	0	3	0	849	12	0	1971	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.977			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	0	3	0	923	13	0	2142	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	18	0	0	936	0	0	2144	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	14	0	3	0	849	12	0	1971	2
Future Vol, veh/h	0	0	0	14	0	3	0	849	12	0	1971	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	15	0	3	0	923	13	0	2142	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	2001	3074	468	-	0	0	936	0	0
Stage 1	929	929	-	-	-	-	-	-	-
Stage 2	1071	2145	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	52	12	542	0	-	-	728	-	-
Stage 1	345	344	-	0	-	-	-	-	-
Stage 2	290	87	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	52	0	542	-	-	-	728	-	-
Mov Cap-2 Maneuver	167	0	-	-	-	-	-	-	-
Stage 1	345	0	-	-	-	-	-	-	-
Stage 2	290	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	25.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	191	728	-	-
HCM Lane V/C Ratio	-	-	0.097	-	-	-
HCM Control Delay (s/veh)	-	-	25.9	0	-	-
HCM Lane LOS	-	-	D	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Future Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.201		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	399	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	920	34	21	2092	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	920	34	21	2092	58
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.42	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.0			207.5	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	105	0	3	~466	0
Queue Length 95th (ft)	21	22		29	17		25	279	0	16	#946	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	906		245	557		327	1597	814	359	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.42	0.08

Intersection Summary	
Area Type:	Other

2: Highway 60 & Linwood Dr/Sandridge Ct

Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 142.4	Intersection LOS: F
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Future Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.201		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	399	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	920	34	21	2092	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	920	34	21	2092	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.42	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.0			207.5	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	105	0	3	~466	0
Queue Length 95th (ft)	21	22		29	17		25	279	0	16	#946	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	906		245	557		327	1597	814	359	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.42	0.08

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 142.4	Intersection LOS: F
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	944	1997	1
Future Volume (vph)	0	5	1	944	1997	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	1026	2171	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	1026	2172	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	944	1997	1
Future Vol, veh/h	0	5	1	944	1997	1
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	-	250	-	-	-
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	0	5	1	1026	2171	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2686	1086	2172	0	-	0
Stage 1	2171	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	212	242	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	18	212	242	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	22.46	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	242	-	212	-	-
HCM Lane V/C Ratio	0.004	-	0.026	-	-
HCM Control Delay (s/veh)	19.9	-	22.5	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	29	19	987	2077	4
Future Volume (vph)	6	29	19	987	2077	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.889					
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1641	0	1888	3539	3539	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1641	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	32	21	1073	2258	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	21	1073	2262	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	29	19	987	2077	4
Future Vol, veh/h	6	29	19	987	2077	4
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	-	250	-	-	-
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	7	32	21	1073	2258	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2838	1131	2262	0	-	0
Stage 1	2260	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	14	197	223	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	13	197	223	-	-	-
Mov Cap-2 Maneuver	50	-	-	-	-	-
Stage 1	59	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	43.19	0.43	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	223	-	131	-	-
HCM Lane V/C Ratio	0.093	-	0.289	-	-
HCM Control Delay (s/veh)	22.8	-	43.2	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	1.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	17	2	0	70	2	933	30	179	1944	3
Future Volume (vph)	1	0	17	2	0	70	2	933	30	179	1944	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.868			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	18	2	0	76	2	1014	33	195	2113	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	78	0	2	1047	0	195	2116	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	17	2	0	70	2	933	30	179	1944	3
Future Vol, veh/h	1	0	17	2	0	70	2	933	30	179	1944	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	18	2	0	76	2	1014	33	195	2113	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3015	3555	1058	2480	3540	523	2116	0	0	1047	0	0
Stage 1	2504	2504	-	1035	1035	-	-	-	-	-	-	-
Stage 2	511	1051	-	1446	2505	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	6	6	221	15	6	498	255	-	-	660	-	-
Stage 1	29	57	-	248	307	-	-	-	-	-	-	-
Stage 2	513	302	-	138	56	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	4	221	10	4	498	255	-	-	660	-	-
Mov Cap-2 Maneuver	3	4	-	10	4	-	-	-	-	-	-	-
Stage 1	20	40	-	246	305	-	-	-	-	-	-	-
Stage 2	431	299	-	89	40	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	22.02	32.53	0.04	1.07
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	255	-	-	49	207	660	-	-
HCM Lane V/C Ratio	0.009	-	-	0.402	0.378	0.295	-	-
HCM Control Delay (s/veh)	19.3	-	-	122	32.5	12.7	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	1.7	1.2	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	15	928	5	14	1934
Future Volume (vph)	2	15	928	5	14	1934
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.880		0.999			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1629	0	3536	0	1888	3539
Flt Permitted	0.994				0.950	
Satd. Flow (perm)	1629	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	16	1009	5	15	2102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	1014	0	15	2102
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.5%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	15	928	5	14	1934
Future Vol, veh/h	2	15	928	5	14	1934
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	-	-	-	250	-
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	2	16	1009	5	15	2102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2093	507	0	0	1014	0
Stage 1	1011	-	-	-	-	-
Stage 2	1082	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	45	511	-	-	680	-
Stage 1	312	-	-	-	-	-
Stage 2	287	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	44	511	-	-	680	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	312	-	-	-	-	-
Stage 2	280	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.39	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	402	680	-
HCM Lane V/C Ratio	-	-	0.046	0.022	-
HCM Control Delay (s/veh)	-	-	14.4	10.4	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2180	27	1	1185	4
Future Volume (vph)	0	0	0	10	0	2	0	2180	27	1	1185	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998				
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2370	29	1	1288	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2399	0	1	1292	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2180	27	1	1185	4
Future Vol, veh/h	0	0	0	10	0	2	0	2180	27	1	1185	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2370	29	1	1288	4

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3030	3679	1199	-	0	0	2399	0	0
Stage 1	2384	2384	-	-	-	-	-	-	-
Stage 2	646	1295	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	5	178	0	-	-	197	-	-
Stage 1	55	65	-	0	-	-	-	-	-
Stage 2	484	231	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 10	0	178	-	-	-	197	-	-
Mov Cap-2 Maneuver	47	0	-	-	-	-	-	-	-
Stage 1	55	0	-	-	-	-	-	-	-
Stage 2	481	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	93.11	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	53	197	-	-
HCM Lane V/C Ratio	-	-	0.245	0.006	-	-
HCM Control Delay (s/veh)	-	-	93.1	23.4	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Future Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2301	58	24	1228	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2301	58	24	1228	27
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.96	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			243.0			42.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~758	0	6	~339	0
Queue Length 95th (ft)	35	18		28	30		47	#1077	0	18	#486	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.96	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 167.6	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Future Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2301	58	24	1228	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2301	58	24	1228	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.96	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			243.0			42.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~758	0	6	~339	0
Queue Length 95th (ft)	35	18		28	30		47	#1077	0	18	#486	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.96	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 167.6	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2271	1206	1
Future Volume (vph)	1	3	9	2271	1206	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2468	1311	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2468	1312	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2271	1206	1
Future Vol, veh/h	1	3	9	2271	1206	1
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	-	250	-	-	-
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	1	3	10	2468	1311	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2565	656	1312	0	-	0
Stage 1	1311	-	-	-	-	-
Stage 2	1254	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	21	408	523	-	-	-
Stage 1	216	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	408	523	-	-	-
Mov Cap-2 Maneuver	111	-	-	-	-	-
Stage 1	212	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.01	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	523	-	244	-	-
HCM Lane V/C Ratio	0.019	-	0.018	-	-
HCM Control Delay (s/veh)	12	-	20	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	30	32	2248	1247	15
Future Volume (vph)	14	30	32	2248	1247	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	33	35	2443	1355	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	35	2443	1371	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	30	32	2248	1247	15
Future Vol, veh/h	14	30	32	2248	1247	15
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	-	250	-	-	-
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	15	33	35	2443	1355	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2655	686	1372	0	-	0
Stage 1	1364	-	-	-	-	-
Stage 2	1291	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	390	496	-	-	-
Stage 1	203	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	390	496	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	189	-	-	-	-	-
Stage 2	222	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	27.99	0.18	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	496	-	204	-	-
HCM Lane V/C Ratio	0.07	-	0.235	-	-
HCM Control Delay (s/veh)	12.8	-	28	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	17	0	0	183	10	2114	12	98	1171	4
Future Volume (vph)	3	0	17	0	0	183	10	2114	12	98	1171	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.884			0.865			0.999				
Flt Protected		0.993					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Flt Permitted		0.993					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	18	0	0	199	11	2298	13	107	1273	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	199	0	11	2311	0	107	1277	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	17	0	0	183	10	2114	12	98	1171	4
Future Vol, veh/h	3	0	17	0	0	183	10	2114	12	98	1171	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	18	0	0	199	11	2298	13	107	1273	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2659	3821	639	3176	3816	1155	1277	0	0	2311	0	0
Stage 1	1488	1488	-	2326	2326	-	-	-	-	-	-	-
Stage 2	1171	2333	-	849	1490	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	11	4	419	4	4	~ 190	539	-	-	213	-	-
Stage 1	130	186	-	38	70	-	-	-	-	-	-	-
Stage 2	205	70	-	322	186	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	2	419	2	2	~ 190	539	-	-	213	-	-
Mov Cap-2 Maneuver	5	2	-	2	2	-	-	-	-	-	-	-
Stage 1	65	93	-	37	69	-	-	-	-	-	-	-
Stage 2	-	68	-	154	93	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	$228.27	129.5	0.06	2.89
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	539	-	-	33	190	213	-	-
HCM Lane V/C Ratio	0.02	-	-	0.65	1.047	0.499	-	-
HCM Control Delay (s/veh)	11.8	-	-	228.3	129.5	37.6	-	-
HCM Lane LOS	B	-	-	F	F	E	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.2	9.2	2.5	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	53	2164	4	20	1238
Future Volume (vph)	4	53	2164	4	20	1238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.874					
Flt Protected	0.997				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.997				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	58	2352	4	22	1346
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	2356	0	22	1346
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 70.1%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	53	2164	4	20	1238
Future Vol, veh/h	4	53	2164	4	20	1238
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	-	-	-	250	-
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	4	58	2352	4	22	1346

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3071	1178	0	0	2357	0
Stage 1	2354	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	9	183	-	-	205	-
Stage 1	57	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	8	183	-	-	205	-
Mov Cap-2 Maneuver	47	-	-	-	-	-
Stage 1	57	-	-	-	-	-
Stage 2	398	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	43.81	0	0.39
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	153	205	-
HCM Lane V/C Ratio	-	-	0.406	0.106	-
HCM Control Delay (s/veh)	-	-	43.8	24.7	-
HCM Lane LOS	-	-	E	C	-
HCM 95th %tile Q(veh)	-	-	1.8	0.4	-

AM and PM Peak Hour

Year 2029 Background plus Development Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	3	0	855	12	0	1974	2
Future Volume (vph)	0	0	0	14	0	3	0	855	12	0	1974	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.977			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	0	3	0	929	13	0	2146	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	18	0	0	942	0	0	2148	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	14	0	3	0	855	12	0	1974	2
Future Vol, veh/h	0	0	0	14	0	3	0	855	12	0	1974	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	15	0	3	0	929	13	0	2146	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	2009	3084	471	-	0	0	942	0	0
Stage 1	936	936	-	-	-	-	-	-	-
Stage 2	1073	2148	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	51	12	539	0	-	-	723	-	-
Stage 1	342	342	-	0	-	-	-	-	-
Stage 2	290	87	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	51	0	539	-	-	-	723	-	-
Mov Cap-2 Maneuver	166	0	-	-	-	-	-	-	-
Stage 1	342	0	-	-	-	-	-	-	-
Stage 2	290	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	26.03	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	190	723	-	-
HCM Lane V/C Ratio	-	-	0.097	-	-	-
HCM Control Delay (s/veh)	-	-	26	0	-	-
HCM Lane LOS	-	-	D	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Future Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.198		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	393	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	926	34	21	2096	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	926	34	21	2096	58
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.43	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.1			208.6	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	106	0	3	~467	0
Queue Length 95th (ft)	21	22		29	17		25	282	0	16	#948	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	906		245	557		327	1597	814	357	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.43	0.08

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay (s/veh): 143.0	Intersection LOS: F
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Future Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.198		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	393	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	926	34	21	2096	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	926	34	21	2096	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.43	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.1			208.6	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	106	0	3	~467	0
Queue Length 95th (ft)	21	22		29	17		25	282	0	16	#948	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	906		245	557		327	1597	814	357	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.43	0.08

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay (s/veh): 143.0	Intersection LOS: F
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	950	1999	1
Future Volume (vph)	0	5	1	950	1999	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	1033	2173	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	1033	2174	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	950	1999	1
Future Vol, veh/h	0	5	1	950	1999	1
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	-	250	-	-	-
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	0	5	1	1033	2173	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2692	1087	2174	0	-	0
Stage 1	2173	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	17	211	242	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	211	242	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	72	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	22.49	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	242	-	211	-	-
HCM Lane V/C Ratio	0.004	-	0.026	-	-
HCM Control Delay (s/veh)	20	-	22.5	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	29	19	1009	2132	4
Future Volume (vph)	6	29	19	1009	2132	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.889					
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1641	0	1888	3539	3539	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1641	0	1888	3539	3539	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	32	21	1097	2317	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	21	1097	2321	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	29	19	1009	2132	4
Future Vol, veh/h	6	29	19	1009	2132	4
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	-	250	-	-	-
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	7	32	21	1097	2317	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2909	1161	2322	0	-	0
Stage 1	2320	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	12	188	211	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	11	188	211	-	-	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	54	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	46.6	0.44	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	211	-	124	-	-
HCM Lane V/C Ratio	0.098	-	0.308	-	-
HCM Control Delay (s/veh)	23.9	-	46.6	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	1.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	17	2	0	72	2	954	30	182	1995	3
Future Volume (vph)	1	0	17	2	0	72	2	954	30	182	1995	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.868			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	18	2	0	78	2	1037	33	198	2168	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	80	0	2	1070	0	198	2171	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	17	2	0	72	2	954	30	182	1995	3
Future Vol, veh/h	1	0	17	2	0	72	2	954	30	182	1995	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	18	2	0	78	2	1037	33	198	2168	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3089	3640	1086	2538	3625	535	2172	0	0	1070	0	0
Stage 1	2566	2566	-	1058	1058	-	-	-	-	-	-	-
Stage 2	523	1074	-	1480	2567	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	5	5	212	14	5	490	242	-	-	647	-	-
Stage 1	26	52	-	240	300	-	-	-	-	-	-	-
Stage 2	505	294	-	132	52	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	3	212	9	4	490	242	-	-	647	-	-
Mov Cap-2 Maneuver	3	3	-	9	4	-	-	-	-	-	-	-
Stage 1	18	36	-	238	297	-	-	-	-	-	-	-
Stage 2	421	292	-	83	36	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	48.09	36.01	0.04	1.08
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	242	-	-	42	194	647	-	-
HCM Lane V/C Ratio	0.009	-	-	0.461	0.414	0.306	-	-
HCM Control Delay (s/veh)	20	-	-	148.1	36	13	-	-
HCM Lane LOS	C	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	1.9	1.3	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	16	947	5	17	1983
Future Volume (vph)	2	16	947	5	17	1983
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.879		0.999			
Flt Protected	0.995				0.950	
Satd. Flow (prot)	1629	0	3536	0	1888	3539
Flt Permitted	0.995				0.950	
Satd. Flow (perm)	1629	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	17	1029	5	18	2155
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	1034	0	18	2155
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	16	947	5	17	1983
Future Vol, veh/h	2	16	947	5	17	1983
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	-	-	-	250	-
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	2	17	1029	5	18	2155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2147	517	0	0	1035	0
Stage 1	1032	-	-	-	-	-
Stage 2	1115	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	41	503	-	-	667	-
Stage 1	304	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	40	503	-	-	667	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	268	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.53	0	0.09
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	667	-
HCM Lane V/C Ratio	-	-	0.049	0.028	-
HCM Control Delay (s/veh)	-	-	14.5	10.5	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	55	22	993	2081	2
Future Volume (vph)	6	55	22	993	2081	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.879					0.850
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1629	0	1888	3539	3539	1583
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1629	0	1888	3539	3539	1583
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	60	24	1079	2262	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	24	1079	2262	2
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	55	22	993	2081	2
Future Vol, veh/h	6	55	22	993	2081	2
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	-	250	-	-	250
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	7	60	24	1079	2262	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2849	1131	2264	0	-	0
Stage 1	2262	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	14	197	223	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	12	197	223	-	-	-
Mov Cap-2 Maneuver	49	-	-	-	-	-
Stage 1	58	-	-	-	-	-
Stage 2	518	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	45.69	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	223	-	152	-	-
HCM Lane V/C Ratio	0.107	-	0.435	-	-
HCM Control Delay (s/veh)	23.1	-	45.7	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.4	-	2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2184	27	1	1191	4
Future Volume (vph)	0	0	0	10	0	2	0	2184	27	1	1191	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998				
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2374	29	1	1295	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2403	0	1	1299	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2184	27	1	1191	4
Future Vol, veh/h	0	0	0	10	0	2	0	2184	27	1	1191	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2374	29	1	1295	4

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3038	3690	1202	-	0	0	2403	0	0
Stage 1	2389	2389	-	-	-	-	-	-	-
Stage 2	649	1301	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	5	177	0	-	-	196	-	-
Stage 1	55	65	-	0	-	-	-	-	-
Stage 2	482	229	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 10	0	177	-	-	-	196	-	-
Mov Cap-2 Maneuver	47	0	-	-	-	-	-	-	-
Stage 1	55	0	-	-	-	-	-	-	-
Stage 2	479	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	93.75	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	53	196	-	-
HCM Lane V/C Ratio	-	-	0.246	0.006	-	-
HCM Control Delay (s/veh)	-	-	93.7	23.5	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Future Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2307	58	24	1235	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2307	58	24	1235	27
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.97	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			244.7			43.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~761	0	6	~343	0
Queue Length 95th (ft)	35	18		28	30		47	#1081	0	18	#490	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.97	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 168.9	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Future Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2307	58	24	1235	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2307	58	24	1235	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.97	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			244.7			43.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~761	0	6	~343	0
Queue Length 95th (ft)	35	18		28	30		47	#1081	0	18	#490	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.97	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 168.9	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2275	1213	1
Future Volume (vph)	1	3	9	2275	1213	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2473	1318	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2473	1319	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2275	1213	1
Future Vol, veh/h	1	3	9	2275	1213	1
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	-	250	-	-	-
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	1	3	10	2473	1318	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2575	660	1320	0	-	0
Stage 1	1319	-	-	-	-	-
Stage 2	1256	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	21	406	520	-	-	-
Stage 1	214	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	406	520	-	-	-
Mov Cap-2 Maneuver	110	-	-	-	-	-
Stage 1	210	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.11	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	520	-	243	-	-
HCM Lane V/C Ratio	0.019	-	0.018	-	-
HCM Control Delay (s/veh)	12.1	-	20.1	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	30	32	2303	1284	15
Future Volume (vph)	14	30	32	2303	1284	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	33	35	2503	1396	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	35	2503	1412	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	30	32	2303	1284	15
Future Vol, veh/h	14	30	32	2303	1284	15
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	-	250	-	-	-
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	15	33	35	2503	1396	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2725	706	1412	0	-	0
Stage 1	1404	-	-	-	-	-
Stage 2	1321	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	17	378	479	-	-	-
Stage 1	193	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	378	479	-	-	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	179	-	-	-	-	-
Stage 2	214	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	29.33	0.18	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	479	-	195	-	-
HCM Lane V/C Ratio	0.073	-	0.245	-	-
HCM Control Delay (s/veh)	13.1	-	29.3	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	17	0	0	187	10	2167	12	100	1206	4
Future Volume (vph)	3	0	17	0	0	187	10	2167	12	100	1206	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.884			0.865			0.999				
Flt Protected		0.993					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Flt Permitted		0.993					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	18	0	0	203	11	2355	13	109	1311	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	203	0	11	2368	0	109	1315	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	17	0	0	187	10	2167	12	100	1206	4
Future Vol, veh/h	3	0	17	0	0	187	10	2167	12	100	1206	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	18	0	0	203	11	2355	13	109	1311	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2730	3921	658	3257	3916	1184	1315	0	0	2368	0	0
Stage 1	1530	1530	-	2384	2384	-	-	-	-	-	-	-
Stage 2	1199	2390	-	873	1533	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	3	407	4	3	~ 182	522	-	-	202	-	-
Stage 1	122	177	-	35	65	-	-	-	-	-	-	-
Stage 2	197	65	-	311	177	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	1	407	2	1	~ 182	522	-	-	202	-	-
Mov Cap-2 Maneuver	4	1	-	2	1	-	-	-	-	-	-	-
Stage 1	57	82	-	34	64	-	-	-	-	-	-	-
Stage 2	-	64	-	138	82	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/s	$ 310.11	154.77	0.06	3.18
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	522	-	-	27	182	202	-	-
HCM Lane V/C Ratio	0.021	-	-	0.791	1.118	0.537	-	-
HCM Control Delay (s/veh)	12	-	-	$ 310.1	154.8	41.7	-	-
HCM Lane LOS	B	-	-	F	F	E	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	10.2	2.8	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	56	2214	4	22	1271
Future Volume (vph)	4	56	2214	4	22	1271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.873					
Flt Protected	0.997				0.950	
Satd. Flow (prot)	1621	0	3539	0	1888	3539
Flt Permitted	0.997				0.950	
Satd. Flow (perm)	1621	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	61	2407	4	24	1382
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	2411	0	24	1382
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	56	2214	4	22	1271
Future Vol, veh/h	4	56	2214	4	22	1271
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	-	-	-	250	-
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	4	61	2407	4	24	1382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3147	1205	0	0	2411	0
Stage 1	2409	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	8	176	-	-	195	-
Stage 1	53	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	7	176	-	-	195	-
Mov Cap-2 Maneuver	44	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	380	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	47.84	0	0.44
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	147	195	-
HCM Lane V/C Ratio	-	-	0.445	0.123	-
HCM Control Delay (s/veh)	-	-	47.8	26.1	-
HCM Lane LOS	-	-	E	D	-
HCM 95th %tile Q(veh)	-	-	2	0.4	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	37	56	2261	1262	6
Future Volume (vph)	4	37	56	2261	1262	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.877					0.850
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1625	0	1888	3539	3539	1583
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1625	0	1888	3539	3539	1583
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	40	61	2458	1372	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	61	2458	1372	7
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	37	56	2261	1262	6
Future Vol, veh/h	4	37	56	2261	1262	6
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	-	250	-	-	250
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	4	40	61	2458	1372	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2722	686	1378	0	-	0
Stage 1	1372	-	-	-	-	-
Stage 2	1351	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	17	390	493	-	-	-
Stage 1	201	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	390	493	-	-	-
Mov Cap-2 Maneuver	93	-	-	-	-	-
Stage 1	176	-	-	-	-	-
Stage 2	206	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	19.22	0.32	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	493	-	298	-	-
HCM Lane V/C Ratio	0.123	-	0.15	-	-
HCM Control Delay (s/veh)	13.3	-	19.2	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	-	-

AM and PM Peak Hour

Year 2034 Background Volumes Only

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	15	0	3	0	906	13	0	2103	2
Future Volume (vph)	0	0	0	15	0	3	0	906	13	0	2103	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1751	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1751	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	0	3	0	985	14	0	2286	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	19	0	0	999	0	0	2288	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	15	0	3	0	906	13	0	2103	2
Future Vol, veh/h	0	0	0	15	0	3	0	906	13	0	2103	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	16	0	3	0	985	14	0	2286	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	2135	3280	499	-	0	0	999	0	0
Stage 1	992	992	-	-	-	-	-	-	-
Stage 2	1143	2288	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	42	9	517	0	-	-	689	-	-
Stage 1	320	322	-	0	-	-	-	-	-
Stage 2	266	73	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	42	0	517	-	-	-	689	-	-
Mov Cap-2 Maneuver	152	0	-	-	-	-	-	-	-
Stage 1	320	0	-	-	-	-	-	-	-
Stage 2	266	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	28.63	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	172	689	-	-
HCM Lane V/C Ratio	-	-	0.114	-	-	-
HCM Control Delay (s/veh)	-	-	28.6	0	-	-
HCM Lane LOS	-	-	D	A	-	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Future Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.857			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1596	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.174		
Satd. Flow (perm)	1330	1596	0	1863	1626	0	290	3539	1583	346	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	2	39	43	2	11	42	980	36	22	2233	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	41	0	43	13	0	42	980	36	22	2233	62
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.19	0.08		0.14	0.61	0.04	0.07	1.52	0.08
Control Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.2			21.9			15.8			248.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		13	1		7	114	0	4	~517	0
Queue Length 95th (ft)	22	23		30	17		26	#332	0	17	#1022	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	905		244	557		327	1597	814	341	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05		0.18	0.02		0.13	0.61	0.04	0.06	1.52	0.08

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 170.0	Intersection LOS: F
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Future Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.857			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1596	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.174		
Satd. Flow (perm)	1330	1596	0	1863	1626	0	290	3539	1583	346	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	2	39	43	2	11	42	980	36	22	2233	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	41	0	43	13	0	42	980	36	22	2233	62
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.19	0.08		0.14	0.61	0.04	0.07	1.52	0.08
Control Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.2			21.9			15.8			248.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		13	1		7	114	0	4	~517	0
Queue Length 95th (ft)	22	23		30	17		26	#332	0	17	#1022	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	905		244	557		327	1597	814	341	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05		0.18	0.02		0.13	0.61	0.04	0.06	1.52	0.08

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 170.0	Intersection LOS: F
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	6	1	1007	2130	1
Future Volume (vph)	0	6	1	1007	2130	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	7	1	1095	2315	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	1	1095	2316	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.9%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	1	1007	2130	1
Future Vol, veh/h	0	6	1	1007	2130	1
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	-	250	-	-	-
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	0	7	1	1095	2315	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2865	1158	2316	0	-	0
Stage 1	2316	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	13	189	212	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	13	189	212	-	-	-
Mov Cap-2 Maneuver	51	-	-	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	24.7	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	212	-	189	-	-
HCM Lane V/C Ratio	0.005	-	0.034	-	-
HCM Control Delay (s/veh)	22	-	24.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	31	20	1053	2215	5
Future Volume (vph)	7	31	20	1053	2215	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.891					
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1645	0	1888	3539	3539	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1645	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	34	22	1145	2408	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	0	22	1145	2413	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	31	20	1053	2215	5
Future Vol, veh/h	7	31	20	1053	2215	5
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	-	250	-	-	-
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	8	34	22	1145	2408	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3026	1207	2413	0	-	0
Stage 1	2410	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	10	176	194	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	176	194	-	-	-
Mov Cap-2 Maneuver	41	-	-	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	56.87	0.48	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	194	-	109	-	-
HCM Lane V/C Ratio	0.112	-	0.379	-	-
HCM Control Delay (s/veh)	25.8	-	56.9	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	1.5	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	18	2	0	75	2	996	32	191	2073	3
Future Volume (vph)	1	0	18	2	0	75	2	996	32	191	2073	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.871			0.868			0.995				
Flt Protected		0.998			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Flt Permitted		0.998			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	20	2	0	82	2	1083	35	208	2253	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	84	0	2	1118	0	208	2256	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	18	2	0	75	2	996	32	191	2073	3
Future Vol, veh/h	1	0	18	2	0	75	2	996	32	191	2073	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	20	2	0	82	2	1083	35	208	2253	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3216	3792	1128	2646	3776	559	2257	0	0	1117	0	0
Stage 1	2670	2670	-	1104	1104	-	-	-	-	-	-	-
Stage 2	546	1122	-	1542	2672	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	4	4	198	11	4	473	224	-	-	621	-	-
Stage 1	23	46	-	225	285	-	-	-	-	-	-	-
Stage 2	490	279	-	120	46	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	2	3	198	7	3	473	224	-	-	621	-	-
Mov Cap-2 Maneuver	2	3	-	7	3	-	-	-	-	-	-	-
Stage 1	15	31	-	223	282	-	-	-	-	-	-	-
Stage 2	401	277	-	72	31	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	209.01	46.12	0.04	1.15
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	224	-	-	35	168	621	-	-
HCM Lane V/C Ratio	0.01	-	-	0.598	0.499	0.334	-	-
HCM Control Delay (s/veh)	21.2	-	-	209	46.1	13.7	-	-
HCM Lane LOS	C	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2	2.4	1.5	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	16	990	6	15	2063
Future Volume (vph)	2	16	990	6	15	2063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.879		0.999			
Flt Protected	0.995				0.950	
Satd. Flow (prot)	1629	0	3536	0	1888	3539
Flt Permitted	0.995				0.950	
Satd. Flow (perm)	1629	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	17	1076	7	16	2242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	1083	0	16	2242
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	16	990	6	15	2063
Future Vol, veh/h	2	16	990	6	15	2063
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	-	-	-	250	-
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	2	17	1076	7	16	2242

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2233	541	0	0	1083	0
Stage 1	1079	-	-	-	-	-
Stage 2	1154	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	36	485	-	-	640	-
Stage 1	287	-	-	-	-	-
Stage 2	262	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	35	485	-	-	640	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.97	0	0.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	380	640	-
HCM Lane V/C Ratio	-	-	0.051	0.025	-
HCM Control Delay (s/veh)	-	-	15	10.8	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2326	28	1	1264	5
Future Volume (vph)	0	0	0	10	0	2	0	2326	28	1	1264	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998			0.999	
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2528	30	1	1374	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2558	0	1	1379	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2326	28	1	1264	5
Future Vol, veh/h	0	0	0	10	0	2	0	2326	28	1	1264	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2528	30	1	1374	5

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3233	3925	1279	-	0	0	2559	0	0
Stage 1	2543	2543	-	-	-	-	-	-	-
Stage 2	689	1382	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 7	3	157	0	-	-	170	-	-
Stage 1	45	54	-	0	-	-	-	-	-
Stage 2	460	210	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 7	0	157	-	-	-	170	-	-
Mov Cap-2 Maneuver	38	0	-	-	-	-	-	-	-
Stage 1	45	0	-	-	-	-	-	-	-
Stage 2	457	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	119.04	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	44	170	-	-
HCM Lane V/C Ratio	-	-	0.298	0.006	-	-
HCM Control Delay (s/veh)	-	-	119	26.3	-	-
HCM Lane LOS	-	-	F	D	-	-
HCM 95th %tile Q(veh)	-	-	1	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Future Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2455	62	26	1310	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2455	62	26	1310	28
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			286.5			57.0	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~841	0	6	~383	0
Queue Length 95th (ft)	37	19		30	32		49	#1164	0	20	#534	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type:	Other

2: Highway 60 & Linwood Dr/Sandridge Ct

Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 199.8	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Future Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2455	62	26	1310	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2455	62	26	1310	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			286.5			57.0	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~841	0	6	~383	0
Queue Length 95th (ft)	37	19		30	32		49	#1164	0	20	#534	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 199.8	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2423	1287	1
Future Volume (vph)	1	3	9	2423	1287	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2634	1399	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2634	1400	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2423	1287	1
Future Vol, veh/h	1	3	9	2423	1287	1
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	-	250	-	-	-
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	1	3	10	2634	1399	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2736	700	1400	0	-	0
Stage 1	1399	-	-	-	-	-
Stage 2	1336	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	16	382	484	-	-	-
Stage 1	194	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	16	382	484	-	-	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	190	-	-	-	-	-
Stage 2	210	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.56	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	484	-	222	-	-
HCM Lane V/C Ratio	0.02	-	0.02	-	-
HCM Control Delay (s/veh)	12.6	-	21.6	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	32	34	2398	1330	16
Future Volume (vph)	15	32	34	2398	1330	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	35	37	2607	1446	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	37	2607	1463	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	32	34	2398	1330	16
Future Vol, veh/h	15	32	34	2398	1330	16
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	-	250	-	-	-
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	16	35	37	2607	1446	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2832	732	1463	0	-	0
Stage 1	1454	-	-	-	-	-
Stage 2	1377	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 14	364	458	-	-	-
Stage 1	181	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 13	364	458	-	-	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	166	-	-	-	-	-
Stage 2	199	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	32.18	0.19	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	458	-	183	-	-
HCM Lane V/C Ratio	0.081	-	0.28	-	-
HCM Control Delay (s/veh)	13.6	-	32.2	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.1	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	18	0	0	196	10	2255	13	105	1249	5
Future Volume (vph)	3	0	18	0	0	196	10	2255	13	105	1249	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.883			0.865			0.999			0.999	
Flt Protected		0.994					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Flt Permitted		0.994					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	20	0	0	213	11	2451	14	114	1358	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	213	0	11	2465	0	114	1363	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	18	0	0	196	10	2255	13	105	1249	5
Future Vol, veh/h	3	0	18	0	0	196	10	2255	13	105	1249	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	20	0	0	213	11	2451	14	114	1358	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2836	4076	682	3387	4071	1233	1363	0	0	2465	0	0
Stage 1	1589	1589	-	2480	2480	-	-	-	-	-	-	-
Stage 2	1247	2487	-	907	1591	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	3	393	3	3	~ 169	500	-	-	185	-	-
Stage 1	112	166	-	30	58	-	-	-	-	-	-	-
Stage 2	184	58	-	297	165	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	1	393	1	1	~ 169	500	-	-	185	-	-
Mov Cap-2 Maneuver	~ 3	1	-	1	1	-	-	-	-	-	-	-
Stage 1	43	64	-	29	57	-	-	-	-	-	-	-
Stage 2	-	56	-	108	64	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/s	$ 521.48	210.75	0.05	3.97
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	500	-	-	20	169	185	-	-
HCM Lane V/C Ratio	0.022	-	-	1.14	1.263	0.616	-	-
HCM Control Delay (s/veh)	12.4	-	-	$ 521.5	210.7	51.4	-	-
HCM Lane LOS	B	-	-	F	F	F	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	12.1	3.5	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	57	2309	5	22	1321
Future Volume (vph)	5	57	2309	5	22	1321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.875					
Flt Protected	0.996				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.996				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	62	2510	5	24	1436
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	2515	0	24	1436
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	57	2309	5	22	1321
Future Vol, veh/h	5	57	2309	5	22	1321
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	-	-	-	250	-
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	5	62	2510	5	24	1436

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3278	1258	0	0	2515	0
Stage 1	2513	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	7	162	-	-	177	-
Stage 1	47	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	6	162	-	-	177	-
Mov Cap-2 Maneuver	39	-	-	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	363	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	59.97	0	0.47
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	129	177	-
HCM Lane V/C Ratio	-	-	0.522	0.135	-
HCM Control Delay (s/veh)	-	-	60	28.5	-
HCM Lane LOS	-	-	F	D	-
HCM 95th %tile Q(veh)	-	-	2.5	0.5	-

AM and PM Peak Hour

Year 2034 Background plus Development Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Future Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.976			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	3	0	865	12	0	2009	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	17	0	0	877	0	0	2011	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Future Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	0	3	0	865	12	0	2009	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1876	2882	439	-	0	0	877	0	0
Stage 1	871	871	-	-	-	-	-	-	-
Stage 2	1004	2011	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	63	16	566	0	-	-	766	-	-
Stage 1	370	367	-	0	-	-	-	-	-
Stage 2	315	102	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	63	0	566	-	-	-	766	-	-
Mov Cap-2 Maneuver	184	0	-	-	-	-	-	-	-
Stage 1	370	0	-	-	-	-	-	-	-
Stage 2	315	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	23.64	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	211	766	-	-
HCM Lane V/C Ratio	-	-	0.083	-	-	-
HCM Control Delay (s/veh)	-	-	23.6	0	-	-
HCM Lane LOS	-	-	C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	885	1872	1
Future Volume (vph)	0	5	1	885	1872	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	962	2035	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	962	2036	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	885	1872	1
Future Vol, veh/h	0	5	1	885	1872	1
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	-	250	-	-	-
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	0	5	1	962	2035	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2518	1018	2036	0	-	0
Stage 1	2035	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	23	235	274	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	235	274	-	-	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.69	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	274	-	235	-	-
HCM Lane V/C Ratio	0.004	-	0.023	-	-
HCM Control Delay (s/veh)	18.2	-	20.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	27	18	925	1947	4
Future Volume (vph)	6	27	18	925	1947	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.891					
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1643	0	1888	3539	3539	0
Flt Permitted	0.990		0.950			
Satd. Flow (perm)	1643	0	1888	3539	3539	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	29	20	1005	2116	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	20	1005	2120	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	27	18	925	1947	4
Future Vol, veh/h	6	27	18	925	1947	4
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	-	250	-	-	-
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	7	29	20	1005	2116	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2660	1060	2121	0	-	0
Stage 1	2118	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	220	254	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	220	254	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	72	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	36.59	0.39	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	254	-	149	-	-
HCM Lane V/C Ratio	0.077	-	0.24	-	-
HCM Control Delay (s/veh)	20.4	-	36.6	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Future Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.869			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	17	2	0	72	2	951	30	183	1980	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	74	0	2	981	0	183	1983	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Future Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	17	2	0	72	2	951	30	183	1980	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2827	3333	992	2326	3320	491	1984	0	0	982	0	0
Stage 1	2347	2347	-	971	971	-	-	-	-	-	-	-
Stage 2	480	986	-	1355	2349	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	8	245	20	8	523	287	-	-	699	-	-
Stage 1	37	68	-	272	329	-	-	-	-	-	-	-
Stage 2	536	324	-	157	68	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	6	245	14	6	523	287	-	-	699	-	-
Mov Cap-2 Maneuver	5	6	-	14	6	-	-	-	-	-	-	-
Stage 1	27	50	-	269	327	-	-	-	-	-	-	-
Stage 2	459	322	-	108	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	80.75	25.54	0.04	1.01
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	287	-	-	65	248	699	-	-
HCM Lane V/C Ratio	0.008	-	-	0.283	0.298	0.261	-	-
HCM Control Delay (s/veh)	17.6	-	-	80.8	25.5	12	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1	1.2	1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	14	870	5	13	1813
Future Volume (vph)	2	14	870	5	13	1813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.881		0.999			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1631	0	3536	0	1888	3539
Flt Permitted	0.994				0.950	
Satd. Flow (perm)	1631	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	15	946	5	14	1971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	951	0	14	1971
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	14	870	5	13	1813
Future Vol, veh/h	2	14	870	5	13	1813
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	-	-	-	250	-
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	2	15	946	5	14	1971

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1962	476	0	0	951	0
Stage 1	948	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	55	536	-	-	718	-
Stage 1	337	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	54	536	-	-	718	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	305	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.88	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	718	-
HCM Lane V/C Ratio	-	-	0.041	0.02	-
HCM Control Delay (s/veh)	-	-	13.9	10.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	931	1951	0
Future Volume (vph)	0	0	0	931	1951	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1987	3539	3539	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	1987	3539	3539	1863
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1012	2121	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1012	2121	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	931	1951	0
Future Vol, veh/h	0	0	0	931	1951	0
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	-	250	-	-	250
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	0	0	0	1012	2121	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2627	1060	2121	0	-	0
Stage 1	2121	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	19	220	254	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	19	220	254	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	571	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	254	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2330	28	1	1270	5
Future Volume (vph)	0	0	0	10	0	2	0	2330	28	1	1270	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998			0.999	
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2533	30	1	1380	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2563	0	1	1385	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2330	28	1	1270	5
Future Vol, veh/h	0	0	0	10	0	2	0	2330	28	1	1270	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2533	30	1	1380	5

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3240	3936	1282	-	0	0	2563	0	0
Stage 1	2548	2548	-	-	-	-	-	-	-
Stage 2	692	1388	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 7	3	156	0	-	-	169	-	-
Stage 1	45	54	-	0	-	-	-	-	-
Stage 2	458	208	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 7	0	156	-	-	-	169	-	-
Mov Cap-2 Maneuver	38	0	-	-	-	-	-	-	-
Stage 1	45	0	-	-	-	-	-	-	-
Stage 2	455	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	119.9	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	44	169	-	-
HCM Lane V/C Ratio	-	-	0.3	0.006	-	-
HCM Control Delay (s/veh)	-	-	119.9	26.4	-	-
HCM Lane LOS	-	-	F	D	-	-
HCM 95th %tile Q(veh)	-	-	1	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Future Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2460	62	26	1316	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2460	62	26	1316	28
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			287.9			58.3	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~843	0	6	~386	0
Queue Length 95th (ft)	37	19		30	32		49	#1167	0	20	#537	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 201.0	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Future Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2460	62	26	1316	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2460	62	26	1316	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			287.9			58.3	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~843	0	6	~386	0
Queue Length 95th (ft)	37	19		30	32		49	#1167	0	20	#537	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 201.0	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2427	1293	1
Future Volume (vph)	1	3	9	2427	1293	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2638	1405	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2638	1406	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2427	1293	1
Future Vol, veh/h	1	3	9	2427	1293	1
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	-	250	-	-	-
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	1	3	10	2638	1405	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2745	703	1407	0	-	0
Stage 1	1406	-	-	-	-	-
Stage 2	1339	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	16	380	481	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	16	380	481	-	-	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	188	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.66	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	481	-	220	-	-
HCM Lane V/C Ratio	0.02	-	0.02	-	-
HCM Control Delay (s/veh)	12.6	-	21.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	32	34	2453	1367	16
Future Volume (vph)	15	32	34	2453	1367	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	35	37	2666	1486	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	37	2666	1503	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	32	34	2453	1367	16
Future Vol, veh/h	15	32	34	2453	1367	16
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	-	250	-	-	-
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	16	35	37	2666	1486	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2902	752	1503	0	-	0
Stage 1	1495	-	-	-	-	-
Stage 2	1407	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 12	353	442	-	-	-
Stage 1	172	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	353	442	-	-	-
Mov Cap-2 Maneuver	84	-	-	-	-	-
Stage 1	158	-	-	-	-	-
Stage 2	192	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	33.86	0.19	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	442	-	175	-	-
HCM Lane V/C Ratio	0.084	-	0.292	-	-
HCM Control Delay (s/veh)	13.9	-	33.9	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.2	-	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	18	0	0	199	10	2308	13	107	1284	5
Future Volume (vph)	3	0	18	0	0	199	10	2308	13	107	1284	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.883			0.865			0.999			0.999	
Flt Protected		0.994					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Flt Permitted		0.994					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	20	0	0	216	11	2509	14	116	1396	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	216	0	11	2523	0	116	1401	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	17.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	18	0	0	199	10	2308	13	107	1284	5
Future Vol, veh/h	3	0	18	0	0	199	10	2308	13	107	1284	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	20	0	0	216	11	2509	14	116	1396	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2907	4176	701	3468	4171	1261	1401	0	0	2523	0	0
Stage 1	1631	1631	-	2538	2538	-	-	-	-	-	-	-
Stage 2	1276	2545	-	930	1634	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	2	381	3	2	~ 161	483	-	-	176	-	-
Stage 1	106	158	-	28	54	-	-	-	-	-	-	-
Stage 2	176	54	-	287	158	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 2	1	381	1	1	~ 161	483	-	-	176	-	-
Mov Cap-2 Maneuver	~ 2	1	-	1	1	-	-	-	-	-	-	-
Stage 1	36	53	-	27	53	-	-	-	-	-	-	-
Stage 2	-	53	-	92	53	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/s	$741.33	243.39	0.05	4.48
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	483	-	-	16	161	176	-	-
HCM Lane V/C Ratio	0.022	-	-	1.46	1.342	0.662	-	-
HCM Control Delay (s/veh)	12.6	-	-	$ 741.3	243.4	58.4	-	-
HCM Lane LOS	B	-	-	F	F	F	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.4	13.1	3.9	-	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	60	2358	5	24	1354
Future Volume (vph)	5	60	2358	5	24	1354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.875					
Flt Protected	0.996				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.996				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	65	2563	5	26	1472
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	2568	0	26	1472
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.0%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	60	2358	5	24	1354
Future Vol, veh/h	5	60	2358	5	24	1354
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	-	-	-	250	-
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	5	65	2563	5	26	1472

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3354	1284	0	0	2568	0
Stage 1	2566	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	6	156	-	-	169	-
Stage 1	43	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 5	156	-	-	169	-
Mov Cap-2 Maneuver	36	-	-	-	-	-
Stage 1	43	-	-	-	-	-
Stage 2	345	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	66.84	0	0.53
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	124	169	-
HCM Lane V/C Ratio	-	-	0.569	0.155	-
HCM Control Delay (s/veh)	-	-	66.8	30.2	-
HCM Lane LOS	-	-	F	D	-
HCM 95th %tile Q(veh)	-	-	2.8	0.5	-

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	37	56	2412	1346	6
Future Volume (vph)	4	37	56	2412	1346	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.877					0.850
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1625	0	1888	3539	3539	1583
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1625	0	1888	3539	3539	1583
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	40	61	2622	1463	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	61	2622	1463	7
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

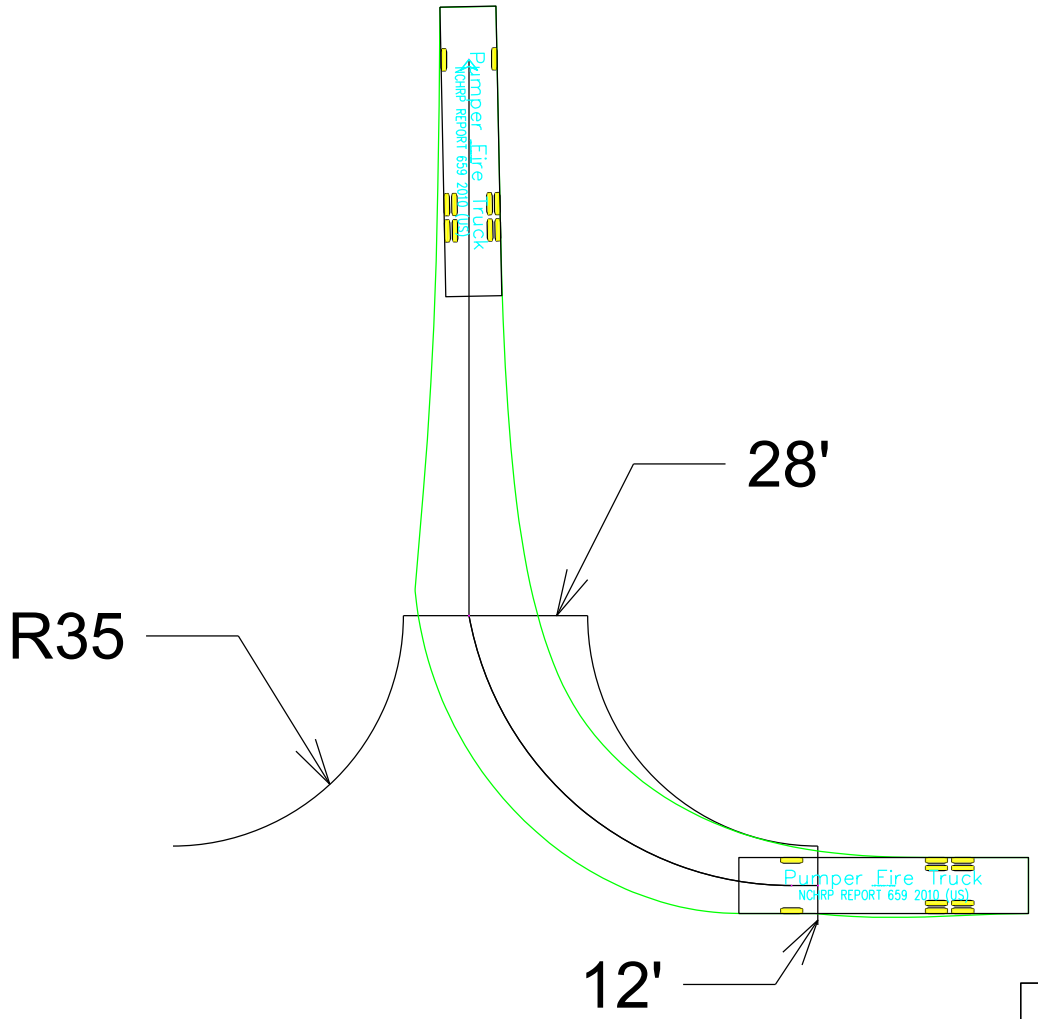
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	37	56	2412	1346	6
Future Vol, veh/h	4	37	56	2412	1346	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	250
Veh in Median Storage, #	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	4	40	61	2622	1463	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2896	732	1470	0	-	0
Stage 1	1463	-	-	-	-	-
Stage 2	1433	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	13	364	455	-	-	-
Stage 1	179	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	11	364	455	-	-	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	155	-	-	-	-	-
Stage 2	186	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.76	0.32	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	455	-	273	-	-
HCM Lane V/C Ratio	0.134	-	0.163	-	-
HCM Control Delay (s/veh)	14.1	-	20.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.6	-	-

Appendix E – AutoTURN Exhibit



LJA Engineering, Inc.

AUTOTURN ANALYSIS

Appendix F – Intersection Control Evaluation (ICE) Analysis

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.3| Revised 11/13/2023

GDOT PI #	
Project Location:	Thompson Bridge @ Access A
Existing Control:	Conventional (Minor Stop)
Prepared by:	Marco Gonzalez-Soto
Date:	9/25/2024

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	**Screening Decision Justification:**
Unsignalized Intersections	Conventional (Minor Stop)	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	
	Conventional (All-Way Stop)	No	No	No	No	No	No	No	Traffic will be congested and flow will be reduced.
	Mini Roundabout	No	No	No	No	No	No	No	Per GDOT, traffic on major road needs to be less than 90%. ~98% of traffic
	Single Lane Roundabout	No	No	No	No	No	No	No	Major road traffic is at ~98%, > GDOT's maximum 90%
	Multilane Roundabout	No	No	No	No	No	No	No	Major road traffic is at ~98%, > GDOT's maximum 90%
	RCUT (stop control)	No	No	No	No	No	No	No	There is no median that can be cut for a protected left-turn.
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	There is no median that can be cut for a protected left-turn.
	High-T (unsignalized)	No	No	No	No	No	No	No	Adjacent property owners would be affected with road widening.
	Offset-T Intersections	No	No	No	No	No	No	No	There is only one driveway of interest.
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	For much larger volumes of traffic. Property owners would be affected.
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	For much larger volumes of traffic. Property owners would be affected.
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	There is an existing two-way left turn lane (TWLTL).
	Other unsignalized (provide description):	No	No	No	No	No	No	No	
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	RCUT (signalized)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Continuous Green-T	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Jughandle	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Quadrant Roadway	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Diverging Diamond	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Single Point Interchange	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	
	Other Signalized (provide description):	No	No	No	No	No	No	No	

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

CITY OF GAINESVILLE

Planning and Appeals Board Agenda Request

Item Created:	October 15, 2024
Date Submitted:	October 17, 2024
Final Approval Date:	October 25, 2024
Presenter:	Matt Tate, Community & Economic Development Dept Deputy Director
Item of Business:	Request from **Grand Communities, LLC** to rezone a 33.82± acres tract located on the west side of Thompson Bridge Road, between Mountain View Drive and Springview Drive (a/k/a **0, 1799, 1805, 1825, 1829 and 1981 Thompson Bridge Road, NW**) from Residential-I (R-I) to Planned Unit Development (P-U-D).
Meeting Date:	November 12, 2024

Purpose of Request:

The applicant is proposing to rezone a 33.82± acres subject property as part of an overall 36.38± acres tract with a zoning of Planned Unit Development (P-U-D). The property consists of 6 parcels and is currently zoned Residential-I (R-I) within the city limits. Presently, there are four residential homes, of which two are occupied. The property is heavily wooded and a sanitary sewer line and stream traverses the property.

The proposal includes 141 for sale residential units consisting of 53 single-family homes and 88 townhomes and will be named “Sapphire Springs”. The single-family homes are a mixture of ranch and two-story homes ranging from 1,200 to 3,100 square feet in size with two car garages. The townhomes are two-stories ranging from 1,550 to 1,850 square feet in size with a mixture of 1 and 2 car garages. Amenities include a community clubhouse, pool, playground, mulch trail, common green space and mail kiosk, all of which will be maintained by a mandatory Homeowners Association (HOA). A sanitary sewer line and stream traverse part of the larger adjacent tract that is part of this development. One access road is proposed from Thompson Bridge Road and a gated emergency access drive is proposed from Crystal Drive. The proposed streets will be public roads, water, sanitary sewer and solid waste pickup will be provided by the City of Gainesville.

The adjacent uses include single-family homes to the north, south and west. Commercial and multifamily uses are present on the east side of Thompson Bridge Road and include the Cielo At Thompson apartments, Chattahoochee shopping center, Brown Eyed Girl Upscale Resale, Pro Touch Landscapes, House Dressing Outdoor store and Cabinetry By Collier / Custom Kitchens.

Facts & Issues / History & Background:

Department Recommendation:

Planning staff recommended approval with seventeen conditions. See the Staff Recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget? No

Amount Requested: **Sources of Funds:**

Finance Comments:

Administrative Comments:

Attachments:

1. Staff Recommendation Report
2. Location maps
3. Narrative Report (Revised)
4. Reservation of Constitutional & Other Legal Rights (Revised)
5. Design Book
6. Site Plan
7. Concept - Green Space Plan
8. Open Space Plan
9. Land Use Plan
10. Detached Home Renderings
11. 2024-10-01 Traffic Impact Study - Sapphire Springs

GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION

Applicant	Grand Communities, LLC
Property Owners	See family estate property list
Location	1936 Crystal Drive; 0, 1799, 1805, 1825, 1829 and 1981 Thompson Bridge Road, NW
Request	Annex with P-U-D zoning Rezone from R-I to P-U-D zoning
Total Acres	Annexation: 2.56± acres Rezoning: 33.82± acres Total: 36.38± acres
Ward	One
Proposed Use	53 single-family detached homes and 88 single-family attached townhomes
Planning Division Staff Recommendation	**Approval, with conditions**
Date	November 12, 2024

- ***Applicant's Proposal and Background Information***

The applicant is proposing to annex 2.559± acres with a zoning of Planned Unit Development (P-U-D) and rezone 33.82± acres from Residential-I (R-I) to Planned Unit Development (P-U-D), for a total of 36.38± acres.

The 2.559± acres tract is currently zoned Residential-I (R-I) and is an unincorporated County island that is undeveloped with dense vegetation. The 33.82± acres tract is located within the city limits and consists of six parcels with four residential structures, of which two are occupied. This property is heavily wooded and contains a sanitary sewer line and stream that traverse the property. The subject property slopes downward from Thompson Bridge Road approximately 70 feet to Crystal Drive.

The proposed “Sapphire Springs” residential development includes 141 for sale residential units consisting of 53 single-family detached homes and 88 single-family attached townhomes. It is anticipated construction will occur over a period of 48 months (12 months developing the site and 36 months of home construction).

The single-family homes include a mixture of ranch and two-story homes ranging from 1,200 to 3,100 square feet in size with two-car garages. The townhomes are two-stories, ranging from 1,550 to 1,850 square feet in size with a mixture of 1 and 2 car garages. Amenities include a community club house, pool, playground, mulch trail, common green space and mail kiosk of which will be maintained by a mandatory Homeowners Association (HOA). According to the concept plan, part of proposed street A, a portion of the clubhouse parking lot and approximately 16 townhome lots encroach within the stream buffer.

A single access road is proposed from Thompson Bridge Road and a gated emergency access is proposed from Crystal Drive. Internal streets are intended to be public roads. Water, sanitary sewer and solid waste pick up will be provided by the City of Gainesville.

The development standards are as follows:

Total Acreage	36.38 Acres	
Minimum Open Space	20% (7.31 Acres)	
Total Density	3.87± Du/Ac	
	Single-Family Attached (SFA) (Townhomes)	**Single-Family Detached (SFD) (Dwellings)**
Permitted Uses	Up to 88 Attached Townhomes	Up to 53 Detached Homes
Max Lot Coverage	None	None
Min Lot Size	2,000 SF	7,000 SF
Min Lot Width	20 ft	60 ft
Unit Square Feet	1,550 sf to 1,850 sf	1,200 sf to 3,100+ sf
Min Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior Boundary: 20 ft Amenity Rec. Building: 20 ft	Front: 20 ft Rear 20 ft Side 5 ft (15 ft between structures) Exterior Boundary: 20 ft Amenity Rec. Building: 20 ft
Min Exterior Buffers	Standard: 20 ft natural/undisturbed + additional 20 ft buffer graded/ planted	Standard: 20 ft natural/undisturbed + additional 20 ft buffer graded/ planted
	Thompson Bridge Road: 25 ft natural/undisturbed + additional 25 ft buffer, graded/ planted	Thompson Bridge Road: 25 ft natural/undisturbed + additional 25 ft buffer, graded/ planted
Stream Buffers / Impervious Setbacks	50 ft / 75 ft stream bank, except 0 ft from stream bank where depicted on site plan	50 ft / 75 ft stream bank, except 0 ft from stream bank where depicted on site plan
Min Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Max Townhome per Bldg.	6 units	N/A
Max Bldg. Height	42 ft	42 ft
Max Bldg. Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives: 20 ft wide right-of-way and pavement, No curb	Emergency Access Drives: 20 ft wide right-of-way and pavement, No curb
	Internal Streets: 50 ft right-of-way with minimum 28 ft wide pavement back of curb to back of curb	Internal Streets: 50 ft right-of-way with minimum 28 ft wide pavement back of curb to back of curb
Street Improvements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No maximum cul-de-sac length	No maximum cul-de-sac length
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5	Minimum Community Rec Facility Parking Spaces: 5
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

- ***Adjacent Land Use and Zoning***

Location	Use	Zoning
North	Single-family homes	Residential- I (R-I) -City
South	Single-family homes	Residential-I (R-I) -City
East	Cielo At Thompson apartments, Chattahoochee shopping center, Brown Eyed Girl Upscale Resale, Pro Touch Landscapes, House Dressing Outdoors and Cabinetry By Collier / Custom Kitchens.	Residential-II (R-II) -City Neighborhood Business (N-B) -City Regional Business (R-B) -City
West	Single-family homes	Residential-I (R-I) -City Residential-I (R-I) -County

Other nearby uses include the Linwood Nature Preserve and the Linwood Water Treatment Plant which are located northwest of the property adjacent to Lake Lanier.

- ***Traffic Summary***

A Traffic Impact Study was conducted for the proposed development on October 1, 2024. A brief summary of the findings is provided below.

Studied intersections:

1. Thompson Bridge Road/SR 60 at River Cliff Drive (unsignalized)
2. Thompson Bridge Road/SR 60 at Linwood Drive / Sandridge Court (signalized)
3. Thompson Bridge Road/SR 60 at Springview Drive (unsignalized)
4. Thompson Bridge Road/SR 60 at Mountain View Road (unsignalized)
5. Thompson Bridge Road/SR 60 at Virginia Avenue / Oakland Drive (unsignalized)
6. Thompson Bridge Road/SR 60 at Lanier Avenue (unsignalized)
7. Proposed Subdivision Road at Thompson Bridge Road/SR 60 (unsignalized)

An average annualized growth rate of 1.3% was calculated using historical traffic data from the GDOT traffic count data base. The below table represents the anticipated project trip generation upon the development being built out.

	Total Trips	Inbound Trips	Outbound Trips
Daily	1,228	614	614
AM	85	24	61
PM	107	64	43

Currently, the approach experiencing the most delay is eastbound at SR 60 and Oakland Drive / Virginia Ave. The intersection with the next highest delay overall is north and south bound at SR 60 at Linwood Drive / Sandridge Court. However, no new intersections fail as a result of adding peak hour development traffic from the development. A sight distance analysis was also conducted for the development which revealed the following.

Intersection	Estimated Intersection Sight Distance		
	Left-turn from Subdivision Road Stop	Right-turn from Subdivision Road Stop	Left-turn from Thompson Bridge Road
New Access at Thompson Bridge Road	>500’	>565’	>450’

Based on the findings in this study, a southbound right turn lane along Thompson Bridge Rd/SR 60 at the access to the development is recommended. There were no other improvements recommended.

- ***Other Departmental Comments***

The Georgia Department of Transportation does not have any major objections to the proposal. However, coordination with GDOT is required and the development will be required to meet all requirements, provided in the Driveway and Encroachment Manual.

The following comments are from the Gainesville Public Works Department.

- Coordination with will be required for the proposed development access plan.
- The addition of a southbound right turn lane along Thompson Bridge Rd/SR 60 at access A shall be installed at the developer's expense.
- All streets within the development shall meet Gainesville Public Works requirements for acceptance. Any variances will need to be approved during plan review process.
- The intersection of street A and street B will need to be modified in order for the driveways not to create conflict.
- Alignment at street A and cul-de-sac need to be re-evaluated for efficient traffic flow.
- Amenity parking lot driveways will need to meet City of Gainesville distance standards from intersection.
- No parking to be allowed on the streets throughout the development (both single family and townhomes sections)
- Developer will be responsible for all signage (stop, street, no parking, etc.) throughout the development.

- ***Zoning History***

The following zoning actions have taken place in the immediate area during the last ten years:

2024 - A request by Outer Banks, LLC (Paul Brown) to rezone a 4.08+ acres tract located at 2590 and 2600 Old Thompson Bridge Road, NW from Residential-I (R-I) and General Business (G-B) to Residential-II (R-II) was conditionally approved for 42 residential townhomes.

2024 - A request by Constantino Gutierrez to rezone a 0.38+ acre tract located at 934 Etta Vesta Circle, NE from Neighborhood Business (N-B) to Residential-I (R-I) was approved for a single-family home.

2023 - A request by Eric Owens for site plan approval on a 0.34± acre tract zoned Residential and Office (R-O) located at 1714 Thompson Bridge Road was conditionally approved for an office building.

2022 - A request by Easto Construction to amend a 4.847± acres tract zoned Planned Unit Development (P-U-D) located at 2702 High Visa Point, NE was withdrawn to the City Council meeting for 50 residential townhomes.

2022 - A request by Mark D. Thebaut, D.D.S. to amend a 0.67± acre tract zoned Planned Unit Development (P-U-D) located at 1398 Thompson Bridge Road, NE was approved for a medical office or restaurant with drive-thru.

2020 - A request by Walker-Lanier, LLC to rezone a 0.50± acre tract located at 989 Lanier Avenue and 1437 Walker Street from Residential-I (R-I) to Residential-II (R-II) was approved with conditions for duplex homes.

2019 - A request by Fred Godbee to rezone a 0.5+ acre tract located at 1831 Thompson Bridge Road, NW from Residential-I (R-I) to Neighborhood Business (N-B) was conditionally approved for a security office.

2017 - A request by Adams & Copeland, LLC for a special use for a hair salon and office within the Office and Institutional (O-I) zoning district located at 1665 Thompson Bridge Road was approved with conditions.

2016 - A request by Jack Bailey to rezone a 0.61± acre tract located at 1665 Thompson Bridge Road, NW from Residential-I (R-I) to Office and Institutional (O-I) was approved with conditions for an insurance office.

2015 - A request by David P. Johnson to rezone a 1.458± acres tract located at 1537 and 1551 Thompson Bridge Road; and 135 Virginia Circle from Residential-I (R-I) to Neighborhood Business (N-B) with a special use for a restaurant with drive-thru and retail was denied.

2014 - A request by Polestar Development, LLC to rezone a 1.741± acres tract located at 1435 Thompson Bridge Road from Residential-II (R-II) to Regional Business (R-B) for a grocery store and fuel service station was approved with conditions.

- ***Staff Analysis***

(1) Is the proposed use suitable in view of the zoning and development of adjacent and nearby property?

The proposed use includes single-family detached homes and single-family attached townhomes with a zoning of Planned Unit Development (P-U-D). The adjacent and nearby properties consist of mostly single-family homes built in the 1950's, 60's and 70's. There are also multi-family apartments and various commercial uses which front along Thompson Bridge Road. These properties are primarily zoned Residential-I (R-I) with the exception of the nearby multi-family and commercial properties zoned Residential-II (R-II), Neighborhood Business (N-B), Regional Business (R-B), General Business (G-B). The following are some of the residential developments within the nearby area.

Neighborhood / Development	Acres	Units / Lots	Density (Du/Ac)
Sapphire Springs (Proposed)	**36.56±**	**141**	**3.86**
Mountain View Drive / Honeysuckle Road / Harbor Cove	145.9±	133	0.9
Springview Drive / Pinecrest Road / Crystal Drive *	20.2±	33	1.6
Woodlawn Avenue / Virginia Circle / Oakland Drive	58.6±	76	1.3
Etta Vesta	13.2±	25	1.9
Sandridge Commons Townhomes	4.5±	55	12.2
North Pointe Apartments	9.7±	106	10.9
Cielo at Thompson Apartments	5.1±	81	15.9
Linwood Apartments	9.6±	100	10.4

*Acres and Unit calculation does not include subject property or City owned property.

(2) Will the proposed use adversely affect the existing use or usability of adjacent or nearby property?

Aside from the four existing single-family homes fronting Thompson Bridge Road and an existing sanitary sewer easement, the subject property has remained as undeveloped green space.

The proposed development will change the living conditions of the adjacent and nearby residential uses both aesthetically and by increasing traffic on Thompson Bridge Road. Vehicle turning movements, specifically left turns, at the intersections of Thompson Bridge Road/Springview Drive, Thompson Bridge Road/Mountain View Drive and Thompson Bridge Road/Virginia Avenue can be difficult given the speed of northbound and southbound traffic.

From an environmental perspective, particular care to protect the existing stream on the property is paramount as it flows directly to Lake Lanier. While the proposed development provides for adequate stormwater run-off, water quality and sedimentation control measures, additional actions may be necessary to negate any impacts to the stream, Lake Lanier and adjacent properties.

The proposal anticipates the development will include three phases and will be built-out over a period of 4 years which will help integrate the residential growth.

(3) Is the proposed use compatible with the purpose and intent of the Comprehensive Plan?

The Future Land Use Map for the City of Gainesville places most of the property within the *General Mixed-Use* land use category and the smaller unincorporated area within the *Single-Family Residential* land use category.

The *General Mixed-Use* land use category includes areas containing or planned for a mixture of land uses including office, neighborhood retail, detached residential and attached residential.
The *Single-Family Residential* land use category includes areas containing or planned for single-family detached or semi-detached housing at densities ranging from two to four dwelling units per acre. The proposed residential density is 3.86 dwelling units per acre.

According to the Character Area map for the City of Gainesville, most of the subject property is located within the *Lake District* and a smaller portion of the property is located within the *Traditional Neighborhoods* Character Area.

The main character area driver of the *Lake District* is the presence of Lake Lanier and its distinctive rolling landscape. New housing will be a major source of growth for the area and should feature a wide range of product, from townhouses to high-end single-family detached homes. The area should maintain and advance a residential focus on both sides of the Lake Lanier bridge, combining traditional neighborhood development walkability. The character area can accommodate limited mixed-use and commercial growth, but it must be carefully planned to avoid suburban sprawl. Land uses allowed in the Lake District are Parks and recreation, single-family residential, limited multi-family residential, limited general mixed-use, limited commercial (retail and office) and public and institutional uses.

The *Traditional Neighborhoods Character Area* includes Parks and recreation, single-family residential, multi-family residential, limited general mixed-use, commercial (retail and office), and public and institutional uses. Although the area is mostly built-out, opportunities for infill development should be promoted as they arise and neighborhood-serving businesses are encouraged.

(4) Are there substantial reasons why the property cannot or should not be used as currently zoned?

The subject property is currently zoned Residential-I (R-I). As an infill residential development, a minimum lot size of 10,000 square feet is allowed and is restricted to single-family detached lots. Given there are 36.561 acres, the gross density would allow for up to 159 residential units. However, given the existing stream, sanitary sewer easement and required infrastructure, the actual number of lots would be lower.

The proposal includes a mixture of housing types, lot sizes and other development standards which are currently not approved within R-I zoning. Therefore, the applicant is proposing a zoning of Planned Unit Development (P-U-D) which is considered a site-specific zoning. A zoning of P-U-D is intended to provide for some flexibility of land uses that should include unique and innovative development of the land through a unified site design in order to meet the objectives of the comprehensive plan.

(5) Will the proposed use cause an excessive or burdensome use of public facilities or services, including but not limited to streets, schools, water or sewer utilities, and police or fire protection?

Since the land is mostly undeveloped, the proposal will increase the amount of traffic generated and turning movements from the proposed Thompson Bridge Road driveway location. The estimated trips include 1,228 daily trips, 85 AM Peak Hour trips and 107 PM Peak Hour trips. According to the traffic impact study, a southbound right turn lane along Thompson Bridge Road /SR60 at the access to the development is recommended and will be required by GDOT. Due to the number of residential units proposed, staff does not believe a traffic signal will be warranted by GDOT.

Water and sewer capacity are available to serve the development. Gainesville Fire and Police Departments currently respond to adjacent and nearby properties. Gainesville Fire Station #3 located off of Nancy Creek Road is approximately 2.65± miles from the subject property.

The applicant estimates there will be approximately 78 school age children within the development over a period of four years. The actual number of students who live in the proposed development may be more or less than this number, as the method of calculation uses the total number households citywide, with some households containing more than the average number of children and others comprised of zero children.

(6) Is the proposed use supported by new or changing conditions not anticipated by the Comprehensive Plan or reflected in the existing zoning on the property or surrounding properties?

The proposal is supported by changing conditions in the surrounding area. In recent years, development along Thompson Bridge Road has been somewhat slower than other major corridors and has centered around existing neighborhood commercial nodes near the Enota Avenue and Linwood Drive intersections. This is in part due to topographical challenges, Lake Lanier and the difficulty of assembling smaller parcels that front Thompson Bridge Road. Redevelopment of aging commercial properties has occurred, some of which include the Wal-Mart Neighborhood Market, Starbucks, Zaxby's, Clipper Petroleum, and the Sandridge Court mixed-use development. Depending on market conditions, it is anticipated that additional residential development would encourage commercial redevelopment opportunities along the corridor.

(7) Does the proposed use reflect a reasonable balance between the promotion of the public health, safety, morality, or general welfare and the right to unrestricted use of property?

The proposed use is consistent with the Future Land Use Map and Character Area Map within the Comprehensive Plan. The proposal, *with the recommended conditions*, appears to promote a reasonable balance between the interests of the city, the property owner, and neighboring residents and property owners.

- ***Staff Recommendation***

  The Planning Division staff is recommending **conditional approval** of this annexation and rezoning request with **P-U-D zoning** based on the Comprehensive Plan, the existing approved use for the property and the adjacent mixture of uses.

  Conditions

1. **The development standards within the applicant's narrative, site plans, and architectural renderings shall be made part of the zoning ordinance, and shall be subject to the Community and Economic Development Director approval. Any zoning conditions adopted as part of this zoning ordinance that conflict with the applicant's narrative, concept plan and architectural renderings shall take precedence over the applicant's development standards.**
2. **The total number of residential units shall not exceed 141 units. The maximum number of single-family attached townhomes shall be 88. Apartments are not an approved use for the property.**
3. **A mandatory Homeowners Association (HOA) shall be required for the proposed development providing for the financial management, architectural controls, enforcement of community standards and management of all common areas. The Board will be established and operated by the developer until such time the powers are transferred to the HOA(s). A covenant shall be required to be recorded for the proposed development stating that no more than 20% of the total residential units may be rented.**
4. **Any proposed single-family detached lots and attached townhome lots encroaching within the State 25-foot undisturbed stream buffer must first receive approval from the Environmental Protection Division (EPD) prior to the issuance of a land development permit for those lots.**
5. **Prior to permits being issued for the residential uses, each contractor/developer shall provide architectural renderings of the proposed single-family detached homes and attached townhomes for the review and approval of the Community and Economic Development Department Director.**
6. **All exterior wall front, sides, and rear of the single-family detached homes, townhomes, and multi-family units shall consist of a variety of building materials consistent with architectural themes and styles determined by the applicant. Foundation water tables of matching brick or stone material, that also covers all exposed foundation walls, will be used where architecturally compatible. Vinyl siding shall only be permitted on soffit areas.**

   Other architectural requirements will include:

   - **Carriage style garage doors with decorative hardware or other embellishments shall be used on all single-family detached homes and townhomes;**

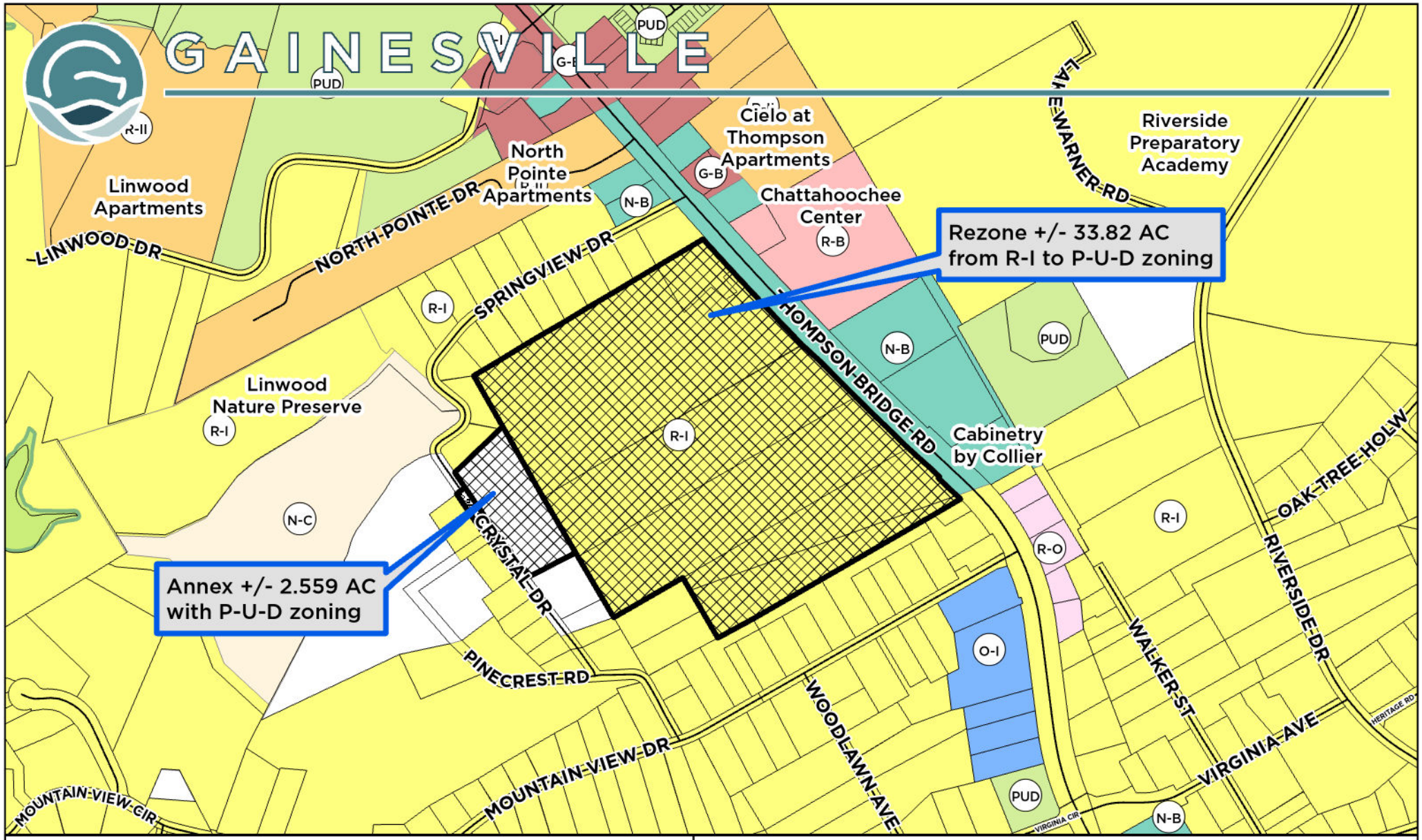
- **The roofing material used on all single-family detached homes and townhomes shall be 3-tab architectural/dimensional style asphalt shingles or metal as appropriate to the architectural style of each home as determined by the builder.**
- **All roofs and gables shall be of a pitch no less than 8/12. This condition shall not apply to dormers, porches, bay windows, and third floor retreats;**
- **All overhangs including gables and side gables will have a minimum of a 12-inch overhang on all sides;**
- **If dormers are included, they will not be taller than the main roof;**
- **All roof vents, pipes, and other roof equipment (except chimneys) shall be located on the rear elevations and shall be painted to match the color of the roof;**
- **The developer shall use a variety of techniques to avoid the monotonous appearance of identical single-family detached homes and attached townhome buildings. Such techniques may employ among others the use of differing front elevations, architectural styles, building exteriors, and other similar techniques so that no single-family detached house or townhome building is the same as any house or townhome building directly in front or on either adjacent side of the structure;**
- **The exterior materials for all homes shall consist of a mixture of brick, stone, fiber cement siding, cedar shake or wood siding to include at minimum a 3 foot architectural water table of brick or stone materials on the front and sides of the single-family detached homes and townhome buildings;**
- **No above-ground swimming pools shall be permitted;**
- **No window air conditioning unit may be installed;**
- **No exterior blank, windowless walls will be constructed;**
- **All single-family detached house plans will have front or side loaded two-car garages;**
- **All townhomes will have front or rear entry and a mixture of one and two garages;**
- **Street lighting will be provided throughout the development;**
- **All front porches of single-family detached homes shall have a minimum depth of 5';**
- **Windows are restricted to single hung or double hung windows.**

These requirements shall be included in the Covenants to be recorded against the property.

7. **All trash receptacles shall be screened from view from the road and adjacent properties.**
8. **Outdoor lighting used in this development shall be of non-spill design and placed in a manner so as to minimize direct visibility by the adjacent properties per Unified Land Development Code standards.**
9. **The proposed erosion control and water quality measures for the development shall at minimum meet the Georgia Storm Water Management Manual requirements. The developer shall also construct additional bioretention facilities within the development to help further remove contaminants and sedimentation from Lake Lanier, per the approval of the Gainesville Department of Water Resources.**
10. **A Uniform Sign Plan as identified within the Gainesville Unified Land Development Code shall be required from the developer and is subject to approval by the Gainesville Community and Economic Development Director. All signs shall be limited to indirect**

lighting. All signs shall be located outside of utility areas and shall not block visibility of vehicular traffic.

11. **The development shall include a minimum fifty foot (50') wide perimeter buffer fronting Thompson Bridge Road consisting of 25' natural/undisturbed buffer and a 25' wide planted buffer. In addition, a minimum forty foot (40') wide perimeter buffer consisting of a 20' natural/undisturbed buffer and a 20' wide planted buffer shall be required adjacent to all of the existing single-family communities and Crystal Drive. The planted portion of the buffers shall include at minimum a staggered row of evergreen trees consisting of a mixture of Cryptomeria, Arborvitae and Eastern Red Cedar trees at a minimum height of 10 feet. The location, spacing, size and type of trees planted shall be subject to the approval of the Community and Economic Development Department Director.**
12. **The front yard of each lot shall be sodded and planted with at least one 3" caliper in size hardwood tree.**
13. **All proposed detention ponds shall be fenced and landscaped in order to mitigate the view from all roads and adjacent properties. All fencing and landscaping materials shall be approved by the Community and Economic Development Department Director.**
14. **Access to the development shall be limited to Thompson Bridge Road except for a gated, emergency-only access road off of Crystal Drive. The proposed Thompson Bridge Road access shall be located more central to the development frontage upon Georgia Department of Transportation (GDOT) approving the intersection sight distance standards. All access point design for the subject property shall be submitted for review and approval by the Gainesville Public Works Director and GDOT.**
15. **Other than the development of the emergency-only access road at Crystal Drive, construction access shall be limited to Thompson Bridge Road.**
16. **All new streets shall meet the standards within the current Gainesville Unified Land Development Code, unless varied herein and approved by the Gainesville Public Works Department. All costs associated with the improvements shall be at the full expense of the developer.**
17. **Covenants shall be put in place by the developer restricting against the parking of boats, trailers, and campers within driveways or streets. In addition, no on street parking shall be permitted for vehicles.**



Applicant: GRAND COMMUNITIES, LLC

ANNEXATION & REZONING REQUEST

Request:
Annex +/- 2.559 AC and establish zoning as Planned Unit Development (P-U-D). Rezone +/- 33.82 AC from Residential I (R-I) to Planned Unit Development (P-U-D) for a residential development.

Subject Property Address:
0, 1799, 1805, 1825, 1829, 1981 Thompson Bridge Rd.;
1936 Crystal Dr.

Tax Parcel:
00-090-002-024, 01-090-002-021, 00-090-002-021, 00-090-002-022, 00-090-002-023, 00-090-002-032; 00-090-002-001

Subject Property

Right-of-way to be annexed

Meeting Date: 11/12/2024

Map Prepared: 10/01/2024

0 300 600 900 1,200 Feet

SCALE: 1:6,000

N W E S

Applicant: GRAND COMMUNITIES, LLC

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Aerial from 2023

Meeting Date: 11/12/2024

Map Prepared: 10/01/2024

0 300 600 900 1,200 Feet

SCALE: 1:6,000

N W E S

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NARRATIVE REPORT, LAND USES AND DEVELOPMENT SUMMARY, IMPROVEMENT REQUIREMENTS COMPARISON, AND COMMUNITY BENEFIT STATEMENT FOR ZONING APPLICATION

Applicant:	**Grand Communities, LLC**
Subject Property:	**36.561 Acres Designated as Hall County Tax Parcel(s): 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 00090 002001**
Current Zoning:	**R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County)**
Proposed Zoning:	**PUD – Planned Unit Development**
Proposed Use:	**53 Dwellings, Single-Family Detached; plus 88 Dwellings, Single-Family Attached;**
Application:	**Rezoning & Annexation**
ROW Access:	**Thomson Bridge Road (SR 60) and Crystal Drive**
Governing Jurisdiction:	**City of Gainesville**

This statement is intended to comply with the application procedures established by The City of Gainesville, GA for submittal of applications for annexation as required by the City of Gainesville Unified Land Development Code (the "ULDC"), City of Gainesville Public Hearing Application Requirements, and other City of Gainesville Ordinances and Standards and is intended to serve as the Narrative Report required by the ULDC. As part of this Narrative Report, the Applicant asserts the statements contained in the Application for Zoning Actions package, submitted herewith incorporated herein by reference, and as may be amended (the "Application"), describing justification for the requested zoning and for any request of variances, in any, as if such were fully stated herein.

The Applicant proposes to zone a total of 36.378 acres located within the City of Gainesville.

I. Land Uses and Development Summary

Specifically, the Applicant requests the following:

1. **The Annexation of parcel 00090 002001 into the City of Gainesville.**

2. **Rezone the Subject Property from R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County) to PUD – Planned Unit Development (City of Gainesville).**

The Applicant proposes to develop the Proposed Use on the Subject Property, consisting of the following:

- **53 Single-Family Detached Dwellings**

- **88 Single-Family Attached Dwellings**
- **Amenity Areas, clubhouse, playground, nature trail (mulch trail), pool**

The Subject Property is located between Thompson Bridge Road and Crystal Drive south of Lake Lanier. To the Subject Property's south is the Mountain View neighborhood zoned R-I and to the north is the Springview neighborhood also zoned R-I. To the east, nearby properties are zoned N-B and R-B and to the west, nearby property are zoned N-C and R-I.

The Proposed Use is consistent with the intent of the Comprehensive Plan. The Subject Property is located in the Lake District Character Area of the Gainesville 2040 Comprehensive Plan, which states, "New housing will be a major source of growth for the area and should feature a wide range of product, from townhouses to high-end single-family detached homes. The area should maintain and advance a residential focus on both sides of the Lake Lanier bridge, combining traditional neighborhood development (TND) walkability with the natural character of the Country Club." 2040 Comp. Plan, p. 168. Appropriate land uses and development types in this Character Area are:

- Single-family residential;
- Limited multi-family residential;
- Limited general mixed-use;
- Limited commercial (retail and office)

The PUD zoning district is listed as an appropriate zoning district under the 2040 Comprehensive Plan. *Id*. At 171. The Proposed Use will accomplish the goals of the 2040 Comprehensive Plan by providing a variety of housing types consisting of single-family detached and single-family attached housing.

The Subject Property is designated as "General Mixed Use" and "Single Family Residential" on the Future Land Use Map.

A. Zoning and Land Use.

The Applicant is proposing to rezone the Subject Property from R-I – Residential District (City of Gainesville) & R-I – Residential District (Hall County) to Planned Unit Development (PUD) (City of Gainesville). The Applicant proposes to subject the Subject Property to the land uses and performance standards stated below and as depicted on the Concept Plan and the Conceptual Master Plan, submitted concurrently with the Application and incorporated herein by reference.

	Single Family Attached (SFA) (Townhomes)	**Single Family Detached (SFD)**
Total Acreage	36.561 Acres	
Minimum Open Space	20% (7.31 acres)	
Total Density	±3.86 U/A	
Permitted Uses	Townhomes	Single Family Detached
Use Quantity	Up to 88 Units	Up to 53 Units

Maximum Lot Coverage	None	None
Minimum Lot Size	2,000 SF	7,000 sf
Minimum Lot Width	20 ft	60 ft
Minimum Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior: 20 ft Property line to Community Rec Facility: 20 ft	Front: 20 ft Rear: 20 ft Side: 5 ft, with 15 feet between detached structures Exterior: 20 ft Property line to Community Rec Facility: 20 ft
Minimum Exterior Buffers	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted
	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted
Minimum Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Maximum Townhome per Building	6 units	N/A
Stream Buffers / Impervious Setbacks	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.
Maximum Height	42 ft	42 ft
Maximum Building Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required
	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb

Street Improvement Requirements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No Maximum Cul-De-Sac Length	No Maximum Cul-De-Sac Length
	175 ft Minimum Radius Curvature of Center Line	175 ft Minimum Radius Curvature of Center Line
	Minimum tangent length - 50 ft	Minimum tangent length - 50 ft
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5 spaces	Minimum Community Rec Facility Parking Spaces: 5 spaces
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

B. Proposed Construction Phasing Schedule.

Construction will occur over approximately 48 months. Upon issuance of Land Disturbance Permit, which is estimated to require up to 12 months, the Applicant anticipates the project will be developed within 12 months thereafter, and houses to be constructed over the following 36 months.

The Applicant estimates there will be on average **1.8 occupants per unit**. Assuming this to be the case, the Applicant expects the population of the new development to be as follows:

Projected Subdivision Population			
Year	New Houses	Total New Households	Population of New Homes
1	0	0	0
2	47	47	85
3	47	94	170
4	47	141	254

C. Traffic Impact Analysis.

The Applicant also submits with this Narrative Report, and incorporates herein, a Trip Generation Report and Traffic Study Network Determination.

Permanent access to the development will be from the ROW Access. All of the development's interior streets and driveways will be privately-owned and maintained. In addition, such interior streets may be gated, at the election of the property owner.

Traffic generated from the development will be minimal and the entrance will be at a location where sight distance is sufficient. All curb cuts shall be coordinated and approved by the City of Gainesville and GDOT and acceleration and deceleration lanes will be installed as required. All streets within the development will be constructed to conform to standard requirements. Parking will be provided onsite as required by the ULDC.

D. School System.

The Table below estimates the number of school children expected to be generated by the project, based upon the ratio of the estimated number of school children in the Governing Jurisdiction (8,022) to the estimated number of households in the Governing Jurisdiction (14,619), then multiplying the quotient by the number of residential units in the Proposed Use. This factor is calculated to be 0.55 students per household.

Projected Student Population Impact: After calculating the first year add that amount to each year thereafter	
Year	**Total**
1	0
2	26
3	52
4	78

The numbers above are a planning factor used to project total student population and plan the need for new school facilities. However, the actual number of students who live in the proposed development may be more or less than the factor above, because the method of calculation uses a total number households citywide, with some households containing more than the average number of children and others comprised of zero children.

E. Utilities.

With regard to public utilities, water, sanitary sewer, electricity, and cable are available to the site. The development's water and sewer needs will be served by the City of Gainesville. The Applicant will install underground utility lines within the development to serve the project on an as-needed basis.

F. Environmental Impact.

The project should also have a minimal impact on the environment. There should be no impact on air quality. Drainage, soil erosion, and sedimentation controls will be extensively utilized on the site after obtaining all required approvals from the Soil Conservation Service and the City of Gainesville. Best management practices will be utilized to protect natural resources. The Applicant will submit plans detailing the development for approval by all applicable and appropriate governmental agencies, based on conformity with subdivision and zoning requirements, as well as other applicable ordinances, statutes, and regulations.

II. Improvement Requirements Comparison

	City Standards	Proposed Standards
Local Street ROW Widths	50 feet	50 feet
Pavement Widths	24 feet	28 feet
Sidewalk Width	4 feet	5 feet
Sidewalk Location	At least 1 side of each residential road	Both sides of internal streets.

III. Community Benefit Statement.

The community will benefit from the Proposed Use, which will provide high quality housing and amenity areas to the residents. The Proposed Use will have little impact on school attendance.

The Proposed Use will provide quality architectural designs, and extend utility services to areas currently unserved by water and sewer. The access design will mitigate the potential traffic impact to Thompson Bridge Road and Crystal Drive.

CONCLUSION

Approval of the Application will be in the best interest of the City. The Applicant respectfully requests that the Application, as requested by the Applicant, be approved. The Applicant also reserves the right to amend this statement and the Application by supplementing further responses and documents.

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RESERVATION OF CONSTITUTIONAL AND OTHER LEGAL RIGHTS

Applicant:	**Grand Communities, LLC**
Subject Property:	**36.561 Acres Designated as Hall County Tax Parcel(s): 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 00090 002001**
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Proposed Zoning:	**PUD – Planned Unit Development**
Proposed Use:	**53 Dwellings, Single-Family Detached; plus 88 Dwellings, Single-Family Attached;**
Application:	**Rezoning & Annexation**
ROW Access:	**Thomson Bridge Road (SR 60) and Crystal Drive**
Governing Jurisdiction:	**City of Gainesville**

This Reservation of Constitutional and Other Legal Rights ("the Reservation") is intended to supplement and form a part of the land use application (including any request for zoning, conditional use permit, site plan approval, and variances) (collectively, the "Application") of the Applicant and the owners of the Subject Property (collectively, the "Owner") and to put the Governing Jurisdiction on notice of the Applicant's assertion of its constitutional and legal rights.

The Applicant has filed a timely application, has provided all required information and has submitted the appropriate application fees. The Application meets all judicial and statutory requirements for approval.

The Applicant objects to the standing of any opponents who are not owners of land adjoining the Subject Property and to the consideration by the Governing Jurisdiction of testimony or evidence presented by any party without standing in making its decision regarding the Application. The Applicant also objects to the consideration of testimony or evidence that is hearsay, violates any applicable rules of procedure or evidence, or that is presented by any party who fails to comply with notice and campaign disclosure requirements.

The Current Zoning (and/or zoning conditions) of the Subject Property is unconstitutional and deprives the Subject Property and all viable economic use thereof. The Proposed Use is the only viable economic use of the Subject Property, and the Governing Jurisdiction has deemed this Application necessary to allow the Proposed Use. As such, the Applicant and Owner file this Application for the purpose of changing the Current Zoning (and/or zoning conditions and requesting variances) to facilitate the Proposed Use, and to exhaust administrative remedies in the event the Application is denied. As such, the filing of this application is not an admission of the need for any such approval of the Applicant's right to develop the property. The Applicant and Owner reserve the right to challenge the Current Zoning and any zoning conditions and other restrictions affecting the Subject Property.

Denial of the Application or approval of the Application in any form that is different than as requested by the Applicant will impose a disproportionate hardship on the Applicant and Owner of the Subject Property without benefiting any surrounding property owners. There is no reasonable use of the Subject Property other than as proposed by the Application and no resulting benefit to the public from denial of or modification to the Application.

Any provisions in the applicable land use, subdivision, and /or zoning ordinances (collectively the "Zoning Ordinance") that classify, or may classify, the Subject Property into any of the non-requested zoning or use classifications, including the Proposed Zoning District and Proposed Use at a density or intensity less than that requested by the Applicant, are unconstitutional in that they constitute a taking of the Applicant's and Owner's property rights without first paying fair, adequate, and just compensation for such rights in violation of Article I, Section III, Paragraph I of the Georgia Constitution of 1983, as amended and the Fifth and Fourteenth Amendments to the Constitution of the United States.

The Subject Property is suitable for development as proposed in the Application and it is not suitable for development under any other zoning classification, use, or at a density or intensity less than that requested by the Applicant. Failure to approve the Application as requested by the Applicant would be an unreasonable application of local land use authority, which bears no relationship to the public health, safety, morality or general welfare of the public and would constitute an arbitrary and capricious abuse of discretion in violation of Article I, Section I, Paragraph I of the Georgia Constitution of 1983, as amended and the Due Process Clause of the Fifth and Fourteenth Amendments to the Constitution of the United States.

A refusal by the Governing Jurisdiction to approve the Application as requested by the Applicant will prohibit the only viable economic use of the Subject Property, will be unconstitutional and will discriminate in an arbitrary, capricious and unreasonable manner between the Applicant and Owner and the owners of similarly situated properties in violation of Article I, Section I, Paragraph II of the Georgia Constitution of 1983, as amended, and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States.

A refusal by the Governing Jurisdiction to approve the Application as requested by the Applicant without the consent of persons elected to the governing body of the Governing Jurisdiction will amount to an unlawful delegation of the Governing Jurisdiction's authority, in violation of Article IX, Section II, Paragraph IV of the Georgia Constitution of 1983, as amended.

Furthermore, the Governing Jurisdiction cannot lawfully impose more restrictive standards on the Subject Property's development than are presently set forth in the Zoning Ordinance. Any conditions or other restrictions imposed on the Subject Property without the consent of the Applicant and Owner that do not serve to reasonably ameliorate the negative impacts of the development are invalid and void. The imposition of improvements or design requirements unnecessary to facilitate the proposed development constitute an illegal impact fee, an unconstitutional condemnation, or both. As such, the Applicant and Owner reserve the right to challenge any such conditions, restrictions, or design requirements.

The Applicant and Owner assert that each has expended substantial sums and significantly changed its economic position in reliance upon versions of the Zoning Ordinance that allow the development of the Subject Property as proposed by the Applicant. As such, the Applicant has acquired vested rights to develop the property and the filing of this Application shall not constitute a waiver of those vested rights.

Finally, the Applicant and Owner assert that the current Zoning Ordinance, Character Area Map, Future Development Map and Comprehensive Plan were not adopted in compliance with the laws or constitutions of the State of Georgia or of the United States, and a denial of the Applicant's request based upon provisions illegally adopted will deprive the Applicant and Owner of due process under the law.

By filing this Reservation, the Applicant reserves all rights and remedies available to it under the United States Constitution, the Georgia Constitution, all applicable federal, state, and local laws and ordinances, and in equity.

The Applicant and Owner respectfully request that the Application be approved as requested by the Applicant and in the manner shown on the Application, which is incorporated herein by reference. This Reservation forms an integral part of the Application, and we ask that this Reservation be included with the Applicant's other Application materials. The Applicant and Owner reserve the right to amend and supplement this Reservation at any time.

Sincerely,

Ethan Underwood

Ethan Underwood
Attorney for Applicant

SAPPHIRE SPRINGS

GAINESVILLE, GA

FISCHER HOMES

A PLANNED UNIT DEVELOPMENT | OCTOBER 31, 2024

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SAPPHIRE
SPRINGS

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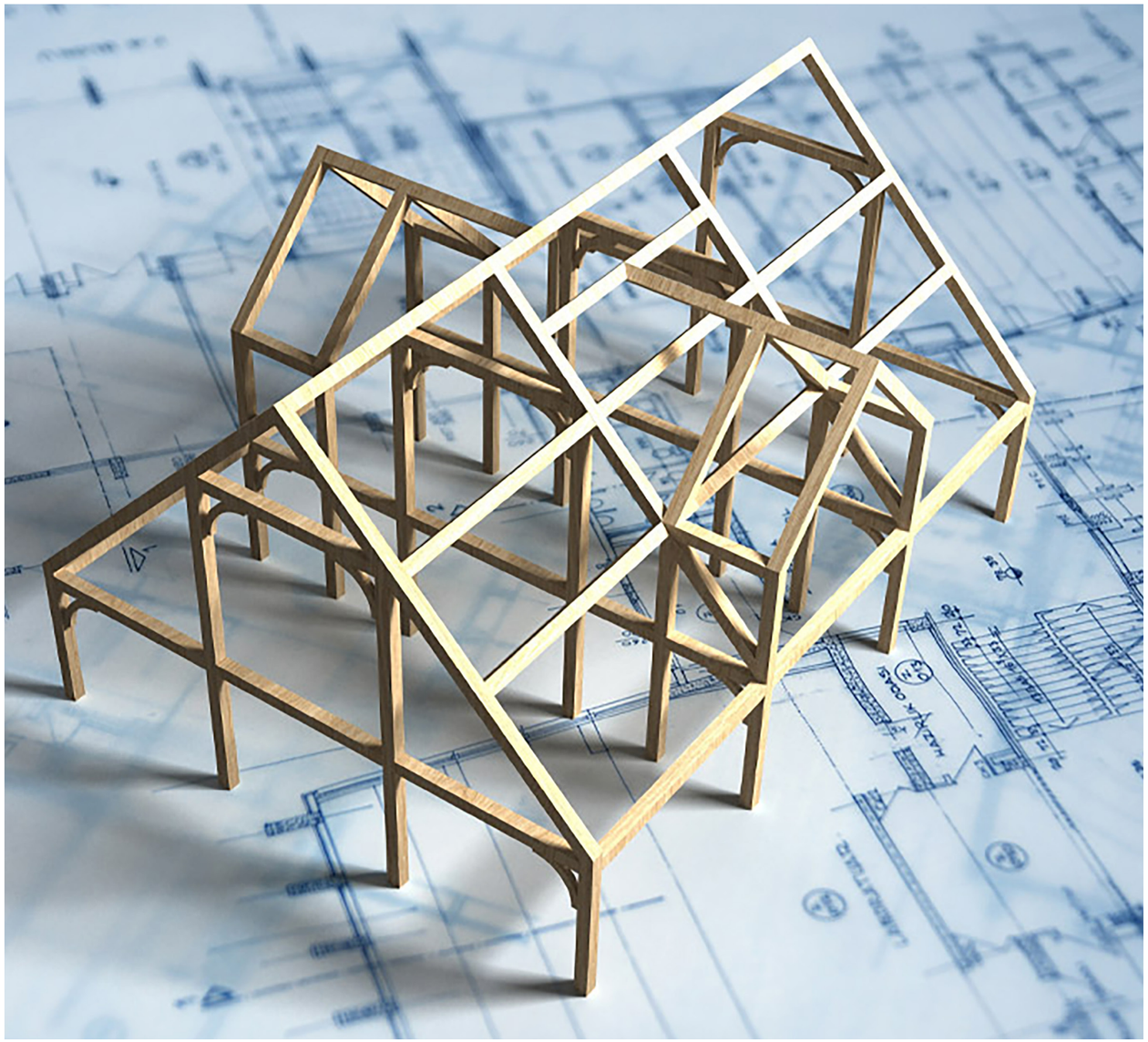
DEVELOPER'S STORY

OF SAPPHIRE SPRINGS



HISTORY

Fischer Homes is a privately-owned home builder based in the Greater Cincinnati area. Fischer Homes was founded in 1980 as Henry Fischer Builder, Inc. on the belief that dreams were meant to become reality. Today, Fischer Homes is one of the largest builders in the nation; ranked 32nd (per the Home Builder Executive) of the Largest U.S. home builders. Fischer Homes is located in six other markets - Columbus, OH (2008), Indianapolis, IN (2009), Atlanta, GA (2013), Louisville, KY (2018), Dayton, OH (2020), St. Louis, MO (2021), and Northwest Florida (2023).

PHILOSOPHY

Create an Exceptional Customer Experience. From the company's beginning, the focus has been on our customers, and today the company is single-mindedly dedicated to this guiding principle. Through the years, Fischer Homes has been honored with many awards, but our high level of Customer Satisfaction is most important. Each homeowner has our commitment that building a home with us will be one of the most enjoyable experiences of their lives.

Thoughtful consideration is given to the communities which we choose to build, and we take special pride in the amount of forethought and planning that goes into each of our neighborhoods. We concentrate on creative and efficient communities that are easy for homeowners to enjoy and maintain. By providing residents with the proper tools and a solid community foundation, homeowners can enjoy life in a sustainable and beautiful setting to stand the test of time. Our legacy is important, and we set up our communities and homeowners to succeed over the long-term.

Our vision for our urban infill product is "to build exceptional urban homes in distinctive, walkable neighborhoods that appeal to a range of buyers and leverage our strengths in sales, construction, and operations."

MISSION

Our mission is to deliver the "best total new home solution."

- High-quality homes in highly desirable locations
- Thoughtful and caring approach to overall community design
- Believe the community is an extension - an integral part - of the home
- Continuous investment in home designs

LOCATION

OF SAPPHIRE SPRINGS

The future Sapphire Springs development is located approximately 3.5 miles north of I-985 at exit 22 and 2.5 miles north of downtown Gainesville. The site is situated along the southwest side of Thompson Bridge Road (Highway 60), between the intersections of Springview Drive and Mountain View Drive. The property is 0.3 miles from Lake Lanier. One unnamed stream exists on the property, which drains into an unnamed tributary that eventually flows into Lake Lanier.

The subject site includes seven tax parcels with Parcel IDs of 0090 002001, 00090 002021, 00090 002022, 00090 002023, 00090 002024, 00090 002032, and 01090 002021. Parcel 0090 002001 will be annexed into Gainesville city limits during the rezoning process for the project. The latitude and longitude coordinates for the site are 34.327675°N, -83.839448°W.

The property is surrounded by a variety of residential and commercial properties. Five existing home sites with houses are located within the northeastern property boundary along the southwest side of Thompson Bridge Road. Single-family residential properties are located along the northwestern, southern, and southeastern site boundaries. Multiple commercial properties are located on the northeast side of Thompson Bridge Road, within a shopping center. Many larger retail stores such as Walmart (just 0.4 miles south of the site) and Publix (0.7 miles south of the site) anchor Thompson Bridge Road. The Northeast Georgia Medical Center is located 2.7 miles south of the development via the Hwy 129 business route.

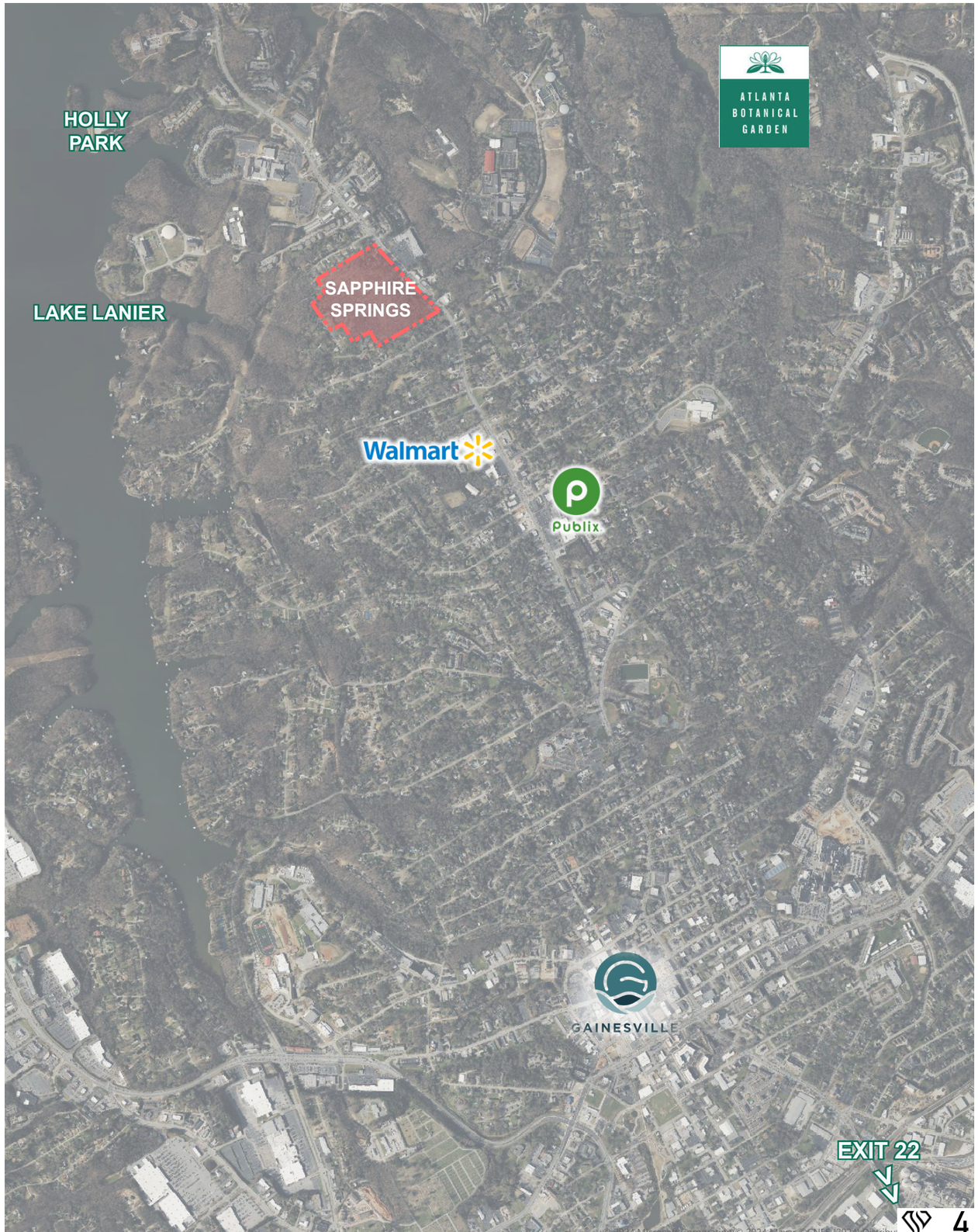
Additional Location Information

Proximity to Parks and Recreation: The site is close to several parks and recreational areas, including Holly Park, which is approximately 1.2 miles to the north and Laurel Park, which is approximately 1.5 miles northeast and offers amenities such as boat ramps, picnic areas, and sports facilities.

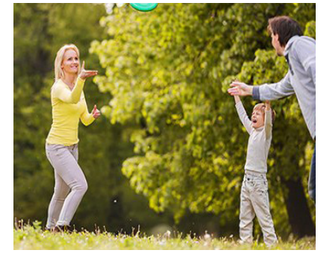
Educational Institutions: Nearby schools include Riverside Preparatory Academy, Enota Multiple Intelligences Academy and Gainesville High School, all within a 3-mile radius.

Transportation: The site is well-connected with major roads and highways, providing easy access to Atlanta (approximately 55 miles southwest via I-985 and I-85).

Economic Development: The area is experiencing growth of new residential developments, commercial developments and infrastructure improvements. The proximity to these existing locations enhances the overall appeal and accessibility for the future Sapphire Springs development.



PROJECT OVERVIEW AND CHARACTER



Sapphire Springs is a master planned community consisting of 141 homes / units on 36.561 acres with an overall density of 3.86 units per acre. The development will be separated into two housing options of single family detached homes and single family attached townhomes, catering to diverse needs and preferences. This mix consists of (53) 60' wide (minimum) single-family detached lots along with (44) single-family attached units of 24' townhomes and (44) 20' (minimum) single family attached units of townhomes. The variety of product types is intended to encompass different price points and accommodate the varying lifestyles of the residents.

The community is non gated with a dedicated amenity area that forms a gathering area between the two product pods. Social spaces like the clubhouse and mail kiosk area will foster a sense of community, encouraging interactions among residents. Additional opportunities for interaction include sidewalk connections and mulch walking trails.

The identity of Sapphire Springs would be deeply rooted in the area's natural beauty and recreational opportunities associated with Lake Lanier and the City of Gainesville. Lake Lanier, known for its expansive waters and scenic surroundings, would play a central role in shaping the development's identity with adjacent amenities such as boating, fishing, and hiking, creating a lifestyle that celebrates the lake's serene environment. Additionally, the proximity to Gainesville, with its rich history and vibrant downtown, would infuse the development with a sense of cultural heritage and local charm. The identity of this new area would be a blend of lakeside tranquillity and small-town warmth, offering residents a unique and appealing living experience.

The character of this new development would be one of inclusivity, relaxation, and a strong connection to nature, making it an inviting place to call home.

STREET SYSTEM

OF SAPPHIRE SPRINGS

Primary access to the future development will be from Thompson Bridge Road, also known as Highway 60, near the current driveway of a residential home site at 1981 Thompson Bridge Road. The entrance is positioned at a curb cut along Thompson Bridge Road, which is a four-lane road with a center turn lane, facilitating traffic flow and access to adjacent properties. Secondary emergency access will be west of the main entrance, from Crystal Drive.

Sapphire Springs will be a non-gated community with public roadways. Streets will typically be constructed to the City of Gainesville standards and will include a 5' sidewalks on both sides of the streets, street lights and cross walks where indicated. Multi-use paths or walking trails may be constructed of concrete, asphalt, gravel or mulch.

Some variations to street design standards are anticipated due to the existing stream buffer, which creates two pods within the site. These variations promote the slowing of vehicular traffic and provide a more creative approach to street design. Variations to the street standards include 1: cul-de-sacs may be non-standard as depicted on the site plan, 2: a reduction in the horizontal centerline radius from 275'R to 175'R, 3: no maximum cul-de-sac length, 4. minimum tangent length - 50 ft.

CONCEPTUAL RENDERING

SITE DEVELOPMENT

OF SAPPHIRE SPRINGS

MONUMENTATION AND SIGNAGE

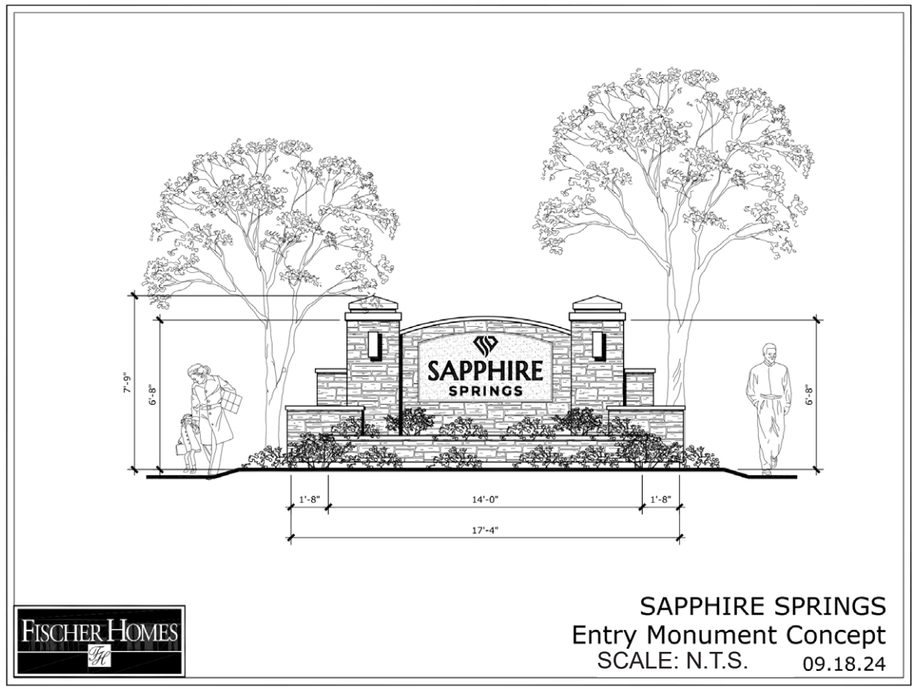
The primary entrance to Sapphire Springs is situated just beyond the intersection of Mountain View Drive and Thompson Bridge Road. This entrance serves as the main visual access point to the project, heralding the development. Given its importance in forming Sapphire Springs' first impression, the entrance will feature landscaping, signage, monumentation, and lighting to create a sense of place and a welcoming arrival point. The design of the monument sign will mirror the architectural and landscape style of the development. Additional signage within the development will identify amenities and residential streets.

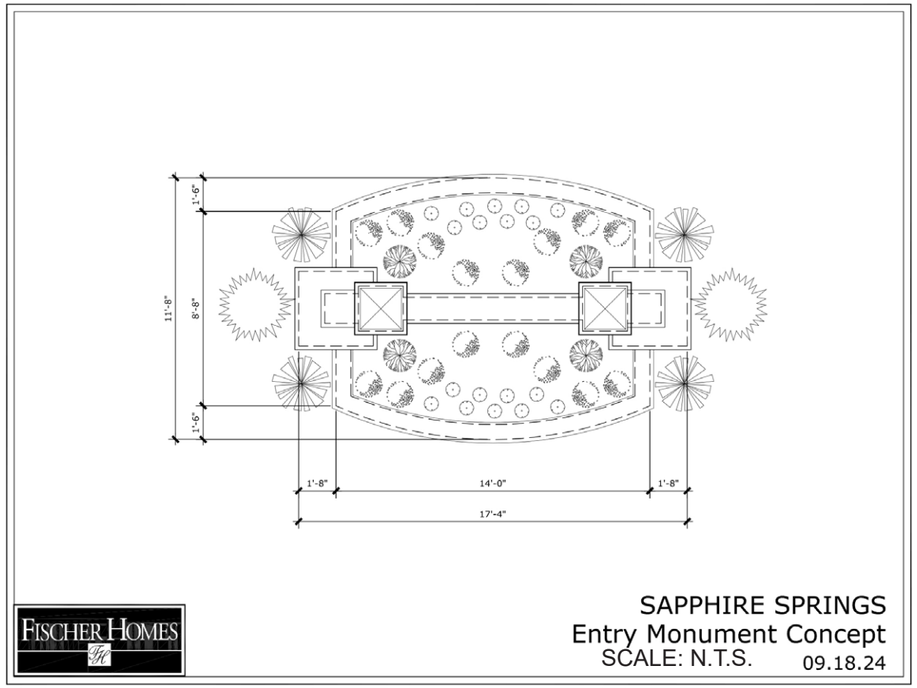
SECONDARY IDENTIFICATION

Signage and monumentation elements may be distributed throughout the development, maintaining a style consistent with the major project identification signs but on a smaller scale. Secondary identification may be placed on the interior streets of Sapphire Springs, indicating residential street names. Minor informational signs may also be used to guide visitors to various amenities and points of interest within Sapphire Springs. These signs might include event listings and other relevant community information.

LANDSCAPING

Alongside the infrastructure design, the thoughtful planning and design of outdoor spaces is critical in cultivating the desired atmosphere of Sapphire Springs. The overall landscape concept for this area plays a vital role in unifying the community, ensuring that residences and related improvements blend seamlessly with the existing scenic beauty and natural conditions. The development will respect the area's natural setting by preserving existing canopy and providing new plantings that harmonize with the existing environment and the landscape character of the region. The developer will establish a consistent landscape that responds to aesthetic concerns and helps establish a positive image within the development for years to come.

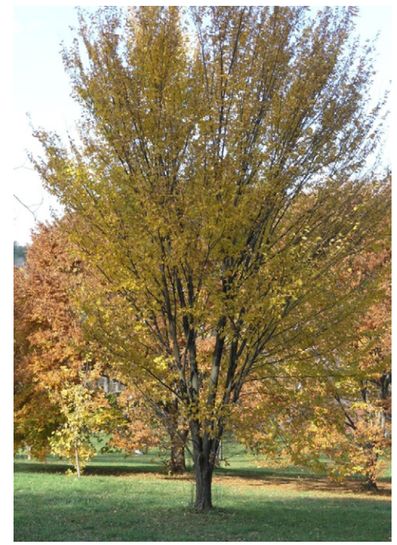




LANDSCAPING

DOGWOOD

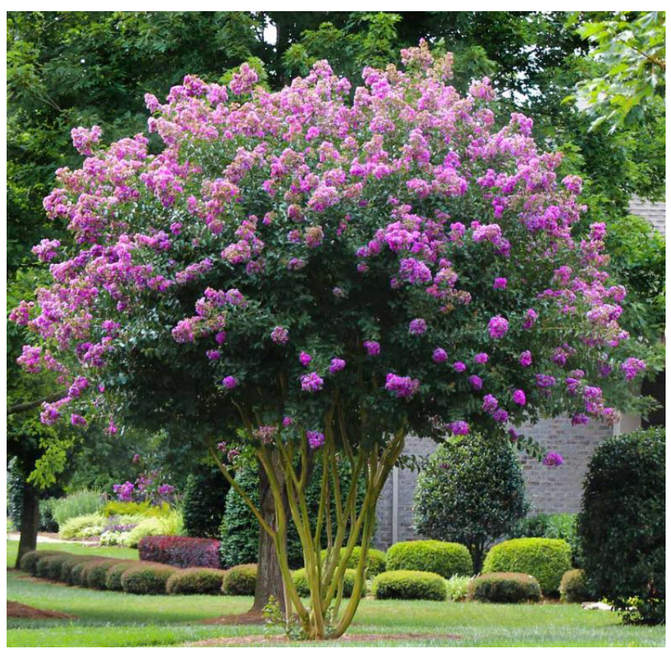
FLOWERING CHERRY



ELM

ARNOLD TULIP POPLAR

LEYLAND CYPRESS



CRAPE MYRTLE

OAK

REDBUD

RED MAPLE

Plant material may include, but is not limited to this palette

COMMUNITY STANDARDS

OF SAPPHIRE SPRINGS

MAINTENANCE AND OWNERSHIP OF STREETS AND OPENS SPACES
All the streets and sidewalks, including those within individual phases, are intended to be built as publicly maintained streets and turned over to the City for ownership. All interior open spaces and common elements (including structural slopes, walls, etc.) will be deeded to the master homeowners association for maintenance and operation.

The hoa(s) will maintain and manage all of the common areas of the development, including financial management and enforcement of community standards. Any modifications or new construction within the community must be approved by an architectural review board. The board will be established and operated by the developer until such time as the powers are transferred to the hoa(s).

WATER AND SEWER UTILITIES
Water and sewer utilities will be provided by City of Gainesville. There is an existing 8” waterline that runs along Thompson Bridge Road that Sapphire Springs will tie into. The site also has existing sewer that enters from the southeastern adjacent property and runs parallel to the existing stream before exiting. The existing sewer pipes are planned to be rerouted for development.

FENCES AND WALLS
Fences and walls should be designed and maintained in relationship with the character of the surrounding land uses and structures. Retaining walls will be constructed of concrete, architectural modular block, gabion material, or match the architectural character of the surroundings and site.

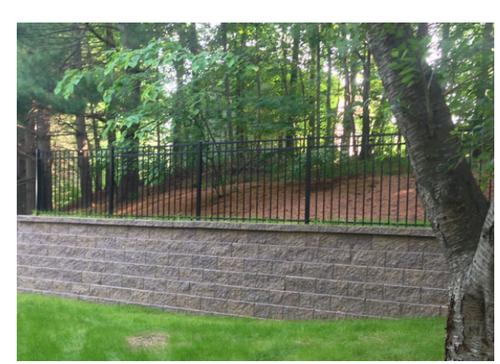
HOMEOWNERS ASSOCIATION
A mandatory Homeowners Association (HOA) or multiple associations will be formed for Sapphire Springs or portions thereof. The HOA(s) will maintain and manage all common areas of the development, including financial management, architectural controls, and enforcement of community standards. Any modifications or new construction within the community must be approved by an Architectural Review Board. The Board will be established and operated by the Developer until such time as the powers are transferred to the HOA(s).

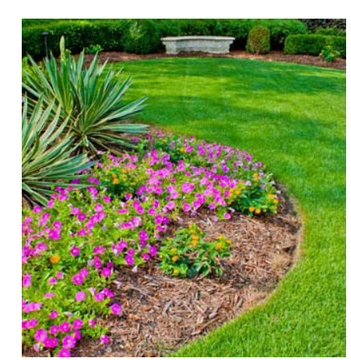
DRAINAGE AND STORMWATER MANAGEMENT
Highest elevations are in the northern and southern corners of the property, with gently sloping topography towards the intermittent stream in the central portion of the site, an overall drainage direction of west-northwest. The site drains into an unnamed tributary that eventually flows into Lake Lanier. Stormwater management facilities are planned at suitable stormwater pond management areas adjacent to the central drainage channel of the site, which reduces the amount of direct discharge into Lake Lanier.

USES
Land development for residential housing is dynamic because of the need to concurrently predict and respond to the local real estate market and national economic and demographic trends.
Approval of the Sapphire Springs Master Plan is intended to approve approximately 141 homes / units as the maximum number of units for the development. Housing products may be moved, combined, or reconfigured without limit within the development, provided the maximum number of units is not exceeded and the overall change will not increase impact to the roadway system at peak hours or increase the points of connection. Uses of a traditional, single-family residence for owner occupancy in this development are detached and attached forms of housing. Uses and standards described in the plan anticipate and describe single family residential construction. If the use and/or form of housing for a particular phase is not specifically described or detailed in the plan, such a use or form may be approved administratively by staff based on the existing approved standards of the City of Gainesville for such a form of construction on similar sites elsewhere in the incorporated areas of the city.

PHASING
The developer intends to construct Sapphire Springs in 3 separate phases. Phasing is generally sequential but may overlap. Lots of various sizes and ownership types may be under development concurrently in multiple portions of the overall site.

Phase 100: 31 Maple Street SFD residential units will be built (lots 1-29, 52, 53)
Phase 110: 28 Single family attached townhomes will be built (units 54-63, 126-141)
Phase 200: 22 The amenity area and Maple Street SFD residential units will be built (lots 30-51)
Phase 210: 32 Single family attached townhomes will be built (units 70-81, 110-117)
Phase 310: 28 Single family attached townhomes will be built (units 82-189)





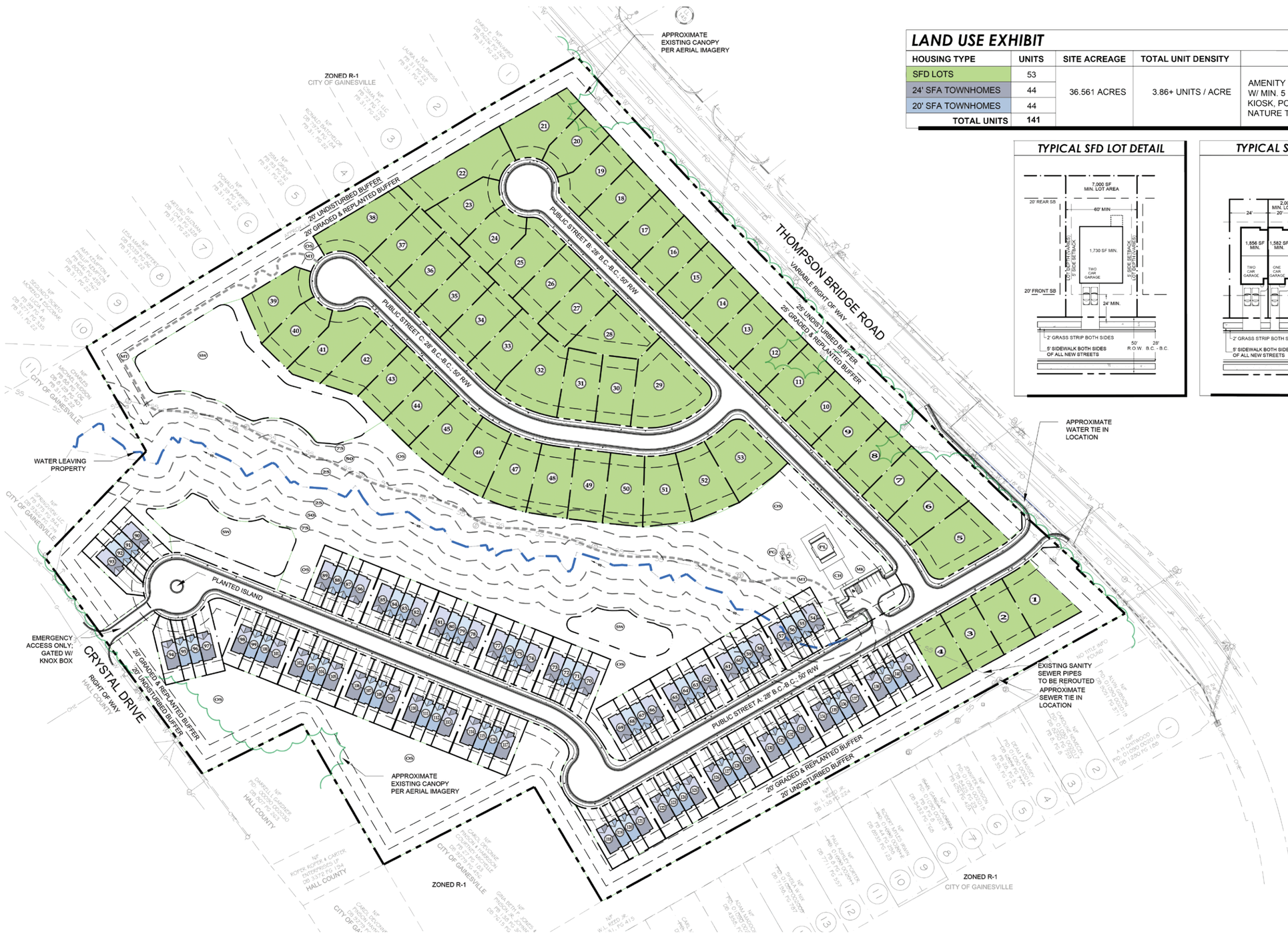
OPEN SPACE

OF SAPPHIRE SPRINGS

Sapphire Springs will have a minimum 20% (or 7.31 acres of the total acreage) of open space. The open space will surround the perimeter of the property, and will double as a natural and graded/replanted buffer. The open space will also include the preserved portion of the riparian corridor running through the middle of the site. Open spaces will provide areas for amenities including a clubhouse, pool, playground, and mulch walking trail running within the existing sanitary sewer easement. The undisturbed portion of open space will protect the natural beauty of the site as well as the environmentally sensitive areas.

Sapphire Springs is being developed with healthy lifestyle experiences in mind: lots of open spaces for passive recreation, a network of sidewalks, a mulch trail, and an active recreation area. This area will serve as the focal point when arriving from the main vehicular entrance, which will further foster a community central gathering area around open spaces.

LAND USE PLAN

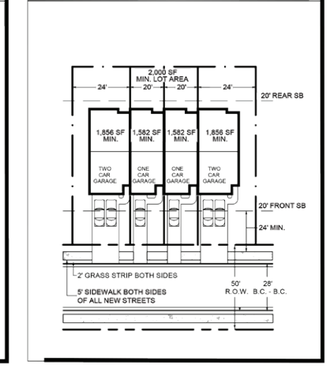


LAND USE EXHIBIT

HOUSING TYPE	UNITS	SITE ACREAGE	TOTAL UNIT DENSITY	FEATURES
SFD LOTS	53	36.561 ACRES	3.86+ UNITS / ACRE	AMENITY CLUBHOUSE (+/- 1,400 SF) W/ MIN. 5 PARKING SPACES, MAIL KIOSK, POOL, PLAYGROUND, & NATURE TRAIL
24' SFA TOWNHOMES	44			
20' SFA TOWNHOMES	44			
TOTAL UNITS	141			

TYPICAL SFD LOT DETAIL

TYPICAL SFA LOT DETAIL



CONCEPTUAL SITE PLAN

	Single Family Attached (SFA) (Townhomes)	Single Family Detached (SFD)
Total Acreage	36.561 Acres	
Minimum Open Space	20% (7.31 acres)	
Total Density	±3.86 U/A	
Permitted Uses	Townhomes	Single Family Detached
Use Quantity	Up to 88 Units	Up to 53 Units
Maximum Lot Coverage	None	None
Minimum Lot Size	2,000 SF	7,000 sf
Minimum Lot Width	20 ft	60 ft
Minimum Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior: 20 ft Property line to Community Rec Facility: 20 ft	Front: 20 ft Rear: 20 ft Side: 5 ft, with 15 feet between detached structures Exterior: 20 ft Property line to Community Rec Facility: 20 ft
Minimum Exterior Buffers	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted
	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted
Minimum Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Maximum Townhome per Building	6 units	N/A
Stream Buffers / Impervious Setbacks	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.
Maximum Height	42 ft	42 ft
Maximum Building Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required
	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb
Street Improvement Requirements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No Maximum Cul-De-Sac Length	No Maximum Cul-De-Sac Length
	175 ft Minimum Radius Curvature of Center Line	175 ft Minimum Radius Curvature of Center Line
	Minimum tangent length - 50 ft	Minimum tangent length - 50 ft
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5 spaces	Minimum Community Rec Facility Parking Spaces: 5 spaces
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

PROPERTY ADDRESS:
THOMPSON BRIDGE ROAD
GAINESVILLE, GA 30501

APPLICANT:
FISCHER HOMES
3940 OLYMPIC BLVD SUITE 400
ERLANGER, KY 41018
24 HR CONTACT - KYLE TRELOAR 605-430-1783

OWNERS
1. PARCEL NO: 00090 002021 - PINSON, BOBBIE S (CITY OF GAINESVILLE)
2. PARCEL NO: 01090 002021 - YAHNES, CAROL DEVONNE PINSON (CITY OF GAINESVILLE)
3. PARCEL NO: 00090 002022 - TURNER, ELANE L (CITY OF GAINESVILLE)
4. PARCEL NO: 00090 002023 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
5. PARCEL NO: 00090 002024 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
6. PARCEL NO: 00090 002032 - ROPER ROPER & CARTER ENTERPRISES LP (HALL COUNTY)
7. PARCEL NO: 00090 002001 - ROPER ROPER & CARTER ENTERPRISES LP (CITY OF GAINESVILLE)

SEWER NOTE:
EXISTING SEWER PIPES TO BE REROUTED ON SITE. SEWER PROVIDED BY CITY OF GAINESVILLE.

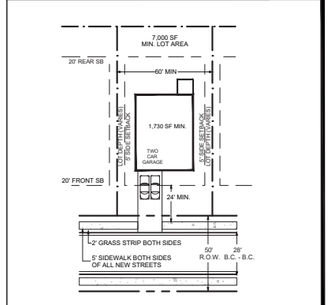
WATER NOTE:
WATER PROVIDED BY CITY OF GAINESVILLE.

STORMWATER NOTE:
STORMWATER WILL BE PROVIDED ON SITE.

FEMA NOTE:
ACCORDING TO FIRM NUMBER 13139C0179G DATED 04/04/2018 FOR HALL COUNTY GEORGIA, THE PROPERTY SHOWN DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA.

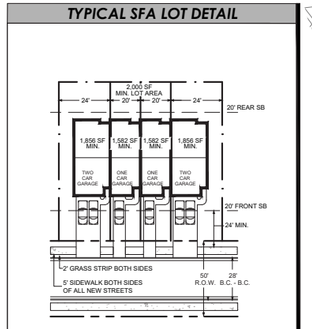
PHASING NOTE: THE DEVELOPMENT WILL HAVE 3 PHASES, WHICH INCLUDES 2 SUB-PHASES FOR THE SFD AND 3 SUB-PHASES FOR THE SFA.

TYPICAL SFD LOT DETAIL

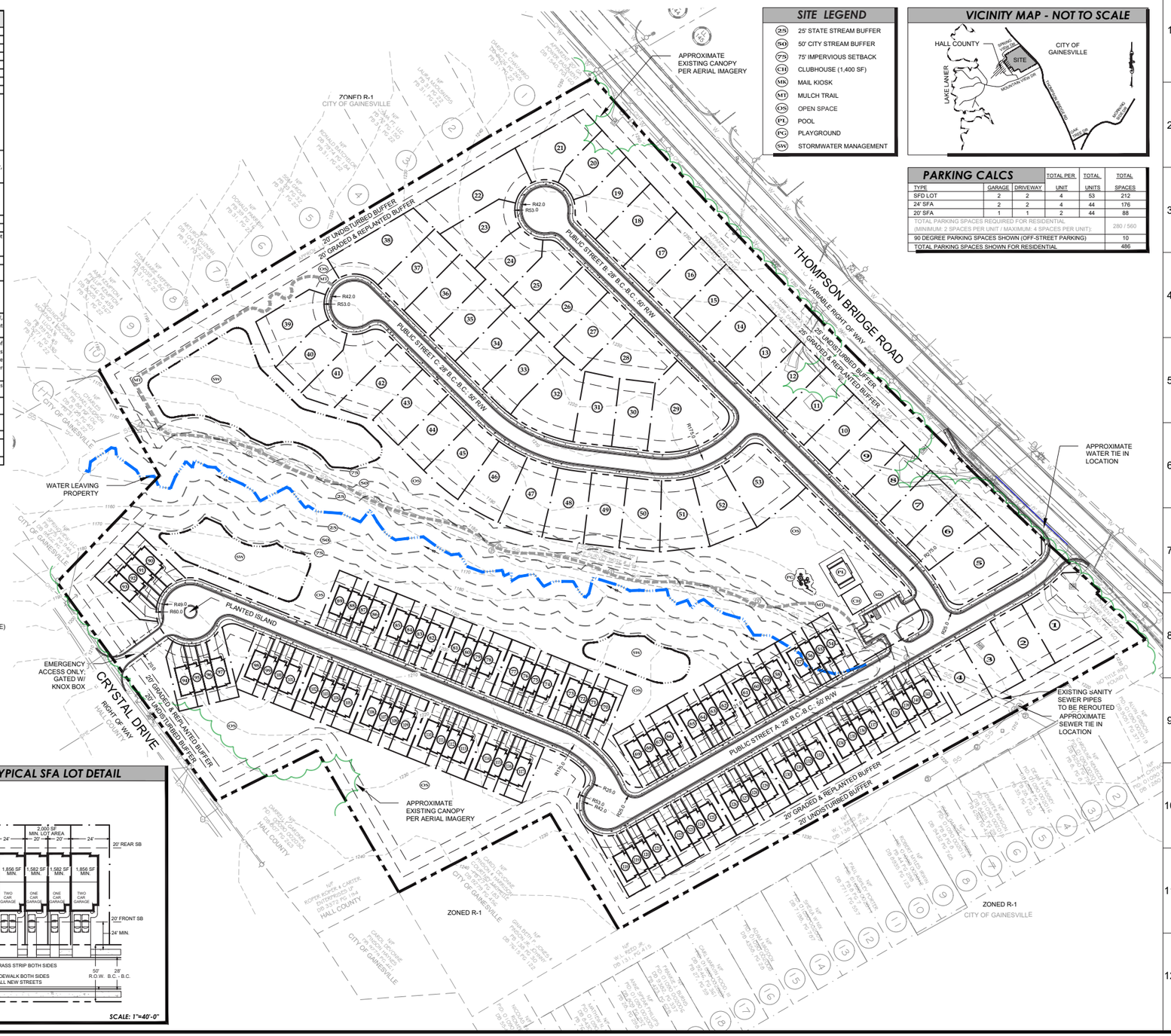


SCALE: 1"=40'-0"

TYPICAL SFA LOT DETAIL



SCALE: 1"=40'-0"



SITE LEGEND

25	25' STATE STREAM BUFFER
50	50' CITY STREAM BUFFER
75	75' IMPERVIOUS SETBACK
CH	CLUBHOUSE (1,400 SF)
MK	MAIL KIOSK
MT	MULCH TRAIL
OS	OPEN SPACE
PL	POOL
PG	PLAYGROUND
SW	STORMWATER MANAGEMENT

VICINITY MAP - NOT TO SCALE

PARKING CALCS

TYPE	GARAGE	DRIVEWAY	TOTAL PER UNIT	TOTAL UNITS	TOTAL SPACES
SFD LOT	2	2	4	53	212
24' SFA	2	2	4	44	176
20' SFA	1	1	2	44	88
TOTAL PARKING SPACES REQUIRED FOR RESIDENTIAL (MINIMUM 2 SPACES PER UNIT / MAXIMUM 4 SPACES PER UNIT):					280 / 560
90 DEGREE PARKING SPACES SHOWN (OFF-STREET PARKING)					10
TOTAL PARKING SPACES SHOWN FOR RESIDENTIAL					486

NO.	DATE	DESCRIPTION	BY	CHK	APV
1	10-31-24	ADD PERFERMANCE STANDARDS	###	###	###

NOT RELEASED FOR CONSTRUCTION

LJA ENGINEERING
299 S. MAIN STREET
ALPHARETTA, GA 30009
770-225-4730

FISCHER HOMES
3940 OLYMPIC BLVD.
SUITE 400
ERLANGER, KY 41018
OFFICE: 859.344.7261

SITE ZONING PLAN FOR SAPPHIRE SPRINGS

GAINESVILLE, GA 30501
LAND LOT 277, 278
PARCEL # 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 0090 002001

NORTH

SCALE: 1"= 80'
0 80

PROJECT NUMBER
GA5481-2403

SHEET TITLE
ZONING PLAN

SHEET NUMBER
C-100

File Location: s:\sedropbox\ga5481-2403 - thompson bridge road - hall county, ga\02-design\drawings\01-concept\zoning_10-25-24

AMENITIES

OF SAPPHIRE SPRINGS

Sapphire Springs will have a minimum 20% (or 7.31 acres of the total acreage) of open space. The open space will surround the perimeter of the property, and will double as a natural and graded/replanted buffer. The open space will also include the preserved portion of the riparian corridor running through the middle of the site. Open spaces will provide areas for amenities including a clubhouse, pool, playground, and mulch walking trail running within the existing sanitary sewer easement. The undisturbed portion of open space will protect the natural beauty of the site as well as the environmentally sensitive areas.

Sapphire Springs is being developed with healthy lifestyle experiences in mind: lots of open spaces, a network of sidewalks, a mulch trail, and an active recreation area. The main amenity clubhouse area will include the mail kiosk and may include benches for passive observation. This area will serve as the focal point when arriving from the main vehicular entrance, which will further foster a community central gathering area around open spaces.

There is an existing sanitary sewer easement that has contributed to some clearing of the existing canopy running along the center portion of the site with an east/west orientation, along the existing stream's flow. This area provides the best opportunity to meander a mulch trail with minimal impact to existing vegetation, while also allowing for enhanced maintenance of the trail system.

SINGLE FAMILY DETACHED RESIDENTIAL PRODUCTS

SAPPHIRE
SPRINGS

Maple Street Product

The Maple Street Collection offers single-family homes that make the dream of becoming a homeowner affordable! Whether a customer is looking for more space or is a first-time homebuyer, this collection provides a variety of floorplan options and design choices. Floorplans range from 1,200 to over 3,100 square feet of finished space. Customers have the flexibility to choose structural options such as additional bedrooms, private office space, or larger windows. At our Lifestyle Design Center, customers can explore a Maple Street-crafted room with numerous options, including exterior colors, countertops, cabinets, flooring, and more, to personalize their new home.

FISCHER HOMES

GREENBRIAR

Maple Street Collection

welcome home.

Approximately 1983 sq ft

URBAN MODERN
(WITH OPTIONAL BRICK)

designed by: FH

HYDE PARK COTTAGE
(WITH OPTIONAL BRICK)

designed by: FH

COASTAL CLASSIC
(WITH OPTIONAL PORCH)

designed by: FH

URBAN MODERN

designed by: FH

Images & Options Available at **fischerhomes**.com

Our Plans Include You

FISCHER HOMES

YOSEMITE

Maple Street Collection

welcome home.

Approximately 2258 sq ft

MODERN FARMHOUSE

designed by: FH

AMERICAN CLASSIC

designed by: FH

MODERN FARMHOUSE
(WITH OPTIONAL BRICK)

designed by: FH

WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

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Images & Options Available at **fischerhomes**.com

FISCHER HOMES

WESLEY
Maple Street Collection

welcome home.

Approximately 1842 sq ft

URBAN MODERN
(WITH OPTIONAL BRICK)

designed by: FH

WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

designed by: FH

MODERN FARMHOUSE

designed by: FH

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THE BRECKENRIDGE
MAPLE STREET COLLECTION

3,135-3,156 SQFT	2 Story	4-5 Bedrooms	2.5-3.5 Baths

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Modern Farmhouse

Western Craftsman

Urban Modern

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RVSD 12/23

FISCHER HOMES

JENSEN
Maple Street Collection

welcome home.

Approximately 2794 sq ft

Western Craftsman
(WITH OPTIONAL BRICK)

designed by: FH

Modern Retreat
(WITH OPTIONAL BRICK)

designed by: FH

American Classic
(WITH OPTIONAL BRICK & PORCH)

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Coastal Classic
(WITH OPTIONAL BRICK)

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Modern Farmhouse
(WITH OPTIONAL BRICK)

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FISCHER HOMES

THE DAVINCI
MAPLE STREET COLLECTION

1,730-1,752 SQFT	1 Story	3 Bedrooms	2 Baths

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Urban Modern

Western Craftsman

Coastal Classic

Modern Farmhouse

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SINGLE FAMILY TOWNHOME RESIDENTIAL PRODUCTS

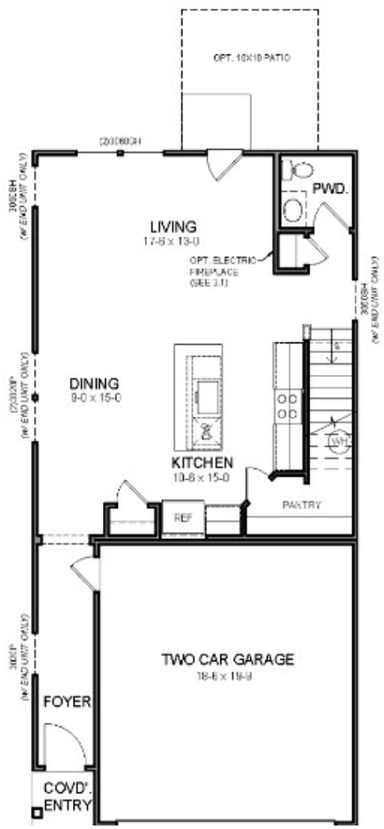
FISCHER HOMES

Wilder + Atlas Townhome Product

The Townhome Collection offers single-family, attached homes for first-time homebuyers, young professionals, or anyone looking for maintenance-free living. Residents will own their fee simple lots while enjoying the maintenance package established by the community HOA, freeing their time to be active participants in all of the shopping, dining, and other amenities Buckstone has to offer. Floorplans range from 1,550 to 1,850 square feet of finished space.

- Included 9ft first floor ceiling height
- Included 6ft privacy fence on rear of buildings between patios
- One and two car front entry

Wilder Townhome Floorplan

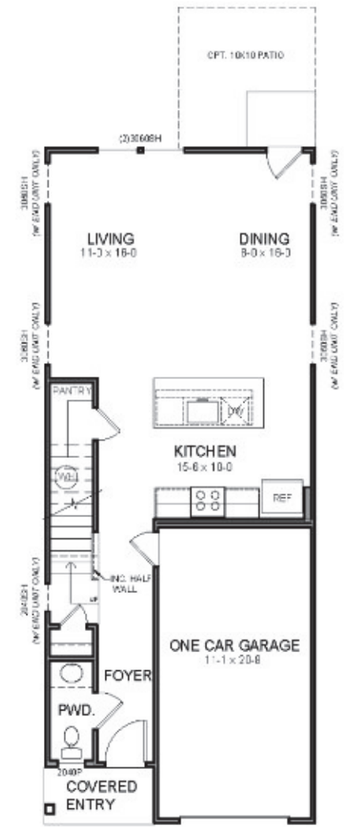


First Floor

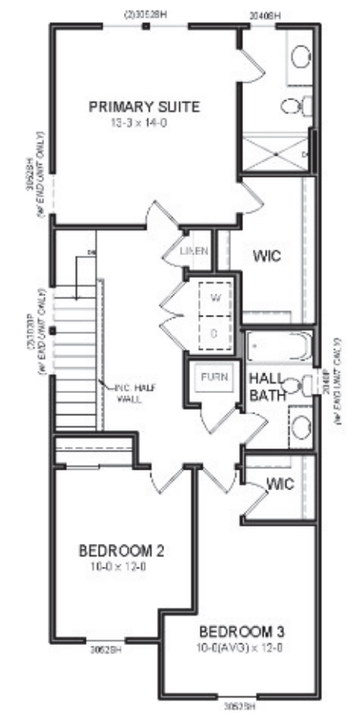
Second Floor

FISCHER HOMES

Atlas Townhome Floorplan



First Floor



Second Floor

FISCHER HOMES

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2-STORY TOWNHOME - (5 UNITS COMBINED)

NOT FOR CONSTRUCTION

	Single Family Attached (SFA) (Townhomes)	Single Family Detached (SFD)
Total Acreage	36.561 Acres	
Minimum Open Space	20% (7.31 acres)	
Total Density	±3.86 U/A	
Permitted Uses	Townhomes	Single Family Detached
Use Quantity	Up to 88 Units	Up to 53 Units
Maximum Lot Coverage	None	None
Minimum Lot Size	2,000 SF	7,000 sf
Minimum Lot Width	20 ft	60 ft
Minimum Setbacks	Front: 20 ft Rear: 20 ft Side: 0 ft Exterior: 20 ft Property line to Community Rec Facility: 20 ft	Front: 20 ft Rear: 20 ft Side: 5 ft, with 15 feet between detached structures Exterior: 20 ft Property line to Community Rec Facility: 20 ft
Minimum Exterior Buffers	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted	Standard: 20 ft Buffer, natural undisturbed + additional 20 ft Buffer, graded and planted
	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted	Adjacent to Thompson Bride Road: 25 ft Buffer, natural undisturbed + additional 25 ft Buffer, graded and planted
Minimum Building Separation	20 ft between townhouse buildings	15 ft between dwellings
Maximum Townhome per Building	6 units	N/A
Stream Buffers / Impervious Setbacks	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.	50 ft / 75 ft from stream bank, except 0 ft / 0 ft from stream bank in areas depicted on site plan.
Maximum Height	42 ft	42 ft
Maximum Building Coverage	No maximum	No maximum
Internal Access Drives	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required	Emergency Access Drives, in areas depicted on site plan - 20 ft ROW, with minimum 20 ft wide pavement, No Curb Required
	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb	Internal Local Streets - 50 ft ROW, with minimum 28 ft wide pavement Back of Curb to Back of Curb
Street Improvement Requirements	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.	Streets shall be constructed to City of Gainesville Standards except as stated in these Performance Standards, the Conceptual Master Plan, or on site plan.
	Cul-de-sacs may be none standard as depicted on the site plan.	Cul-de-sacs may be none standard as depicted on the site plan.
	No Maximum Cul-De-Sac Length	No Maximum Cul-De-Sac Length
	175 ft Minimum Radius Curvature of Center Line	175 ft Minimum Radius Curvature of Center Line
	Minimum tangent length - 50 ft	Minimum tangent length - 50 ft
Parking Requirements	Minimum Community Rec Facility Parking Spaces: 5 spaces	Minimum Community Rec Facility Parking Spaces: 5 spaces
	Minimum Garage Size: 1 car	Minimum Garage Size: 2 cars

PROPERTY ADDRESS:
THOMPSON BRIDGE ROAD
GAINESVILLE, GA 30501

APPLICANT:
FISCHER HOMES
3940 OLYMPIC BLVD SUITE 400
ERLANGER, KY 41018
24 HR CONTACT - KYLE TRELOAR 605-430-1783

OWNERS
1. PARCEL NO: 00090 002021 - PINSON, BOBBIE S (CITY OF GAINESVILLE)
2. PARCEL NO: 01090 002021 - YAHNES, CAROL DEVONNE PINSON (CITY OF GAINESVILLE)
3. PARCEL NO: 00090 002022 - TURNER, ELANE L (CITY OF GAINESVILLE)
4. PARCEL NO: 00090 002023 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
5. PARCEL NO: 00090 002024 - ROPER SR, DAVID DONALD (CITY OF GAINESVILLE)
6. PARCEL NO: 00090 002032 - ROPER ROPER & CARTER ENTERPRISES LP (HALL COUNTY)
7. PARCEL NO: 00090 002001 - ROPER ROPER & CARTER ENTERPRISES LP (CITY OF GAINESVILLE)

SEWER NOTE:
EXISTING SEWER PIPES TO BE REROUTED ON SITE. SEWER PROVIDED BY CITY OF GAINESVILLE.

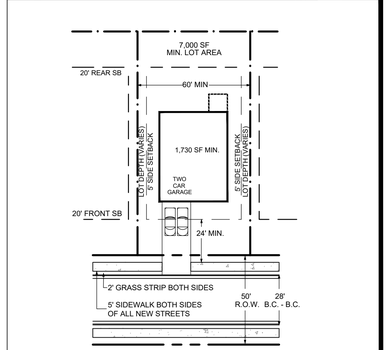
WATER NOTE:
WATER PROVIDED BY CITY OF GAINESVILLE.

STORMWATER NOTE:
STORMWATER WILL BE PROVIDED ON SITE.

FEMA NOTE:
ACCORDING TO FIRM NUMBER 13139C0179G DATED 04/04/2018 FOR HALL COUNTY GEORGIA, THE PROPERTY SHOWN DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD AREA.

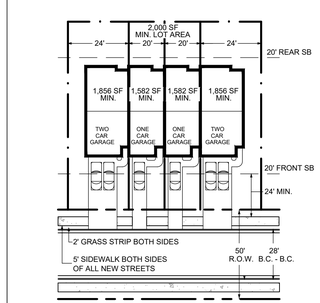
PHASING NOTE: THE DEVELOPMENT WILL HAVE 3 PHASES, WHICH INCLUDES 2 SUB-PHASES FOR THE SFD AND 3 SUB-PHASES FOR THE SFA.

TYPICAL SFD LOT DETAIL

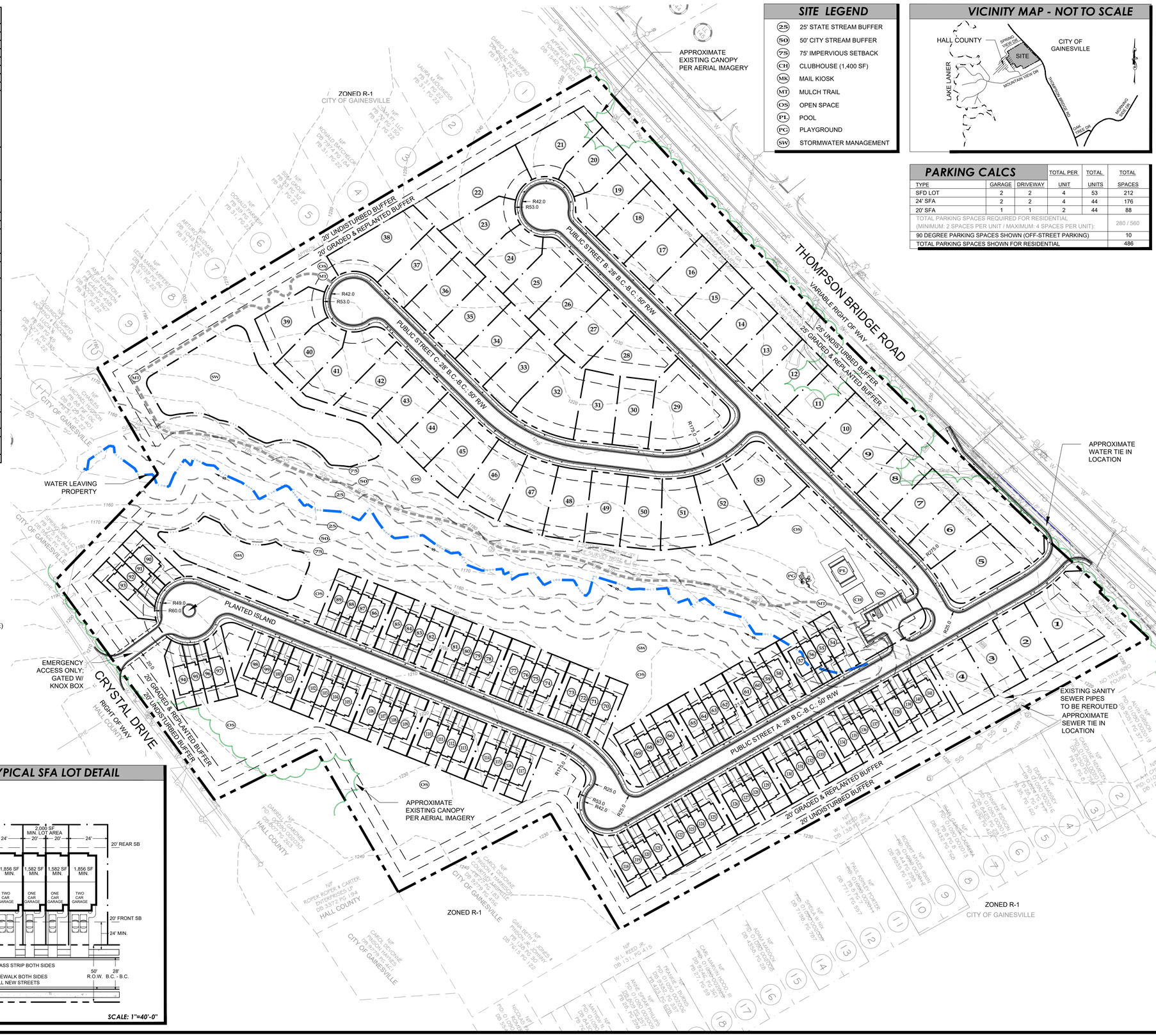


SCALE: 1"=40'-0"

TYPICAL SFA LOT DETAIL



SCALE: 1"=40'-0"



SITE LEGEND

25	25' STATE STREAM BUFFER
50	50' CITY STREAM BUFFER
75	75' IMPERVIOUS SETBACK
CH	CLUBHOUSE (1,400 SF)
MK	MAIL KIOSK
MT	MULCH TRAIL
OS	OPEN SPACE
PL	POOL
PG	PLAYGROUND
SW	STORMWATER MANAGEMENT

VICINITY MAP - NOT TO SCALE

PARKING CALCS

TYPE	GARAGE	DRIVEWAY	TOTAL PER UNIT	TOTAL UNITS	TOTAL SPACES
SFD LOT	2	2	4	53	212
24' SFA	2	2	4	44	176
20' SFA	1	1	2	44	88
TOTAL PARKING SPACES REQUIRED FOR RESIDENTIAL (MINIMUM: 2 SPACES PER UNIT / MAXIMUM: 4 SPACES PER UNIT):					280 / 560
90 DEGREE PARKING SPACES SHOWN (OFF-STREET PARKING)					10
TOTAL PARKING SPACES SHOWN FOR RESIDENTIAL					486

NO.	DATE	DESCRIPTION	BY	CHK	APV
1	10-25-24	PERFORMANCE STANDARDS ADDED	JW		
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

NOT RELEASED FOR CONSTRUCTION

LJA ENGINEERING
299 S. MAIN STREET
ALPHARETTA, GA 30009
770-225-4730

FISCHER HOMES
3940 OLYMPIC BLVD.
SUITE 400
ERLANGER, KY 41018
OFFICE: 859.344.7261

SITE ZONING PLAN FOR SAPPHIRE SPRINGS

GAINESVILLE, GA 30501
LL 145 ~ DISTRICT 9TH
PARCEL # 00090 002032, 00090 002024, 00090 002023, 00090 002022, 00090 002021, 01090 002021, 0090 002001

NORTH

SCALE: 1"= 80'
0 80

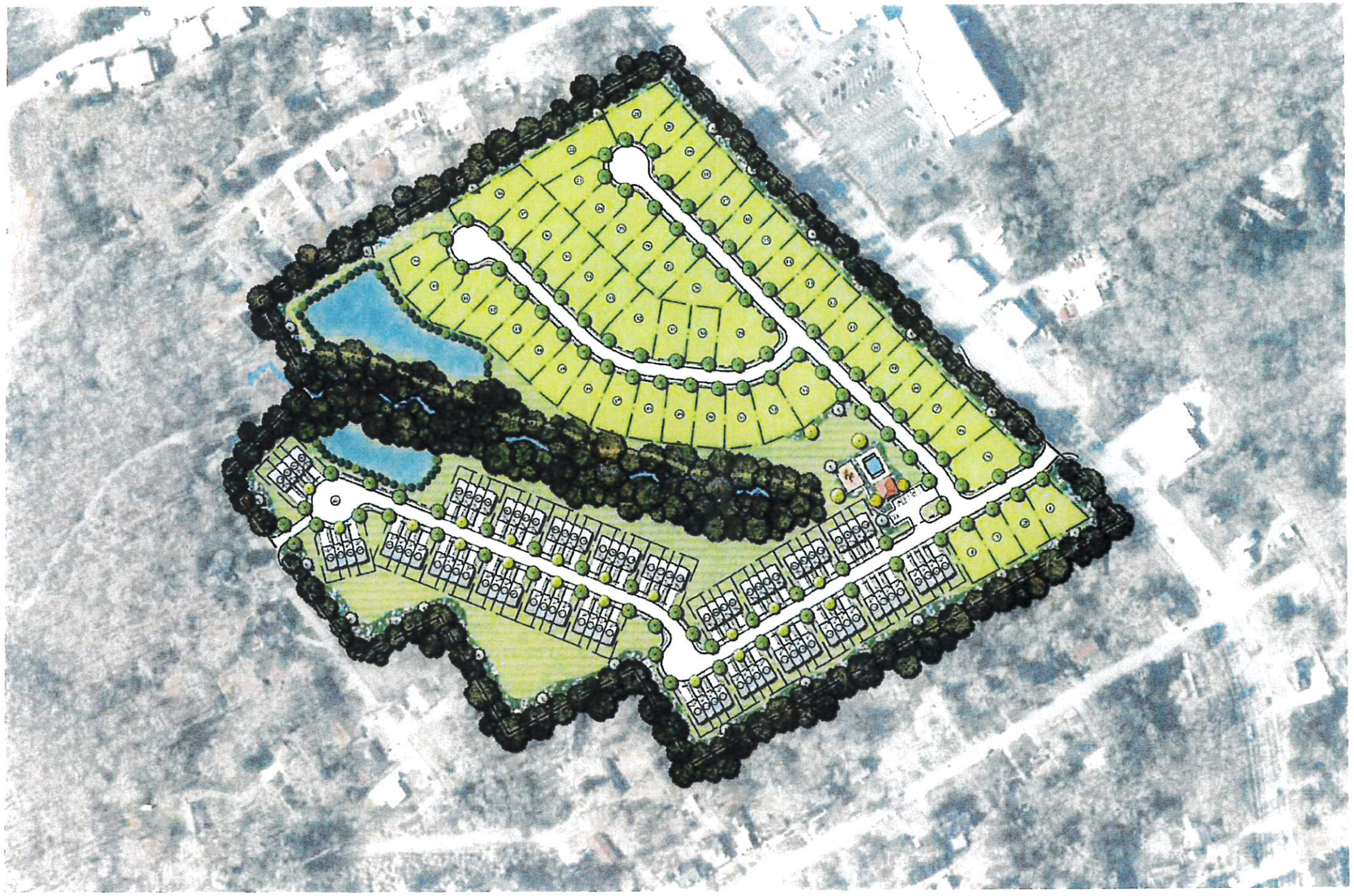
PROJECT NUMBER
GA5481-2403

SHEET TITLE
ZONING PLAN

SHEET NUMBER
C-100

File Location: s:\sesf\projects\ga5481-2403 - thompson bridge road - hall county, ga\02-design\drawings\01-concept\zoning_10-25-24

CONCEPTUAL RENDERING



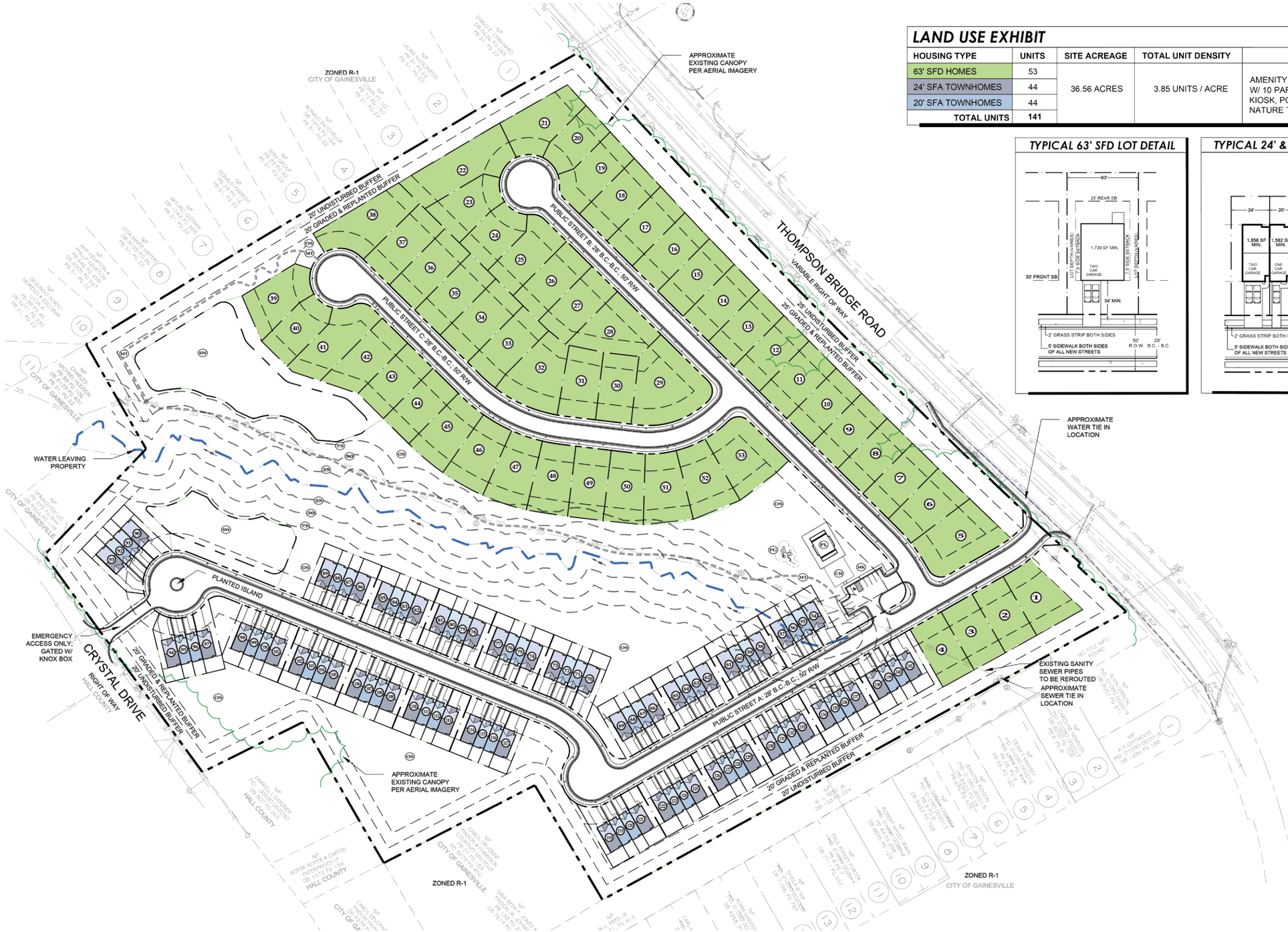
OPEN SPACE

OF SAPPHIRE SPRINGS

Sapphire Springs will have approximately 12.43 total acres (or 34% of the total acreage) of open space. The open space will surround the perimeter of the property, and will double as a natural and graded/replanted buffer. The open space will also include the preserved portion of the riparian corridor running through the middle of the site. Open spaces will provide areas for amenities including a clubhouse, pool, playground, and mulch walking trail running within the existing sanitary sewer easement. The undisturbed portion of open space will protect the natural beauty of the site as well as the environmentally sensitive areas.

Sapphire Springs is being developed with healthy lifestyle experiences in mind: lots of open spaces for passive recreation, a network of sidewalks, a mulch trail, and an active recreation area. This area will serve as the focal point when arriving from the main vehicular entrance, which will further foster a community central gathering area around open spaces.

LAND USE PLAN

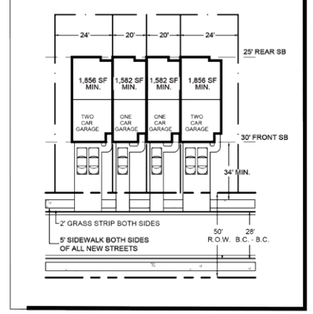


LAND USE EXHIBIT

HOUSING TYPE	UNITS	SITE ACREAGE	TOTAL UNIT DENSITY	FEATURES
63' SFD HOMES	53	36.56 ACRES	3.85 UNITS / ACRE	AMENITY CLUBHOUSE (+/- 1,400 SF) W/ 10 PARKING SPACES, MAIL KIOSK, POOL, PLAYGROUND, & NATURE TRAIL
24' SFA TOWNHOMES	44			
20' SFA TOWNHOMES	44			
TOTAL UNITS	141			

TYPICAL 63' SFD LOT DETAIL

TYPICAL 24' & 20' SFA LOT DETAIL



FISCHER HOMES

GREENBRIAR

Maple Street Collection

welcome home.

Approximately 1983 sq ft

URBAN MODERN
(WITH OPTIONAL BRICK)

designed by:

HYDE PARK COTTAGE
(WITH OPTIONAL BRICK)

designed by:

COASTAL CLASSIC
(WITH OPTIONAL PORCH)

designed by:

URBAN MODERN

designed by:

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FISCHER HOMES

YOSEMITE

Maple Street Collection

welcome home.

Approximately 2258 sq ft

MODERN FARMHOUSE

designed by:

AMERICAN CLASSIC

designed by:

MODERN FARMHOUSE
(WITH OPTIONAL BRICK)

designed by:

WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

designed by:

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FISCHER HOMES

WESLEY

Maple Street Collection

welcome home.

Approximately 1842 sq ft

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(WITH OPTIONAL BRICK)

designed by: FH

WESTERN CRAFTSMAN
(WITH OPTIONAL BRICK)

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MODERN FARMHOUSE

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THE BRECKENRIDGE

MAPLE STREET COLLECTION

3,135-3,156 SQFT	2 Story	4-5 Bedrooms	2.5-3.5 Baths

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Modern Farmhouse

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Coastal Classic

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FISCHER HOMES

JENSEN
Maple Street Collection

welcome home.

Approximately 2794 sq ft

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Coastal Classic
(WITH OPTIONAL BRICK)

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Modern Farmhouse
(WITH OPTIONAL BRICK)

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THE DAVINCI

MAPLE STREET COLLECTION

1,730-1,752 SQFT	1 Story	3 Bedrooms	2 Baths

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RVSD 12/23

DATE

October 1, 2024

Zachary Vermillion, P.E.

SAPPHIRE SPRINGS TRAFFIC IMPACT STUDY

Gainesville, GA

LJA PN: 4221-2301

PREPARED BY:

LJA ENGINEERING, INC.

299 South Main Street Suite A
Alpharetta, GA 30009
770.225.4730
GA License PEF007392

PREPARED FOR:

Miles Hansford, LLC

178 South Main Street Suite 310
Alpharetta, GA 30009

SAPPHIRE SPRINGS
TRAFFIC IMPACT STUDY

Zachary S. Vermillion

October 1, 2024

299 South Main Street Suite A
Alpharetta, Georgia 30009
Phone: 770.225.4730
www.ljaengineering.com
GA License PEF007392

EXECUTIVE SUMMARY

This report presents the summary of findings for the Traffic Impact Study (TIS) prepared by LJA Engineering, Inc. (LJA) for the proposed Sapphire Springs development in Gainesville, GA.

This development will consist of 53 single-family homes and 94 townhomes. Construction for this development is expected to be completed in 2029. The objective of this study is to analyze the impacts of the traffic generated by the proposed development on the performance of the surrounding roadway network and to determine if mitigation measures to address any resulting deficiencies are recommended.

The study area for this TIS includes the street network located within a mile from the proposed development's access points and includes the following intersections:

1. Thompson Bridge Rd/Hwy 60 at River Cliff Dr
2. Thompson Bridge Rd/Hwy 60 at Linwood Dr/Sandridge Ct
3. Thompson Bridge Rd/Hwy 60 at Springview Dr
4. Thompson Bridge Rd/Hwy 60 at Mountainview Rd NW
5. Thompson Bridge Rd/Hwy 60 at Virginia Ave/Oakland Dr NW
6. Thompson Bridge Rd/Hwy 60 at Lanier Ave

Future development access points include:

7. Access A at Thompson Bridge Rd/Hwy 60

For this study, the AM and PM peak hours were analyzed for each of the following scenarios:

1. Existing conditions (2024)
2. Build-out year (2029) – background traffic only
3. Build-out year (2029) – combined traffic
4. Horizon year (2034) - background traffic only
5. Horizon year (2034) - background traffic

Peak hour traffic and 24-hour link data were collected on September 4, 2024. An average annualized growth rate of 1.3 percent was calculated using historical traffic data from the GDOT traffic count database. This growth rate was applied to the existing traffic volumes in order to determine the future background traffic volumes for the year 2029.

The overall proposed development is expected to add 1228 daily vehicle trips with 85 vehicle trips (24 in 61 out) during the AM peak hour and 107 vehicle trips (64 in 43 out) during the PM peak hour. These traffic volumes were distributed to the surrounding roadway network according to the existing travel patterns within the study area.

All analyses in this study were completed using standard traffic engineering practices based on the methodology outlined in the *Highway Capacity Manual - 6th Edition* (HCM6). Level of Service analyses for intersections were completed using Synchro 12 traffic analysis software.

Improvements Not Related to the Development

There are no planned improvements not related to the development according to the Georgia Department of Transportation project list, and no improvements are recommended in this study.

Development-Related Improvements

To comply with GDOT guidelines, the study recommends the following:

- Add southbound right turn lane along Thompson Bridge Rd/Hwy 60 at Access A.

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I. Introduction

This report presents the summary of findings for the Traffic Impact Study (TIS) prepared by LJA Engineering, Inc. (LJA) for the proposed Sapphire Springs development in Gainesville, GA. The objective of this study is to analyze the impacts of the traffic generated by the proposed development on the performance of the surrounding roadway network and to determine the recommended mitigation measures to address any resulting deficiencies.

This development will consist of 53 single-family homes and 94 proposed townhomes. A copy of the proposed site concept plan is in **Appendix A**.

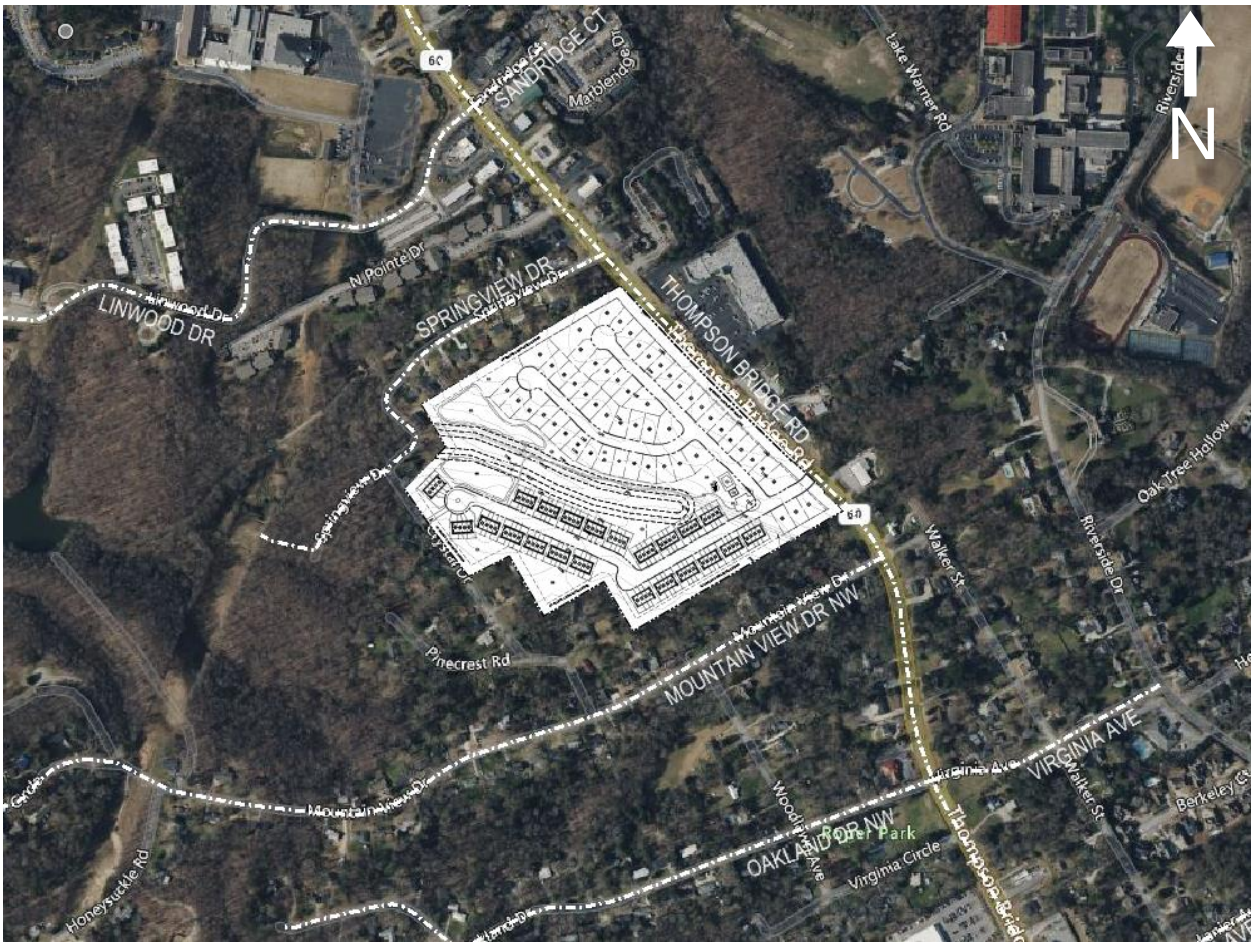


Figure 1 – Proposed Site Location

Construction build-out for this development is estimated to be completed in 2029. It should be noted that build-out of the residential development is based on market conditions.

1.1 Existing Area Conditions

1.1.1 Existing Roadway Configuration and Access

The proposed development is located along Thompson Bridge Road/Highway 60 south of Lake Lanier and north of Downtown Gainesville.

Thompson Bridge Rd/Hwy 60 is a 4-lane undivided roadway with a two-way left turn lane. It is 60 feet wide with a posted speed limit of 45 miles per hour. To the south of the development is Mountain View Dr NW, a 2-lane, 24-foot wide residential roadway with a posted speed limit of 30 miles per hour. To the north of the development is Springview Dr, which is also a 2-lane, 24-foot wide residential roadway with a posted speed limit of 30 miles per hour.

1.1.2 Study Area

The study area for this TIS includes the street network located within 0.5 miles from the proposed development's access points. Major intersections within the study area include:

1. Thompson Bridge Rd/Hwy 60 at River Cliff Dr
2. Thompson Bridge Rd/Hwy 60 at Linwood Dr/Sandridge Ct
3. Thompson Bridge Rd/Hwy 60 at Springview Dr
4. Thompson Bridge Rd/Hwy 60 at Mountainview Rd NW
5. Thompson Bridge Rd/Hwy 60 at Virginia Ave/Oakland Dr NW
6. Thompson Bridge Rd/Hwy 60 at Lanier Ave

1.2 Proposed Area Conditions

The proposed development will have access through two (2) different driveways: one is located along Thompson Bridge/Hwy 60, and the other one will on the southern end of the development and will be used for emergencies only. The current existing land use at the project site is classified as Agriculture/Forestry. The proposed development will be a high-density residential area once construction is completed. Per Gainesville-Hall County's Comprehensive Transportation Plan (CTP), there are no adjacent transportation projects or improvements in the vicinity of the Sapphire Springs development.

The proposed development will have one public access point:

1. Access A at Thompson Bridge Rd

II. Methodology

In order to evaluate the traffic impacts of the proposed development on the surrounding roadway network, future traffic conditions were analyzed with (combined traffic) and without (background only) the development's generated traffic. After the future traffic conditions were analyzed, mitigation measures were developed to address any resulting deficiencies in the performance of the surrounding street network due to the development related traffic. For this study, the AM and PM peak hours were analyzed for each of the following scenarios:

1. Existing conditions (2024)
2. Build-out year (2029) – background traffic only
3. Build-out year (2029) – combined traffic
4. Horizon year (2034) – background traffic only
5. Horizon year (2034) – combined traffic

For the build-out year, it was assumed that all residential development is in place.

2.1 Traffic Data and Existing Conditions

Peak hour traffic and 24-hour link data were collected on September 4th, 2024, and copies of the raw traffic count data are located in **Appendix B.**

Exhibit 1 in **Appendix C** shows the existing lane configurations at the study intersections and the existing traffic control is listed below.

1. Thompson Bridge Rd/Hwy 60 at River Cliff Dr – Two-Way Stop Control
2. Thompson Bridge Rd/Hwy 60 at Linwood Dr/Sandridge Ct – Signalized
3. Thompson Bridge Rd/Hwy 60 at Springview Dr – Two-Way Stop Control
4. Thompson Bridge Rd/Hwy 60 at Mountainview Rd NW – Two-Way Stop Control
5. Thompson Bridge Rd/Hwy 60 at Virginia Ave/Oakland Dr NW – Two-Way Stop Control
6. Thompson Bridge Rd/Hwy 60 at Lanier Ave – Two-Way Stop Control

Exhibit 2 in **Appendix C** shows existing peak hour traffic volumes at the study intersections.

2.1.1 Traffic Operation Analysis Requirements

For a Level 2 TIS, the existing condition operations have to be analyzed. An Intersection Control Evaluation (ICE) is required since the proposed driveway is along at least one roadway designated as a state route (state highway system) or as part of the National Highway System.

2.1.2 Background Traffic Growth

An average annualized growth rate of 1.3 percent was calculated using historical traffic data from the GDOT traffic count database. This growth rate was applied to the existing traffic volumes in order to determine the future background traffic volumes for the year 2029.

Table 1 - Background Growth Rate Calculation

Location	AADT Volume/Year		Volume Growth	Percentage Growth	Annual Growth
	2012	2022			
Thompson Bridge Rd N of Development	29010	33200	4190	14%	1.4%
	2012	**2022**			
Thompson Bridge Rd S of Development	24310	27900	3590	15%	1.4%
	2012	**2022**			
Oak Tree Dr E of Thompson Bridge Rd	3620	4690	1070	30%	2.6%
	2012	**2022**			
Riverside Dr E of Thompson Bridge Rd	15210	14800	-410	-3%	-0.3%
				Average Annual Growth	1.3%

Exhibit 3 in **Appendix C** shows the background traffic volumes for the year 2029 (build-out year) and **Exhibit 4** in **Appendix C** shows the background traffic volumes for the year 2034 (horizon year).

2.2 Trip Generation and Distribution

The amount of traffic a proposed development will generate depends on several factors including the nature, size, and location of the proposed development. Vehicle trips related to the proposed development are generated based on information contained in the *Trip Generation Manual – 11th Edition* which is published by the Institute of Transportation Engineers (ITE).

2.2.1 Trip Generation

Table 2 below shows the estimated amount of vehicle trips which will be generated by the proposed development using the fitted equations from the manual.

Table 2 - Vehicle Trip Generation Totals for Proposed Development

Land Use (ITE Code)	Units	AM Peak Trips (vph)			PM Peak Trips (vph)			Weekday 24-hour Trips
		In	Out	Total	In	Out	Total	
Single-Family Detached Housing (210)	53	11	31	42	34	20	55	563
Single-Family Attached Housing (215)	94	13	30	43	30	23	52	666
	Total	**24**	**61**	**85**	**64**	**43**	**107**	**1228**

The overall proposed development is expected to add 1228 daily vehicle trips with 85 vehicle trips (24 in 61 out) during the AM peak hour period and 107 vehicle trips (64 in 43 out) during the PM peak hour period. These traffic volumes were distributed to the surrounding roadway network according to the existing travel patterns within the study area.

2.2.2 Trip Distribution and Assignment

Generated traffic volumes were assigned to the study street network according to the routes that provide the shortest travel distance to their corresponding origins/destinations. Vehicle trip distribution percentages and development related vehicle trips are presented in **Exhibit 5** and **Exhibit 6** in **Appendix C**, respectively.

2.2.3 Internal Trip Capture

Internal trip capture (trips that stay within a development) occurs within developments that include complementary and interacting land uses. Examples include developments with office, retail, restaurants, entertainment, hotels and/or residential. Internal trip capture can be calculated using tables and information from the *ITE Trip Generation Manual – 11th Edition*. For this development, no internal trip capture was assumed.

2.2.4 Pass-by Trip Reduction

The total external trips of the generated traffic may be reduced by a Pass-By Reduction factor to account for the projected traffic that is already traveling along the roadways adjacent to the proposed development. Pass-by reduction methodologies are established by the Institute of Transportation Engineers (ITE) and only apply to certain types of development. Pass-by reduction was not considered in this analysis for this development.

2.2.5 Background plus Development Traffic Volumes.

The distributed development traffic volumes were then added to the background traffic volumes for the various scenarios. **Exhibit 7** and **Exhibit 8** in **Appendix C** show the combined background and development traffic volumes projected within the study area for 2029 (build-out year) and the horizon background and development traffic volumes for 2034, respectively.

III. Intersection Capacity Analysis

All analyses in this study were completed using standard traffic engineering practices based on the methodology outlined in the *Highway Capacity Manual - 6th Edition* (HCM6), which provides procedures used to evaluate the operations of all types of transportation facilities, including both signalized and unsignalized intersections. Level of Service analyses for intersections were completed using Synchro 12 traffic analysis software.

Levels of Service is represented by a letter grade between A and F. Generally, a LOS ranking of D or better is considered acceptable. A LOS ranking of E represents conditions where the traffic demand volume is approaching the maximum capacity for a movement or the overall intersection. A LOS ranking of F represents a condition where the traffic demand volume exceeds the capacity.

For signalized intersections and all-way stop controlled intersections, a LOS is calculated for each of the lane groups/approaches at the intersection and an overall LOS for the intersection is calculated by averaging the delays (weighted by traffic volume). For one-way and two-way stop-controlled intersections a LOS is calculated for each of the lane groups/approaches at the intersection. An overall LOS is calculated, but with some movements being free flow, it may not be representative of actual operations at stop or yield controlled approaches.

Table 3 shows the criteria for each of the levels of service as listed in the HCM for intersections and intersection lane groups for both unsignalized and signalized intersections. Complete Synchro analyses output files are presented in **Appendix D.**

Table 3 – Level of Service Criteria for Intersections and Intersection Lane Groups

Level of Service	Average Amount of Control Delay (sec/veh)	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	10 – 15	10 – 20
C	15 – 25	20 – 35
D	25 – 35	35 – 55
E	35 – 50	55 – 80
F	> 50	> 80

In the following tables, the level of service and average delay per vehicle for signalized and all-way stop intersections is shown as an overall measure for the intersection. For intersections that are two-way stop controlled, the LOS and average delay is given for the movements that are stop controlled.

3.1 Existing Conditions

Table 4 below summarizes the level of service for the existing conditions with existing traffic volumes for the AM and PM peak hours.

Table 4 – LOS Summary – Existing Conditions

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.1	A	0.3	A
		WB	23.64	C	72.64	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	117.2	F	140.1	F
		NB	14.4	B	203.7	F
		SB	169.7	F	34.1	C
		WB	21.7	C	17.3	B
		EB	11.4	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	20.69	C	18.69	C
Highway 60 & Mountainview Rd	TWSC	All	0.5	A	0.4	A
		EB	36.59	E	24.8	C
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	1.7	A	16.7	C
		WB	25.54	D	81.16	F
		EB	80.75	F	>500	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.7	A
		WB	13.88	B	36.34	E

Currently, the approach experiencing the most delay is eastbound at Highway 60 and Oakland Dr/Virginia Ave. The intersection with the highest delay overall is Highway 60 at Linwood Dr/Sandridge Ct.

3.2 Background and Background plus Development Scenarios

As discussed in the report, an annual growth rate was applied to the existing traffic volumes to generate background traffic volumes for the year 2029. Development trips were then generated, distributed on the study network, and combined with the background traffic volumes for both scenarios.

3.2.1 Year 2029 Analysis

Table 5 – LOS Summary – Year 2029 Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	25.9	D	93.11	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	142.4	F	167.6	F
		NB	15	B	243	F
		SB	207.5	F	42.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.46	C	20.01	C
Highway 60 & Mountainview Rd	TWSC	All	0.6	A	0.5	A
		EB	43.19	E	27.99	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.2	A	8.9	A
		WB	32.53	D	129.5	F
		EB	122.02	F	228.27	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.9	A
		WB	14.39	B	43.81	E

and Table 7 below summarize the level of service for the study intersections for the AM and PM peak for the year 2029 (build-out year).

Table 5 – LOS Summary – Year 2029 Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	25.9	D	93.11	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	142.4	F	167.6	F
		NB	15	B	243	F
		SB	207.5	F	42.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.46	C	20.01	C
Highway 60 & Mountainview Rd	TWSC	All	0.6	A	0.5	A
		EB	43.19	E	27.99	D

Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.2	A	8.9	A
		WB	32.53	D	129.5	F
		EB	122.02	F	228.27	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.9	A
		WB	14.39	B	43.81	E

As background traffic is scaled up according to the growth rate, delays increase to the point of failing during the PM peak. Compared to peak background traffic, there was a slight increase in delay for the intersections that already had a LOS of F.

Table 6 – LOS Summary – Year 2029 Background Plus Development

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	26.03	D	93.75	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	143	F	168.9	F
		NB	15.1	B	244.7	F
		SB	208.6	F	43.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.49	C	20.11	C
Highway 60 & Mountainview Rd	TWSC	All	0.7	A	0.5	A
		EB	46.6	E	29.33	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.4	A	10.6	B
		WB	36.01	E	154.77	F
		EB	148.09	F	310.11	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	1	A
		WB	14.53	B	47.84	E
Access A & Thompson Bridge/Hwy 60	TWSC	All	1	A	0.4	A
		EB	45.69	E	19.22	C

No new intersections fail as a result of adding peak hour development traffic.

3.2.2 Year 2029 Analysis

Table 5 – LOS Summary – Year 2029 Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.3	A
		WB	25.9	D	93.11	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	142.4	F	167.6	F
		NB	15	B	243	F
		SB	207.5	F	42.3	D
		WB	21.7	C	17.2	B
		EB	11.3	B	13.1	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	22.46	C	20.01	C
Highway 60 & Mountainview Rd	TWSC	All	0.6	A	0.5	A

		EB	43.19	E	27.99	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	2.2	A	8.9	A
		WB	32.53	D	129.5	F
		EB	122.02	F	228.27	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	0.9	A
		WB	14.39	B	43.81	E

and Table 9 below summarize the level of service for the study intersections for the AM and PM peak for the year 2029 (horizon year).

Table 7 – LOS Summary – Year 2029 Horizon Background

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.2	A	0.4	A
		WB	28.63	D	119.04	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	170	F	199.8	F
		NB	15.8	B	286.5	F
		SB	248.7	F	57	E
		WB	21.9	C	17.3	B
		EB	11.2	B	13	B
Highway 60 & Springview Dr	TWSC	All	0.1	A	0.1	A
		EB	24.7	C	24.7	C
Highway 60 & Mountainview Rd	TWSC	All	0.8	A	0.5	A
		EB	56.87	F	32.18	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	3	A	15	B
		WB	46.12	E	210.75	F
		EB	209.01	F	>500	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	1.3	A
		WB	14.97	B	59.97	F

As the background traffic is scaled up according to the growth rate, delays increase along approaches that are projected to fail in 2029 and two additional approaches: eastbound Mountainview Rd during the AM peak and westbound Lanier Ave during PM peak.

Table 8 – LOS Summary – Year 2029 Horizon Background Plus Development

Study Intersection	Control Type	Movement	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Highway 60 & Mall Entrance/River Cliff Dr	TWSC	All	0.1	A	0.4	A
		WB	23.64	C	119.9	F
Highway 60 & Linwood Dr/Sandridge Ct	Signal	All	117.2	F	201	F
		NB	14.4	B	287.9	F
		SB	169.7	F	58.3	E
		WB	21.7	C	17.3	B
		EB	11.4	B	13	B
Highway 60 & Springview Dr	TWSC	All	0	A	0.1	A
		EB	20.69	C	21.66	C
Highway 60 & Mountainview Rd	TWSC	All	0.5	A	0.5	A
		EB	36.59	E	33.86	D
Highway 60 & Oakland Dr/Virginia Ave	TWSC	All	1.7	A	17.8	B
		WB	25.54	D	243.39	F
		EB	80.75	F	>500	F
Highway 60 & Lanier Ave	TWSC	All	0.1	A	1.3	A
		WB	13.88	B	66.84	F
Access A & Thompson Bridge/Hwy 60	TWSC	All	0	A	0.4	A
		EB	0	A	20.76	C

No new intersections fail as a result of adding peak hour development traffic.

3.3 Right and Left Turn Lane Analyses

Evaluations for right and left-turn lanes at the proposed development driveways were performed in accordance with the *City of Gainesville* guidelines.

3.3.1 Left-Turn Lanes

A two-way left turn lane is already in place along Thompson Bridge Rd/Hwy 60. Sufficient storage is available to accommodate the left turns into the development.

3.3.2 Right-turn Lanes

Based on Table 4-6 from the GDOT's Driveway Design Guidelines, a right turn deceleration lane is required for this development. The forecasted daily right turn volumes exceed 75 vehicles per day on a roadway with more than two lanes and an AADT greater than 10,000 vehicles per day.

3.4 Access Spacing

Based on the proposed development plan, the nearest driveway from Access A is Mountain View Dr, which is approximately 450 feet south of Access A. Approximately 1300 feet to the north of Access A is Springview Dr. The minimum driveway spacing along a roadway with a posted speed limit of 45 MPH is 230 feet.

3.5 Turning Radii

The turning radius for southbound right turns from Thompson Bridge Rd/Hwy 60 was analyzed using AutoTURN software. AutoTURN is a MicroStation program that is specifically designed for vehicle path analysis, allowing engineers and planners to simulate and analyze the movements of several types of vehicles (like trucks, buses, or cars) to ensure that roads, intersections, parking lots, and other infrastructure can accommodate them. Access A at Thompson Bridge Rd/Hwy 60 is a new driveway for the proposed Sapphire Springs development. Access A is designed to have a curb radius of 35 degrees, and a driveway throat width of 28 feet. While the proposed curb radius cannot accommodate right turns for the WB-67 design vehicle, it can accommodate a standard fire engine. Heavy truck restrictions are recommended for southbound turns into Access A.

3.6 Sight Distance Analysis

For new proposed driveway/roadways, the City of Gainesville requests the intersection sight distance (ISD) for the following three conditions be considered at the proposed connections. The horizontal and vertical curvature of Thompson Bridge Rd/Hwy 60 is relatively gentle and there are few obstructions to sight distance. Adequate ISD exists for all 3 conditions listed below.

- Left-turn from Stop (Case B1)
- Right-turn from Stop (Case B2)
- Left-turn from Major Road (Case F)

Table 9 – Estimated Intersection Sight Distance

Intersection	Estimated Intersection Sight Distance		
	Case B1	Case B2	Case F
Access A at Thompson Bridge/Hwy 60	>500’	>565’	>450’

3.7 HCM Vehicle Queues Analysis

HCM peak hour queues in the 95th percentile for the Background plus Development scenario during year 2029 (build-out) are summarized in the tables below. Approaches and movements with a LOS of C or better and values below 1.0 are not shown. The queuing along Thompson Bridge/Hwy 60 is not expected to exceed 1 vehicle during the PM peak hour.

Table 10 – LOS Summary – HCM Queue Summary - Build-out Year 2029 Background Plus Development

Study Intersection	Lane	AM	PM
		HCM 95th %tile Q(veh)	HCM 95th %tile Q(veh)
Access A at Thompson Bridge/Hwy 60	EBL	2	-
	EBT	-	-
	EBR	-	-
	WBL	-	-
	WBT	-	-
	NBL	-	-
	NBR	-	-

HCM peak hour queues in the 95th percentile for the Background plus Development scenario during year 2029 (horizon) are summarized in the tables below. Approaches and movements with a LOS of C or better and values below 1.0 are not shown. The queuing along Thompson Bridge/Hwy 60 is not expected to exceed 1 vehicle during the AM and PM peak hour.

Table 11 – LOS Summary – HCM Queue Summary – Horizon Build-out Year 2034 Background Plus Development

Study Intersection	Lane	AM	PM
		HCM 95th %tile Q(veh)	HCM 95th %tile Q(veh)
Access A at Thompson Bridge/Hwy 60	EBL	-	-
	EBT	-	-
	EBR	-	-
	WBL	-	-
	WBT	-	-
	NBL	-	-
	NBR	-	-

IV. Mitigation Measures

Mitigation measures can be broken down into two general categories. One is a physical capacity increase, such as additional lanes. The second is a change in traffic control that provides additional capacity.

The addition of development traffic does not cause the adjacent roadway network to fail at locations which are not already projected to fail in future years without the development. Therefore, no mitigation measures are recommended or required at this time.

V. Recommendations

Improvements Not Related to the Development

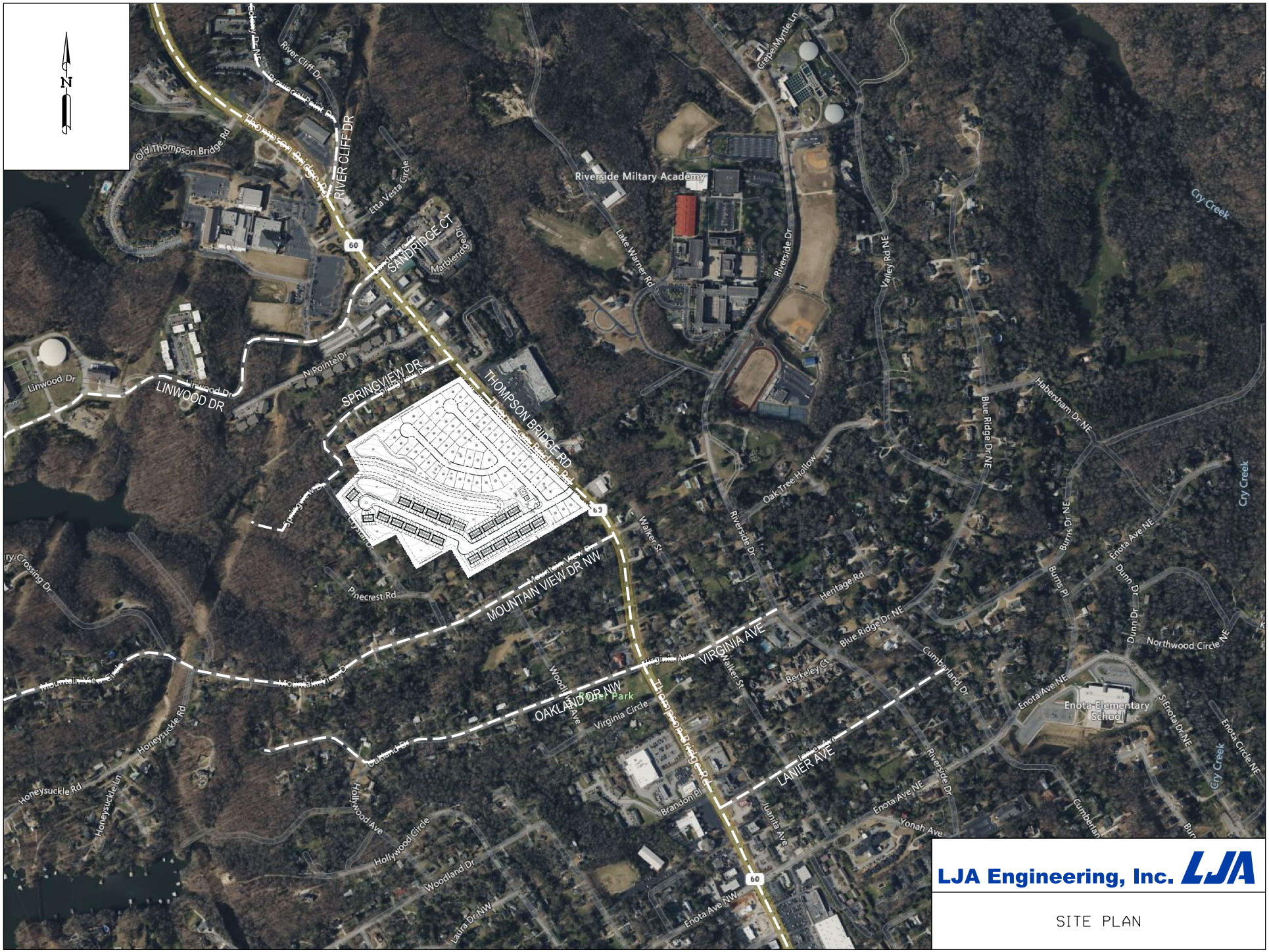
There are no planned improvements not related to the development according to the Georgia Department of Transportation project list, and no improvements are recommended in this study.

Development-Related Improvements

To comply with GDOT guidelines, the study recommends the following:

- Add southbound right turn lane along Thompson Bridge Rd/Hwy 60 at Access A.

Appendix A – Proposed Development Site Plan



LJA Engineering, Inc. LJA

SITE PLAN

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Appendix B – Traffic Count Data

Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Springview Dr

Peak Hour Turning Movement Count

ID: 24-180189-003
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SR 60/Thompson Bridge Rd — SOUTHBOUND

AM	1	1872	0	0	885	AM
NOON	0	0	0	0	0	NOON
PM	1	1131	0	0	2130	PM

EASTBOUND — Springview Dr

AM	NOON	PM	
2	0	9	
0	0	0	0
0	0	1	0
0	0	0	1
5	0	3	0

WESTBOUND — Springview Dr

	PM	NOON	AM
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
	0	0	0

NORTHBOUND — SR 60/Thompson Bridge Rd

PM	1134	0	8	2129	0	PM
NOON	0	0	0	0	0	NOON
AM	1877	0	1	885	0	AM

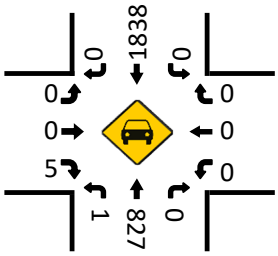
Turning movements (AM / NOON / PM): 0 2 0 0 | 0 0 2 0

CONTROL

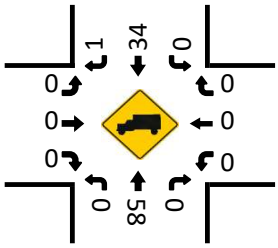
1-Way Stop(EB)

	AM	NOON	PM
TEV	2764	0	3273
PHF	0.87		0.98

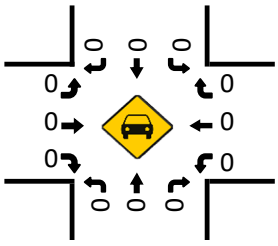
Cars (AM)



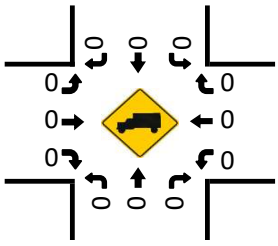
HT (AM)



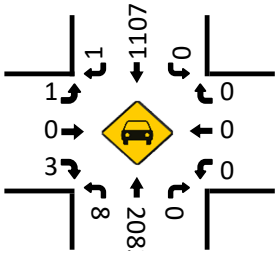
Cars (NOON)



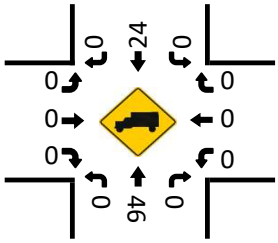
HT (NOON)



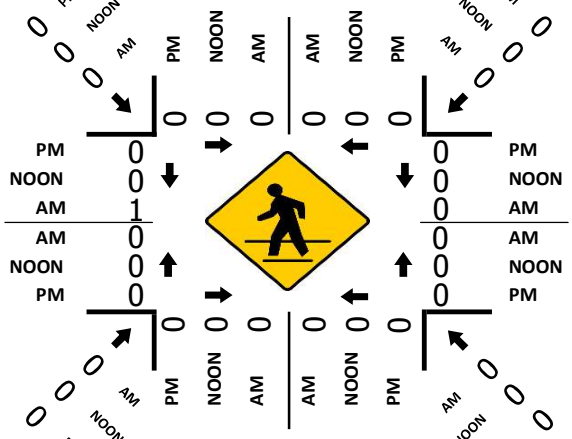
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Linwood Dr/Sandridge Ct

Peak Hour Turning Movement Count

ID: 24-180189-002
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS		COUNT PERIODS
AM	07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SR 60/Thompson Bridge Rd — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
Lanes	1	2	1	0	
AM	50	1805	18	0	824
NOON	0	0	0	0	0
PM	23	1059	21	0	2063

Linwood Dr/Sandridge Ct — WESTBOUND

	Lanes	PM	NOON	AM
Right	0.5	33	0	9
Thru	0.5	4	0	2
Left	1	34	0	35
U-Turn	0	0	0	0
Departing		73	0	49

Linwood Dr/Sandridge Ct — EASTBOUND

	AM	NOON	PM	Lanes
Departing	86	0	101	
U-Turn	0	0	0	0
Left	22	0	45	1
Thru	2	0	2	0.5
Right	32	0	20	0.5

SR 60/Thompson Bridge Rd — NORTHBOUND

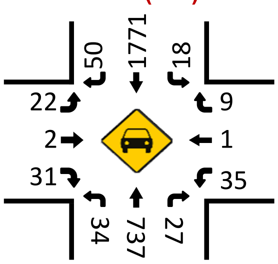
	Departing	U-Turn	Left	Thru	Right
Lanes		0	1	2	1
PM	1113	0	74	1985	50
NOON	0	0	0	0	0
AM	1872	0	34	793	29

CONTROL

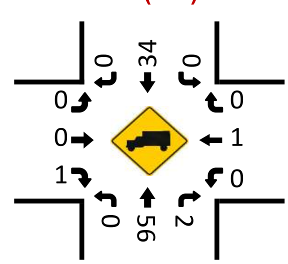
Signalized

	AM	NOON	PM
TEV	2831	0	3350
PHF	0.86		0.98

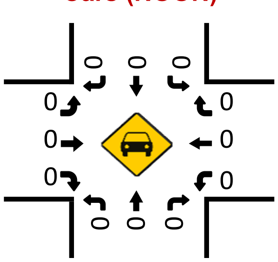
Cars (AM)



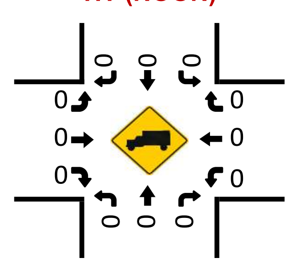
HT (AM)



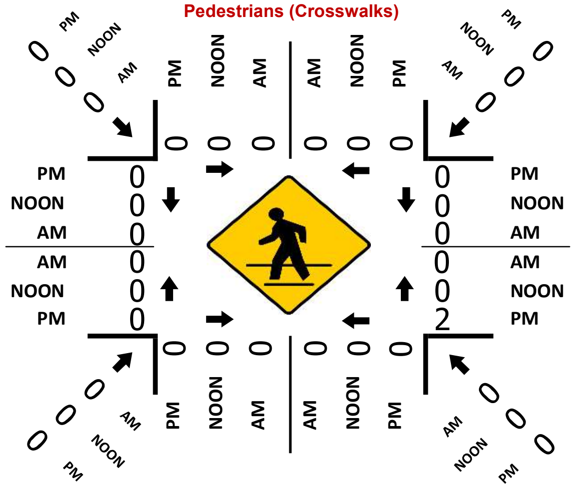
Cars (NOON)



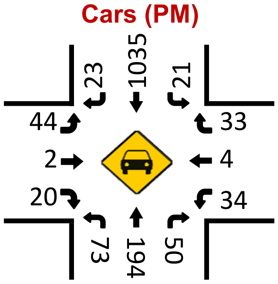
HT (NOON)



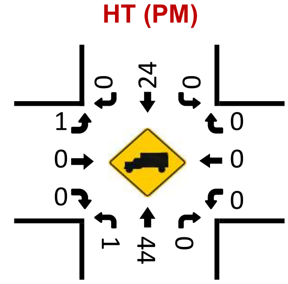
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Lanier Ave

Peak Hour Turning Movement Count

ID: 24-180189-006
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND (SR 60/Thompson Bridge Rd)

AM	0	1813	13	0	884	AM
NOON	0	0	0	0	0	NOON
PM	0	1161	19	0	2079	PM

EASTBOUND (Lanier Ave)

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (Lanier Ave)

PM	NOON	AM	
50	0	14	0
0	0	0	1
4	0	2	0
0	0	0	0
23	0	18	
PM	NOON	AM	

NORTHBOUND (SR 60/Thompson Bridge Rd)

PM	1165	0	0	2029	4	PM
NOON	0	0	0	0	0	NOON
AM	1815	0	0	870	5	AM

Turning movements (red): 0 2 0 0 (SB); 0 0 2 0 (NB); 0 1 0 0 (WB); 0 0 0 0 (EB)

CONTROL: 1-Way Stop(WB)

	AM	NOON	PM
TEV	2717	0	3267
PHF	0.89		0.94

Cars (AM): 1780, 13, 14, 0, 2, 5, 815, 0, 0, 0, 0, 0

HT (AM): 33, 0, 0, 0, 0, 0, 55, 0, 0, 0, 0, 0

Cars (NOON): 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

HT (NOON): 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0

Cars (PM): 1135, 19, 50, 0, 4, 4, 198, 0, 0, 0, 0, 0

HT (PM): 26, 0, 0, 0, 0, 0, 45, 0, 0, 0, 0, 0

Pedestrians (Crosswalks)

	AM	NOON	PM
PM	0	0	0
NOON	0	0	0
AM	0	0	0
AM	0	0	0
NOON	0	0	0
PM	0	0	2

Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Mountain View Dr NW/St. Francis of Assisi Anglican Catholic Church Dwy

Peak Hour Turning Movement Count

ID: 24-180189-004
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS		COUNT PERIODS
07:00 AM - 08:00 AM		6:00 AM - 08:00 AM
NONE		NONE
04:45 PM - 05:45 PM		4:00 PM - 06:00 PM

SOUTHBOUND — SR 60/Thompson Bridge Rd

AM	4	1947	0	0	931	AM
NOON	0	0	0	0	0	NOON
PM	14	1169	0	0	2120	PM

EASTBOUND — Mountain View Dr NW/St. Francis of Assisi Anglican Catholic Church Dwy

AM	NOON	PM	
22	0	44	⇦
0	0	0	↶ 0
6	0	13	↱ 0
0	0	0	→ 1
27	0	28	↳ 0
AM	NOON	PM	

WESTBOUND — Mountain View Dr NW/St. Francis of Assisi Anglican Catholic Church Dwy

PM	NOON	AM	
0	0	0	↲ 0
0	0	0	← 1
0	0	0	↰ 0
0	0	0	↰ 0
0	0	0	⇨
PM	NOON	AM	

0 2 0 0

0 0 2 0

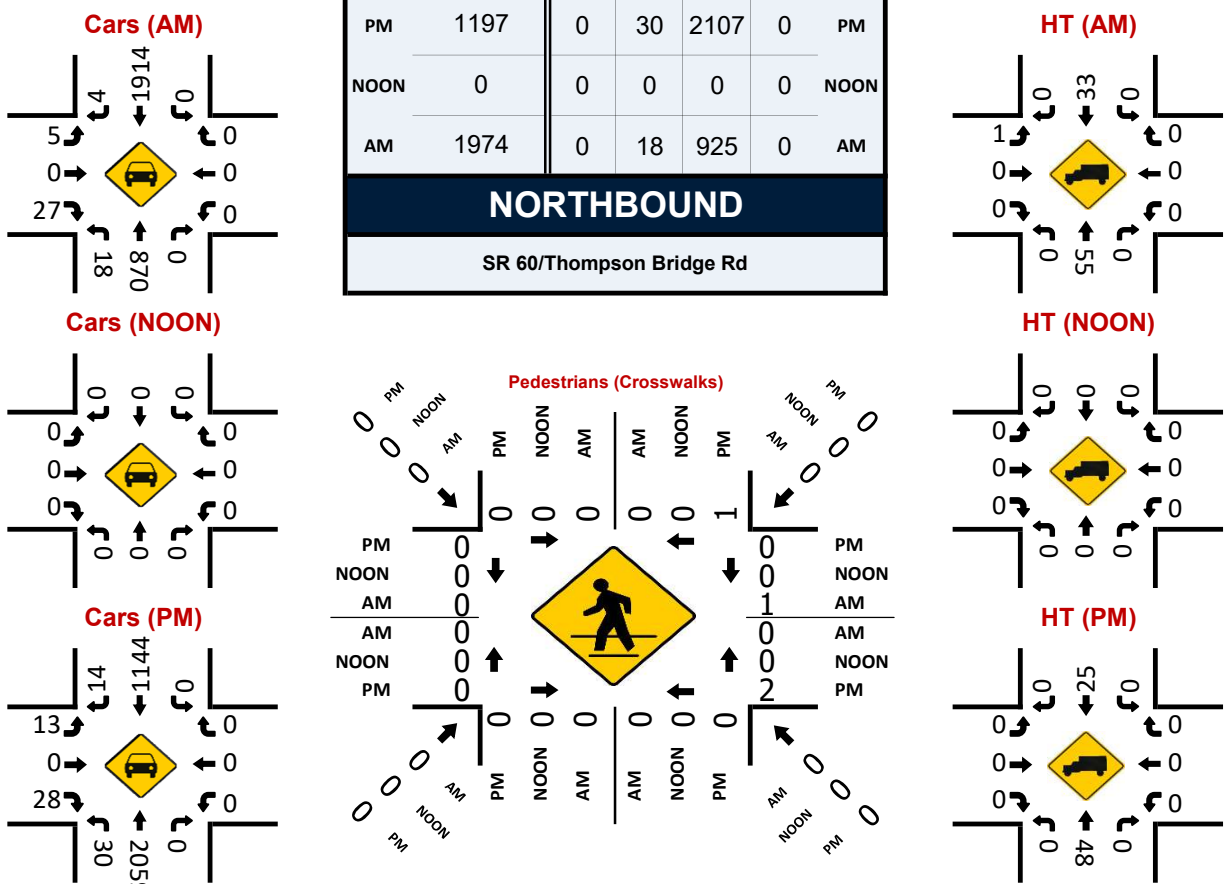
CONTROL

1-Way Stop(EB)

TEV	2927	0	3361
	AM	NOON	PM
PHF	0.87		0.97

NORTHBOUND — SR 60/Thompson Bridge Rd

PM	1197	0	30	2107	0	PM
NOON	0	0	0	0	0	NOON
AM	1974	0	18	925	0	AM



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & Virginia Ave/Virginia Cir NW/Oakland Dr NW

Peak Hour Turning Movement Count

ID: 24-180189-005
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	6:00 AM - 08:00 AM
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND (SR 60/Thompson Bridge Rd)

AM	3	1822	168	0	942	AM
NOON	0	0	0	0	0	NOON
PM	4	1098	92	0	2157	PM

EASTBOUND (Virginia Ave/Virginia Cir NW/Oakland Dr NW)

AM	NOON	PM
5	0	13
0	0	0
1	0	3
0	0	0
16	0	16

WESTBOUND (Virginia Ave/Virginia Cir NW/Oakland Dr NW)

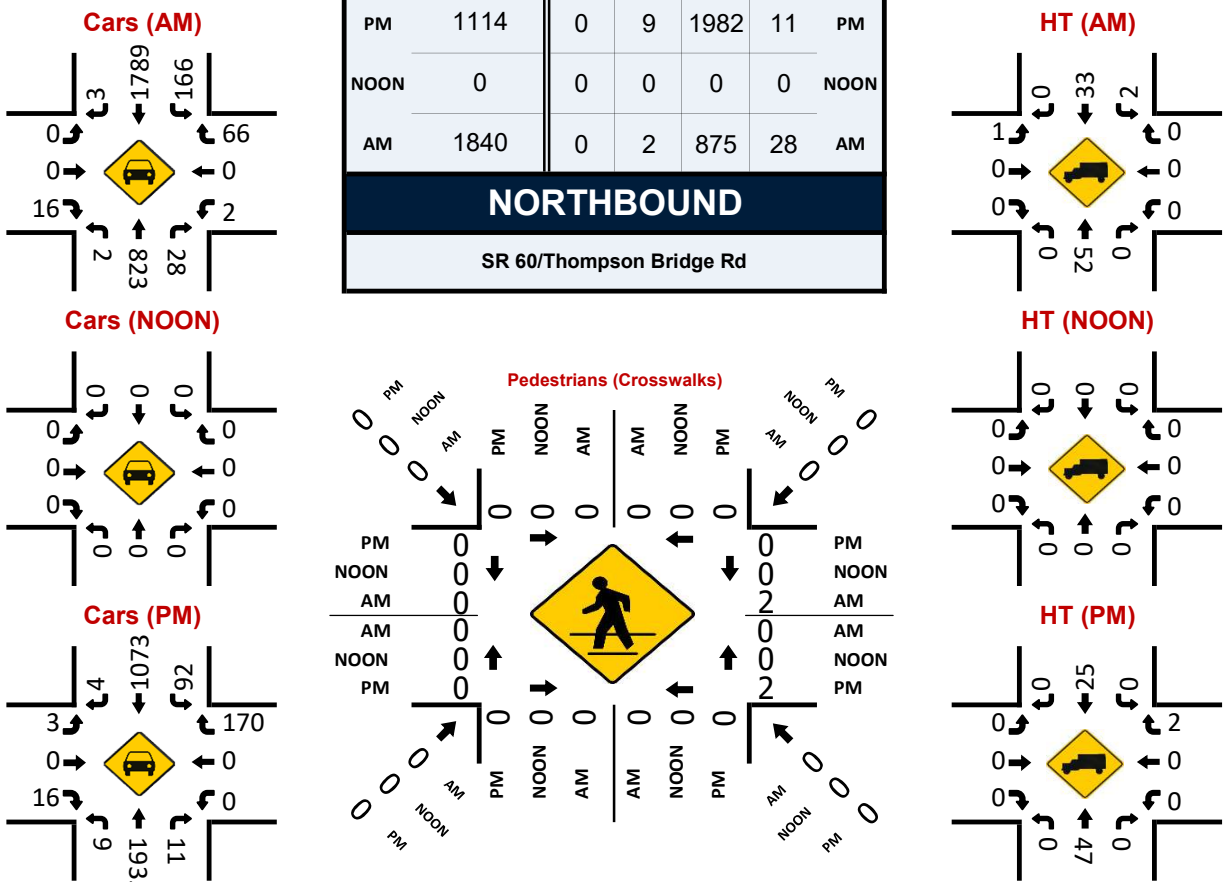
PM	NOON	AM
172	0	66
0	0	0
0	0	2
0	0	0
103	0	196

NORTHBOUND (SR 60/Thompson Bridge Rd)

PM	1114	0	9	1982	11	PM
NOON	0	0	0	0	0	NOON
AM	1840	0	2	875	28	AM

Turning movements (red): 0 2 1 0 | 0 1 2 0

CONTROL			
2-Way Stop (EB/WB)			
TEV	2983 AM	0 NOON	3387 PM
PHF	0.88		0.99



Prepared by National Data & Surveying Services

SR 60/Thompson Bridge Rd & River Cliff Dr/Lakewood Baptist Church Dwy

Peak Hour Turning Movement Count

ID: 24-180189-001
City: Gainesville

Day: Wednesday
Date: 9/4/2024

PEAK HOURS		COUNT PERIODS
07:00 AM - 08:00 AM		6:00 AM - 08:00 AM
NONE		NONE
04:45 PM - 05:45 PM		4:00 PM - 06:00 PM

SOUTHBOUND (SR 60/Thompson Bridge Rd)

AM	2	1848	0	0	799	AM
NOON	0	0	0	0	0	NOON
PM	4	1111	1	0	2046	PM

EASTBOUND (River Cliff Dr/Lakewood Baptist Church Dwy)

AM	NOON	PM
2	0	4
0	0	0
0	0	0
0	0	0
0	0	0
AM	NOON	PM

WESTBOUND (River Cliff Dr/Lakewood Baptist Church Dwy)

PM	NOON	AM
2	0	3
0	0	0
9	0	13
0	0	0
26	0	11
PM	NOON	AM

NORTHBOUND (SR 60/Thompson Bridge Rd)

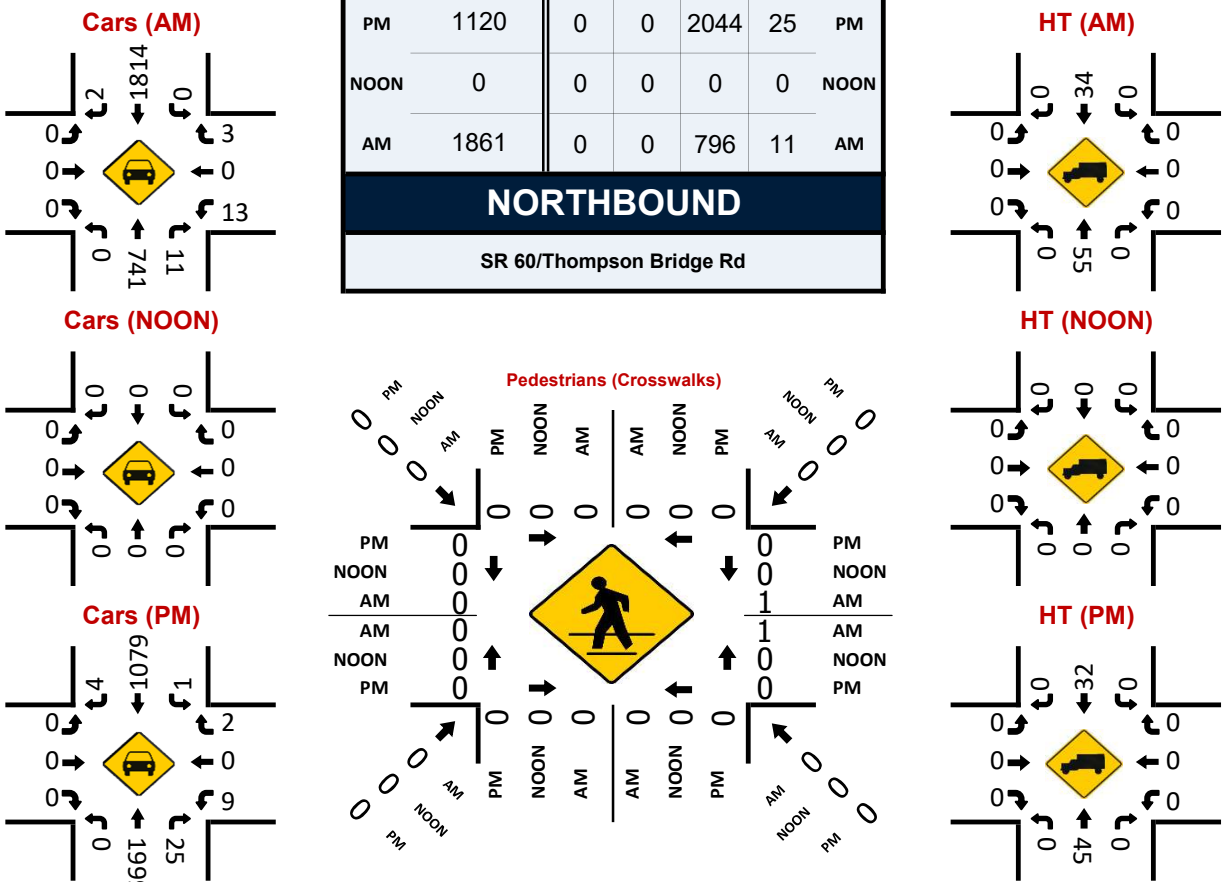
PM	1120	0	0	2044	25	PM
NOON	0	0	0	0	0	NOON
AM	1861	0	0	796	11	AM

Turning movements (0 = no movement):

0	2	0	0	
0	1	0	0	
0	0	2	0	

CONTROL: 1-Way Stop(WB)

	AM	NOON	PM
TEV	2673	0	3196
PHF	0.86		0.99



Appendix C – Turning Volume and Lane Configuration Exhibits

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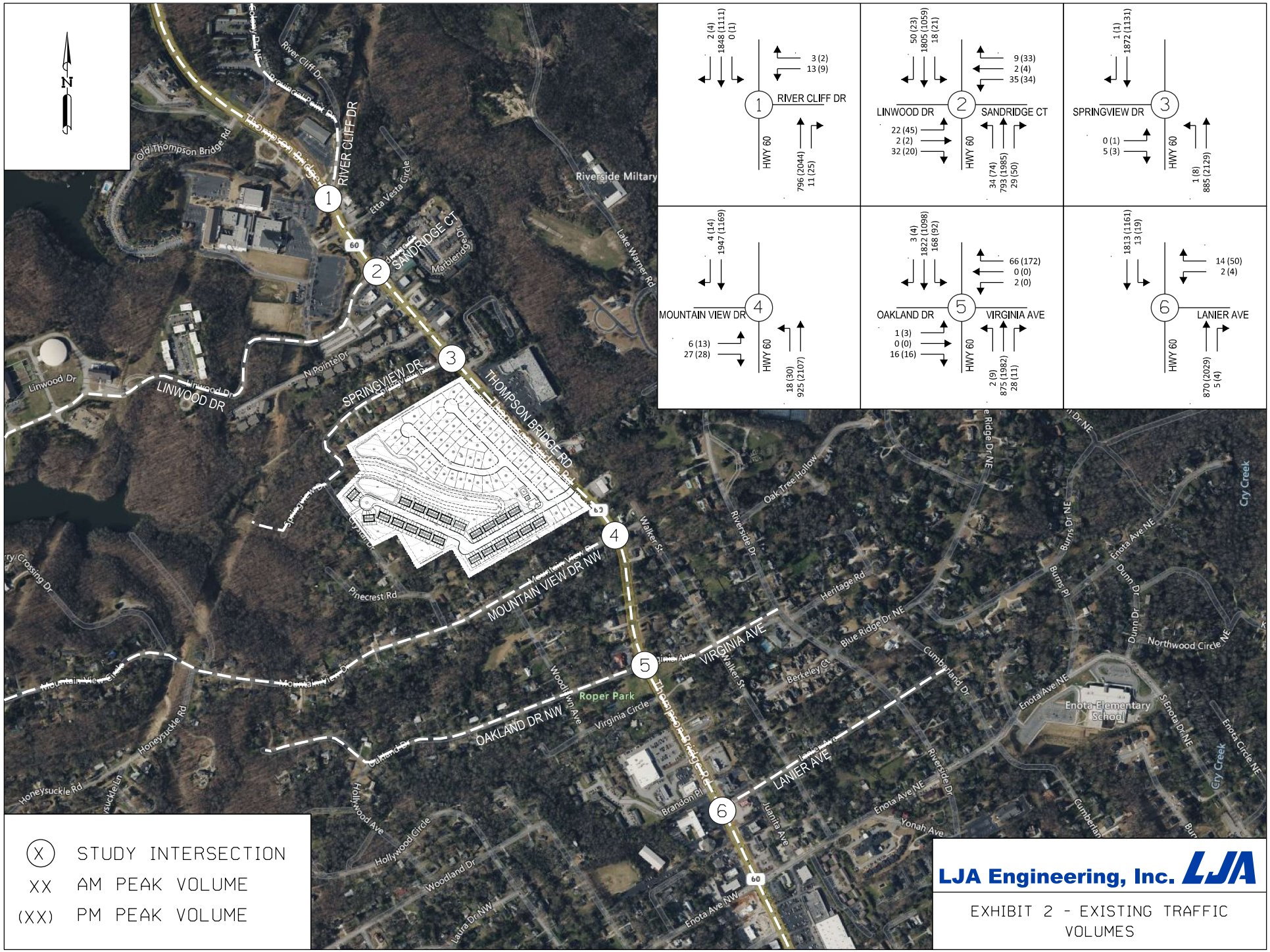

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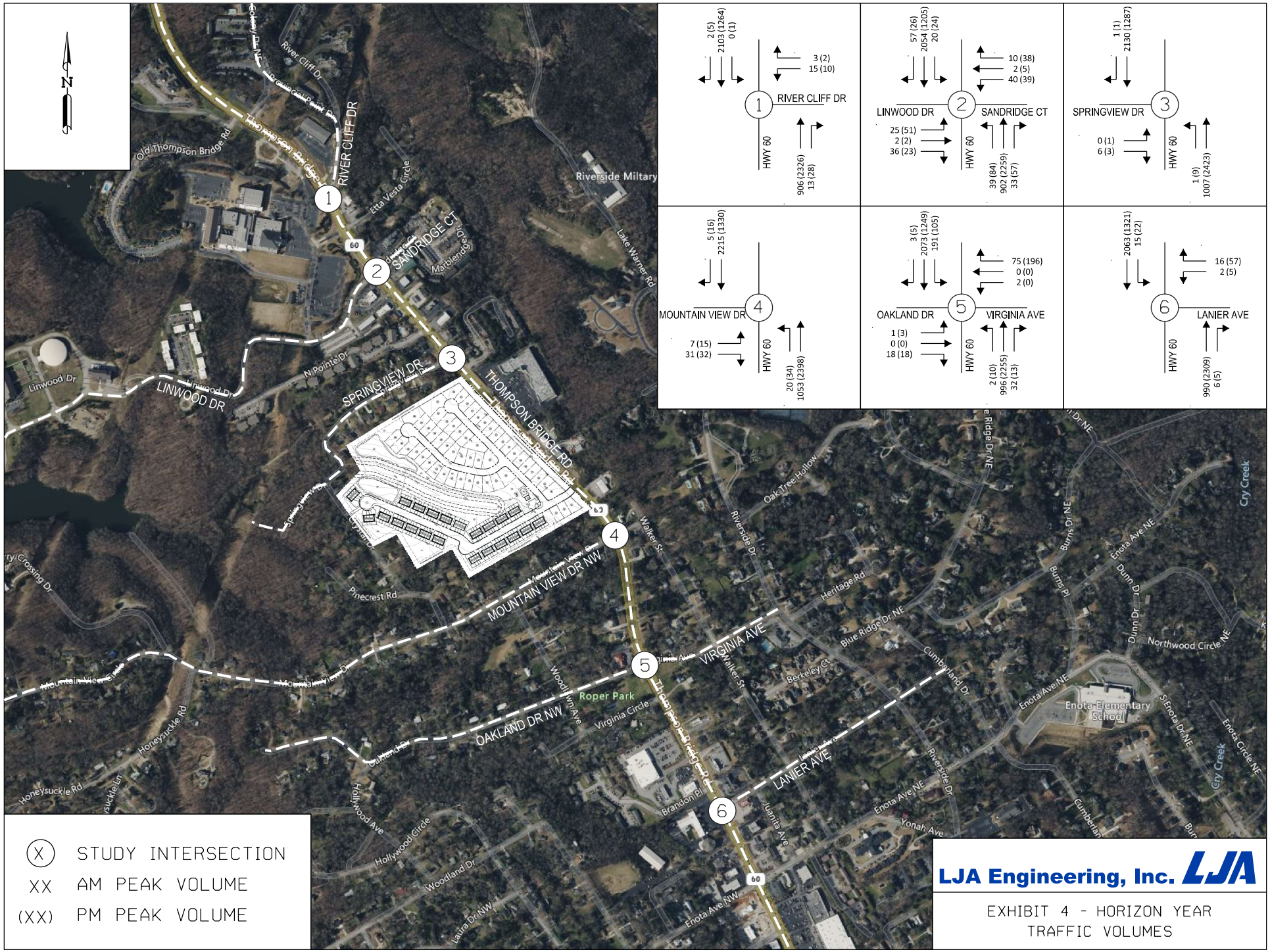

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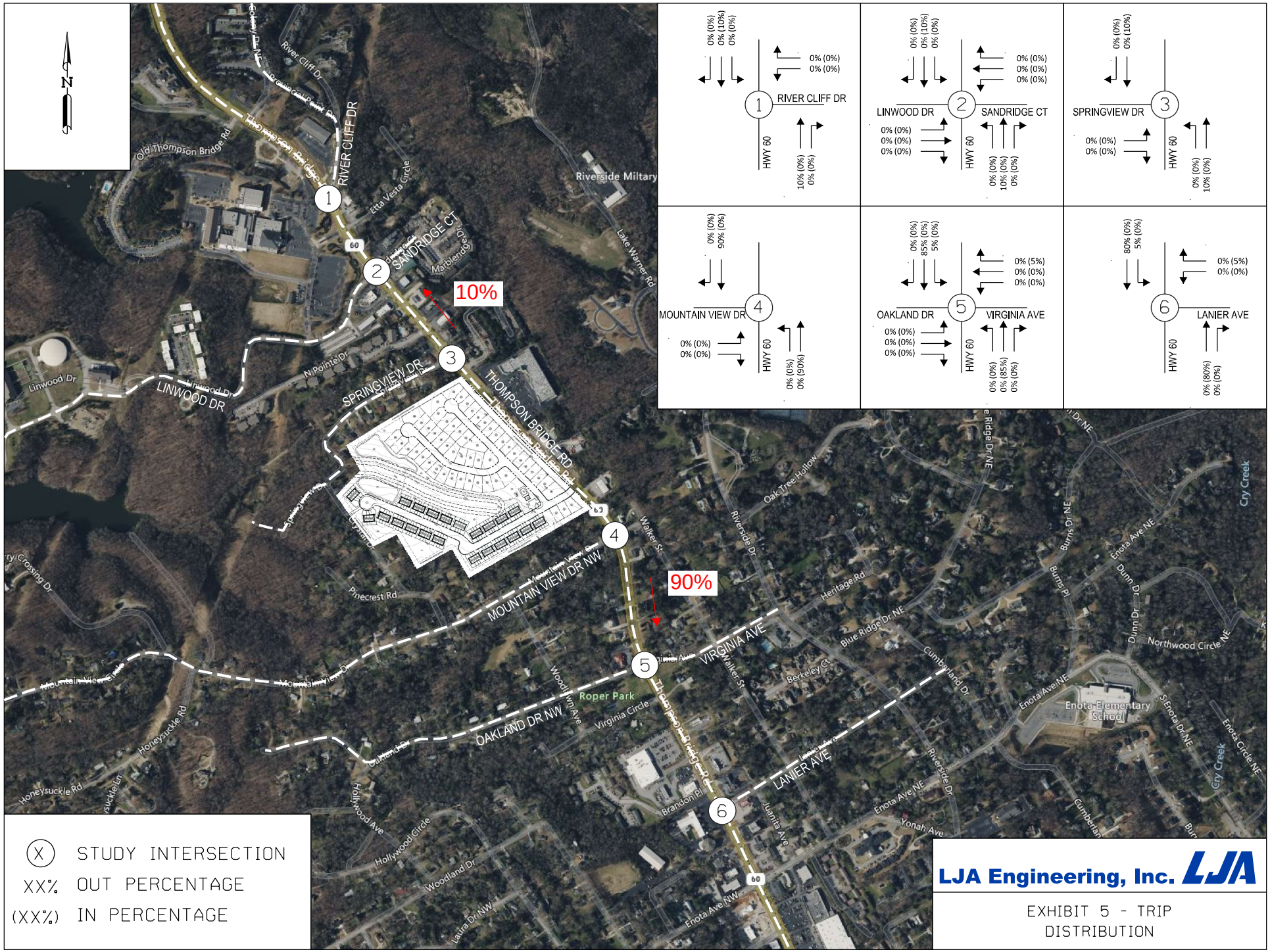

X STUDY INTERSECTION

XX% OUT PERCENTAGE

(XX%) IN PERCENTAGE

LJA Engineering, Inc.

EXHIBIT 5 - TRIP DISTRIBUTION

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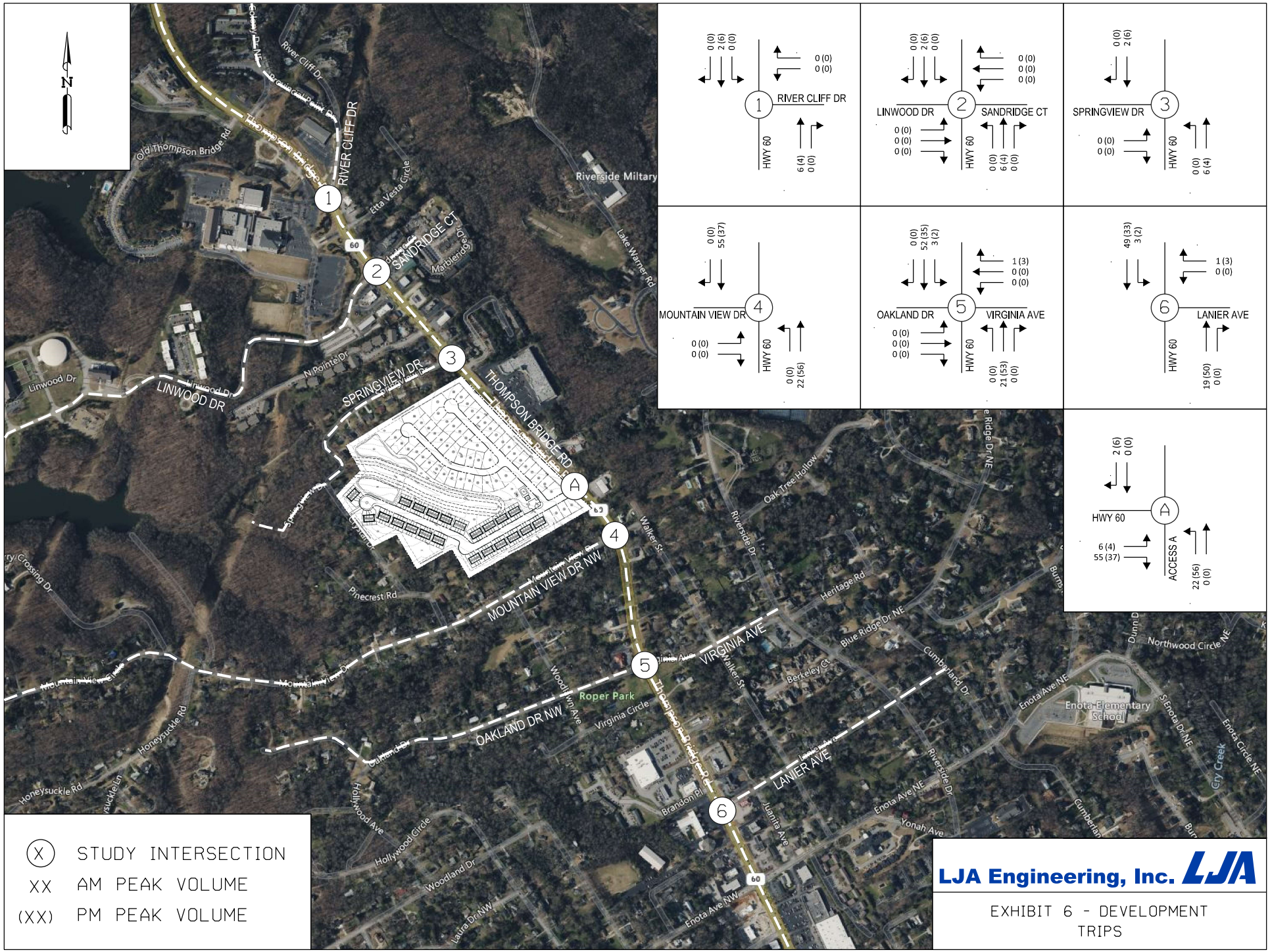

X STUDY INTERSECTION

XX AM PEAK VOLUME

(XX) PM PEAK VOLUME

LJA Engineering, Inc. LJA

EXHIBIT 6 - DEVELOPMENT TRIPS

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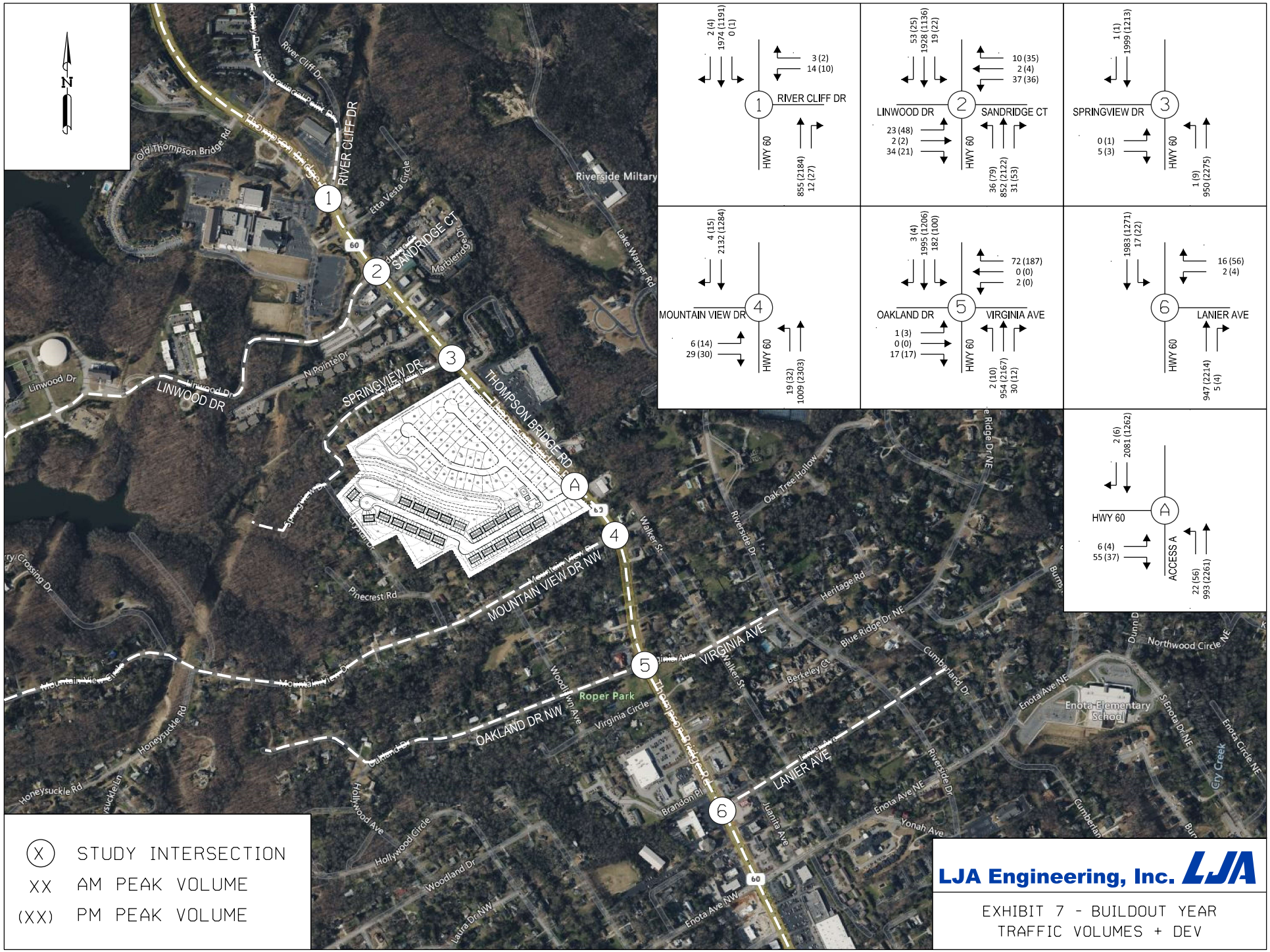

LJA Engineering, Inc.

EXHIBIT 7 - BUILDOUT YEAR TRAFFIC VOLUMES + DEV

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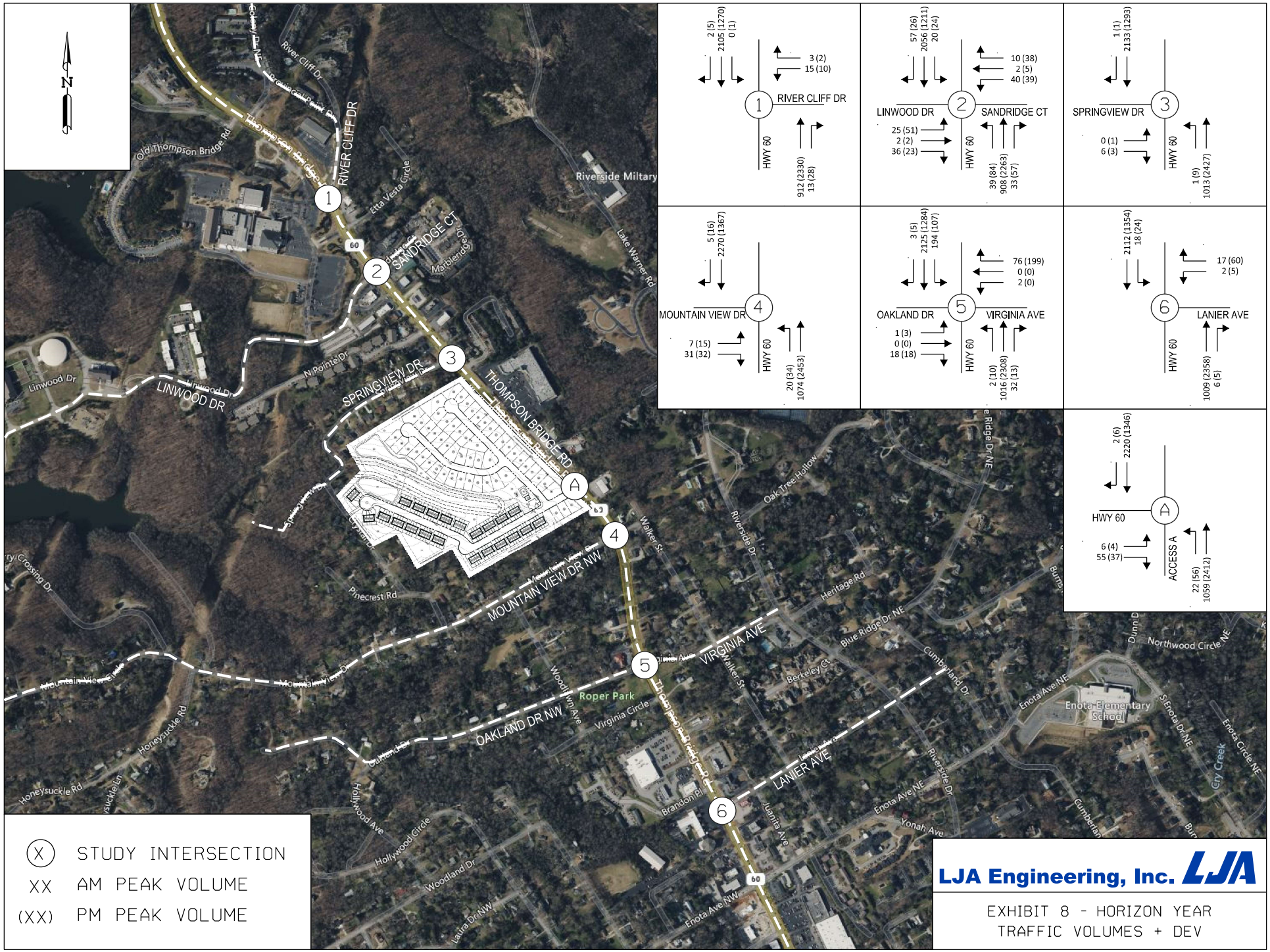

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Appendix D – Synchro Reports

AM and PM Peak Hour

Existing Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Future Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.976			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	3	0	865	12	0	2009	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	17	0	0	877	0	0	2011	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Future Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	0	3	0	865	12	0	2009	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1876	2882	439	-	0	0	877	0	0
Stage 1	871	871	-	-	-	-	-	-	-
Stage 2	1004	2011	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	63	16	566	0	-	-	766	-	-
Stage 1	370	367	-	0	-	-	-	-	-
Stage 2	315	102	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	63	0	566	-	-	-	766	-	-
Mov Cap-2 Maneuver	184	0	-	-	-	-	-	-	-
Stage 1	370	0	-	-	-	-	-	-	-
Stage 2	315	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	23.64	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	211	766	-	-
HCM Lane V/C Ratio	-	-	0.083	-	-	-
HCM Control Delay (s/veh)	-	-	23.6	0	-	-
HCM Lane LOS	-	-	C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type:	Other

2: Highway 60 & Linwood Dr/Sandridge Ct

Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	885	1872	1
Future Volume (vph)	0	5	1	885	1872	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	962	2035	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	962	2036	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	885	1872	1
Future Vol, veh/h	0	5	1	885	1872	1
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	-	250	-	-	-
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	0	5	1	962	2035	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2518	1018	2036	0	-	0
Stage 1	2035	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	23	235	274	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	235	274	-	-	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.69	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	274	-	235	-	-
HCM Lane V/C Ratio	0.004	-	0.023	-	-
HCM Control Delay (s/veh)	18.2	-	20.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	27	18	925	1947	4
Future Volume (vph)	6	27	18	925	1947	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.891					
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1643	0	1888	3539	3539	0
Flt Permitted	0.990		0.950			
Satd. Flow (perm)	1643	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	29	20	1005	2116	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	20	1005	2120	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	27	18	925	1947	4
Future Vol, veh/h	6	27	18	925	1947	4
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	-	250	-	-	-
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	7	29	20	1005	2116	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2660	1060	2121	0	-	0
Stage 1	2118	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	220	254	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	220	254	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	72	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	36.59	0.39	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	254	-	149	-	-
HCM Lane V/C Ratio	0.077	-	0.24	-	-
HCM Control Delay (s/veh)	20.4	-	36.6	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Future Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.869			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	17	2	0	72	2	951	30	183	1980	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	74	0	2	981	0	183	1983	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Future Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	17	2	0	72	2	951	30	183	1980	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2827	3333	992	2326	3320	491	1984	0	0	982	0	0
Stage 1	2347	2347	-	971	971	-	-	-	-	-	-	-
Stage 2	480	986	-	1355	2349	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	8	245	20	8	523	287	-	-	699	-	-
Stage 1	37	68	-	272	329	-	-	-	-	-	-	-
Stage 2	536	324	-	157	68	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	6	245	14	6	523	287	-	-	699	-	-
Mov Cap-2 Maneuver	5	6	-	14	6	-	-	-	-	-	-	-
Stage 1	27	50	-	269	327	-	-	-	-	-	-	-
Stage 2	459	322	-	108	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	80.75	25.54	0.04	1.01
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	287	-	-	65	248	699	-	-
HCM Lane V/C Ratio	0.008	-	-	0.283	0.298	0.261	-	-
HCM Control Delay (s/veh)	17.6	-	-	80.8	25.5	12	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1	1.2	1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	14	870	5	13	1813
Future Volume (vph)	2	14	870	5	13	1813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.881		0.999			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1631	0	3536	0	1888	3539
Flt Permitted	0.994				0.950	
Satd. Flow (perm)	1631	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	15	946	5	14	1971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	951	0	14	1971
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	14	870	5	13	1813
Future Vol, veh/h	2	14	870	5	13	1813
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	-	-	-	250	-
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	2	15	946	5	14	1971

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1962	476	0	0	951	0
Stage 1	948	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	55	536	-	-	718	-
Stage 1	337	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	54	536	-	-	718	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	305	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.88	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	718	-
HCM Lane V/C Ratio	-	-	0.041	0.02	-
HCM Control Delay (s/veh)	-	-	13.9	10.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	9	0	2	0	2044	25	1	1111	4
Future Volume (vph)	0	0	0	9	0	2	0	2044	25	1	1111	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.977			0.998				
Flt Protected					0.960					0.950		
Satd. Flow (prot)	0	0	0	0	1747	0	0	3532	0	1888	3539	0
Flt Permitted					0.960					0.950		
Satd. Flow (perm)	0	0	0	0	1747	0	0	3532	0	1888	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	10	0	2	0	2222	27	1	1208	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	12	0	0	2249	0	1	1212	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	9	0	2	0	2044	25	1	1111	4
Future Vol, veh/h	0	0	0	9	0	2	0	2044	25	1	1111	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	0	2	0	2222	27	1	1208	4

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2841	3449	1124	-	0	0	2249	0	0
Stage 1	2235	2235	-	-	-	-	-	-	-
Stage 2	606	1214	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	14	7	199	0	-	-	226	-	-
Stage 1	67	78	-	0	-	-	-	-	-
Stage 2	507	253	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	14	0	199	-	-	-	226	-	-
Mov Cap-2 Maneuver	56	0	-	-	-	-	-	-	-
Stage 1	67	0	-	-	-	-	-	-	-
Stage 2	505	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	72.64	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	65	226	-	-
HCM Lane V/C Ratio	-	-	0.184	0.005	-	-
HCM Control Delay (s/veh)	-	-	72.6	21	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	0.6	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Future Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.865				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1611	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1611	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			36				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2	22	37	4	36	80	2158	54	23	1151	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	24	0	37	40	0	80	2158	54	23	1151	25
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.6	22.5		10.1	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.14	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.08	0.05		0.15	0.22		0.29	1.42	0.07	0.09	0.90	0.04
Control Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.3			203.7			34.1	
Approach LOS		B			B			F			C	
Queue Length 50th (ft)	14	1		10	2		19	~683	0	5	279	0
Queue Length 95th (ft)	33	18		27	30		44	#998	0	18	#442	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	593	788		271	498		292	1517	782	294	1278	688
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03		0.14	0.08		0.27	1.42	0.07	0.08	0.90	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 140.1	Intersection LOS: F
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Future Volume (vph)	45	2	20	34	4	33	74	1985	50	21	1059	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.865				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1611	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1611	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			36				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	2	22	37	4	36	80	2158	54	23	1151	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	24	0	37	40	0	80	2158	54	23	1151	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.6	22.5		10.1	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.14	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.08	0.05		0.15	0.22		0.29	1.42	0.07	0.09	0.90	0.04
Control Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.4	10.4		17.9	16.6		13.7	215.9	0.2	11.8	35.3	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.3			203.7			34.1	
Approach LOS		B			B			F			C	
Queue Length 50th (ft)	14	1		10	2		19	~683	0	5	279	0
Queue Length 95th (ft)	33	18		27	30		44	#998	0	18	#442	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	593	788		271	498		292	1517	782	294	1278	688
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03		0.14	0.08		0.27	1.42	0.07	0.08	0.90	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 140.1	Intersection LOS: F
Intersection Capacity Utilization 78.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	8	2129	1131	1
Future Volume (vph)	1	3	8	2129	1131	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	9	2314	1229	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	9	2314	1230	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	8	2129	1131	1
Future Vol, veh/h	1	3	8	2129	1131	1
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	-	250	-	-	-
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	1	3	9	2314	1229	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2404	615	1230	0	-	0
Stage 1	1230	-	-	-	-	-
Stage 2	1174	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	28	434	562	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	27	434	562	-	-	-
Mov Cap-2 Maneuver	124	-	-	-	-	-
Stage 1	235	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	18.69	0.04	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	562	-	267	-	-
HCM Lane V/C Ratio	0.015	-	0.016	-	-
HCM Control Delay (s/veh)	11.5	-	18.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	28	30	2107	1169	14
Future Volume (vph)	13	28	30	2107	1169	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.908				0.998	
Flt Protected	0.984		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.984		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	30	33	2290	1271	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	33	2290	1286	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	28	30	2107	1169	14
Future Vol, veh/h	13	28	30	2107	1169	14
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	-	250	-	-	-
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	14	30	33	2290	1271	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2489	643	1286	0	-	0
Stage 1	1278	-	-	-	-	-
Stage 2	1210	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	24	416	535	-	-	-
Stage 1	225	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	416	535	-	-	-
Mov Cap-2 Maneuver	114	-	-	-	-	-
Stage 1	212	-	-	-	-	-
Stage 2	245	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	24.8	0.17	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	535	-	226	-	-
HCM Lane V/C Ratio	0.061	-	0.197	-	-
HCM Control Delay (s/veh)	12.2	-	24.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	16	0	0	172	9	1982	11	92	1098	4
Future Volume (vph)	3	0	16	0	0	172	9	1982	11	92	1098	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.885			0.865			0.999			0.999	
Flt Protected		0.993					0.950			0.950		
Satd. Flow (prot)	0	1637	0	0	1611	0	1888	3536	0	1888	3536	0
Flt Permitted		0.993					0.950			0.950		
Satd. Flow (perm)	0	1637	0	0	1611	0	1888	3536	0	1888	3536	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	17	0	0	187	10	2154	12	100	1193	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	187	0	10	2166	0	100	1197	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 80.9%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	16.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	16	0	0	172	9	1982	11	92	1098	4
Future Vol, veh/h	3	0	16	0	0	172	9	1982	11	92	1098	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	17	0	0	187	10	2154	12	100	1193	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2492	3582	599	2977	3578	1083	1198	0	0	2166	0	0
Stage 1	1396	1396	-	2180	2180	-	-	-	-	-	-	-
Stage 2	1097	2186	-	797	1398	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	15	5	445	6	5	212	578	-	-	243	-	-
Stage 1	149	206	-	47	83	-	-	-	-	-	-	-
Stage 2	227	83	-	346	206	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 1	3	445	3	3	212	578	-	-	243	-	-
Mov Cap-2 Maneuver	~ 1	3	-	3	3	-	-	-	-	-	-	-
Stage 1	87	122	-	46	82	-	-	-	-	-	-	-
Stage 2	27	81	-	196	121	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	$ 2091.57	81.16	0.05	2.29
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	578	-	-	6	212	243	-	-
HCM Lane V/C Ratio	0.017	-	-	3.213	0.88	0.411	-	-
HCM Control Delay (s/veh)	11.3	-	-	$ 2091.6	81.2	29.7	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.8	6.9	1.9	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	50	2029	4	19	1161
Future Volume (vph)	4	50	2029	4	19	1161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.874					
Flt Protected	0.997				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.997				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	54	2205	4	21	1262
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	2209	0	21	1262
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	50	2029	4	19	1161
Future Vol, veh/h	4	50	2029	4	19	1161
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	-	-	-	250	-
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	4	54	2205	4	21	1262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2880	1105	0	0	2210	0
Stage 1	2208	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	13	205	-	-	234	-
Stage 1	69	-	-	-	-	-
Stage 2	469	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	12	205	-	-	234	-
Mov Cap-2 Maneuver	57	-	-	-	-	-
Stage 1	69	-	-	-	-	-
Stage 2	427	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	36.34	0	0.35
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	172	234	-
HCM Lane V/C Ratio	-	-	0.341	0.088	-
HCM Control Delay (s/veh)	-	-	36.3	21.9	-
HCM Lane LOS	-	-	E	C	-
HCM 95th %tile Q(veh)	-	-	1.4	0.3	-

AM and PM Peak Hour

Year 2029 Background Volumes Only

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	3	0	849	12	0	1971	2
Future Volume (vph)	0	0	0	14	0	3	0	849	12	0	1971	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.977			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	0	3	0	923	13	0	2142	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	18	0	0	936	0	0	2144	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	14	0	3	0	849	12	0	1971	2
Future Vol, veh/h	0	0	0	14	0	3	0	849	12	0	1971	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	15	0	3	0	923	13	0	2142	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	2001	3074	468	-	0	0	936	0	0
Stage 1	929	929	-	-	-	-	-	-	-
Stage 2	1071	2145	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	52	12	542	0	-	-	728	-	-
Stage 1	345	344	-	0	-	-	-	-	-
Stage 2	290	87	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	52	0	542	-	-	-	728	-	-
Mov Cap-2 Maneuver	167	0	-	-	-	-	-	-	-
Stage 1	345	0	-	-	-	-	-	-	-
Stage 2	290	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	25.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	191	728	-	-
HCM Lane V/C Ratio	-	-	0.097	-	-	-
HCM Control Delay (s/veh)	-	-	25.9	0	-	-
HCM Lane LOS	-	-	D	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Future Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.201		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	399	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	920	34	21	2092	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	920	34	21	2092	58
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.42	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.0			207.5	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	105	0	3	~466	0
Queue Length 95th (ft)	21	22		29	17		25	279	0	16	#946	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	906		245	557		327	1597	814	359	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.42	0.08

Intersection Summary	
Area Type:	Other

2: Highway 60 & Linwood Dr/Sandridge Ct

Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 142.4	Intersection LOS: F
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Future Volume (vph)	23	2	34	37	2	10	36	846	31	19	1925	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.201		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	399	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	920	34	21	2092	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	920	34	21	2092	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.42	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.8	0.1	9.6	215.2	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.0			207.5	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	105	0	3	~466	0
Queue Length 95th (ft)	21	22		29	17		25	279	0	16	#946	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	906		245	557		327	1597	814	359	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.42	0.08

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 142.4	Intersection LOS: F
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	944	1997	1
Future Volume (vph)	0	5	1	944	1997	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	1026	2171	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	1026	2172	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 65.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	944	1997	1
Future Vol, veh/h	0	5	1	944	1997	1
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	-	250	-	-	-
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	0	5	1	1026	2171	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2686	1086	2172	0	-	0
Stage 1	2171	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	212	242	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	564	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	18	212	242	-	-	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	564	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	22.46	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	242	-	212	-	-
HCM Lane V/C Ratio	0.004	-	0.026	-	-
HCM Control Delay (s/veh)	19.9	-	22.5	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	29	19	987	2077	4
Future Volume (vph)	6	29	19	987	2077	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.889					
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1641	0	1888	3539	3539	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1641	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	32	21	1073	2258	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	21	1073	2262	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	29	19	987	2077	4
Future Vol, veh/h	6	29	19	987	2077	4
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	-	250	-	-	-
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	7	32	21	1073	2258	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2838	1131	2262	0	-	0
Stage 1	2260	-	-	-	-	-
Stage 2	578	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	14	197	223	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	524	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	13	197	223	-	-	-
Mov Cap-2 Maneuver	50	-	-	-	-	-
Stage 1	59	-	-	-	-	-
Stage 2	524	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	43.19	0.43	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	223	-	131	-	-
HCM Lane V/C Ratio	0.093	-	0.289	-	-
HCM Control Delay (s/veh)	22.8	-	43.2	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	1.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	17	2	0	70	2	933	30	179	1944	3
Future Volume (vph)	1	0	17	2	0	70	2	933	30	179	1944	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.868			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	18	2	0	76	2	1014	33	195	2113	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	78	0	2	1047	0	195	2116	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	17	2	0	70	2	933	30	179	1944	3
Future Vol, veh/h	1	0	17	2	0	70	2	933	30	179	1944	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	18	2	0	76	2	1014	33	195	2113	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3015	3555	1058	2480	3540	523	2116	0	0	1047	0	0
Stage 1	2504	2504	-	1035	1035	-	-	-	-	-	-	-
Stage 2	511	1051	-	1446	2505	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	6	6	221	15	6	498	255	-	-	660	-	-
Stage 1	29	57	-	248	307	-	-	-	-	-	-	-
Stage 2	513	302	-	138	56	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	4	221	10	4	498	255	-	-	660	-	-
Mov Cap-2 Maneuver	3	4	-	10	4	-	-	-	-	-	-	-
Stage 1	20	40	-	246	305	-	-	-	-	-	-	-
Stage 2	431	299	-	89	40	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	22.02	32.53	0.04	1.07
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	255	-	-	49	207	660	-	-
HCM Lane V/C Ratio	0.009	-	-	0.402	0.378	0.295	-	-
HCM Control Delay (s/veh)	19.3	-	-	122	32.5	12.7	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	1.7	1.2	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	15	928	5	14	1934
Future Volume (vph)	2	15	928	5	14	1934
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.880		0.999			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1629	0	3536	0	1888	3539
Flt Permitted	0.994				0.950	
Satd. Flow (perm)	1629	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	16	1009	5	15	2102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	1014	0	15	2102
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 63.5%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	15	928	5	14	1934
Future Vol, veh/h	2	15	928	5	14	1934
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	-	-	-	250	-
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	2	16	1009	5	15	2102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2093	507	0	0	1014	0
Stage 1	1011	-	-	-	-	-
Stage 2	1082	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	45	511	-	-	680	-
Stage 1	312	-	-	-	-	-
Stage 2	287	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	44	511	-	-	680	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	312	-	-	-	-	-
Stage 2	280	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.39	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	402	680	-
HCM Lane V/C Ratio	-	-	0.046	0.022	-
HCM Control Delay (s/veh)	-	-	14.4	10.4	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2180	27	1	1185	4
Future Volume (vph)	0	0	0	10	0	2	0	2180	27	1	1185	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998				
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2370	29	1	1288	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2399	0	1	1292	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2180	27	1	1185	4
Future Vol, veh/h	0	0	0	10	0	2	0	2180	27	1	1185	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2370	29	1	1288	4

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3030	3679	1199	-	0	0	2399	0	0
Stage 1	2384	2384	-	-	-	-	-	-	-
Stage 2	646	1295	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	5	178	0	-	-	197	-	-
Stage 1	55	65	-	0	-	-	-	-	-
Stage 2	484	231	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 10	0	178	-	-	-	197	-	-
Mov Cap-2 Maneuver	47	0	-	-	-	-	-	-	-
Stage 1	55	0	-	-	-	-	-	-	-
Stage 2	481	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	93.11	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	53	197	-	-
HCM Lane V/C Ratio	-	-	0.245	0.006	-	-
HCM Control Delay (s/veh)	-	-	93.1	23.4	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Future Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2301	58	24	1228	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2301	58	24	1228	27
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.96	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			243.0			42.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~758	0	6	~339	0
Queue Length 95th (ft)	35	18		28	30		47	#1077	0	18	#486	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.96	0.04

Intersection Summary	
Area Type:	Other

2: Highway 60 & Linwood Dr/Sandridge Ct

Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 167.6	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Future Volume (vph)	48	2	21	36	4	35	79	2117	53	22	1130	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2301	58	24	1228	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2301	58	24	1228	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.96	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	257.6	0.2	11.8	43.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			243.0			42.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~758	0	6	~339	0
Queue Length 95th (ft)	35	18		28	30		47	#1077	0	18	#486	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.96	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 167.6	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2271	1206	1
Future Volume (vph)	1	3	9	2271	1206	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2468	1311	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2468	1312	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.8%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2271	1206	1
Future Vol, veh/h	1	3	9	2271	1206	1
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	-	250	-	-	-
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	1	3	10	2468	1311	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2565	656	1312	0	-	0
Stage 1	1311	-	-	-	-	-
Stage 2	1254	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	21	408	523	-	-	-
Stage 1	216	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	408	523	-	-	-
Mov Cap-2 Maneuver	111	-	-	-	-	-
Stage 1	212	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.01	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	523	-	244	-	-
HCM Lane V/C Ratio	0.019	-	0.018	-	-
HCM Control Delay (s/veh)	12	-	20	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	30	32	2248	1247	15
Future Volume (vph)	14	30	32	2248	1247	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	33	35	2443	1355	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	35	2443	1371	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	30	32	2248	1247	15
Future Vol, veh/h	14	30	32	2248	1247	15
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	-	250	-	-	-
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	15	33	35	2443	1355	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2655	686	1372	0	-	0
Stage 1	1364	-	-	-	-	-
Stage 2	1291	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	390	496	-	-	-
Stage 1	203	-	-	-	-	-
Stage 2	222	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	390	496	-	-	-
Mov Cap-2 Maneuver	101	-	-	-	-	-
Stage 1	189	-	-	-	-	-
Stage 2	222	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	27.99	0.18	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	496	-	204	-	-
HCM Lane V/C Ratio	0.07	-	0.235	-	-
HCM Control Delay (s/veh)	12.8	-	28	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	17	0	0	183	10	2114	12	98	1171	4
Future Volume (vph)	3	0	17	0	0	183	10	2114	12	98	1171	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.884			0.865			0.999				
Flt Protected		0.993					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Flt Permitted		0.993					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	18	0	0	199	11	2298	13	107	1273	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	199	0	11	2311	0	107	1277	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	17	0	0	183	10	2114	12	98	1171	4
Future Vol, veh/h	3	0	17	0	0	183	10	2114	12	98	1171	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	18	0	0	199	11	2298	13	107	1273	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2659	3821	639	3176	3816	1155	1277	0	0	2311	0	0
Stage 1	1488	1488	-	2326	2326	-	-	-	-	-	-	-
Stage 2	1171	2333	-	849	1490	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	11	4	419	4	4	~ 190	539	-	-	213	-	-
Stage 1	130	186	-	38	70	-	-	-	-	-	-	-
Stage 2	205	70	-	322	186	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	2	419	2	2	~ 190	539	-	-	213	-	-
Mov Cap-2 Maneuver	5	2	-	2	2	-	-	-	-	-	-	-
Stage 1	65	93	-	37	69	-	-	-	-	-	-	-
Stage 2	-	68	-	154	93	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	$228.27	129.5	0.06	2.89
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	539	-	-	33	190	213	-	-
HCM Lane V/C Ratio	0.02	-	-	0.65	1.047	0.499	-	-
HCM Control Delay (s/veh)	11.8	-	-	228.3	129.5	37.6	-	-
HCM Lane LOS	B	-	-	F	F	E	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.2	9.2	2.5	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	53	2164	4	20	1238
Future Volume (vph)	4	53	2164	4	20	1238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.874					
Flt Protected	0.997				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.997				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	58	2352	4	22	1346
Shared Lane Traffic (%)						
Lane Group Flow (vph)	62	0	2356	0	22	1346
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 70.1%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	53	2164	4	20	1238
Future Vol, veh/h	4	53	2164	4	20	1238
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	-	-	-	250	-
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	4	58	2352	4	22	1346

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3071	1178	0	0	2357	0
Stage 1	2354	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	9	183	-	-	205	-
Stage 1	57	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	8	183	-	-	205	-
Mov Cap-2 Maneuver	47	-	-	-	-	-
Stage 1	57	-	-	-	-	-
Stage 2	398	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	43.81	0	0.39
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	153	205	-
HCM Lane V/C Ratio	-	-	0.406	0.106	-
HCM Control Delay (s/veh)	-	-	43.8	24.7	-
HCM Lane LOS	-	-	E	C	-
HCM 95th %tile Q(veh)	-	-	1.8	0.4	-

AM and PM Peak Hour

Year 2029 Background plus Development Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	14	0	3	0	855	12	0	1974	2
Future Volume (vph)	0	0	0	14	0	3	0	855	12	0	1974	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.977			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1747	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	15	0	3	0	929	13	0	2146	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	18	0	0	942	0	0	2148	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 64.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	14	0	3	0	855	12	0	1974	2
Future Vol, veh/h	0	0	0	14	0	3	0	855	12	0	1974	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	15	0	3	0	929	13	0	2146	2

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2009	3084	471	-	0	0	942	0	0
Stage 1	936	936	-	-	-	-	-	-	-
Stage 2	1073	2148	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	51	12	539	0	-	-	723	-	-
Stage 1	342	342	-	0	-	-	-	-	-
Stage 2	290	87	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	51	0	539	-	-	-	723	-	-
Mov Cap-2 Maneuver	166	0	-	-	-	-	-	-	-
Stage 1	342	0	-	-	-	-	-	-	-
Stage 2	290	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	26.03	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	190	723	-	-
HCM Lane V/C Ratio	-	-	0.097	-	-	-
HCM Control Delay (s/veh)	-	-	26	0	-	-
HCM Lane LOS	-	-	D	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Future Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.198		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	393	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	926	34	21	2096	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	926	34	21	2096	58
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.43	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.1			208.6	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	106	0	3	~467	0
Queue Length 95th (ft)	21	22		29	17		25	282	0	16	#948	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	906		245	557		327	1597	814	357	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.43	0.08

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay (s/veh): 143.0	Intersection LOS: F
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Future Volume (vph)	23	2	34	37	2	10	36	852	31	19	1928	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.198		
Satd. Flow (perm)	1330	1598	0	1863	1626	0	290	3539	1583	393	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	25	2	37	40	2	11	39	926	34	21	2096	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	39	0	40	13	0	39	926	34	21	2096	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.18	0.08		0.13	0.58	0.04	0.06	1.43	0.08
Control Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.5		22.4	19.5		10.0	15.9	0.1	9.6	216.4	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.3			21.7			15.1			208.6	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		12	1		6	106	0	3	~467	0
Queue Length 95th (ft)	21	22		29	17		25	282	0	16	#948	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	906		245	557		327	1597	814	357	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.12	0.58	0.04	0.06	1.43	0.08

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay (s/veh): 143.0	Intersection LOS: F
Intersection Capacity Utilization 69.5%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	950	1999	1
Future Volume (vph)	0	5	1	950	1999	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	1033	2173	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	1033	2174	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	950	1999	1
Future Vol, veh/h	0	5	1	950	1999	1
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	-	250	-	-	-
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	0	5	1	1033	2173	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2692	1087	2174	0	-	0
Stage 1	2173	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	17	211	242	-	-	-
Stage 1	73	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	211	242	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	72	-	-	-	-	-
Stage 2	562	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	22.49	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	242	-	211	-	-
HCM Lane V/C Ratio	0.004	-	0.026	-	-
HCM Control Delay (s/veh)	20	-	22.5	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	29	19	1009	2132	4
Future Volume (vph)	6	29	19	1009	2132	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.889					
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1641	0	1888	3539	3539	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1641	0	1888	3539	3539	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	32	21	1097	2317	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	21	1097	2321	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	29	19	1009	2132	4
Future Vol, veh/h	6	29	19	1009	2132	4
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	-	250	-	-	-
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	7	32	21	1097	2317	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2909	1161	2322	0	-	0
Stage 1	2320	-	-	-	-	-
Stage 2	590	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	12	188	211	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	11	188	211	-	-	-
Mov Cap-2 Maneuver	46	-	-	-	-	-
Stage 1	54	-	-	-	-	-
Stage 2	517	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	46.6	0.44	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	211	-	124	-	-
HCM Lane V/C Ratio	0.098	-	0.308	-	-
HCM Control Delay (s/veh)	23.9	-	46.6	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.3	-	1.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	17	2	0	72	2	954	30	182	1995	3
Future Volume (vph)	1	0	17	2	0	72	2	954	30	182	1995	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.868			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	18	2	0	78	2	1037	33	198	2168	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	80	0	2	1070	0	198	2171	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	17	2	0	72	2	954	30	182	1995	3
Future Vol, veh/h	1	0	17	2	0	72	2	954	30	182	1995	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	18	2	0	78	2	1037	33	198	2168	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3089	3640	1086	2538	3625	535	2172	0	0	1070	0	0
Stage 1	2566	2566	-	1058	1058	-	-	-	-	-	-	-
Stage 2	523	1074	-	1480	2567	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	5	5	212	14	5	490	242	-	-	647	-	-
Stage 1	26	52	-	240	300	-	-	-	-	-	-	-
Stage 2	505	294	-	132	52	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	3	3	212	9	4	490	242	-	-	647	-	-
Mov Cap-2 Maneuver	3	3	-	9	4	-	-	-	-	-	-	-
Stage 1	18	36	-	238	297	-	-	-	-	-	-	-
Stage 2	421	292	-	83	36	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	48.09	36.01	0.04	1.08
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	242	-	-	42	194	647	-	-
HCM Lane V/C Ratio	0.009	-	-	0.461	0.414	0.306	-	-
HCM Control Delay (s/veh)	20	-	-	148.1	36	13	-	-
HCM Lane LOS	C	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	1.9	1.3	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	16	947	5	17	1983
Future Volume (vph)	2	16	947	5	17	1983
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.879		0.999			
Flt Protected	0.995				0.950	
Satd. Flow (prot)	1629	0	3536	0	1888	3539
Flt Permitted	0.995				0.950	
Satd. Flow (perm)	1629	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	17	1029	5	18	2155
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	1034	0	18	2155
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	16	947	5	17	1983
Future Vol, veh/h	2	16	947	5	17	1983
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	-	-	-	250	-
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	2	17	1029	5	18	2155

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2147	517	0	0	1035	0
Stage 1	1032	-	-	-	-	-
Stage 2	1115	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	41	503	-	-	667	-
Stage 1	304	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	40	503	-	-	667	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	268	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.53	0	0.09
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	397	667	-
HCM Lane V/C Ratio	-	-	0.049	0.028	-
HCM Control Delay (s/veh)	-	-	14.5	10.5	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	55	22	993	2081	2
Future Volume (vph)	6	55	22	993	2081	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.879					0.850
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1629	0	1888	3539	3539	1583
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1629	0	1888	3539	3539	1583
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	60	24	1079	2262	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	24	1079	2262	2
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.9%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	55	22	993	2081	2
Future Vol, veh/h	6	55	22	993	2081	2
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	-	250	-	-	250
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	7	60	24	1079	2262	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2849	1131	2264	0	-	0
Stage 1	2262	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	14	197	223	-	-	-
Stage 1	65	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	12	197	223	-	-	-
Mov Cap-2 Maneuver	49	-	-	-	-	-
Stage 1	58	-	-	-	-	-
Stage 2	518	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	45.69	0.5	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	223	-	152	-	-
HCM Lane V/C Ratio	0.107	-	0.435	-	-
HCM Control Delay (s/veh)	23.1	-	45.7	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.4	-	2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2184	27	1	1191	4
Future Volume (vph)	0	0	0	10	0	2	0	2184	27	1	1191	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998				
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2374	29	1	1295	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2403	0	1	1299	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2184	27	1	1191	4
Future Vol, veh/h	0	0	0	10	0	2	0	2184	27	1	1191	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2374	29	1	1295	4

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3038	3690	1202	-	0	0	2403	0	0
Stage 1	2389	2389	-	-	-	-	-	-	-
Stage 2	649	1301	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 10	5	177	0	-	-	196	-	-
Stage 1	55	65	-	0	-	-	-	-	-
Stage 2	482	229	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 10	0	177	-	-	-	196	-	-
Mov Cap-2 Maneuver	47	0	-	-	-	-	-	-	-
Stage 1	55	0	-	-	-	-	-	-	-
Stage 2	479	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	93.75	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	53	196	-	-
HCM Lane V/C Ratio	-	-	0.246	0.006	-	-
HCM Control Delay (s/veh)	-	-	93.7	23.5	-	-
HCM Lane LOS	-	-	F	C	-	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Future Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2307	58	24	1235	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2307	58	24	1235	27
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.97	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			244.7			43.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~761	0	6	~343	0
Queue Length 95th (ft)	35	18		28	30		47	#1081	0	18	#490	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.97	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 168.9	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Future Volume (vph)	48	2	21	36	4	35	79	2122	53	22	1136	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.862			0.864				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1606	0	1770	1609	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.444			0.889			0.134			0.148		
Satd. Flow (perm)	827	1606	0	1656	1609	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			38				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	2	23	39	4	38	86	2307	58	24	1235	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	25	0	39	42	0	86	2307	58	24	1235	27
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.5		10.2	6.3		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.47	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.15	0.23		0.31	1.52	0.07	0.09	0.97	0.04
Control Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	10.3		18.1	16.3		14.0	259.4	0.2	11.8	44.8	0.1
LOS	B	B		B	B		B	F	A	B	D	A
Approach Delay (s/veh)		13.1			17.2			244.7			43.3	
Approach LOS		B			B			F			D	
Queue Length 50th (ft)	15	1		11	2		21	~761	0	6	~343	0
Queue Length 95th (ft)	35	18		28	30		47	#1081	0	18	#490	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	593	788		271	499		292	1517	782	294	1277	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.14	0.08		0.29	1.52	0.07	0.08	0.97	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 69.8	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 168.9	Intersection LOS: F
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2275	1213	1
Future Volume (vph)	1	3	9	2275	1213	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2473	1318	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2473	1319	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2275	1213	1
Future Vol, veh/h	1	3	9	2275	1213	1
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	-	250	-	-	-
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	1	3	10	2473	1318	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2575	660	1320	0	-	0
Stage 1	1319	-	-	-	-	-
Stage 2	1256	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	21	406	520	-	-	-
Stage 1	214	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	21	406	520	-	-	-
Mov Cap-2 Maneuver	110	-	-	-	-	-
Stage 1	210	-	-	-	-	-
Stage 2	232	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.11	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	520	-	243	-	-
HCM Lane V/C Ratio	0.019	-	0.018	-	-
HCM Control Delay (s/veh)	12.1	-	20.1	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	30	32	2303	1284	15
Future Volume (vph)	14	30	32	2303	1284	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	33	35	2503	1396	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	35	2503	1412	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 73.7%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	30	32	2303	1284	15
Future Vol, veh/h	14	30	32	2303	1284	15
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	-	250	-	-	-
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	15	33	35	2503	1396	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2725	706	1412	0	-	0
Stage 1	1404	-	-	-	-	-
Stage 2	1321	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	17	378	479	-	-	-
Stage 1	193	-	-	-	-	-
Stage 2	214	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	378	479	-	-	-
Mov Cap-2 Maneuver	96	-	-	-	-	-
Stage 1	179	-	-	-	-	-
Stage 2	214	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	29.33	0.18	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	479	-	195	-	-
HCM Lane V/C Ratio	0.073	-	0.245	-	-
HCM Control Delay (s/veh)	13.1	-	29.3	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	17	0	0	187	10	2167	12	100	1206	4
Future Volume (vph)	3	0	17	0	0	187	10	2167	12	100	1206	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.884			0.865			0.999				
Flt Protected		0.993					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Flt Permitted		0.993					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	18	0	0	203	11	2355	13	109	1311	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	203	0	11	2368	0	109	1315	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	17	0	0	187	10	2167	12	100	1206	4
Future Vol, veh/h	3	0	17	0	0	187	10	2167	12	100	1206	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	18	0	0	203	11	2355	13	109	1311	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2730	3921	658	3257	3916	1184	1315	0	0	2368	0	0
Stage 1	1530	1530	-	2384	2384	-	-	-	-	-	-	-
Stage 2	1199	2390	-	873	1533	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	10	3	407	4	3	~ 182	522	-	-	202	-	-
Stage 1	122	177	-	35	65	-	-	-	-	-	-	-
Stage 2	197	65	-	311	177	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	4	1	407	2	1	~ 182	522	-	-	202	-	-
Mov Cap-2 Maneuver	4	1	-	2	1	-	-	-	-	-	-	-
Stage 1	57	82	-	34	64	-	-	-	-	-	-	-
Stage 2	-	64	-	138	82	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/s	$ 310.11	154.77	0.06	3.18
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	522	-	-	27	182	202	-	-
HCM Lane V/C Ratio	0.021	-	-	0.791	1.118	0.537	-	-
HCM Control Delay (s/veh)	12	-	-	$ 310.1	154.8	41.7	-	-
HCM Lane LOS	B	-	-	F	F	E	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	10.2	2.8	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	56	2214	4	22	1271
Future Volume (vph)	4	56	2214	4	22	1271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.873					
Flt Protected	0.997				0.950	
Satd. Flow (prot)	1621	0	3539	0	1888	3539
Flt Permitted	0.997				0.950	
Satd. Flow (perm)	1621	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	61	2407	4	24	1382
Shared Lane Traffic (%)						
Lane Group Flow (vph)	65	0	2411	0	24	1382
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	56	2214	4	22	1271
Future Vol, veh/h	4	56	2214	4	22	1271
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	-	-	-	250	-
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	4	61	2407	4	24	1382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3147	1205	0	0	2411	0
Stage 1	2409	-	-	-	-	-
Stage 2	739	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	8	176	-	-	195	-
Stage 1	53	-	-	-	-	-
Stage 2	433	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	7	176	-	-	195	-
Mov Cap-2 Maneuver	44	-	-	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	380	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	47.84	0	0.44
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	147	195	-
HCM Lane V/C Ratio	-	-	0.445	0.123	-
HCM Control Delay (s/veh)	-	-	47.8	26.1	-
HCM Lane LOS	-	-	E	D	-
HCM 95th %tile Q(veh)	-	-	2	0.4	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	37	56	2261	1262	6
Future Volume (vph)	4	37	56	2261	1262	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.877					0.850
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1625	0	1888	3539	3539	1583
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1625	0	1888	3539	3539	1583
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	40	61	2458	1372	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	61	2458	1372	7
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	37	56	2261	1262	6
Future Vol, veh/h	4	37	56	2261	1262	6
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	-	250	-	-	250
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	4	40	61	2458	1372	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2722	686	1378	0	-	0
Stage 1	1372	-	-	-	-	-
Stage 2	1351	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	17	390	493	-	-	-
Stage 1	201	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	390	493	-	-	-
Mov Cap-2 Maneuver	93	-	-	-	-	-
Stage 1	176	-	-	-	-	-
Stage 2	206	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	19.22	0.32	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	493	-	298	-	-
HCM Lane V/C Ratio	0.123	-	0.15	-	-
HCM Control Delay (s/veh)	13.3	-	19.2	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	0.5	-	-

AM and PM Peak Hour

Year 2034 Background Volumes Only

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	15	0	3	0	906	13	0	2103	2
Future Volume (vph)	0	0	0	15	0	3	0	906	13	0	2103	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1751	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1751	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	16	0	3	0	985	14	0	2286	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	19	0	0	999	0	0	2288	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	15	0	3	0	906	13	0	2103	2
Future Vol, veh/h	0	0	0	15	0	3	0	906	13	0	2103	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	16	0	3	0	985	14	0	2286	2

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	2135	3280	499	-	0	0	999	0	0
Stage 1	992	992	-	-	-	-	-	-	-
Stage 2	1143	2288	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	42	9	517	0	-	-	689	-	-
Stage 1	320	322	-	0	-	-	-	-	-
Stage 2	266	73	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	42	0	517	-	-	-	689	-	-
Mov Cap-2 Maneuver	152	0	-	-	-	-	-	-	-
Stage 1	320	0	-	-	-	-	-	-	-
Stage 2	266	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	28.63	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	172	689	-	-
HCM Lane V/C Ratio	-	-	0.114	-	-	-
HCM Control Delay (s/veh)	-	-	28.6	0	-	-
HCM Lane LOS	-	-	D	A	-	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Future Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.857			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1596	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.174		
Satd. Flow (perm)	1330	1596	0	1863	1626	0	290	3539	1583	346	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	2	39	43	2	11	42	980	36	22	2233	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	41	0	43	13	0	42	980	36	22	2233	62
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.19	0.08		0.14	0.61	0.04	0.07	1.52	0.08
Control Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.2			21.9			15.8			248.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		13	1		7	114	0	4	~517	0
Queue Length 95th (ft)	22	23		30	17		26	#332	0	17	#1022	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	905		244	557		327	1597	814	341	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05		0.18	0.02		0.13	0.61	0.04	0.06	1.52	0.08

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 170.0	Intersection LOS: F
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Future Volume (vph)	25	2	36	40	2	10	39	902	33	20	2054	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.857			0.873				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1596	0	1770	1626	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.174		
Satd. Flow (perm)	1330	1596	0	1863	1626	0	290	3539	1583	346	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			11				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	2	39	43	2	11	42	980	36	22	2233	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	41	0	43	13	0	42	980	36	22	2233	62
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.08		0.19	0.08		0.14	0.61	0.04	0.07	1.52	0.08
Control Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.3		22.7	19.5		10.1	16.7	0.1	9.7	257.9	0.2
LOS	B	A		C	B		B	B	A	A	F	A
Approach Delay (s/veh)		11.2			21.9			15.8			248.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		13	1		7	114	0	4	~517	0
Queue Length 95th (ft)	22	23		30	17		26	#332	0	17	#1022	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	905		244	557		327	1597	814	341	1470	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05		0.18	0.02		0.13	0.61	0.04	0.06	1.52	0.08

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 60.7	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 170.0	Intersection LOS: F
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	6	1	1007	2130	1
Future Volume (vph)	0	6	1	1007	2130	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	7	1	1095	2315	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	1	1095	2316	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.9%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	6	1	1007	2130	1
Future Vol, veh/h	0	6	1	1007	2130	1
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	-	250	-	-	-
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	0	7	1	1095	2315	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2865	1158	2316	0	-	0
Stage 1	2316	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	13	189	212	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	13	189	212	-	-	-
Mov Cap-2 Maneuver	51	-	-	-	-	-
Stage 1	60	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	24.7	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	212	-	189	-	-
HCM Lane V/C Ratio	0.005	-	0.034	-	-
HCM Control Delay (s/veh)	22	-	24.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	31	20	1053	2215	5
Future Volume (vph)	7	31	20	1053	2215	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.891					
Flt Protected	0.991		0.950			
Satd. Flow (prot)	1645	0	1888	3539	3539	0
Flt Permitted	0.991		0.950			
Satd. Flow (perm)	1645	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	34	22	1145	2408	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	0	22	1145	2413	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	31	20	1053	2215	5
Future Vol, veh/h	7	31	20	1053	2215	5
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	-	250	-	-	-
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	8	34	22	1145	2408	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3026	1207	2413	0	-	0
Stage 1	2410	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	10	176	194	-	-	-
Stage 1	53	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	176	194	-	-	-
Mov Cap-2 Maneuver	41	-	-	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	56.87	0.48	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	194	-	109	-	-
HCM Lane V/C Ratio	0.112	-	0.379	-	-
HCM Control Delay (s/veh)	25.8	-	56.9	-	-
HCM Lane LOS	D	-	F	-	-
HCM 95th %tile Q(veh)	0.4	-	1.5	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	18	2	0	75	2	996	32	191	2073	3
Future Volume (vph)	1	0	18	2	0	75	2	996	32	191	2073	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.871			0.868			0.995				
Flt Protected		0.998			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Flt Permitted		0.998			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1615	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	20	2	0	82	2	1083	35	208	2253	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	84	0	2	1118	0	208	2256	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	18	2	0	75	2	996	32	191	2073	3
Future Vol, veh/h	1	0	18	2	0	75	2	996	32	191	2073	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	20	2	0	82	2	1083	35	208	2253	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3216	3792	1128	2646	3776	559	2257	0	0	1117	0	0
Stage 1	2670	2670	-	1104	1104	-	-	-	-	-	-	-
Stage 2	546	1122	-	1542	2672	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	4	4	198	11	4	473	224	-	-	621	-	-
Stage 1	23	46	-	225	285	-	-	-	-	-	-	-
Stage 2	490	279	-	120	46	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	2	3	198	7	3	473	224	-	-	621	-	-
Mov Cap-2 Maneuver	2	3	-	7	3	-	-	-	-	-	-	-
Stage 1	15	31	-	223	282	-	-	-	-	-	-	-
Stage 2	401	277	-	72	31	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/veh	209.01	46.12	0.04	1.15
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	224	-	-	35	168	621	-	-
HCM Lane V/C Ratio	0.01	-	-	0.598	0.499	0.334	-	-
HCM Control Delay (s/veh)	21.2	-	-	209	46.1	13.7	-	-
HCM Lane LOS	C	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2	2.4	1.5	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	16	990	6	15	2063
Future Volume (vph)	2	16	990	6	15	2063
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.879		0.999			
Flt Protected	0.995				0.950	
Satd. Flow (prot)	1629	0	3536	0	1888	3539
Flt Permitted	0.995				0.950	
Satd. Flow (perm)	1629	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	17	1076	7	16	2242
Shared Lane Traffic (%)						
Lane Group Flow (vph)	19	0	1083	0	16	2242
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	16	990	6	15	2063
Future Vol, veh/h	2	16	990	6	15	2063
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	-	-	-	250	-
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	2	17	1076	7	16	2242

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2233	541	0	0	1083	0
Stage 1	1079	-	-	-	-	-
Stage 2	1154	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	36	485	-	-	640	-
Stage 1	287	-	-	-	-	-
Stage 2	262	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	35	485	-	-	640	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	287	-	-	-	-	-
Stage 2	256	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.97	0	0.08
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	380	640	-
HCM Lane V/C Ratio	-	-	0.051	0.025	-
HCM Control Delay (s/veh)	-	-	15	10.8	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2326	28	1	1264	5
Future Volume (vph)	0	0	0	10	0	2	0	2326	28	1	1264	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998			0.999	
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2528	30	1	1374	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2558	0	1	1379	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 75.2%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2326	28	1	1264	5
Future Vol, veh/h	0	0	0	10	0	2	0	2326	28	1	1264	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2528	30	1	1374	5

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3233	3925	1279	-	0	0	2559	0	0
Stage 1	2543	2543	-	-	-	-	-	-	-
Stage 2	689	1382	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 7	3	157	0	-	-	170	-	-
Stage 1	45	54	-	0	-	-	-	-	-
Stage 2	460	210	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 7	0	157	-	-	-	170	-	-
Mov Cap-2 Maneuver	38	0	-	-	-	-	-	-	-
Stage 1	45	0	-	-	-	-	-	-	-
Stage 2	457	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	119.04	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	44	170	-	-
HCM Lane V/C Ratio	-	-	0.298	0.006	-	-
HCM Control Delay (s/veh)	-	-	119	26.3	-	-
HCM Lane LOS	-	-	F	D	-	-
HCM 95th %tile Q(veh)	-	-	1	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Future Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2455	62	26	1310	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2455	62	26	1310	28
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			286.5			57.0	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~841	0	6	~383	0
Queue Length 95th (ft)	37	19		30	32		49	#1164	0	20	#534	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 199.8	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Future Volume (vph)	51	2	23	39	5	38	84	2259	57	24	1205	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2455	62	26	1310	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2455	62	26	1310	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	303.8	0.2	11.9	59.1	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			286.5			57.0	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~841	0	6	~383	0
Queue Length 95th (ft)	37	19		30	32		49	#1164	0	20	#534	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Queues

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 199.8	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2423	1287	1
Future Volume (vph)	1	3	9	2423	1287	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1846	866	
Travel Time (s)	13.8			28.0	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2634	1399	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2634	1400	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2423	1287	1
Future Vol, veh/h	1	3	9	2423	1287	1
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	-	250	-	-	-
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	1	3	10	2634	1399	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2736	700	1400	0	-	0
Stage 1	1399	-	-	-	-	-
Stage 2	1336	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	16	382	484	-	-	-
Stage 1	194	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	16	382	484	-	-	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	190	-	-	-	-	-
Stage 2	210	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.56	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	484	-	222	-	-
HCM Lane V/C Ratio	0.02	-	0.02	-	-
HCM Control Delay (s/veh)	12.6	-	21.6	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	32	34	2398	1330	16
Future Volume (vph)	15	32	34	2398	1330	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	513			1024	1846	
Travel Time (s)	14.0			15.5	28.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	35	37	2607	1446	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	37	2607	1463	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	32	34	2398	1330	16
Future Vol, veh/h	15	32	34	2398	1330	16
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	-	250	-	-	-
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	16	35	37	2607	1446	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2832	732	1463	0	-	0
Stage 1	1454	-	-	-	-	-
Stage 2	1377	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 14	364	458	-	-	-
Stage 1	181	-	-	-	-	-
Stage 2	199	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 13	364	458	-	-	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	166	-	-	-	-	-
Stage 2	199	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	32.18	0.19	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	458	-	183	-	-
HCM Lane V/C Ratio	0.081	-	0.28	-	-
HCM Control Delay (s/veh)	13.6	-	32.2	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.1	-	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	18	0	0	196	10	2255	13	105	1249	5
Future Volume (vph)	3	0	18	0	0	196	10	2255	13	105	1249	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.883			0.865			0.999			0.999	
Flt Protected		0.994					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Flt Permitted		0.994					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	20	0	0	213	11	2451	14	114	1358	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	213	0	11	2465	0	114	1363	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 90.7%	ICU Level of Service E
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	18	0	0	196	10	2255	13	105	1249	5
Future Vol, veh/h	3	0	18	0	0	196	10	2255	13	105	1249	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	20	0	0	213	11	2451	14	114	1358	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2836	4076	682	3387	4071	1233	1363	0	0	2465	0	0
Stage 1	1589	1589	-	2480	2480	-	-	-	-	-	-	-
Stage 2	1247	2487	-	907	1591	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	3	393	3	3	~ 169	500	-	-	185	-	-
Stage 1	112	166	-	30	58	-	-	-	-	-	-	-
Stage 2	184	58	-	297	165	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	1	393	1	1	~ 169	500	-	-	185	-	-
Mov Cap-2 Maneuver	~ 3	1	-	1	1	-	-	-	-	-	-	-
Stage 1	43	64	-	29	57	-	-	-	-	-	-	-
Stage 2	-	56	-	108	64	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/s	$ 521.48	210.75	0.05	3.97
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	500	-	-	20	169	185	-	-
HCM Lane V/C Ratio	0.022	-	-	1.14	1.263	0.616	-	-
HCM Control Delay (s/veh)	12.4	-	-	$ 521.5	210.7	51.4	-	-
HCM Lane LOS	B	-	-	F	F	F	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	12.1	3.5	-	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	57	2309	5	22	1321
Future Volume (vph)	5	57	2309	5	22	1321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.875					
Flt Protected	0.996				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.996				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	62	2510	5	24	1436
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	2515	0	24	1436
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	57	2309	5	22	1321
Future Vol, veh/h	5	57	2309	5	22	1321
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	-	-	-	250	-
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	5	62	2510	5	24	1436

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3278	1258	0	0	2515	0
Stage 1	2513	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	7	162	-	-	177	-
Stage 1	47	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	6	162	-	-	177	-
Mov Cap-2 Maneuver	39	-	-	-	-	-
Stage 1	47	-	-	-	-	-
Stage 2	363	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	59.97	0	0.47
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	129	177	-
HCM Lane V/C Ratio	-	-	0.522	0.135	-
HCM Control Delay (s/veh)	-	-	60	28.5	-
HCM Lane LOS	-	-	F	D	-
HCM 95th %tile Q(veh)	-	-	2.5	0.5	-

AM and PM Peak Hour

Year 2034 Background plus Development Volumes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Future Volume (vph)	0	0	0	13	0	3	0	796	11	0	1848	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.976			0.998				
Flt Protected					0.960							
Satd. Flow (prot)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Flt Permitted					0.960							
Satd. Flow (perm)	0	0	0	0	1745	0	0	3532	0	1987	3539	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	14	0	3	0	865	12	0	2009	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	17	0	0	877	0	0	2011	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Future Vol, veh/h	0	0	0	13	0	3	0	796	11	0	1848	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	14	0	3	0	865	12	0	2009	2

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1876	2882	439	-	0	0	877	0	0
Stage 1	871	871	-	-	-	-	-	-	-
Stage 2	1004	2011	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	63	16	566	0	-	-	766	-	-
Stage 1	370	367	-	0	-	-	-	-	-
Stage 2	315	102	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	63	0	566	-	-	-	766	-	-
Mov Cap-2 Maneuver	184	0	-	-	-	-	-	-	-
Stage 1	370	0	-	-	-	-	-	-	-
Stage 2	315	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	23.64	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	211	766	-	-
HCM Lane V/C Ratio	-	-	0.083	-	-	-
HCM Control Delay (s/veh)	-	-	23.6	0	-	-
HCM Lane LOS	-	-	C	A	-	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Future Volume (vph)	22	2	32	35	2	9	34	793	29	18	1805	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.858			0.875				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1598	0	1770	1630	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.714						0.146			0.229		
Satd. Flow (perm)	1330	1598	0	1863	1630	0	290	3539	1583	455	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			10				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	2	35	38	2	10	37	862	32	20	1962	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	37	0	38	12	0	37	862	32	20	1962	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	22.3	18.3		7.6	5.9		28.5	27.4	27.4	27.4	25.2	25.2
Actuated g/C Ratio	0.37	0.30		0.13	0.10		0.47	0.45	0.45	0.45	0.42	0.42
v/c Ratio	0.04	0.07		0.17	0.07		0.12	0.54	0.04	0.06	1.33	0.07
Control Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.0	9.7		22.3	19.7		9.9	15.1	0.1	9.6	176.0	0.2
LOS	B	A		C	B		A	B	A	A	F	A
Approach Delay (s/veh)		11.4			21.7			14.4			169.7	
Approach LOS		B			C			B			F	
Queue Length 50th (ft)	5	0		11	1		6	96	0	3	~418	0
Queue Length 95th (ft)	20	22		28	16		24	256	0	16	#874	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	638	905		244	558		327	1597	814	379	1471	764
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04		0.16	0.02		0.11	0.54	0.04	0.05	1.33	0.07

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 60.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 117.2	Intersection LOS: F
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	5	1	885	1872	1
Future Volume (vph)	0	5	1	885	1872	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1888	3539	3539	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	5	1	962	2035	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	0	1	962	2036	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	1	885	1872	1
Future Vol, veh/h	0	5	1	885	1872	1
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	-	250	-	-	-
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	0	5	1	962	2035	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2518	1018	2036	0	-	0
Stage 1	2035	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	23	235	274	-	-	-
Stage 1	87	-	-	-	-	-
Stage 2	586	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	23	235	274	-	-	-
Mov Cap-2 Maneuver	73	-	-	-	-	-
Stage 1	86	-	-	-	-	-
Stage 2	586	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.69	0.02	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	274	-	235	-	-
HCM Lane V/C Ratio	0.004	-	0.023	-	-
HCM Control Delay (s/veh)	18.2	-	20.7	-	-
HCM Lane LOS	C	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	27	18	925	1947	4
Future Volume (vph)	6	27	18	925	1947	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.891					
Flt Protected	0.990		0.950			
Satd. Flow (prot)	1643	0	1888	3539	3539	0
Flt Permitted	0.990		0.950			
Satd. Flow (perm)	1643	0	1888	3539	3539	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	29	20	1005	2116	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	0	20	1005	2120	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	27	18	925	1947	4
Future Vol, veh/h	6	27	18	925	1947	4
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	-	250	-	-	-
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	7	29	20	1005	2116	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2660	1060	2121	0	-	0
Stage 1	2118	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	18	220	254	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	17	220	254	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	72	-	-	-	-	-
Stage 2	547	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	36.59	0.39	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	254	-	149	-	-
HCM Lane V/C Ratio	0.077	-	0.24	-	-
HCM Control Delay (s/veh)	20.4	-	36.6	-	-
HCM Lane LOS	C	-	E	-	-
HCM 95th %tile Q(veh)	0.2	-	0.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Future Volume (vph)	1	0	16	2	0	66	2	875	28	168	1822	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.872			0.869			0.995				
Flt Protected		0.997			0.999		0.950			0.950		
Satd. Flow (prot)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Flt Permitted		0.997			0.999		0.950			0.950		
Satd. Flow (perm)	0	1619	0	0	1617	0	1888	3522	0	1888	3539	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	17	2	0	72	2	951	30	183	1980	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	74	0	2	981	0	183	1983	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 68.6%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Future Vol, veh/h	1	0	16	2	0	66	2	875	28	168	1822	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	17	2	0	72	2	951	30	183	1980	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2827	3333	992	2326	3320	491	1984	0	0	982	0	0
Stage 1	2347	2347	-	971	971	-	-	-	-	-	-	-
Stage 2	480	986	-	1355	2349	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	8	245	20	8	523	287	-	-	699	-	-
Stage 1	37	68	-	272	329	-	-	-	-	-	-	-
Stage 2	536	324	-	157	68	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	5	6	245	14	6	523	287	-	-	699	-	-
Mov Cap-2 Maneuver	5	6	-	14	6	-	-	-	-	-	-	-
Stage 1	27	50	-	269	327	-	-	-	-	-	-	-
Stage 2	459	322	-	108	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	80.75	25.54	0.04	1.01
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	287	-	-	65	248	699	-	-
HCM Lane V/C Ratio	0.008	-	-	0.283	0.298	0.261	-	-
HCM Control Delay (s/veh)	17.6	-	-	80.8	25.5	12	-	-
HCM Lane LOS	C	-	-	F	D	B	-	-
HCM 95th %tile Q(veh)	0	-	-	1	1.2	1	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	14	870	5	13	1813
Future Volume (vph)	2	14	870	5	13	1813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.881		0.999			
Flt Protected	0.994				0.950	
Satd. Flow (prot)	1631	0	3536	0	1888	3539
Flt Permitted	0.994				0.950	
Satd. Flow (perm)	1631	0	3536	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	15	946	5	14	1971
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	951	0	14	1971
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 60.1%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	14	870	5	13	1813
Future Vol, veh/h	2	14	870	5	13	1813
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	-	-	-	250	-
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	2	15	946	5	14	1971

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1962	476	0	0	951	0
Stage 1	948	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	55	536	-	-	718	-
Stage 1	337	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	54	536	-	-	718	-
Mov Cap-2 Maneuver	171	-	-	-	-	-
Stage 1	337	-	-	-	-	-
Stage 2	305	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.88	0	0.07
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	718	-
HCM Lane V/C Ratio	-	-	0.041	0.02	-
HCM Control Delay (s/veh)	-	-	13.9	10.1	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	931	1951	0
Future Volume (vph)	0	0	0	931	1951	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1987	3539	3539	1863
Flt Permitted						
Satd. Flow (perm)	1863	0	1987	3539	3539	1863
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1012	2121	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1012	2121	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 57.3%	ICU Level of Service B
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	931	1951	0
Future Vol, veh/h	0	0	0	931	1951	0
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	-	250	-	-	250
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	0	0	0	1012	2121	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2627	1060	2121	0	-	0
Stage 1	2121	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	19	220	254	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	571	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	19	220	254	-	-	-
Mov Cap-2 Maneuver	66	-	-	-	-	-
Stage 1	78	-	-	-	-	-
Stage 2	571	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	254	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	0	2	0	2330	28	1	1270	5
Future Volume (vph)	0	0	0	10	0	2	0	2330	28	1	1270	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	14	12	12
Storage Length (ft)	0		0	0		0	0		0	250		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt					0.979			0.998			0.999	
Flt Protected					0.959					0.950		
Satd. Flow (prot)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Flt Permitted					0.959					0.950		
Satd. Flow (perm)	0	0	0	0	1749	0	0	3532	0	1888	3536	0
Link Speed (mph)		30			25			45			45	
Link Distance (ft)		250			507			697			500	
Travel Time (s)		5.7			13.8			10.6			7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	11	0	2	0	2533	30	1	1380	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	13	0	0	2563	0	1	1385	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	10	0	2	0	2330	28	1	1270	5
Future Vol, veh/h	0	0	0	10	0	2	0	2330	28	1	1270	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	11	0	2	0	2533	30	1	1380	5

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	3240	3936	1282	-	0	0	2563	0	0
Stage 1	2548	2548	-	-	-	-	-	-	-
Stage 2	692	1388	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.54	6.94	-	-	-	4.14	-	-
Critical Hdwy Stg 1	5.84	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	-	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 7	3	156	0	-	-	169	-	-
Stage 1	45	54	-	0	-	-	-	-	-
Stage 2	458	208	-	0	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	~ 7	0	156	-	-	-	169	-	-
Mov Cap-2 Maneuver	38	0	-	-	-	-	-	-	-
Stage 1	45	0	-	-	-	-	-	-	-
Stage 2	455	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	119.9	0	0.02
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	44	169	-	-
HCM Lane V/C Ratio	-	-	0.3	0.006	-	-
HCM Control Delay (s/veh)	-	-	119.9	26.4	-	-
HCM Lane LOS	-	-	F	D	-	-
HCM 95th %tile Q(veh)	-	-	1	0	-	-

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Future Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2460	62	26	1316	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2460	62	26	1316	28
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			287.9			58.3	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~843	0	6	~386	0
Queue Length 95th (ft)	37	19		30	32		49	#1167	0	20	#537	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type:	Other

Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 201.0	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Future Volume (vph)	51	2	23	39	5	38	84	2263	57	24	1211	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		125	250		200
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.861			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1604	0	1770	1613	0	1888	3539	1583	1888	3539	1583
Flt Permitted	0.435			0.851			0.134			0.148		
Satd. Flow (perm)	810	1604	0	1585	1613	0	266	3539	1583	294	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			41				182			182
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		512			501			866			697	
Travel Time (s)		14.0			13.7			13.1			10.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	2	25	42	5	41	91	2460	62	26	1316	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	27	0	42	46	0	91	2460	62	26	1316	28
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			14			14	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes			Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.00	0.92	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Total Split (s)	24.6	37.6		11.6	24.6		11.6	29.2	29.2	11.6	29.2	29.2
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	26.7	22.6		10.3	6.4		32.5	29.9	29.9	29.9	25.2	25.2
Actuated g/C Ratio	0.38	0.32		0.15	0.09		0.46	0.43	0.43	0.43	0.36	0.36
v/c Ratio	0.09	0.05		0.17	0.25		0.32	1.62	0.08	0.10	1.03	0.04
Control Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	14.5	9.9		18.3	16.5		14.3	305.3	0.2	11.9	60.5	0.1
LOS	B	A		B	B		B	F	A	B	E	A
Approach Delay (s/veh)		13.0			17.3			287.9			58.3	
Approach LOS		B			B			F			E	
Queue Length 50th (ft)	16	1		12	2		22	~843	0	6	~386	0
Queue Length 95th (ft)	37	19		30	32		49	#1167	0	20	#537	0
Internal Link Dist (ft)		432			421			786			617	
Turn Bay Length (ft)							250		125	250		200

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	591	788		269	502		291	1515	781	294	1276	687
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.03		0.16	0.09		0.31	1.62	0.08	0.09	1.03	0.04

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 69.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 201.0	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Highway 60 & Linwood Dr/Sandridge Ct

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	3	9	2427	1293	1
Future Volume (vph)	1	3	9	2427	1293	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.899					
Flt Protected	0.988		0.950			
Satd. Flow (prot)	1655	0	1888	3539	3539	0
Flt Permitted	0.988		0.950			
Satd. Flow (perm)	1655	0	1888	3539	3539	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	505			1352	866	
Travel Time (s)	13.8			20.5	13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	3	10	2638	1405	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	10	2638	1406	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	9	2427	1293	1
Future Vol, veh/h	1	3	9	2427	1293	1
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	-	250	-	-	-
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	1	3	10	2638	1405	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2745	703	1407	0	-	0
Stage 1	1406	-	-	-	-	-
Stage 2	1339	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	16	380	481	-	-	-
Stage 1	192	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	16	380	481	-	-	-
Mov Cap-2 Maneuver	98	-	-	-	-	-
Stage 1	188	-	-	-	-	-
Stage 2	209	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	21.66	0.05	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	481	-	220	-	-
HCM Lane V/C Ratio	0.02	-	0.02	-	-
HCM Control Delay (s/veh)	12.6	-	21.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	15	32	34	2453	1367	16
Future Volume (vph)	15	32	34	2453	1367	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt	0.907				0.998	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1664	0	1888	3539	3532	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1664	0	1888	3539	3532	0
Link Speed (mph)	25			45	30	
Link Distance (ft)	513			1024	501	
Travel Time (s)	14.0			15.5	11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	35	37	2666	1486	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	37	2666	1503	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 77.8%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	32	34	2453	1367	16
Future Vol, veh/h	15	32	34	2453	1367	16
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	-	250	-	-	-
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	16	35	37	2666	1486	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2902	752	1503	0	-	0
Stage 1	1495	-	-	-	-	-
Stage 2	1407	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	~ 12	353	442	-	-	-
Stage 1	172	-	-	-	-	-
Stage 2	192	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 11	353	442	-	-	-
Mov Cap-2 Maneuver	84	-	-	-	-	-
Stage 1	158	-	-	-	-	-
Stage 2	192	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	33.86	0.19	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	442	-	175	-	-
HCM Lane V/C Ratio	0.084	-	0.292	-	-
HCM Control Delay (s/veh)	13.9	-	33.9	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	1.2	-	-

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	18	0	0	199	10	2308	13	107	1284	5
Future Volume (vph)	3	0	18	0	0	199	10	2308	13	107	1284	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	14	12	12	14	12	12
Storage Length (ft)	0		0	0		0	250		0	250		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.883			0.865			0.999			0.999	
Flt Protected		0.994					0.950			0.950		
Satd. Flow (prot)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Flt Permitted		0.994					0.950			0.950		
Satd. Flow (perm)	0	1635	0	0	1611	0	1888	3536	0	1888	3536	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		500			510			1241			1024	
Travel Time (s)		13.6			13.9			18.8			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	0	20	0	0	216	11	2509	14	116	1396	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	216	0	11	2523	0	116	1401	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 92.5%	ICU Level of Service F
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	17.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	18	0	0	199	10	2308	13	107	1284	5
Future Vol, veh/h	3	0	18	0	0	199	10	2308	13	107	1284	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	250	-	-	250	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	20	0	0	216	11	2509	14	116	1396	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2907	4176	701	3468	4171	1261	1401	0	0	2523	0	0
Stage 1	1631	1631	-	2538	2538	-	-	-	-	-	-	-
Stage 2	1276	2545	-	930	1634	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	2	381	3	2	~ 161	483	-	-	176	-	-
Stage 1	106	158	-	28	54	-	-	-	-	-	-	-
Stage 2	176	54	-	287	158	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 2	1	381	1	1	~ 161	483	-	-	176	-	-
Mov Cap-2 Maneuver	~ 2	1	-	1	1	-	-	-	-	-	-	-
Stage 1	36	53	-	27	53	-	-	-	-	-	-	-
Stage 2	-	53	-	92	53	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, $/741.33		243.39	0.05	4.48
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	483	-	-	16	161	176	-	-
HCM Lane V/C Ratio	0.022	-	-	1.46	1.342	0.662	-	-
HCM Control Delay (s/veh)	12.6	-	-	$ 741.3	243.4	58.4	-	-
HCM Lane LOS	B	-	-	F	F	F	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.4	13.1	3.9	-	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	60	2358	5	24	1354
Future Volume (vph)	5	60	2358	5	24	1354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12
Storage Length (ft)	0	0		0	250	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt	0.875					
Flt Protected	0.996				0.950	
Satd. Flow (prot)	1623	0	3539	0	1888	3539
Flt Permitted	0.996				0.950	
Satd. Flow (perm)	1623	0	3539	0	1888	3539
Link Speed (mph)	25		45			45
Link Distance (ft)	499		507			1241
Travel Time (s)	13.6		7.7			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	65	2563	5	26	1472
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	2568	0	26	1472
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 76.0%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	60	2358	5	24	1354
Future Vol, veh/h	5	60	2358	5	24	1354
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	-	-	-	250	-
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	5	65	2563	5	26	1472

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3354	1284	0	0	2568	0
Stage 1	2566	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	6	156	-	-	169	-
Stage 1	43	-	-	-	-	-
Stage 2	409	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 5	156	-	-	169	-
Mov Cap-2 Maneuver	36	-	-	-	-	-
Stage 1	43	-	-	-	-	-
Stage 2	345	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	66.84	0	0.53
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	124	169	-
HCM Lane V/C Ratio	-	-	0.569	0.155	-
HCM Control Delay (s/veh)	-	-	66.8	30.2	-
HCM Lane LOS	-	-	F	D	-
HCM 95th %tile Q(veh)	-	-	2.8	0.5	-

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	37	56	2412	1346	6
Future Volume (vph)	4	37	56	2412	1346	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	14	12	12	12
Storage Length (ft)	0	0	250			250
Storage Lanes	1	0	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	0.877					0.850
Flt Protected	0.995		0.950			
Satd. Flow (prot)	1625	0	1888	3539	3539	1583
Flt Permitted	0.995		0.950			
Satd. Flow (perm)	1625	0	1888	3539	3539	1583
Link Speed (mph)	25			30	45	
Link Distance (ft)	255			501	1352	
Travel Time (s)	7.0			11.4	20.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	4	40	61	2622	1463	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	0	61	2622	1463	7
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 76.7%	ICU Level of Service D
Analysis Period (min) 15	

Intersection	
Int Delay, s/veh	0.4

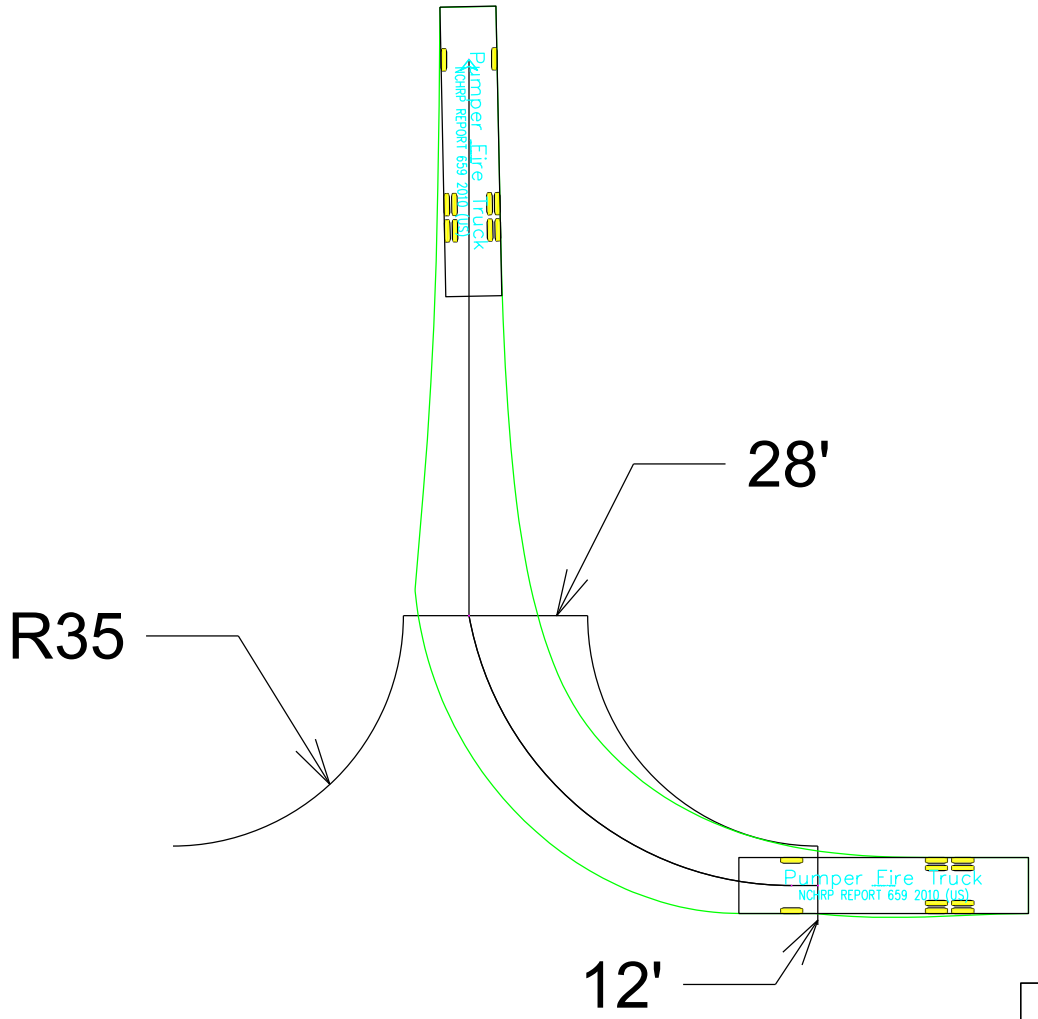
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	37	56	2412	1346	6
Future Vol, veh/h	4	37	56	2412	1346	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	250
Veh in Median Storage, #	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	4	40	61	2622	1463	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2896	732	1470	0	-	0
Stage 1	1463	-	-	-	-	-
Stage 2	1433	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	13	364	455	-	-	-
Stage 1	179	-	-	-	-	-
Stage 2	186	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	11	364	455	-	-	-
Mov Cap-2 Maneuver	82	-	-	-	-	-
Stage 1	155	-	-	-	-	-
Stage 2	186	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	20.76	0.32	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	455	-	273	-	-
HCM Lane V/C Ratio	0.134	-	0.163	-	-
HCM Control Delay (s/veh)	14.1	-	20.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.6	-	-

Appendix E – AutoTURN Exhibit



LJA Engineering, Inc.

AUTOTURN ANALYSIS

Appendix F – Intersection Control Evaluation (ICE) Analysis

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.3| Revised 11/13/2023

GDOT PI #	
Project Location:	Thompson Bridge @ Access A
Existing Control:	Conventional (Minor Stop)
Prepared by:	Marco Gonzalez-Soto
Date:	9/25/2024

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	**Screening Decision Justification:**
Unsignalized Intersections	Conventional (Minor Stop)	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	
	Conventional (All-Way Stop)	No	No	No	No	No	No	No	Traffic will be congested and flow will be reduced.
	Mini Roundabout	No	No	No	No	No	No	No	Per GDOT, traffic on major road needs to be less than 90%. ~98% of traffic
	Single Lane Roundabout	No	No	No	No	No	No	No	Major road traffic is at ~98%, > GDOT's maximum 90%
	Multilane Roundabout	No	No	No	No	No	No	No	Major road traffic is at ~98%, > GDOT's maximum 90%
	RCUT (stop control)	No	No	No	No	No	No	No	There is no median that can be cut for a protected left-turn.
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	There is no median that can be cut for a protected left-turn.
	High-T (unsignalized)	No	No	No	No	No	No	No	Adjacent property owners would be affected with road widening.
	Offset-T Intersections	No	No	No	No	No	No	No	There is only one driveway of interest.
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	For much larger volumes of traffic. Property owners would be affected.
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	For much larger volumes of traffic. Property owners would be affected.
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	There is an existing two-way left turn lane (TWLTL).
	Other unsignalized (provide description):	No	No	No	No	No	No	No	
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	RCUT (signalized)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Continuous Green-T	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Jughandle	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Quadrant Roadway	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Diverging Diamond	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	Single Point Interchange	No	No	No	No	No	No	No	Signal would significantly increase delay along main road.
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	
	Other Signalized (provide description):	No	No	No	No	No	No	No	

☐ = Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

CITY OF GAINESVILLE

Planning and Appeals Board
Agenda Request

Item Created:	October 15, 2024
Date Submitted:	October 17, 2024
Final Approval Date:	October 25, 2024
Presenter:	Matt Tate, Community & Economic Development Dept Deputy Director
Item of Business:	Request from the **City of Gainesville** to amend Chapter 9-21-1, entitled "Planning and Appeals Board, to include amendments to Section 9-21-1-1 entitled "Establishment and Continuation" and Section 9-21-1-2 entitled "Appointments, Terms of Office and Vacancies" of the Unified Land Development Code for the City of Gainesville, Georgia.
Meeting Date:	November 12, 2024

Purpose of Request:
The City of Gainesville is proposing to amend the Unified Land Development Code to establish staggered term limits for the Planning and Appeals Board members. The initial term limits for Seat One and Seat Two will be one year. Seat Three, Seat Four and Seat Five will serve two years. Seat Six and Seat Seven will serve three years. After the initial terms expire, all seats, including the chairperson and vice-chairperson, will be appointed by the Governing Body to three-year terms.

Facts & Issues / History & Background:

Department Recommendation:

Department Director:
Rusty Ligon

If funding is involved, are funds approved within the current budget? No

Amount Requested: **Sources of Funds:**

Finance Comments:

Administrative Comments:

Attachments:
1. Gainesville ULDC Ordinance Amendment - PAB Term Limits

Passed: _____

AN ORDINANCE

No. 2024-

AN ORDINANCE TO AMEND SECTIONS 9-21-1-1 AND 9-21-1-2 OF THE UNIFIED LAND DEVELOPMENT CODE OF THE CITY OF GAINESVILLE; TO REPEAL CONFLICTING ORDINANCES; TO PROVIDE FOR SEVERABILITY; TO PROVIDE FOR CODIFICATION; TO PROVIDE FOR AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.

BE IT HEREBY ORDAINED BY THE GOVERNING BODY OF THE CITY OF GAINESVILLE, GEORGIA, AS FOLLOWS:

SECTION I

Section 9-21-1-1 of the Unified Land Development Code of the City of Gainesville is hereby amended by eliminating it in its entirety and amending it to read as follows:

Section 9-21-1-1. – Establishment and continuation.

The planning and appeals board, as it existed on the effective date of this Code, shall continue in its present form and function. The planning and appeals board shall consist of seven (7) members, all of whom shall be residents of the City. The seven (7) seats on the planning and appeals board shall be designated as Seats One through Seven.

SECTION II

Section 9-21-1-2 of the Unified Land Development Code of the City of Gainesville is hereby amended by eliminating it in its entirety and amending it to read as follows:

Section 9-21-1-2. – Appointments, Terms of Office and Vacancies.

Members, including the chairperson and vice-chairperson, shall be appointed by the Governing Body. The seats on the planning and appeals board shall be designated as Seats One, Two, Three, Four, Five, Six, and Seven, and the initial terms for said Seats shall be as set forth in this Section.

The initial term for Seat One shall extend through December 31, 2025.

The initial term for Seat Two shall extend through December 31, 2025.

The initial term for Seat Three shall extend through December 31, 2026.

The initial term for Seat Four shall extend through December 31, 2026.

The initial term for Seat Five shall extend through December 31, 2026.

The initial term for Seat Six shall extend through December 31, 2027.

The initial term for Seat Seven shall extend through December 31, 2027.

The Governing Body, upon approval of this Ordinance, shall appoint members, including the chairperson and vice-chairperson, to fill Seats One, Two, Three, Four, Five, Six, and Seven on the planning and appeals board. After the expiration of the initial terms set forth above, all subsequent members, including the chairperson and vice-chairperson, shall be appointed by the Governing Body to three-year terms, beginning on January 1st of the calendar year immediately following the expiration of the term or as otherwise appointed. When a position becomes vacant before the end of a term, the Governing Body shall appoint a new member for the duration of the remaining term. A member of the planning and appeals board may be appointed to successive terms and shall continue to serve if such member's time expires until a successor is appointed.

SECTION III

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

SECTION IV

If any portion of this ordinance shall be held to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect or impair the remaining portions unless it clearly appears that such other parts are wholly and necessarily dependent upon the part held to be invalid or unconstitutional.

SECTION V

The effective date of this ordinance shall be upon approval by the governing body of the City of Gainesville.

_____

W. Samuel Couvillon, Mayor

This is to certify that I am City Clerk of the City of Gainesville. As such, I keep its official records, including its minutes. In that capacity, my signature below certifies this Ordinance was adopted as stated and will be recorded in the official minutes.

ATTEST:

_____

Denise O. Jordan, City Clerk

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