

1. CALL TO ORDER

2. MINUTES

A. March 10, 2020 PAB Meeting Minutes

3. OLD BUSINESS

4. NEW BUSINESS

A. Variance Request

- (1) Request from **John and JoAnn Hinshaw** to vary the front yard setback requirement on a 0.377± acre tract located on the southwest side of Inglewood Drive (a/k/a **2714 Inglewood Drive, SW**), having a zoning classification of Residential-I (R-I).
Ward Number: Four
Tax Parcel Number(s): 08-005-000-170
Request: Deck addition

B. Annexation Request

- (1) Request from the **City of Gainesville** to annex a 4.4± acres tract located at the west side of Athens Highway and Smallwood Road to include property located on the north, south and west side of Smallwood Road (a/k/a **0 and 2221 Smallwood Road; 2306 and 2312 Athens Highway**) and to establish zoning as Planned Unit Development (P-U-D).
Ward Number: Three
Tax Parcel Number(s): 15-032-000-002 (Part); 15-032-000-113; 15-032-000-125
Request: Business Park

C. Rezoning Requests

- (1) Request from the **City of Gainesville** to rezone a 1,320± acres tract located between Athens Highway and Candler Highway, having road frontage on Monroe Drive, Allen Creek Road, Fulenwider Road and May Drive (a/k/a **1701 Fulenwider Road, SW**) from Residential-I-A (R-I-A) and Heavy Industrial (H-I) to Planned Unit Development (P-U-D).
Ward Number: Three
Tax Parcel Number(s): 15-023-000-167 (Part)
Request: Business Park
- (2) Request from **Kevin Pethel** to rezone a 1.30± acres tract located southwest of the intersection of Crow Road and White Sulphur Road, having road frontage on the north side of Beverly Road (a/k/a **2092 Crow Road and 2005 White Sulphur Road**) from Residential-I (R-I) to Light Industrial (L-I).
Ward Number: Two
Tax Parcel Number(s): 09-124-000-038 (Part)
Request: Plumbing and electrical contractor office/warehouse

D. Special Use Request

- (1) Request from **Juan Luna** for a special use on a 1.66± acres tract located on the southwest side of the intersection of Washington Street and West Avenue, east of John Morrow Jr. Parkway (a/k/a **0, 903, 915, 919, 921, 925 and 927 Washington Street, SW**), having a zoning of Neighborhood Business (N-B).
Ward Number: Four

Tax Parcel Number(s): 01-046-001-024A, 025, 026, 027, 028, 029 and 037
Request: 20 multi-family apartments

5. MISCELLANEOUS

6. ADJOURNMENT

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 5/11/2020
Presenter: N/A
Item of Business: March 10, 2020 PAB Meeting Minutes
Meeting Date: 6/9/2020

Purpose of Request:

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

History/Background:

Facts & Issues for Consideration:

The draft minutes were reviewed by the Planning Manager and Community Development Director.

Department Recommendation:

Approval of the minutes as presented.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
 Draft Minutes	Minutes

GAINESVILLE PLANNING AND APPEALS BOARD
DRAFT MINUTES OF MEETING
MARCH 10, 2020

CALL TO ORDER Vice-Chair Fleming at 5:30 p.m.

Members Present: Vice-Chair Jane Fleming and Board Members Rich White, Kelvin Simmons, Eddie Martin and Carmen Delgado

Members Absent: Chairman Doug Carter and Board Member Ryan Thompson

Staff Present: Community & Economic Development Deputy Director Matt Tate and Recording Secretary Gwen Fleming

Others Present: Council Members George Wangemann & Barbara Brooks

PRESENTATION RECOGNITION

City Council Member Barbara Brooks on behalf of the Gainesville City Council and the Mayor presented the Board members with a token of appreciation.

MINUTES OF FEBRUARY 11, 2020

Motion made by Board Member White

Motion seconded by Board Member Martin

Vote – 4 favor, 3 absent (Carter, Thompson, Delgado)

NEW BUSINESS

A. Variance Request

- 1) Request from **Eric Aguirre** to vary the rear yard setback and the impervious area requirements on a 0.26± acre tract located on the west side of Central Avenue, south of Myrtle Street (a/k/a **652 Central Avenue, SW**), having a zoning of Residential-II (R-II).

Ward Number: Four

Tax Parcel Number(s): 01-125-004-011

Request: Detached shed

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

The applicant is requesting to vary the rear yard setback from 10-feet to 3-feet and to vary the maximum impervious area requirement from 60% to 70% for an existing detached shed.

The adjacent properties are zoned Residential-II (R-II) and include mostly single-family homes and a residential duplex.

The subject property contains a single-family home that was originally constructed in 1960 and a detached shed constructed in 1979 according to tax records.

The existing home is now 3,860± square feet in size which has received as many as five separate building permits to expand the existing home since 2005.

The original shed was 580± square feet in size and according to aerial photography has been expanded over a twenty-year period to approximately 1,150± square feet without permits.

The original shed was setback 5-feet from the rear property line and was considered a legal non-conforming structure. The additions to the shed have caused it to further encroach as close as 3-feet from the rear property line which has resulted in the need for the proposed setback and impervious area variance request.

The property owner is basing the hardship on the small size of the lot and states they were unaware there was a setback and impervious area requirement when the property was originally purchased and before the shed was expanded.

The Planning Division staff is recommending **conditional approval** of this variance request based on the width of the lot and the location and size of the existing home.

NOTE: Board Member Delgado arrived at the meeting at 5:40 p.m. and recused herself due to a conflict of interest with this request.

Applicant Presentation: Eric Aguire, 1185 Villa Clara Way, stated when his dad purchased the property the shed was too close to the property line and unaware of it when adding an extension to it. The shed is used for storage space of HVAC equipment and no one will be living in the shed. He stated they want the property value higher if they decide to eventually sell the property.

FAVOR: None

OPPOSE: None

Planning and Appeals Board Comments: Board Member Simmons asked about the future use of the shed.

There was a motion to recommend conditional approval of the variance request as presented with the following conditions:

Conditions

- 1. The existing detached shed shall meet the building code requirements and shall not be occupied for residential purposes.**
- 2. The existing home, detached shed and parking areas shall not be expanded beyond their existing square footage.**

Motion made by Board Member Simmons

Motion seconded by Board Member White

Vote – 4 favor, 2 absent (Carter, Thompson), 1 recusal (Delgado)

ADJOURNMENT

There was a motion to adjourn the meeting at 5:44 p.m.

Motion made by Board Member Simmons

Motion seconded by Board Member Martin

Vote – 4 favor, 3 absent (Carter, Thompson, Delgado)

Respectfully submitted,

Jane Fleming, Vice-Chair

Gwen Fleming, Recording Secretary

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 5/18/2020

Presenter: Matt Tate

Item of Business: Request from **John and JoAnn Hinshaw** to vary the front yard setback requirement on a 0.377± acre tract located on the southwest side of Inglewood Drive (a/k/a **2714 Inglewood Drive, SW**), having a zoning classification of Residential-I (R-I).
Ward Number: Four
Tax Parcel Number(s): 08-005-000-170
Request: Deck addition

Meeting Date: 6/9/2020

Purpose of Request:

The applicant is requesting to vary the front yard setback requirement from 30 feet to 1.25 feet for the purpose of constructing a 30' wide x 10' deep deck addition. The addition is to be located on the left side of the existing home over the basement driveway, garage and side entrance area. Access to the deck will be from the master bedroom which is located on the main level and the exterior rear patio area. The deck will be architecturally compatible with the existing home consisting of brick support columns, decorative railing and weather proof decking. The applicant is basing the hardship on the two road frontages and the side of the home currently being located 11.25 feet from the front yard property line. The adjacent properties include single-family homes within the Water's Edge subdivision.

History/Background:

Facts & Issues for Consideration:

Department Recommendation:

Planning staff recommended approval with one condition. See the staff recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
☐ Staff Recommendation Report	Report
☐ Location Maps	Cover Memo
☐ Hardship Statement	Backup Material
☐ Subdivision Plat	Backup Material
☐ As-Built Plat	Backup Material
☐ Concept Plan	Backup Material
☐ Deck Rendering	Cover Memo
☐ HOA Letter	Backup Material

**GAINESVILLE PLANNING AND APPEALS BOARD
STAFF RECOMMENDATION**

Applicant and Property Owners..... John and JoAnn Hinshaw
Location..... 2714 Inglewood Drive, SW
Request..... Vary the front yard setback
Size 0.377± acre
Ward..... Four
Proposed Use..... Deck addition
Planning Division Staff Recommendation **Approval, with condition**
Date..... June 9, 2020

▪ **Request**

The applicant is requesting to vary the front yard setback requirement from 30 feet to 1.25 feet for the purpose of constructing a 30' wide x 10' deep deck addition. The addition is to be located on the left side of the existing home over the basement driveway, garage and side entrance area. Access to the deck will be from the master bedroom which is located on the main level and the exterior rear patio area. The deck will be architecturally compatible with the existing home consisting of brick support columns, decorative railing and weather proof decking.

▪ **Background Information and Existing Conditions**

According to Hall County tax records, the existing home was originally constructed in 1998. The existing home is 4,884± square feet in size including all enclosed areas. The adjacent properties include single-family homes zoned R-1 within the Water's Edge subdivision.

▪ **Significant Factors**

The Ordinance requires that the applicant's claim for hardship must be based on the size or shape of the lot, its topography, or other physical characteristics inherent in the lot itself and not on the desired aesthetics. Further, the Code states that a variance shall not be granted as a convenience to the applicant or as a way to gain any advantage or interest over similarly zoned properties.

The applicant is basing the hardship on the two road frontages as the left side of the home was originally constructed 11.25 feet from the front yard property line. At the time the home was permitted, the front property line in question was considered a side property line which allowed the home to be located as close as 10 feet from Inglewood Drive.

▪ **Other Departmental Comments**

There are no other departmental comments for this request.

▪ **Supporting Documents**

Statement of Hardship, Plat, Concept Plan, Photograph and HOA Letter

▪ **Analysis**

(1) Are there extraordinary and exceptional conditions pertaining to the particular piece of property in question because of its size, shape or topography?

The property is of normal shape and size. However, the lot has two road frontages and slopes downward toward Inglewood Drive.

(2) Would the application of the Unified Land Development Code to this particular piece of property create an unnecessary hardship?

The purpose of the building setback requirement is to provide for uniformity of building placement, sufficient access, as well as to provide for adequate separation from neighboring properties for fire safety. Given the existing home encroaches within part of the required front yard setback, the ability to expand the home is limited due to the corner lot configuration.

(3) Are there conditions that are peculiar to the property which adversely affect its reasonable uses or usability as currently zoned?

The property is zoned Residential-I (R-I) which allows for single-family residential uses. The property would retain its right to be used for single-family purposes regardless of the setback variance. The proposed deck addition is not required but appears reasonable.

(4) Would relief, if granted, cause substantial detriment to the public good or impair the purposes and intent of this ordinance?

The applicant has received approval from the HOA for the deck addition. The proposal would not appear to cause detriment to the public good and would not impair visibility for vehicles traveling on Inglewood Drive. If the variance were approved, the addition would be closer to Inglewood Drive than any other home within the neighborhood. However, there is one nearby home that encroaches inside the front yard setback requirement as much as 20-feet.

(5) There must be a proved hardship by showing beyond a doubt the inability to make a reasonable use of the land if the zoning ordinance were applied literally.

The corner lot configuration and the location of the existing home appear to support the need for a variance. Due to the floorplan of the home there appears to be no other location to build the deck. The proposed size of the deck appears reasonable and in character with the existing structure.

(6) The hardship cannot be self-created; e.g., as in a case where the lot was purchased with the knowledge of an existing restriction.

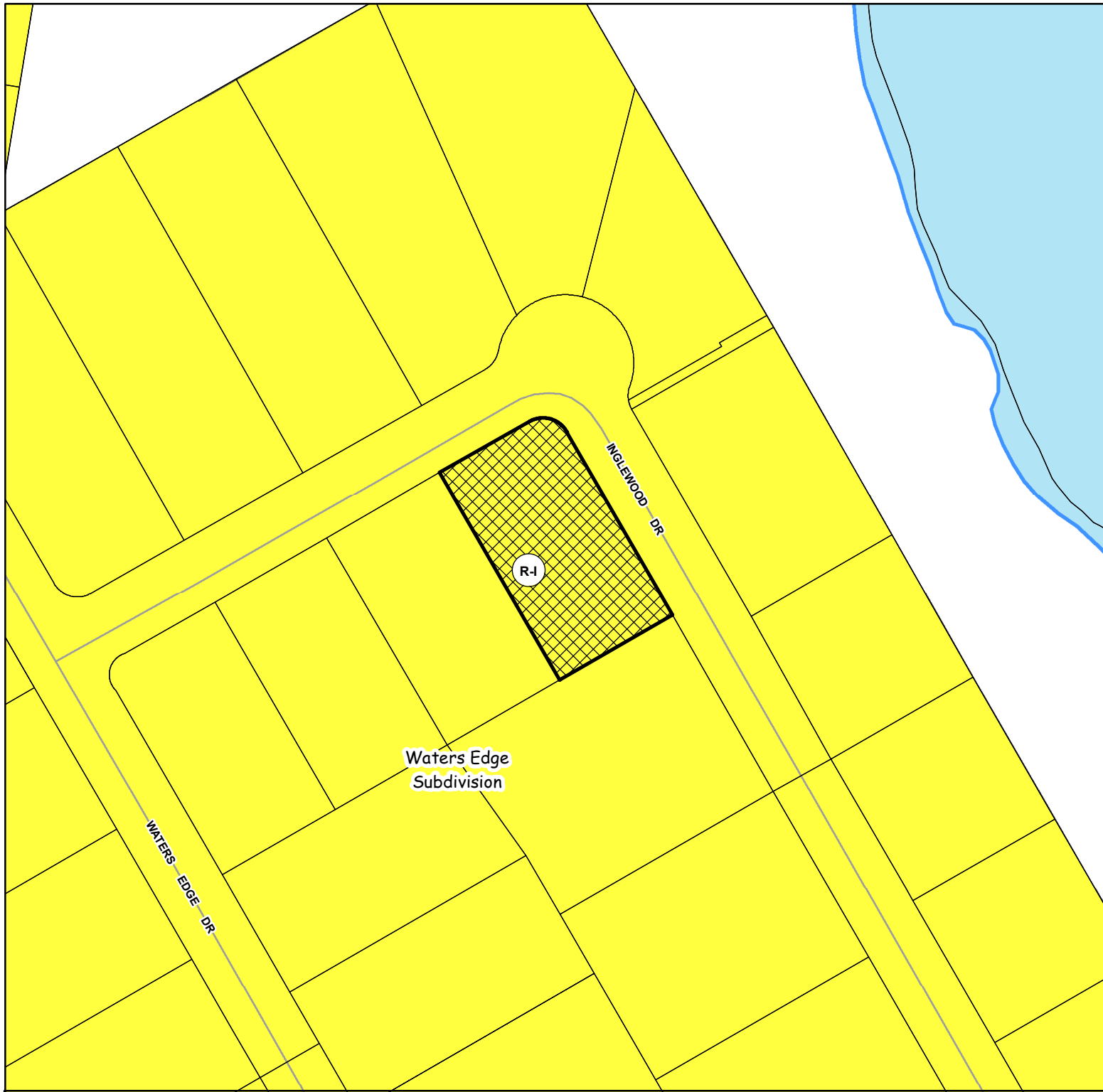
According to the applicant they were unaware of the 30-foot front yard setback requirement prior to planning for the addition of the deck. The location of the existing home was based on the setbacks shown on the original subdivision plat.

▪ **Staff Recommendation**

The Planning Division staff is recommending **conditional approval** of this variance request based on the corner lot configuration and the location and size of the existing home.

Condition

The proposed deck addition shall be generally consistent with the standards depicted on the photograph and rendering submitted with the application.



Applicant:

JOHN AND JOANN HINSHAW

VARIANCE REQUEST

Request:

Vary the front yard setback requirement on a 0.377+/- acre tract for a deck addition within Residential-I (R-I) zoning district

Subject Property Address:

2714 Inglewood Drive, SW

Tax Parcel:

08-005-000-170

Meeting Date: 06/09/2020

Map Prepared: 05/13/2020



Subject Property

N



0 60 120 180 240 Feet

1" = 100'



CITY OF
GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT





Applicant:

JOHN AND JOANN HINSHAW

VARIANCE REQUEST

Request:

Vary the front yard setback requirement on a 0.377+/- acre tract for a deck addition within Residential-I (R-I) zoning district

Subject Property Address:

2714 Inglewood Drive, SW

Tax Parcel:

08-005-000-170

Meeting Date: 06/09/2020

Map Prepared: 05/13/2020



Subject Property

Aerial from 2018

0 60 120 180 240 Feet



1" = 100'



CITY OF

GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT



Variance Request

STATEMENT OF HARDSHIP

The Gainesville Planning and Appeals Board has the authority, in specific cases, to grant variances from the terms of the Unified Land Development Code of the City of Gainesville, Georgia, when the variance will not be contrary to the public interest where, owing to special conditions, a literal enforcement of the Unified Land Development Code will, in specific cases, result in unnecessary hardship and so that the resolution shall be observed, public safety and welfare secured, and substantial justice done. The authority to grant such variances shall be limited to those instances where a hardship is clearly established as required by the Unified Land Development Code. Variances may be granted only upon a finding by the Gainesville Planning and Appeals Board that:

Describe how each situation listed below relates to your application.

1) There are extraordinary and exceptional conditions pertaining to the particular piece of property in question because of its size, shape, or topography. (The hardship must relate to the physical character of the lot and not to a personal or economic hardship.)

The property is A CORNER lot And has two front yard setbacks.

2) The application of the requirements of this resolution to this particular property would create an unnecessary hardship.

The location of the house in relation to the front yard setbacks makes it impossible to build the deck without A variance.

3) There are conditions that are peculiar to the property which adversely affect its reasonable use or usability as currently zoned.

The orientation of the house and the elevation of the property do not allow the home to be expanded without relief.

4) Relief, if granted, would not cause substantial detriment to the public good or impair the purposes and intent of this Ordinance. For example, granting the variance would not confer any special privilege that is denied by this regulation to other property in the same zoning district. Such conditions are not the result of any actions of the property owner.

The proposed deck addition will cause no detriment to the neighborhood and will not visually impact vehicles. The addition will be architecturally compatible and visually pleasing to the architecture of the neighborhood.

5) There must be a proved hardship by showing beyond a doubt the inability to make a reasonable use of the land if the zoning ordinance were applied literally.

The two front yard setback requirements and location of the existing home due to the elevation of the corner lot create the hardship.

6) The hardship cannot be self-created; e.g., as in a case where the lot was purchased with the knowledge of an existing restriction.

We were not aware that the front yard setback requirements applied to the side of the house facing Inglewood Drive when we built the house.

I hereby certify that the above information and all attached information is true and correct.

Signature of Applicant

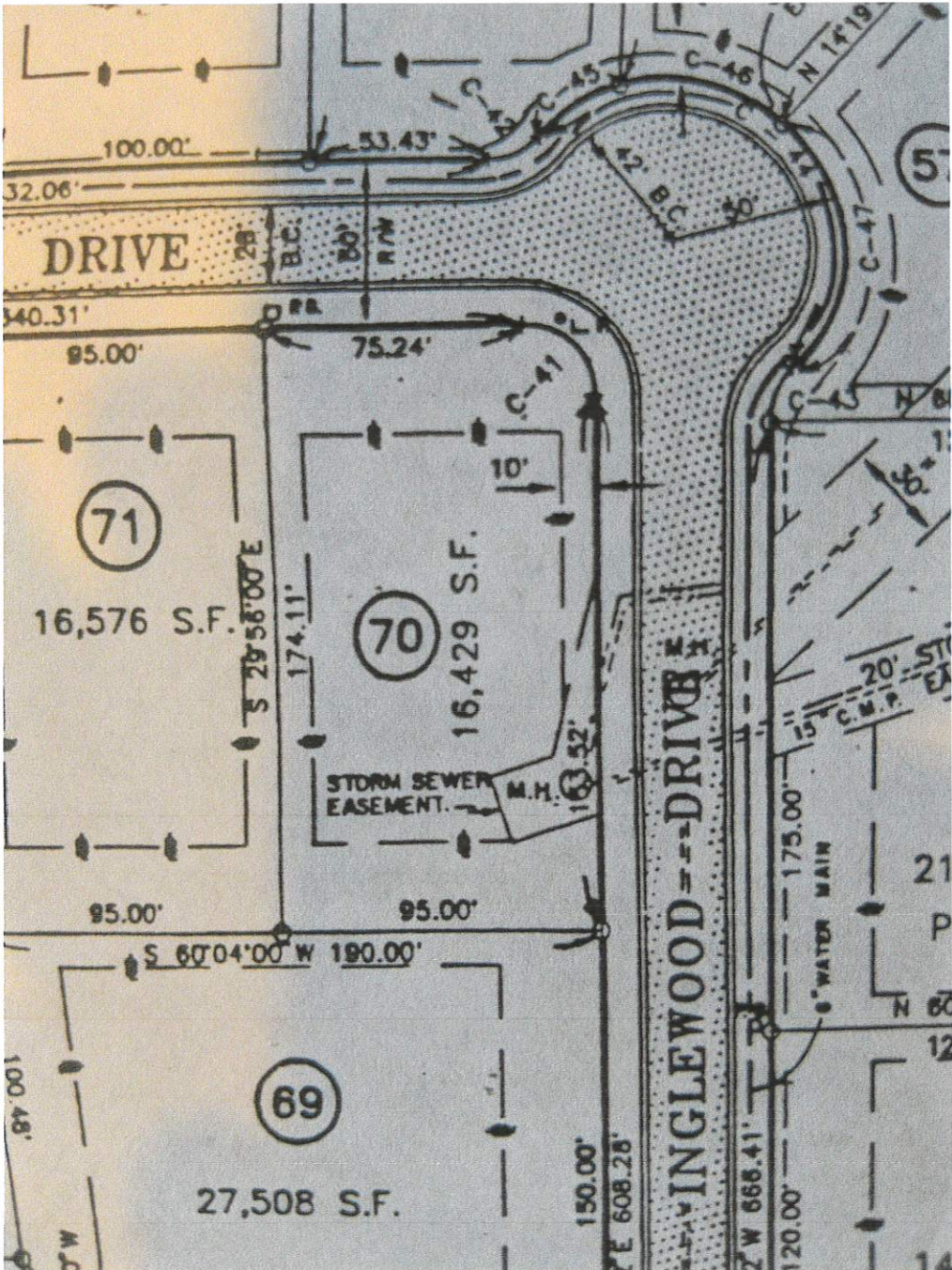
John R. Hunter

Date

3.23.20

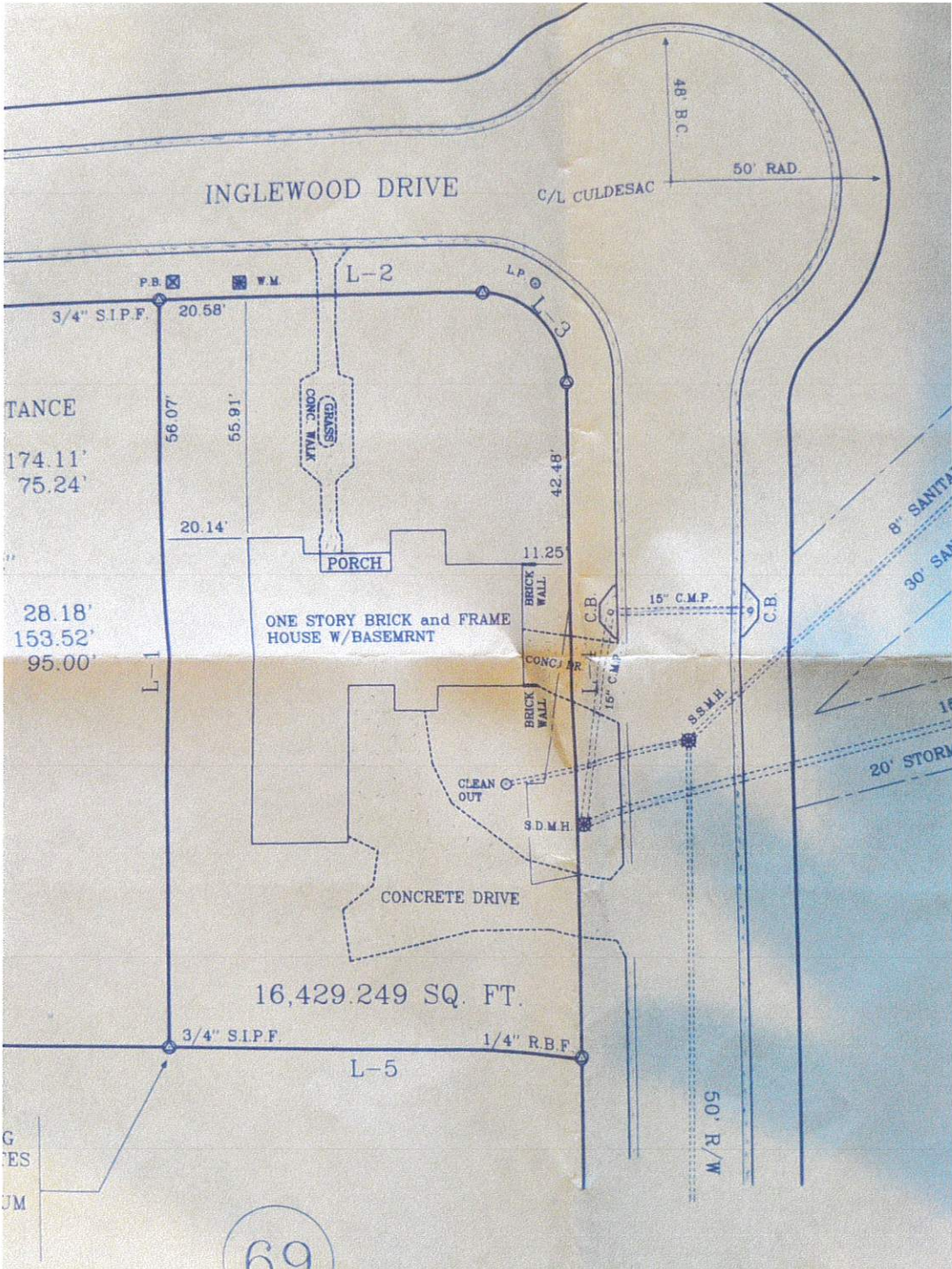
Lot 70 - Attachment 6 - Received by Water's Edge Homeowner's Association of Gainesville LLC on March 19, 2020

Original Lot Layout



Lot 70 - Attachment 5 - Received by Water's Edge Homeowner's Association of Gainesville LLC on March 19, 2020

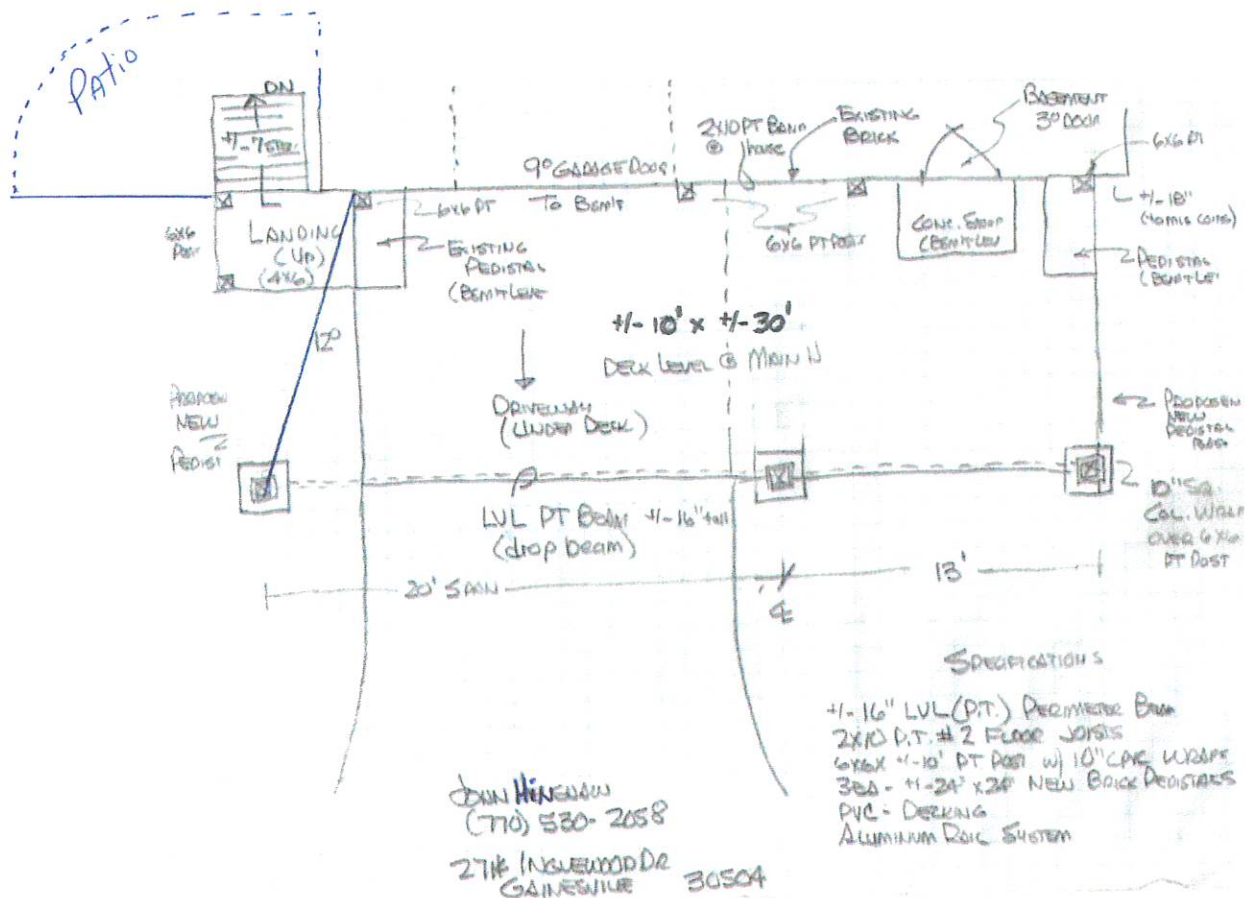
Original House Plan



Lot 70 - Attachment 1 - Received by Water's Edge Homeowner's
Association of Gainesville LLC on March 19, 2020

Design Drawing

John Henshaw © 2714 Inglewood Dr Gainesville jhg



Lot 70 - Attachment 2 - Received by Water's Edge Homeowner's Association of Gainesville LLC on March 19, 2020

Setback measurements



Lot 70 - Attachment 3 - Received by Water's Edge Homeowner's
Association of Gainesville LLC on March 19, 2020

Example of deck finish



To: John Hinshaw
2714 Inglewood Dr.
Gainesville, GA 30504

From: Water's Edge Homeowners' Association
P.O. Box 5722
Gainesville, GA 30504-0722
Carl Bedingfield, President

Date: March 21, 2020

Subject: Approval to proceed with deck addition variance, plans, and permits

Based on the information you have provided to the Homeowner's Association as shown in Attachments 1-6 (scans attached - originals on file), the Association approves your request to proceed with obtaining permits and other agreements to construct a deck addition on Lot 70, 2714 Inglewood Drive, in the Water's Edge subdivision.

As you go through the permitting and building process it will be helpful if you would do the following:

- Insure that the deck as constructed meets the requirements contained in the Water's Edge Covenants dated October 23, 2017, and available on the Water's Edge web page: <http://wehaga.com>.
- Follow all applicable Gainesville, Hall County, Georgia and Federal regulations.
- Notify us if any significant changes are made in the plans.
- Minimize impact on your neighbors during the building process as possible. For example, reduce noise as much as possible, and allow for traffic flow through the neighborhood.

If you will keep us informed of significant building events, we can pass the information on to the neighborhood residents.

Good luck with your deck! Please let us know any way we can help you with your project.

Feel free to contact me directly if you have questions about any of the above.



Carl Bedingfield
President, Water's Edge HOA
Mobile phone: 404-358-0921
E-mail: [bass4dking @bellsouth.net](mailto:bass4dking@bellsouth.net)

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 5/18/2020

Presenter: Matt Tate

Item of Business: Request from the **City of Gainesville** to annex a 4.4± acres tract located at the west side of Athens Highway and Smallwood Road to include property located on the north, south and west side of Smallwood Road (a/k/a **0 and 2221 Smallwood Road; 2306 and 2312 Athens Highway**) and to establish zoning as Planned Unit Development (P-U-D).
Ward Number: Three
Tax Parcel Number(s): 15-032-000-002 (Part); 15-032-000-113; 15-032-000-125
Request: Business Park

Meeting Date: 6/9/2020

Purpose of Request:

The City of Gainesville is proposing to annex the subject property as part of an overall 1,324.4± acres planned development known as the Gainesville 85 Business Park. The property is adjacent to and east of the city limits and is zoned Agricultural Residential-IV (AR-IV) and Residential-II (R-II) within unincorporated Hall County. The subject property consists of three vacant tracts of land and a portion of Smallwood Road that will be improved and used to provide access from Athens Highway (US 129) to the business park. The business park is located east of Interstate 985 between Exits 20 & 22 and will consist of a network of existing and new roads that will serve approximately 19-lots varying in size from 2 acres to over 100 acres. The overall concept plan proposes 5,000,000 square feet of light and heavy industrial uses as well as ancillary uses. The project has an expected built-out over a period of 15 to 20 years. The property is heavily wooded with rolling topography and streams. Adjacent uses include mostly industrial uses within Gainesville and Hall County and some residential uses located to the east along Smallwood Road within the County.

History/Background:

Facts & Issues for Consideration:

Department Recommendation:

Planning staff recommended approval with two conditions. See the staff recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
☐ Staff Recommendation Report	Report
☐ Location Maps	Backup Material
☐ Narrative	Backup Material
☐ Community Benefit Statement	Backup Material
☐ Survey	Backup Material
☐ Site Plans - Phasing Plan	Backup Material

- Buffer Exhibit F
- Architectural Photos
- Traffic Impact Study

- Backup Material
- Backup Material
- Backup Material

**GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION**

Applicant and Property Owner..... City of Gainesville
Location..... Annexation: 0 and 2221 Smallwood Road;
2306 and 2312 Athens Highway
..... Rezoning: 1701 Fulenwider Road, SW
Request..... Annex with P-U-D zoning
..... Rezone from R-I-A and H-I to P-U-D
Total Acres Annexation: 4.4± acres
..... Rezoning: 1,320± acres
Ward..... Three
Proposed Use..... Business Park
Planning Division Staff Recommendation **Approval, with conditions**
Date..... June 9, 2020

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

The City of Gainesville is proposing to annex and rezone the subject property for a 1,324.4± acres planned development known as the Gainesville 85 Business Park. The subject property is located east of Interstate 985 between Exits 20 & 22 and is heavily wooded with rolling topography and streams. The development is to include 5,000,000 square feet of light and heavy industrial uses as well as ancillary uses developed over a period of 15 to 20 years. The development will consist of a network of existing and new roads that will serve approximately 19-lots varying in size from 2 acres to over 100 acres. The overall concept plan anticipates three phases to provide necessary infrastructure for the development sites.

Phase I (approximately 2020 - 2025):

- Clearing, grading and construction of infrastructure improvements at Allen Creek Road, the new roadway from Allen Creek Road south to Fulenwider Road and extension of Fulenwider Road east and terminating at a new cul-de-sac.
- Construction of entrance monument Allen Creek Road, if desired.
- Construction of stormwater management facilities serving the Phase 1 development parcels.
- Construction of water and wastewater improvements to serve the Phase 1 development parcels along the proposed roadways.
- Installation of a sanitary sewer pump station, outfall sanitary sewer and force main.

Phase II (approximately 2026 - 2030):

- Extension of Fulenwider Road from the existing portion to the Phase 1 portion.
- Intersection improvements at Fulenwider Road and SR 60.
- Construction of entrance monument Fulenwider Road, if desired.
- Construction of stormwater management facilities serving the Phase 2 development parcels.
- Construction of water and wastewater improvements to serve the Phase 2 development parcels along the proposed roadways.

Phase III (approximately 2031 - 2040):

- Extension of the roadway from Allen Creek Road north to US 129 with water and wastewater improvements to serve the Phase 3 development parcels.
- Construction of entrance monument at US 129, if desired.
- Intersection improvements at the new roadway and US 129.

Annexation

The property is 4.4± acres in size and is adjacent to and east of the city limits and is currently zoned Agricultural Residential-IV (AR-IV) and Residential-II (R-II) within unincorporated Hall County. The property consists of part or all of five tracts of land and a portion of Smallwood Road that will be improved and will serve as the 85-Business Park access from Athens Highway (US 129). There are two existing residential structures located on the property that will be removed.

Rezoning

The property is 1,320± acres in size and is currently zoned Residential-I-A (R-I-A) and Heavy Industrial (H-I). A large portion of the property was originally annexed and zoned in 1991 for a land application farm for wastewater which was never constructed. The current uses within the property include the Gainesville Public Lands and Buildings maintenance facility and the Kubota ATV / RTV test track, which will all be removed. Access to the property is currently from Allen Creek Road, Fulenwider Road and Monroe Drive.

A full description of the overall development standards is described within the narrative provided with the application which include the permitted uses, dimensional requirements, architectural, landscape/buffer/tree protection, stormwater management, grading and erosion control, signage requirements and infrastructure improvements such as roads and utilities.

▪ Adjacent Land Use and Zoning

Adjacent uses include mostly industrial uses within Gainesville and Hall County and some residential uses located to the east along Smallwood Road within the County.

Location	Use	Zoning
North	Allen Creek Soccer Complex; Gainesville Police Gun Range	Residential-I (R-I-A) City
South	Numerous Industrial Uses; Residential Home	Heavy Industrial (I-II); Agricultural Residential-IV (AR-IV) County
East	Hall County Fire Training Facility, Hall County Sherriff Gun Range; Undeveloped Land	Agricultural Residential-IV (AR-IV) County Residential-I (R-I-A) City
West	Various Industrial uses; Cottrell, Volvo Truck Repair Facility, Hall County Landfill, Residential Home	Light Industrial (I-I), Heavy Industrial (I-II); Agricultural Residential-III (AR-III); Agricultural Residential-IV (AR-IV) County

▪ Traffic Impact Study

A traffic impact study was completed for this development on January 31, 2020. The study area included the following intersections:

- Signalized intersection of Athens Highway US 129 (SR 11) & Monroe Drive.
- Unsignalized intersection of Candler Road SR 60 & Fulenwider Road.
- Unsignalized intersection of Monroe Drive & Allen Creek Road.
- Unsignalized intersection of Athens Highway US 129 (SR 11) & Highlands Village Road / Smallwood Road.
- Unsignalized intersection of Highlands Village Road & Smallwood Road.
- Proposed internal access at Allen Creek Road
- Proposed internal access south of Allen Creek Road.
- Proposed internal access at Fulenwider Road.

Traffic counts were collected on Thursday, October 24, 2019, Tuesday, November 19, 2019, and Wednesday, December 4, 2019 at the studied intersections that exist. The below table is a breakdown of the project trip generation as based on a 2.5% annual growth rate per year.

	Total Trips	Inbound Trips	Outbound Trips	Car Trips	Truck Trips
Daily	16,850	8,425	8,425		
AM	2,000	1,620	380	1,780	220
PM	2,000	420	1,580	1,859	141

Based on the results of this traffic impact study, all studied intersections are projected to continue to operate at a Level of Service (LOS) E or F which is less than desirable. The addition of turn lanes at the studied intersections will help traffic movements but will still experience heavy traffic volumes. A GDOT Intersection Control Evaluation (ICE) procedure and a traffic signal warrant study will be required for the intersections at SR 60 and US 129 and Monroe Drive that are either new or involve changes. Once the ICE is determined, the mitigation needed to provide adequate Level of Service (LOS) can be determined, such as improved signalization and other offsite improvements.

▪ **Other Departmental Comments**

The Georgia Mountains Regional Commission Development of Regional Impact Study (DRI) finds the project does *not* present any potential adverse inter-jurisdictional impacts. Additional measures for environmental and transportation management would be ideal but could limit the scope of the development. Consideration should also be given to examine any potential adverse impacts on the neighboring residential properties.

The Hall County Environmental Health Department commented that any abandoned well shall be properly closed as per Water Well Standards Act. Any abandoned septic tank shall be pumped by a State certified pumper/hauler and crushed/filled.

There were no departmental comments for this request.

▪ **Zoning History**

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

2019- A request by City of Gainesville to rezone 395.69± acres located at 1701 Fulenwider Road, SW from Residential-I-A (R-I-A) to Heavy Industrial (H-I) was approved with conditions for future industrial uses.

Analysis

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

The subject property is adjacent to industrial and public uses located along Fulenwider Road, Monroe Drive, Allen Creek Road, Athens Highway and Candler Road. The industrial uses are supportive of the proposed request. There are also limited residential and agricultural zoned properties to the northeast in the County which touch the subject property along Smallwood Road and to the southwest near Candler Road.

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

It is anticipated the proposed 85-Business Park will be developed over a period of 15 to 20 years. Properties most impacted by the proposal include existing industrial uses and patrons of the nearby Allen Creek Soccer Complex. As well, the existing residential homes located off of Smallwood Road in the County will experience increased traffic movements at the planned intersection of Athens Highway and Smallwood Road. The proposal includes water, sewer and road improvements that will directly serve the proposed business park. The road improvements are designed to allow for alternative points of ingress and egress in order to more evenly distribute employee and truck traffic along Allen Creek Road, Athens Highway, Candler Road, Fulenwider Road and Monroe Drive. In addition, appropriate stormwater measures will be required to protect the existing streams and Allen Creek Watershed.

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

It is staff's opinion that the proposal is consistent with the Comprehensive Plan.

The Future Development Map for the City of Gainesville places most of the 1,320± acres property to be rezoned within the *Industrial* land use category. This industrial land use category includes areas containing or planned for a wide range of office, business, light industrial, manufacturing, research and development uses; and commercial uses that directly support or are otherwise linked to the dominant business use. As well, a small portion of the property is adjacent to the Allen Creek Soccer Complex and is located within the Parks / Recreation / Conservation land use category which is intended for park space, open space and conservation areas.

The 4.4± acres annexation portion of property is planned as the Athens Highway 85-Business Park entrance. This property is located within the *Retail Commercial* and *Low-Medium Density Residential* land use category which is intended for uses such as grocery, bank, restaurants, theatres, hotels and automotive related businesses and single-family housing at densities of up to 4 dwelling units per acre.

According to the Character Area map for the City of Gainesville, the subject properties are located within the *Economic Development Gateways* character area which support the applicant's proposal. This character area represents the industrial, warehousing and other commercial enterprises that parallel the I-985 and Norfolk-Southern railroad corridor. The primary vision for the area is to continue to support economic development while preserving and strengthening important natural and cultural resources. These areas include a wide range of office, business, light industrial, manufacturing, research, and development uses.

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

The subject property is currently zoned for residential and industrial purposes. Based on the Comprehensive Plan and the existing development located off of Allen Creek Road, Fulenwider Road and Monroe Drive, the property appears to be more conducive for industrial purposes. The proposed zoning of Planned Unit Development (P-U-D) is a site-specific zoning that includes consistent and improved development standards unlike the existing industrial development located along Fulenwider Road and Monroe Drive.

(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?

Public facilities and services are adequate but will require improvements to access, roads, stormwater and water/sewer utilities. The Gainesville Fire and Police Departments currently respond to the property. Gainesville Fire Station #1 is located off of Queen City Parkway and is 3.5± miles from the proposed access at Fulenwider Road. Hall County Fire Station #1 is located off of Athens Highway and is approximately 1.5± miles from the proposed Athens Highway/Smallwood Road access. There will be no impacts to the City school system in regards to increasing the number of children attending City schools.

(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?

It is staff's opinion the proposed use is consistent with the Comprehensive Plan. The subject property and much of the surrounding area have been planned for public and industrial uses for over 30 years. As well, the surrounding area has experienced mostly industrial growth partly due to Exit 20 /I-985, Lee Gilmer Memorial Airport and CSX Railroad being located nearby.

(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?

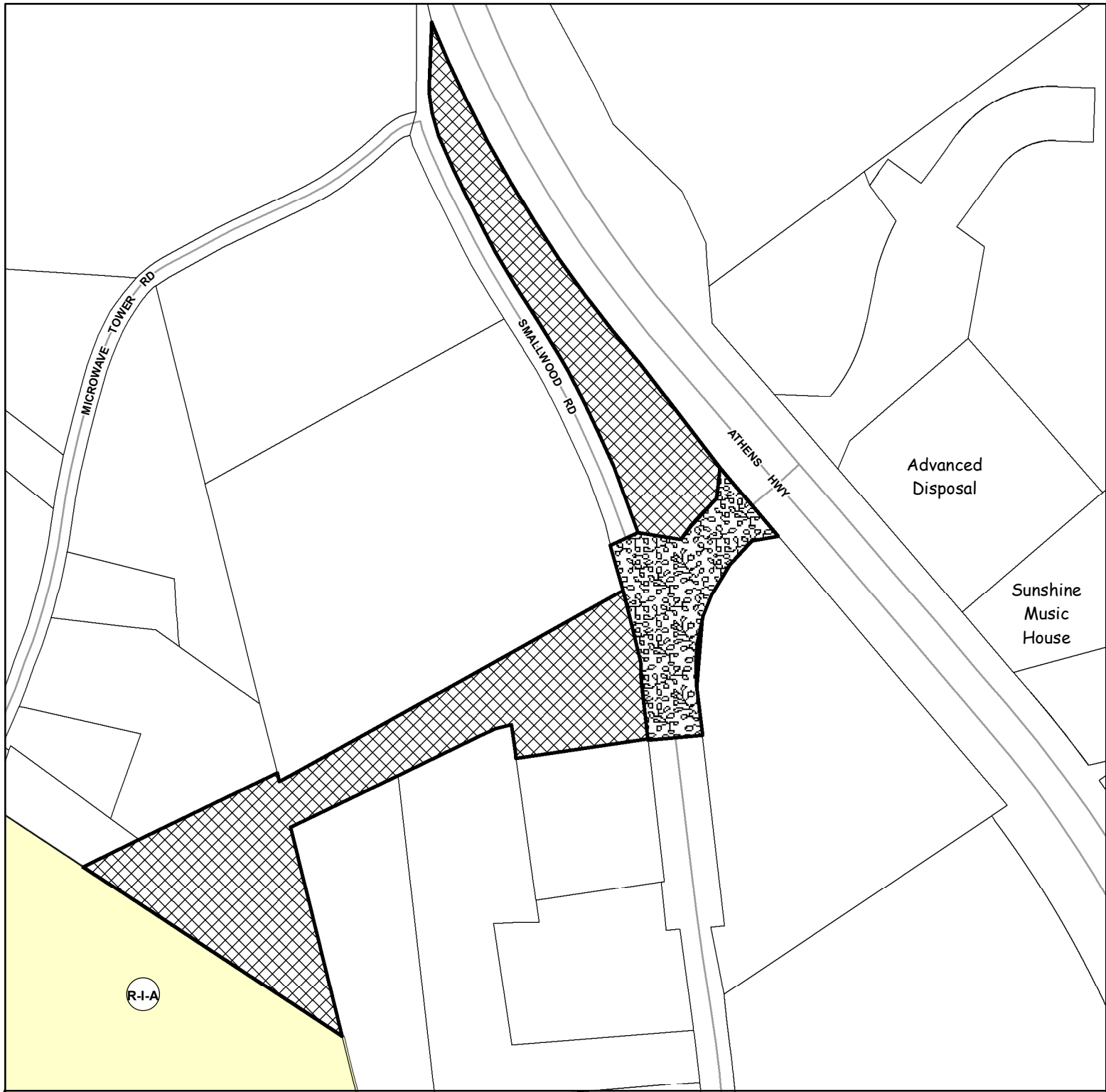
Based on the subject property's close proximity to other industrial properties, the proposal with the zoning conditions recommended by staff appears to promote a reasonable balance between the promotion of the public health, safety, morality, or general welfare, and the right to unrestricted use of property.

▪ **Staff Recommendation**

The Planning Division staff is recommending **conditional approval** of this annexation and rezoning request with a **zoning of Planned Unit Development (P-U-D)**, based on the Comprehensive Plan and the adjacent and nearby industrial uses.

Conditions

- 1. The development standards within the narrative, site plan and architectural renderings submitted with the applicant's annexation and rezoning application shall be made part of the zoning ordinances, and shall be subject to the approval of the Director of the Community and Economic Development Department.**
- 2. The proposed landscape buffer adjacent to the residential properties located off of Smallwood Road and Smallwood Springs Drive shall be planted with evergreen trees where determined necessary to provide for an effective buffer. The number, location, spacing, size and type of trees planted shall be subject to the approval of the Director of the Community and Economic Development Department.**



Applicant:

CITY OF GAINESVILLE

ANNEXATION REQUEST

Request:

Annex 4.4+/- acres and establish zoning as Planned Unit Development (P-U-D) for a business park

Subject Property Address:

0 & 2221 Smallwood Road; and
2306 & 2312 Athens Highway

Tax Parcel:

15-032-000-002 (Part)
15-032-000-113 & 125

Meeting Date: 06/09/2020

Map Prepared: 04/29/2020



Subject Property



Right-of-Way to be Annexed



0 120 240 360 480 Feet

1" = 200'



CITY OF

GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT





Applicant:

CITY OF GAINESVILLE

ANNEXATION REQUEST

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Tax Parcel:

15-032-000-002 (Part)
15-032-000-113 & 125

Meeting Date: 06/09/2020

Map Prepared: 04/29/2020



Subject Property and
Right-of-Way to be Annexed

Aerial from 2018

0 120 240 360 480 Feet



1" = 200'



CITY OF
GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT



GAINESVILLE 85 BUSINESS PARK
CONDITIONS OF ZONING
February 28, 2020

The request is to rezone 1,320 ± acres from Residential-I-A (R-I-A) and Heavy Industrial (H-I) to Planned Unit Development (P-U-D) and to annex 4.4 ± acres with a zoning of Planned Unit Development (P-U-D) for a proposed business park. This document is submitted consistent with requirements of the Unified Development Code of Gainesville, Georgia, Section 9-7-1-1, PUD, Planned Unit Development, as amended 12/17/19. It accompanies other rezoning application submittal material and is an integral part of the rezoning package to be reviewed by staff and to be subject to the public hearing process. As such it may be modified by mutual agreement of the City of Gainesville, Georgia ("City") and the Applicant, City of Gainesville, Georgia (hereinafter "Developer") up to the point of approval by the City Council. Upon approval it shall become an integral part of the zoning approval for the properties herein described and depicted in the accompanying Conceptual Plan (hereinafter "Concept Plan"). Additional terms are provided for its interpretation or modification after approval.

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RELATIONSHIP TO CITY ZONING ACTION

This narrative explains and clarifies the Concept Plan and related development standards specific to the Gainesville 85 Business Park Planned Unit Development district (hereinafter "Project"). This method is common for large, complex developments that will be built over a period of several years. It gives the City, adjacent property owners, the general public and Developer, including its successors and assigns, certainty with respect to development standards, while also providing flexibility to the Developer to be able to respond to changes in market conditions and preferences consistent with the intent of the Planned Unit Development Section of the City's Zoning Ordinance as it exists at the time of initial application.

This document is intended to detail and clarify the conditions of zoning and slight modifications to the Gainesville Unified Land Development Code for the Project as described herein and as reflected in the accompanying Exhibits. Due to the complexity of the Project, its projected build-out over a period of 15 to 20 years, and uncertainty of future economic considerations, the City acknowledges the significant rights vested to the applicant based on this approval, and the need for the Developer to be able to rely on these conditions of approval over the life of the project, as long as the project proceeds in general conformance with the program discussed herein. After approval, the conditions of zoning shall be recorded in the public records of Hall County, Georgia and reference to recording information shall be included on any and all plats created for the development.

It is intended that the submitted boundary perimeter of the Project (hereinafter "Project Boundary") and corresponding acreage of the PUD district will be as shown in submittal material. However, zoning conditions of the Project may be applied to additional property outside the initial Project Boundary, if the Applicant acquires additional property and with City Council approval via the rezoning process. Consideration of different conditions for the addition of property(ies) after approval(s) shall not prompt or require a re-review of conditions of zoning for the Project as it then exists, but shall apply only to additional lands, if any.

CONCEPT PLAN

The development of the Project shall be controlled by the Concept Plan, attached hereto as Exhibit "A", the Project Narrative and other exhibits provided as modified in the final approval. The Plan is considered conceptual in nature, and certain modifications to that Plan are anticipated as reflected in the specific language herein. Beyond such specific language, modifications of the location and arrangement of lots, roads, amenities and other improvements that do not materially conflict with specific standards and requirements of these conditions may be made by the Developer, so long as such modification does not materially alter the location or nature of improvements or change the land use or increase density. The current Plan incorporates light industrial and heavy industrial uses.

PUD ZONING DISTRICT - GAINESVILLE 85 BUSINESS PARK

The Project shown in the Concept Plan is strategically located east of Interstate 985 between Exits 20 & 22. With close access to US 129 and SR 60, the Park will consist of a network of existing and new roads that will serve approximately nineteen (19) lots varying in size from 2 acres to over 100 acres. The Developer will retain the flexibility to combine or further subdivide the lots in order to accommodate specific needs of future users. Five

(5) outparcels have been acquired and will be annexed into the City for the purpose of providing a direct connection to US 129.

The overall Concept Plan requests approval for a maximum of 5,000,000 SF of light and heavy industrial uses as well as additional uses as specified herein. The Developer acknowledges that the specific standards of these conditions and applicable City codes not otherwise modified herein shall control.

DEVELOPMENT

Dimensional Requirements

The dimensional requirements for the project shall be as outlined in Table 1 below:

Table 1

Dimensional Requirements - Gainesville 85 Business Park	
Project Acreage	1330 +/-
Minimum lot size	15,000 SF
Minimum lot width	100'
Maximum building coverage - individual lot	60%
Maximum impervious surface coverage - individual lot	85%
Minimum open space - individual lot	none
Minimum open space - overall	5%
Minimum landscape strip along internal R/W's	20'
Maximum structure height	120'
Maximum number of stories	5
Front setback from R/W	75'
Side setback - internal	20'
Rear setback - internal	20'
Industrial Park Perimeter Side/Rear setback/buffer adjacent to residential uses/zoning districts	50'
Industrial Park Perimeter Side/Rear setback/buffer adjacent to nonresidential uses/zoning districts	none
Parking setback from R/W	10'
Front Building setback from parking lots	10'
Parking ratio - manufacturing, processing, assembling	none
Parking ratio - all other uses	Per UIDC
Driveway width	28'
Minimum driveway radius	25'
Minimum number of off street loading spaces	none

Development Standards

The Developer agrees to comply with all applicable City rules and regulations in effect on the date of approval, except as specifically modified herein. The Developer agrees to comply with future amendments to those rules or regulations, except where specific conflicting standards are approved herein, or such future compliance is specifically waived.

Subsequent actions by the City to change Development Standards for other zoning districts of the City shall not apply to the 85 Gainesville Industrial Park PUD district, unless such changes are city-wide and required by changes in federal or state laws. By approval of the City, the Developer will have substantial vested rights for the Project.

Permitted Uses

This PUD zoning shall allow for the following uses:

- Conservation Area
- Clinic
- Club or Lodge
- College or University
- School for Arts
- Private School
- Professional School
- Special School
- Trade School
- Bank or Financial Establishment
- Broadcasting Studio
- Building Materials Sales
- Business Service Establishment
- Contractor's Establishment
- Custom Order Shop
- Exterminator
- Health Spa
- Museum
- Office
- Parking Lot – off site
- Parking Structure
- Personal Service Establishment – more than 2500 sf
- Restaurant
- Retreat Center
- Bottling or Canning Plant
- Brewery or Distillery
- Bulk Storage
- Cold Storage
- Distribution including truck terminal
- Apparel Manufacturing
- Ceramics Manufacturing
- Cosmetics Manufacturing
- Electronics Manufacturing
- Fiberglass Insulation Manufacturing
- Ice Manufacturing
- Machine Manufacturing
- Metal Products Manufacturing

- Pharmaceutical/Medical Manufacturing
- Office/Warehouse
- Warehouse or Storage Building
- Wholesale Trade Establishment
- Public Use
- Utility Company
- Utility Company Substation
- Accessory Use incidental to principal use
- ATM Machine
- ATM Drive through
- Caretaker's Residence
- Construction Field Office
- Drive Through
- Manufacturing Accessory to Retail use
- Office/Institutional/Industrial Warehouse/Distribution/Manufacturing uses
- Instrument Assembly

In addition, this PUD zoning shall allow for the following specific uses:

- Proving grounds for equipment performance testing
- Gun ranges owned and operated by government agencies
- Equipment maintenance facilities owned and operated by government agencies
- Temporary construction offices housed in trailer or modular buildings

DEVELOPMENT FEES

All applicable fees for water & sewer connections, land disturbance permits and building permits will be administered based on the then current fee schedule for the City of Gainesville.

AESTHETICS

ARCHITECTURE

The Developer has proposed a unified development vernacular of building forms, mass, articulation, exterior treatments, surface materials and finishes, complimentary colors and similar details. This approval will guide development of the buildings, with no further architectural approval required outside of the administrative building permit process. Pictorial examples of the intended quality level and character of industrial architecture are provided in Exhibit "B". Review and compliance will be monitored through the covenants to be filed on the property.

Landscape Standards

Landscape standards shall be in accordance with the Declaration of Covenants, Restrictions and Easements for Gainesville 85 Business Park, to be recorded on the property. Any standards not addressed within the covenants shall meet the standards of the ULDC.

SIGNAGE

Signage and graphics design standards, typical for a Planned Unit Development, are developed to establish a cohesive, distinctive and functional system to visually attract and communicate with everyone who visits and works in Gainesville 85 Business Park. A well-coordinated sign system is also one of the most effective ways of creating lasting identity and way-finding clarity. Project signage along public roadways in 85 Gainesville Industrial Park will be designed consistent with a high-quality image. A coordinated program of signage for individual sites shall be approved in conjunction with the site plan approval of the building, similar to pictorial examples provided in Exhibit "C".

All sign square footage criteria are calculated inclusive of the sign monument.

Signage design criteria is requested as follows:

<u>Sign Type</u>	<u>Maximum Area per Face (SF)</u>	<u>Maximum Height (ft)</u>	<u>Frequency</u>
User Sign Types			
Ground Mounted Sign	200 sf	18 ft	One (1) sign per lot per street frontage
Portable Sign	8 sf		One (1) per establishment
Wall Sign	1 sf of wall signage per 1 lf of wall length	3 ft on 1 st & 2nd floor	One (1) per each tenant having an exterior public entrance
Window Sign	32 sf	12 inches	One (1) per establishment
Projecting Blade Sign	16 sf		One (1) per establishment
Entry Signage	32 sf	8 ft	One (1) per bldg. entrance
Grand Opening and Temporary Signage	32 sf		
Developer Sign Types			
Major Parkway Identification	200 sf	18 ft	One (1) @ SR 129 One (1) on Fullenwider Rd
Secondary Parkway Identification	200 sf	18 ft	One (1) @ Monroe Dr
Way-finding Signage	100 sf	15 ft	As needed
Minor Information and Directional Signs	35 sf	8 ft	As needed
Regulatory Signs			As needed

Entry Feature Monuments

A main entrance feature or signage shall be allowed at the entrances from US 129, Fullenwider Road and Monroe Drive. The main entrance features may include extensive walls, fencing, landscaping and signage that is commensurate with the size of the Project and the scale of the entrances.

ENVIRONMENTAL

FLOOD PLAIN MANAGEMENT

Flood plains will remain undisturbed with the exception of roadway crossings and utility placement. A trail system may also be constructed within this zone.

BUFFERS, LANDSCAPING AND TREE PROTECTION

An external buffer of 50' will be imposed where the site adjoins a residential zoning district (Exhibit "F"). Driveway construction for Lot #5 may be constructed within the buffer and is excluded from this requirement. The buffer may be disturbed and replanted in these areas to the satisfaction of the Declarant.

CULTURAL RESOURCES

A cultural resources literature search by R.S. Webb & Associates, dated August 13, 2018, identified five sites that may have eligibility under NHRP. These sites, as shown on Exhibit "D" will be delineated and protected by an additional 25' buffer around the perimeter. A variance to this buffer may not be granted.

STORMWATER MANAGEMENT, GRADING AND EROSION CONTROL

Stormwater Management

A series of storm water management facilities will be designed to serve the project on a basin wide basis, rather than individual sites. However, individual sites will be required to provide water quality elements for their own stormwater runoff.

Grading and Erosion Control

The Project contemplates multiple areas being open to construction activity concurrently. Similarly, over time multiple phases of concurrent road and lot development may be on going in multiple parcels within multiple phases. At the developer's discretion these may be submitted as stand-alone projects or integrated within common sets of construction plans. Proper erosion control measures are to be maintained at all times with particular attention to steep fill or cut slopes, large areas of grading and areas immediately adjacent to stream buffers. Developer will adhere to all State and Federal requirements regarding erosion and sediment controls.

Stream Buffers

The Project contains several small unnamed tributaries to Allen Creek. The Developer has received a US Army Corps of Engineers' Individual Permit for permitting stream & wetland impacts. If these impacts are exhausted and to the degree feasible, the Developer may avoid additional impacts to the stream channel by use of pre-fabricated span structures, such as ConSpan or OmegaSpan, wooden bridges or other types of alternative crossings that meet development regulations, rather than pipe or culvert. In consideration of the extra expense and effort associated with this limitation of impact to streams, the City agrees that variances to the City's required stream buffers (50' undisturbed & 75' impervious) will be considered where dimensional and topographic hardships may exist. Such buffers may be crossed by utility crossings, roads and trails, provided such are placed as perpendicular to the buffer as practical. Pervious surface trails of the Multi-Use Trail system may meander within buffers at distances greater than 25' from top of bank, except at points of crossing or specific focal points of interest. Unless

DEVELOPMENT PHASING

85 Gainesville Industrial Park is anticipated to be developed over a fifteen to twenty year time frame. At present the following phasing, as depicted on Exhibit "E" is planned on a conservative basis, but may be either accelerated or deferred at the discretion of the Developer, depending on market conditions. It is the Developer's desire and intent to develop all phases of the Project, but no guarantee is made by way of this document,

zoning approval, or accompanying Concept Plan that all phases of the Project will be developed.

Phase I (approximately 2020 - 2025):

- Clearing, grading and construction of infrastructure improvements at Allen Creek Road, the new roadway from Allen Creek Road south to Fullenwider Road and extension of Fullenwider Road east and terminating at a new cul-de-sac.
- Construction of entrance monumentation at Allen Creek Road, if desired.
- Construction of stormwater management facilities serving the Phase 1 development parcels.
- Construction of water and wastewater improvements to serve the Phase 1 development parcels along the proposed roadways.
- Installation of a sanitary sewer pump station, outfall sanitary sewer and force main.

Phase II (approximately 2026 - 2030):

- Extension of Fullenwider Road from the existing portion to the Phase 1 portion.
- Intersection improvements at Fullenwider Road and SR 60.
- Construction of entrance monumentation at Fullenwider Road, if desired.
- Construction of stormwater management facilities serving the Phase 2 development parcels.
- Construction of water and wastewater improvements to serve the Phase 2 development parcels along the proposed roadways.

Phase III (approximately 2031 - 2040):

- Extension of the roadway from Allen Creek Road north to US 129 with water and wastewater improvements to serve the Phase 3 development parcels.
- Construction of entrance monumentation at US 129, if desired.
- Intersection improvements at the new roadway and US 129.

INFRASTRUCTURE IMPROVEMENTS

In general, the Developer shall be responsible for providing the timely construction of all on-site project-related infrastructure necessary to serve the Project, and to also accommodate or facilitate specific concurrent or future additional on-site system-related improvements of the City. The Developer shall not be required to oversize roads, facilities or pipe systems at their expense, unless accommodation is made for credits or rebates of fees and charges for the portion of system-related improvements that exceed otherwise required project-related improvements.

The construction and installation of infrastructure improvements shall be conducted in conformance with the applicable codes, ordinances, policies and procedures of the City and the other applicable governmental agencies and service providers, unless specifically modified herein. Modification of the requirements of other agencies or providers may be referenced here, but the authority to make such modifications lays with those other parties by separate agreement.

ROAD IMPROVEMENTS

On-site Improvements

As provided for through the PUD District, it is intended that the on-site roads shall all be constructed to meet the City standards and specification for public roads, with the following modifications:

Fullenwider Road Extension

Minimum design speed – 25 mph, with design values based on AASHTO standards

- Minimum right-of-way – 60'
- Minimum pavement width (back to back of curb) – 28'
- Minimum pavement design – 2" Type E, 3" Type B & 12" GAB
- Minimum cul-de-sac pavement radius – 52' to back of curb
- Perpetual Easement outside R/W – 5' on both sides
- Maximum grade – 12%

US 129 Entrance Road

- Minimum right-of-way – 60'
- Minimum pavement width (back to back of curb) – 28'
- Minimum pavement design – 2" Type E, 3" Type B & 12" GAB
- Perpetual Easement outside R/W – 5' on both sides
- Maximum grade – 12%

Allen Creek Road Connector

- Minimum right-of-way – 60'
- Minimum pavement width (back to back of curb) – 28'
- Minimum pavement design – 2" Type E, 3" Type B & 12" GAB
- Perpetual Easement outside R/W – 5' on both sides
- Maximum grade – 12%

UTILITIES

Water Service

Water service will be provided by the City, through an extension of existing water lines located in Allen Creek Road and Fullenwider Road with a future connection back to US 129.

Sanitary Sewer Service

Sanitary Sewer Service will be provided by the City. Gravity sewers will be constructed throughout the property and will flow to the new 85 Gainesville Business Park pump station located at the southern end of the property. The flow will then be pumped back to the existing Allen Creek pump station located near the soccer complex and eventually to the Flat Creek Water Reclamation Facility for treatment and disposal.

Other Utilities

All utilities are to be placed underground. Electric, gas, phone, cable and/or fiber are to be placed by respective utility providers as available per City of Gainesville standards in common trench or conduit after curbing and prior to driveway/sidewalk installation. Small cell antenna systems for internet and Wi-Fi as an alternative to cable or fiber may be placed in conjunction with street light poles.

AMENDMENTS TO THESE CONDITIONS

It is understood that the Project is being constructed over an extended period of time in a rapidly growing area; therefore, amendments to these conditions are possible and should be anticipated. In order to protect the interests of the parties involved, along with the interests of neighboring property owners and the general public, these conditions shall be amended under the procedures outlined below:

Changes to the Concept Plan

Certain modifications to the Concept Plan are described above, which are exempt because of distance from the original perimeter of the property or can be administered at a staff level and do not require formal amendment of the Concept Plan. However, if a proposed change does not meet the criteria, a formal amendment must be approved through the same public hearing process as required for the original zoning approval. Examples of these would be major changes at the original perimeter of the property, or changes in use or development standards for the property on the whole.

Changes to the Language of these Conditions

Minor changes or clarifications of the language of these conditions may be made as part of a vote by the City Council at any duly called meeting. These include the adjustment of time frames for specific actions while maintaining the overall intent of Project phasing, the modification of technical specifications for infrastructure improvements, and the addition of new language clarifying issues not previously part of this agreement.

Other changes to the language of these conditions must be approved through the same public hearing process as required for the original zoning approval. This specifically includes the deletion of any required improvements, the addition of any permitted land use(s), any increase, above 10%, in the maximum amount of development permitted, or a change to the criteria for buffers or setbacks for development taking place adjacent to the Project Boundary.

EFFECT OF CITY ORDINANCE CHANGES

It is specifically acknowledged that the City may consider changes to its development regulations over the life of this Project's development, construction and occupancy. As such, the parties acknowledge that other development related codes and ordinances change over time, and such changes customarily have different effects on various portions of the Project's development depending upon their stage of completion.

Changes in Conflict with the Concept Plan or these conditions

Changes in City development-related codes, ordinances, policies or practices which are in direct conflict with the details or provisions of the approved Concept Plan or these conditions shall not apply to the continued development of the Project, except where such changes are mandated by State or Federal law, such as changes to standard building codes, or except where such relate to City-wide fees or charges not addressed by the zoning documents.

Changes to Dimensional or Development Standards, or Subdivision Regulations

It is the intent of the City to allow the Project to develop with a consistent look and feel, and with a level of predictability in development cost over time. Therefore, changes to dimensional standards (such as height, setback, etc.), development standards (such as parking or landscaping requirements, or sign regulations), shall not apply to the remaining phases of development, unless there is a demonstrated compelling public health, safety, morals or welfare interest to require the new standard. Exceptions to this policy would be standards mandated by State or Federal law.

Other City Codes and Ordinances

Nothing within this agreement shall affect the ongoing enforcement of other City codes, regardless of changes over time, including codes affecting the accessory uses of property or maintenance of property.

COMMUNITY BENEFIT STATEMENT

For Gainesville 85 Business Park

The Gainesville 85 Business Park is proposed as a Planned Unit Development (PUD) under the City of Gainesville's Unified Land Development Code (Sec. 9-7-1-1) as amended 12/17/19, with specific conditions as proposed in the zoning request. The Project shown in the Conceptual Plan is strategically located east of Interstate 985 between Exits 20 & 22. With close access to US 129 and SR 60, the Park will consist of a network of existing and new roads that will serve approximately nineteen (19) lots varying in size from 2 acres to over 100 acres. The Developer will retain the flexibility to combine or further subdivide the lots in order to accommodate specific needs of future users. Five (5) outparcels have been acquired and will be annexed into the City for the purpose of providing a direct connection to US 129.

The historical use of the land has been mostly agricultural with recent municipal use for a small portion of the site as the gun range for the Gainesville City Police Department. The site has been owned by the City since 2000. The site is bisected by Allen Creek.

The Gainesville 85 Business Park will be a master planned business park with multiple development opportunities for small, medium and large users. The mix of development opportunities will be attractive to a range of industrial uses as well as ancillary support businesses. The superior location and site features will make for a unique opportunity to continue the City's industrial growth in a measured and manageable pattern.

Over 300 acres of the site will be devoted to open space that will include a trail system and protection of at least 5 cultural resource sites. The cultural resource sites will include a 25' buffer area and will be fenced for protection. These sites may contain house ruins and lithic scatter.

The site is designated in the City's Comprehensive Plan dated June 20, 2017 as an "Economic Development Gateways" Character Area. The Character Area vision is included below:

Because many of these industrial / business parks and facilities were built over the last 35 to 45 years, they exhibit modern industrial development norms such as single-story large footprint buildings, extensive parking / loading areas, and reliance on truck transportation. Common site design patterns include campus-style master plans or light industrial subdivisions with low-rise office or office-warehouse buildings. They also are highly visible to motorists entering the city from the south and east, and therefore, act as gateways to Gainesville. The character area also features large, forested tracts of natural land and coexists with recreation and conservation landmarks like the Allen Creek Soccer Complex, the Elachee Nature Science Center, and the Chicopee Woods Agricultural Center. It reaches to the Athens Street corridor, which was once a primary entry to the city from the south but has struggled with economic disinvestment and creeping blight. It has been the subject of recent revitalization planning efforts. The primary vision for the area is to continue to support economic development, while preserving and strengthening important natural and cultural resources. Other goals include creating a positive impression for visitors entering the city from I-985; supporting the revitalization of the Athens Street corridor; and creating better connections to the Downtown / Midtown area. Green design / sustainability standards should be considered in future modifications to site development regulations or as an overlay for the area.

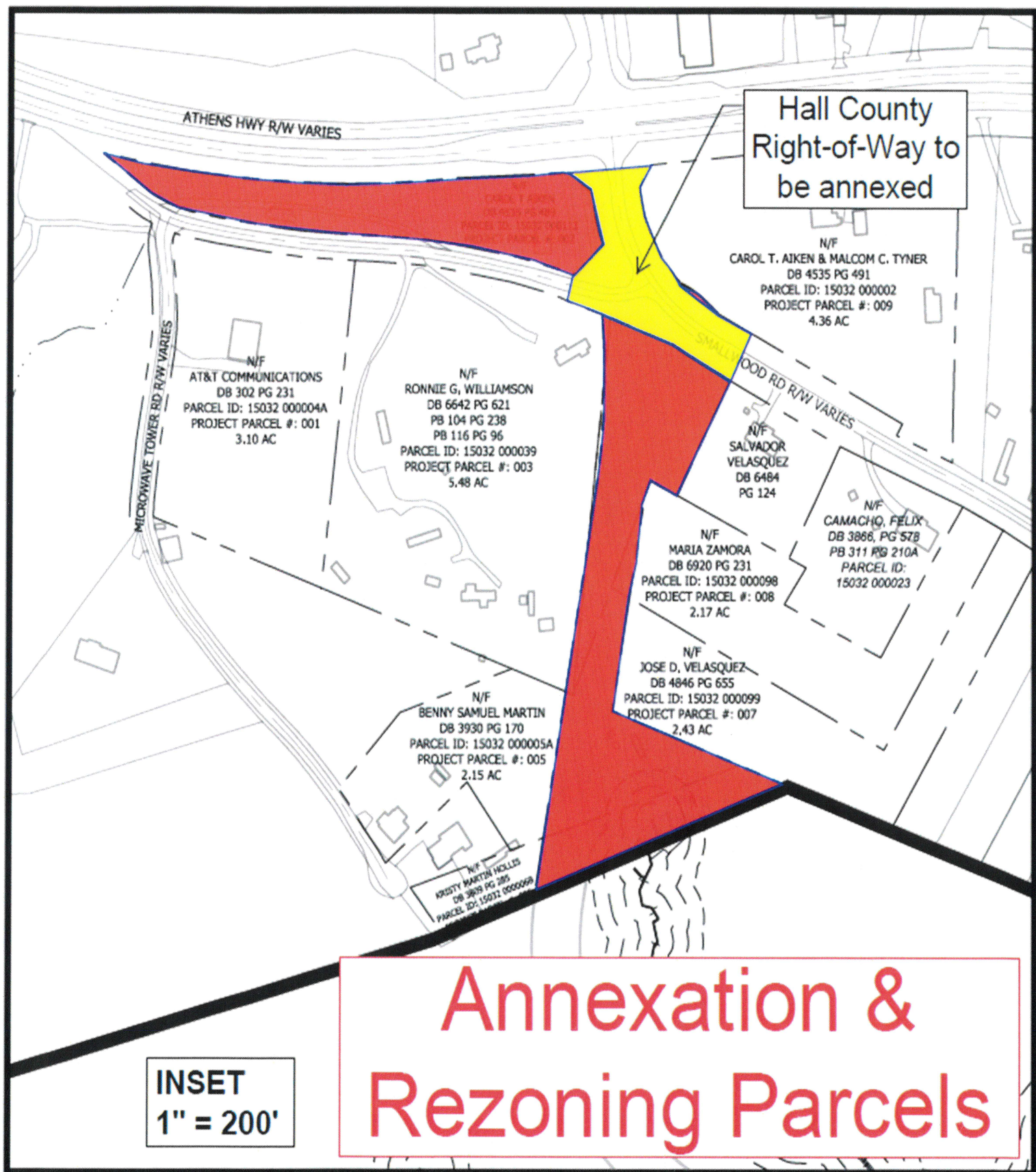
Economic development gateways are located on the city's fringe and are not therefore typical infill development sites. Cutting-edge "green" design and sustainable development practices can open new

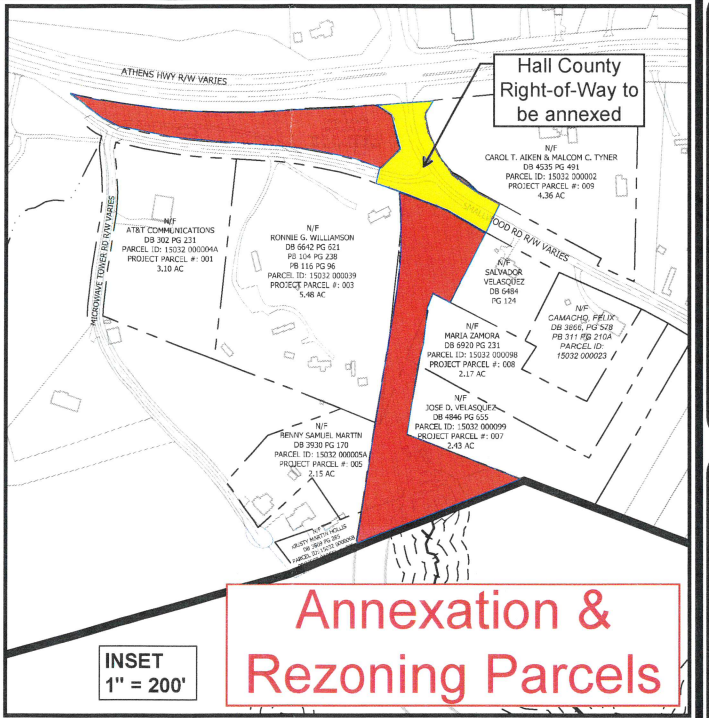
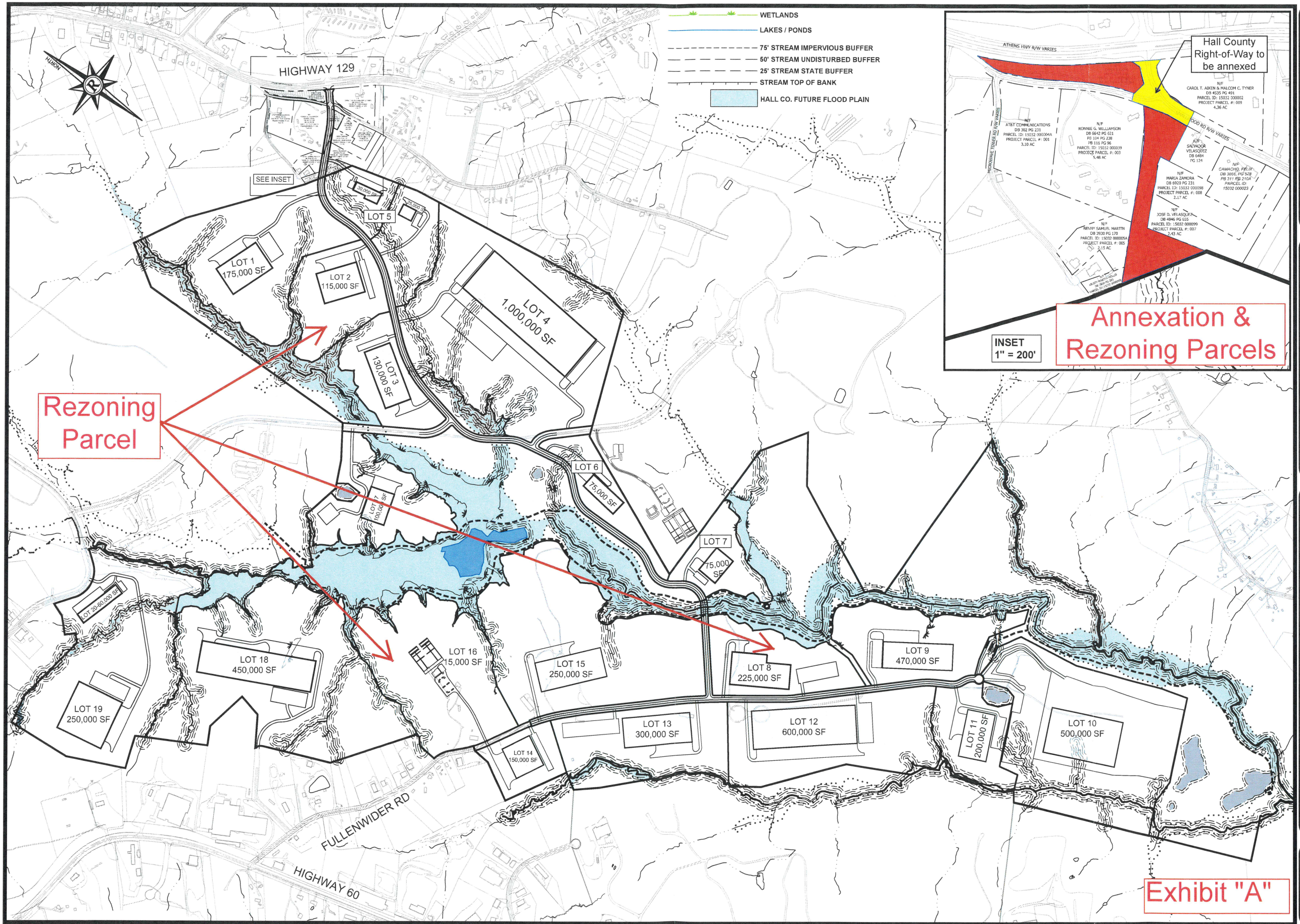
opportunities to improve the visual and architectural quality of industrially-zoned development. Expanding pedestrian, bike and transit mobility options should be a priority for all gateway areas. The character area could play a role in an emerging high-tech / green business identity for the region. The Beulah Rucker Museum is located within this character area. Open space preservation should be required in all new industrial or business development, using low-impact design strategies. Protection of sensitive habitat, wildlife corridors, and groundwater recharge areas should be a priority for any new development. Much of the gateway is located within the North Oconee water supply watershed. Most of Gainesville's future economic growth could be accommodated in the gateway areas. Business attraction should be tailored to the skills of Gainesville's diverse population as well as long-term economic sustainability. Maximizing employment options for local residents should be considered in evaluating incentives for new businesses. Aesthetically improving gateways can give this area a competitive advantage and "brand" in attracting new industry and jobs. Cooperation with Hall County and the Greater Hall Chamber of Commerce is essential to realizing the character area's potential.

Land uses allowed in Economic Development Gateways are commercial, industrial, mixed-use, residential (existing uses only), public / institutional, transportation / communications / utilities, and parks / recreation / conservation.

A number of the goals identified in the Comprehensive Plan for this type of development will be achieved through the development of this site. A large amount of open space (approximately 25%), including wetlands, floodplain and cultural resource areas will be retained and protected through the planning and entitlement process. The Developer (City of Gainesville) will control the standards through extensive covenants and oversight for the life of the project. Other quantitative and qualitative benefits include:

- Permanent job creation of approximately 2,500 new jobs at build out;
- Temporary construction jobs during the construction phase of each user;
- New and improved road infrastructure;
- Over \$4,600,000 in annual property tax revenues at build out (not including personal property taxes);
- Increased sales tax revenue based on job growth;
- Approximately \$1,500,000 in Impact Fees over the life of the project;
- Water Meter Fees (estimated at more than \$1,800,000 over the life of the project);
- Sanitary Sewer Tap Fees (estimated at more than \$3,700,000 over the life of the project);
- One time Building Permit Fees (estimated at more than \$1,000,000 over the life of the project);
- Development Impact Fees for public safety improvements (estimated at more than \$2,000,000 over the life of the project); and
- Water & Sewer Use Fees (estimated at more than \$140,000 annually at buildout).
- Gainesville intends to locate a new Maintenance Facility at the Gainesville 85 Business Park that will consolidate several disparate Water Resources and Public Works facilities that currently operate in old buildings poorly designed for their current use. These city facilities support critical city operations including maintenance of water and sewer pipes and pump stations, city vehicle maintenance and fueling, street maintenance and public lands management. The new Maintenance Facility will enhance the City's ability to deliver these services for decades to come.





Rochester & Associates, Inc.

425 Oak Street N.W. • Gainesville, Georgia 30501
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REZONING PLAN FOR:

85 GAINESVILLE BUSINESS PARK

LOCATED IN

CITY OF GAINESVILLE

HALL COUNTY, GEORGIA

REVISIONS	
NO.	DESCRIPTION

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GRAPHIC SCALE

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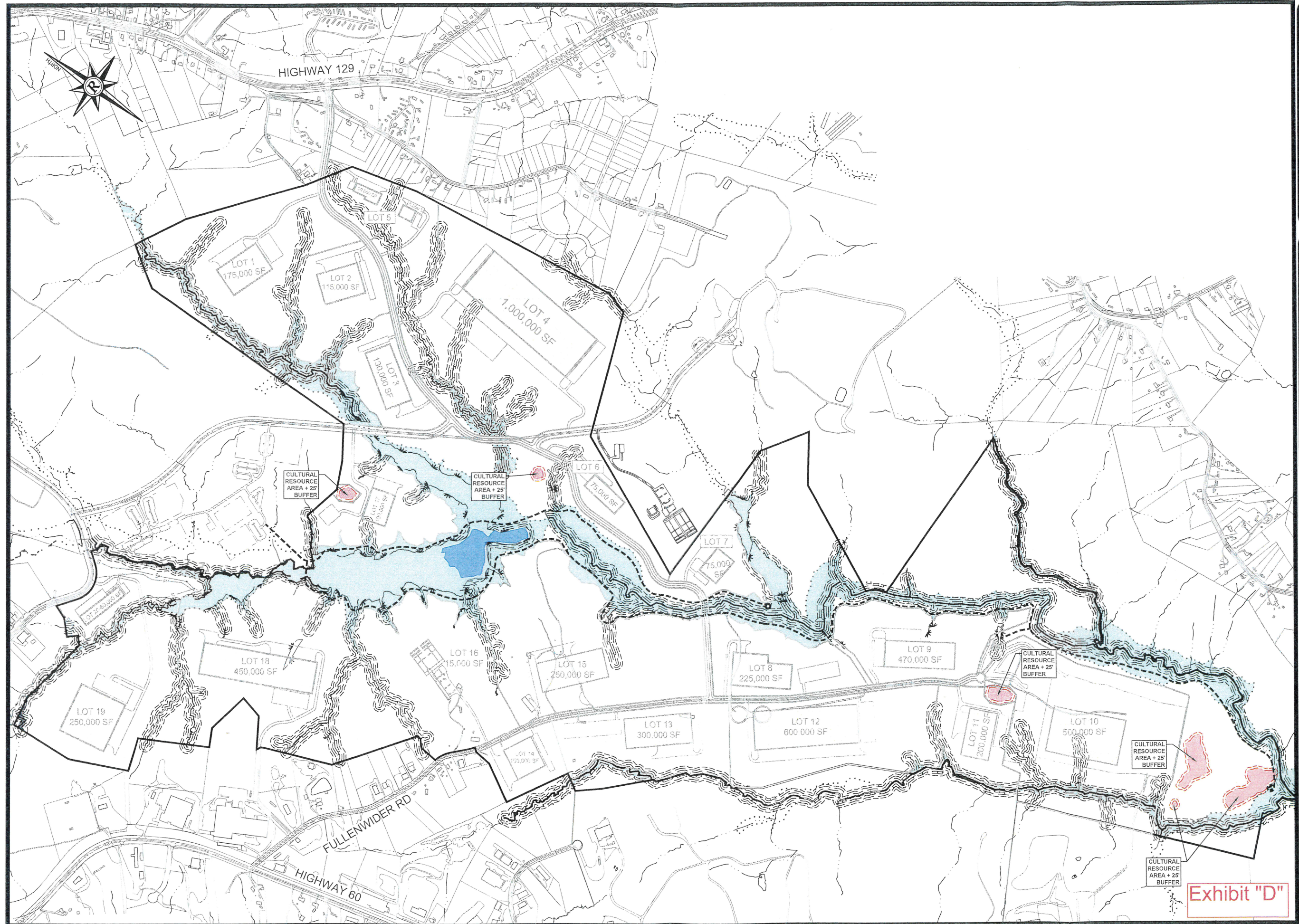


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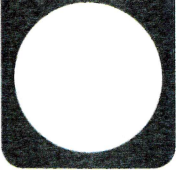
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CULTURAL RESOURCE AREAS
 FOR:
85 GAINESVILLE BUSINESS PARK
 LOCATED IN
 CITY OF GAINESVILLE
 HALL COUNTY, GEORGIA

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GRAPHIC SCALE
 250' 0' 500' 1000'



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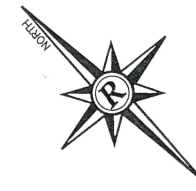
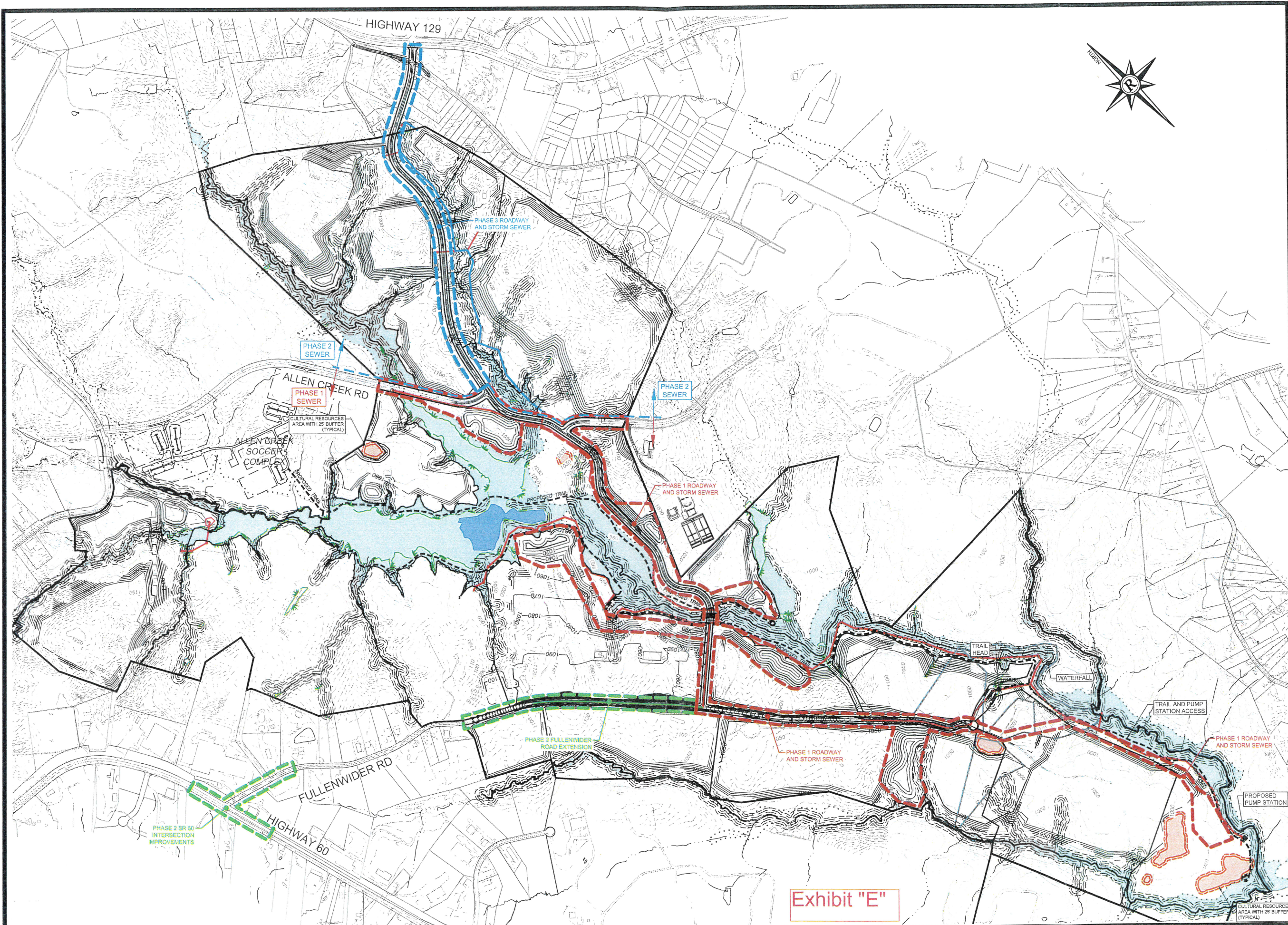


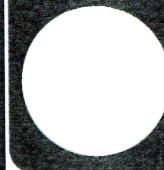
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PHASING PLAN FOR:
85 GAINESVILLE BUSINESS PARK
LOCATED IN:
LAND LOT DISTRICT
CITY OF GAINESVILLE
HALL COUNTY, GEORGIA

REVISIONS		
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85 Gainesville Business Park Development Traffic Impact Study

Highway 129, Monroe Road, Allen Creek
Road, Fullenwider Road and Highway 60
Gainesville, Georgia

Prepared for: Rochester & Associates, Inc.

Wolverton Project No.

19-TF-057

January 31, 2020



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1. INTRODUCTION

1.1. Study Area

This study was conducted to evaluate the traffic impact of a proposed 5.0 million square foot industrial park in Gainesville, Georgia. The proposed site is on approximately 956.40 acres of land on 20 parcels located north of Chandler Road (State Route 60), west of Monroe Drive, south of Athens Highway (US Route 129 & State Route 11) and straddles both Fullenwider Road and Allen Creek Road. The proposed development is anticipated to be fully open in 2040. A Traffic Impact Analysis was performed to determine how much new traffic would be generated by the proposed development and how the new traffic would impact the existing roadway network. Figure 1 illustrates the location of the site and identifies the roadway network in the vicinity.

The existing intersections that could be impacted by this project include:

1. SR 60 & Fullenwider Road
2. Monroe Drive & Allen Creek Road
3. US 129 (SR 11) & Monroe Drive
4. US 129 (SR 11) & Highlands Village Road / Smallwood Road
5. Highlands Village Road & Smallwood Road

The project site is currently vacant land.

1.2. Proposed Development

The proposed development will consist of a 5.0 million square foot industrial park on 20 parcels totaling approximately 956.40 acres in Gainesville, Georgia. An internal roadway is proposed to intersect at the northern end at the existing intersection of Highlands Village Road & Smallwood Road, continue south and intersect with Allen Creek Road, continuing further south to intersect with Fullenwider Road. As such, the following proposed intersection locations were included for evaluation in this study:

6. Allen Creek Road & Internal Access
7. Internal Access & Street just south of Allen Creek Road
8. Fullenwider & Internal Access

A site plan is included in Appendix A.

1.3. Methodology

Initial evaluations were made to assess the current conditions near the development. Twenty-four (24) hour volume/classification (Automatic Traffic Recorder (ATR)) counts and existing AM and PM peak period turning movement counts (TMC) were conducted at the above noted existing intersections.

The traffic growth rate was obtained from several nearby Georgia Department of Transportation (GDOT) traffic counters, which provide historical count data in the area:

- 1390118, US 129 near Monroe Drive
- 1380116, US 129 near Morgan Drive
- 1390305, SR60 near Calvary Church Road / Old Candler Road
- 1398071 Monroe Drive near Allen Creek Road

Using traffic count data since the year 2010, a growth rate was developed. The traffic growth rate was applied to the existing volumes to estimate the traffic that will exist at the build-out Year 2040 of the site if the proposed development is not developed.

Estimates were made of the traffic that will be generated by the proposed development. These trips were then distributed and assigned to the road network.

The distribution of these new trips was based on the existing peak hour traffic patterns. After the generated traffic for the proposed development was distributed and assigned, it was then superimposed with the future background traffic to provide an estimate of projected traffic once the proposed development is complete.

Capacity analysis was used to evaluate the Existing Year 2019, Future Background Year 2040, and Future with Project Year 2040 conditions for the intersections being studied.

1.4. Planned Transportation Improvements

There are no current or planned transportation improvement or maintenance projects in the study area based on a review of the Georgia Department of Transportation (GDOT) online project database.

Figure 1 - Aerial View of Study Area



2. EXISTING CONDITIONS

Existing conditions in the vicinity of the project were surveyed using a combination of desktop research and on-site data collection. Traffic counts, which included 24-hour volume/classification counts and peak period turning movement counts (TMCs), were performed as follows:

Thursday, October 24, 2019

- 24-hour counts on SR 60, Monroe Drive and US 129 (SR 11)
- TMC's at SR 60 & Fullenwider Road and at Monroe Drive & Allen Creek Road

Tuesday, November 19, 2019

- TMC's at US 129 (SR 11) & Highlands Village Road / Smallwood Road and at Highlands Village Road & Smallwood Road

Wednesday, December 4, 2019

- TMC's at US 129 (SR 11) & Monroe Drive

The counts were performed on different dates due to intersections being added subsequent to the initial counts based upon input from the applicant and the Gainesville-Hall Metropolitan Planning Organization (MPO). The counts are included in Appendix B.

2.1. Roadways

US 129 is a four-lane divided roadway that changes orientation and posted speed limit depending on its location. It is classified as an Urban Principal Arterial – Other and provides access to I85 to the east and I985, US 23 to the west. In the vicinity of Highlands Village Road & Smallwood Road, US 129 has a north-south orientation and a posted speed limit of 55 mph. In the vicinity of Monroe Drive, it has an east-west orientation and a posted speed limit of 45 mph. There are no separate pedestrian or bicycle accommodations along US 129 within the project limits.

SR 60 is a two-lane undivided roadway that primarily runs in a north-south direction. SR 60 is classified as an Urban Minor Arterial and has a speed limit of 55 miles per hour (mph) near the site.

Monroe Drive is a two-lane undivided roadway that runs in an east-west direction between Old Candler Road and Allen Creek and runs in north-south direction between Allen Creek and Athens Street. Monroe Drive is classified a Local Road and has a posted speed limit of 45 mph. Monroe Drive intersects at a 4-way unsignalized all-way stop controlled intersection at its westerly limit with Griffin Circle and Old Candler Road. Monroe Drive intersects at an unsignalized "T" intersection with Athens Street at its north limits with Monroe Drive being the stop-controlled approach. Monroe Drive provides access to industrial and commercial businesses, to Allen Creek Road as well as Athens Highway (US 129). There are no separate pedestrian or bicycle accommodations along Monroe Drive.

Fullenwider Road is a two-lane undivided roadway that runs in an east-west direction east of Candler Road and dead ends. Fullenwider Road is classified a Local Road and has a posted speed limit of 35 mph. Fullenwider Road provides access to industrial and commercial businesses. Fullenwider Road crosses railroad tracks at its westerly limit and intersects Candler Road at an unsignalized "T" intersection with

Fullenwider Road being the stop-controlled approach. There are no separate pedestrian or bicycle accommodations along Fullenwider Road.

Allen Creek Road is a two-lane undivided roadway that runs in an east-west direction east of Monroe Drive and dead ends. Allen Creek Road is classified a Local Road and has a posted speed limit of 45 mph and primarily provides access to the Allen Creek Soccer Complex. Allen Creek Road intersects Monroe Drive at an unsignalized “T” intersection with Allen Creek Road being the stop-controlled approach. There are no separate pedestrian or bicycle accommodations along Monroe Drive. However, there is signage alerting motorists to be aware of pedestrians and bicyclists.

2.2. Intersections

The following four unsignalized intersections were identified to be studied:

- SR 60 & Fullenwider Road
- Monroe Drive & Allen Creek Road
- US 129 (SR 11) & Highlands Village Road / Smallwood Road
- Highlands Village Road & Smallwood Road

The following signalized intersection was identified to be studied:

- US 129 (SR 11) & Monroe Drive

The following intersections, which currently do not exist but are proposed as part of the development have also been studied:

- Allen Creek Road & Internal Access
- Internal Access & Street just south of Allen Creek Road
- Fullenwider & Internal Access

Existing geometry and traffic operation control of the existing intersections were inventoried. Figure 2 illustrates the associated geometry and operation control of the study intersections.

2.3. Existing Traffic Flow Patterns

The existing Annual Average Daily Traffic (AADT) volumes on SR 60 north of Fullenwider Road, US 129 north of Gaines Mill Road, and Monroe Drive west of Allen Creek Road were estimated from 24-hour traffic counts collected in October 2019. The estimated AADT is shown in

Table 1. Existing morning and evening peak hour traffic is shown in Figure 2Figure 3 and Figure 4.

Table 1 - Existing Traffic Volumes

ROADWAY	Est. AADT	DHV (AM)	DHV (PM)
	VOLUME	VOLUME	VOLUME
Athens Highway (US 129)	33,675	2,525	2,830
Chandler Road (SR 60)	15,000	1,125	1,215
Monroe Drive	3,075	235	310

Figure 2 – Existing Lane Configuration

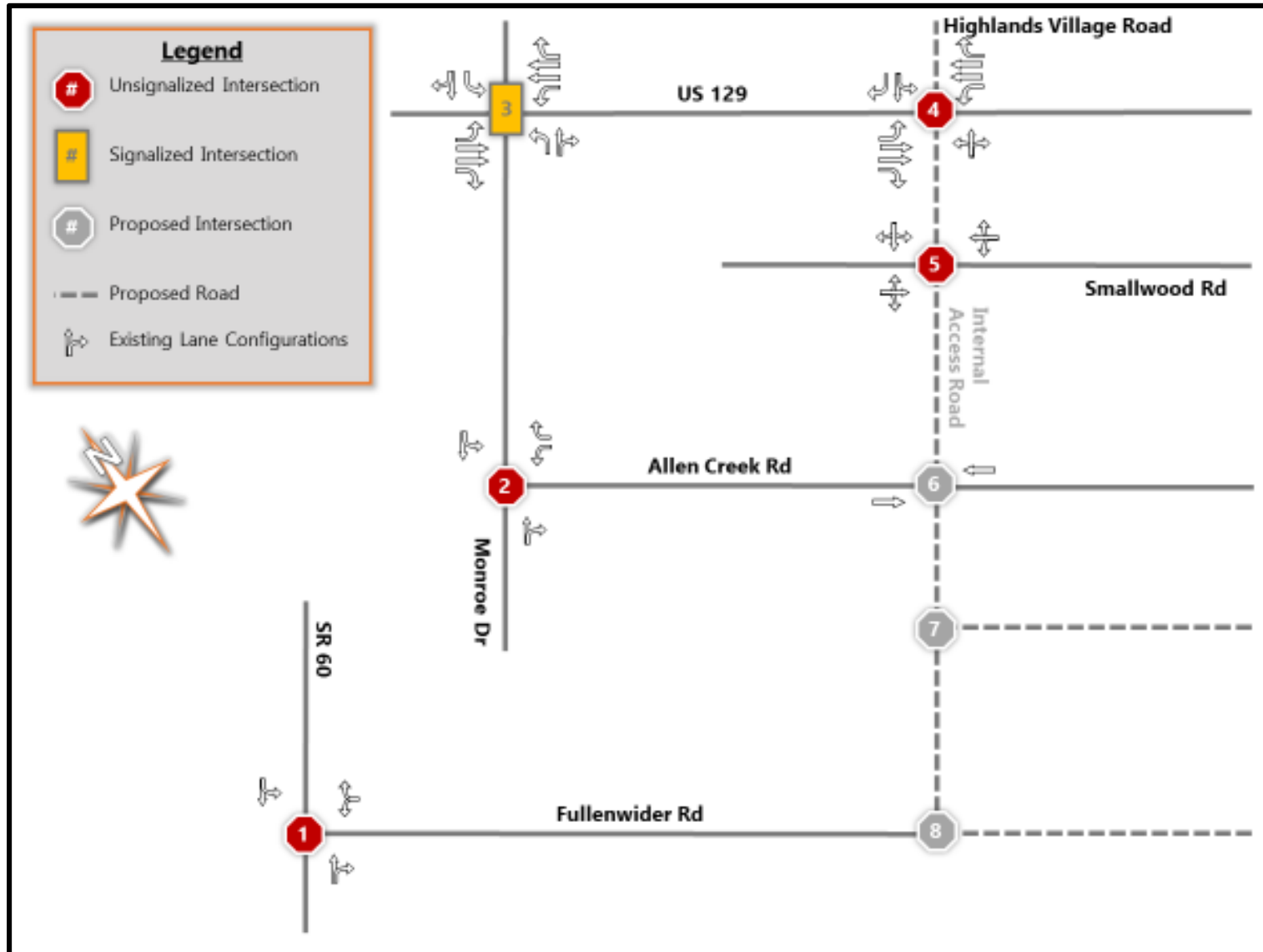


Figure 3 - 2019 Existing Peak Hour Traffic – I

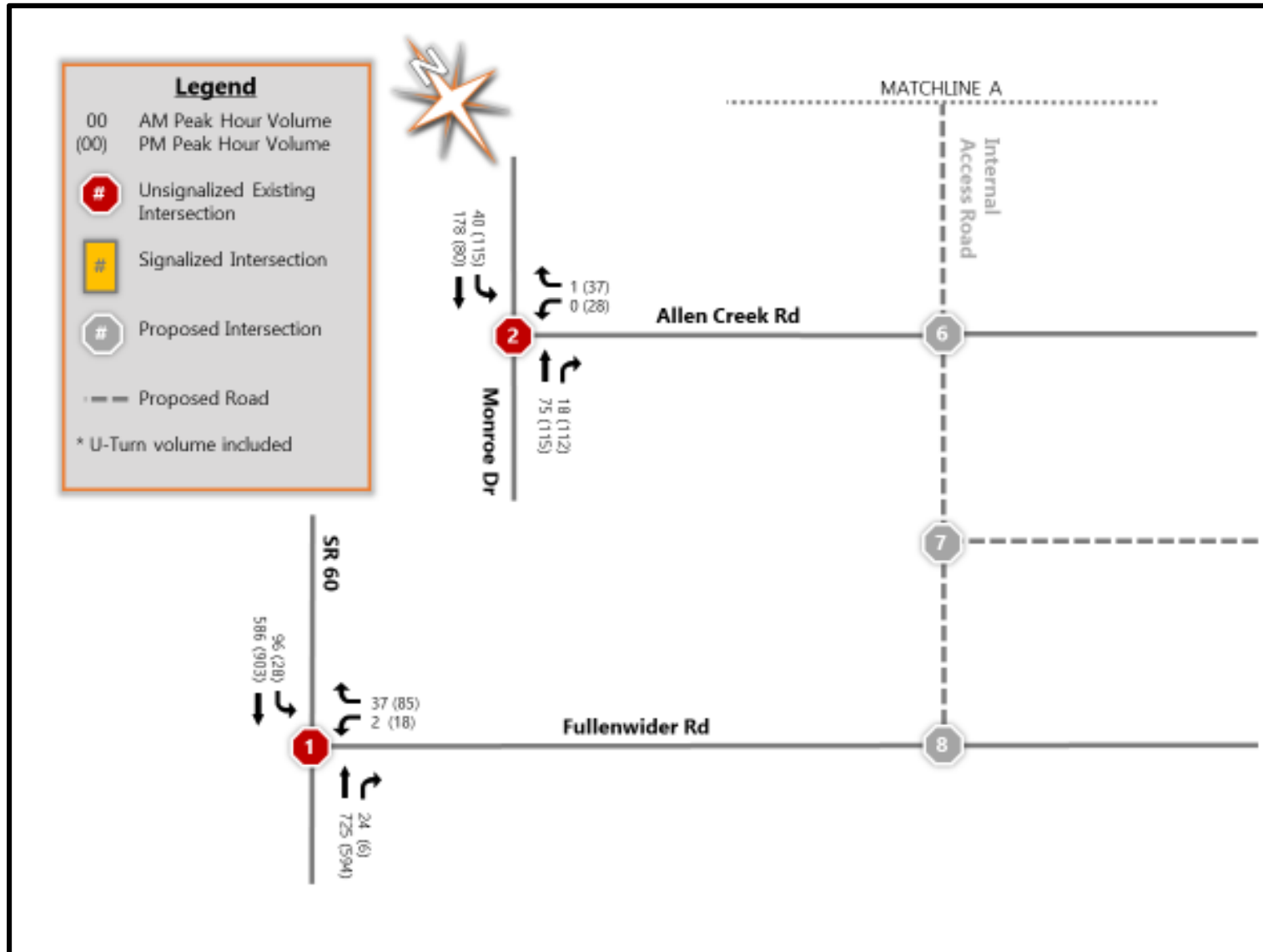
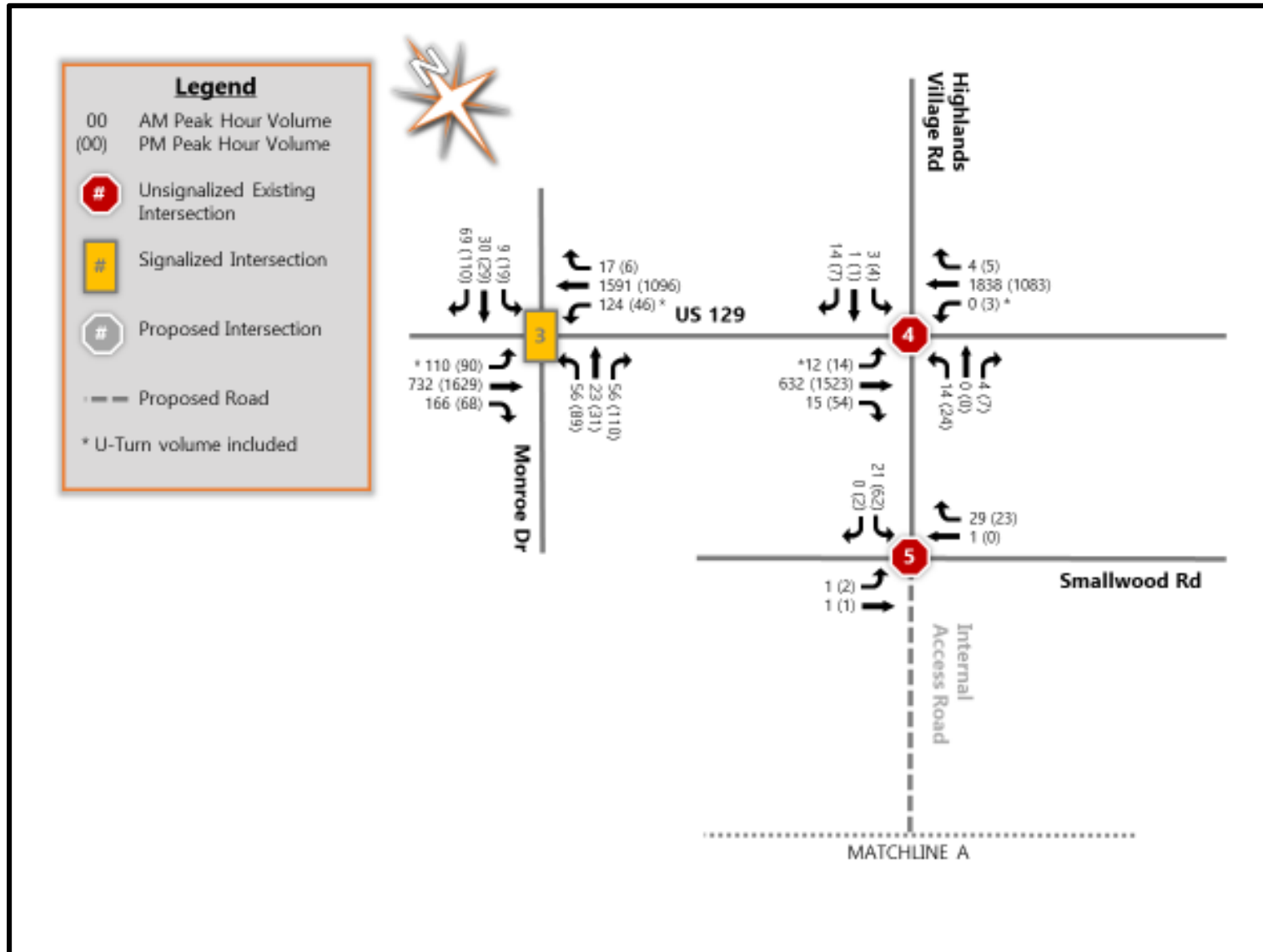


Figure 4 - 2019 Existing Peak Hour Traffic – II



3. TRAFFIC PROJECTIONS

3.1. Future Background Traffic

A build-out year of 2040 was established for the project. An annual growth rate was determined based on a review of traffic volume growth trends from GDOT data, and population growth trends and projections from US Census data.

The average annual growth rate, which was determined to be 2.5 percent per year, was applied to the 2019 traffic at the above noted intersections to establish the 2040 Background Traffic. There are no other known planned/approved development projects in the study area to be considered for the background condition.

The future 2040 Background peak hour traffic is shown in Figure 5 and Figure 6.

3.2. Trip Generation

The traffic that would be generated by the proposed development was estimated using the Institute of Transportation Engineers (ITE) ITE TripGen Web-based App which provides a searchable database of information included in *Trip Generation Manual (TGM) 10th Edition*. The trips that would be generated by the proposed project were estimated using ITE Land Use Code 130 – Industrial Park. The ITE describes an Industrial Park as:

containing a number of industrial or related facilities. It is characterized by a mix of manufacturing, service and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities – some with a large number of small businesses and others with one or two dominant industries.

The total number of project-generated trips was estimated for the typical weekday and the morning and evening peak hours based upon total gross floor area.

Industrial Parks generate new (primary) trips only and do not generate traffic on the adjacent network passing the site (e.g. pass-by traffic). The trip generation results are listed in Table 2. The project may generate 16,850 new trips per day, with 2,000 trips in the morning peak hour and 2,000 trips in the evening peak hour. Industrial Parks typically generate truck trip traffic. There is limited data pertaining to the percentage of truck traffic generated by this type of facility. The ITE 10th Edition reproduced the truck trip generation of the ITE 9th Edition. The ITE Trip Generation Manual, 9th Edition indicates that the truck trips for this land use accounted for 1 to 31 percent of the weekday traffic with the average being approximately 13 percent. In addition to the ITE, the National Cooperative Highway Research Program (NCHRP) Report 739 / National Cooperative Freight Research Program (NCFRP) Report 19, Freight Trip Generation and Land Use, which contains information for estimating truck trips based upon the different land use categories was also reviewed. Lastly, given the proposed location of the site and the existing surrounding land uses which are truck related uses, the existing traffic counts were utilized to estimate the truck trip percentages for this project. The truck trip generation results are listed in Table 3Table 2.

Table 2 - Project Trip Generation Results

Land Use Description	Code	Size	Unit	Weekday			AM Peak Hour			PM Peak Hour		
				Total	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit
Industrial Park	130	6.0	MSF	8,425	8,425	16,850	2,000	1,620	380	2,000	420	1,580

Table 3 - Project Trip Generation Results – by Classification

Mode	AM Peak Hour			PM Peak Hour		
	Total	Entry	Exit	Total	Entry	Exit
Cars	1,780	1,541	239	1,859	332	1,527
Trucks	220	79	141	141	88	53
	2,000	1,620	380	2,000	420	1,580

3.3. Distribution of Project-Generated Trips

Based upon the proposed use, passenger vehicles and truck trips are estimated to have differing distribution patterns. The new trips generated by the proposed project were distributed to the surrounding roadway network based on the location of each access drive, the potential regional distribution, and discussions with the applicant and the Gainesville-Hall Metropolitan Planning Organization (MPO). The distribution patterns are shown in

Figure 7 - New Trip Distribution Percentages – Passenger Vehicles



Figure 8 for passenger vehicles and Figure 8 for the truck trips.

3.4. Assignment of Project-Generated Trips

The number of trips were assigned to the project driveways based on the trip distribution determined for the study area and the proximity of each driveway to the existing and future proposed internal access roadways. See Figure 9 and Figure 10

The project-generated traffic was superimposed with the 2040 Background traffic to provide an estimate of traffic that would be present when the proposed development opens. The 2040 With Project peak hour traffic is shown in Figure 11 and Figure 14.

Figure 5 - 2040 Background Peak Hour Traffic – I

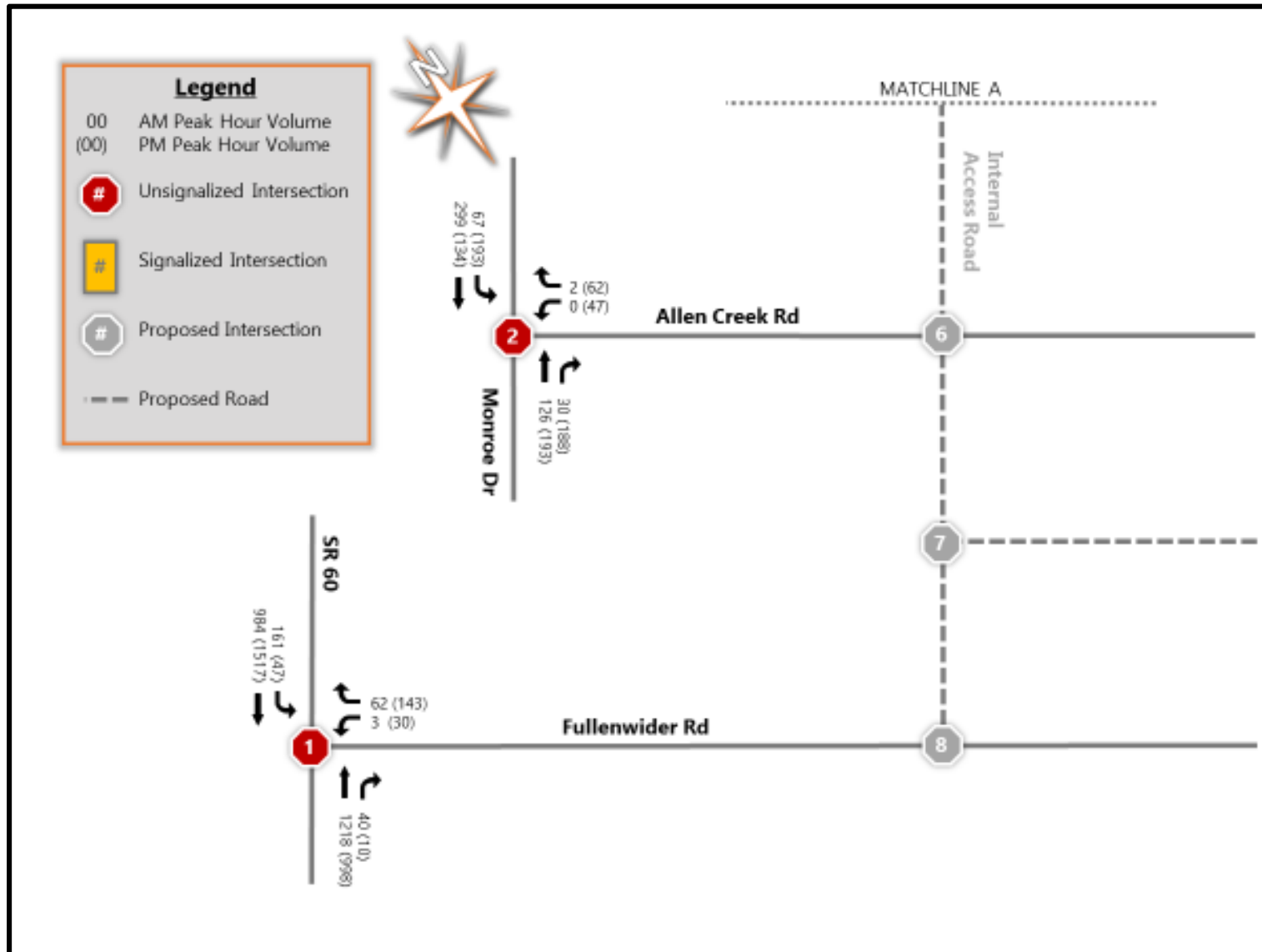


Figure 6 - 2040 Background Peak Hour Traffic – II

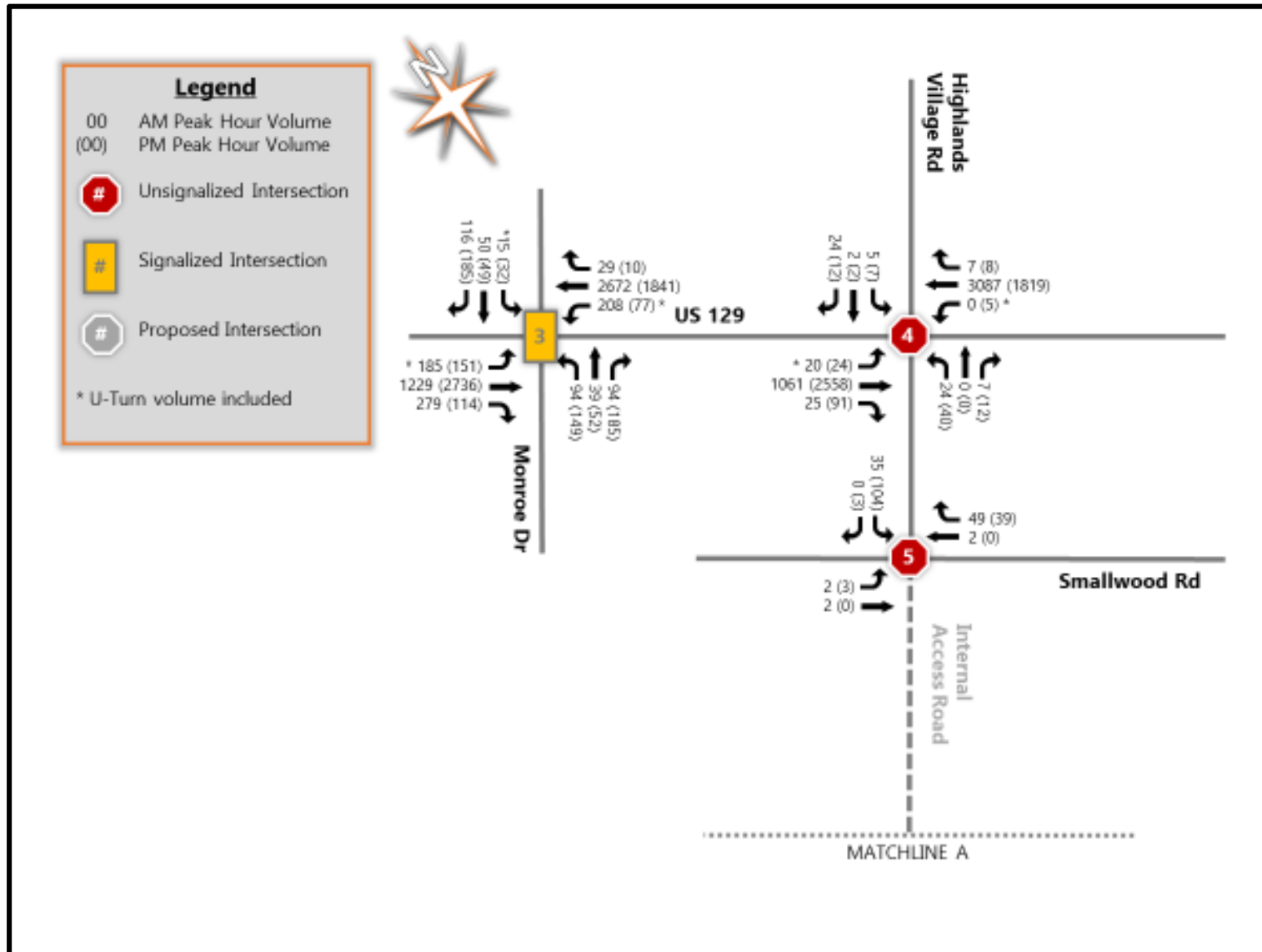


Figure 7 - New Trip Distribution Percentages – Passenger Vehicles



Figure 8 - New Trip Distribution Percentages – Truck Trips



Figure 9 - New Trip Passenger Distribution Volumes – I

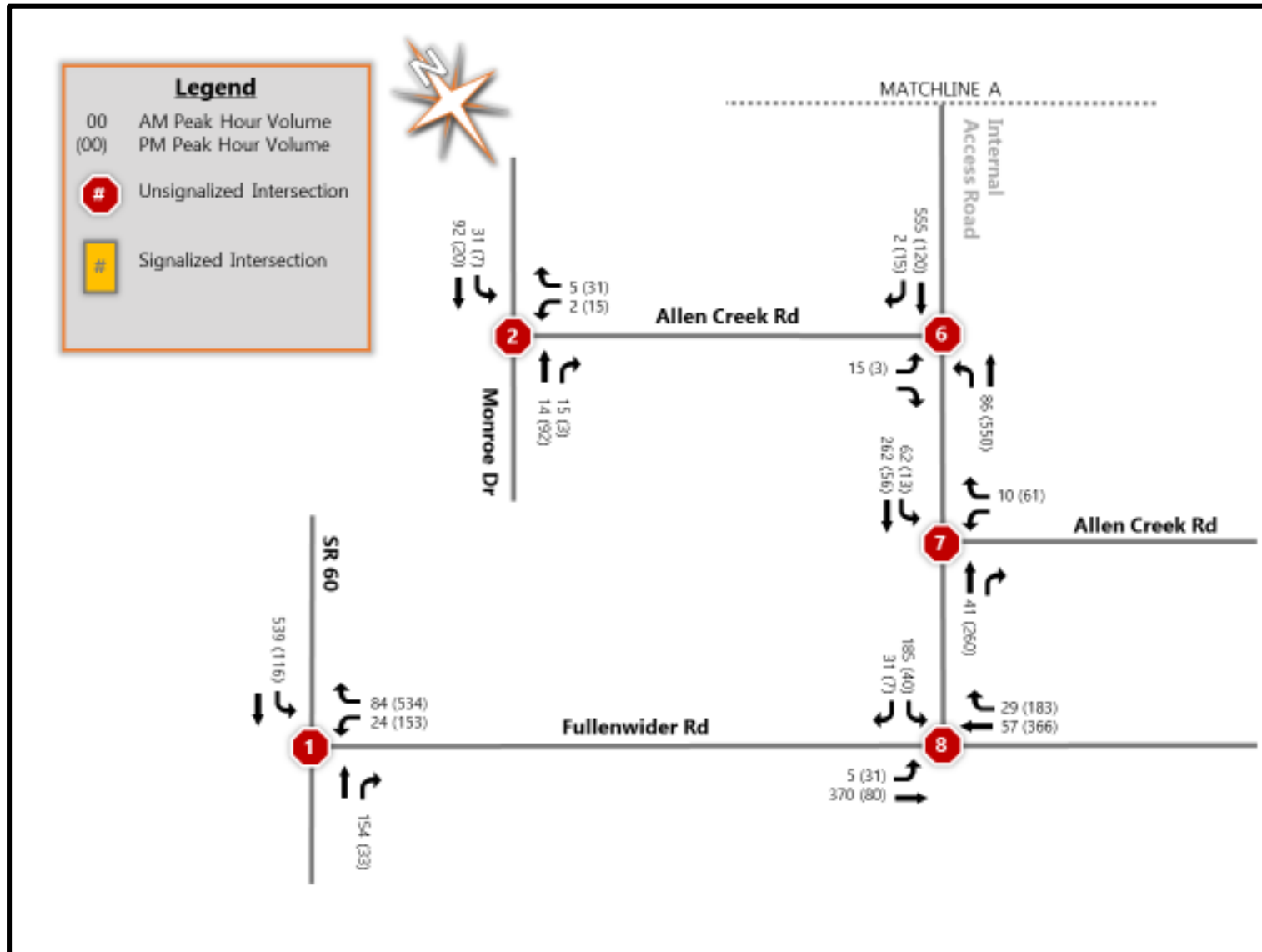


Figure 10 - New Trip Passenger Vehicle Distribution Volumes – II

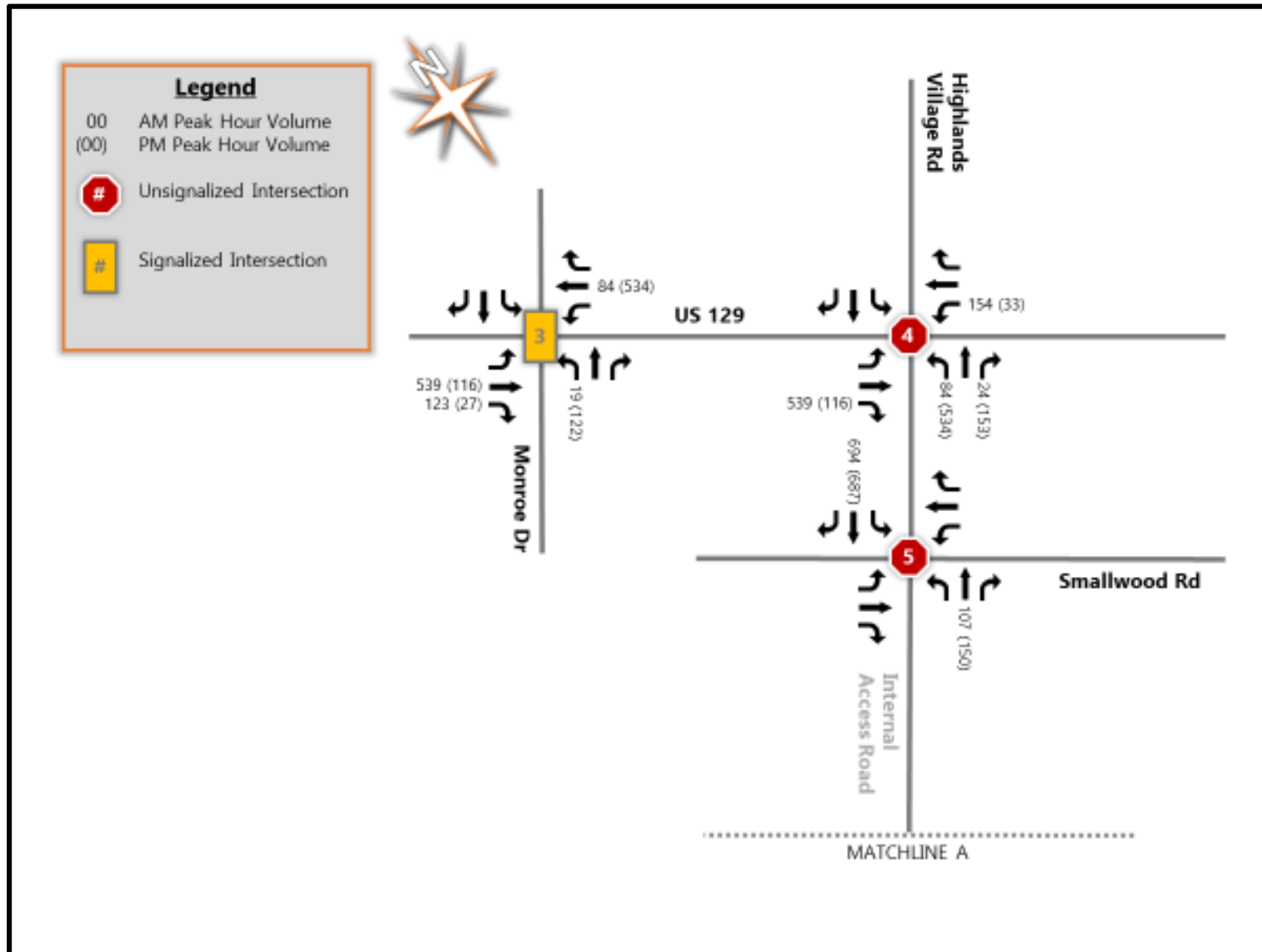


Figure 11 - New Trip Truck Distribution Volumes – I

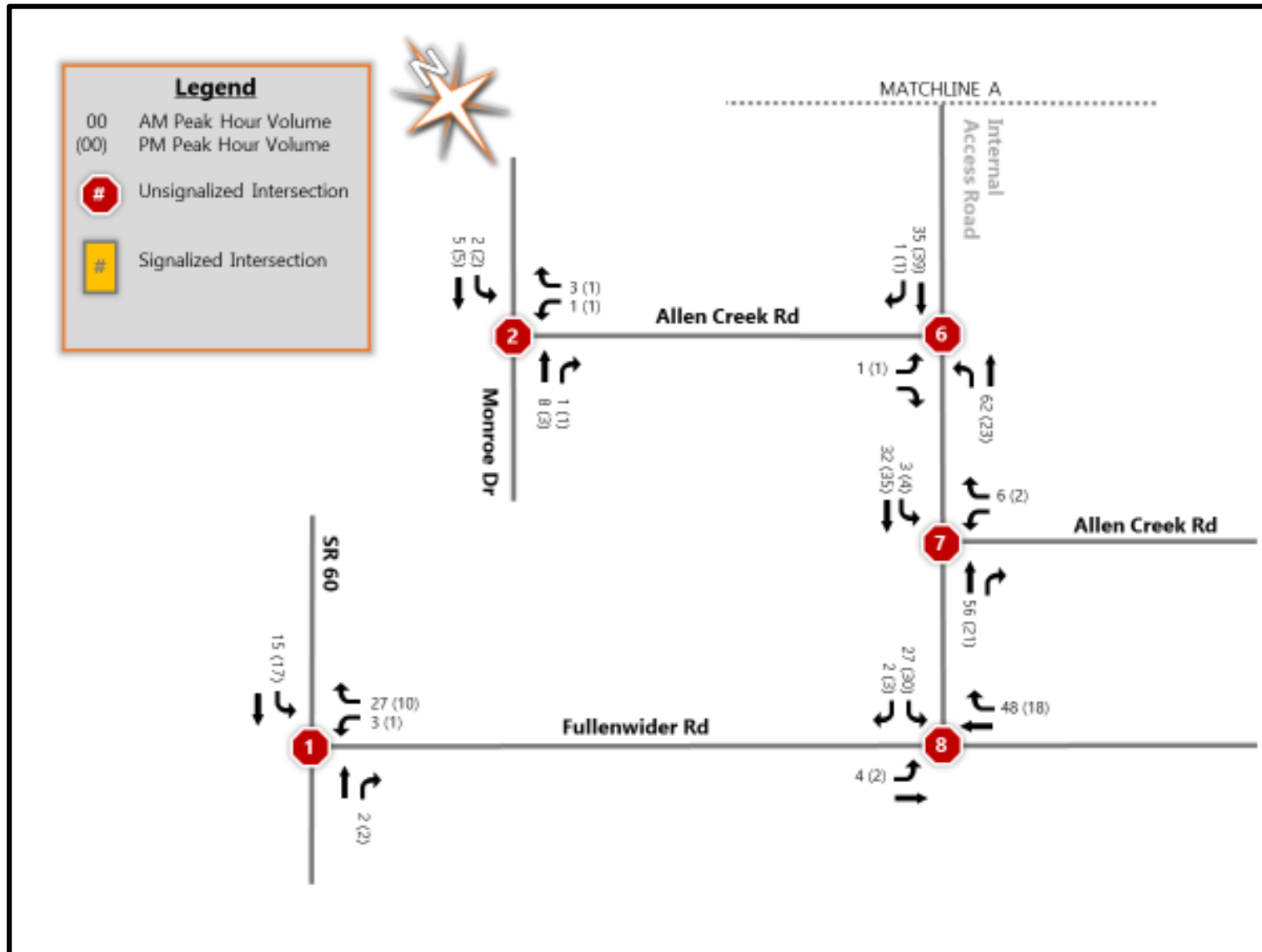


Figure 12 - New Trip Truck Distribution Volumes – II

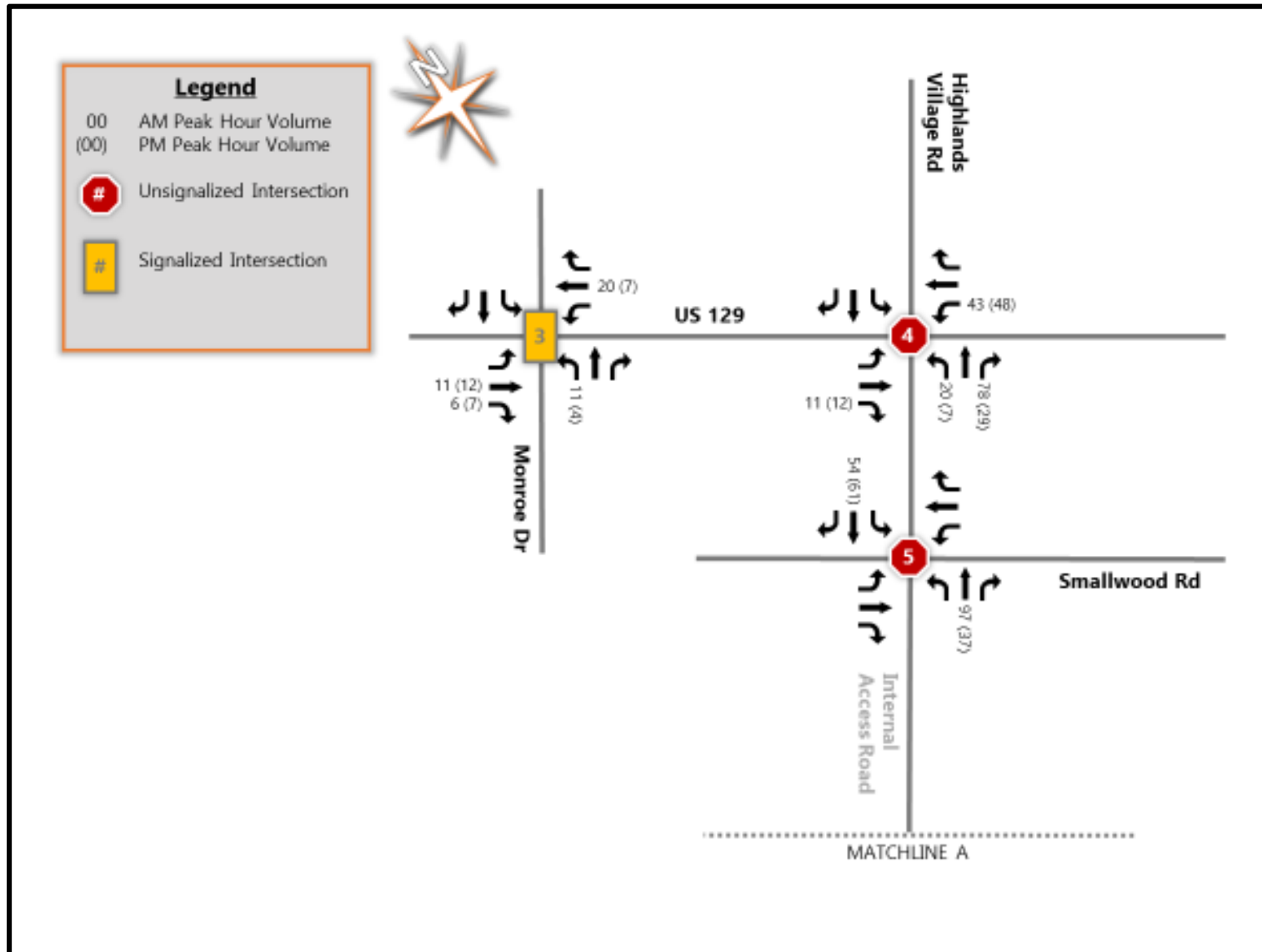


Figure 13 - 2040 With Project Peak Hour Traffic – I

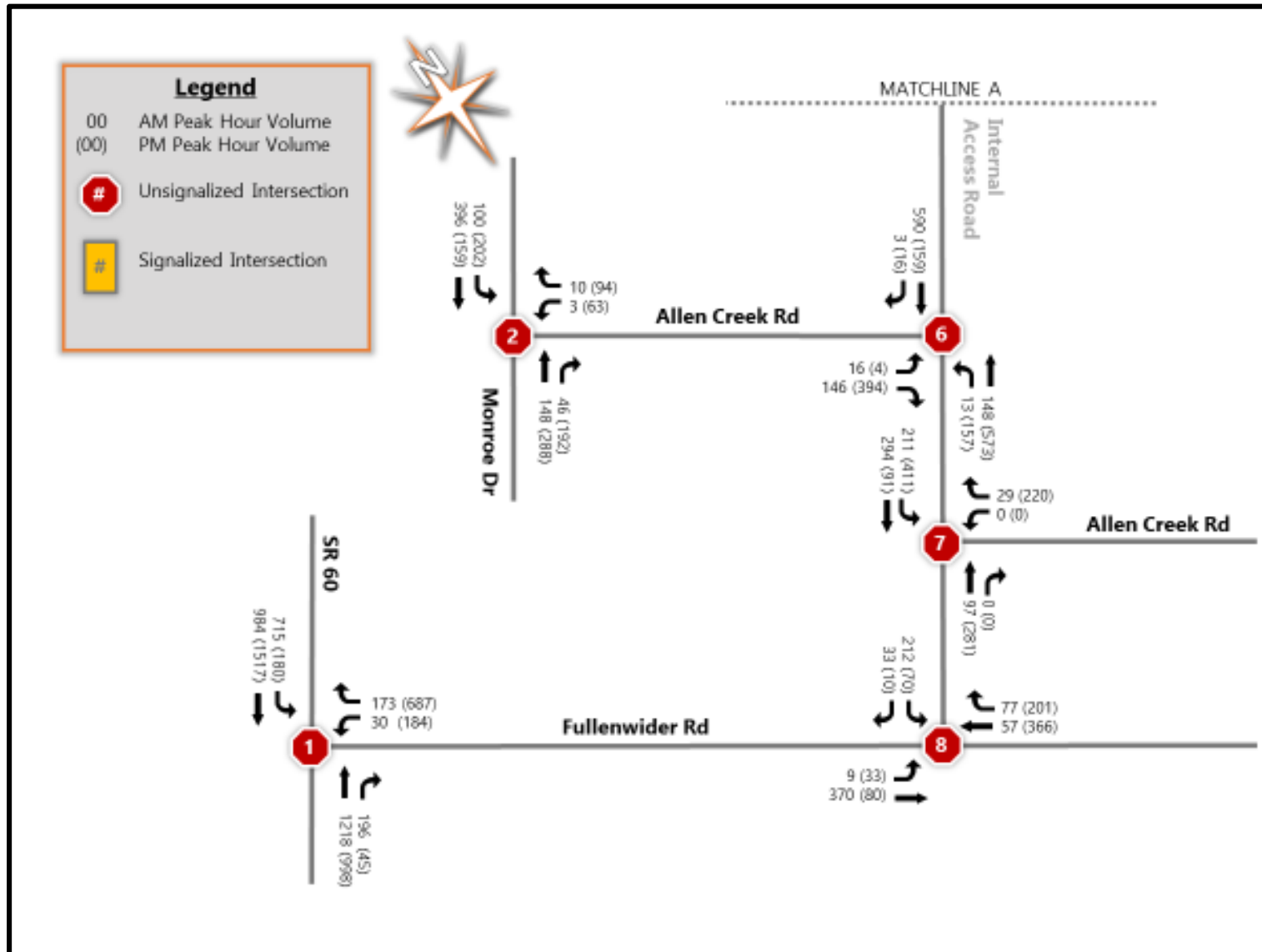
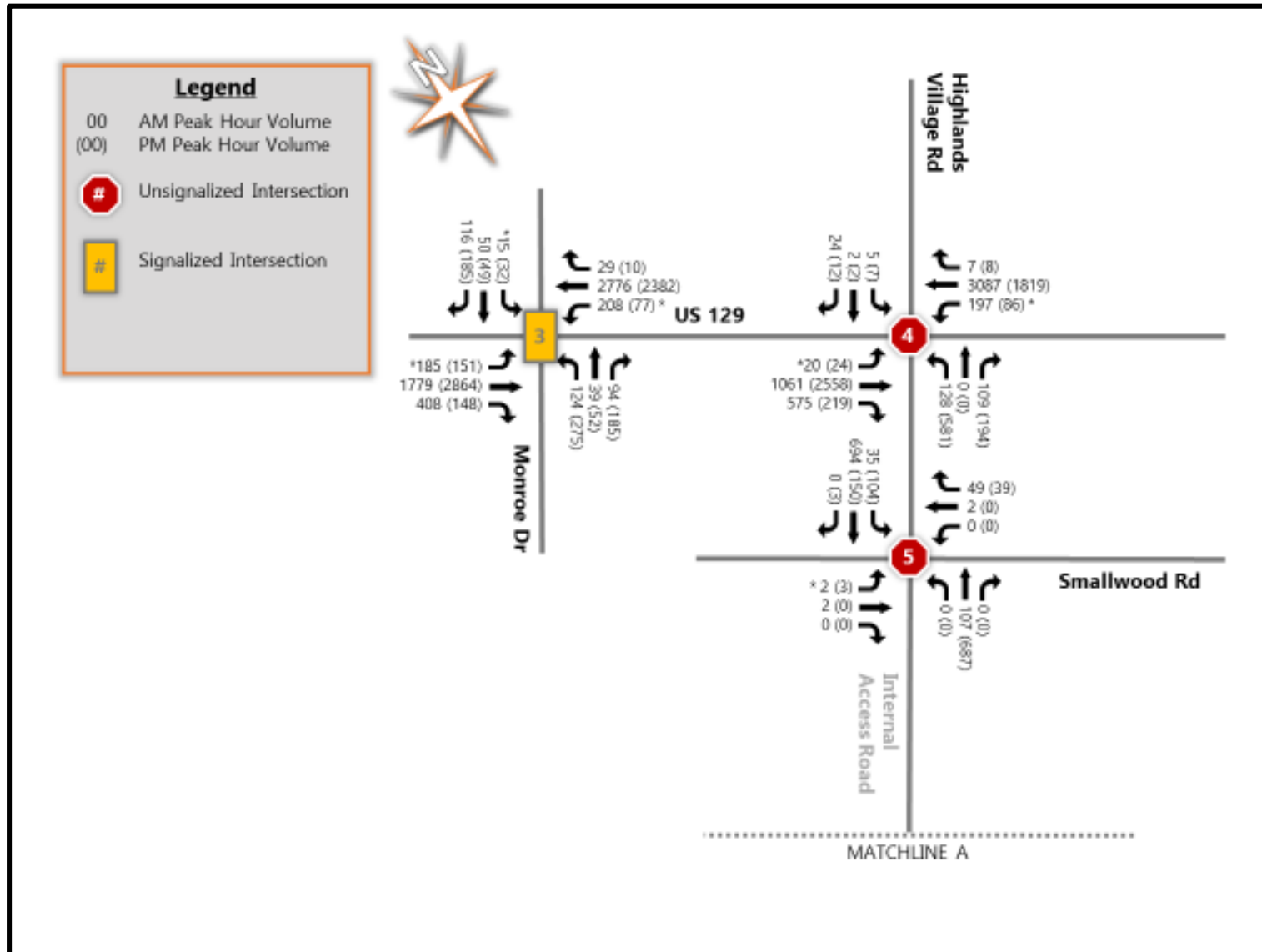


Figure 14 - 2040 With Project Peak Hour Traffic – II



4. CAPACITY ANALYSIS

4.1. Level of Service Criteria

In order to quantify the impacts of additional traffic and to determine any needed roadway and/or operational improvements, a capacity analysis was performed for the Future Background and the Future with Project peak hour conditions based on the methodology outlined in the *Highway Capacity Manual (HCM)*. Various computer programs are available which implement the *HCM* methodology. Synchro 10 software was used to evaluate the study area intersections.

HCM defines level of service (LOS) in terms of the amount of control delay, including initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The LOS categories range from A to F, with different thresholds specified according to the type of traffic control at the intersection. The LOS definitions are provided in Table 4.

Table 4 – Intersection Capacity LOS Criteria

Level of Service (LOS)	Unsignalized Control Delay per Vehicle (sec)	Signalized Control Delay per Vehicle (sec)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Rural, sparsely developed areas have a minimum LOS requirement of C based on rural residents' expectation for relatively uncongested conditions in combination with design flexibility associated with lower right of way costs. The minimum LOS for urban areas is D, reflecting the greater acceptance of delay and congestion by urban residents. Additionally, the increased density of developments makes right of way costs much higher in urban areas. The project site is located in Gainesville. The study area is in an urban location. A minimum LOS D is assumed for the study intersections.

4.2. Intersection Capacity Analysis

Intersection capacity analysis was performed for the morning and evening peak hours for the Existing Year (2019), Future Background Year (2040) and the Future with Project (2040) conditions. For Existing Year, Future Background Year, and Future with Project Year, the existing lane configurations and traffic control were used. Table 5 shows the resulting analysis during the AM peak hour and Table 6 shows the PM peak hours. Main street through and right turn movements at two-way stop-controlled intersections are assumed to not experience any delay, so those movements are not included in the capacity analysis results. *Synchro* printouts are contained in Appendix C.

Table 5 - 2040 Intersection LOS and Average Delay Results – AM Peak Hour

Int. #	Roadway	Approach	Movement	2019 Existing		2040 Future Background		2040 Future with Project		2040 Future with Project - Mitigation	
				sec/veh	LOS	sec/veh	LOS	sec/veh	LOS	sec/veh	LOS
1	SR 60	Southbound	Left	10.1	B	15.7	C	355.9	F	355.9	F
	Fullenwider Road	Westbound	Left/Right ¹	19.8	C	436.5	F	291.5	F	-	-
			Right	NA		NA		NA		141.0	F
2	Monroe Drive	Southbound	Left	7.5	A	7.8	A	8.0	A	8.0	A
	Allen Creek Road	Westbound	Left	0.0	A	0.0	A	21.4	C	20.2	C
			Right	8.8	A	9.1	A	9.8	A	9.6	A
3	Monroe Drive	Northbound	Left	84.4	F	140.7	F	236.7	F	111.2	F
			Through/Right ²	27.9	C	37.7	D	37.8	D	57.2	E
			Right ²	NA		NA		NA		14.1	B
		Southbound	Overall	51.4	D	80.4	F	134.0	F	68.4	E
			Left	57.9	E	56.9	E	56.9	E	56.0	E
			Through/Right ²	33.3	C	47.4	D	47.3	D	58.7	E
	US Route 129	Eastbound	Right ²	NA		NA		NA		18.4	B
			Overall	35.3	D	48.2	D	48.1	D	32.7	C
		Westbound	Left	17.3	B	184.4	F	185.1	F	163.9	F
			Through	9.2	A	16.0	B	24.9	C	24.9	C
			Right	1.5	A	1.7	A	3.7	A	3.7	A
		Overall	Overall	8.8	A	32.1	C	33.7	C	32.1	C
			Left	4.9	A	22.2	C	185.9	F	164.9	F
			Through	15.3	B	145.0	F	171.6	F	171.6	F
			Right	0.1	A	0.1	A	0.1	A	0.1	A
4	US Route 129	Northbound	Overall	14.4	B	134.7	F	170.9	F	169.5	F
			Left	0.0	A	0.0	A	82.7	F	82.7	F
			Through	0.0	A	0.0	A	0.0	A	0.0	A
		Southbound	Right	0.0	A	0.0	A	0.0	A	0.0	A
			Overall	0.0	A	0.0	A	4.9	A	4.9	A
			Left	42.7	E	1383.0	F	1377.1	F	1377.1	F
	Smallwood Road	Eastbound	Through	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A
			Overall	0.8	A	25.0	C	16.6	C	16.6	C
	Highlands Village Road	Westbound	Left/Through/Right ³	124.1	F	-	-	-	-	-	-
			Right	NA		NA		NA		25.2	D
			Left/Through	391.9	F	-	-	-	-	-	-
5	Internal Road	Northbound	Right	24.4	C	100.8	F	98.5	F	98.5	F
			Overall	106.1	F	-	-	-	-	-	-
	Highlands Village Road	Southbound	Left	-	-	-	-	0.0	A	0.0	A
			Left	8.4	A	8.5	A	7.7	A	7.7	A
	Smallwood Road	Eastbound	Left/Through/Right ⁴	7.2	A	7.3	A	24.1	C	24.1	C
6	Internal Road	Northbound	Left/Through/Right ⁴	-	-	-	-	9.7	A	9.7	A
			Left	-	-	-	-	9.5	A	9.5	A
	Allen Creek Road	Eastbound	Left/Right	NA		NA		17.9	C	16.6	C
7	Internal Road	Southbound	Right	NA		NA		NA		16.4	C
			Left/Through	NA		NA		7.9	A	7.9	A
	Allen Creek Road	Westbound	Left/Right	NA		NA		9.3	A	0.0	A
8	Internal Road	Southbound	Right	NA		NA		NA		9.3	A
			Left/Right ¹	NA		NA		18.8	C	17.5	C
	Fullenwider Road	Eastbound	Left	NA		NA		NA		8.8	A

Note: - Value not provided, as volume exceeds capacity

NA - Not Applicable as movement, approach, intersection, etc. may not exist

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³ In Future with Project - Mitigation condition, movement is shared through / left turn lane

⁴ In Future with Project - Mitigation condition, the movement is shared left / through / right turn lane. During other conditions, the eastbound approach consists of shared left/through and the westbound consists of shared through/right turn lane

Table 6 - 2040 Intersection LOS and Average Delay Results – PM Peak Hour

Int. #	Roadway	Approach	Movement	2019 Existing		2040 Future Background		2040 Future with Project		2040 Future with Project - Mitigation	
				sec/veh	LOS	sec/veh	LOS	sec/veh	LOS	sec/veh	LOS
1	SR 60	Southbound	Left	9.8	A	12.8	B	15.4	C	15.4	C
	Fullenwider Road	Westbound	Left/Right ¹ Right	28.8 NA	D	57.4 NA	F	1366.6 NA	F	>1400 942.3	F
2	Monroe Drive	Southbound	Left	8.2	A	9.3	A	10.1	B	10.1	B
	Allen Creek Road	Westbound	Left Right	14.9 9.6	B A	31.7 11.0	D B	61.0 12.8	F B	42.4 11.4	E B
3	Monroe Drive	Northbound	Left	102.6	F	382.4	F	985.2	F	203.2	F
			Through/Right ²	29.7	C	51.8	D	52.2	D	58.3	E
			Right ²	NA		NA		NA		39.8	D
		Southbound	Overall	58.0	E	179.7	F	553.8	F	129.5	F
			Left	62.2	E	72.0	E	72.4	E	58.5	E
			Through/Right ² Right ²	26.0 NA	C	46.4 NA	D	49.5 NA	D	58.1 38.1	E D
	US Route 129	Eastbound	Overall	30.3	C	49.5	D	52.3	D	44.3	D
			Left	6.7	A	73.0	E	73.0	E	73.0	E
			Through Right	16.2 2.2	B A	157.6 4.9	F A	183.8 6.3	F A	183.8 6.3	F A
		Westbound	Overall	15.2	B	147.6	F	170.2	F	170.2	F
			Left	9.6	A	61.1	E	61.1	E	61.1	E
			Through Right Overall	12.6 0.0 12.4	B A B	34.3 0.0 35.2	C A D	114.0 0.0 111.9	F A F	114.0 0.0 111.9	F A F
4	US Route 129	Northbound	Left	19.6	C	79.9	F	69.5	F	69.5	F
			Through	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A
		Southbound	Overall	0.1	A	0.2	A	3.1	A	3.1	A
			Left	11.4	B	20.0	C	20.2	C	20.2	C
			Through Right Overall	0.0 0.0 0.1	A A A	0.0 0.0 0.2	A A A	0.0 0.0 0.2	A A A	0.0 0.0 0.2	A A A
	Smallwood Road	Eastbound	Left/Through/Right ³ Right	380.0 NA	F	- NA	-	- NA	F	332.4 -	F
	Highlands Village Road	Westbound	Left/Through	138.0	F	4728.1	F	-	-	-	-
			Right	12.6	B	19.0	C	19.0	C	19.0	C
			Overall	64.9	F	2037.2	F	-	-	-	-
5	Internal Road	Northbound	Left	9.0	A	9.4	A	0.0	A	0.0	A
	Highlands Village Road	Southbound	Left	-	-	-	-	10.1	B	10.1	B
	Smallwood Road	Eastbound	Left/Through/Right ⁴	0.0	A	0.0	A	36.4	E	36.4	E
		Westbound	Left/Through/Right ⁴	-	-	-	-	15.7	C	15.7	C
6	Internal Road	Northbound	Left	NA	NA	NA	NA	8.0	A	8.0	A
	Allen Creek Road	Eastbound	Left/Right Right					14.1 NA	B	28.0 13.2	D B
7	Internal Road	Southbound	Left/Through	NA	NA	NA	NA	9.4	A	9.4	A
	Allen Creek Road	Westbound	Left/Right Right					12.2 B		12.2	B
8	Internal Road	Southbound	Left/Right ¹	NA	NA	NA	NA	17.9	C	15.7	C
	Fullenwider Road	Eastbound	Left					9.0	A	9.0	A

Note: - Value not provided, as volume exceeds capacity

NA - Not Applicable as movement, approach, intersection, etc. may not exist

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³ In Future with Project - Mitigation condition, movement is shared through / left turn lane

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Existing Conditions (2019)

The following movements are currently operating inadequately and are expected to continue to operate inadequately for Future Background Year 2040 conditions:

US 129 & Monroe Drive

- Northbound left on Monroe Drive during both peak hours
- Southbound left on Monroe Drive during both peak hours

US 129 & Highlands Village Road / Smallwood Road

- Southbound left on US 129 during AM peak hour
- Eastbound left/through/right on Smallwood Road during both peak hours
- Westbound left/through on Highlands Village Road during both peak hours

Future Background Year 2040 conditions

In addition, while the following movements currently operate adequately in Existing Year 2019, these movements are expected to operate inadequately for Future Background Year 2040 conditions:

SR 60 & Fullenwider Road

- Westbound left/right on Fullenwider Road during both peak hours

US 129 & Monroe Drive

- Eastbound left on US 129 during both peak hours
- Eastbound through on US 129 during PM peak hour
- Westbound left on US 129 during the PM peak hour
- Westbound through on US 129 during AM peak hour

US 129 & Highlands Village Road / Smallwood Road

- Northbound left on US 129 during PM peak hour
- Westbound right on Highlands Village Road during the AM peak hour

Future with Project 2040 conditions

In addition to the above movements that are expected to operate inadequately for Future Background conditions, the following movements are expected to operate inadequately for Future with Project conditions with the anticipated project traffic superimposed:

SR 60 & Fullenwider Road

- Southbound left on SR 60 during AM peak hour

Monroe Drive & Allen Creek Road

- Westbound left on Allen Creek Road during PM peak hour

US 129 & Monroe Drive

- Westbound left on US 129 during the AM peak hour
- Westbound through on US 129 during the PM peak hour

US 129& Highlands Village Road / Smallwood Road

- Northbound left on US 129 during the AM peak hour

While the Smallwood Road eastbound left/through movement at the Highlands Village Road / Internal Access shows LOS E during the PM peak hour, it is noted that the Smallwood Road eastbound left turn movement volume during the PM peak hour is 3 vehicles. Given the LOS volume and the fact that the delay for this movement during the PM peak hour is just 1.4 seconds of delay above the LOS D threshold, no improvements are necessary or recommended to accommodate this movement.

4.3. Need for Auxiliary Turn Lanes

It is apparent that the added project traffic will add delay at existing intersections. To gauge the impact of additional turn lanes at the intersections expected to experience inadequate LOS when the development is fully open in Future with Project Year, further analysis was performed with additional turn lanes in locations to and from the development that were expected to potentially mitigate the heavy delays.

The GDOT manual *Regulations for Driveway and Encroachment Control*, which stipulates guidelines for determining when auxiliary lanes are required, was used along with the capacity analysis results to assess the locations where left and/or right turn lanes should be provided. Table 7 shows the timing for when turn lanes should be added as well as the overall lanes proposed for the intersections created by the internal access road.

Table 7 – Geometric Improvement and Estimated Timing

Int. #	Intersection	2019 Existing	2040 Future Background	2040 Future with Project
1	SR 60 & Fullenwider Road	NA	Southbound Left	Northbound Right Westbound Right
2	Monroe Drive & Allen Creek Road	NA	Northbound Right Southbound Left	NA
3	US 129 & Monroe Drive	Northbound Right Southbound Right	NA	NA
4	US Route 129 & Highlands Village Road / Smallwood Road	NA	NA	Eastbound Right
5	Highlands Village Road / Internal Road & Smallwood Road ^A	NA	NA	Shared Eastbound Right Shared Westbound Left Shared Northbound Left / Through / Right Shared Southbound Right
6	Internal Road & Allen Creek Road ^A	NA	NA	Eastbound Left Eastbound Right Shared Northbound Left/Through Shared Southbound Through/Right
7	Internal Road & Allen Creek Road ^A	NA	NA	Westbound Left Westbound Right Shared Northbound Through/Right Southbound Left Southbound Through
8	Internal Road & Fullenwider Road ^A	NA	NA	Shared Eastbound Left/Through Westbound Through Westbound Right Southbound Left Southbound Right

Note: All movements are exclusive lanes unless otherwise noted

^A Added movements to develop intersection

Despite the additional turn lanes at these locations, inadequate LOS prevailed for several movements at the following locations:

- SR 60 & Fullenwider Road
- US 129 & Monroe Drive
- US 129 & Highlands Village Road / Smallwood Road
- Highlands Village Road & Internal Access / Smallwood Road

The study intersections remain with the existing operational control (e.g. unsignalized for 7 of the intersections and signalized for the 1 intersection) in the Future with Project Year 2040 scenario. The

primary reason for this is because the GDOT Intersection Control Evaluation (ICE) process performed during the design phase will include a full traffic signal warrant analysis and therefore is not within the scope of this study.

GDOT requires a minimum of 1320 feet of space (0.25 miles) between traffic signals on a state route. The US 129 & Highlands Village Road/Smallwood Road intersection appears to be more than 1.0 mile from the signalized intersection of US 129 & Old County Dump Road / Athens Street (to the west) and US 129 & SR 323 (Gillsville Highway) (to the east). The SR60 & Fullenwider Road is approximately 0.7 miles from the signalized intersection of SR 60 & Calvary Church Road/Old Chandler Road to the north and is more than 1.0 mile to the signalized intersection to the south. Therefore, a traffic signal at these intersections could be feasible and still meet the spacing requirements. The spacing criteria will more completely be evaluated as part of the GDOT ICE process.

4.4. Queue Lengths

The 95th percentile queue is the maximum distance to the back of the queue (BOQ) that would be expected 95 percent of the time. Most of the time, the queue will be shorter, and the chances of a longer queue occurring are very small; therefore, the 95th percentile BOQ distance is typically used to determine a reasonable storage length for intersection turn lanes. The 95th percentile queue lengths, which are expressed in feet, are shown in Table 8 for each intersection during both peak hours for the Existing, the Background Condition and the With Project Conditions. All turn bays must exceed the queue lengths or meet minimum deceleration criteria as stipulated by GDOT, whichever is longer. See GDOT standards for bay taper and deceleration lengths.

Table 8 – Queue Lengths

Int. #	Roadway	Approach	Movement	AM PEAK HOUR				PM PEAK HOUR			
				2019 Existing	2040 Future Background	2040 Future with Project	2040 Future with Project - Mitigation	2019 Existing	2040 Future Background	2040 Future with Project	2040 Future with Project - Mitigation
1	SR 60	Southbound	Left	10	38	1150	1150	3	8	43	43
	Fullenwider Road	Westbound	Left/Right ¹ Right	13 NA	168 NA	353 NA	- 225	53 NA	145 NA	2355 NA	688 1698
2	Monroe Drive	Southbound	Left	3	5	8	8	10	23	28	28
	Allen Creek Road	Westbound	Left Right	0 0	0 0	3 0	0 0	8 5	33 10	73 20	55 15
3	Monroe Drive	Northbound	Left	104	222	304	248	162	397	729	583
			Through/Right ²	73	140	140	74	126	270	271	95
			Right ²	NA	NA	NA	55	NA	NA	NA	194
		Southbound	Left	26	38	38	37	47	72	72	66
			Through/Right ²	97	188	188	91	113	252	262	90
			Right ²	NA	NA	NA	79	NA	NA	NA	189
	US Route 129	Eastbound	Left	62	355	355	355	41	224	224	224
			Through	206	420	818	818	714	2136	2286	2286
			Right	27	33	82	82	19	44	63	63
		Westbound	Left	47	102	381	381	24	117	117	117
			Through	641	1916	2041	2041	379	1059	1794	1794
			Right	0	0	0	0	0	0	0	0
4	US Route 129	Northbound	Left	0	0	203	203	0	8	88	88
			Through	-	-	-	-	-	-	-	-
			Right	-	-	-	-	-	-	-	-
		Southbound	Left	10	98	98	98	3	8	8	8
			Through	-	-	-	-	-	-	-	-
			Right	-	-	-	-	-	-	-	-
	Smallwood Road	Eastbound	Left/Through/Right ³	38	-	-	-	90	-	-	-
	Right	NA	NA	NA	50	NA	NA	NA	350		
Highlands Village Road	Westbound	Left/Through	23	-	-	-	13	60	-	-	
Right	8	43	43	43	0	3	3	3			
5	Internal Road	Northbound	Left	NA	NA	0	0	NA	NA	0	0
	Highlands Village Road	Southbound	Left	0	0	3	3	0	0	13	13
	Smallwood Road	Eastbound	Left/Through/Right ⁴	0	0	3	3	0	0	3	3
		Westbound	Left/Through/Right ⁴	0	0	5	5	0	0	10	10
6	Internal Road	Northbound	Left	NA	NA	3	3	NA	NA	10	10
	Allen Creek Road	Eastbound	Left/Right			45	5			78	3
			Right			0	38			0	70
7	Internal Road	Southbound	Left/Through	NA	NA	13	13	NA	NA	40	40
	Allen Creek Road	Westbound	Left/Right			3	0			35	0
			Right			0	3			0	35
8	Internal Road	Southbound	Left/Right ¹	NA	NA	73	58	NA	NA	23	18
	Right	0	3			0	3				
	Fullenwider Road	Eastbound	Left			0	0			3	3

Note: - Value not provided, as volume exceeds capacity

NA - Not Applicable as movement, approach, intersection, etc. may not exist

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5. CONCLUSIONS

This traffic study was conducted to evaluate the traffic impact of a proposed 5 million square foot industrial park development located in Gainesville, Georgia. The proposed site is on approximately 956.40 acres of land on 20 parcels located north of Chandler Road (State Route 60), west of Monroe Drive, south of Athens Highway (US Route 129 & State Route 11) and straddles both Fullenwider Road and Allen Creek Road. The proposed development is anticipated to be fully open in 2040. The project site is currently vacant land.

The existing intersections that could be impacted by this project include:

1. SR 60 & Fullenwider Road
2. Monroe Drive & Allen Creek Road
3. US 129 (SR 11) & Monroe Drive
4. US 129 (SR 11) & Highlands Village Road / Smallwood Road
5. Highlands Village Road & Smallwood Road

An internal roadway is proposed to intersect at the northern end at the existing intersection of Highlands Village Road & Smallwood Road, continue south and intersect with Allen Creek Road, continuing further south to intersect with Fullenwider Road. As such, the following proposed intersection locations were included for evaluation in this study:

6. Allen Creek Road & Internal Access
7. Internal Access & Street just south of Allen Creek Road
8. Fullenwider & Internal Access

The proposed development could generate a total of 2,000 new trips during the weekday morning peak hour and 2,000 new trips during the weekday evening peak hour. The site generated trips were distributed to the surrounding roadway network based on the location of each access drive, the potential regional distribution, and discussions with the applicant and the Gainesville-Hall Metropolitan Planning Organization (MPO).

Intersection capacity analysis was performed for the morning and evening peak hours for the Existing Year (2019), Future Background Year (2040) and the Future with Project (2040) conditions. For Existing Year, Future Background Year, and Future with Project Year, the existing lane configurations and traffic control were used. The analyses showed that several movements at the study area intersections are currently or are anticipated to operate at less than desirable LOS (LOS E or LOS F) Table 9 shows when these movements experience the LOS E/F operations.

While the Smallwood Road eastbound left/through movement at the Highlands Village Road / Internal Access shows LOS E during the PM peak hour, it is noted that the Smallwood Road eastbound left turn movement volume during the PM peak hour is 3 vehicles. Given the LOS volume and the fact that the delay for this movement during the PM peak hour is just 1.4 seconds of delay above the LOS D threshold, no improvements are necessary or recommended to accommodate this movement.

Table 9 –Condition during which LOS E/F operations of movements begin

Int. #	Intersection	Movement	2019 Existing		2040 Future Background		2040 Future with Project		2040 Future with Project - Mitigation	
			AM	PM	AM	PM	AM	PM	AM	PM
1	SR 60 & Fullenwider Road	Westbound L/R			√	√			√	
		Westbound R								
		Southbound L					√			
2	Monroe Drive & Allen Creek Road	Westbound L						√		
3	US 129 & Monroe Drive	Eastbound L			√	√				
		Eastbound T				√				
		Westbound L				√	√			
		Westbound T			√			√		
		Northbound L	√	√						
		Northbound T							√	√
		Southbound L	√	√						
		Southbound T							√	√
4	US Route 129 & Highlands Village Road / Smallwood Road	Southbound L	√	√					√	
		Northbound L				√	√			
		Eastbound L/T/R	√	√						
		Eastbound R								√
		Westbound L/T	√	√						
		Westbound R			√					

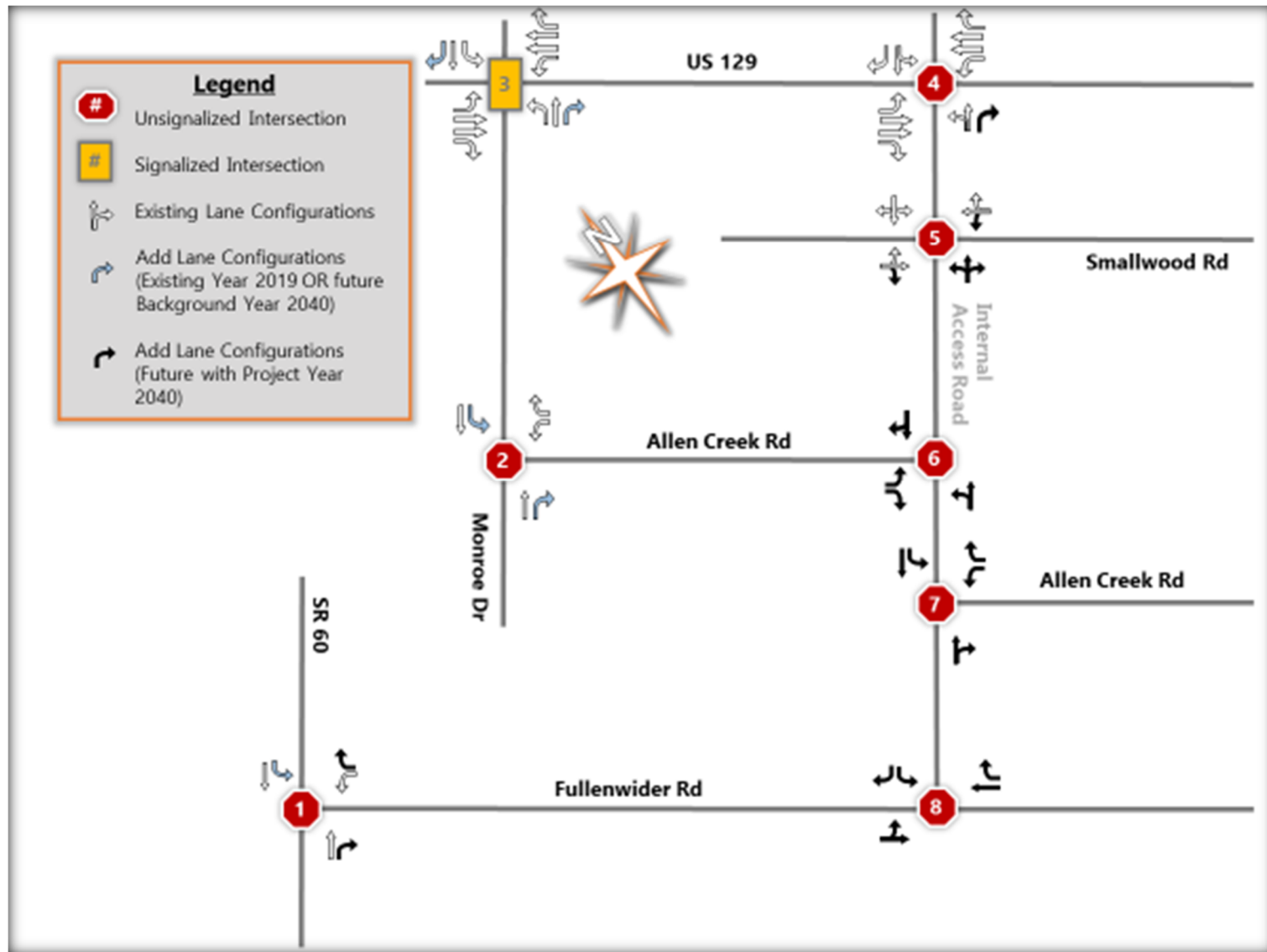
It is apparent that the several of the movements to the existing study area intersections are currently experiencing less than desirable LOS and are expected to continue in the 2040 Future Background Condition. It is also apparent that added project traffic will add delay at existing intersections and proposed. To gauge the impact of additional turn lanes at the intersections expected to experience inadequate LOS when the development is fully open in Future with Project Year 2040, further analysis was performed with additional turn lanes in locations to and from the development that were expected to potentially mitigate the heavy delays. Despite the additional turn lanes at these locations, inadequate LOS prevailed for several of the movements at the study intersections.

The existing unsignalized study intersections remained unsignalized in the Future with Project Year 2040 scenario because the GDOT Intersection Control Evaluation (ICE) process performed during the design phase will include a traffic signal warrant analysis and therefore is not within the scope of this study.

A GDOT ICE procedure will be required for the intersections SR 60, US 129 and Monroe Avenue intersections that are either new or involve proposed changes. A traffic signal warrant study is required as part of the ICE Analysis. Once the control at the intersection is determined, the lanes needed to provide adequate LOS can be determined.

Figure 15 shows the proposed lane configurations at each of the study intersections.

Figure 15 – Proposed Lane Configuration



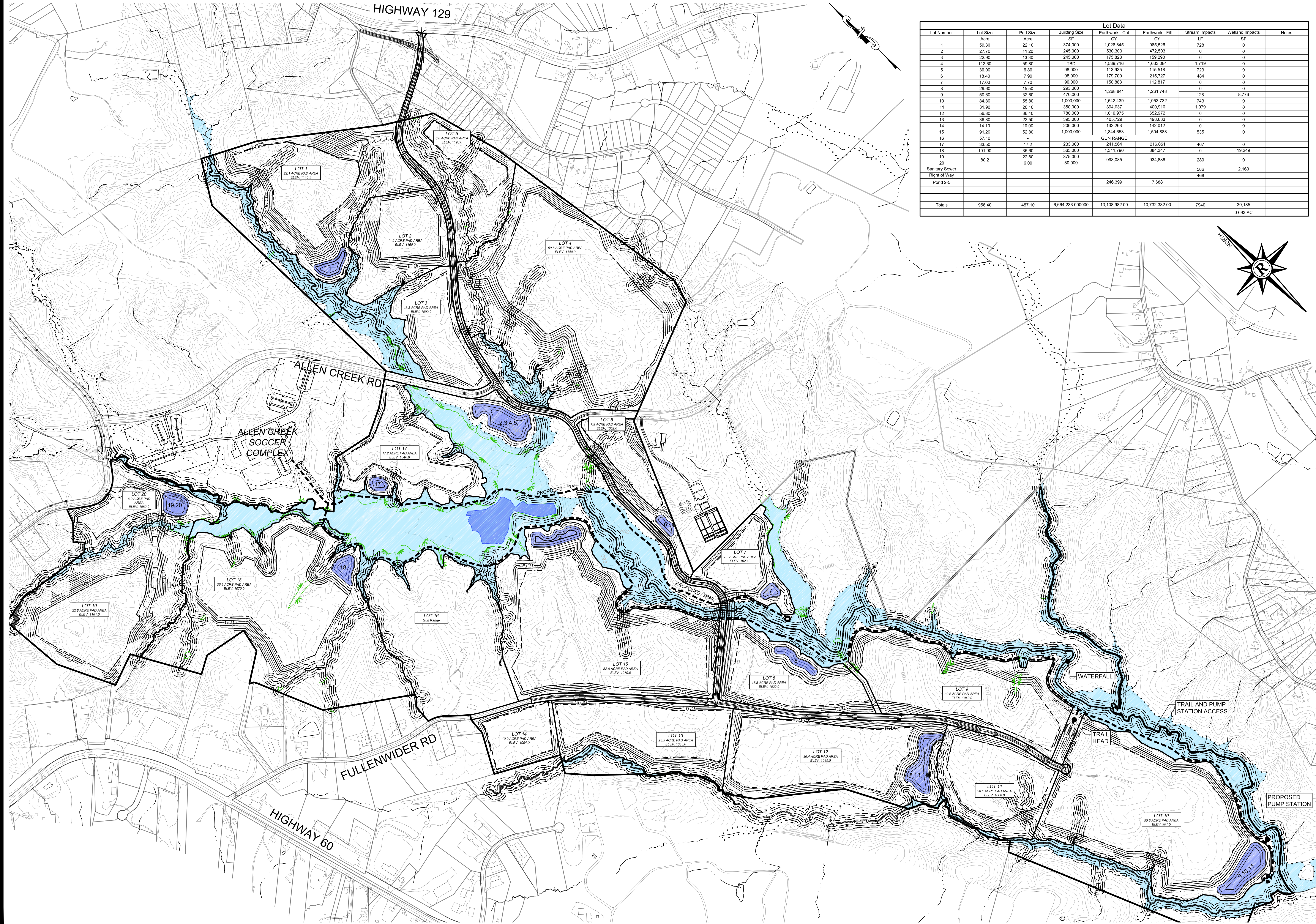
6. REFERENCES

- Trip Generation, 10th Edition, Institute of Transportation Engineers, Washington, DC, 2017.
- Trip Generation Handbook, 3rd Edition, Institute of Transportation Engineers, Washington, DC, 2014.
- Highway Capacity Manual, 6th Edition, Transportation Research Board, Washington, DC, 2016.
- Synchro, Version 10, Trafficware Ltd., Sugar Land, TX, 2014.
- Regulations for Driveway and Encroachment Control, Georgia Department of Transportation, Atlanta, GA, 2016.



Appendix A

Site Plan



Lot Data								
Lot Number	Lot Size Acres	Pad Size Acres	Building Size SF	Earthwork - Cut CY	Earthwork - Fill CY	Stream Impacts LF	Wetland Impacts SF	Notes
1	59.30	22.10	374,000	1,026,845	965,526	728	0	
2	27.70	11.20	245,000	530,300	472,503	0	0	
3	22.90	13.30	245,000	175,828	159,290	0	0	
4	112.50	59.80	780	1,539,716	1,633,084	1,719	0	
5	30.00	6.80	98,000	113,935	115,518	723	0	
6	18.40	7.90	98,000	179,700	215,727	484	0	
7	17.00	7.70	90,000	150,883	112,817	0	0	
8	29.60	15.50	283,000	1,268,841	1,261,748	0	0	
9	50.60	32.90	470,000	1,000,000	1,053,732	128	8,776	
10	84.80	65.80	1,000,000	1,542,439	1,053,732	743	0	
11	31.90	20.10	350,000	394,037	400,910	1,079	0	
12	56.80	36.40	780,000	1,010,975	652,972	0	0	
13	36.80	23.50	395,000	405,729	498,633	0	0	
14	14.10	10.00	296,000	132,263	142,012	0	0	
15	91.20	62.80	1,000,000	1,844,653	1,504,888	535	0	
16	57.10	-	-	GUN RANGE	-	-	-	
17	33.50	17.2	233,000	241,564	216,051	467	0	
18	101.90	35.60	565,000	1,311,790	384,347	0	19,249	
19	-	-	375,000	-	-	-	-	
20	80.2	6.00	80,000	993,085	934,886	280	0	
Sanitary Sewer						586	2,160	
Right of Way						468		
Pond 2-5				246,399	7,688			
Totals	956.40	457.10	6,664,233.000000	13,108,982.00	10,732,332.00	7940	30,185	0.693 AC

Rochester & Associates, Inc.
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OVERALL GRADING PLAN

FOR:

ALLEN CREEK BUSINESS PARK

LOCATED IN

LAND LOT/DISTRICT

CITY OF

HALL COUNTY, GEORGIA

NO.		DATE	DESCRIPTION	REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THIS DRAWING MUST BE APPROVED BY THE WRITER. THE WRITER'S SEAL, SHOWN HEREIN, IS A REQUIREMENT OF THE STATE OF GEORGIA. THE WRITER'S SEAL, SHOWN HEREIN, IS A REQUIREMENT OF THE STATE OF GEORGIA. THE WRITER'S SEAL, SHOWN HEREIN, IS A REQUIREMENT OF THE STATE OF GEORGIA.

GRAPHIC SCALE

250' 0' 500' 1000'

SHEET

1

OF

2

DATE: 06.20.18

SCALE: 1"=500'

JOB NO. G190760.COG

DRAWN BY: MFF



Appendix B

Traffic Counts

All Traffic Data Services, Inc

Page 1

alltrafficdata.net

Site Code: 1
Station ID: 1
SR-60 NORTH OF FULLENWIDER ROAD

Start Time	24-Oct-19 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		16	114			31	135				
12:15		16	115			7	112				
12:30		20	128			12	148				
12:45		19	96	71	453	11	130	61	525	132	978
01:00		16	110			15	154				
01:15		25	112			6	135				
01:30		27	98			7	139				
01:45		15	114	83	434	7	134	35	562	118	996
02:00		17	127			7	164				
02:15		16	114			10	142				
02:30		20	151			16	137				
02:45		29	145	82	537	13	142	46	585	128	1122
03:00		20	139			11	170				
03:15		17	140			17	143				
03:30		21	155			14	181				
03:45		15	192	73	626	11	167	53	661	126	1287
04:00		11	183			18	163				
04:15		28	164			22	156				
04:30		31	173			44	172				
04:45		34	159	104	679	47	252	131	743	235	1422
05:00		33	180			53	190				
05:15		59	166			75	158				
05:30		83	137			81	228				
05:45		106	165	281	648	83	172	292	748	573	1396
06:00		90	139			73	171				
06:15		128	138			108	145				
06:30		157	106			174	151				
06:45		176	87	551	470	208	101	563	568	1114	1038
07:00		177	80			169	138				
07:15		179	73			159	109				
07:30		223	62			137	103				
07:45		169	55	748	270	106	85	571	435	1319	705
08:00		141	49			130	103				
08:15		162	35			106	98				
08:30		132	46			100	73				
08:45		126	42	561	172	98	61	434	335	995	507
09:00		132	29			100	66				
09:15		153	26			88	71				
09:30		95	20			101	73				
09:45		111	27	491	102	88	47	377	257	868	359
10:00		94	30			80	54				
10:15		103	18			83	43				
10:30		119	25			98	30				
10:45		93	19	409	92	95	32	356	159	765	251
11:00		132	24			88	32				
11:15		95	33			96	33				
11:30		131	25			116	30				
11:45		123	11	481	93	106	15	406	110	887	203
Total		3935	4576			3325	5688			7260	10264
Percent		46.2%	53.8%			36.9%	63.1%			41.4%	58.6%
Grand Total		3935	4576			3325	5688			7260	10264
Percent		46.2%	53.8%			36.9%	63.1%			41.4%	58.6%
ADT		ADT 17,524		AADT 17,524							

All Traffic Data Services, Inc

Page 1

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Site Code: 2

Station ID: 2

MONROE DRIVE WEST OF ALLEN CREEK ROAD

Start Time	24-Oct-19 Thu	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	26			4	31				
12:15		1	31			0	24				
12:30		1	20			1	23				
12:45		3	23	12	100	1	24	6	102	18	202
01:00		2	27			3	18				
01:15		3	18			1	21				
01:30		2	21			2	27				
01:45		1	18	8	84	0	24	6	90	14	174
02:00		0	28			0	22				
02:15		3	26			3	21				
02:30		0	40			2	23				
02:45		1	32	4	126	1	19	6	85	10	211
03:00		5	28			2	27				
03:15		0	25			2	23				
03:30		3	36			4	25				
03:45		2	25	10	114	2	32	10	107	20	221
04:00		2	54			2	28				
04:15		1	39			1	34				
04:30		1	52			6	30				
04:45		3	58	7	203	6	20	15	112	22	315
05:00		1	64			6	26				
05:15		3	37			5	37				
05:30		4	64			15	26				
05:45		7	65	15	230	20	35	46	124	61	354
06:00		9	39			16	40				
06:15		16	30			27	36				
06:30		15	32			31	15				
06:45		16	34	56	135	47	17	121	108	177	243
07:00		14	44			35	30				
07:15		21	26			27	28				
07:30		36	14			44	51				
07:45		19	14	90	98	65	16	171	125	261	223
08:00		24	10			47	15				
08:15		30	7			17	14				
08:30		16	9			18	16				
08:45		26	12	96	38	18	40	100	85	196	123
09:00		18	9			23	25				
09:15		19	10			13	9				
09:30		17	5			19	16				
09:45		15	4	69	28	15	4	70	54	139	82
10:00		19	2			12	6				
10:15		16	4			19	3				
10:30		18	2			16	6				
10:45		15	4	68	12	14	3	61	18	129	30
11:00		10	3			20	5				
11:15		21	2			18	4				
11:30		23	7			21	12				
11:45		28	1	82	13	30	3	89	24	171	37
Total		517	1181			701	1034			1218	2215
Percent		30.4%	69.6%			40.4%	59.6%			35.5%	64.5%
Grand Total		517	1181			701	1034			1218	2215
Percent		30.4%	69.6%			40.4%	59.6%			35.5%	64.5%

ADT ADT 3,433 AADT 3,433

All Traffic Data Services, Inc

Page 1

alltrafficdata.net

Site Code: 3
Station ID: 3
HWY-129 NORTH OF GAINES MILL ROAD

Start Time	24-Oct-19 Thu	NB		Hour Totals		Direction 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		38	227			59	246				
12:15		44	221			49	226				
12:30		32	259			54	276				
12:45		37	260	151	967	28	232	190	980	341	1947
01:00		18	204			33	240				
01:15		26	210			32	287				
01:30		24	249			30	209				
01:45		16	222	84	885	39	246	134	982	218	1867
02:00		18	238			28	287				
02:15		20	250			45	278				
02:30		28	254			30	271				
02:45		44	275	110	1017	26	310	129	1146	239	2163
03:00		25	286			40	300				
03:15		21	314			33	361				
03:30		62	302			34	380				
03:45		48	304	156	1206	37	413	144	1454	300	2660
04:00		34	316			38	399				
04:15		62	322			42	496				
04:30		100	317			51	464				
04:45		130	397	326	1352	46	460	177	1819	503	3171
05:00		136	344			54	490				
05:15		194	320			90	498				
05:30		273	337			104	523				
05:45		268	355	871	1356	100	456	348	1967	1219	3323
06:00		322	300			148	388				
06:15		394	312			190	406				
06:30		403	270			188	394				
06:45		454	234	1573	1116	212	302	738	1490	2311	2606
07:00		439	201			222	346				
07:15		534	226			194	369				
07:30		641	208			212	326				
07:45		548	169	2162	804	176	298	804	1339	2966	2143
08:00		396	174			194	270				
08:15		353	124			198	284				
08:30		337	142			196	232				
08:45		294	130	1380	570	158	236	746	1022	2126	1592
09:00		231	104			156	227				
09:15		245	122			185	167				
09:30		268	96			186	168				
09:45		244	103	988	425	192	143	719	705	1707	1130
10:00		211	74			198	158				
10:15		216	102			194	150				
10:30		232	94			186	128				
10:45		234	66	893	336	186	104	764	540	1657	876
11:00		162	56			186	106				
11:15		231	69			206	108				
11:30		257	61			202	86				
11:45		222	47	872	233	228	54	822	354	1694	587
Total		9566	10267			5715	13798			15281	24065
Percent		48.2%	51.8%			29.3%	70.7%			38.8%	61.2%
Grand Total		9566	10267			5715	13798			15281	24065
Percent		48.2%	51.8%			29.3%	70.7%			38.8%	61.2%
ADT		ADT 39,346		AADT 39,346							

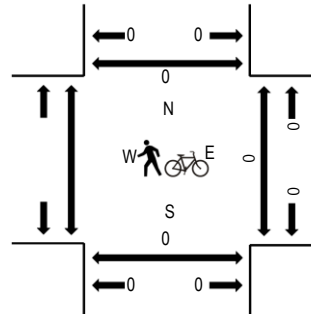
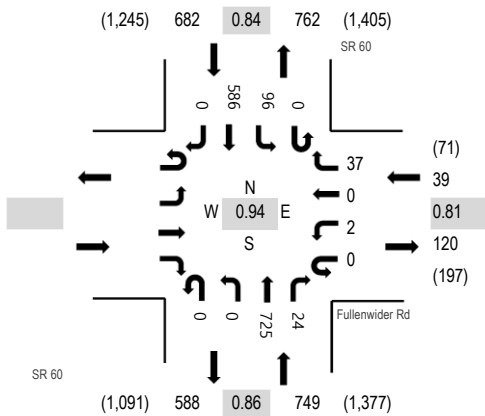


(303) 216-2439
www.alltrafficdata.net

Location: #1 SR 60 & Fullenwider Rd AM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				Fullenwider Rd Westbound				SR 60 Northbound				SR 60 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM					0	0	0	8	0	0	162	4	0	19	158	0	351	1,450	0	0	0	0
6:45 AM					0	1	0	9	0	0	161	10	0	23	189	0	393	1,470	0	0	0	0
7:00 AM					0	0	0	9	0	0	185	6	0	27	137	0	364	1,393	0	0	0	0
7:15 AM					0	0	0	12	0	0	162	6	0	25	137	0	342	1,314	0	0	0	0
7:30 AM					0	1	0	7	0	0	217	2	0	21	123	0	371	1,243	0	0	0	0
7:45 AM					0	1	0	6	0	0	163	6	0	23	117	0	316		0	0	0	0
8:00 AM					0	0	0	10	0	0	133	2	0	10	130	0	285		0	0	0	0
8:15 AM					0	1	0	6	0	0	155	3	0	10	96	0	271		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	8	0	0	7	0	0	3	19	0	37
Lights					0	1	0	22	0	0	696	24	0	91	523	0	1,357
Mediums					0	1	0	7	0	0	22	0	0	2	44	0	76
Total					0	2	0	37	0	0	725	24	0	96	586	0	1,470

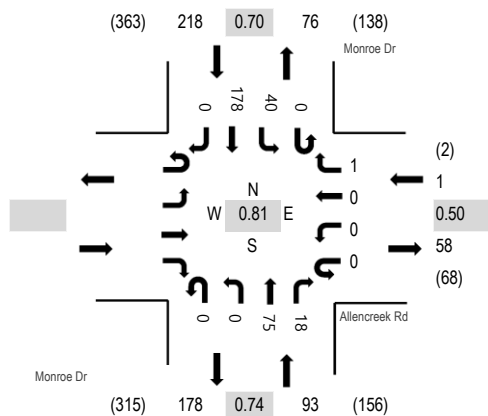
Location: #2 Monroe Dr & Allencreek Rd AM

Date and Start Time: Thursday, October 24, 2019

Peak Hour: 07:15 AM - 08:15 AM

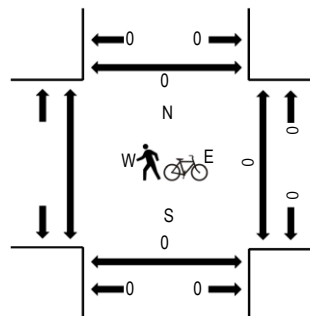
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time					Allencreek Rd				Monroe Dr				Monroe Dr				Total	Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
6:30 AM					0	0	0	0	0	0	15	0	0	0	36	0	51	222		0	0	0
6:45 AM					0	0	0	1	0	0	15	0	0	1	52	0	69	260		0	0	0
7:00 AM					0	0	0	0	0	0	12	1	0	1	29	0	43	287		0	0	0
7:15 AM					0	0	0	0	0	0	11	7	0	9	32	0	59	312		0	0	0
7:30 AM					0	0	0	1	0	0	23	9	0	15	41	0	89	299		0	0	0
7:45 AM					0	0	0	0	0	0	16	2	0	13	65	0	96		0	0	0	
8:00 AM					0	0	0	0	0	0	25	0	0	3	40	0	68		0	0	0	
8:15 AM					0	0	0	0	0	0	19	1	0	6	20	0	46		0	0	0	

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	1	0	0	0	2	0	3
Lights					0	0	0	1	0	0	66	18	0	40	166	0	291
Mediums					0	0	0	0	0	0	8	0	0	0	10	0	18
Total					0	0	0	1	0	0	75	18	0	40	178	0	312

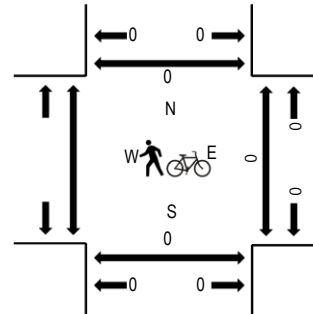
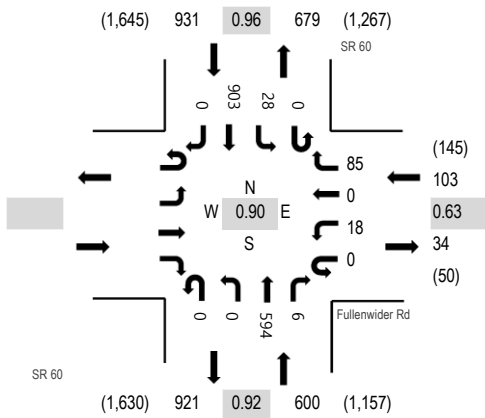


(303) 216-2439
www.alltrafficdata.net

Location: #1 SR 60 & Fullenwider Rd PM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				Fullenwider Rd Westbound				SR 60 Northbound				SR 60 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM					0	4	0	21	0	0	141	4	0	13	192	0	375	1,634	0	0	0	0
4:45 PM					0	4	0	19	0	0	130	1	0	7	242	0	403	1,632	0	0	0	0
5:00 PM					0	9	0	32	0	0	166	1	0	6	242	0	456	1,572	0	0	0	0
5:15 PM					0	1	0	13	0	0	157	0	0	2	227	0	400	1,433	0	0	0	0
5:30 PM					0	2	0	4	0	0	135	0	0	3	229	0	373	1,313	0	0	0	0
5:45 PM					0	2	0	12	0	0	156	1	0	2	170	0	343		0	0	0	0
6:00 PM					0	5	0	13	0	0	129	0	0	5	165	0	317		0	0	0	0
6:15 PM					0	1	0	3	0	0	136	0	0	5	135	0	280		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	2	0	0	12	2	0	3	11	0	30
Lights					0	18	0	78	0	0	557	4	0	18	863	0	1,538
Mediums					0	0	0	5	0	0	25	0	0	7	29	0	66
Total					0	18	0	85	0	0	594	6	0	28	903	0	1,634

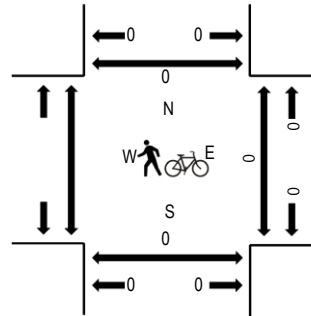
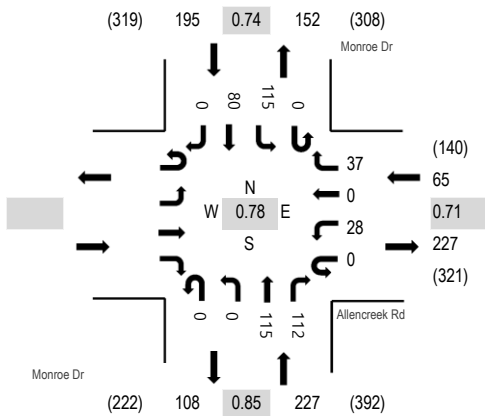


(303) 216-2439
www.alltrafficdata.net

Location: #2 Monroe Dr & Allencreek Rd PM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				Allencreek Rd Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM					0	0	0	0	0	0	38	9	0	6	22	0	75	380	0	0	0	0
4:45 PM					0	0	0	3	0	0	39	13	0	8	21	0	84	415	0	0	0	0
5:00 PM					0	4	0	9	0	0	48	19	0	16	22	0	118	487	0	0	0	0
5:15 PM					0	6	0	10	0	0	24	13	0	24	26	0	103	482	0	0	0	0
5:30 PM					0	9	0	3	0	0	23	35	0	29	11	0	110	471	0	0	0	0
5:45 PM					0	9	0	15	0	0	20	45	0	46	21	0	156		0	0	0	0
6:00 PM					0	20	0	14	0	0	20	17	0	22	20	0	113		0	0	0	0
6:15 PM					0	16	0	22	0	0	20	9	0	10	15	0	92		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	1	0	0	2	0	3
Lights					0	28	0	37	0	0	114	110	0	115	71	0	475
Mediums					0	0	0	0	0	0	1	1	0	0	7	0	9
Total					0	28	0	37	0	0	115	112	0	115	80	0	487



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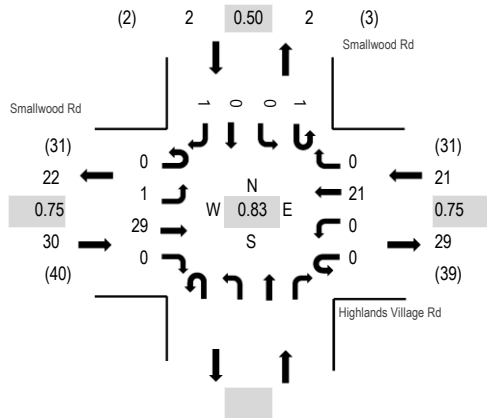
Location: #1 Smallwood Rd & Highlands Village Rd AM

Date and Start Time: Tuesday, November 19, 2019

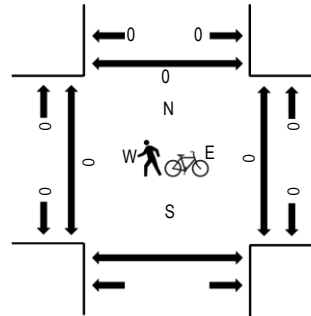
Peak Hour: 06:30 AM - 07:30 AM

Peak 15-Minutes: 06:30 AM - 06:45 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Smallwood Rd Eastbound				Highlands Village Rd Westbound				Northbound				Smallwood Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	8	0	0	0	0	7	0				1	0	0	0	16	53	0	0	0	0
6:45 AM	0	0	10	0	0	0	0	5	0				0	0	0	0	15	44	0	0	0	0
7:00 AM	0	0	6	0	0	0	0	3	0				0	0	0	0	9	34	0	0	0	0
7:15 AM	0	1	5	0	0	0	0	6	0				0	0	0	1	13	30	0	0	0	0
7:30 AM	0	0	5	0	0	0	0	2	0				0	0	0	0	7	20	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	3	1				0	0	0	0	5		0	0	0	0
8:00 AM	0	0	3	0	0	0	0	2	0				0	0	0	0	5		0	0	0	0
8:15 AM	0	0	1	0	0	0	0	2	0				0	0	0	0	3		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0					0	0	0	0	0
Lights	0	1	29	0	0	0	17	0					1	0	0	1	49
Mediums	0	0	0	0	0	0	4	0					0	0	0	0	4
Total	0	1	29	0	0	0	21	0					1	0	0	1	53



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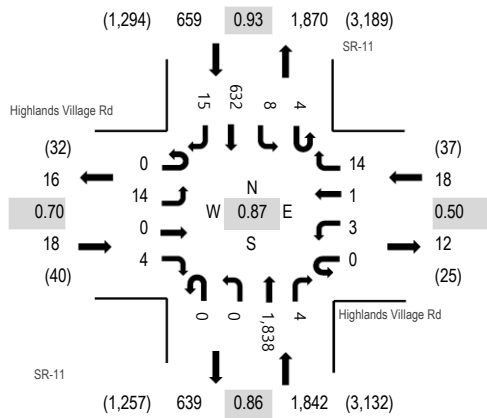
Location: #2 SR-11 & Highlands Village Rd AM

Date and Start Time: Tuesday, November 19, 2019

Peak Hour: 07:00 AM - 08:00 AM

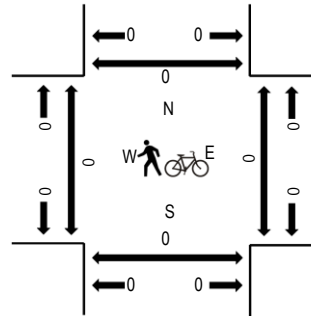
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Highlands Village Rd Eastbound				Highlands Village Rd Westbound				SR-11 Northbound				SR-11 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	8	0	0	0	0	1	11	0	2	337	5	0	1	160	4	529	2,189	0	0	0	0
6:45 AM	0	10	0	0	0	0	0	2	0	0	307	0	0	0	149	5	473	2,390	0	0	0	0
7:00 AM	0	4	0	1	0	0	0	2	0	0	386	1	1	2	149	3	549	2,537	0	0	0	0
7:15 AM	0	4	0	1	0	2	1	5	0	0	453	0	0	4	162	6	638	2,523	0	0	0	0
7:30 AM	0	5	0	2	0	0	0	5	0	0	532	3	1	1	179	2	730	2,314	0	0	0	0
7:45 AM	0	1	0	0	0	1	0	2	0	0	467	0	2	1	142	4	620		0	0	0	0
8:00 AM	0	2	0	0	0	2	0	3	0	0	352	1	0	5	168	2	535		0	0	0	0
8:15 AM	0	2	0	0	0	0	0	0	1	0	284	1	1	0	138	2	429		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	52	0	0	0	33	0	85
Lights	0	14	0	4	0	3	1	12	0	0	1,733	3	4	6	570	14	2,364
Mediums	0	0	0	0	0	0	0	2	0	0	53	1	0	2	29	1	88
Total	0	14	0	4	0	3	1	14	0	0	1,838	4	4	8	632	15	2,537



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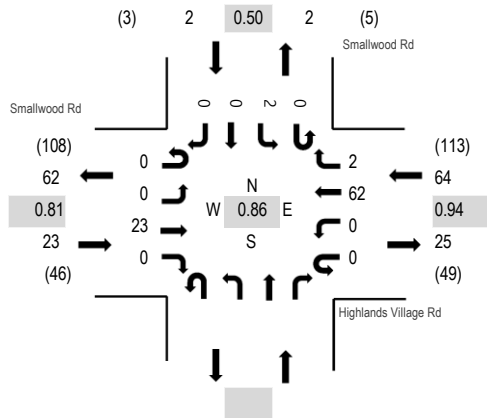
Location: #1 Smallwood Rd & Highlands Village Rd PM

Date and Start Time: Tuesday, November 19, 2019

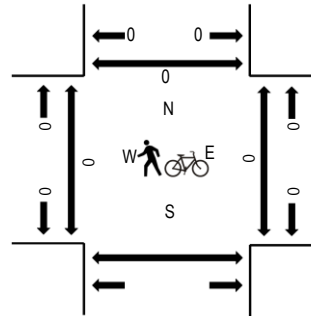
Peak Hour: 05:30 PM - 06:30 PM

Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Smallwood Rd Eastbound				Highlands Village Rd Westbound				Northbound				Smallwood Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	0	2	0	0	0	0	8	1				0	0	0	0	11	73	0	0		0
4:45 PM	0	0	9	0	0	0	0	13	1				0	0	0	0	23	88	0	0		0
5:00 PM	0	0	6	0	0	0	0	14	0				0	1	0	0	21	88	0	0		0
5:15 PM	0	0	6	0	0	0	0	11	1				0	0	0	0	18	86	0	0		0
5:30 PM	0	0	8	0	0	0	0	16	1				0	1	0	0	26	89	0	0		0
5:45 PM	0	0	7	0	0	0	0	16	0				0	0	0	0	23		0	0		0
6:00 PM	0	0	5	0	0	0	0	14	0				0	0	0	0	19		0	0		0
6:15 PM	0	0	3	0	0	0	0	16	1				0	1	0	0	21		0	0		0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0					0	0	0	0	0
Lights	0	0	22	0	0	0	62	2					0	2	0	0	88
Mediums	0	0	1	0	0	0	0	0					0	0	0	0	1
Total	0	0	23	0	0	0	62	2					0	2	0	0	89



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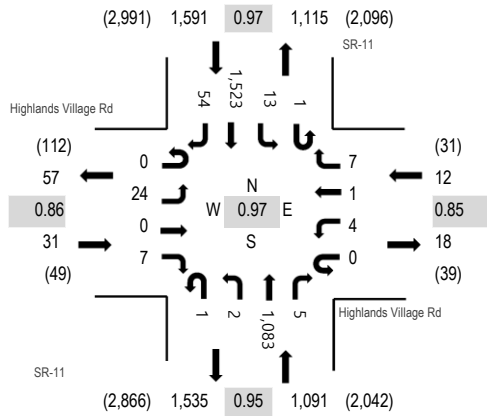
Location: #2 SR-11 & Highlands Village Rd PM

Date and Start Time: Tuesday, November 19, 2019

Peak Hour: 04:45 PM - 05:45 PM

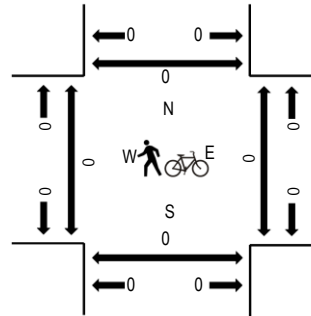
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Highlands Village Rd Eastbound				Highlands Village Rd Westbound				SR-11 Northbound				SR-11 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	2	0	0	0	1	0	6	0	0	278	1	0	6	373	9	676	2,717	0	0	0	0
4:45 PM	0	8	0	1	0	1	1	2	0	0	278	0	0	3	382	14	690	2,725	0	0	0	0
5:00 PM	0	6	0	1	0	0	0	1	0	0	279	1	0	3	395	13	699	2,664	0	0	0	0
5:15 PM	0	6	0	0	0	1	0	1	0	2	242	2	0	4	384	10	652	2,485	0	0	0	0
5:30 PM	0	4	0	5	0	2	0	3	1	0	284	2	1	3	362	17	684	2,396	0	0	0	0
5:45 PM	0	5	1	0	0	1	1	3	0	0	229	1	1	3	369	15	629		0	0	0	0
6:00 PM	0	5	0	0	0	0	0	5	0	0	210	0	0	7	279	14	520		0	1	0	0
6:15 PM	0	5	0	0	0	0	0	2	0	1	230	1	0	1	308	15	563		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	43	0	0	0	42	0	85
Lights	0	23	0	7	0	4	1	7	1	2	1,018	5	1	13	1,458	53	2,593
Mediums	0	1	0	0	0	0	0	0	0	0	22	0	0	0	23	1	47
Total	0	24	0	7	0	4	1	7	1	2	1,083	5	1	13	1,523	54	2,725



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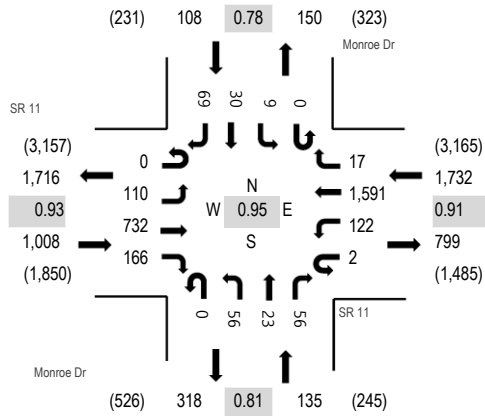
Location: #1 Monroe Dr & SR 11 AM

Date and Start Time: Wednesday, December 4, 2019

Peak Hour: 07:00 AM - 08:00 AM

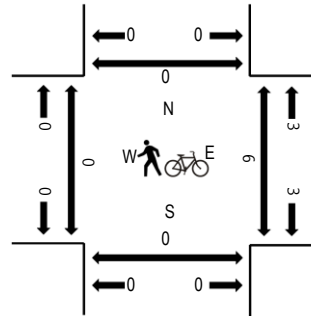
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	SR 11 Eastbound				SR 11 Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	26	153	25	0	24	351	13	0	7	3	1	0	1	6	30	640	2,781	0	0	0	0
6:45 AM	0	32	169	19	3	35	354	18	0	4	9	19	0	3	11	26	702	2,929	0	1	0	0
7:00 AM	0	24	176	32	1	28	346	8	0	14	0	13	0	5	4	10	661	2,983	0	3	0	0
7:15 AM	0	31	189	51	1	31	410	3	0	11	6	17	0	1	9	18	778	2,947	0	1	0	0
7:30 AM	0	26	170	43	0	30	441	3	0	18	13	13	0	2	9	20	788	2,710	0	0	0	0
7:45 AM	0	29	197	40	0	33	394	3	0	13	4	13	0	1	8	21	756		0	2	0	0
8:00 AM	0	38	163	30	0	22	314	3	0	17	11	6	0	1	2	18	625		0	0	0	0
8:15 AM	0	15	152	20	1	7	285	3	0	17	2	14	0	0	7	18	541		0	2	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	6	32	4	0	2	45	1	0	2	0	4	0	0	2	2	100
Lights	0	101	674	151	2	117	1,509	14	0	40	22	39	0	9	26	61	2,765
Mediums	0	3	26	11	0	3	37	2	0	14	1	13	0	0	2	6	118
Total	0	110	732	166	2	122	1,591	17	0	56	23	56	0	9	30	69	2,983



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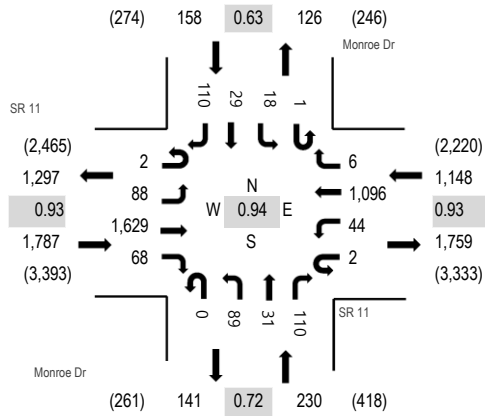
Location: #1 Monroe Dr & SR 11 PM

Date and Start Time: Wednesday, December 4, 2019

Peak Hour: 04:45 PM - 05:45 PM

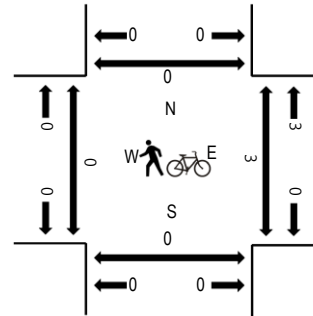
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	SR 11 Eastbound				SR 11 Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	25	366	17	0	12	247	6	0	24	11	25	0	5	8	35	781	3,270	0	3	0	0
4:45 PM	1	22	375	28	0	17	266	0	0	12	10	21	0	2	9	20	783	3,323	0	2	0	0
5:00 PM	1	14	388	15	0	10	240	2	0	40	10	33	0	12	5	56	826	3,297	0	0	0	0
5:15 PM	0	24	451	11	1	8	299	1	0	20	6	28	1	2	9	19	880	3,254	0	0	0	0
5:30 PM	0	28	415	14	1	9	291	3	0	17	5	28	0	2	6	15	834	3,035	0	1	0	0
5:45 PM	0	14	416	15	0	11	230	3	0	20	6	17	0	1	5	19	757		0	0	0	0
6:00 PM	0	16	394	8	0	13	279	3	0	19	8	20	0	2	5	16	783		0	0	0	0
6:15 PM	0	16	309	10	0	12	250	6	0	14	6	18	0	1	4	15	661		0	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	41	4	0	5	33	0	0	2	0	3	0	1	2	1	92
Lights	2	86	1,562	62	2	36	1,050	5	0	86	29	106	1	17	27	109	3,180
Mediums	0	2	26	2	0	3	13	1	0	1	2	1	0	0	0	0	51
Total	2	88	1,629	68	2	44	1,096	6	0	89	31	110	1	18	29	110	3,323



Appendix C

Synchro and HCM Reports

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	37	725	24	96	586
Future Volume (vph)	2	37	725	24	96	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.872		0.996			
Flt Protected	0.998					0.993
Satd. Flow (prot)	1169	0	1822	0	0	1713
Flt Permitted	0.998					0.993
Satd. Flow (perm)	1169	0	1822	0	0	1713
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	50%	41%	4%	0%	5%	11%
Adj. Flow (vph)	2	39	771	26	102	623
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	797	0	0	725
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 89.1%				ICU Level of Service E		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	37	725	24	96	586
Future Vol, veh/h	2	37	725	24	96	586
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	41	4	0	5	11
Mvmt Flow	2	39	771	26	102	623
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1611	784	0	0	797	0
Stage 1	784	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Critical Hdwy	6.9	6.61	-	-	4.15	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.669	-	-	2.245	-
Pot Cap-1 Maneuver	89	338	-	-	812	-
Stage 1	376	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	72	338	-	-	812	-
Mov Cap-2 Maneuver	72	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	19.8	0	1.4			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	284	812	-	
HCM Lane V/C Ratio	-	-	0.146	0.126	-	
HCM Control Delay (s)	-	-	19.8	10.1	0	
HCM Lane LOS	-	-	C	B	A	
HCM 95th %tile Q(veh)	-	-	0.5	0.4	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1	75	18	40	178
Future Volume (vph)	0	1	75	18	40	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.974			
Flt Protected						0.991
Satd. Flow (prot)	1900	1615	1687	0	0	1781
Flt Permitted						0.991
Satd. Flow (perm)	1900	1615	1687	0	0	1781
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	12%	0%	0%	7%
Adj. Flow (vph)	0	1	93	22	49	220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	115	0	0	269
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 21.6%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	75	18	40	178
Future Vol, veh/h	0	1	75	18	40	178
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	12	0	0	7
Mvmt Flow	0	1	93	22	49	220
Major/Minor						
	Minor1	Major1	Major2			
Conflicting Flow All	422	104	0	0	115	0
Stage 1	104	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	592	956	-	-	1487	-
Stage 1	925	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	570	956	-	-	1487	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Approach						
	WB	NB	SB			
HCM Control Delay, s	8.8	0	1.4			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	956	1487	-
HCM Lane V/C Ratio	-	-	-	0.001	0.033	-
HCM Control Delay (s)	-	-	0	8.8	7.5	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	0.1	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	110	732	166	2	122	1591	17	56	23	56	9	30
Future Volume (vph)	110	732	166	2	122	1591	17	56	23	56	9	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		0	135	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98								0.99	
Frt			0.850				0.850		0.893			0.896
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3343	1482	0	1737	3438	1369	1399	1385	0	1805	1516
Flt Permitted	0.096				0.338			0.650			0.703	
Satd. Flow (perm)	169	3343	1445	0	618	3438	1369	957	1385	0	1321	1516
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			175				76		59			64
Link Speed (mph)		45			45			45				45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Confl. Peds. (#/hr)			6								6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	8%	9%	0%	4%	5%	18%	29%	4%	30%	0%	13%
Adj. Flow (vph)	116	771	175	2	128	1675	18	59	24	59	9	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	771	175	0	130	1675	18	59	83	0	9	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases	1	6			5	2			4			8
Permitted Phases	6		6	5	2		2	4			8	
Detector Phase	1	6	6	5	5	2	2	4	4		8	8
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	69
Future Volume (vph)	69
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	12%
Adj. Flow (vph)	73
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4	12.4
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0		30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%		20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6		22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)	114.8	106.5	106.5		114.6	106.3	106.3	16.0	16.0		16.0	16.0
Actuated g/C Ratio	0.77	0.71	0.71		0.76	0.71	0.71	0.11	0.11		0.11	0.11
v/c Ratio	0.55	0.32	0.16		0.24	0.69	0.02	0.58	0.41		0.06	0.48
Control Delay	17.3	9.2	1.5		4.9	15.3	0.1	84.4	27.9		57.9	33.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	17.3	9.2	1.5		4.9	15.3	0.1	84.4	27.9		57.9	33.3
LOS	B	A	A		A	B	A	F	C		E	C
Approach Delay		8.8				14.4			51.4			35.3
Approach LOS		A				B			D			D
Queue Length 50th (ft)	20	137	0		23	447	0	56	22		8	37
Queue Length 95th (ft)	62	206	27		47	641	0	104	73		26	97
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180			135	
Base Capacity (vph)	231	2373	1077		556	2436	992	144	258		199	282
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	0.50	0.32	0.16		0.23	0.69	0.02	0.41	0.32		0.05	0.37

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 14.9

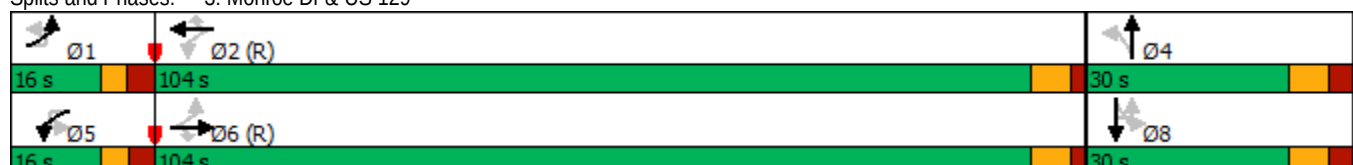
Intersection LOS: B

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Monroe Dr & US 129





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	0	4	3	1	14	0	1838	4	4	8	632
Future Volume (vph)	14	0	4	3	1	14	0	1838	4	4	8	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	0		0	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	0.95	1.00	0.95
Frt		0.968				0.850			0.850			
Flt Protected		0.963			0.964						0.950	
Satd. Flow (prot)	0	1771	0	0	1832	1417	1900	3406	1292	0	1555	3282
Flt Permitted		0.963			0.964						0.950	
Satd. Flow (perm)	0	1771	0	0	1832	1417	1900	3406	1292	0	1555	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		424			653			2889				1747
Travel Time (s)		11.6			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	14%	0%	6%	25%	0%	25%	10%
Adj. Flow (vph)	16	0	5	3	1	16	0	2113	5	5	9	726
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	4	16	0	2113	5	0	14	726
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	15
Future Volume (vph)	15
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1509
Flt Permitted	
Satd. Flow (perm)	1509
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	7%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	1.8												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	14	0	4	3	1	14	0	1838	4	4	8	632	15
Future Vol, veh/h	14	0	4	3	1	14	0	1838	4	4	8	632	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	14	0	6	25	0	25	10	7
Mvmt Flow	16	0	5	3	1	16	0	2113	5	5	9	726	17
Major/Minor	Minor2		Minor1		Major1		Major2						
Conflicting Flow All	1811	2872	363	2504	2884	1057	743	0	0	2113	2118	0	0
Stage 1	754	754	-	2113	2113	-	-	-	-	-	-	-	-
Stage 2	1057	2118	-	391	771	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	7.18	4.1	-	-	6.4	4.6	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.44	2.2	-	-	2.5	2.45	-	-
Pot Cap-1 Maneuver	50	17	640	15	16	202	873	-	-	64	185	-	-
Stage 1	372	420	-	53	93	-	-	-	-	-	-	-	-
Stage 2	244	92	-	610	413	-	-	-	-	-	-	-	-
Platoon blocked, %													
Mov Cap-1 Maneuver	39	15	640	13	14	202	873	-	-	109	109	-	-
Mov Cap-2 Maneuver	39	15	-	13	14	-	-	-	-	-	-	-	-
Stage 1	372	366	-	53	93	-	-	-	-	-	-	-	-
Stage 2	222	92	-	528	360	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB						
HCM Control Delay, s	124.1		106.1		0		0.8						
HCM LOS	F		F										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	873	-	-	49	13	202	109	-	-				
HCM Lane V/C Ratio	-	-	-	0.422	0.354	0.08	0.127	-	-				
HCM Control Delay (s)	0	-	-	124.1	391.9	24.4	42.7	-	-				
HCM Lane LOS	A	-	-	F	F	C	E	-	-				
HCM 95th %tile Q(veh)	0	-	-	1.5	0.9	0.3	0.4	-	-				



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations		↕	↕			↕	
Traffic Volume (vph)	1	29	21	0	1	0	1
Future Volume (vph)	1	29	21	0	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.932	
Flt Protected		0.999				0.976	
Satd. Flow (prot)	0	1898	1597	0	0	1728	0
Flt Permitted		0.999				0.976	
Satd. Flow (perm)	0	1898	1597	0	0	1728	0
Link Speed (mph)		25	30			25	
Link Distance (ft)		1416	424			1013	
Travel Time (s)		38.6	9.6			27.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	19%	0%	0%	0%	0%
Adj. Flow (vph)	1	35	25	0	1	0	1
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	36	25	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	R NA	Left	Right
Median Width(ft)		0	0			12	
Link Offset(ft)		0	0			0	
Crosswalk Width(ft)		16	16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	9	15	9
Sign Control		Free	Free			Stop	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	13.3%			ICU Level of Service A			
Analysis Period (min)	15						

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	1	29	21	0	1	0	1
Future Vol, veh/h	1	29	21	0	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	0	-
Grade, %	-	0	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	19	0	0	0	0
Mvmt Flow	1	35	25	0	1	0	1
Major/Minor	Major1	Major2		Minor2			
Conflicting Flow All	25	0	-	0	0	62	25
Stage 1	-	-	-	-	0	25	-
Stage 2	-	-	-	-	0	37	-
Critical Hdwy	4.1	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1603	-	-	-	0	949	1057
Stage 1	-	-	-	-	0	1003	-
Stage 2	-	-	-	-	0	991	-
Platoon blocked, %		-	-	-	-		
Mov Cap-1 Maneuver	1603	-	-	-	0	948	1057
Mov Cap-2 Maneuver	-	-	-	-	0	948	-
Stage 1	-	-	-	-	0	1002	-
Stage 2	-	-	-	-	0	991	-
Approach	EB	WB		SB			
HCM Control Delay, s	0.2	0		8.4			
HCM LOS	A						
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1603	-	-	-	1057		
HCM Lane V/C Ratio	0.001	-	-	-	0.001		
HCM Control Delay (s)	7.2	0	-	-	8.4		
HCM Lane LOS	A	A	-	-	A		
HCM 95th %tile Q(veh)	0	-	-	-	0		

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	85	594	6	28	903
Future Volume (vph)	18	85	594	6	28	903
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889		0.999			
Flt Protected	0.991					0.999
Satd. Flow (prot)	1570	0	1786	0	0	1808
Flt Permitted	0.991					0.999
Satd. Flow (perm)	1570	0	1786	0	0	1808
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	8%	6%	33%	36%	4%
Adj. Flow (vph)	20	94	660	7	31	1003
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	0	667	0	0	1034
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	83.0%			ICU Level of Service E		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	85	594	6	28	903
Future Vol, veh/h	18	85	594	6	28	903
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	8	6	33	36	4
Mvmt Flow	20	94	660	7	31	1003
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1729	664	0	0	667	0
Stage 1	664	-	-	-	-	-
Stage 2	1065	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.46	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.524	-
Pot Cap-1 Maneuver	98	450	-	-	782	-
Stage 1	516	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	89	450	-	-	782	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	28.8	0		0.3		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	263	782	-	
HCM Lane V/C Ratio	-	-	0.435	0.04	-	
HCM Control Delay (s)	-	-	28.8	9.8	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	2.1	0.1	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	37	115	112	115	80
Future Volume (vph)	28	37	115	112	115	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.933			
Flt Protected	0.950					0.971
Satd. Flow (prot)	1805	1615	1747	0	0	1765
Flt Permitted	0.950					0.971
Satd. Flow (perm)	1805	1615	1747	0	0	1765
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	1%	2%	0%	11%
Adj. Flow (vph)	36	47	147	144	147	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	47	291	0	0	250
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 36.8%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection							
Int Delay, s/veh	3.5						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	28	37	115	112	115	80	
Future Vol, veh/h	28	37	115	112	115	80	
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	65	-	-	-	-	
Veh in Median Storage, #	0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	78	78	78	78	78	78	
Heavy Vehicles, %	0	0	1	2	0	11	
Mvmt Flow	36	47	147	144	147	103	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	616	219	0	0	291	0	
Stage 1	219	-	-	-	-	-	
Stage 2	397	-	-	-	-	-	
Critical Hdwy	6.4	6.2	-	-	4.1	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.3	-	-	2.2	-	
Pot Cap-1 Maneuver	457	826	-	-	1282	-	
Stage 1	822	-	-	-	-	-	
Stage 2	683	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	401	826	-	-	1282	-	
Mov Cap-2 Maneuver	401	-	-	-	-	-	
Stage 1	722	-	-	-	-	-	
Stage 2	683	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	11.9	0		4.8			
HCM LOS	B						
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)		-	-	401	826	1282	-
HCM Lane V/C Ratio		-	-	0.09	0.057	0.115	-
HCM Control Delay (s)		-	-	14.9	9.6	8.2	0
HCM Lane LOS		-	-	B	A	A	A
HCM 95th %tile Q(veh)		-	-	0.3	0.2	0.4	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	88	1629	68	2	44	1096	6	89	31	110	1
Future Volume (vph)	2	88	1629	68	2	44	1096	6	89	31	110	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		280		0		312		300	180		0	
Storage Lanes		1		1		1		1	1		0	
Taper Length (ft)		25				25			25			
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										0.99		
Frt				0.850				0.850		0.883		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1482	0	1539	3471	1380	1752	1585	0	0
Flt Permitted		0.198				0.089			0.505			
Satd. Flow (perm)	0	369	3471	1482	0	144	3471	1380	932	1585	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70		96		
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Confl. Peds. (#/hr)											3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	9%	0%	18%	4%	17%	3%	6%	4%	0%
Adj. Flow (vph)	2	94	1733	72	2	47	1166	6	95	33	117	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	1733	72	0	49	1166	6	95	150	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2		1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100		20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	custom	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm
Protected Phases		1	6			5	2			4		
Permitted Phases	1	6		6	5	2		2	4			8
Detector Phase	1	1	6	6	5	5	2	2	4	4		8
Switch Phase												

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	18	29	110
Future Volume (vph)	18	29	110
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	135		0
Storage Lanes	1		0
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	1.00		
Frt		0.881	
Flt Protected	0.950		
Satd. Flow (prot)	1708	1637	0
Flt Permitted	0.499		
Satd. Flow (perm)	893	1637	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		103	
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Confl. Peds. (#/hr)	3		
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	6%	7%	1%
Adj. Flow (vph)	19	31	117
Shared Lane Traffic (%)			
Lane Group Flow (vph)	20	148	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	
Protected Phases		8	
Permitted Phases	8		
Detector Phase	8	8	
Switch Phase			

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0		35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%		21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6		27.6
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None
Act Effct Green (s)		121.5	114.9	114.9		118.6	111.6	111.6	21.2	21.2		
Actuated g/c Ratio		0.76	0.72	0.72		0.74	0.70	0.70	0.13	0.13		
v/c Ratio		0.28	0.70	0.07		0.30	0.48	0.01	0.77	0.51		
Control Delay		6.7	16.2	2.2		9.6	12.6	0.0	102.6	29.7		
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		6.7	16.2	2.2		9.6	12.6	0.0	102.6	29.7		
LOS		A	B	A		A	B	A	F	C		
Approach Delay			15.2				12.4			58.0		
Approach LOS			B				B			E		
Queue Length 50th (ft)		21	531	1		10	275	0	97	51		
Queue Length 95th (ft)		41	714	19		24	379	0	162	123		
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)		280				312		300	180			
Base Capacity (vph)		420	2491	1083		188	2420	983	160	352		
Starvation Cap Reductn		0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.23	0.70	0.07		0.26	0.48	0.01	0.59	0.43		

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 17.9

Intersection LOS: B

Intersection Capacity Utilization 84.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Monroe Dr & US 129





Lane Group	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	
Minimum Split (s)	12.4	12.4	
Total Split (s)	35.0	35.0	
Total Split (%)	21.9%	21.9%	
Maximum Green (s)	27.6	27.6	
Yellow Time (s)	4.4	4.4	
All-Red Time (s)	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	7.4	7.4	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	
Recall Mode	None	None	
Act Effct Green (s)	21.2	21.2	
Actuated g/C Ratio	0.13	0.13	
v/c Ratio	0.17	0.48	
Control Delay	62.2	26.0	
Queue Delay	0.0	0.0	
Total Delay	62.2	26.0	
LOS	E	C	
Approach Delay		30.3	
Approach LOS		C	
Queue Length 50th (ft)	19	42	
Queue Length 95th (ft)	47	113	
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)	135		
Base Capacity (vph)	154	367	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.13	0.40	
Intersection Summary			

Lanes, Volumes, Timings
4: US 129 & Highlands Village Rd

Existing PM
12/12/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	24	0	7	4	1	7	1	2	1083	5	1	13
Future Volume (vph)	24	0	7	4	1	7	1	2	1083	5	1	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	0		0	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt		0.970				0.850				0.850		
Flt Protected		0.962			0.962			0.950				0.950
Satd. Flow (prot)	0	1719	0	0	1828	1615	0	1805	3406	1615	0	1805
Flt Permitted		0.962			0.962			0.950				0.950
Satd. Flow (perm)	0	1719	0	0	1828	1615	0	1805	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		269			653				2889			
Travel Time (s)		7.3			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	25	0	7	4	1	7	1	2	1116	5	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	5	7	0	3	1116	5	0	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 57.2%	ICU Level of Service B											
Analysis Period (min) 15												



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	1523	54
Future Volume (vph)	1523	54
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1583
Flt Permitted		
Satd. Flow (perm)	3471	1583
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	2%
Adj. Flow (vph)	1570	56
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1570	56
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

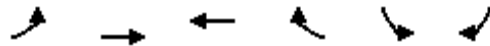
Intersection														
Int Delay, s/veh	4.7													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Vol, veh/h	24	0	7	4	1	7	1	2	1083	5	1	13	1523	54
Future Vol, veh/h	24	0	7	4	1	7	1	2	1083	5	1	13	1523	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	-	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	4	0	0	0	0	0	0	0	6	0	0	0	4	2
Mvmt Flow	25	0	7	4	1	7	1	2	1116	5	1	13	1570	56

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	2163	2725	785	1935	2776	558	1570	1626	0	0	1116	1121	0	0
Stage 1	1598	1598	-	1122	1122	-	-	-	-	-	-	-	-	-
Stage 2	565	1127	-	813	1654	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.5	6.9	7.5	6.5	6.9	6.4	4.1	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4	3.3	3.5	4	3.3	2.5	2.2	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	26	21	340	41	19	478	145	405	-	-	285	631	-	-
Stage 1	109	167	-	223	284	-	-	-	-	-	-	-	-	-
Stage 2	472	282	-	343	157	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 24	20	340	39	18	478	250	250	-	-	579	579	-	-
Mov Cap-2 Maneuver	~ 24	20	-	39	18	-	-	-	-	-	-	-	-	-
Stage 1	108	163	-	220	281	-	-	-	-	-	-	-	-	-
Stage 2	458	279	-	328	153	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB				SB					
HCM Control Delay, s	\$ 380		64.9		0.1				0.1					
HCM LOS	F		F											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	250	-	-	30	32	478	579	-	-
HCM Lane V/C Ratio	0.012	-	-	1.065	0.161	0.015	0.025	-	-
HCM Control Delay (s)	19.6	-	-	\$ 380	138	12.6	11.4	-	-
HCM Lane LOS	C	-	-	F	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	3.6	0.5	0	0.1	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	23	62	2	2	0
Future Volume (vph)	0	23	62	2	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					
Flt Protected	0.950					
Satd. Flow (prot)	0	1827	1892	0	1805	0
Flt Permitted	0.950					
Satd. Flow (perm)	0	1827	1892	0	1805	0
Link Speed (mph)	25		30	25		
Link Distance (ft)	1416		269	945		
Travel Time (s)	38.6		6.1	25.8		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	0	27	72	2	2	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	27	74	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)	0		0	12		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control	Free		Free	Stop		
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 13.4%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	62	2	2	0
Future Vol, veh/h	0	23	62	2	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	27	72	2	2	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	74	0	-	0	100	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1538	-	-	-	904	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1538	-	-	-	904	995
Mov Cap-2 Maneuver	-	-	-	-	904	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	1001	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1538	-	-	-	904	
HCM Lane V/C Ratio	-	-	-	-	0.003	
HCM Control Delay (s)	0	-	-	-	9	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	62	1218	40	161	984
Future Volume (vph)	3	62	1218	40	161	984
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871		0.996			
Flt Protected	0.998					0.993
Satd. Flow (prot)	1168	0	1822	0	0	1713
Flt Permitted	0.998					0.993
Satd. Flow (perm)	1168	0	1822	0	0	1713
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	50%	41%	4%	0%	5%	11%
Adj. Flow (vph)	3	66	1296	43	171	1047
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	1339	0	0	1218
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 141.2%				ICU Level of Service H		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	12.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	62	1218	40	161	984
Future Vol, veh/h	3	62	1218	40	161	984
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	41	4	0	5	11
Mvmt Flow	3	66	1296	43	171	1047
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2707	1318	0	0	1339	0
Stage 1	1318	-	-	-	-	-
Stage 2	1389	-	-	-	-	-
Critical Hdwy	6.9	6.61	-	-	4.15	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.669	-	-	2.245	-
Pot Cap-1 Maneuver	16	159	-	-	505	-
Stage 1	199	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 3	159	-	-	505	-
Mov Cap-2 Maneuver	~ 3	-	-	-	-	-
Stage 1	38	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	\$ 436.5	0	2.2			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	47	505	-	
HCM Lane V/C Ratio	-	-	1.471	0.339	-	
HCM Control Delay (s)	-	-	\$ 436.5	15.7	0	
HCM Lane LOS	-	-	F	C	A	
HCM 95th %tile Q(veh)	-	-	6.7	1.5	-	
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)	0	2	126	30	67	299
Future Volume (vph)	0	2	126	30	67	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.974			
Flt Protected						0.991
Satd. Flow (prot)	1900	1615	1687	0	0	1781
Flt Permitted						0.991
Satd. Flow (perm)	1900	1615	1687	0	0	1781
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	12%	0%	0%	7%
Adj. Flow (vph)	0	2	156	37	83	369
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	193	0	0	452
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 34.6%			ICU Level of Service A			
Analysis Period (min) 15						

Intersection							
Int Delay, s/veh	1						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	0	2	126	30	67	299	
Future Vol, veh/h	0	2	126	30	67	299	
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	65	-	-	-	-	
Veh in Median Storage, #	0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	81	81	81	81	81	81	
Heavy Vehicles, %	0	0	12	0	0	7	
Mvmt Flow	0	2	156	37	83	369	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	710	175	0	0	193	0	
Stage 1	175	-	-	-	-	-	
Stage 2	535	-	-	-	-	-	
Critical Hdwy	6.4	6.2	-	-	4.1	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.3	-	-	2.2	-	
Pot Cap-1 Maneuver	403	874	-	-	1392	-	
Stage 1	860	-	-	-	-	-	
Stage 2	591	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	373	874	-	-	1392	-	
Mov Cap-2 Maneuver	373	-	-	-	-	-	
Stage 1	796	-	-	-	-	-	
Stage 2	591	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	9.1	0		1.4			
HCM LOS	A						
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)		-	-	-	874	1392	-
HCM Lane V/C Ratio		-	-	-	0.003	0.059	-
HCM Control Delay (s)		-	-	0	9.1	7.8	0
HCM Lane LOS		-	-	A	A	A	A
HCM 95th %tile Q(veh)		-	-	-	0	0.2	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	185	1229	279	3	205	2672	29	94	39	94	15	50
Future Volume (vph)	185	1229	279	3	205	2672	29	94	39	94	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		0	135	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98								0.99	
Frt			0.850				0.850		0.894			0.895
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3343	1482	0	1736	3438	1369	1399	1388	0	1805	1514
Flt Permitted	0.041				0.159			0.466			0.569	
Satd. Flow (perm)	72	3343	1445	0	291	3438	1369	686	1388	0	1071	1514
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			294				76		68			65
Link Speed (mph)		45			45			45				45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Confl. Peds. (#/hr)			6								6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	8%	9%	0%	4%	5%	18%	29%	4%	30%	0%	13%
Adj. Flow (vph)	195	1294	294	3	216	2813	31	99	41	99	16	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1294	294	0	219	2813	31	99	140	0	16	175
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases	1	6			5	2			4			8
Permitted Phases	6		6	5	2		2	4			8	
Detector Phase	1	6	6	5	5	2	2	4	4		8	8
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	116
Future Volume (vph)	116
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	12%
Adj. Flow (vph)	122
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4	12.4
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0		30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%		20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6		22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)	108.4	98.2	98.2		107.8	97.8	97.8	22.6	22.6		22.6	22.6
Actuated g/C Ratio	0.72	0.65	0.65		0.72	0.65	0.65	0.15	0.15		0.15	0.15
v/c Ratio	1.23	0.59	0.28		0.73	1.26	0.03	0.96	0.53		0.10	0.62
Control Delay	184.4	16.0	1.7		22.2	145.0	0.1	140.7	37.7		56.9	47.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	184.4	16.0	1.7		22.2	145.0	0.1	140.7	37.7		56.9	47.4
LOS	F	B	A		C	F	A	F	D		E	D
Approach Delay		32.1				134.7			80.4			48.2
Approach LOS		C				F			F			D
Queue Length 50th (ft)	~187	356	0		52	~1806	0	98	64		14	102
Queue Length 95th (ft)	#355	420	33		102	#1916	0	#222	140		38	188
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180			135	
Base Capacity (vph)	158	2188	1047		307	2241	919	103	266		161	283
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	1.23	0.59	0.28		0.71	1.26	0.03	0.96	0.53		0.10	0.62

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 94.4

Intersection LOS: F

Intersection Capacity Utilization 121.6%

ICU Level of Service H

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: 3: Monroe Dr & US 129



Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	0	7	5	2	24	0	3087	7	7	13	1061
Future Volume (vph)	24	0	7	5	2	24	0	3087	7	7	13	1061
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	0		0	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	0.95	1.00	0.95
Frt		0.970				0.850			0.850			
Flt Protected		0.963			0.964						0.950	
Satd. Flow (prot)	0	1775	0	0	1832	1417	1900	3406	1292	0	1552	3282
Flt Permitted		0.963			0.964						0.950	
Satd. Flow (perm)	0	1775	0	0	1832	1417	1900	3406	1292	0	1552	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		424			653			2889				1747
Travel Time (s)		11.6			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	14%	0%	6%	25%	0%	25%	10%
Adj. Flow (vph)	28	0	8	6	2	28	0	3548	8	8	15	1220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	8	28	0	3548	8	0	23	1220
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	102.0%											
Analysis Period (min)	15											
	ICU Level of Service G											

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1509
Flt Permitted	
Satd. Flow (perm)	1509
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	7%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	6.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	24	0	7	5	2	24	0	3087	7	7	13	1061	25
Future Vol, veh/h	24	0	7	5	2	24	0	3087	7	7	13	1061	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	14	0	6	25	0	25	10	7
Mvmt Flow	28	0	8	6	2	28	0	3548	8	8	15	1220	29

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	3041	4822	610	4204	4843	1774	1249	0
Stage 1	1266	1266	-	3548	3548	-	-	-
Stage 2	1775	3556	-	656	1295	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	7.18	4.1	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.44	2.2	-
Pot Cap-1 Maneuver	~ 6	1	442	~ 1	~ 1	63	564	-
Stage 1	182	242	-	6	16	-	-	-
Stage 2	88	16	-	426	235	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	442	-	0	63	564	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-
Stage 1	182	0	-	6	16	-	-	-
Stage 2	42	16	-	-	0	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	25
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	564	-	-	-	-	63	~ 10	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.438	2.299	-	-
HCM Control Delay (s)	0	-	-	-	-	100.8	\$ 1383	-	-
HCM Lane LOS	A	-	-	-	-	F	F	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	1.7	3.9	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations		↕	↕			↕	
Traffic Volume (vph)	2	49	35	0	2	0	2
Future Volume (vph)	2	49	35	0	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't						0.932	
Flt Protected		0.998				0.976	
Satd. Flow (prot)	0	1896	1597	0	0	1728	0
Flt Permitted		0.998				0.976	
Satd. Flow (perm)	0	1896	1597	0	0	1728	0
Link Speed (mph)		30	25			25	
Link Distance (ft)		1416	424			1013	
Travel Time (s)		32.2	11.6			27.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	19%	0%	0%	0%	0%
Adj. Flow (vph)	2	59	42	0	2	0	2
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	61	42	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	R NA	Left	Right
Median Width(ft)		0	0			12	
Link Offset(ft)		0	0			0	
Crosswalk Width(ft)		16	16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	9	15	9
Sign Control		Free	Free			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 14.2%

ICU Level of Service A

Analysis Period (min) 15

Intersection							
Int Delay, s/veh	0.5						
Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	2	49	35	0	2	0	2
Future Vol, veh/h	2	49	35	0	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	0	-
Grade, %	-	0	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	19	0	0	0	0
Mvmt Flow	2	59	42	0	2	0	2
Major/Minor	Major1	Major2		Minor2			
Conflicting Flow All	42	0	-	0	0	105	42
Stage 1	-	-	-	-	0	42	-
Stage 2	-	-	-	-	0	63	-
Critical Hdwy	4.1	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1580	-	-	-	0	898	1034
Stage 1	-	-	-	-	0	986	-
Stage 2	-	-	-	-	0	965	-
Platoon blocked, %		-	-	-	-		
Mov Cap-1 Maneuver	1580	-	-	-	0	897	1034
Mov Cap-2 Maneuver	-	-	-	-	0	897	-
Stage 1	-	-	-	-	0	985	-
Stage 2	-	-	-	-	0	965	-
Approach	EB	WB		SB			
HCM Control Delay, s	0.3	0		8.5			
HCM LOS	A						
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1580	-	-	-	1034		
HCM Lane V/C Ratio	0.002	-	-	-	0.002		
HCM Control Delay (s)	7.3	0	-	-	8.5		
HCM Lane LOS	A	A	-	-	A		
HCM 95th %tile Q(veh)	0	-	-	-	0		

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	143	998	10	47	1517
Future Volume (vph)	30	143	998	10	47	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.888		0.999			
Flt Protected	0.991					0.999
Satd. Flow (prot)	1568	0	1786	0	0	1808
Flt Permitted	0.991					0.999
Satd. Flow (perm)	1568	0	1786	0	0	1808
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	8%	6%	33%	36%	4%
Adj. Flow (vph)	33	159	1109	11	52	1686
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	0	1120	0	0	1738
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	134.9%			ICU Level of Service H		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	143	998	10	47	1517
Future Vol, veh/h	30	143	998	10	47	1517
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	8	6	33	36	4
Mvmt Flow	33	159	1109	11	52	1686
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2905	1115	0	0	1120	0
Stage 1	1115	-	-	-	-	-
Stage 2	1790	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.46	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.524	-
Pot Cap-1 Maneuver	~ 18	246	-	-	514	-
Stage 1	316	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	246	-	-	514	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	57.4	0		0.4		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	246	514	-	
HCM Lane V/C Ratio	-	-	0.781	0.102	-	
HCM Control Delay (s)	-	-	57.4	12.8	0	
HCM Lane LOS	-	-	F	B	A	
HCM 95th %tile Q(veh)	-	-	5.8	0.3	-	
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)	47	62	193	188	193	134
Future Volume (vph)	47	62	193	188	193	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.933			
Flt Protected	0.950					0.971
Satd. Flow (prot)	1805	1615	1747	0	0	1765
Flt Permitted	0.950					0.971
Satd. Flow (perm)	1805	1615	1747	0	0	1765
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	1%	2%	0%	11%
Adj. Flow (vph)	60	79	247	241	247	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	79	488	0	0	419
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 52.7%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	62	193	188	193	134
Future Vol, veh/h	47	62	193	188	193	134
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	1	2	0	11
Mvmt Flow	60	79	247	241	247	172
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1034	368	0	0	488	0
Stage 1	368	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	259	682	-	-	1086	-
Stage 1	704	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	194	682	-	-	1086	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	19.9	0	5.5			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	194	682	1086	-
HCM Lane V/C Ratio	-	-	0.311	0.117	0.228	-
HCM Control Delay (s)	-	-	31.7	11	9.3	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.4	0.9	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	148	2736	114	3	74	1841	10	149	52	185	2
Future Volume (vph)	3	148	2736	114	3	74	1841	10	149	52	185	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		280		0		312		300	180		0	
Storage Lanes		1		1		1		1	1		0	
Taper Length (ft)		25				25			25			
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850				0.850		0.883		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1482	0	1538	3471	1380	1752	1606	0	0
Flt Permitted		0.038				0.040			0.301			
Satd. Flow (perm)	0	71	3471	1482	0	65	3471	1380	555	1606	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70		91		
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	9%	0%	18%	4%	17%	3%	6%	4%	0%
Adj. Flow (vph)	3	157	2911	121	3	79	1959	11	159	55	197	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	2911	121	0	82	1959	11	159	252	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2		1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100		20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA		Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases	6	6		6	2	2		2	4			8
Detector Phase	1	1	6	6	5	5	2	2	4	4		8
Switch Phase												
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	30	49	185
Future Volume (vph)	30	49	185
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	135		0
Storage Lanes	1		0
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Frt		0.881	
Flt Protected	0.950		
Satd. Flow (prot)	1709	1637	0
Flt Permitted	0.294		
Satd. Flow (perm)	529	1637	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		102	
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	6%	7%	1%
Adj. Flow (vph)	32	52	197
Shared Lane Traffic (%)			
Lane Group Flow (vph)	34	249	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	CI+Ex	CI+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		CI+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	
Protected Phases		8	
Permitted Phases	8		
Detector Phase	8	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	
Minimum Split (s)	12.4	12.4	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0		35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%		21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6		27.6
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None
Act Effct Green (s)		118.3	104.7	104.7		107.9	99.3	99.3	27.6	27.6		
Actuated g/C Ratio		0.74	0.65	0.65		0.67	0.62	0.62	0.17	0.17		
v/c Ratio		0.82	1.28	0.12		0.69	0.91	0.01	1.67	0.72		
Control Delay		73.0	157.6	4.9		61.1	34.3	0.0	382.4	51.8		
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		73.0	157.6	4.9		61.1	34.3	0.0	382.4	51.8		
LOS		E	F	A		E	C	A	F	D		
Approach Delay			147.6				35.2			179.7		
Approach LOS			F				D			F		
Queue Length 50th (ft)		114	~2036	18		40	924	0	~241	163		
Queue Length 95th (ft)		#224	#2136	44		#117	1059	0	#397	270		
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)		280				312		300	180			
Base Capacity (vph)		212	2270	994		128	2154	883	95	352		
Starvation Cap Reductn		0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.75	1.28	0.12		0.64	0.91	0.01	1.67	0.72		

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.67

Intersection Signal Delay: 106.3

Intersection LOS: F

Intersection Capacity Utilization 124.5%

ICU Level of Service H

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: 3: Monroe Dr & US 129

		
Ø1	Ø2 (R)	Ø4
21 s	104 s	35 s
		
Ø5	Ø6 (R)	Ø8
15 s	110 s	35 s



Lane Group	SBL	SBT	SBR
Total Split (s)	35.0	35.0	
Total Split (%)	21.9%	21.9%	
Maximum Green (s)	27.6	27.6	
Yellow Time (s)	4.4	4.4	
All-Red Time (s)	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	7.4	7.4	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	
Recall Mode	None	None	
Act Effct Green (s)	27.6	27.6	
Actuated g/C Ratio	0.17	0.17	
v/c Ratio	0.37	0.68	
Control Delay	72.0	46.4	
Queue Delay	0.0	0.0	
Total Delay	72.0	46.4	
LOS	E	D	
Approach Delay		49.5	
Approach LOS		D	
Queue Length 50th (ft)	32	147	
Queue Length 95th (ft)	72	252	
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)	135		
Base Capacity (vph)	91	366	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.37	0.68	
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	40	0	12	7	2	12	2	3	1819	8	2	22
Future Volume (vph)	40	0	12	7	2	12	2	3	1819	8	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	0		0	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt		0.969				0.850				0.850		
Flt Protected		0.963			0.963			0.950				0.950
Satd. Flow (prot)	0	1720	0	0	1830	1615	0	1805	3406	1615	0	1805
Flt Permitted		0.963			0.963			0.950				0.950
Satd. Flow (perm)	0	1720	0	0	1830	1615	0	1805	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		424			653				2889			
Travel Time (s)		11.6			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	41	0	12	7	2	12	2	3	1875	8	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	9	12	0	5	1875	8	0	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 87.0%	ICU Level of Service E											
Analysis Period (min) 15												



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	2558	91
Future Volume (vph)	2558	91
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1583
Flt Permitted		
Satd. Flow (perm)	3471	1583
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	2%
Adj. Flow (vph)	2637	94
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2637	94
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

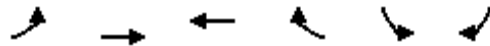
Intersection														
Int Delay, s/veh	9.5													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Vol, veh/h	40	0	12	7	2	12	2	3	1819	8	2	22	2558	91
Future Vol, veh/h	40	0	12	7	2	12	2	3	1819	8	2	22	2558	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	-	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	4	0	0	0	0	0	0	0	6	0	0	0	4	2
Mvmt Flow	41	0	12	7	2	12	2	3	1875	8	2	23	2637	94

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	3636	4580	1319	3254	4666	938	2637	2731	0	0	1875	1883	0	0
Stage 1	2687	2687	-	1885	1885	-	-	-	-	-	-	-	-	-
Stage 2	949	1893	-	1369	2781	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.5	6.9	7.5	6.5	6.9	6.4	4.1	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4	3.3	3.5	4	3.3	2.5	2.2	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 2	1	150	~ 4	~ 1	269	29	150	-	-	92	323	-	-
Stage 1	~ 21	47	-	75	121	-	-	-	-	-	-	-	-	-
Stage 2	276	120	-	157	42	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	1	150	~ 3	~ 1	269	53	53	-	-	264	264	-	-
Mov Cap-2 Maneuver	-	1	-	~ 3	~ 1	-	-	-	-	-	-	-	-	-
Stage 1	~ 19	43	-	68	110	-	-	-	-	-	-	-	-	-
Stage 2	234	109	-	130	38	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 2037.2	0.2	0.2
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	53	-	-	-	2	269	264	-	-
HCM Lane V/C Ratio	0.097	-	-	-	4.639	0.046	0.094	-	-
HCM Control Delay (s)	79.9	-	-	\$ 4728.1	19	20	-	-	-
HCM Lane LOS	F	-	-	-	F	C	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4	0.1	0.3	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	39	104	3	3	0
Future Volume (vph)	0	39	104	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997					
Flt Protected	0.950					
Satd. Flow (prot)	0	1827	1894	0	1805	0
Flt Permitted	0.950					
Satd. Flow (perm)	0	1827	1894	0	1805	0
Link Speed (mph)	25		30	25		
Link Distance (ft)	1416		424	1013		
Travel Time (s)	38.6		9.6	27.6		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	0	45	121	3	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	45	124	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)	0		0	12		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control	Free		Free	Stop		
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 15.7%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	39	104	3	3	0
Future Vol, veh/h	0	39	104	3	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	45	121	3	3	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	124	0	-	0	168	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1475	-	-	-	827	933
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	827	933
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	983	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.4		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1475	-	-	-	827	
HCM Lane V/C Ratio	-	-	-	-	0.004	
HCM Control Delay (s)	0	-	-	-	9.4	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	173	1218	196	715	984
Future Volume (vph)	30	173	1218	196	715	984
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885		0.981			
Flt Protected	0.993					0.979
Satd. Flow (prot)	1304	0	1799	0	0	1728
Flt Permitted	0.993					0.979
Satd. Flow (perm)	1304	0	1799	0	0	1728
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	30%	4%	1%	3%	11%
Adj. Flow (vph)	32	184	1296	209	761	1047
Shared Lane Traffic (%)						
Lane Group Flow (vph)	216	0	1505	0	0	1808
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 189.7%				ICU Level of Service H		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	94.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	173	1218	196	715	984
Future Vol, veh/h	30	173	1218	196	715	984
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	17	30	4	1	3	11
Mvmt Flow	32	184	1296	209	761	1047
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	3970	1401	0	0	1505	0
Stage 1	1401	-	-	-	-	-
Stage 2	2569	-	-	-	-	-
Critical Hdwy	6.57	6.5	-	-	4.13	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.57	-	-	2.227	-
Pot Cap-1 Maneuver	~ 3	~ 149	-	-	~ 442	-
Stage 1	211	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	~ 149	-	-	~ 442	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	291.5	0		149.8		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	149	~ 442	-	
HCM Lane V/C Ratio	-	-	1.449	1.721	-	
HCM Control Delay (s)	-	-	291.5	355.9	0	
HCM Lane LOS	-	-	F	F	A	
HCM 95th %tile Q(veh)	-	-	14.1	46	-	
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)	3	10	148	46	100	396
Future Volume (vph)	3	10	148	46	100	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.968			
Flt Protected	0.950					0.990
Satd. Flow (prot)	1357	1242	1632	0	0	1788
Flt Permitted	0.950					0.990
Satd. Flow (perm)	1357	1242	1632	0	0	1788
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	33%	30%	16%	2%	2%	6%
Adj. Flow (vph)	4	12	183	57	123	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	12	240	0	0	612
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 50.3%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	10	148	46	100	396
Future Vol, veh/h	3	10	148	46	100	396
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	33	30	16	2	2	6
Mvmt Flow	4	12	183	57	123	489
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	947	212	0	0	240	0
Stage 1	212	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Critical Hdwy	6.73	6.5	-	-	4.12	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.57	-	-	2.218	-
Pot Cap-1 Maneuver	255	763	-	-	1327	-
Stage 1	755	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	223	763	-	-	1327	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.5	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	223	763	1327	-
HCM Lane V/C Ratio	-	-	0.017	0.016	0.093	-
HCM Control Delay (s)	-	-	21.4	9.8	8	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	0.3	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Future Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		0	135	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850				0.850		0.894			0.895
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3406	1495	0	1736	3406	1380	1378	1377	0	1805	1520
Flt Permitted	0.041				0.049			0.466			0.569	
Satd. Flow (perm)	72	3406	1495	0	90	3406	1380	676	1377	0	1081	1520
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			330				76		68			65
Link Speed (mph)		45				45			45			45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	6%	8%	0%	4%	6%	17%	31%	5%	31%	0%	14%
Adj. Flow (vph)	195	1873	429	3	216	2922	31	131	41	99	16	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1873	429	0	219	2922	31	131	140	0	16	175
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases	1	6			5	2			4			8
Permitted Phases	6		6	5	2		2	4			8	
Detector Phase	1	6	6	5	5	2	2	4	4		8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4	12.4

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	116
Future Volume (vph)	116
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	11%
Adj. Flow (vph)	122
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0		30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%		20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6		22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)	108.0	97.8	97.8		108.2	97.8	97.8	22.6	22.6		22.6	22.6
Actuated g/C Ratio	0.72	0.65	0.65		0.72	0.65	0.65	0.15	0.15		0.15	0.15
v/c Ratio	1.23	0.84	0.39		1.25	1.32	0.03	1.30	0.53		0.10	0.62
Control Delay	185.1	24.9	3.7		185.9	171.6	0.1	236.7	37.8		56.9	47.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	185.1	24.9	3.7		185.9	171.6	0.1	236.7	37.8		56.9	47.3
LOS	F	C	A		F	F	A	F	D		E	D
Approach Delay		33.7				170.9			134.0			48.1
Approach LOS		C				F			F			D
Queue Length 50th (ft)	~187	702	34		~206	~1934	0	~162	64		14	102
Queue Length 95th (ft)	#355	818	82		#381	#2041	0	#304	140		38	188
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180			135	
Base Capacity (vph)	158	2220	1089		175	2220	926	101	265		162	284
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	1.23	0.84	0.39		1.25	1.32	0.03	1.30	0.53		0.10	0.62

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 109.6

Intersection LOS: F

Intersection Capacity Utilization 126.1%

ICU Level of Service H

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: 3: Monroe Dr & US 129





Lane Group	SBR
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Future Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	0		0	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	0.95	1.00	0.95
Frt		0.938				0.850			0.850			
Flt Protected		0.974			0.964		0.950				0.950	
Satd. Flow (prot)	0	1225	0	0	1832	1429	1480	3406	1252	0	1570	3282
Flt Permitted		0.974			0.964		0.950				0.950	
Satd. Flow (perm)	0	1225	0	0	1832	1429	1480	3406	1252	0	1570	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		254			653			2889				1747
Travel Time (s)		6.9			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	16%	0%	72%	0%	0%	13%	22%	6%	29%	0%	23%	10%
Adj. Flow (vph)	147	0	125	6	2	28	226	3548	8	8	15	1220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	272	0	0	8	28	226	3548	8	0	23	1220
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 119.1%	ICU Level of Service H											
Analysis Period (min) 15												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	575
Future Volume (vph)	575
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	2%
Adj. Flow (vph)	661
Shared Lane Traffic (%)	
Lane Group Flow (vph)	661
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	8.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575
Future Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	16	0	72	0	0	13	22	6	29	0	23	10	2
Mvmt Flow	147	0	125	6	2	28	226	3548	8	8	15	1220	661

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	3493	5274	610	4656	5927	1774	1881	0
Stage 1	1266	1266	-	4000	4000	-	-	-
Stage 2	2227	4008	-	656	1927	-	-	-
Critical Hdwy	7.82	6.5	8.34	7.5	6.5	7.16	4.54	-
Critical Hdwy Stg 1	6.82	5.5	-	6.5	5.5	-	-	-
Critical Hdwy Stg 2	6.82	5.5	-	6.5	5.5	-	-	-
Follow-up Hdwy	3.66	4	4.02	3.5	4	3.43	2.42	-
Pot Cap-1 Maneuver	~ 2	0	301	0	0	64	245	-
Stage 1	159	242	-	~ 3	9	-	-	-
Stage 2	~ 37	9	-	426	115	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	301	-	0	64	245	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-
Stage 1	~ 12	0	-	0	~ 1	-	-	-
Stage 2	-	1	-	-	0	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			4.9	16.6
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	245	-	-	-	-	64	~ 10	-	-
HCM Lane V/C Ratio	0.924	-	-	-	-	0.431	2.299	-	-
HCM Control Delay (s)	82.7	-	-	-	-	98.5	1377.1	-	-
HCM Lane LOS	F	-	-	-	-	F	F	-	-
HCM 95th %tile Q(veh)	8.1	-	-	-	-	1.7	3.9	-	-

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)	2	2	0	0	2	49	0	107	0	35	694	0
Future Volume (vph)	2	2	0	0	2	49	0	107	0	35	694	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869											
Flt Protected	0.976											
Satd. Flow (prot)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Flt Permitted	0.976											
Satd. Flow (perm)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Link Speed (mph)	25											
Link Distance (ft)	1001											
Travel Time (s)	27.3											
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	91%	0%	20%	8%	0%
Adj. Flow (vph)	2	2	0	0	2	59	0	129	0	42	836	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	61	0	0	129	0	0	878	0
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)	0											
Link Offset(ft)	0											
Crosswalk Width(ft)	16											
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 55.1%	ICU Level of Service B											
Analysis Period (min) 15												

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
Future Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	91	0	20	8	0
Mvmt Flow	2	2	0	0	2	59	0	129	0	42	836	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1080	1049	836	1050	1049	129	836	0	0	129	0	0
Stage 1	920	920	-	129	129	-	-	-	-	-	-	-
Stage 2	160	129	-	921	920	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	197	229	370	207	229	926	807	-	-	1353	-	-
Stage 1	327	352	-	880	793	-	-	-	-	-	-	-
Stage 2	847	793	-	327	352	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	216	370	196	216	926	807	-	-	1353	-	-
Mov Cap-2 Maneuver	175	216	-	196	216	-	-	-	-	-	-	-
Stage 1	327	332	-	880	793	-	-	-	-	-	-	-
Stage 2	791	793	-	306	332	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.1		9.7		0		0.4	
HCM LOS	C		A					

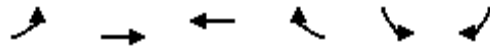
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	193	820	1353	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.075	0.031	-	-
HCM Control Delay (s)	0	-	-	24.1	9.7	7.7	0	-
HCM Lane LOS	A	-	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	146	13	148	590	5
Future Volume (vph)	16	146	13	148	590	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878				0.999	
Flt Protected	0.995			0.996		
Satd. Flow (prot)	1621	0	0	1341	1787	0
Flt Permitted	0.995			0.996		
Satd. Flow (perm)	1621	0	0	1341	1787	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	2%	31%	42%	6%	33%
Adj. Flow (vph)	17	159	14	161	641	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	0	175	646	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 47.9%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	146	13	148	590	5
Future Vol, veh/h	16	146	13	148	590	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	31	42	6	33
Mvmt Flow	17	159	14	161	641	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	833	644	646	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.46	6.22	4.41	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.479	-	-	-
Pot Cap-1 Maneuver	333	473	815	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	327	473	815	-	-	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17.9	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	815	-	453	-	-	
HCM Lane V/C Ratio	0.017	-	0.389	-	-	
HCM Control Delay (s)	9.5	0	17.9	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	29	97	0	211	294
Future Volume (vph)	0	29	97	0	211	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.980
Satd. Flow (prot)	1226	0	1203	0	0	1729
Flt Permitted						0.980
Satd. Flow (perm)	1226	0	1203	0	0	1729
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	34%	58%	0%	3%	11%
Adj. Flow (vph)	0	32	105	0	229	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	105	0	0	549
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 43.8%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	97	0	211	294
Future Vol, veh/h	0	29	97	0	211	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	34	58	0	3	11
Mvmt Flow	0	32	105	0	229	320
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	883	105	0	0	105	0
Stage 1	105	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Critical Hdwy	6.4	6.54	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.606	-	-	2.227	-
Pot Cap-1 Maneuver	319	869	-	-	1480	-
Stage 1	924	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	869	-	-	1480	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		3.3		
HCM LOS	A					
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	869	1480	-
HCM Lane V/C Ratio		-	-	0.036	0.155	-
HCM Control Delay (s)		-	-	9.3	7.9	0
HCM Lane LOS		-	-	A	A	A
HCM 95th %tile Q(veh)		-	-	0.1	0.5	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	370	57	77	212	33
Future Volume (vph)	9	370	57	77	212	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.922		0.982	
Flt Protected		0.999			0.959	
Satd. Flow (prot)	0	1878	1291	0	1597	0
Flt Permitted		0.999			0.959	
Satd. Flow (perm)	0	1878	1291	0	1597	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	44%	0%	0%	62%	13%	6%
Adj. Flow (vph)	10	402	62	84	230	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	412	146	0	266	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	47.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	370	57	77	212	33
Future Vol, veh/h	9	370	57	77	212	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	44	0	0	62	13	6
Mvmt Flow	10	402	62	84	230	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	146	0	-	0	526	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	4.54	-	-	-	6.53	6.26
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.596	-	-	-	3.617	3.354
Pot Cap-1 Maneuver	1215	-	-	-	494	940
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1215	-	-	-	489	940
Mov Cap-2 Maneuver	-	-	-	-	489	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	639	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		18.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1215	-	-	-	523	
HCM Lane V/C Ratio	0.008	-	-	-	0.509	
HCM Control Delay (s)	8	0	-	-	18.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	2.9	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	184	687	998	45	180	1517
Future Volume (vph)	184	687	998	45	180	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893		0.994			
Flt Protected	0.990					0.995
Satd. Flow (prot)	1638	0	1778	0	0	1790
Flt Permitted	0.990					0.995
Satd. Flow (perm)	1638	0	1778	0	0	1790
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	6%	11%	19%	4%
Adj. Flow (vph)	204	763	1109	50	200	1686
Shared Lane Traffic (%)						
Lane Group Flow (vph)	967	0	1159	0	0	1886
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 207.6%				ICU Level of Service H		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	330.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	184	687	998	45	180	1517
Future Vol, veh/h	184	687	998	45	180	1517
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	3	6	11	19	4
Mvmt Flow	204	763	1109	50	200	1686
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3220	1134	0	0	1159	0
Stage 1	1134	-	-	-	-	-
Stage 2	2086	-	-	-	-	-
Critical Hdwy	6.41	6.23	-	-	4.29	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.327	-	-	2.371	-
Pot Cap-1 Maneuver	~ 11	~ 245	-	-	546	-
Stage 1	308	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	~ 245	-	-	546	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	\$ 1366.6	0	1.6			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	245	546	-	
HCM Lane V/C Ratio	-	-	3.95	0.366	-	
HCM Control Delay (s)	-	-	\$ 1366.6	15.4	0	
HCM Lane LOS	-	-	F	C	A	
HCM 95th %tile Q(veh)	-	-	94.2	1.7	-	
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)	63	94	288	192	202	159
Future Volume (vph)	63	94	288	192	202	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.946			
Flt Protected	0.950					0.973
Satd. Flow (prot)	1770	1599	1762	0	0	1739
Flt Permitted	0.950					0.973
Satd. Flow (perm)	1770	1599	1762	0	0	1739
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	2%	2%	1%	13%
Adj. Flow (vph)	81	121	369	246	259	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	121	615	0	0	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 59.9%	ICU Level of Service B					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	7.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	94	288	192	202	159
Future Vol, veh/h	63	94	288	192	202	159
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	1	2	2	1	13
Mvmt Flow	81	121	369	246	259	204
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1214	492	0	0	615	0
Stage 1	492	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.42	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	201	579	-	-	970	-
Stage 1	615	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	579	-	-	970	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	32.1	0		5.6		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	140	579	970	-
HCM Lane V/C Ratio	-	-	0.577	0.208	0.267	-
HCM Control Delay (s)	-	-	61	12.8	10.1	0
HCM Lane LOS	-	-	F	B	B	A
HCM 95th %tile Q(veh)	-	-	2.9	0.8	1.1	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Future Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frts				0.850				0.850		0.883		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1455	0	1538	3471	1346	1752	1606	0	0
Flt Permitted		0.038				0.040			0.301			
Satd. Flow (perm)	0	71	3471	1455	0	65	3471	1346	555	1606	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70		90		
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	11%	0%	18%	4%	20%	3%	6%	4%	0%
Adj. Flow (vph)	3	157	3047	157	3	79	2534	11	293	55	197	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	3047	157	0	82	2534	11	293	252	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2		1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100		20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	custom	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm
Protected Phases		1	6			5	2			4		
Permitted Phases	1	6		6	5	2		2	4			8
Detector Phase	1	1	6	6	5	5	2	2	4	4		8
Switch Phase												
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0		35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%		21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6		27.6

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	30	49	185
Future Volume (vph)	30	49	185
Ideal Flow (vphpl)	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00
Fr't		0.881	
Flt Protected	0.950		
Satd. Flow (prot)	1693	1640	0
Flt Permitted	0.294		
Satd. Flow (perm)	524	1640	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		93	
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	1%
Adj. Flow (vph)	32	52	197
Shared Lane Traffic (%)			
Lane Group Flow (vph)	34	249	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	CI+Ex	CI+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		CI+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	
Protected Phases		8	
Permitted Phases	8		
Detector Phase	8	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	
Minimum Split (s)	12.4	12.4	
Total Split (s)	35.0	35.0	
Total Split (%)	21.9%	21.9%	
Maximum Green (s)	27.6	27.6	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None
Act Effct Green (s)		118.3	104.7	104.7		107.9	99.3	99.3	27.6	27.6		
Actuated g/C Ratio		0.74	0.65	0.65		0.67	0.62	0.62	0.17	0.17		
v/c Ratio		0.82	1.34	0.16		0.69	1.18	0.01	3.08	0.72		
Control Delay		73.0	183.8	6.3		61.1	114.0	0.0	985.2	52.2		
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		73.0	183.8	6.3		61.1	114.0	0.0	985.2	52.2		
LOS		E	F	A		E	F	A	F	D		
Approach Delay			170.2				111.9			553.8		
Approach LOS			F				F			F		
Queue Length 50th (ft)		114	~2191	32		40	~1680	0	~531	164		
Queue Length 95th (ft)		#224	#2286	63		#117	#1794	0	#729	271		
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)												
Base Capacity (vph)		212	2270	976		128	2154	862	95	351		
Starvation Cap Reductn		0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.75	1.34	0.16		0.64	1.18	0.01	3.08	0.72		

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 3.08

Intersection Signal Delay: 173.5

Intersection LOS: F

Intersection Capacity Utilization 135.1%

ICU Level of Service H

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: 3: Monroe Dr & US 129





Lane Group	SBL	SBT	SBR
Yellow Time (s)	4.4	4.4	
All-Red Time (s)	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	7.4	7.4	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	
Recall Mode	None	None	
Act Effct Green (s)	27.6	27.6	
Actuated g/C Ratio	0.17	0.17	
v/c Ratio	0.38	0.69	
Control Delay	72.4	49.5	
Queue Delay	0.0	0.0	
Total Delay	72.4	49.5	
LOS	E	D	
Approach Delay		52.3	
Approach LOS		D	
Queue Length 50th (ft)	32	157	
Queue Length 95th (ft)	72	262	
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)			
Base Capacity (vph)	90	359	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.38	0.69	
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Future Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	0		0	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt		0.966				0.850				0.850		
Flt Protected		0.964			0.963			0.950				0.950
Satd. Flow (prot)	0	1681	0	0	1830	1615	0	1159	3406	1615	0	1805
Flt Permitted		0.964			0.963			0.950				0.950
Satd. Flow (perm)	0	1681	0	0	1830	1615	0	1159	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		254			653				2889			
Travel Time (s)		6.9			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Heavy Vehicles (%)	2%	0%	15%	0%	0%	0%	0%	57%	6%	0%	0%	0%
Adj. Flow (vph)	599	0	200	7	2	12	2	87	1875	8	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	799	0	0	9	12	0	89	1875	8	0	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	128.8%											
Analysis Period (min)	15											
	ICU Level of Service H											



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	2558	219
Future Volume (vph)	2558	219
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1524
Flt Permitted		
Satd. Flow (perm)	3471	1524
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	6%
Adj. Flow (vph)	2637	226
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2637	226
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

Intersection															
Int Delay, s/veh	1.2														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Future Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	-	None	
Storage Length	-	-	-	-	-	0	-	150	-	110	-	150	-	150	
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-	
Peak Hour Factor	97	97	97	97	97	97	92	97	97	97	92	97	97	97	
Heavy Vehicles, %	2	0	15	0	0	0	0	57	6	0	0	0	4	6	
Mvmt Flow	599	0	200	7	2	12	2	87	1875	8	2	23	2637	226	

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	3804	4748	1319	3422	4966	938	2637	2863	0	0	1875	1883	0	0
Stage 1	2687	2687	-	2053	2053	-	-	-	-	-	-	-	-	-
Stage 2	1117	2061	-	1369	2913	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	7.2	7.5	6.5	6.9	6.4	5.24	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.45	3.5	4	3.3	2.5	2.77	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 1	1	~ 131	~ 3	~ 1	269	29	~ 50	-	-	92	323	-	-
Stage 1	~ 22	47	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 221	98	-	157	35	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	1	~ 131	-	~ 1	269	138	138	-	-	262	262	-	-
Mov Cap-2 Maneuver	-	1	-	-	~ 1	-	-	-	-	-	-	-	-	-
Stage 1	~ 22	43	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 206	98	-	-	32	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB				SB					
HCM Control Delay, s					3.1				0.2					
HCM LOS	-		-											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	138	-	-	-	-	269	262	-	-
HCM Lane V/C Ratio	0.643	-	-	-	-	0.046	0.095	-	-
HCM Control Delay (s)	69.5	-	-	-	-	19	20.2	-	-
HCM Lane LOS	F	-	-	-	-	C	C	-	-
HCM 95th %tile Q(veh)	3.5	-	-	-	-	0.1	0.3	-	-

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

Lanes, Volumes, Timings
5: Internal Access/Internal Driveway & Smallwood Rd

Build PM
01/20/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	0	0	0	39	0	687	0	104	150	3
Future Volume (vph)	3	0	0	0	0	39	0	687	0	104	150	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't					0.865						0.999	
Flt Protected		0.950									0.980	
Satd. Flow (prot)	0	1805	0	0	1565	0	0	1810	0	0	1501	0
Flt Permitted		0.950									0.980	
Satd. Flow (perm)	0	1805	0	0	1565	0	0	1810	0	0	1501	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1001			1156			4656			254	
Travel Time (s)		27.3			31.5			105.8			5.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	5%	0%	0%	41%	0%
Adj. Flow (vph)	3	0	0	0	0	45	0	799	0	121	174	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	45	0	0	799	0	0	298	0
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)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 63.3%	ICU Level of Service B											
Analysis Period (min) 15												

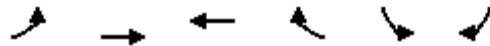
Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Future Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	5	0	5	0	0	41	0
Mvmt Flow	3	0	0	0	0	45	0	799	0	121	174	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1240	1217	176	1217	1218	799	177	0	0	799	0	0
Stage 1	418	418	-	799	799	-	-	-	-	-	-	-
Stage 2	822	799	-	418	419	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.25	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.345	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	153	182	872	159	182	381	1411	-	-	833	-	-
Stage 1	616	594	-	382	401	-	-	-	-	-	-	-
Stage 2	371	401	-	616	593	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	153	872	139	153	381	1411	-	-	833	-	-
Mov Cap-2 Maneuver	118	153	-	139	153	-	-	-	-	-	-	-
Stage 1	616	498	-	382	401	-	-	-	-	-	-	-
Stage 2	327	401	-	517	498	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	36.4		15.7		0		4.1					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1411	-	-	118	381	833	-	-				
HCM Lane V/C Ratio	-	-	-	0.03	0.119	0.145	-	-				
HCM Control Delay (s)	0	-	-	36.4	15.7	10.1	0	-				
HCM Lane LOS	A	-	-	E	C	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.5	-	-				

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	394	157	573	159	16
Future Volume (vph)	4	394	157	573	159	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.866				0.988	
Flt Protected				0.989		
Satd. Flow (prot)	1610	0	0	1818	1522	0
Flt Permitted				0.989		
Satd. Flow (perm)	1610	0	0	1818	1522	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	2%	1%	4%	25%	6%
Adj. Flow (vph)	4	428	171	623	173	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	432	0	0	794	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 82.8%				ICU Level of Service E		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	394	157	573	159	16
Future Vol, veh/h	4	394	157	573	159	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	2	1	4	25	6
Mvmt Flow	4	428	171	623	173	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1147	182	190	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Critical Hdwy	6.65	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	198	861	1390	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	161	861	1390	-	-	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	1.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1390	-	825	-	-	
HCM Lane V/C Ratio	0.123	-	0.524	-	-	
HCM Control Delay (s)	8	0	14.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	3.1	-	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	220	281	0	411	91
Future Volume (vph)	0	220	281	0	411	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.961
Satd. Flow (prot)	1611	0	1776	0	0	1682
Flt Permitted						0.961
Satd. Flow (perm)	1611	0	1776	0	0	1682
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	7%	0%	2%	38%
Adj. Flow (vph)	0	239	305	0	447	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	0	305	0	0	546
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	66.0%			ICU Level of Service C		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	220	281	0	411	91
Future Vol, veh/h	0	220	281	0	411	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	7	0	2	38
Mvmt Flow	0	239	305	0	447	99
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1298	305	0	0	305	0
Stage 1	305	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	180	735	-	-	1256	-
Stage 1	752	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	112	735	-	-	1256	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.2	0		7.7		
HCM LOS	B					
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	735	1256	-
HCM Lane V/C Ratio		-	-	0.325	0.356	-
HCM Control Delay (s)		-	-	12.2	9.4	0
HCM Lane LOS		-	-	B	A	A
HCM 95th %tile Q(veh)		-	-	1.4	1.6	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	80	366	201	70	10
Future Volume (vph)	33	80	366	201	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952		0.983	
Flt Protected		0.986			0.958	
Satd. Flow (prot)	0	1841	1753	0	1266	0
Flt Permitted		0.986			0.958	
Satd. Flow (perm)	0	1841	1753	0	1266	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	0%	9%	43%	30%
Adj. Flow (vph)	36	87	398	218	76	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	616	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	80	366	201	70	10
Future Vol, veh/h	33	80	366	201	70	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	9	43	30
Mvmt Flow	36	87	398	218	76	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	616	0	-	0	666	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	159	-
Critical Hdwy	4.16	-	-	-	6.83	6.5
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.254	-	-	-	3.887	3.57
Pot Cap-1 Maneuver	945	-	-	-	367	514
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	945	-	-	-	352	514
Mov Cap-2 Maneuver	-	-	-	-	352	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	779	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		17.9		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	945	-	-	-	366	
HCM Lane V/C Ratio	0.038	-	-	-	0.238	
HCM Control Delay (s)	9	0	-	-	17.9	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	173	1218	196	715	984
Future Volume (vph)	30	173	1218	196	715	984
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1543	1242	1827	1599	1752	1712
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1543	1242	1827	1599	1752	1712
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	30%	4%	1%	3%	11%
Adj. Flow (vph)	32	184	1296	209	761	1047
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	184	1296	209	761	1047
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	117.1%			ICU Level of Service H		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	76.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	173	1218	196	715	984
Future Vol, veh/h	30	173	1218	196	715	984
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	0	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	17	30	4	1	3	11
Mvmt Flow	32	184	1296	209	761	1047
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3865	1296	0	0	1505	0
Stage 1	1296	-	-	-	-	-
Stage 2	2569	-	-	-	-	-
Critical Hdwy	6.57	6.5	-	-	4.13	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.57	-	-	2.227	-
Pot Cap-1 Maneuver	~ 3	~ 173	-	-	~ 442	-
Stage 1	239	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	~ 173	-	-	~ 442	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s		0	149.8			
HCM LOS	-					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	173	~ 442	-
HCM Lane V/C Ratio	-	-	-	1.064	1.721	-
HCM Control Delay (s)	-	-	-	141	355.9	-
HCM Lane LOS	-	-	-	F	F	-
HCM 95th %tile Q(veh)	-	-	-	9	46	-
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)	3	10	148	46	100	396
Future Volume (vph)	3	10	148	46	100	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1357	1242	1638	1583	1770	1792
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1357	1242	1638	1583	1770	1792
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	33%	30%	16%	2%	2%	6%
Adj. Flow (vph)	4	12	183	57	123	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	12	183	57	123	489
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 30.8%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	10	148	46	100	396
Future Vol, veh/h	3	10	148	46	100	396
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	65	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	33	30	16	2	2	6
Mvmt Flow	4	12	183	57	123	489
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	918	183	0	0	240	0
Stage 1	183	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Critical Hdwy	6.73	6.5	-	-	4.12	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.57	-	-	2.218	-
Pot Cap-1 Maneuver	266	792	-	-	1327	-
Stage 1	779	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	792	-	-	1327	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	241	792	1327	-
HCM Lane V/C Ratio	-	-	0.015	0.016	0.093	-
HCM Control Delay (s)	-	-	20.2	9.6	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0.3	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Future Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		100	135	
Storage Lanes	1		1		1		1	1		1	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3406	1495	0	1736	3406	1380	1378	1810	1233	1805	1667
Flt Permitted	0.041				0.049			0.722			0.730	
Satd. Flow (perm)	72	3406	1495	0	90	3406	1380	1047	1810	1233	1387	1667
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			330				76			99		
Link Speed (mph)		45				45			45			45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	6%	8%	0%	4%	6%	17%	31%	5%	31%	0%	14%
Adj. Flow (vph)	195	1873	429	3	216	2922	31	131	41	99	16	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1873	429	0	219	2922	31	131	41	99	16	53
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2	1	1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6	20	20	6
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		CI+Ex				CI+Ex			CI+Ex			CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	5	2			4			8
Permitted Phases	6		6	2	2		2	4		4	8	
Detector Phase	1	6	6	5	5	2	2	4	4	4	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4	12.4	12.4	12.4

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	116
Future Volume (vph)	116
Ideal Flow (vphpl)	1900
Storage Length (ft)	100
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1455
Flt Permitted	
Satd. Flow (perm)	1455
Right Turn on Red	Yes
Satd. Flow (RTOR)	103
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	11%
Adj. Flow (vph)	122
Shared Lane Traffic (%)	
Lane Group Flow (vph)	122
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Detector Phase	8
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	12.4

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6	22.6	22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4	7.4	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None	None
Act Effct Green (s)	108.9	97.8	97.8		109.1	97.8	97.8	21.7	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.73	0.65	0.65		0.73	0.65	0.65	0.14	0.14	0.14	0.14	0.14
v/c Ratio	1.16	0.84	0.39		1.18	1.32	0.03	0.87	0.16	0.38	0.08	0.22
Control Delay	157.9	24.9	3.7		159.3	171.6	0.1	107.3	57.2	14.2	56.1	58.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	157.9	24.9	3.7		159.3	171.6	0.1	107.3	57.2	14.2	56.1	58.7
LOS	F	C	A		F	F	A	F	E	B	E	E
Approach Delay		31.6				169.1			65.7			32.8
Approach LOS		C				F			E			C
Queue Length 50th (ft)	~187	702	34		~206	~1934	0	126	35	0	14	46
Queue Length 95th (ft)	#355	818	82		#381	#2041	0	#248	74	55	37	91
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180		100	135	
Base Capacity (vph)	168	2220	1089		186	2220	926	157	272	269	208	251
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.84	0.39		1.18	1.32	0.03	0.83	0.15	0.37	0.08	0.21

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 104.3

Intersection LOS: F

Intersection Capacity Utilization 123.5%

ICU Level of Service H

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: 3: Monroe Dr & US 129

		
Ø1	Ø2 (R)	Ø4
16 s	104 s	30 s
		
Ø5	Ø6 (R)	Ø8
16 s	104 s	30 s

Lane Group	SBR
Total Split (s)	30.0
Total Split (%)	20.0%
Maximum Green (s)	22.6
Yellow Time (s)	4.4
All-Red Time (s)	3.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	7.4
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	5.0
Recall Mode	None
Act Effct Green (s)	21.7
Actuated g/C Ratio	0.14
v/c Ratio	0.41
Control Delay	18.5
Queue Delay	0.0
Total Delay	18.5
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	16
Queue Length 95th (ft)	79
Internal Link Dist (ft)	
Turn Bay Length (ft)	100
Base Capacity (vph)	306
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.40
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Future Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	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	0.95	1.00	0.95
Frt			0.850			0.850			0.850			
Flt Protected		0.950			0.964		0.950				0.950	
Satd. Flow (prot)	0	1556	939	0	1832	1429	1480	3406	1252	0	1570	3282
Flt Permitted		0.950			0.964		0.950				0.950	
Satd. Flow (perm)	0	1556	939	0	1832	1429	1480	3406	1252	0	1570	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		254			653			2889				1747
Travel Time (s)		6.9			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	16%	0%	72%	0%	0%	13%	22%	6%	29%	0%	23%	10%
Adj. Flow (vph)	147	0	125	6	2	28	226	3548	8	8	15	1220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	125	0	8	28	226	3548	8	0	23	1220
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	112.4%											
Analysis Period (min)	15											
ICU Level of Service H												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	575
Future Volume (vph)	575
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	2%
Adj. Flow (vph)	661
Shared Lane Traffic (%)	
Lane Group Flow (vph)	661
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	8.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575
Future Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	0	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	16	0	72	0	0	13	22	6	29	0	23	10	2
Mvmt Flow	147	0	125	6	2	28	226	3548	8	8	15	1220	661

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	3493	5274	610	4656	5927	1774	1881	0
Stage 1	1266	1266	-	4000	4000	-	-	-
Stage 2	2227	4008	-	656	1927	-	-	-
Critical Hdwy	7.82	6.5	8.34	7.5	6.5	7.16	4.54	-
Critical Hdwy Stg 1	6.82	5.5	-	6.5	5.5	-	-	-
Critical Hdwy Stg 2	6.82	5.5	-	6.5	5.5	-	-	-
Follow-up Hdwy	3.66	4	4.02	3.5	4	3.43	2.42	-
Pot Cap-1 Maneuver	~ 2	0	301	0	0	64	245	-
Stage 1	159	242	-	~ 3	9	-	-	-
Stage 2	~ 37	9	-	426	115	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	301	-	0	64	245	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-
Stage 1	~ 12	0	-	0	~ 1	-	-	-
Stage 2	-	1	-	-	0	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			4.9	16.6
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	245	-	-	-	301	-	64	~ 10	-	-
HCM Lane V/C Ratio	0.924	-	-	-	0.416	-	0.431	2.299	-	-
HCM Control Delay (s)	82.7	-	-	-	25.2	-	98.5	1377.1	-	-
HCM Lane LOS	F	-	-	-	D	-	F	F	-	-
HCM 95th %tile Q(veh)	8.1	-	-	-	2	-	1.7	3.9	-	-

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)	2	2	0	0	2	49	0	107	0	35	694	0
Future Volume (vph)	2	2	0	0	2	49	0	107	0	35	694	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts	0.869											
Flt Protected	0.976											
Satd. Flow (prot)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Flt Permitted	0.976											
Satd. Flow (perm)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Link Speed (mph)	25											
Link Distance (ft)	1001											
Travel Time (s)	27.3											
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	91%	0%	20%	8%	0%
Adj. Flow (vph)	2	2	0	0	2	59	0	129	0	42	836	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	61	0	0	129	0	0	878	0
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)	0											
Link Offset(ft)	0											
Crosswalk Width(ft)	16											
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.1%											
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
Future Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	91	0	20	8	0
Mvmt Flow	2	2	0	0	2	59	0	129	0	42	836	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1080	1049	836	1050	1049	129	836	0	0	129	0	0
Stage 1	920	920	-	129	129	-	-	-	-	-	-	-
Stage 2	160	129	-	921	920	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	197	229	370	207	229	926	807	-	-	1353	-	-
Stage 1	327	352	-	880	793	-	-	-	-	-	-	-
Stage 2	847	793	-	327	352	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	216	370	196	216	926	807	-	-	1353	-	-
Mov Cap-2 Maneuver	175	216	-	196	216	-	-	-	-	-	-	-
Stage 1	327	332	-	880	793	-	-	-	-	-	-	-
Stage 2	791	793	-	306	332	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.1		9.7		0		0.4	
HCM LOS	C		A					

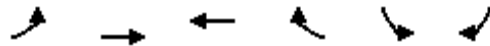
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	193	820	1353	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.075	0.031	-	-
HCM Control Delay (s)	0	-	-	24.1	9.7	7.7	0	-
HCM Lane LOS	A	-	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	146	13	148	590	5
Future Volume (vph)	16	146	13	148	590	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1703	1583	0	1341	1787	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1703	1583	0	1341	1787	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	2%	31%	42%	6%	33%
Adj. Flow (vph)	17	159	14	161	641	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	159	0	175	646	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 47.1%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	146	13	148	590	5
Future Vol, veh/h	16	146	13	148	590	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	31	42	6	33
Mvmt Flow	17	159	14	161	641	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	833	644	646	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.46	6.22	4.41	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.479	-	-	-
Pot Cap-1 Maneuver	333	473	815	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	327	473	815	-	-	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.4	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	815	-	327	473	-	-
HCM Lane V/C Ratio	0.017	-	0.053	0.336	-	-
HCM Control Delay (s)	9.5	0	16.6	16.4	-	-
HCM Lane LOS	A	A	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	1.5	-	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	29	97	0	211	294
Future Volume (vph)	0	29	97	0	211	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100		0	0	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	1900	1205	1203	0	1752	1712
Flt Permitted					0.950	
Satd. Flow (perm)	1900	1205	1203	0	1752	1712
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	34%	58%	0%	3%	11%
Adj. Flow (vph)	0	32	105	0	229	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	32	105	0	229	320
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 21.7%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	97	0	211	294
Future Vol, veh/h	0	29	97	0	211	294
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	100	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	34	58	0	3	11
Mvmt Flow	0	32	105	0	229	320
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	883	105	0	0	105	0
Stage 1	105	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Critical Hdwy	6.4	6.54	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.606	-	-	2.227	-
Pot Cap-1 Maneuver	319	869	-	-	1480	-
Stage 1	924	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	270	869	-	-	1480	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		3.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	869	1480	-
HCM Lane V/C Ratio	-	-	-	0.036	0.155	-
HCM Control Delay (s)	-	-	0	9.3	7.9	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.1	0.5	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	370	57	77	212	33
Future Volume (vph)	9	370	57	77	212	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	0	0
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1878	1900	997	1597	1524
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1878	1900	997	1597	1524
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	44%	0%	0%	62%	13%	6%
Adj. Flow (vph)	10	402	62	84	230	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	412	62	84	230	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 45.0%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	370	57	77	212	33
Future Vol, veh/h	9	370	57	77	212	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	44	0	0	62	13	6
Mvmt Flow	10	402	62	84	230	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	146	0	-	0	484	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	4.54	-	-	-	6.53	6.26
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.596	-	-	-	3.617	3.354
Pot Cap-1 Maneuver	1215	-	-	-	522	992
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1215	-	-	-	516	992
Mov Cap-2 Maneuver	-	-	-	-	516	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	639	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		16.3		
HCM LOS	C					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1215	-	-	-	516	992
HCM Lane V/C Ratio	0.008	-	-	-	0.447	0.036
HCM Control Delay (s)	8	0	-	-	17.5	8.8
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0	-	-	-	2.3	0.1

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	184	687	998	45	180	1517
Future Volume (vph)	184	687	998	45	180	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1568	1792	1455	1517	1827
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1568	1792	1455	1517	1827
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	6%	11%	19%	4%
Adj. Flow (vph)	204	763	1109	50	200	1686
Shared Lane Traffic (%)						
Lane Group Flow (vph)	204	763	1109	50	200	1686
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	101.7%			ICU Level of Service G		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	879.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	184	687	998	45	180	1517
Future Vol, veh/h	184	687	998	45	180	1517
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	0	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	3	6	11	19	4
Mvmt Flow	204	763	1109	50	200	1686
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3195	1109	0	0	1159	0
Stage 1	1109	-	-	-	-	-
Stage 2	2086	-	-	-	-	-
Critical Hdwy	6.41	6.23	-	-	4.29	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.327	-	-	2.371	-
Pot Cap-1 Maneuver	~ 11	~ 254	-	-	546	-
Stage 1	317	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 7	~ 254	-	-	546	-
Mov Cap-2 Maneuver	~ 7	-	-	-	-	-
Stage 1	~ 201	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	\$ 3642.5	0	1.6			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	7	254	546	-
HCM Lane V/C Ratio	-	-	29.206	3.005	0.366	-
HCM Control Delay (s)	-	-	\$ 13724	\$ 942.3	15.4	-
HCM Lane LOS	-	-	F	F	C	-
HCM 95th %tile Q(veh)	-	-	27.5	67.9	1.7	-
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)	63	94	288	192	202	159
Future Volume (vph)	63	94	288	192	202	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1599	1863	1583	1787	1681
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1599	1863	1583	1787	1681
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	2%	2%	1%	13%
Adj. Flow (vph)	81	121	369	246	259	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	121	369	246	259	204
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 39.8%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	94	288	192	202	159
Future Vol, veh/h	63	94	288	192	202	159
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	65	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	1	2	2	1	13
Mvmt Flow	81	121	369	246	259	204
Major/Minor						
	Minor1	Major1	Major2			
Conflicting Flow All	1091	369	0	0	615	0
Stage 1	369	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.42	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	238	679	-	-	970	-
Stage 1	699	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	174	679	-	-	970	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Approach						
	WB	NB	SB			
HCM Control Delay, s	23.8	0	5.6			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	174	679	970	-
HCM Lane V/C Ratio	-	-	0.464	0.177	0.267	-
HCM Control Delay (s)	-	-	42.4	11.4	10.1	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	2.2	0.6	1.1	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Future Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		280		0		312		300	180		100	
Storage Lanes		1		1		1		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1455	0	1538	3471	1346	1752	1792	1553	0
Flt Permitted		0.038				0.040			0.723			
Satd. Flow (perm)	0	71	3471	1455	0	65	3471	1346	1334	1792	1553	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70			90	
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	11%	0%	18%	4%	20%	3%	6%	4%	0%
Adj. Flow (vph)	3	157	3047	157	3	79	2534	11	293	55	197	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	3047	157	0	82	2534	11	293	55	197	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			CI+Ex				CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	custom	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA	Perm	Perm
Protected Phases		1	6			5	2			4		
Permitted Phases	1	6		6	5	2		2	4		4	8
Detector Phase	1	1	6	6	5	5	2	2	4	4	4	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4	12.4	12.4

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	30	49	185
Future Volume (vph)	30	49	185
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	135		100
Storage Lanes	1		1
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	1693	1792	1599
Flt Permitted	0.721		
Satd. Flow (perm)	1285	1792	1599
Right Turn on Red			Yes
Satd. Flow (RTOR)			93
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	1%
Adj. Flow (vph)	32	52	197
Shared Lane Traffic (%)			
Lane Group Flow (vph)	34	52	197
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (ft)	20	100	20
Trailing Detector (ft)	0	0	0
Detector 1 Position(ft)	0	0	0
Detector 1 Size(ft)	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	Perm
Protected Phases		8	
Permitted Phases	8		8
Detector Phase	8	8	8
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	12.4	12.4	12.4

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0	35.0	35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%	21.9%	21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6	27.6	27.6
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4	4.4	4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4	7.4	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None
Act Effct Green (s)		118.3	104.7	104.7		107.9	99.3	99.3	27.6	27.6	27.6	
Actuated g/C Ratio		0.74	0.65	0.65		0.67	0.62	0.62	0.17	0.17	0.17	
v/c Ratio		0.82	1.34	0.16		0.69	1.18	0.01	1.27	0.18	0.58	
Control Delay		73.0	183.8	6.3		61.1	114.0	0.0	203.2	58.3	39.8	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		73.0	183.8	6.3		61.1	114.0	0.0	203.2	58.3	39.8	
LOS		E	F	A		E	F	A	F	E	D	
Approach Delay			170.2				111.9			129.5		
Approach LOS			F				F			F		
Queue Length 50th (ft)		114	~2191	32		40	~1680	0	~386	50	103	
Queue Length 95th (ft)		#224	#2286	63		#117	#1794	0	#583	95	194	
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)		280				312		300	180		100	
Base Capacity (vph)		212	2270	976		128	2154	862	230	309	342	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.75	1.34	0.16		0.64	1.18	0.01	1.27	0.18	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.34

Intersection Signal Delay: 139.3

Intersection LOS: F

Intersection Capacity Utilization 123.4%

ICU Level of Service H

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: 3: Monroe Dr & US 129

		
Ø1	Ø2 (R)	Ø4
21 s	104 s	35 s
		
Ø5	Ø6 (R)	Ø8
15 s	110 s	35 s



Lane Group	SBL	SBT	SBR
Total Split (s)	35.0	35.0	35.0
Total Split (%)	21.9%	21.9%	21.9%
Maximum Green (s)	27.6	27.6	27.6
Yellow Time (s)	4.4	4.4	4.4
All-Red Time (s)	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	5.0
Recall Mode	None	None	None
Act Effct Green (s)	27.6	27.6	27.6
Actuated g/C Ratio	0.17	0.17	0.17
v/c Ratio	0.15	0.17	0.56
Control Delay	58.5	58.1	38.1
Queue Delay	0.0	0.0	0.0
Total Delay	58.5	58.1	38.1
LOS	E	E	D
Approach Delay		44.3	
Approach LOS		D	
Queue Length 50th (ft)	31	47	100
Queue Length 95th (ft)	66	90	189
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)	135		100
Base Capacity (vph)	221	309	352
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.17	0.56
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Future Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt			0.850			0.850				0.850		
Flt Protected		0.950			0.963			0.950				0.950
Satd. Flow (prot)	0	1770	1404	0	1830	1615	0	1159	3406	1615	0	1805
Flt Permitted		0.950			0.963			0.950				0.950
Satd. Flow (perm)	0	1770	1404	0	1830	1615	0	1159	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		254			653				2889			
Travel Time (s)		6.9			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Heavy Vehicles (%)	2%	0%	15%	0%	0%	0%	0%	57%	6%	0%	0%	0%
Adj. Flow (vph)	599	0	200	7	2	12	2	87	1875	8	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	599	200	0	9	12	0	89	1875	8	0	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 117.0%												
ICU Level of Service H												
Analysis Period (min) 15												

	↓	↙
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	2558	219
Future Volume (vph)	2558	219
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1524
Flt Permitted		
Satd. Flow (perm)	3471	1524
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	6%
Adj. Flow (vph)	2637	226
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2637	226
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

Intersection															
Int Delay, s/veh	1.2														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations		↕	↕		↕	↕		↕	↕		↕	↕	↕	↕	↕
Traffic Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Future Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	-	None	
Storage Length	-	-	0	-	-	0	-	150	-	110	-	150	-	150	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-	-	
Peak Hour Factor	97	97	97	97	97	97	92	97	97	97	92	97	97	97	
Heavy Vehicles, %	2	0	15	0	0	0	0	57	6	0	0	0	4	6	
Mvmt Flow	599	0	200	7	2	12	2	87	1875	8	2	23	2637	226	

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	3804	4748	1319	3422	4966	938	2637	2863	0	0	1875	1883	0	0
Stage 1	2687	2687	-	2053	2053	-	-	-	-	-	-	-	-	-
Stage 2	1117	2061	-	1369	2913	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	7.2	7.5	6.5	6.9	6.4	5.24	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.45	3.5	4	3.3	2.5	2.77	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 1	1	~ 131	~ 3	~ 1	269	29	~ 50	-	-	92	323	-	-
Stage 1	~ 22	47	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 221	98	-	157	35	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	1	~ 131	-	~ 1	269	138	138	-	-	262	262	-	-
Mov Cap-2 Maneuver	-	1	-	-	~ 1	-	-	-	-	-	-	-	-	-
Stage 1	~ 22	43	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 206	98	-	-	32	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB				SB					
HCM Control Delay, s					3.1				0.2					
HCM LOS	-		-											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	138	-	-	-	131	-	269	262	-	-
HCM Lane V/C Ratio	0.643	-	-	-	1.527	-	0.046	0.095	-	-
HCM Control Delay (s)	69.5	-	-	-	\$ 332.4	-	19	20.2	-	-
HCM Lane LOS	F	-	-	-	F	-	C	C	-	-
HCM 95th %tile Q(veh)	3.5	-	-	-	14	-	0.1	0.3	-	-

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	0	0	0	39	0	687	0	104	150	3
Future Volume (vph)	3	0	0	0	0	39	0	687	0	104	150	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't					0.865						0.999	
Flt Protected		0.950									0.980	
Satd. Flow (prot)	0	1805	0	0	1565	0	0	1810	0	0	1501	0
Flt Permitted		0.950									0.980	
Satd. Flow (perm)	0	1805	0	0	1565	0	0	1810	0	0	1501	0
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1001			1156			4656			254	
Travel Time (s)		27.3			31.5			105.8			5.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	5%	0%	0%	41%	0%
Adj. Flow (vph)	3	0	0	0	0	45	0	799	0	121	174	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	45	0	0	799	0	0	298	0
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)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 63.3%	ICU Level of Service B											
Analysis Period (min) 15												

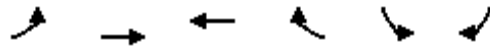
Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Future Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	5	0	5	0	0	41	0
Mvmt Flow	3	0	0	0	0	45	0	799	0	121	174	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1240	1217	176	1217	1218	799	177	0	0	799	0	0
Stage 1	418	418	-	799	799	-	-	-	-	-	-	-
Stage 2	822	799	-	418	419	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.25	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.345	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	153	182	872	159	182	381	1411	-	-	833	-	-
Stage 1	616	594	-	382	401	-	-	-	-	-	-	-
Stage 2	371	401	-	616	593	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	153	872	139	153	381	1411	-	-	833	-	-
Mov Cap-2 Maneuver	118	153	-	139	153	-	-	-	-	-	-	-
Stage 1	616	498	-	382	401	-	-	-	-	-	-	-
Stage 2	327	401	-	517	498	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	36.4		15.7		0		4.1					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1411	-	-	118	381	833	-	-				
HCM Lane V/C Ratio	-	-	-	0.03	0.119	0.145	-	-				
HCM Control Delay (s)	0	-	-	36.4	15.7	10.1	0	-				
HCM Lane LOS	A	-	-	E	C	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.5	-	-				

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	394	157	573	159	16
Future Volume (vph)	4	394	157	573	159	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.988	
Flt Protected	0.950			0.989		
Satd. Flow (prot)	1444	1583	0	1818	1522	0
Flt Permitted	0.950			0.989		
Satd. Flow (perm)	1444	1583	0	1818	1522	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	2%	1%	4%	25%	6%
Adj. Flow (vph)	4	428	171	623	173	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	428	0	794	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 61.5%				ICU Level of Service B		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	394	157	573	159	16
Future Vol, veh/h	4	394	157	573	159	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	2	1	4	25	6
Mvmt Flow	4	428	171	623	173	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1147	182	190	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Critical Hdwy	6.65	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	198	861	1390	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	161	861	1390	-	-	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.3	1.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1390	-	161	861	-	-
HCM Lane V/C Ratio	0.123	-	0.027	0.497	-	-
HCM Control Delay (s)	8	0	28	13.2	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.1	2.8	-	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	220	281	0	411	91
Future Volume (vph)	0	220	281	0	411	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100		0	0	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	1900	1583	1776	0	1770	1377
Flt Permitted					0.950	
Satd. Flow (perm)	1900	1583	1776	0	1770	1377
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	7%	0%	2%	38%
Adj. Flow (vph)	0	239	305	0	447	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	239	305	0	447	99
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 44.2%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	220	281	0	411	91
Future Vol, veh/h	0	220	281	0	411	91
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	100	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	7	0	2	38
Mvmt Flow	0	239	305	0	447	99
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1298	305	0	0	305	0
Stage 1	305	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	180	735	-	-	1256	-
Stage 1	752	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	735	-	-	1256	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.2	0	7.7			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	735	1256	-
HCM Lane V/C Ratio	-	-	-	0.325	0.356	-
HCM Control Delay (s)	-	-	0	12.2	9.4	-
HCM Lane LOS	-	-	A	B	A	-
HCM 95th %tile Q(veh)	-	-	-	1.4	1.6	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	33	80	366	201	70	10
Future Volume (vph)	33	80	366	201	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	0	0
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected		0.986			0.950	
Satd. Flow (prot)	0	1841	1900	1482	1262	1242
Flt Permitted		0.986			0.950	
Satd. Flow (perm)	0	1841	1900	1482	1262	1242
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	0%	9%	43%	30%
Adj. Flow (vph)	36	87	398	218	76	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	398	218	76	11
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 39.2%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	80	366	201	70	10
Future Vol, veh/h	33	80	366	201	70	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	9	43	30
Mvmt Flow	36	87	398	218	76	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	616	0	-	0	557	398
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	159	-
Critical Hdwy	4.16	-	-	-	6.83	6.5
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.254	-	-	-	3.887	3.57
Pot Cap-1 Maneuver	945	-	-	-	428	595
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	945	-	-	-	411	595
Mov Cap-2 Maneuver	-	-	-	-	411	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	779	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		15.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	945	-	-	-	411	595
HCM Lane V/C Ratio	0.038	-	-	-	0.185	0.018
HCM Control Delay (s)	9	0	-	-	15.7	11.2
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.1

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 5/18/2020

Presenter: Matt Tate

Item of Business: Request from the **City of Gainesville** to rezone a 1,320± acres tract located between Athens Highway and Candler Highway, having road frontage on Monroe Drive, Allen Creek Road, Fulenwider Road and May Drive (a/k/a **1701 Fulenwider Road, SW**) from Residential-I-A (R-I-A) and Heavy Industrial (H-I) to Planned Unit Development (P-U-D).
Ward Number: Three
Tax Parcel Number(s): 15-023-000-167 (Part)
Request: Business Park

Meeting Date: 6/9/2020

Purpose of Request:

The City of Gainesville is proposing to rezone the subject property as part of an overall 1,324.4± acres planned development known as the Gainesville 85 Business Park. The subject property consists of a large tract of land located east of Interstate 985 between Exits 20 & 22, with access to US 129 and SR 60. The business park will consist of a network of existing and new roads that will serve approximately 19-lots varying in size from 2 acres to over 100 acres. The property is heavily wooded with rolling topography and streams. Adjacent uses include mostly industrial uses within Gainesville and Hall County and some residential uses located to the east along Smallwood Road within the County.

History/Background:

Facts & Issues for Consideration:

Department Recommendation:

Planning staff recommended approval with two conditions. See the staff recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
☐ Staff Recommendation Report	Report
☐ Location Maps	Backup Material
☐ Narrative	Backup Material
☐ Community Benefit Statement	Backup Material
☐ Site Plans - Phasing Plan	Backup Material
☐ Buffer Exhibit F	Backup Material
☐ Architectural Photos	Backup Material
☐ Traffic Impact Study	Backup Material

**GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION**

Applicant and Property Owner..... City of Gainesville
Location..... Annexation: 0 and 2221 Smallwood Road;
2306 and 2312 Athens Highway
..... Rezoning: 1701 Fulenwider Road, SW
Request..... Annex with P-U-D zoning
..... Rezone from R-I-A and H-I to P-U-D
Total Acres Annexation: 4.4± acres
..... Rezoning: 1,320± acres
Ward..... Three
Proposed Use..... Business Park
Planning Division Staff Recommendation **Approval, with conditions**
Date..... June 9, 2020

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

The City of Gainesville is proposing to annex and rezone the subject property for a 1,324.4± acres planned development known as the Gainesville 85 Business Park. The subject property is located east of Interstate 985 between Exits 20 & 22 and is heavily wooded with rolling topography and streams. The development is to include 5,000,000 square feet of light and heavy industrial uses as well as ancillary uses developed over a period of 15 to 20 years. The development will consist of a network of existing and new roads that will serve approximately 19-lots varying in size from 2 acres to over 100 acres. The overall concept plan anticipates three phases to provide necessary infrastructure for the development sites.

Phase I (approximately 2020 - 2025):

- Clearing, grading and construction of infrastructure improvements at Allen Creek Road, the new roadway from Allen Creek Road south to Fulenwider Road and extension of Fulenwider Road east and terminating at a new cul-de-sac.
- Construction of entrance monument Allen Creek Road, if desired.
- Construction of stormwater management facilities serving the Phase 1 development parcels.
- Construction of water and wastewater improvements to serve the Phase 1 development parcels along the proposed roadways.
- Installation of a sanitary sewer pump station, outfall sanitary sewer and force main.

Phase II (approximately 2026 - 2030):

- Extension of Fulenwider Road from the existing portion to the Phase 1 portion.
- Intersection improvements at Fulenwider Road and SR 60.
- Construction of entrance monument Fulenwider Road, if desired.
- Construction of stormwater management facilities serving the Phase 2 development parcels.
- Construction of water and wastewater improvements to serve the Phase 2 development parcels along the proposed roadways.

Phase III (approximately 2031 - 2040):

- Extension of the roadway from Allen Creek Road north to US 129 with water and wastewater improvements to serve the Phase 3 development parcels.
- Construction of entrance monument at US 129, if desired.
- Intersection improvements at the new roadway and US 129.

Annexation

The property is 4.4± acres in size and is adjacent to and east of the city limits and is currently zoned Agricultural Residential-IV (AR-IV) and Residential-II (R-II) within unincorporated Hall County. The property consists of part or all of five tracts of land and a portion of Smallwood Road that will be improved and will serve as the 85-Business Park access from Athens Highway (US 129). There are two existing residential structures located on the property that will be removed.

Rezoning

The property is 1,320± acres in size and is currently zoned Residential-I-A (R-I-A) and Heavy Industrial (H-I). A large portion of the property was originally annexed and zoned in 1991 for a land application farm for wastewater which was never constructed. The current uses within the property include the Gainesville Public Lands and Buildings maintenance facility and the Kubota ATV / RTV test track, which will all be removed. Access to the property is currently from Allen Creek Road, Fulenwider Road and Monroe Drive.

A full description of the overall development standards is described within the narrative provided with the application which include the permitted uses, dimensional requirements, architectural, landscape/buffer/tree protection, stormwater management, grading and erosion control, signage requirements and infrastructure improvements such as roads and utilities.

▪ Adjacent Land Use and Zoning

Adjacent uses include mostly industrial uses within Gainesville and Hall County and some residential uses located to the east along Smallwood Road within the County.

Location	Use	Zoning
North	Allen Creek Soccer Complex; Gainesville Police Gun Range	Residential-I (R-I-A) City
South	Numerous Industrial Uses; Residential Home	Heavy Industrial (I-II); Agricultural Residential-IV (AR-IV) County
East	Hall County Fire Training Facility, Hall County Sherriff Gun Range; Undeveloped Land	Agricultural Residential-IV (AR-IV) County Residential-I (R-I-A) City
West	Various Industrial uses; Cottrell, Volvo Truck Repair Facility, Hall County Landfill, Residential Home	Light Industrial (I-I), Heavy Industrial (I-II); Agricultural Residential-III (AR-III); Agricultural Residential-IV (AR-IV) County

▪ Traffic Impact Study

A traffic impact study was completed for this development on January 31, 2020. The study area included the following intersections:

- Signalized intersection of Athens Highway US 129 (SR 11) & Monroe Drive.
- Unsignalized intersection of Candler Road SR 60 & Fulenwider Road.
- Unsignalized intersection of Monroe Drive & Allen Creek Road.
- Unsignalized intersection of Athens Highway US 129 (SR 11) & Highlands Village Road / Smallwood Road.
- Unsignalized intersection of Highlands Village Road & Smallwood Road.
- Proposed internal access at Allen Creek Road
- Proposed internal access south of Allen Creek Road.
- Proposed internal access at Fulenwider Road.

Traffic counts were collected on Thursday, October 24, 2019, Tuesday, November 19, 2019, and Wednesday, December 4, 2019 at the studied intersections that exist. The below table is a breakdown of the project trip generation as based on a 2.5% annual growth rate per year.

	Total Trips	Inbound Trips	Outbound Trips	Car Trips	Truck Trips
Daily	16,850	8,425	8,425		
AM	2,000	1,620	380	1,780	220
PM	2,000	420	1,580	1,859	141

Based on the results of this traffic impact study, all studied intersections are projected to continue to operate at a Level of Service (LOS) E or F which is less than desirable. The addition of turn lanes at the studied intersections will help traffic movements but will still experience heavy traffic volumes. A GDOT Intersection Control Evaluation (ICE) procedure and a traffic signal warrant study will be required for the intersections at SR 60 and US 129 and Monroe Drive that are either new or involve changes. Once the ICE is determined, the mitigation needed to provide adequate Level of Service (LOS) can be determined, such as improved signalization and other offsite improvements.

▪ **Other Departmental Comments**

The Georgia Mountains Regional Commission Development of Regional Impact Study (DRI) finds the project does *not* present any potential adverse inter-jurisdictional impacts. Additional measures for environmental and transportation management would be ideal but could limit the scope of the development. Consideration should also be given to examine any potential adverse impacts on the neighboring residential properties.

The Hall County Environmental Health Department commented that any abandoned well shall be properly closed as per Water Well Standards Act. Any abandoned septic tank shall be pumped by a State certified pumper/hauler and crushed/filled.

There were no departmental comments for this request.

▪ **Zoning History**

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

2019- A request by City of Gainesville to rezone 395.69± acres located at 1701 Fulenwider Road, SW from Residential-I-A (R-I-A) to Heavy Industrial (H-I) was approved with conditions for future industrial uses.

Analysis

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

The subject property is adjacent to industrial and public uses located along Fulenwider Road, Monroe Drive, Allen Creek Road, Athens Highway and Candler Road. The industrial uses are supportive of the proposed request. There are also limited residential and agricultural zoned properties to the northeast in the County which touch the subject property along Smallwood Road and to the southwest near Candler Road.

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

It is anticipated the proposed 85-Business Park will be developed over a period of 15 to 20 years. Properties most impacted by the proposal include existing industrial uses and patrons of the nearby Allen Creek Soccer Complex. As well, the existing residential homes located off of Smallwood Road in the County will experience increased traffic movements at the planned intersection of Athens Highway and Smallwood Road. The proposal includes water, sewer and road improvements that will directly serve the proposed business park. The road improvements are designed to allow for alternative points of ingress and egress in order to more evenly distribute employee and truck traffic along Allen Creek Road, Athens Highway, Candler Road, Fulenwider Road and Monroe Drive. In addition, appropriate stormwater measures will be required to protect the existing streams and Allen Creek Watershed.

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

It is staff's opinion that the proposal is consistent with the Comprehensive Plan.

The Future Development Map for the City of Gainesville places most of the 1,320± acres property to be rezoned within the *Industrial* land use category. This industrial land use category includes areas containing or planned for a wide range of office, business, light industrial, manufacturing, research and development uses; and commercial uses that directly support or are otherwise linked to the dominant business use. As well, a small portion of the property is adjacent to the Allen Creek Soccer Complex and is located within the Parks / Recreation / Conservation land use category which is intended for park space, open space and conservation areas.

The 4.4± acres annexation portion of property is planned as the Athens Highway 85-Business Park entrance. This property is located within the *Retail Commercial* and *Low-Medium Density Residential* land use category which is intended for uses such as grocery, bank, restaurants, theatres, hotels and automotive related businesses and single-family housing at densities of up to 4 dwelling units per acre.

According to the Character Area map for the City of Gainesville, the subject properties are located within the *Economic Development Gateways* character area which support the applicant's proposal. This character area represents the industrial, warehousing and other commercial enterprises that parallel the I-985 and Norfolk-Southern railroad corridor. The primary vision for the area is to continue to support economic development while preserving and strengthening important natural and cultural resources. These areas include a wide range of office, business, light industrial, manufacturing, research, and development uses.

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

The subject property is currently zoned for residential and industrial purposes. Based on the Comprehensive Plan and the existing development located off of Allen Creek Road, Fulenwider Road and Monroe Drive, the property appears to be more conducive for industrial purposes. The proposed zoning of Planned Unit Development (P-U-D) is a site-specific zoning that includes consistent and improved development standards unlike the existing industrial development located along Fulenwider Road and Monroe Drive.

(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?

Public facilities and services are adequate but will require improvements to access, roads, stormwater and water/sewer utilities. The Gainesville Fire and Police Departments currently respond to the property. Gainesville Fire Station #1 is located off of Queen City Parkway and is 3.5± miles from the proposed access at Fulenwider Road. Hall County Fire Station #1 is located off of Athens Highway and is approximately 1.5± miles from the proposed Athens Highway/Smallwood Road access. There will be no impacts to the City school system in regards to increasing the number of children attending City schools.

(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?

It is staff's opinion the proposed use is consistent with the Comprehensive Plan. The subject property and much of the surrounding area have been planned for public and industrial uses for over 30 years. As well, the surrounding area has experienced mostly industrial growth partly due to Exit 20 /I-985, Lee Gilmer Memorial Airport and CSX Railroad being located nearby.

(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?

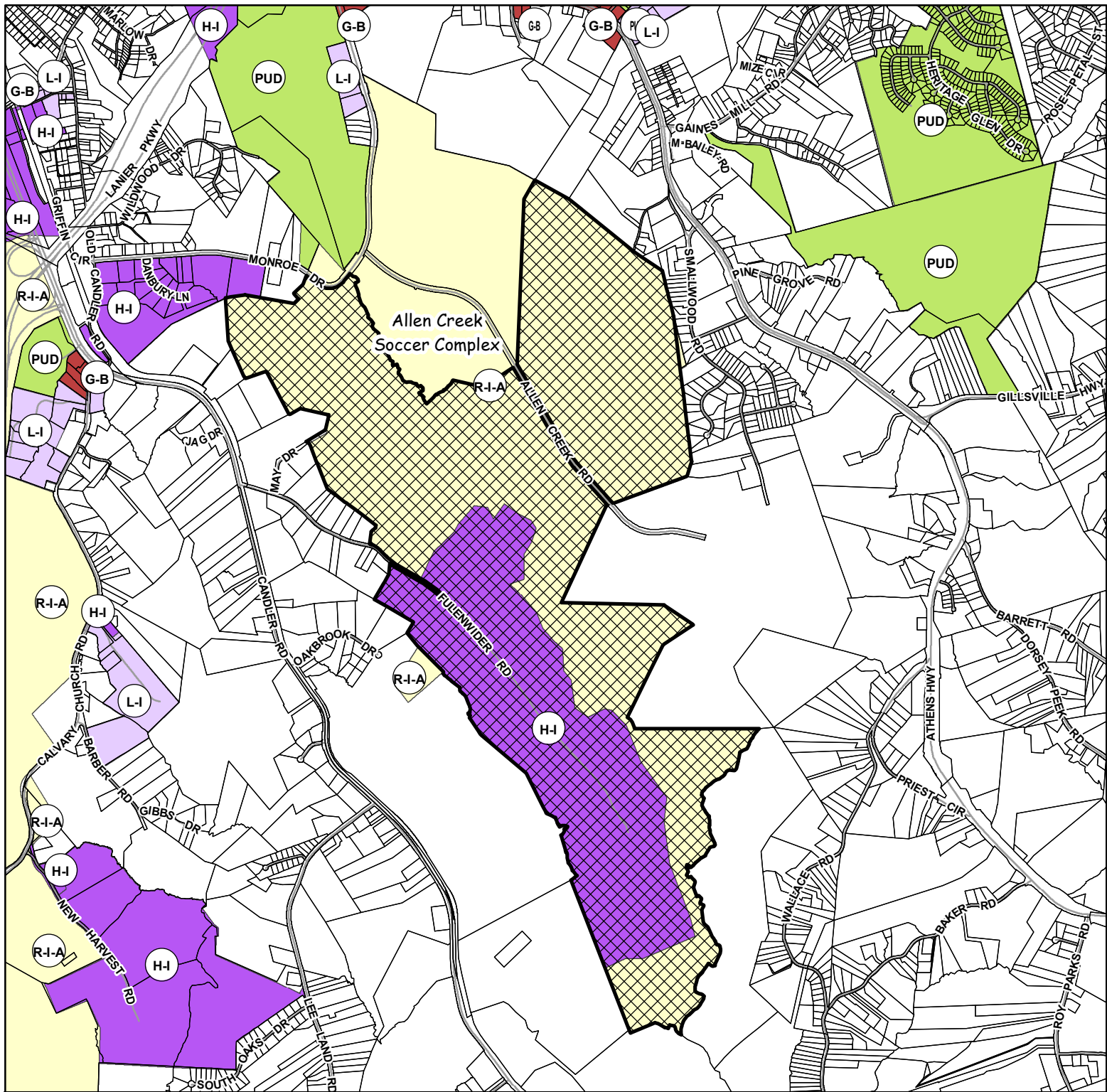
Based on the subject property's close proximity to other industrial properties, the proposal with the zoning conditions recommended by staff appears to promote a reasonable balance between the promotion of the public health, safety, morality, or general welfare, and the right to unrestricted use of property.

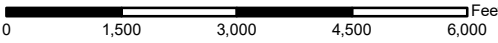
▪ **Staff Recommendation**

The Planning Division staff is recommending **conditional approval** of this annexation and rezoning request with a **zoning of Planned Unit Development (P-U-D)**, based on the Comprehensive Plan and the adjacent and nearby industrial uses.

Conditions

- 1. The development standards within the narrative, site plan and architectural renderings submitted with the applicant's annexation and rezoning application shall be made part of the zoning ordinances, and shall be subject to the approval of the Director of the Community and Economic Development Department.**
- 2. The proposed landscape buffer adjacent to the residential properties located off of Smallwood Road and Smallwood Springs Drive shall be planted with evergreen trees where determined necessary to provide for an effective buffer. The number, location, spacing, size and type of trees planted shall be subject to the approval of the Director of the Community and Economic Development Department.**



Applicant: CITY OF GAINESVILLE		 Subject Property 
Request: Rezone a 1,320+/- acres tract from Residential-I-A (R-I-A) and Heavy Industrial (H-I) to Planned Unit Development (P-U-D) for a business park		
Subject Property Address: 1701 Fulenwider Road, SW	Tax Parcel: 15-023-000-167 (Part)	 0 1,500 3,000 4,500 6,000 Feet 1" = 2,500' 
Meeting Date: 06/09/2020 Map Prepared: 05/13/2020		



Applicant:

CITY OF GAINESVILLE

REZONING REQUEST

Request:

Rezone a 1,320+/- acres tract from Residential-I-A (R-I-A) and Heavy Industrial (H-I) to Planned Unit Development (P-U-D) for a business park

Subject Property Address:

1701 Fulewider Road, SW

Tax Parcel:

15-023-000-167 (Part)

Meeting Date: 06/09/2020

Map Prepared: 05/13/2020



Subject Property

Aerial from 2018

0 1,500 3,000 4,500 6,000 Feet

1" = 2,500'



CITY OF
GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT



GAINESVILLE 85 BUSINESS PARK
CONDITIONS OF ZONING
February 28, 2020

The request is to rezone 1,231 ± acres from Residential-I-A (R-I-A) and Heavy Industrial (H-I) to Planned Unit Development (P-U-D) and to annex 4.4 ± acres with a zoning of Planned Unit Development (P-U-D) for a proposed business park. This document is submitted consistent with requirements of the Unified Development Code of Gainesville, Georgia, Section 9-7-1-1, PUD, Planned Unit Development, as amended 12/17/19. It accompanies other rezoning application submittal material and is an integral part of the rezoning package to be reviewed by staff and to be subject to the public hearing process. As such it may be modified by mutual agreement of the City of Gainesville, Georgia ("City") and the Applicant, City of Gainesville, Georgia (hereinafter "Developer") up to the point of approval by the City Council. Upon approval it shall become an integral part of the zoning approval for the properties herein described and depicted in the accompanying Conceptual Plan (hereinafter "Concept Plan"). Additional terms are provided for its interpretation or modification after approval.

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RELATIONSHIP TO CITY ZONING ACTION

This narrative explains and clarifies the Concept Plan and related development standards specific to the Gainesville 85 Business Park Planned Unit Development district (hereinafter "Project"). This method is common for large, complex developments that will be built over a period of several years. It gives the City, adjacent property owners, the general public and Developer, including its successors and assigns, certainty with respect to development standards, while also providing flexibility to the Developer to be able to respond to changes in market conditions and preferences consistent with the intent of the Planned Unit Development Section of the City's Zoning Ordinance as it exists at the time of initial application.

This document is intended to detail and clarify the conditions of zoning and slight modifications to the Gainesville Unified Land Development Code for the Project as described herein and as reflected in the accompanying Exhibits. Due to the complexity of the Project, its projected build-out over a period of 15 to 20 years, and uncertainty of future economic considerations, the City acknowledges the significant rights vested to the applicant based on this approval, and the need for the Developer to be able to rely on these conditions of approval over the life of the project, as long as the project proceeds in general conformance with the program discussed herein. After approval, the conditions of zoning shall be recorded in the public records of Hall County, Georgia and reference to recording information shall be included on any and all plats created for the development.

It is intended that the submitted boundary perimeter of the Project (hereinafter "Project Boundary") and corresponding acreage of the PUD district will be as shown in submittal material. However, zoning conditions of the Project may be applied to additional property outside the initial Project Boundary, if the Applicant acquires additional property and with City Council approval via the rezoning process. Consideration of different conditions for the addition of property(ies) after approval(s) shall not prompt or require a re-review of conditions of zoning for the Project as it then exists, but shall apply only to additional lands, if any.

CONCEPT PLAN

The development of the Project shall be controlled by the Concept Plan, attached hereto as Exhibit "A", the Project Narrative and other exhibits provided as modified in the final approval. The Plan is considered conceptual in nature, and certain modifications to that Plan are anticipated as reflected in the specific language herein. Beyond such specific language, modifications of the location and arrangement of lots, roads, amenities and other improvements that do not materially conflict with specific standards and requirements of these conditions may be made by the Developer, so long as such modification does not materially alter the location or nature of improvements or change the land use or increase density. The current Plan incorporates light industrial and heavy industrial uses.

PUD ZONING DISTRICT - GAINESVILLE 85 BUSINESS PARK

The Project shown in the Concept Plan is strategically located east of Interstate 985 between Exits 20 & 22. With close access to US 129 and SR 60, the Park will consist of a network of existing and new roads that will serve approximately nineteen (19) lots varying in size from 2 acres to over 100 acres. The Developer will retain the flexibility to combine or further subdivide the lots in order to accommodate specific needs of future users. Five

(5) outparcels have been acquired and will be annexed into the City for the purpose of providing a direct connection to US 129.

The overall Concept Plan requests approval for a maximum of 5,000,000 SF of light and heavy industrial uses as well as additional uses as specified herein. The Developer acknowledges that the specific standards of these conditions and applicable City codes not otherwise modified herein shall control.

DEVELOPMENT

Dimensional Requirements

The dimensional requirements for the project shall be as outlined in Table 1 below:

Table 1

Dimensional Requirements - Gainesville 85 Business Park	
Project Acreage	1330 +/-
Minimum lot size	15,000 SF
Minimum lot width	100'
Maximum building coverage - individual lot	60%
Maximum impervious surface coverage - individual lot	85%
Minimum open space - individual lot	none
Minimum open space - overall	5%
Minimum landscape strip along internal R/W's	20'
Maximum structure height	120'
Maximum number of stories	5
Front setback from R/W	75'
Side setback - internal	20'
Rear setback - internal	20'
Industrial Park Perimeter Side/Rear setback/buffer adjacent to residential uses/zoning districts	50'
Industrial Park Perimeter Side/Rear setback/buffer adjacent to nonresidential uses/zoning districts	none
Parking setback from R/W	10'
Front Building setback from parking lots	10'
Parking ratio - manufacturing, processing, assembling	none
Parking ratio - all other uses	Per UIDC
Driveway width	28'
Minimum driveway radius	25'
Minimum number of off street loading spaces	none

Development Standards

The Developer agrees to comply with all applicable City rules and regulations in effect on the date of approval, except as specifically modified herein. The Developer agrees to comply with future amendments to those rules or regulations, except where specific conflicting standards are approved herein, or such future compliance is specifically waived.

Subsequent actions by the City to change Development Standards for other zoning districts of the City shall not apply to the 85 Gainesville Industrial Park PUD district, unless such changes are city-wide and required by changes in federal or state laws. By approval of the City, the Developer will have substantial vested rights for the Project.

Permitted Uses

This PUD zoning shall allow for the following uses:

- Conservation Area
- Clinic
- Club or Lodge
- College or University
- School for Arts
- Private School
- Professional School
- Special School
- Trade School
- Bank or Financial Establishment
- Broadcasting Studio
- Building Materials Sales
- Business Service Establishment
- Contractor's Establishment
- Custom Order Shop
- Exterminator
- Health Spa
- Museum
- Office
- Parking Lot – off site
- Parking Structure
- Personal Service Establishment – more than 2500 sf
- Restaurant
- Retreat Center
- Bottling or Canning Plant
- Brewery or Distillery
- Bulk Storage
- Cold Storage
- Distribution including truck terminal
- Apparel Manufacturing
- Ceramics Manufacturing
- Cosmetics Manufacturing
- Electronics Manufacturing
- Fiberglass Insulation Manufacturing
- Ice Manufacturing
- Machine Manufacturing
- Metal Products Manufacturing

- Pharmaceutical/Medical Manufacturing
- Office/Warehouse
- Warehouse or Storage Building
- Wholesale Trade Establishment
- Public Use
- Utility Company
- Utility Company Substation
- Accessory Use incidental to principal use
- ATM Machine
- ATM Drive through
- Caretaker's Residence
- Construction Field Office
- Drive Through
- Manufacturing Accessory to Retail use
- Office/Institutional/Industrial Warehouse/Distribution/Manufacturing uses
- Instrument Assembly

In addition, this PUD zoning shall allow for the following specific uses:

- Proving grounds for equipment performance testing
- Gun ranges owned and operated by government agencies
- Equipment maintenance facilities owned and operated by government agencies
- Temporary construction offices housed in trailer or modular buildings

DEVELOPMENT FEES

All applicable fees for water & sewer connections, land disturbance permits and building permits will be administered based on the then current fee schedule for the City of Gainesville.

AESTHETICS

ARCHITECTURE

The Developer has proposed a unified development vernacular of building forms, mass, articulation, exterior treatments, surface materials and finishes, complimentary colors and similar details. This approval will guide development of the buildings, with no further architectural approval required outside of the administrative building permit process. Pictorial examples of the intended quality level and character of industrial architecture are provided in Exhibit "B". Review and compliance will be monitored through the covenants to be filed on the property.

Landscape Standards

Landscape standards shall be in accordance with the Declaration of Covenants, Restrictions and Easements for Gainesville 85 Business Park, to be recorded on the property. Any standards not addressed within the covenants shall meet the standards of the ULDC.

SIGNAGE

Signage and graphics design standards, typical for a Planned Unit Development, are developed to establish a cohesive, distinctive and functional system to visually attract and communicate with everyone who visits and works in Gainesville 85 Business Park. A well-coordinated sign system is also one of the most effective ways of creating lasting identity and way-finding clarity. Project signage along public roadways in 85 Gainesville Industrial Park will be designed consistent with a high-quality image. A coordinated program of signage for individual sites shall be approved in conjunction with the site plan approval of the building, similar to pictorial examples provided in Exhibit "C".

All sign square footage criteria are calculated inclusive of the sign monument.

Signage design criteria is requested as follows:

<u>Sign Type</u>	<u>Maximum Area per Face (SF)</u>	<u>Maximum Height (ft)</u>	<u>Frequency</u>
User Sign Types			
Ground Mounted Sign	200 sf	18 ft	One (1) sign per lot per street frontage
Portable Sign	8 sf		One (1) per establishment
Wall Sign	1 sf of wall signage per 1 lf of wall length	3 ft on 1 st & 2nd floor	One (1) per each tenant having an exterior public entrance
Window Sign	32 sf	12 inches	One (1) per establishment
Projecting Blade Sign	16 sf		One (1) per establishment
Entry Signage	32 sf	8 ft	One (1) per bldg. entrance
Grand Opening and Temporary Signage	32 sf		
Developer Sign Types			
Major Parkway Identification	200 sf	18 ft	One (1) @ SR 129 One (1) on Fullenwider Rd
Secondary Parkway Identification	200 sf	18 ft	One (1) @ Monroe Dr
Way-finding Signage	100 sf	15 ft	As needed
Minor Information and Directional Signs	35 sf	8 ft	As needed
Regulatory Signs			As needed

Entry Feature Monuments

A main entrance feature or signage shall be allowed at the entrances from US 129, Fullenwider Road and Monroe Drive. The main entrance features may include extensive walls, fencing, landscaping and signage that is commensurate with the size of the Project and the scale of the entrances.

ENVIRONMENTAL

FLOOD PLAIN MANAGEMENT

Flood plains will remain undisturbed with the exception of roadway crossings and utility placement. A trail system may also be constructed within this zone.

BUFFERS, LANDSCAPING AND TREE PROTECTION

An external buffer of 50' will be imposed where the site adjoins a residential zoning district (Exhibit "F"). Driveway construction for Lot #5 may be constructed within the buffer and is excluded from this requirement. The buffer may be disturbed and replanted in these areas to the satisfaction of the Declarant.

CULTURAL RESOURCES

A cultural resources literature search by R.S. Webb & Associates, dated August 13, 2018, identified five sites that may have eligibility under NHRP. These sites, as shown on Exhibit "D" will be delineated and protected by an additional 25' buffer around the perimeter. A variance to this buffer may not be granted.

STORMWATER MANAGEMENT, GRADING AND EROSION CONTROL

Stormwater Management

A series of storm water management facilities will be designed to serve the project on a basin wide basis, rather than individual sites. However, individual sites will be required to provide water quality elements for their own stormwater runoff.

Grading and Erosion Control

The Project contemplates multiple areas being open to construction activity concurrently. Similarly, over time multiple phases of concurrent road and lot development may be on going in multiple parcels within multiple phases. At the developer's discretion these may be submitted as stand-alone projects or integrated within common sets of construction plans. Proper erosion control measures are to be maintained at all times with particular attention to steep fill or cut slopes, large areas of grading and areas immediately adjacent to stream buffers. Developer will adhere to all State and Federal requirements regarding erosion and sediment controls.

Stream Buffers

The Project contains several small unnamed tributaries to Allen Creek. The Developer has received a US Army Corps of Engineers' Individual Permit for permitting stream & wetland impacts. If these impacts are exhausted and to the degree feasible, the Developer may avoid additional impacts to the stream channel by use of pre-fabricated span structures, such as ConSpan or OmegaSpan, wooden bridges or other types of alternative crossings that meet development regulations, rather than pipe or culvert. In consideration of the extra expense and effort associated with this limitation of impact to streams, the City agrees that variances to the City's required stream buffers (50' undisturbed & 75' impervious) will be considered where dimensional and topographic hardships may exist. Such buffers may be crossed by utility crossings, roads and trails, provided such are placed as perpendicular to the buffer as practical. Pervious surface trails of the Multi-Use Trail system may meander within buffers at distances greater than 25' from top of bank, except at points of crossing or specific focal points of interest. Unless

DEVELOPMENT PHASING

85 Gainesville Industrial Park is anticipated to be developed over a fifteen to twenty year time frame. At present the following phasing, as depicted on Exhibit "E" is planned on a conservative basis, but may be either accelerated or deferred at the discretion of the Developer, depending on market conditions. It is the Developer's desire and intent to develop all phases of the Project, but no guarantee is made by way of this document,

zoning approval, or accompanying Concept Plan that all phases of the Project will be developed.

Phase I (approximately 2020 - 2025):

- Clearing, grading and construction of infrastructure improvements at Allen Creek Road, the new roadway from Allen Creek Road south to Fullenwider Road and extension of Fullenwider Road east and terminating at a new cul-de-sac.
- Construction of entrance monumentation at Allen Creek Road, if desired.
- Construction of stormwater management facilities serving the Phase 1 development parcels.
- Construction of water and wastewater improvements to serve the Phase 1 development parcels along the proposed roadways.
- Installation of a sanitary sewer pump station, outfall sanitary sewer and force main.

Phase II (approximately 2026 - 2030):

- Extension of Fullenwider Road from the existing portion to the Phase 1 portion.
- Intersection improvements at Fullenwider Road and SR 60.
- Construction of entrance monumentation at Fullenwider Road, if desired.
- Construction of stormwater management facilities serving the Phase 2 development parcels.
- Construction of water and wastewater improvements to serve the Phase 2 development parcels along the proposed roadways.

Phase III (approximately 2031 - 2040):

- Extension of the roadway from Allen Creek Road north to US 129 with water and wastewater improvements to serve the Phase 3 development parcels.
- Construction of entrance monumentation at US 129, if desired.
- Intersection improvements at the new roadway and US 129.

INFRASTRUCTURE IMPROVEMENTS

In general, the Developer shall be responsible for providing the timely construction of all on-site project-related infrastructure necessary to serve the Project, and to also accommodate or facilitate specific concurrent or future additional on-site system-related improvements of the City. The Developer shall not be required to oversize roads, facilities or pipe systems at their expense, unless accommodation is made for credits or rebates of fees and charges for the portion of system-related improvements that exceed otherwise required project-related improvements.

The construction and installation of infrastructure improvements shall be conducted in conformance with the applicable codes, ordinances, policies and procedures of the City and the other applicable governmental agencies and service providers, unless specifically modified herein. Modification of the requirements of other agencies or providers may be referenced here, but the authority to make such modifications lays with those other parties by separate agreement.

ROAD IMPROVEMENTS

On-site Improvements

As provided for through the PUD District, it is intended that the on-site roads shall all be constructed to meet the City standards and specification for public roads, with the following modifications:

Fullenwider Road Extension

Minimum design speed – 25 mph, with design values based on AASHTO standards

- Minimum right-of-way – 60'
- Minimum pavement width (back to back of curb) – 28'
- Minimum pavement design – 2" Type E, 3" Type B & 12" GAB
- Minimum cul-de-sac pavement radius – 52' to back of curb
- Perpetual Easement outside R/W – 5' on both sides
- Maximum grade – 12%

US 129 Entrance Road

- Minimum right-of-way – 60'
- Minimum pavement width (back to back of curb) – 28'
- Minimum pavement design – 2" Type E, 3" Type B & 12" GAB
- Perpetual Easement outside R/W – 5' on both sides
- Maximum grade – 12%

Allen Creek Road Connector

- Minimum right-of-way – 60'
- Minimum pavement width (back to back of curb) – 28'
- Minimum pavement design – 2" Type E, 3" Type B & 12" GAB
- Perpetual Easement outside R/W – 5' on both sides
- Maximum grade – 12%

UTILITIES

Water Service

Water service will be provided by the City, through an extension of existing water lines located in Allen Creek Road and Fullenwider Road with a future connection back to US 129.

Sanitary Sewer Service

Sanitary Sewer Service will be provided by the City. Gravity sewers will be constructed throughout the property and will flow to the new 85 Gainesville Business Park pump station located at the southern end of the property. The flow will then be pumped back to the existing Allen Creek pump station located near the soccer complex and eventually to the Flat Creek Water Reclamation Facility for treatment and disposal.

Other Utilities

All utilities are to be placed underground. Electric, gas, phone, cable and/or fiber are to be placed by respective utility providers as available per City of Gainesville standards in common trench or conduit after curbing and prior to driveway/sidewalk installation. Small cell antenna systems for internet and Wi-Fi as an alternative to cable or fiber may be placed in conjunction with street light poles.

AMENDMENTS TO THESE CONDITIONS

It is understood that the Project is being constructed over an extended period of time in a rapidly growing area; therefore, amendments to these conditions are possible and should be anticipated. In order to protect the interests of the parties involved, along with the interests of neighboring property owners and the general public, these conditions shall be amended under the procedures outlined below:

Changes to the Concept Plan

Certain modifications to the Concept Plan are described above, which are exempt because of distance from the original perimeter of the property or can be administered at a staff level and do not require formal amendment of the Concept Plan. However, if a proposed change does not meet the criteria, a formal amendment must be approved through the same public hearing process as required for the original zoning approval. Examples of these would be major changes at the original perimeter of the property, or changes in use or development standards for the property on the whole.

Changes to the Language of these Conditions

Minor changes or clarifications of the language of these conditions may be made as part of a vote by the City Council at any duly called meeting. These include the adjustment of time frames for specific actions while maintaining the overall intent of Project phasing, the modification of technical specifications for infrastructure improvements, and the addition of new language clarifying issues not previously part of this agreement.

Other changes to the language of these conditions must be approved through the same public hearing process as required for the original zoning approval. This specifically includes the deletion of any required improvements, the addition of any permitted land use(s), any increase, above 10%, in the maximum amount of development permitted, or a change to the criteria for buffers or setbacks for development taking place adjacent to the Project Boundary.

EFFECT OF CITY ORDINANCE CHANGES

It is specifically acknowledged that the City may consider changes to its development regulations over the life of this Project's development, construction and occupancy. As such, the parties acknowledge that other development related codes and ordinances change over time, and such changes customarily have different effects on various portions of the Project's development depending upon their stage of completion.

Changes in Conflict with the Concept Plan or these conditions

Changes in City development-related codes, ordinances, policies or practices which are in direct conflict with the details or provisions of the approved Concept Plan or these conditions shall not apply to the continued development of the Project, except where such changes are mandated by State or Federal law, such as changes to standard building codes, or except where such relate to City-wide fees or charges not addressed by the zoning documents.

Changes to Dimensional or Development Standards, or Subdivision Regulations

It is the intent of the City to allow the Project to develop with a consistent look and feel, and with a level of predictability in development cost over time. Therefore, changes to dimensional standards (such as height, setback, etc.), development standards (such as parking or landscaping requirements, or sign regulations), shall not apply to the remaining phases of development, unless there is a demonstrated compelling public health, safety, morals or welfare interest to require the new standard. Exceptions to this policy would be standards mandated by State or Federal law.

Other City Codes and Ordinances

Nothing within this agreement shall affect the ongoing enforcement of other City codes, regardless of changes over time, including codes affecting the accessory uses of property or maintenance of property.

COMMUNITY BENEFIT STATEMENT

For Gainesville 85 Business Park

The Gainesville 85 Business Park is proposed as a Planned Unit Development (PUD) under the City of Gainesville's Unified Land Development Code (Sec. 9-7-1-1) as amended 12/17/19, with specific conditions as proposed in the zoning request. The Project shown in the Conceptual Plan is strategically located east of Interstate 985 between Exits 20 & 22. With close access to US 129 and SR 60, the Park will consist of a network of existing and new roads that will serve approximately nineteen (19) lots varying in size from 2 acres to over 100 acres. The Developer will retain the flexibility to combine or further subdivide the lots in order to accommodate specific needs of future users. Five (5) outparcels have been acquired and will be annexed into the City for the purpose of providing a direct connection to US 129.

The historical use of the land has been mostly agricultural with recent municipal use for a small portion of the site as the gun range for the Gainesville City Police Department. The site has been owned by the City since 2000. The site is bisected by Allen Creek.

The Gainesville 85 Business Park will be a master planned business park with multiple development opportunities for small, medium and large users. The mix of development opportunities will be attractive to a range of industrial uses as well as ancillary support businesses. The superior location and site features will make for a unique opportunity to continue the City's industrial growth in a measured and manageable pattern.

Over 300 acres of the site will be devoted to open space that will include a trail system and protection of at least 5 cultural resource sites. The cultural resource sites will include a 25' buffer area and will be fenced for protection. These sites may contain house ruins and lithic scatter.

The site is designated in the City's Comprehensive Plan dated June 20, 2017 as an "Economic Development Gateways" Character Area. The Character Area vision is included below:

Because many of these industrial / business parks and facilities were built over the last 35 to 45 years, they exhibit modern industrial development norms such as single-story large footprint buildings, extensive parking / loading areas, and reliance on truck transportation. Common site design patterns include campus-style master plans or light industrial subdivisions with low-rise office or office-warehouse buildings. They also are highly visible to motorists entering the city from the south and east, and therefore, act as gateways to Gainesville. The character area also features large, forested tracts of natural land and coexists with recreation and conservation landmarks like the Allen Creek Soccer Complex, the Elachee Nature Science Center, and the Chicopee Woods Agricultural Center. It reaches to the Athens Street corridor, which was once a primary entry to the city from the south but has struggled with economic disinvestment and creeping blight. It has been the subject of recent revitalization planning efforts. The primary vision for the area is to continue to support economic development, while preserving and strengthening important natural and cultural resources. Other goals include creating a positive impression for visitors entering the city from I-985; supporting the revitalization of the Athens Street corridor; and creating better connections to the Downtown / Midtown area. Green design / sustainability standards should be considered in future modifications to site development regulations or as an overlay for the area.

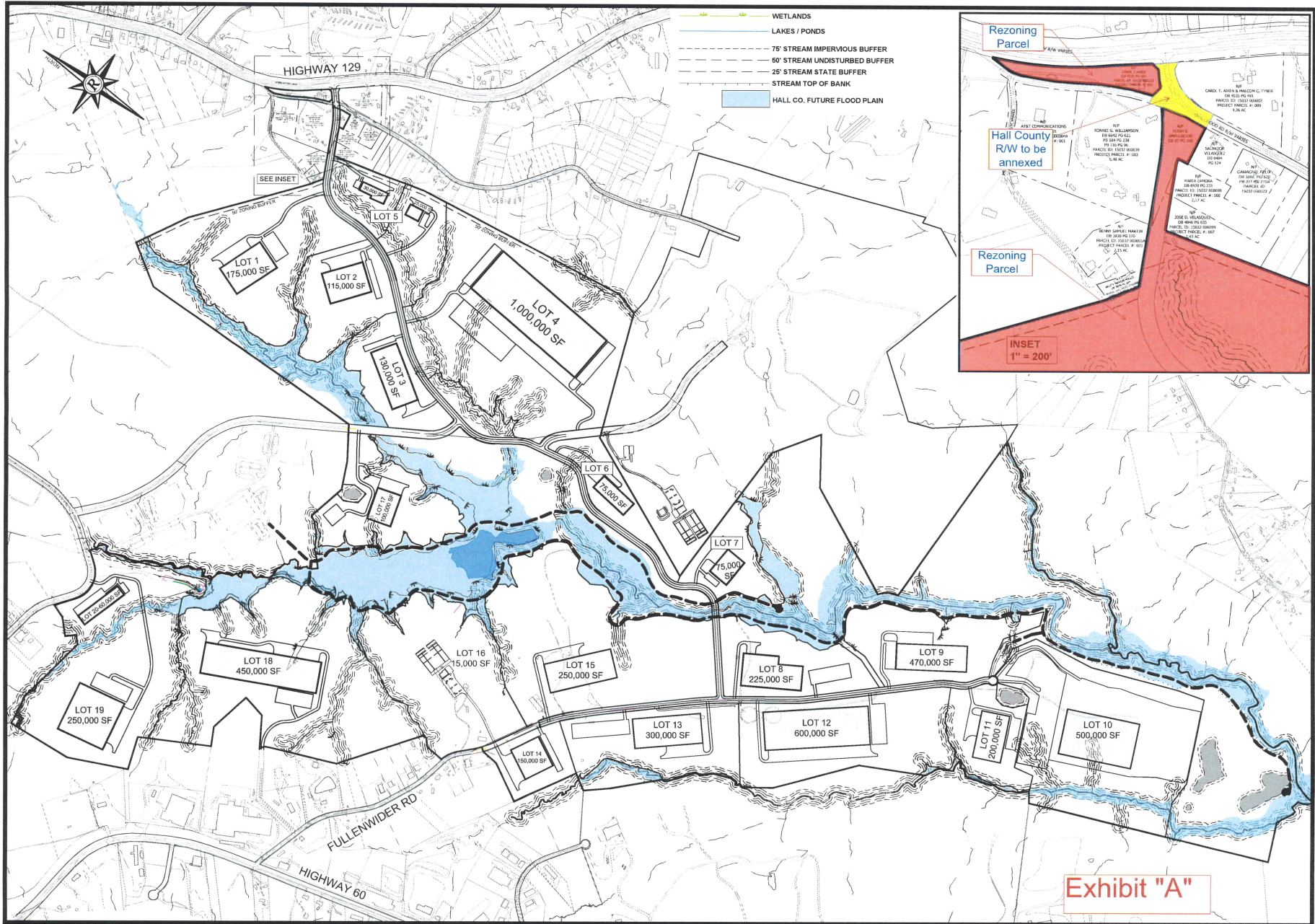
Economic development gateways are located on the city's fringe and are not therefore typical infill development sites. Cutting-edge "green" design and sustainable development practices can open new

opportunities to improve the visual and architectural quality of industrially-zoned development. Expanding pedestrian, bike and transit mobility options should be a priority for all gateway areas. The character area could play a role in an emerging high-tech / green business identity for the region. The Beulah Rucker Museum is located within this character area. Open space preservation should be required in all new industrial or business development, using low-impact design strategies. Protection of sensitive habitat, wildlife corridors, and groundwater recharge areas should be a priority for any new development. Much of the gateway is located within the North Oconee water supply watershed. Most of Gainesville's future economic growth could be accommodated in the gateway areas. Business attraction should be tailored to the skills of Gainesville's diverse population as well as long-term economic sustainability. Maximizing employment options for local residents should be considered in evaluating incentives for new businesses. Aesthetically improving gateways can give this area a competitive advantage and "brand" in attracting new industry and jobs. Cooperation with Hall County and the Greater Hall Chamber of Commerce is essential to realizing the character area's potential.

Land uses allowed in Economic Development Gateways are commercial, industrial, mixed-use, residential (existing uses only), public / institutional, transportation / communications / utilities, and parks / recreation / conservation.

A number of the goals identified in the Comprehensive Plan for this type of development will be achieved through the development of this site. A large amount of open space (approximately 25%), including wetlands, floodplain and cultural resource areas will be retained and protected through the planning and entitlement process. The Developer (City of Gainesville) will control the standards through extensive covenants and oversight for the life of the project. Other quantitative and qualitative benefits include:

- Permanent job creation of approximately 2,500 new jobs at build out;
- Temporary construction jobs during the construction phase of each user;
- New and improved road infrastructure;
- Over \$4,600,000 in annual property tax revenues at build out (not including personal property taxes);
- Increased sales tax revenue based on job growth;
- Approximately \$1,500,000 in Impact Fees over the life of the project;
- Water Meter Fees (estimated at more than \$1,800,000 over the life of the project);
- Sanitary Sewer Tap Fees (estimated at more than \$3,700,000 over the life of the project);
- One time Building Permit Fees (estimated at more than \$1,000,000 over the life of the project);
- Development Impact Fees for public safety improvements (estimated at more than \$2,000,000 over the life of the project); and
- Water & Sewer Use Fees (estimated at more than \$140,000 annually at buildout).
- Gainesville intends to locate a new Maintenance Facility at the Gainesville 85 Business Park that will consolidate several disparate Water Resources and Public Works facilities that currently operate in old buildings poorly designed for their current use. These city facilities support critical city operations including maintenance of water and sewer pipes and pump stations, city vehicle maintenance and fueling, street maintenance and public lands management. The new Maintenance Facility will enhance the City's ability to deliver these services for decades to come.



REZONING PLAN FOR
85 GAINESVILLE BUSINESS PARK
LOCATED IN
CITY OF GAINESVILLE
HALL COUNTY, GEORGIA

NO.	DATE	DESCRIPTION	REVISIONS

ANY CHANGES TO ALTERNATIVE MAPS, NO. 1, SHALL BE THE PROPERTY OF ROCHESTER & ASSOCIATES, INC. AND SHALL BE THE PROPERTY OF ROCHESTER & ASSOCIATES, INC. FOR THE PURPOSES OF THE REZONING PLAN.

GRAPHIC SCALE
250' 0' 500' 1000'

SHEET
1
OF
1

DATE: 07/20/20
SCALE: 1"=200'
JOB NO.: 080015-000
DRAWN BY: JTV

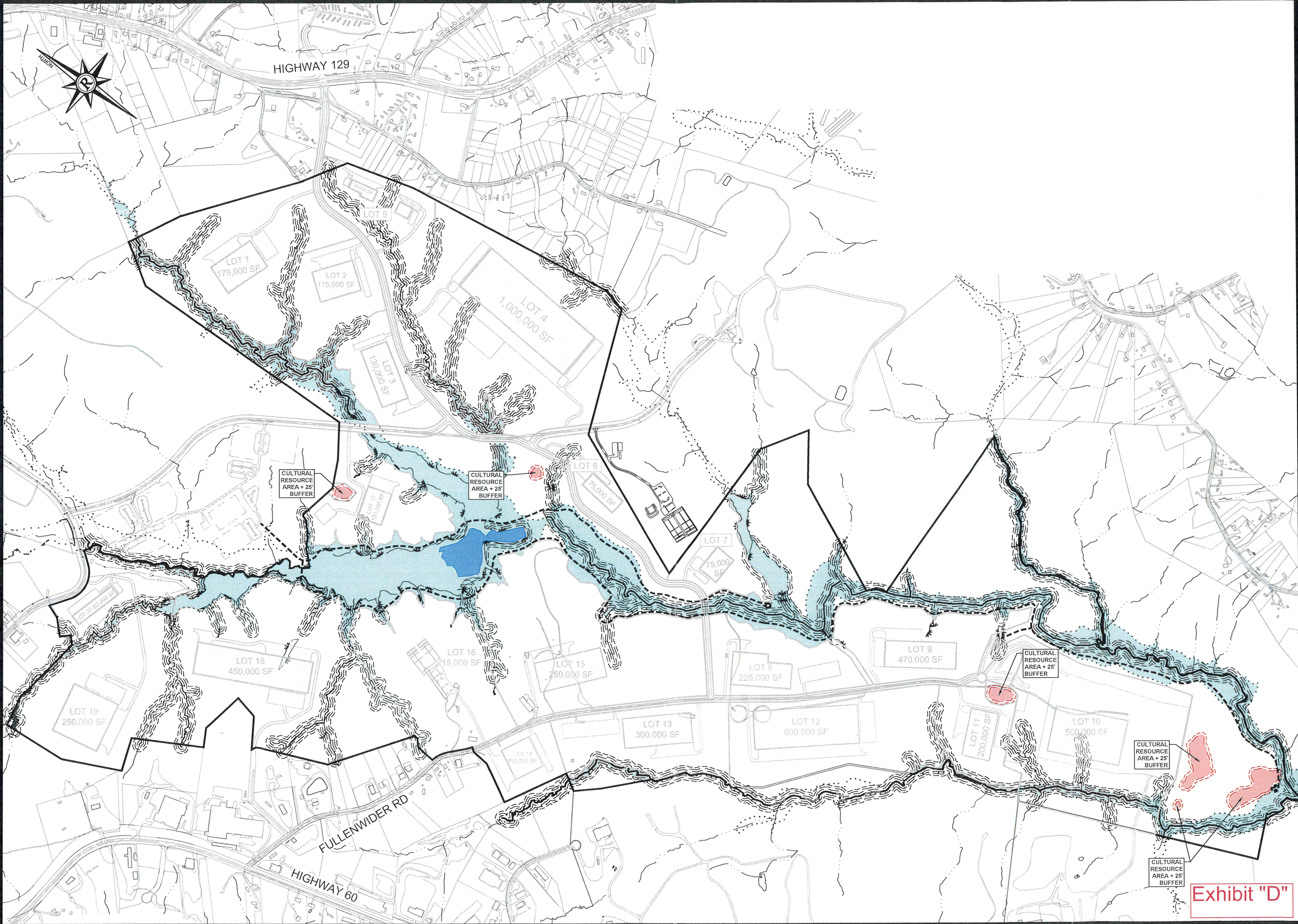


Exhibit "D"

REVISIONS		
NO.	DATE	DESCRIPTION

ANY CHANGES OR ALTERATIONS MADE TO THIS DRAWING MUST BE APPROVED BY THE WRITTEN APPROVAL OF ROCHESTER & ASSOCIATES, INC. AND VOID WITHOUT THE SEAL SHOWN WITH THIS PROJECT. ORIGINAL DRAWINGS ARE CHANGES.

GRAPHIC SCALE
250' 0' 500' 1000'



SHEET
1
OF
1

DATE: 1/21/2020
SCALE: 1"=500'
SUB NO.: 0
DRAWN BY: ATM

CULTURAL RESOURCE AREAS
FOR:
85 GAINESVILLE BUSINESS PARK
LOCATED IN
CITY OF GAINESVILLE
HALL COUNTY, GEORGIA

Rochester & Associates, Inc.
425 Oak Street N.W. • Gainesville, Georgia 30501
(770) 718-0600 (770) 718-9090 Fax • www.rochester-assoc.com

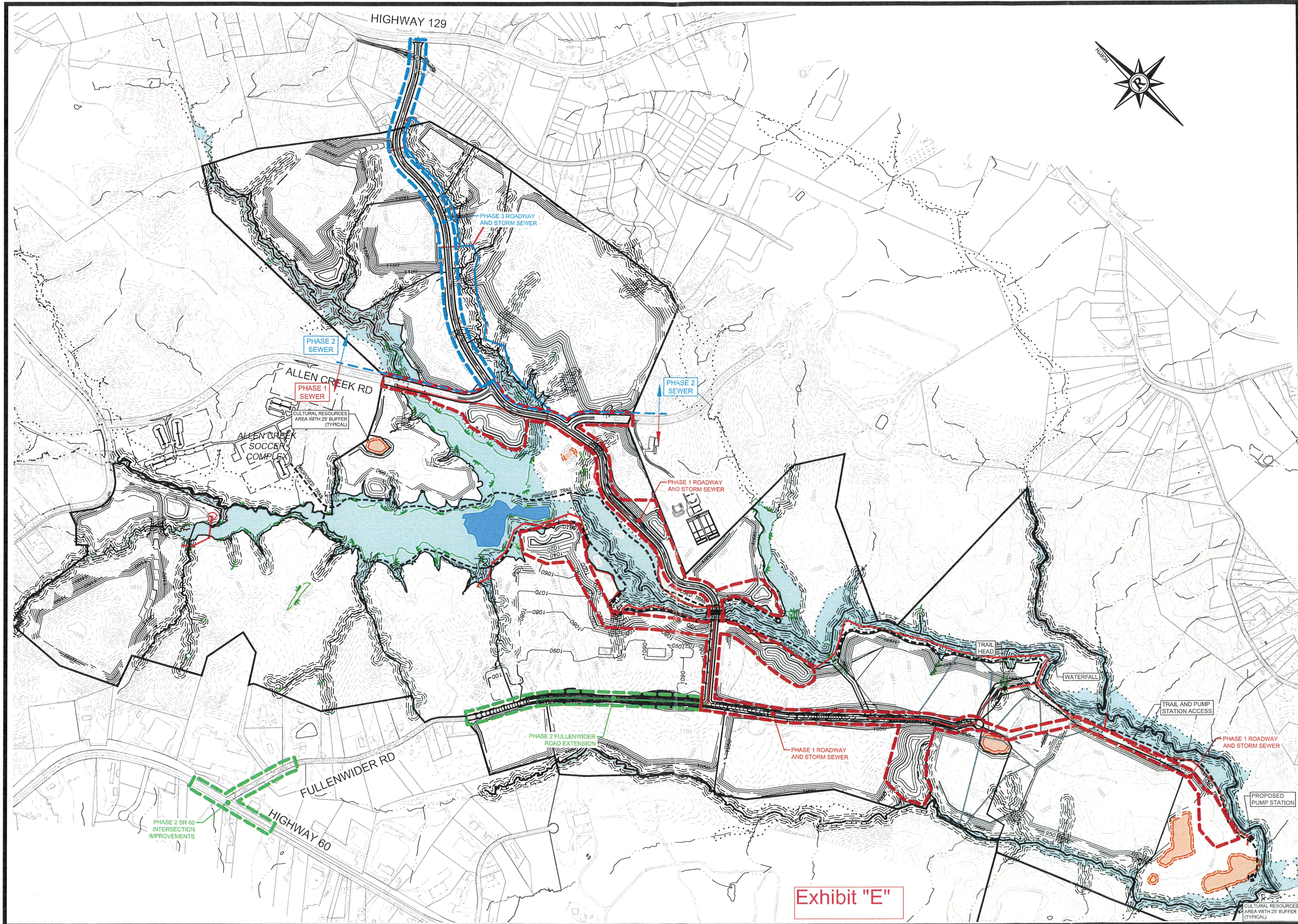
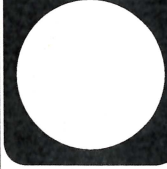


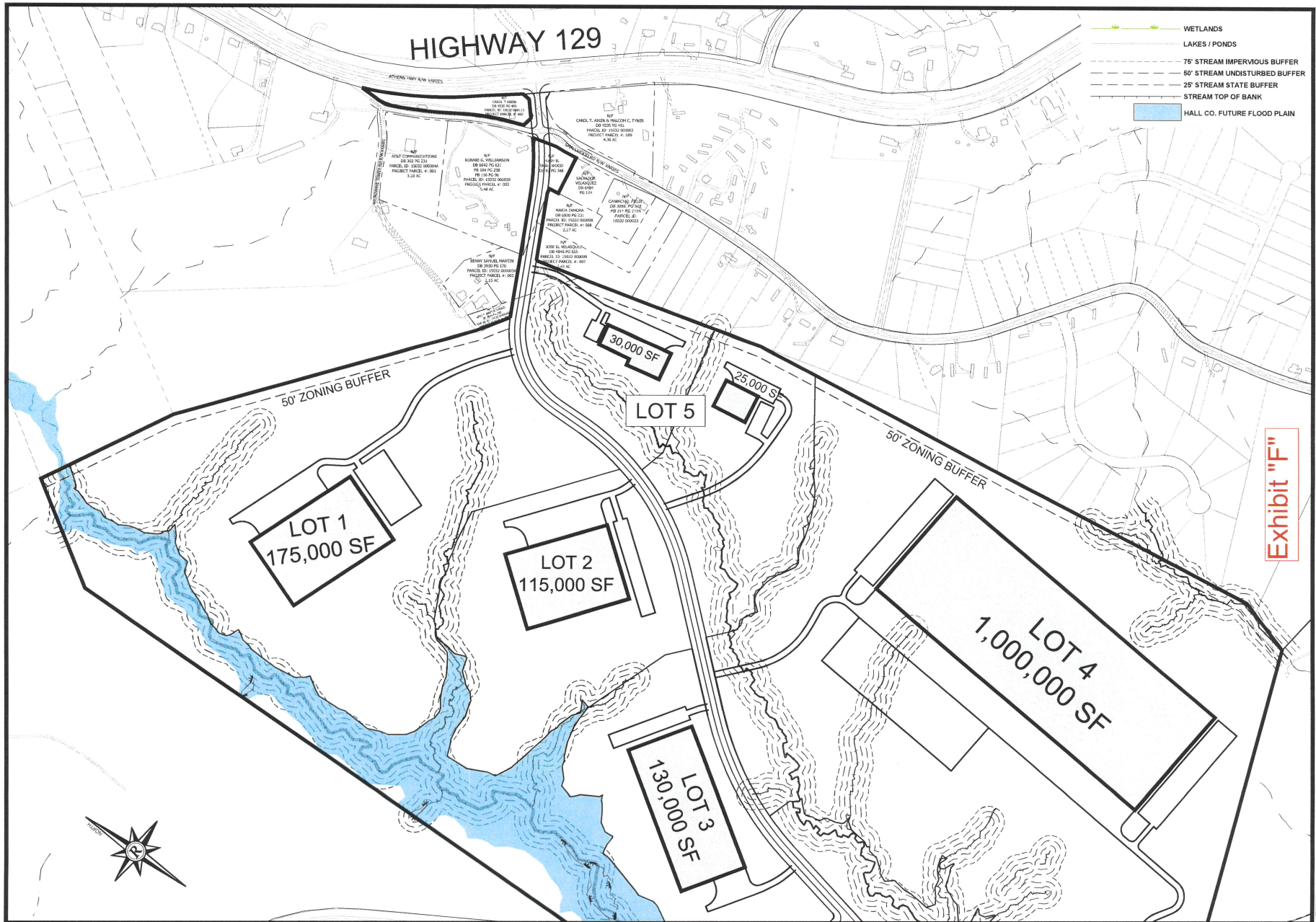
Exhibit "E"

NO.		DATE	DESCRIPTION

ANY CHANGES OR ALTERATIONS MADE TO THESE CONSTRUCTION DRAWINGS WITHOUT THE SIGNATURE OF THE SEAL SHOWN HEREON ARE VOID. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE
250' 0' 500' 1000'



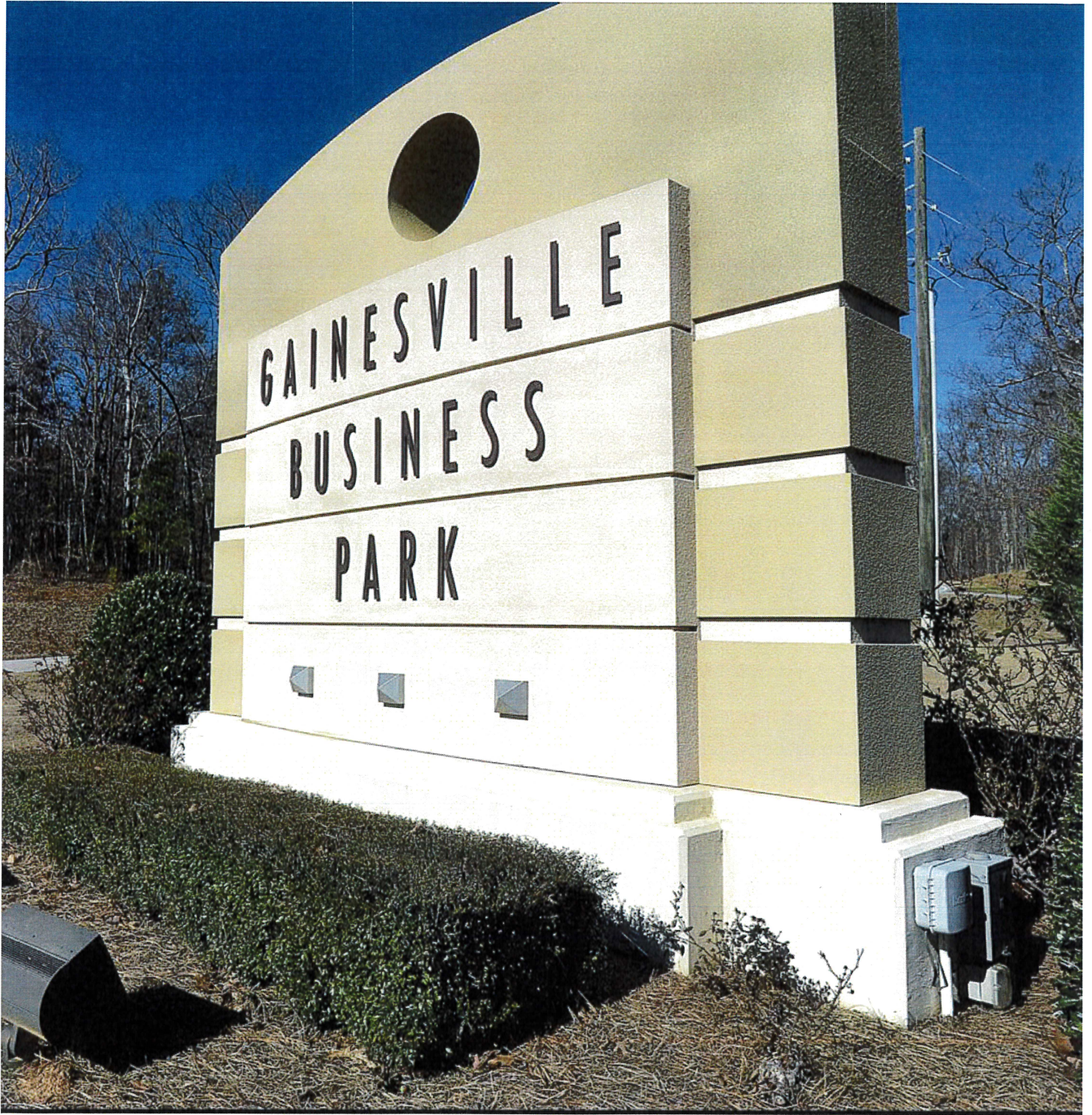












85 Gainesville Business Park Development Traffic Impact Study

Highway 129, Monroe Road, Allen Creek
Road, Fullenwider Road and Highway 60
Gainesville, Georgia

Prepared for: Rochester & Associates, Inc.

Wolverton Project No.

19-TF-057

January 31, 2020



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1. INTRODUCTION

1.1. Study Area

This study was conducted to evaluate the traffic impact of a proposed 5.0 million square foot industrial park in Gainesville, Georgia. The proposed site is on approximately 956.40 acres of land on 20 parcels located north of Chandler Road (State Route 60), west of Monroe Drive, south of Athens Highway (US Route 129 & State Route 11) and straddles both Fullenwider Road and Allen Creek Road. The proposed development is anticipated to be fully open in 2040. A Traffic Impact Analysis was performed to determine how much new traffic would be generated by the proposed development and how the new traffic would impact the existing roadway network. Figure 1 illustrates the location of the site and identifies the roadway network in the vicinity.

The existing intersections that could be impacted by this project include:

1. SR 60 & Fullenwider Road
2. Monroe Drive & Allen Creek Road
3. US 129 (SR 11) & Monroe Drive
4. US 129 (SR 11) & Highlands Village Road / Smallwood Road
5. Highlands Village Road & Smallwood Road

The project site is currently vacant land.

1.2. Proposed Development

The proposed development will consist of a 5.0 million square foot industrial park on 20 parcels totaling approximately 956.40 acres in Gainesville, Georgia. An internal roadway is proposed to intersect at the northern end at the existing intersection of Highlands Village Road & Smallwood Road, continue south and intersect with Allen Creek Road, continuing further south to intersect with Fullenwider Road. As such, the following proposed intersection locations were included for evaluation in this study:

6. Allen Creek Road & Internal Access
7. Internal Access & Street just south of Allen Creek Road
8. Fullenwider & Internal Access

A site plan is included in Appendix A.

1.3. Methodology

Initial evaluations were made to assess the current conditions near the development. Twenty-four (24) hour volume/classification (Automatic Traffic Recorder (ATR)) counts and existing AM and PM peak period turning movement counts (TMC) were conducted at the above noted existing intersections.

The traffic growth rate was obtained from several nearby Georgia Department of Transportation (GDOT) traffic counters, which provide historical count data in the area:

- 1390118, US 129 near Monroe Drive
- 1380116, US 129 near Morgan Drive
- 1390305, SR60 near Calvary Church Road / Old Candler Road
- 1398071 Monroe Drive near Allen Creek Road

Using traffic count data since the year 2010, a growth rate was developed. The traffic growth rate was applied to the existing volumes to estimate the traffic that will exist at the build-out Year 2040 of the site if the proposed development is not developed.

Estimates were made of the traffic that will be generated by the proposed development. These trips were then distributed and assigned to the road network.

The distribution of these new trips was based on the existing peak hour traffic patterns. After the generated traffic for the proposed development was distributed and assigned, it was then superimposed with the future background traffic to provide an estimate of projected traffic once the proposed development is complete.

Capacity analysis was used to evaluate the Existing Year 2019, Future Background Year 2040, and Future with Project Year 2040 conditions for the intersections being studied.

1.4. Planned Transportation Improvements

There are no current or planned transportation improvement or maintenance projects in the study area based on a review of the Georgia Department of Transportation (GDOT) online project database.

Figure 1 - Aerial View of Study Area



2. EXISTING CONDITIONS

Existing conditions in the vicinity of the project were surveyed using a combination of desktop research and on-site data collection. Traffic counts, which included 24-hour volume/classification counts and peak period turning movement counts (TMCs), were performed as follows:

Thursday, October 24, 2019

- 24-hour counts on SR 60, Monroe Drive and US 129 (SR 11)
- TMC's at SR 60 & Fullenwider Road and at Monroe Drive & Allen Creek Road

Tuesday, November 19, 2019

- TMC's at US 129 (SR 11) & Highlands Village Road / Smallwood Road and at Highlands Village Road & Smallwood Road

Wednesday, December 4, 2019

- TMC's at US 129 (SR 11) & Monroe Drive

The counts were performed on different dates due to intersections being added subsequent to the initial counts based upon input from the applicant and the Gainesville-Hall Metropolitan Planning Organization (MPO). The counts are included in Appendix B.

2.1. Roadways

US 129 is a four-lane divided roadway that changes orientation and posted speed limit depending on its location. It is classified as an Urban Principal Arterial – Other and provides access to I85 to the east and I95, US 23 to the west. In the vicinity of Highlands Village Road & Smallwood Road, US 129 has a north-south orientation and a posted speed limit of 55 mph. In the vicinity of Monroe Drive, it has an east-west orientation and a posted speed limit of 45 mph. There are no separate pedestrian or bicycle accommodations along US 129 within the project limits.

SR 60 is a two-lane undivided roadway that primarily runs in a north-south direction. SR 60 is classified as an Urban Minor Arterial and has a speed limit of 55 miles per hour (mph) near the site.

Monroe Drive is a two-lane undivided roadway that runs in an east-west direction between Old Candler Road and Allen Creek and runs in north-south direction between Allen Creek and Athens Street. Monroe Drive is classified a Local Road and has a posted speed limit of 45 mph. Monroe Drive intersects at a 4-way unsignalized all-way stop controlled intersection at its westerly limit with Griffin Circle and Old Candler Road. Monroe Drive intersects at an unsignalized "T" intersection with Athens Street at its north limits with Monroe Drive being the stop-controlled approach. Monroe Drive provides access to industrial and commercial businesses, to Allen Creek Road as well as Athens Highway (US 129). There are no separate pedestrian or bicycle accommodations along Monroe Drive.

Fullenwider Road is a two-lane undivided roadway that runs in an east-west direction east of Candler Road and dead ends. Fullenwider Road is classified a Local Road and has a posted speed limit of 35 mph. Fullenwider Road provides access to industrial and commercial businesses. Fullenwider Road crosses railroad tracks at its westerly limit and intersects Candler Road at an unsignalized "T" intersection with

Fullenwider Road being the stop-controlled approach. There are no separate pedestrian or bicycle accommodations along Fullenwider Road.

Allen Creek Road is a two-lane undivided roadway that runs in an east-west direction east of Monroe Drive and dead ends. Allen Creek Road is classified a Local Road and has a posted speed limit of 45 mph and primarily provides access to the Allen Creek Soccer Complex. Allen Creek Road intersects Monroe Drive at an unsignalized “T” intersection with Allen Creek Road being the stop-controlled approach. There are no separate pedestrian or bicycle accommodations along Monroe Drive. However, there is signage alerting motorists to be aware of pedestrians and bicyclists.

2.2. Intersections

The following four unsignalized intersections were identified to be studied:

- SR 60 & Fullenwider Road
- Monroe Drive & Allen Creek Road
- US 129 (SR 11) & Highlands Village Road / Smallwood Road
- Highlands Village Road & Smallwood Road

The following signalized intersection was identified to be studied:

- US 129 (SR 11) & Monroe Drive

The following intersections, which currently do not exist but are proposed as part of the development have also been studied:

- Allen Creek Road & Internal Access
- Internal Access & Street just south of Allen Creek Road
- Fullenwider & Internal Access

Existing geometry and traffic operation control of the existing intersections were inventoried. Figure 2 illustrates the associated geometry and operation control of the study intersections.

2.3. Existing Traffic Flow Patterns

The existing Annual Average Daily Traffic (AADT) volumes on SR 60 north of Fullenwider Road, US 129 north of Gaines Mill Road, and Monroe Drive west of Allen Creek Road were estimated from 24-hour traffic counts collected in October 2019. The estimated AADT is shown in

Table 1. Existing morning and evening peak hour traffic is shown in Figure 2Figure 3 and Figure 4.

Table 1 - Existing Traffic Volumes

ROADWAY	Est. AADT	DHV (AM)	DHV (PM)
	VOLUME	VOLUME	VOLUME
Athens Highway (US 129)	33,675	2,525	2,830
Chandler Road (SR 60)	15,000	1,125	1,215
Monroe Drive	3,075	235	310

Figure 2 – Existing Lane Configuration

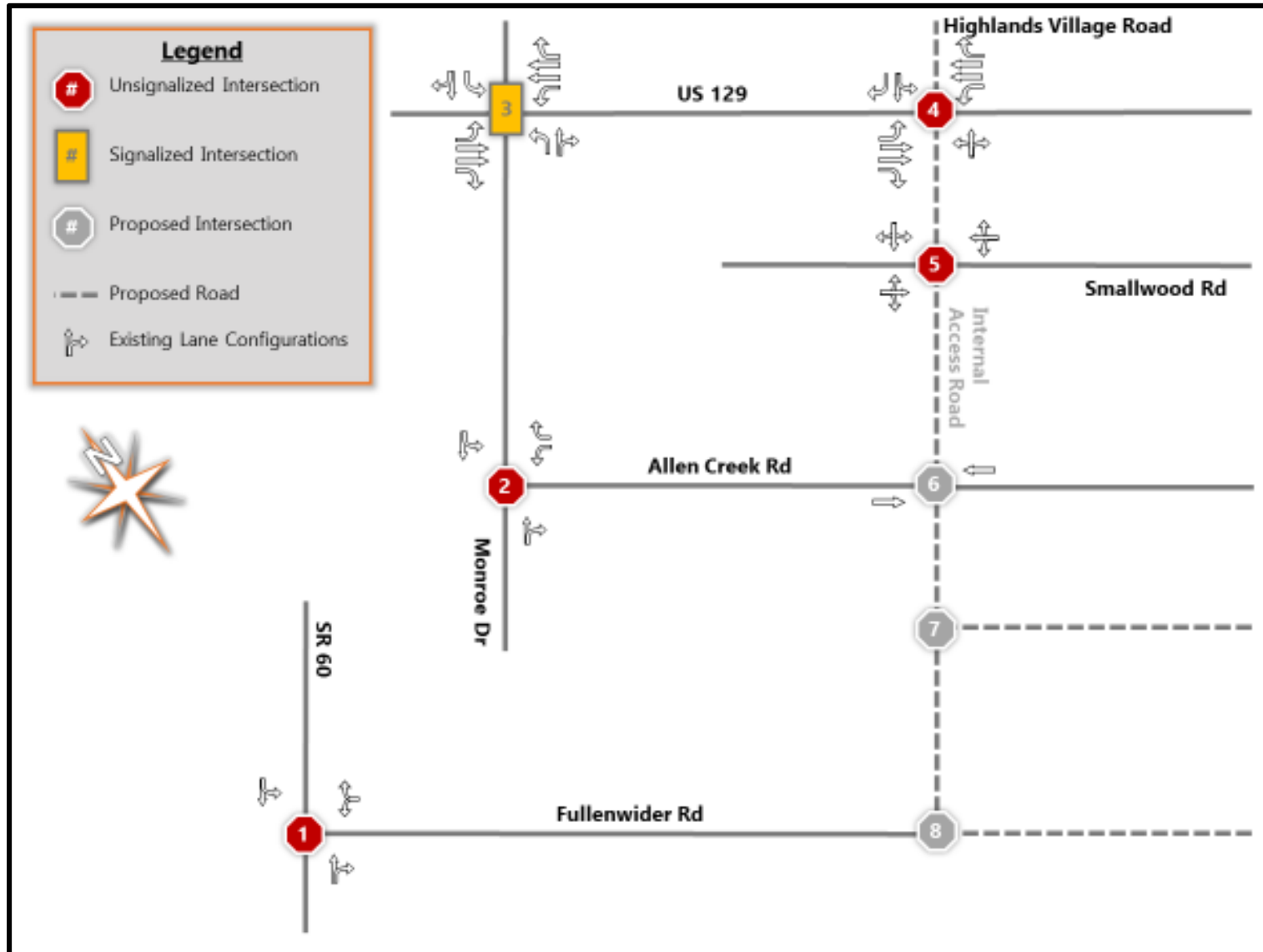


Figure 3 - 2019 Existing Peak Hour Traffic – I

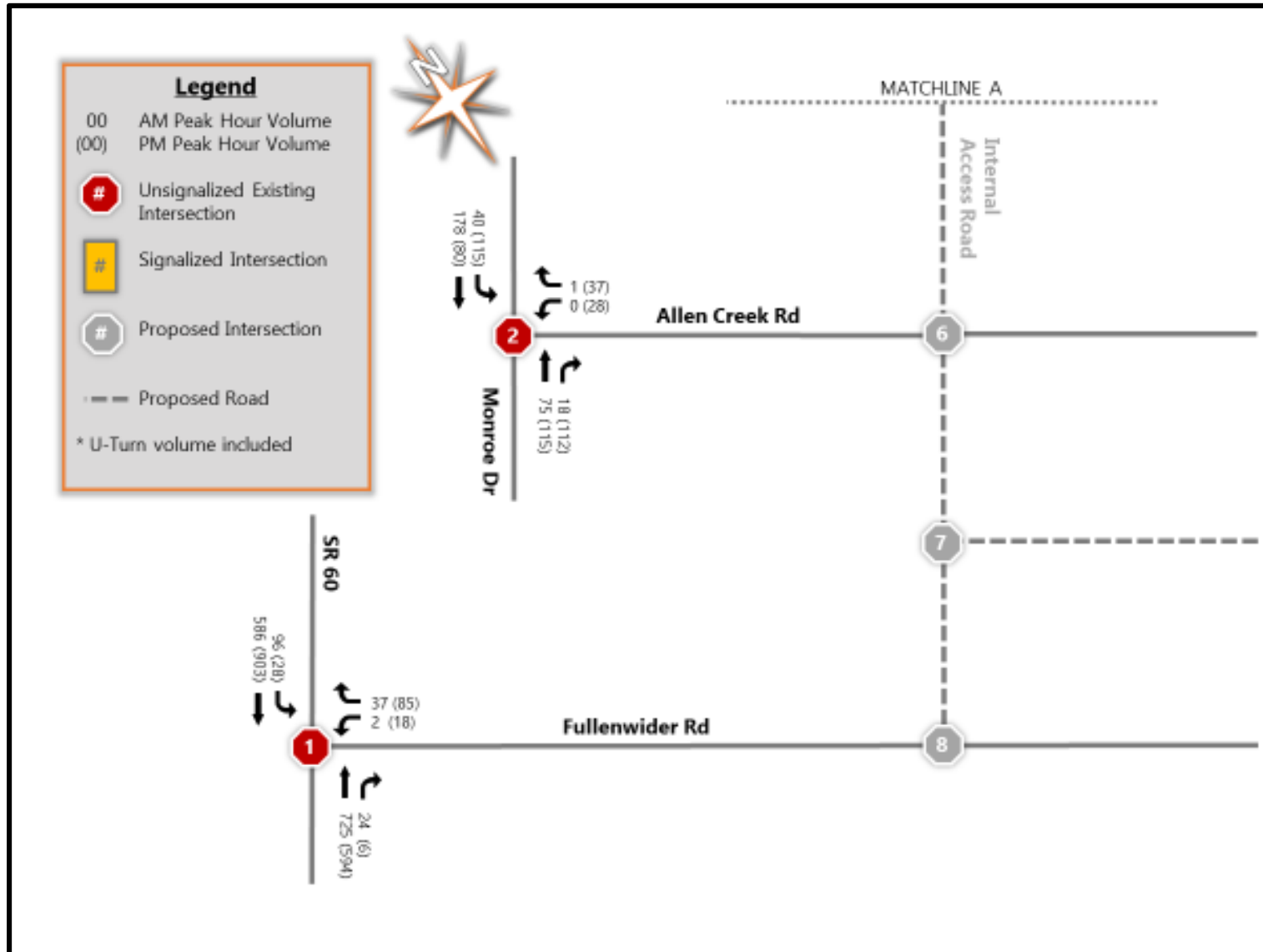
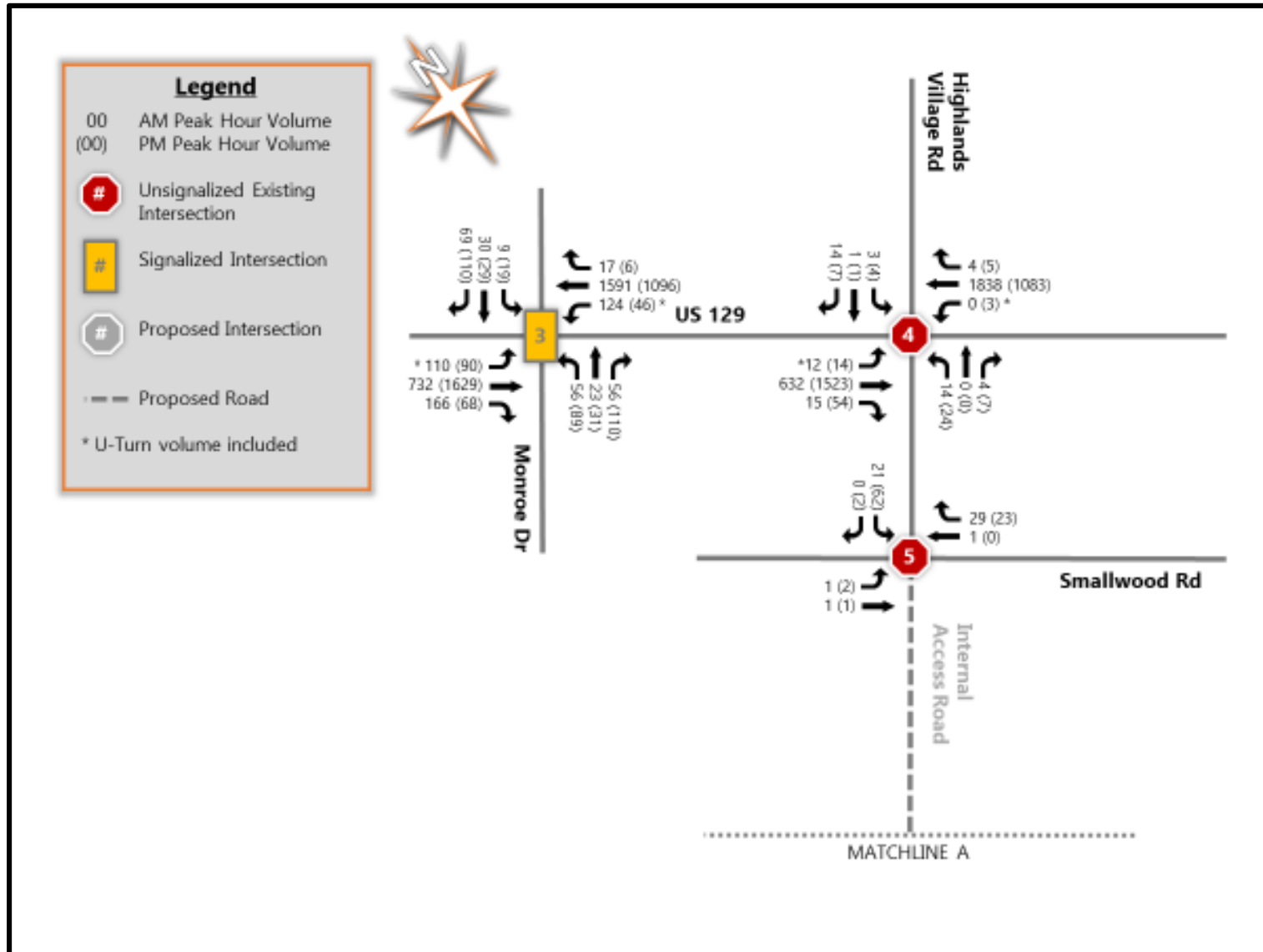


Figure 4 - 2019 Existing Peak Hour Traffic – II



3. TRAFFIC PROJECTIONS

3.1. Future Background Traffic

A build-out year of 2040 was established for the project. An annual growth rate was determined based on a review of traffic volume growth trends from GDOT data, and population growth trends and projections from US Census data.

The average annual growth rate, which was determined to be 2.5 percent per year, was applied to the 2019 traffic at the above noted intersections to establish the 2040 Background Traffic. There are no other known planned/approved development projects in the study area to be considered for the background condition.

The future 2040 Background peak hour traffic is shown in Figure 5 and Figure 6.

3.2. Trip Generation

The traffic that would be generated by the proposed development was estimated using the Institute of Transportation Engineers (ITE) ITE TripGen Web-based App which provides a searchable database of information included in *Trip Generation Manual (TGM) 10th Edition*. The trips that would be generated by the proposed project were estimated using ITE Land Use Code 130 – Industrial Park. The ITE describes an Industrial Park as:

containing a number of industrial or related facilities. It is characterized by a mix of manufacturing, service and warehouse facilities with a wide variation in the proportion of each type of use from one location to another. Many industrial parks contain highly diversified facilities – some with a large number of small businesses and others with one or two dominant industries.

The total number of project-generated trips was estimated for the typical weekday and the morning and evening peak hours based upon total gross floor area.

Industrial Parks generate new (primary) trips only and do not generate traffic on the adjacent network passing the site (e.g. pass-by traffic). The trip generation results are listed in Table 2. The project may generate 16,850 new trips per day, with 2,000 trips in the morning peak hour and 2,000 trips in the evening peak hour. Industrial Parks typically generate truck trip traffic. There is limited data pertaining to the percentage of truck traffic generated by this type of facility. The ITE 10th Edition reproduced the truck trip generation of the ITE 9th Edition. The ITE Trip Generation Manual, 9th Edition indicates that the truck trips for this land use accounted for 1 to 31 percent of the weekday traffic with the average being approximately 13 percent. In addition to the ITE, the National Cooperative Highway Research Program (NCHRP) Report 739 / National Cooperative Freight Research Program (NCFRP) Report 19, Freight Trip Generation and Land Use, which contains information for estimating truck trips based upon the different land use categories was also reviewed. Lastly, given the proposed location of the site and the existing surrounding land uses which are truck related uses, the existing traffic counts were utilized to estimate the truck trip percentages for this project. The truck trip generation results are listed in Table 3Table 2.

Table 2 - Project Trip Generation Results

Land Use Description	Code	Size	Unit	Weekday			AM Peak Hour			PM Peak Hour		
				Total	Entry	Exit	Total	Entry	Exit	Total	Entry	Exit
Industrial Park	130	6.0	MSF	8,425	8,425	16,850	2,000	1,620	380	2,000	420	1,580

Table 3 - Project Trip Generation Results – by Classification

Mode	AM Peak Hour			PM Peak Hour		
	Total	Entry	Exit	Total	Entry	Exit
Cars	1,780	1,541	239	1,859	332	1,527
Trucks	220	79	141	141	88	53
	2,000	1,620	380	2,000	420	1,580

3.3. Distribution of Project-Generated Trips

Based upon the proposed use, passenger vehicles and truck trips are estimated to have differing distribution patterns. The new trips generated by the proposed project were distributed to the surrounding roadway network based on the location of each access drive, the potential regional distribution, and discussions with the applicant and the Gainesville-Hall Metropolitan Planning Organization (MPO). The distribution patterns are shown in

Figure 7 - New Trip Distribution Percentages – Passenger Vehicles



Figure 8 for passenger vehicles and Figure 8 for the truck trips.

3.4. Assignment of Project-Generated Trips

The number of trips were assigned to the project driveways based on the trip distribution determined for the study area and the proximity of each driveway to the existing and future proposed internal access roadways. See Figure 9 and Figure 10

The project-generated traffic was superimposed with the 2040 Background traffic to provide an estimate of traffic that would be present when the proposed development opens. The 2040 With Project peak hour traffic is shown in Figure 11 and Figure 14.

Figure 5 - 2040 Background Peak Hour Traffic – I

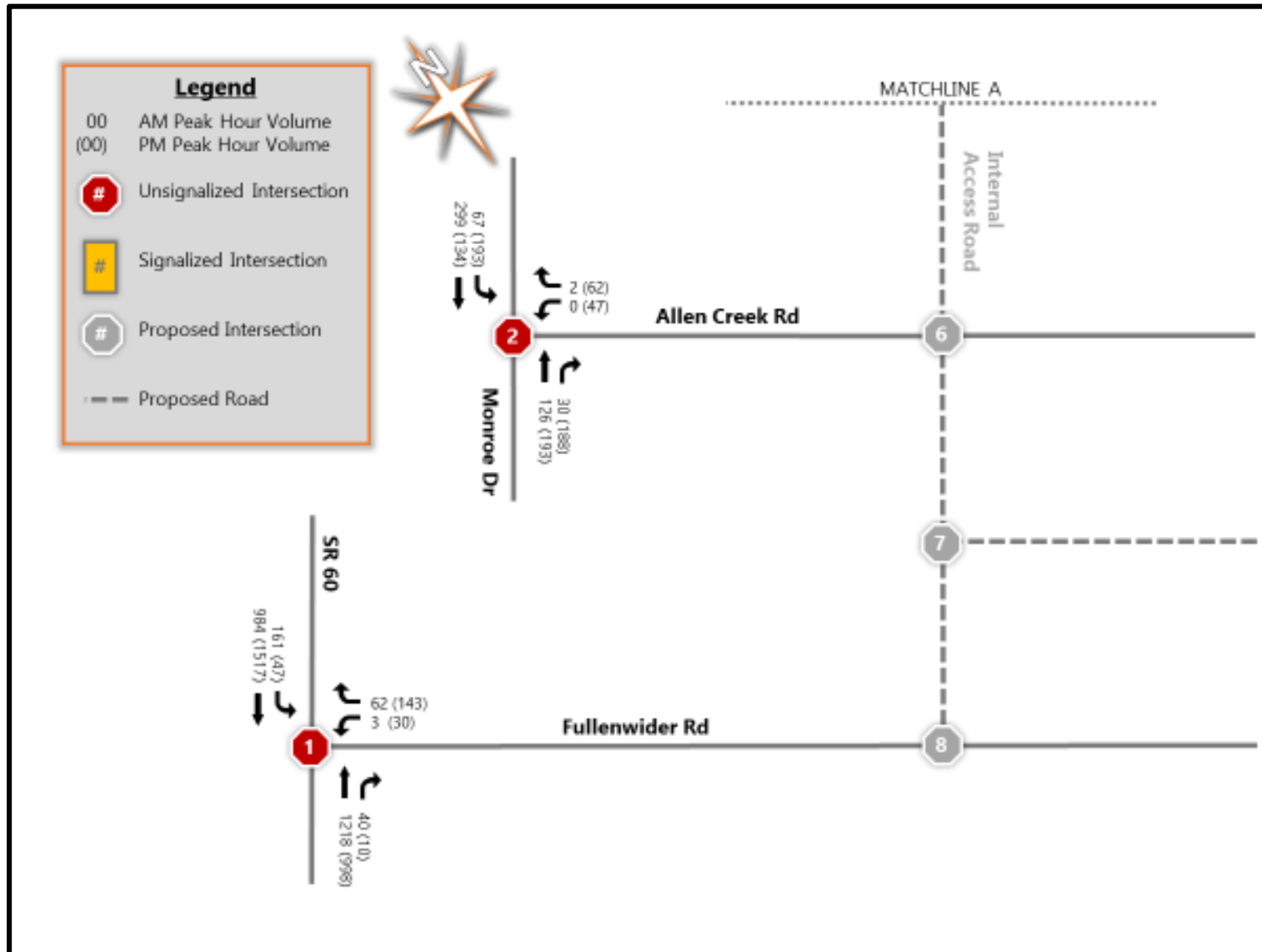


Figure 6 - 2040 Background Peak Hour Traffic – II

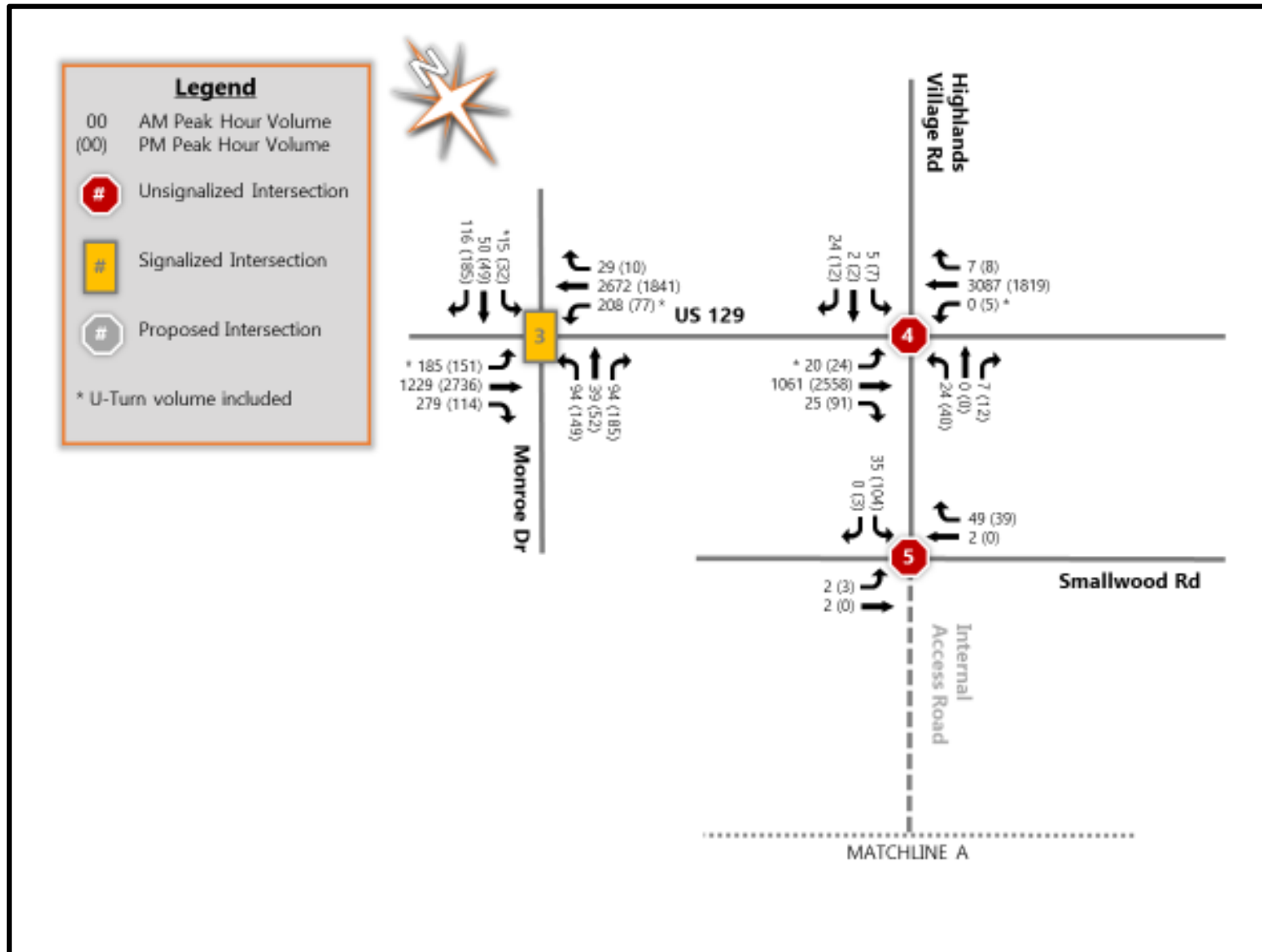


Figure 7 - New Trip Distribution Percentages – Passenger Vehicles



Figure 8 - New Trip Distribution Percentages – Truck Trips



Figure 9 - New Trip Passenger Distribution Volumes – I

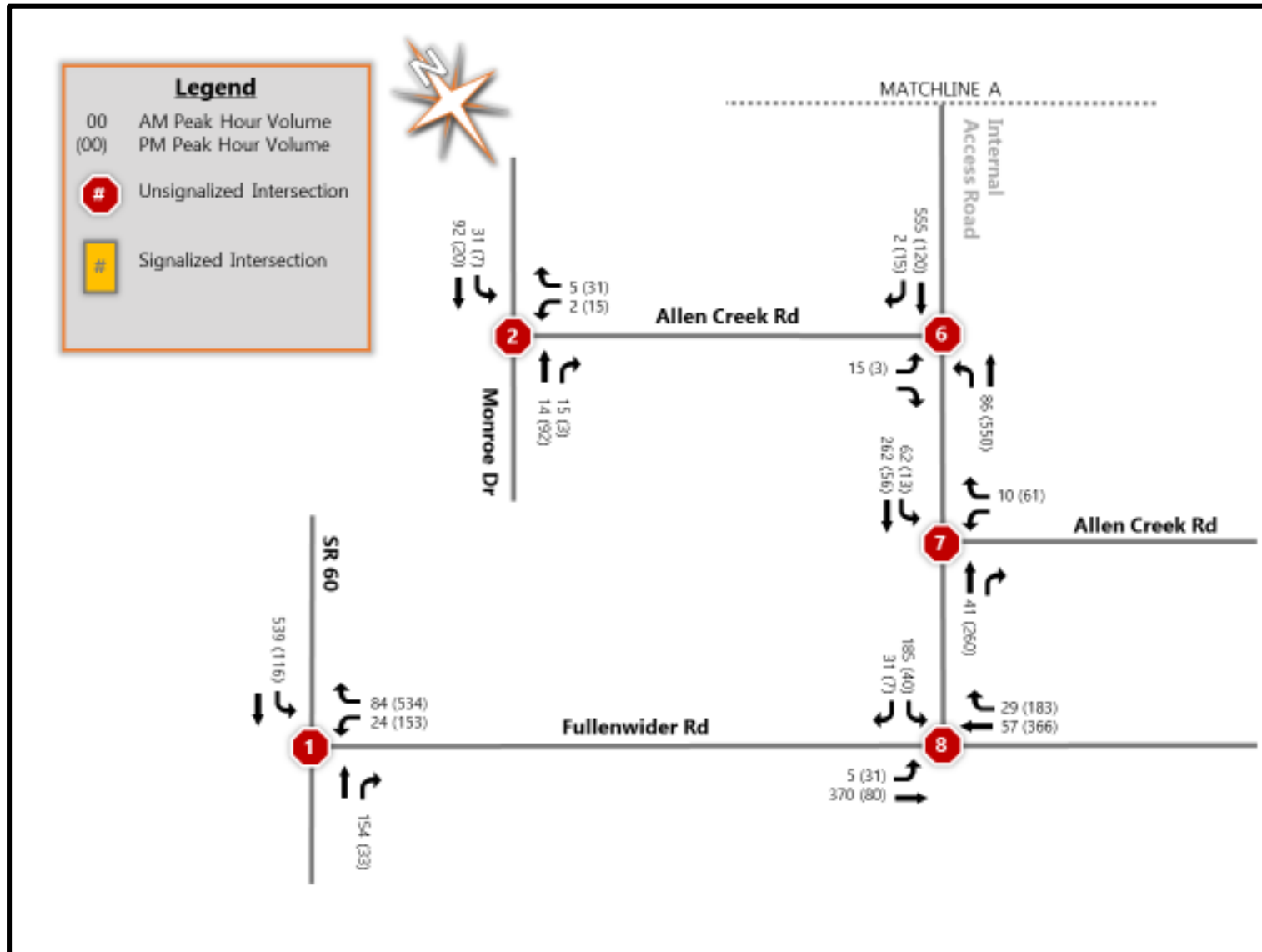


Figure 10 - New Trip Passenger Vehicle Distribution Volumes – II

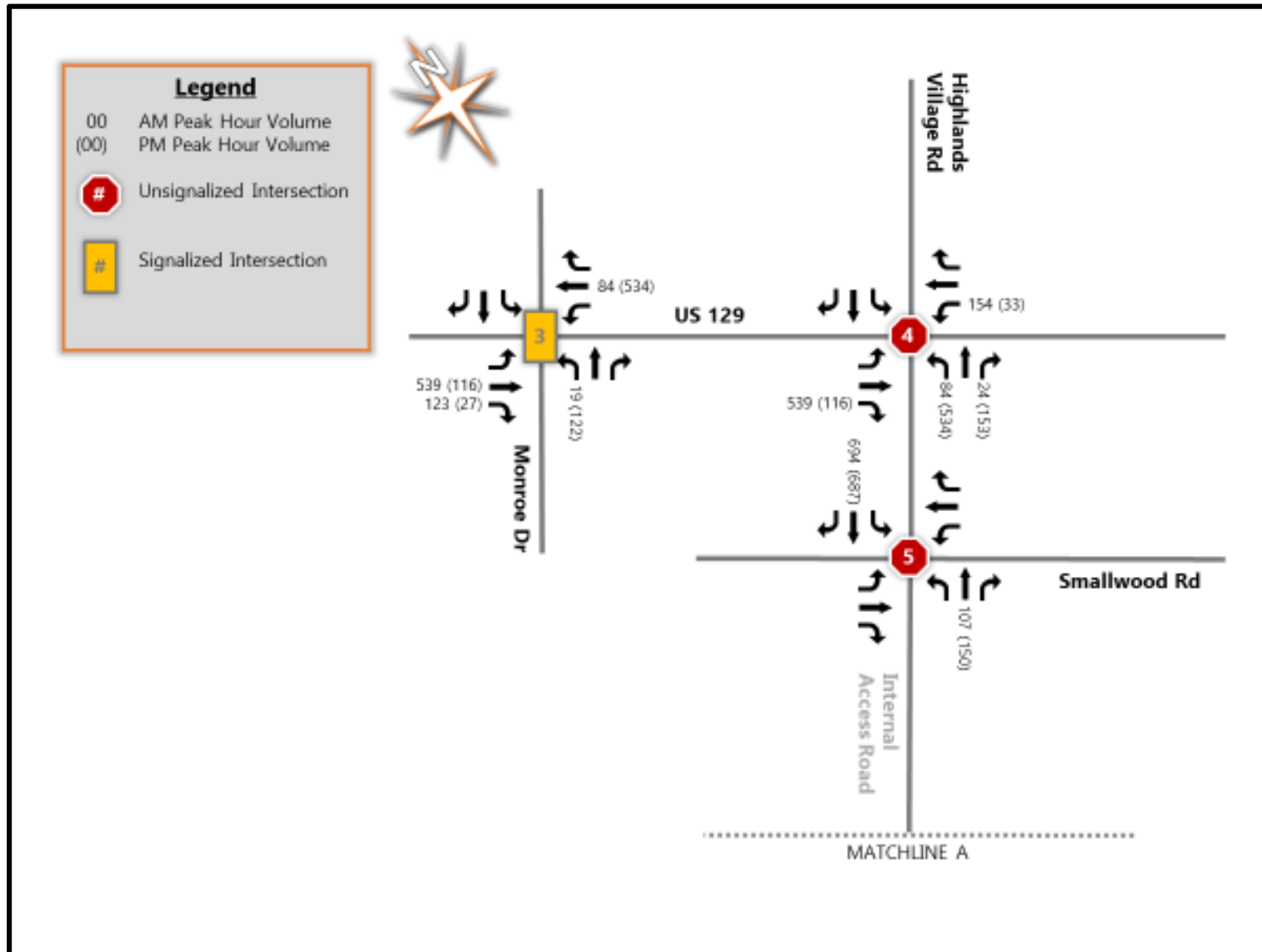


Figure 11 - New Trip Truck Distribution Volumes – I

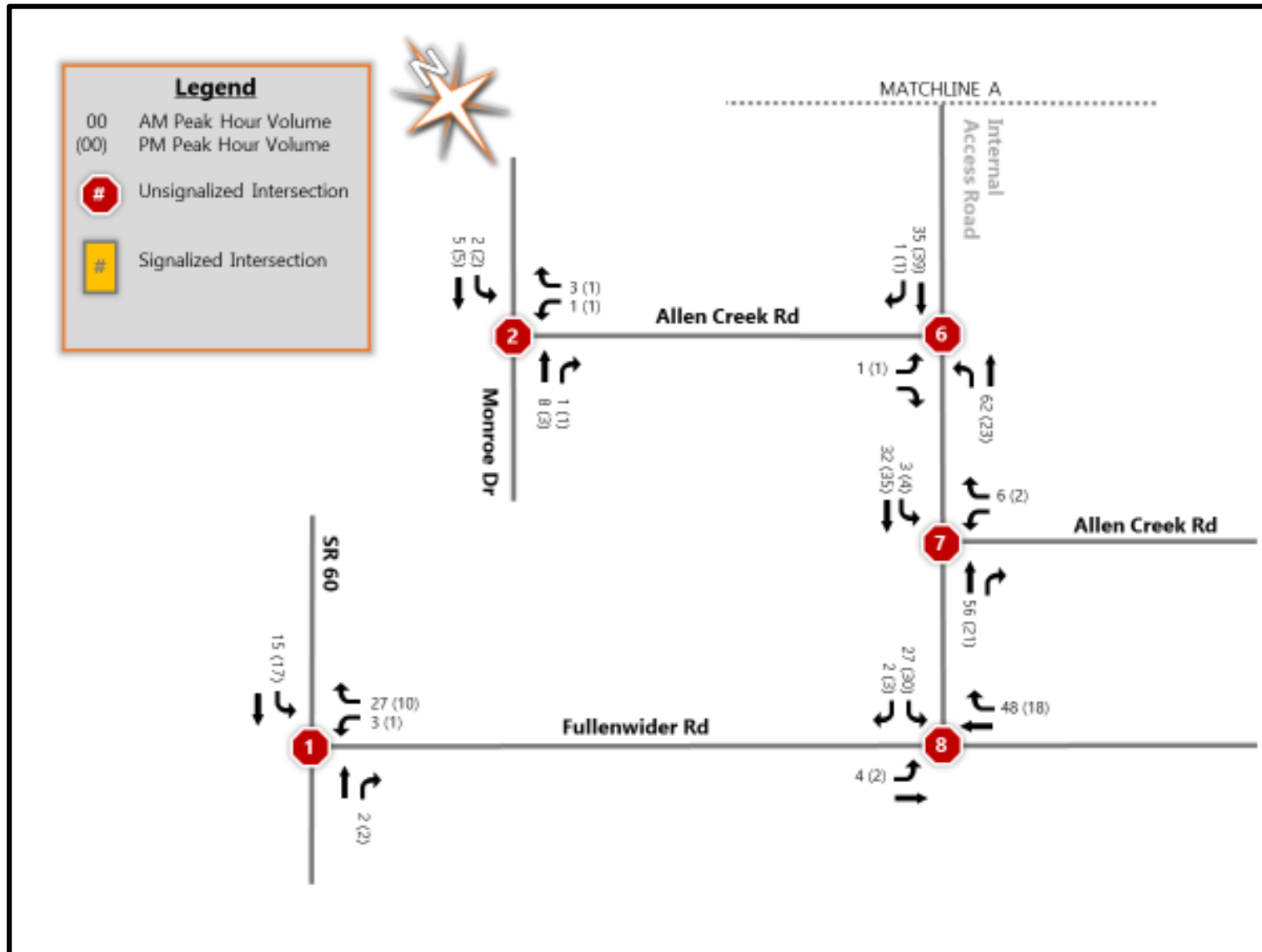


Figure 12 - New Trip Truck Distribution Volumes – II

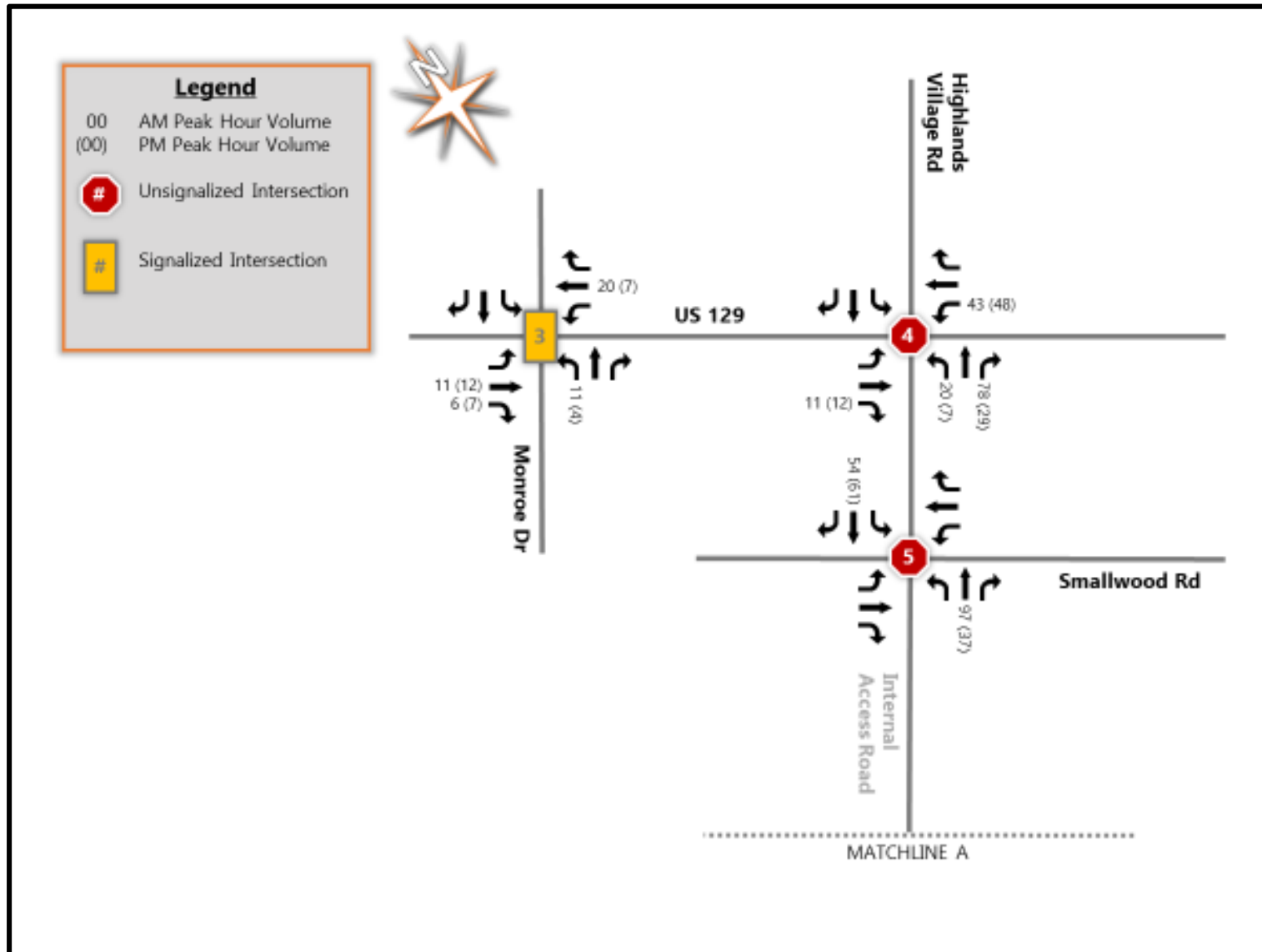


Figure 13 - 2040 With Project Peak Hour Traffic – I

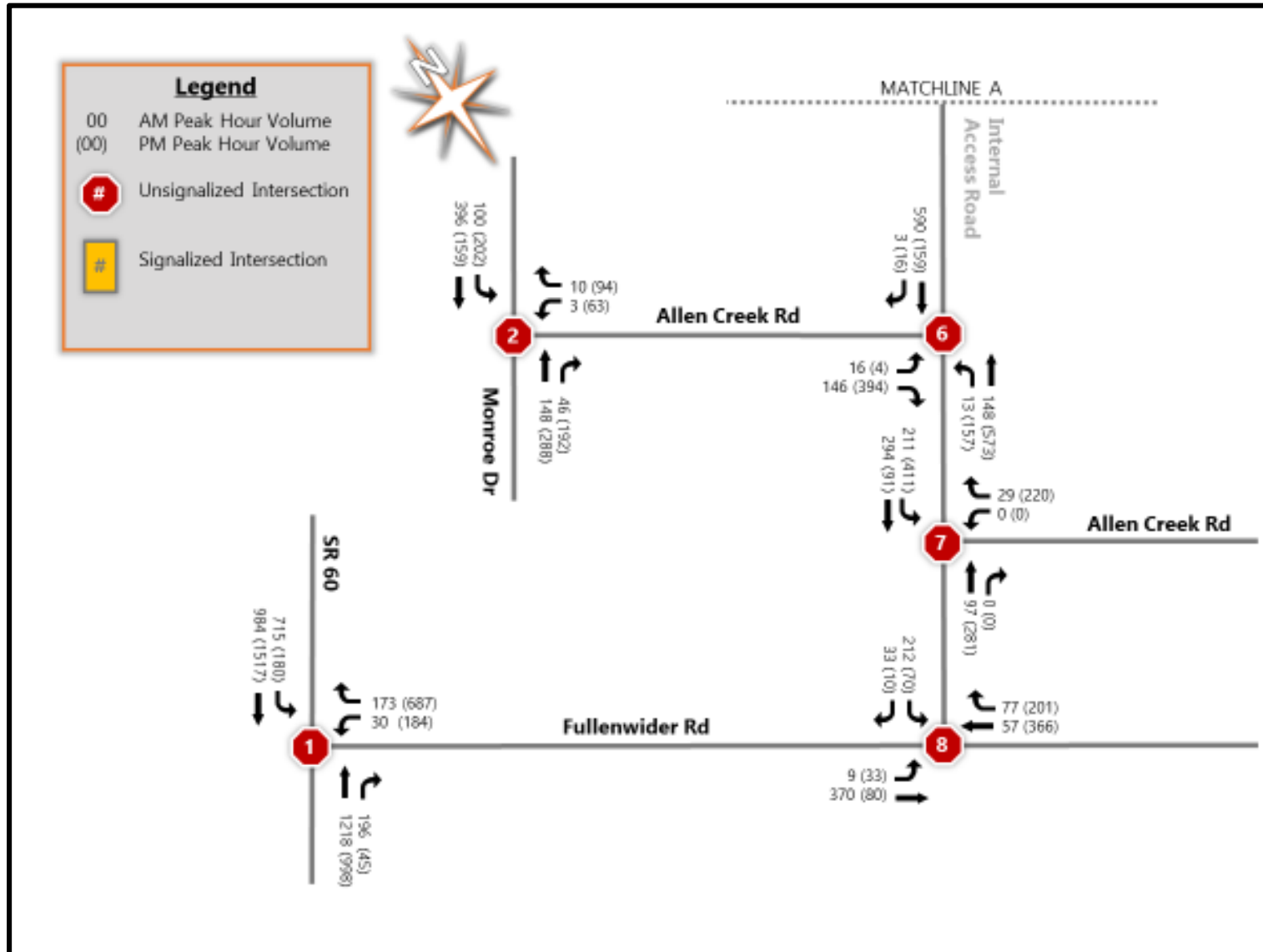
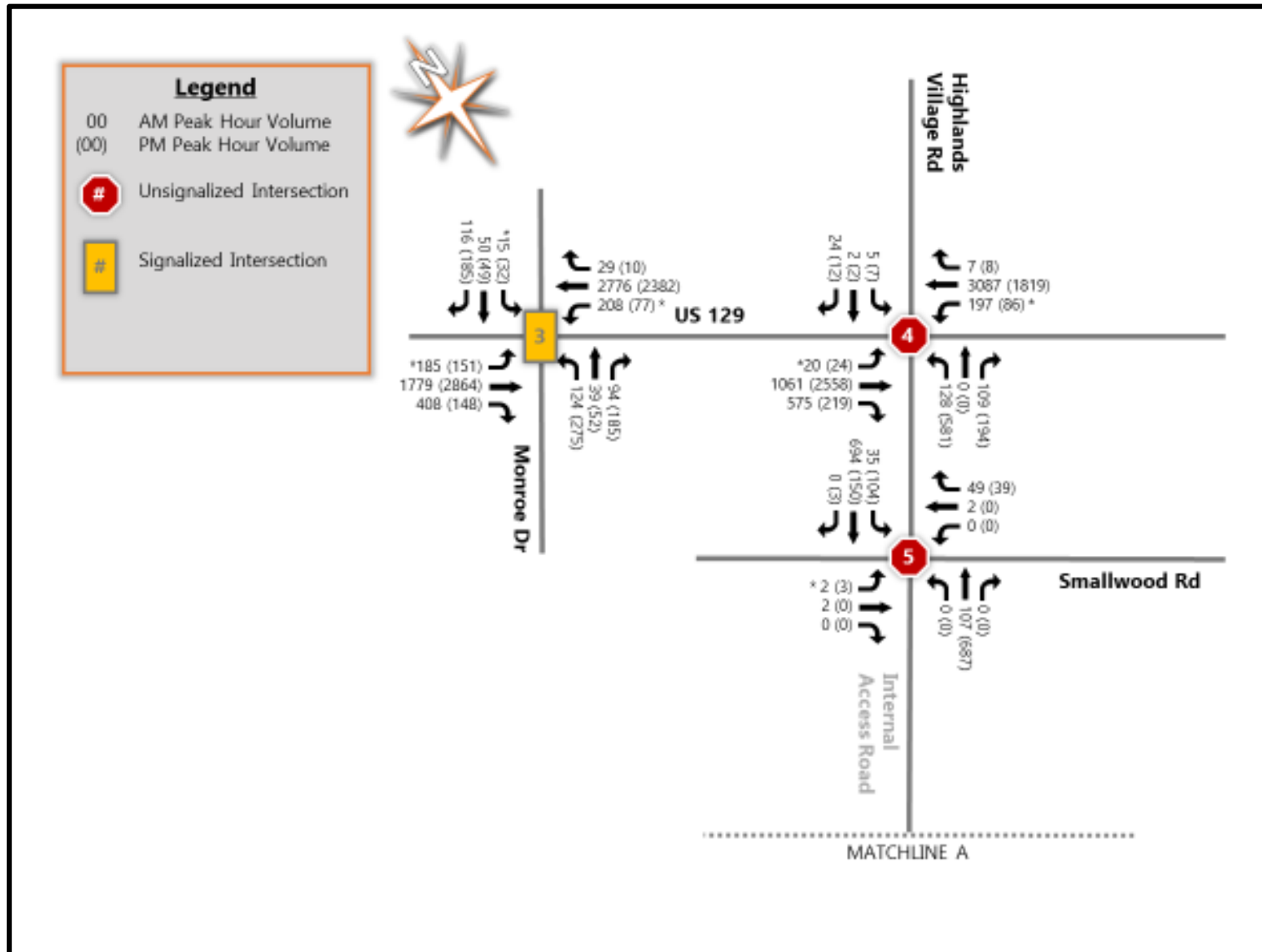


Figure 14 - 2040 With Project Peak Hour Traffic – II



4. CAPACITY ANALYSIS

4.1. Level of Service Criteria

In order to quantify the impacts of additional traffic and to determine any needed roadway and/or operational improvements, a capacity analysis was performed for the Future Background and the Future with Project peak hour conditions based on the methodology outlined in the *Highway Capacity Manual (HCM)*. Various computer programs are available which implement the *HCM* methodology. Synchro 10 software was used to evaluate the study area intersections.

HCM defines level of service (LOS) in terms of the amount of control delay, including initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The LOS categories range from A to F, with different thresholds specified according to the type of traffic control at the intersection. The LOS definitions are provided in Table 4.

Table 4 – Intersection Capacity LOS Criteria

Level of Service (LOS)	Unsignalized Control Delay per Vehicle (sec)	Signalized Control Delay per Vehicle (sec)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Rural, sparsely developed areas have a minimum LOS requirement of C based on rural residents' expectation for relatively uncongested conditions in combination with design flexibility associated with lower right of way costs. The minimum LOS for urban areas is D, reflecting the greater acceptance of delay and congestion by urban residents. Additionally, the increased density of developments makes right of way costs much higher in urban areas. The project site is located in Gainesville. The study area is in an urban location. A minimum LOS D is assumed for the study intersections.

4.2. Intersection Capacity Analysis

Intersection capacity analysis was performed for the morning and evening peak hours for the Existing Year (2019), Future Background Year (2040) and the Future with Project (2040) conditions. For Existing Year, Future Background Year, and Future with Project Year, the existing lane configurations and traffic control were used. Table 5 shows the resulting analysis during the AM peak hour and Table 6 shows the PM peak hours. Main street through and right turn movements at two-way stop-controlled intersections are assumed to not experience any delay, so those movements are not included in the capacity analysis results. *Synchro* printouts are contained in Appendix C.

Table 5 - 2040 Intersection LOS and Average Delay Results – AM Peak Hour

Int. #	Roadway	Approach	Movement	2019 Existing		2040 Future Background		2040 Future with Project		2040 Future with Project - Mitigation	
				sec/veh	LOS	sec/veh	LOS	sec/veh	LOS	sec/veh	LOS
1	SR 60	Southbound	Left	10.1	B	15.7	C	355.9	F	355.9	F
	Fullenwider Road	Westbound	Left/Right ¹	19.8	C	436.5	F	291.5	F	-	-
			Right	NA		NA		NA		141.0	F
2	Monroe Drive	Southbound	Left	7.5	A	7.8	A	8.0	A	8.0	A
	Allen Creek Road	Westbound	Left	0.0	A	0.0	A	21.4	C	20.2	C
			Right	8.8	A	9.1	A	9.8	A	9.6	A
3	Monroe Drive	Northbound	Left	84.4	F	140.7	F	236.7	F	111.2	F
			Through/Right ²	27.9	C	37.7	D	37.8	D	57.2	E
			Right ²	NA		NA		NA		14.1	B
			Overall	51.4	D	80.4	F	134.0	F	68.4	E
		Southbound	Left	57.9	E	56.9	E	56.9	E	56.0	E
			Through/Right ²	33.3	C	47.4	D	47.3	D	58.7	E
			Right ²	NA		NA		NA		18.4	B
			Overall	35.3	D	48.2	D	48.1	D	32.7	C
	US Route 129	Eastbound	Left	17.3	B	184.4	F	185.1	F	163.9	F
			Through	9.2	A	16.0	B	24.9	C	24.9	C
			Right	1.5	A	1.7	A	3.7	A	3.7	A
			Overall	8.8	A	32.1	C	33.7	C	32.1	C
		Westbound	Left	4.9	A	22.2	C	185.9	F	164.9	F
			Through	15.3	B	145.0	F	171.6	F	171.6	F
			Right	0.1	A	0.1	A	0.1	A	0.1	A
			Overall	14.4	B	134.7	F	170.9	F	169.5	F
4	US Route 129	Northbound	Left	0.0	A	0.0	A	82.7	F	82.7	F
			Through	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A
			Overall	0.0	A	0.0	A	4.9	A	4.9	A
		Southbound	Left	42.7	E	1383.0	F	1377.1	F	1377.1	F
			Through	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A
			Overall	0.8	A	25.0	C	16.6	C	16.6	C
	Smallwood Road	Eastbound	Left/Through/Right ³	124.1	F	-	-	-	-	-	-
			Right	NA		NA		NA		25.2	D
	Highlands Village Road	Westbound	Left/Through	391.9	F	-	-	-	-	-	-
			Right	24.4	C	100.8	F	98.5	F	98.5	F
			Overall	106.1	F	-	-	-	-	-	-
5	Internal Road	Northbound	Left	-	-	-	-	0.0	A	0.0	A
	Highlands Village Road	Southbound	Left	8.4	A	8.5	A	7.7	A	7.7	A
	Smallwood Road	Eastbound	Left/Through/Right ⁴	7.2	A	7.3	A	24.1	C	24.1	C
		Westbound	Left/Through/Right ⁴	-	-	-	-	9.7	A	9.7	A
6	Internal Road	Northbound	Left	NA	NA	NA	NA	9.5	A	9.5	A
	Allen Creek Road	Eastbound	Left/Right					17.9	C	16.6	C
			Right					NA		16.4	C
7	Internal Road	Southbound	Left/Through	NA	NA	NA	NA	7.9	A	7.9	A
	Allen Creek Road	Westbound	Left/Right					9.3	A	0.0	A
			Right					NA		9.3	A
8	Internal Road	Southbound	Left/Right ¹	NA	NA	NA	NA	18.8	C	17.5	C
			Right					NA		8.8	A
	Fullenwider Road	Eastbound	Left					8.0	A	8.0	A

Note: - Value not provided, as volume exceeds capacity

NA - Not Applicable as movement, approach, intersection, etc. may not exist

¹ In Future with Project - Mitigation condition, movement is exclusive left turn lane

² In Future with Project - Mitigation condition, movement is exclusive through and exclusive right turn lane

³ In Future with Project - Mitigation condition, movement is shared through / left turn lane

⁴ In Future with Project - Mitigation condition, the movement is shared left / through / right turn lane. During other conditions, the eastbound approach consists of shared left/through and the westbound consists of shared through/right turn lane

Table 6 - 2040 Intersection LOS and Average Delay Results – PM Peak Hour

Int. #	Roadway	Approach	Movement	2019 Existing		2040 Future Background		2040 Future with Project		2040 Future with Project - Mitigation	
				sec/veh	LOS	sec/veh	LOS	sec/veh	LOS	sec/veh	LOS
1	SR 60	Southbound	Left	9.8	A	12.8	B	15.4	C	15.4	C
	Fullenwider Road	Westbound	Left/Right ¹	28.8	D	57.4	F	1366.6	F	>1400	F
				NA		NA		NA		942.3	F
2	Monroe Drive	Southbound	Left	8.2	A	9.3	A	10.1	B	10.1	B
	Allen Creek Road	Westbound	Left	14.9	B	31.7	D	61.0	F	42.4	E
				9.6	A	11.0	B	12.8	B	11.4	B
3	Monroe Drive	Northbound	Left	102.6	F	382.4	F	985.2	F	203.2	F
			Through/Right ²	29.7	C	51.8	D	52.2	D	58.3	E
			Right ²	NA		NA		NA		39.8	D
		Southbound	Overall	58.0	E	179.7	F	553.8	F	129.5	F
			Left	62.2	E	72.0	E	72.4	E	58.5	E
			Through/Right ²	26.0	C	46.4	D	49.5	D	58.1	E
	US Route 129	Eastbound	Right ²	NA		NA		NA		38.1	D
			Overall	30.3	C	49.5	D	52.3	D	44.3	D
		Westbound	Left	6.7	A	73.0	E	73.0	E	73.0	E
			Through	16.2	B	157.6	F	183.8	F	183.8	F
			Right	2.2	A	4.9	A	6.3	A	6.3	A
		Overall	Overall	15.2	B	147.6	F	170.2	F	170.2	F
4	US Route 129	Northbound	Left	19.6	C	79.9	F	69.5	F	69.5	F
			Through	0.0	A	0.0	A	0.0	A	0.0	A
			Right	0.0	A	0.0	A	0.0	A	0.0	A
		Southbound	Overall	0.1	A	0.2	A	3.1	A	3.1	A
			Left	11.4	B	20.0	C	20.2	C	20.2	C
			Through	0.0	A	0.0	A	0.0	A	0.0	A
	Smallwood Road	Eastbound	Right	0.0	A	0.0	A	0.0	A	0.0	A
			Overall	0.1	A	0.2	A	0.2	A	0.2	A
		Westbound	Left/Through/Right ³	380.0	F	-	-	-	F	332.4	F
			Right	NA		NA		NA		-	F
		Highlands Village Road	Left/Through	138.0	F	4728.1	F	-	-	-	-
			Right	12.6	B	19.0	C	19.0	C	19.0	C
5	Internal Road	Northbound	Overall	64.9	F	2037.2	F	-	-	-	-
			Left/Through/Right ⁴	-	-	-	-	15.7	C	15.7	C
	Highlands Village Road	Southbound	Left	9.0	A	9.4	A	0.0	A	0.0	A
			Left	-	-	-	-	10.1	B	10.1	B
6	Smallwood Road	Eastbound	Left/Through/Right ⁴	0.0	A	0.0	A	36.4	E	36.4	E
			Left/Through/Right ⁴	-	-	-	-	15.7	C	15.7	C
	Internal Road	Southbound	Left	8.0	A	8.0	A	8.0	A	8.0	A
			Left/Right	NA		NA		14.1	B	28.0	D
7	Allen Creek Road	Eastbound	Right	NA		NA		NA		13.2	B
			Left/Through	NA		NA		9.4	A	9.4	A
	Internal Road	Westbound	Left/Right	NA		NA		NA		0.0	A
			Right	NA		NA		12.2	B	12.2	B
8	Internal Road	Southbound	Left/Right ¹	NA		NA		17.9	C	15.7	C
			Right	NA		NA		NA		11.2	B
9	Fullenwider Road	Eastbound	Left	NA		NA		9.0	A	9.0	A
			Left	NA		NA		NA		NA	

Note: - Value not provided, as volume exceeds capacity

NA - Not Applicable as movement, approach, intersection, etc. may not exist

¹ In Future with Project - Mitigation condition, movement is exclusive left turn lane

² In Future with Project - Mitigation condition, movement is exclusive through and exclusive right turn lane

³ In Future with Project - Mitigation condition, movement is shared through / left turn lane

⁴ In Future with Project - Mitigation condition, the movement is shared left / through / right turn lane. During other conditions, the eastbound approach consists of shared left/through and the westbound consists of shared through/right turn lane

Existing Conditions (2019)

The following movements are currently operating inadequately and are expected to continue to operate inadequately for Future Background Year 2040 conditions:

US 129 & Monroe Drive

- Northbound left on Monroe Drive during both peak hours
- Southbound left on Monroe Drive during both peak hours

US 129 & Highlands Village Road / Smallwood Road

- Southbound left on US 129 during AM peak hour
- Eastbound left/through/right on Smallwood Road during both peak hours
- Westbound left/through on Highlands Village Road during both peak hours

Future Background Year 2040 conditions

In addition, while the following movements currently operate adequately in Existing Year 2019, these movements are expected to operate inadequately for Future Background Year 2040 conditions:

SR 60 & Fullenwider Road

- Westbound left/right on Fullenwider Road during both peak hours

US 129 & Monroe Drive

- Eastbound left on US 129 during both peak hours
- Eastbound through on US 129 during PM peak hour
- Westbound left on US 129 during the PM peak hour
- Westbound through on US 129 during AM peak hour

US 129 & Highlands Village Road / Smallwood Road

- Northbound left on US 129 during PM peak hour
- Westbound right on Highlands Village Road during the AM peak hour

Future with Project 2040 conditions

In addition to the above movements that are expected to operate inadequately for Future Background conditions, the following movements are expected to operate inadequately for Future with Project conditions with the anticipated project traffic superimposed:

SR 60 & Fullenwider Road

- Southbound left on SR 60 during AM peak hour

Monroe Drive & Allen Creek Road

- Westbound left on Allen Creek Road during PM peak hour

US 129 & Monroe Drive

- Westbound left on US 129 during the AM peak hour
- Westbound through on US 129 during the PM peak hour

US 129& Highlands Village Road / Smallwood Road

- Northbound left on US 129 during the AM peak hour

While the Smallwood Road eastbound left/through movement at the Highlands Village Road / Internal Access shows LOS E during the PM peak hour, it is noted that the Smallwood Road eastbound left turn movement volume during the PM peak hour is 3 vehicles. Given the LOS volume and the fact that the delay for this movement during the PM peak hour is just 1.4 seconds of delay above the LOS D threshold, no improvements are necessary or recommended to accommodate this movement.

4.3. Need for Auxiliary Turn Lanes

It is apparent that the added project traffic will add delay at existing intersections. To gauge the impact of additional turn lanes at the intersections expected to experience inadequate LOS when the development is fully open in Future with Project Year, further analysis was performed with additional turn lanes in locations to and from the development that were expected to potentially mitigate the heavy delays.

The GDOT manual *Regulations for Driveway and Encroachment Control*, which stipulates guidelines for determining when auxiliary lanes are required, was used along with the capacity analysis results to assess the locations where left and/or right turn lanes should be provided. Table 7 shows the timing for when turn lanes should be added as well as the overall lanes proposed for the intersections created by the internal access road.

Table 7 – Geometric Improvement and Estimated Timing

Int. #	Intersection	2019 Existing	2040 Future Background	2040 Future with Project
1	SR 60 & Fullenwider Road	NA	Southbound Left	Northbound Right Westbound Right
2	Monroe Drive & Allen Creek Road	NA	Northbound Right Southbound Left	NA
3	US 129 & Monroe Drive	Northbound Right Southbound Right	NA	NA
4	US Route 129 & Highlands Village Road / Smallwood Road	NA	NA	Eastbound Right
5	Highlands Village Road / Internal Road & Smallwood Road ^A	NA	NA	Shared Eastbound Right Shared Westbound Left Shared Northbound Left / Through / Right Shared Southbound Right
6	Internal Road & Allen Creek Road ^A	NA	NA	Eastbound Left Eastbound Right Shared Northbound Left/Through Shared Southbound Through/Right
7	Internal Road & Allen Creek Road ^A	NA	NA	Westbound Left Westbound Right Shared Northbound Through/Right Southbound Left Southbound Through
8	Internal Road & Fullenwider Road ^A	NA	NA	Shared Eastbound Left/Through Westbound Through Westbound Right Southbound Left Southbound Right

Note: All movements are exclusive lanes unless otherwise noted

^A Added movements to develop intersection

Despite the additional turn lanes at these locations, inadequate LOS prevailed for several movements at the following locations:

- SR 60 & Fullenwider Road
- US 129 & Monroe Drive
- US 129 & Highlands Village Road / Smallwood Road
- Highlands Village Road & Internal Access / Smallwood Road

The study intersections remain with the existing operational control (e.g. unsignalized for 7 of the intersections and signalized for the 1 intersection) in the Future with Project Year 2040 scenario. The

primary reason for this is because the GDOT Intersection Control Evaluation (ICE) process performed during the design phase will include a full traffic signal warrant analysis and therefore is not within the scope of this study.

GDOT requires a minimum of 1320 feet of space (0.25 miles) between traffic signals on a state route. The US 129 & Highlands Village Road/Smallwood Road intersection appears to be more than 1.0 mile from the signalized intersection of US 129 & Old County Dump Road / Athens Street (to the west) and US 129 & SR 323 (Gillsville Highway) (to the east). The SR60 & Fullenwider Road is approximately 0.7 miles from the signalized intersection of SR 60 & Calvary Church Road/Old Chandler Road to the north and is more than 1.0 mile to the signalized intersection to the south. Therefore, a traffic signal at these intersections could be feasible and still meet the spacing requirements. The spacing criteria will more completely be evaluated as part of the GDOT ICE process.

4.4. Queue Lengths

The 95th percentile queue is the maximum distance to the back of the queue (BOQ) that would be expected 95 percent of the time. Most of the time, the queue will be shorter, and the chances of a longer queue occurring are very small; therefore, the 95th percentile BOQ distance is typically used to determine a reasonable storage length for intersection turn lanes. The 95th percentile queue lengths, which are expressed in feet, are shown in Table 8 for each intersection during both peak hours for the Existing, the Background Condition and the With Project Conditions. All turn bays must exceed the queue lengths or meet minimum deceleration criteria as stipulated by GDOT, whichever is longer. See GDOT standards for bay taper and deceleration lengths.

Table 8 – Queue Lengths

Int. #	Roadway	Approach	Movement	AM PEAK HOUR				PM PEAK HOUR			
				2019 Existing	2040 Future Background	2040 Future with Project	2040 Future with Project - Mitigation	2019 Existing	2040 Future Background	2040 Future with Project	2040 Future with Project - Mitigation
1	SR 60	Southbound	Left	10	38	1150	1150	3	8	43	43
	Fullenwider Road	Westbound	Left/Right ¹	13	168	353	-	53	145	2355	688
			Right	NA	NA	NA	225	NA	NA	NA	1698
2	Monroe Drive	Southbound	Left	3	5	8	8	10	23	28	28
	Allen Creek Road	Westbound	Left	0	0	3	0	8	33	73	55
			Right	0	0	0	0	5	10	20	15
3	Monroe Drive	Northbound	Left	104	222	304	248	162	397	729	583
			Through/Right ²	73	140	140	74	126	270	271	95
			Right ²	NA	NA	NA	55	NA	NA	NA	194
		Southbound	Left	26	38	38	37	47	72	72	66
			Through/Right ²	97	188	188	91	113	252	262	90
			Right ²	NA	NA	NA	79	NA	NA	NA	189
	US Route 129	Eastbound	Left	62	355	355	355	41	224	224	224
			Through	206	420	818	818	714	2136	2286	2286
			Right	27	33	82	82	19	44	63	63
		Westbound	Left	47	102	381	381	24	117	117	117
			Through	641	1916	2041	2041	379	1059	1794	1794
			Right	0	0	0	0	0	0	0	0
4	US Route 129	Northbound	Left	0	0	203	203	0	8	88	88
			Through	-	-	-	-	-	-	-	-
			Right	-	-	-	-	-	-	-	-
		Southbound	Left	10	98	98	98	3	8	8	8
			Through	-	-	-	-	-	-	-	-
			Right	-	-	-	-	-	-	-	-
	Smallwood Road	Eastbound	Left/Through/Right ³	38	-	-	-	90	-	-	-
			Right	NA	NA	NA	50	NA	NA	NA	350
Highlands Village Road	Westbound	Left/Through	23	-	-	-	13	60	-	-	
		Right	8	43	43	43	0	3	3	3	
5	Internal Road	Northbound	Left	NA	NA	0	0	NA	NA	0	0
	Highlands Village Road	Southbound	Left	0	0	3	3	0	0	13	13
	Smallwood Road	Eastbound	Left/Through/Right ⁴	0	0	3	3	0	0	3	3
		Westbound	Left/Through/Right ⁴	0	0	5	5	0	0	10	10
6	Internal Road	Northbound	Left	NA	NA	3	3	NA	NA	10	10
	Allen Creek Road	Left/Right	45			5	78			3	
		Right	0			38	0			70	
7	Internal Road	Southbound	Left/Through	NA	NA	13	13	NA	NA	40	40
	Allen Creek Road	Left/Right	3			0	35			0	
		Right	0			3	0			35	
8	Internal Road	Southbound	Left/Right ¹	NA	NA	73	58			23	18
		Right	0			3	0			3	
	Fullenwider Road	Eastbound	Left			0	0			3	3

Note: - Value not provided, as volume exceeds capacity

NA - Not Applicable as movement, approach, intersection, etc. may not exist

¹ In Future with Project - Mitigation condition, movement is exclusive left turn lane

² In Future with Project - Mitigation condition, movement is exclusive through and exclusive right turn lane

³ In Future with Project - Mitigation condition, movement is shared through / left turn lane

⁴ In Future with Project - Mitigation condition, the movement is shared left / through / right turn lane. During other conditions, the eastbound approach consists of shared left/through and the westbound consists of shared through/right turn lane

5. CONCLUSIONS

This traffic study was conducted to evaluate the traffic impact of a proposed 5 million square foot industrial park development located in Gainesville, Georgia. The proposed site is on approximately 956.40 acres of land on 20 parcels located north of Chandler Road (State Route 60), west of Monroe Drive, south of Athens Highway (US Route 129 & State Route 11) and straddles both Fullenwider Road and Allen Creek Road. The proposed development is anticipated to be fully open in 2040. The project site is currently vacant land.

The existing intersections that could be impacted by this project include:

1. SR 60 & Fullenwider Road
2. Monroe Drive & Allen Creek Road
3. US 129 (SR 11) & Monroe Drive
4. US 129 (SR 11) & Highlands Village Road / Smallwood Road
5. Highlands Village Road & Smallwood Road

An internal roadway is proposed to intersect at the northern end at the existing intersection of Highlands Village Road & Smallwood Road, continue south and intersect with Allen Creek Road, continuing further south to intersect with Fullenwider Road. As such, the following proposed intersection locations were included for evaluation in this study:

6. Allen Creek Road & Internal Access
7. Internal Access & Street just south of Allen Creek Road
8. Fullenwider & Internal Access

The proposed development could generate a total of 2,000 new trips during the weekday morning peak hour and 2,000 new trips during the weekday evening peak hour. The site generated trips were distributed to the surrounding roadway network based on the location of each access drive, the potential regional distribution, and discussions with the applicant and the Gainesville-Hall Metropolitan Planning Organization (MPO).

Intersection capacity analysis was performed for the morning and evening peak hours for the Existing Year (2019), Future Background Year (2040) and the Future with Project (2040) conditions. For Existing Year, Future Background Year, and Future with Project Year, the existing lane configurations and traffic control were used. The analyses showed that several movements at the study area intersections are currently or are anticipated to operate at less than desirable LOS (LOS E or LOS F) Table 9 shows when these movements experience the LOS E/F operations.

While the Smallwood Road eastbound left/through movement at the Highlands Village Road / Internal Access shows LOS E during the PM peak hour, it is noted that the Smallwood Road eastbound left turn movement volume during the PM peak hour is 3 vehicles. Given the LOS volume and the fact that the delay for this movement during the PM peak hour is just 1.4 seconds of delay above the LOS D threshold, no improvements are necessary or recommended to accommodate this movement.

Table 9 –Condition during which LOS E/F operations of movements begin

Int. #	Intersection	Movement	2019 Existing		2040 Future Background		2040 Future with Project		2040 Future with Project - Mitigation	
			AM	PM	AM	PM	AM	PM	AM	PM
1	SR 60 & Fullenwider Road	Westbound L/R Westbound R Southbound L			√	√			√	
2	Monroe Drive & Allen Creek Road	Westbound L						√		
3	US 129 & Monroe Drive	Eastbound L Eastbound T Westbound L Westbound T Northbound L Northbound T Southbound L Southbound T			√	√ √ √				
			√	√	√			√		
			√	√					√	√
									√	√
4	US Route 129 & Highlands Village Road / Smallwood Road	Southbound L Northbound L Eastbound L/T/R Eastbound R Westbound L/T Westbound R	√	√		√	√		√	
			√	√						√
			√	√						
					√					

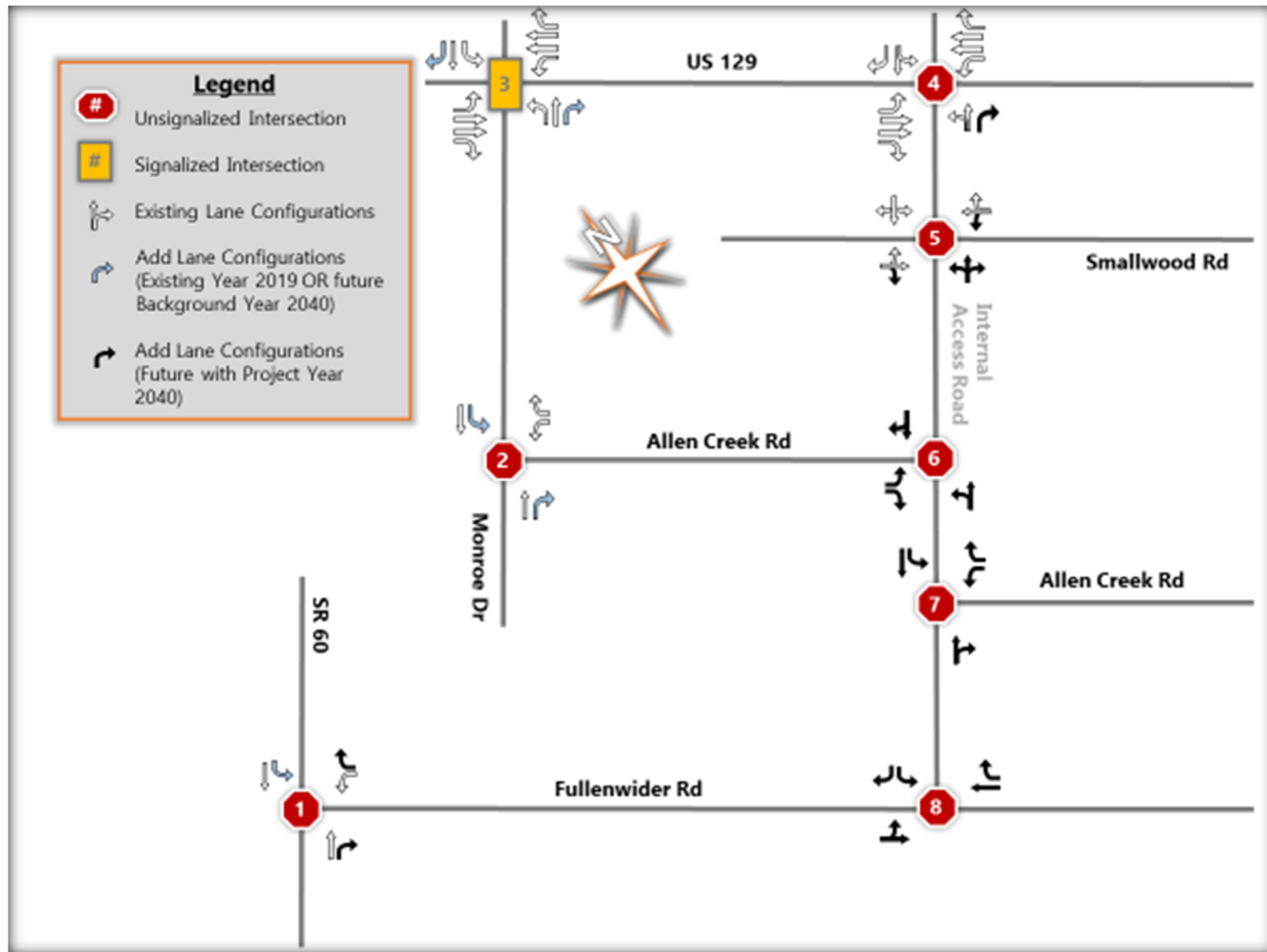
It is apparent that the several of the movements to the existing study area intersections are currently experiencing less than desirable LOS and are expected to continue in the 2040 Future Background Condition. It is also apparent that added project traffic will add delay at existing intersections and proposed. To gauge the impact of additional turn lanes at the intersections expected to experience inadequate LOS when the development is fully open in Future with Project Year 2040, further analysis was performed with additional turn lanes in locations to and from the development that were expected to potentially mitigate the heavy delays. Despite the additional turn lanes at these locations, inadequate LOS prevailed for several of the movements at the study intersections.

The existing unsignalized study intersections remained unsignalized in the Future with Project Year 2040 scenario because the GDOT Intersection Control Evaluation (ICE) process performed during the design phase will include a traffic signal warrant analysis and therefore is not within the scope of this study.

A GDOT ICE procedure will be required for the intersections SR 60, US 129 and Monroe Avenue intersections that are either new or involve proposed changes. A traffic signal warrant study is required as part of the ICE Analysis. Once the control at the intersection is determined, the lanes needed to provide adequate LOS can be determined.

Figure 15 shows the proposed lane configurations at each of the study intersections.

Figure 15 – Proposed Lane Configuration



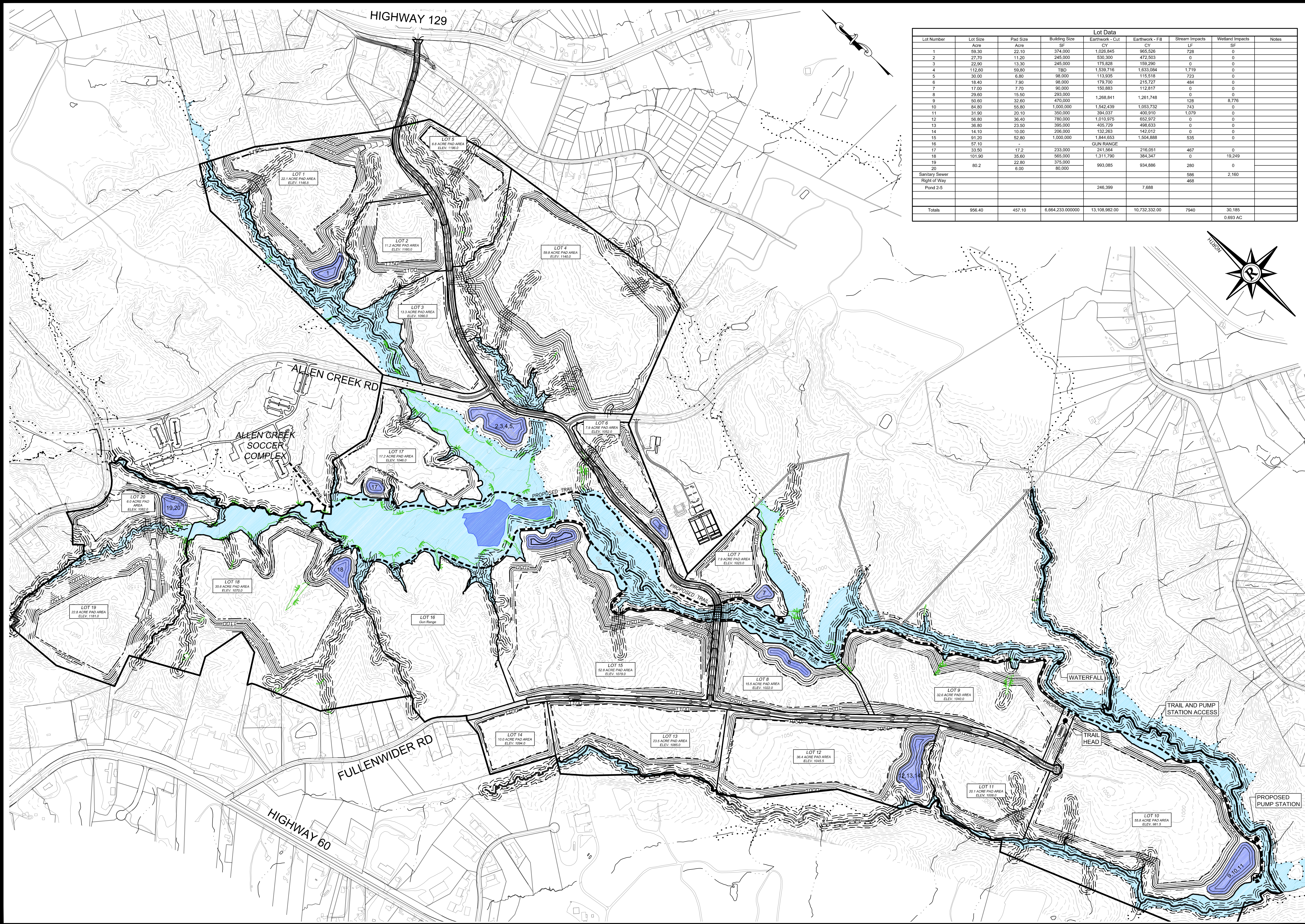
6. REFERENCES

- Trip Generation, 10th Edition, Institute of Transportation Engineers, Washington, DC, 2017.
- Trip Generation Handbook, 3rd Edition, Institute of Transportation Engineers, Washington, DC, 2014.
- Highway Capacity Manual, 6th Edition, Transportation Research Board, Washington, DC, 2016.
- Synchro, Version 10, Trafficware Ltd., Sugar Land, TX, 2014.
- Regulations for Driveway and Encroachment Control, Georgia Department of Transportation, Atlanta, GA, 2016.



Appendix A

Site Plan



Lot Data									
Lot Number	Lot Size Acre	Pad Size Acre	Building Size SF	Earthwork - Cut CY	Earthwork - Fill CY	Stream Impacts LF	Wetland Impacts SF	Notes	
1	22.10	22.10	374,000	1,026,845	965,526	728	0		
2	11.20	11.20	245,000	530,300	472,503	0	0		
3	13.30	13.30	245,000	175,828	159,290	0	0		
4	59.80	59.80	780	1,539,716	1,633,084	1,719	0		
5	30.00	6.80	98,000	113,935	115,518	723	0		
6	18.40	7.90	98,000	179,700	215,727	484	0		
7	17.00	7.70	90,000	150,883	112,817	0	0		
8	29.60	15.50	283,000	1,268,841	1,261,748	0	0		
9	50.00	32.90	470,000	1,000,000	1,053,732	128	8,776		
10	84.80	65.80	1,000,000	1,542,439	1,053,732	743	0		
11	31.90	20.10	350,000	394,037	400,910	1,079	0		
12	56.80	36.40	780,000	1,010,975	652,972	0	0		
13	36.80	23.50	395,000	405,729	498,633	0	0		
14	14.10	10.00	296,000	132,263	142,012	0	0		
15	91.20	52.80	1,000,000	1,844,653	1,504,888	535	0		
16	57.10	-	-	GUN RANGE	-	-	-		
17	33.50	17.2	233,000	241,564	216,051	467	0		
18	101.90	35.60	565,000	1,311,790	384,347	0	19,249		
19	80.2	22.80	375,000	993,085	934,886	280	0		
20	80.2	6.00	80,000	-	-	-	-		
Sanitary Sewer						586	2,160		
Right of Way						468	-		
Pond 2-5				246,399	7,688	-	-		
Totals	956.40	457.10	6,664,233.000000	13,108,982.00	10,732,332.00	7940	30,185		0.693 AC

Rochester & Associates, Inc.

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OVERALL GRADING PLAN

FOR:

ALLEN CREEK BUSINESS PARK

LOCATED IN

LAND LOT/DISTRICT

CITY OF

HALL COUNTY, GEORGIA

NO.	DATE	DESCRIPTION	REVISIONS

ANY CHANGES OR ALTERATIONS MADE TO THIS DRAWING MUST BE APPROVED BY THE WRITER. APPROVAL OF ROCHESTER & ASSOCIATES, INC. VOIDS THE SEAL SHOWN HEREON. THIS DRAWING IS NOT TO BE USED WITH THIS PROJECT. ORIGINAL DRAWINGS ARE KEPT ON FILE FOR VERIFICATION OF ANY CHANGES.

GRAPHIC SCALE

250' 0' 500' 1000'

SHEET

1

OF

2

DATE: 06.20.18
SCALE: 1"=500'
JOB NO. G190760.COG
DWG NO. 190760.DWG
DRAWN BY: MPP



Appendix B

Traffic Counts

All Traffic Data Services, Inc

Page 1

alltrafficdata.net

Site Code: 1
Station ID: 1
SR-60 NORTH OF FULLENWIDER ROAD

Start Time	24-Oct-19 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		16	114			31	135				
12:15		16	115			7	112				
12:30		20	128			12	148				
12:45		19	96	71	453	11	130	61	525	132	978
01:00		16	110			15	154				
01:15		25	112			6	135				
01:30		27	98			7	139				
01:45		15	114	83	434	7	134	35	562	118	996
02:00		17	127			7	164				
02:15		16	114			10	142				
02:30		20	151			16	137				
02:45		29	145	82	537	13	142	46	585	128	1122
03:00		20	139			11	170				
03:15		17	140			17	143				
03:30		21	155			14	181				
03:45		15	192	73	626	11	167	53	661	126	1287
04:00		11	183			18	163				
04:15		28	164			22	156				
04:30		31	173			44	172				
04:45		34	159	104	679	47	252	131	743	235	1422
05:00		33	180			53	190				
05:15		59	166			75	158				
05:30		83	137			81	228				
05:45		106	165	281	648	83	172	292	748	573	1396
06:00		90	139			73	171				
06:15		128	138			108	145				
06:30		157	106			174	151				
06:45		176	87	551	470	208	101	563	568	1114	1038
07:00		177	80			169	138				
07:15		179	73			159	109				
07:30		223	62			137	103				
07:45		169	55	748	270	106	85	571	435	1319	705
08:00		141	49			130	103				
08:15		162	35			106	98				
08:30		132	46			100	73				
08:45		126	42	561	172	98	61	434	335	995	507
09:00		132	29			100	66				
09:15		153	26			88	71				
09:30		95	20			101	73				
09:45		111	27	491	102	88	47	377	257	868	359
10:00		94	30			80	54				
10:15		103	18			83	43				
10:30		119	25			98	30				
10:45		93	19	409	92	95	32	356	159	765	251
11:00		132	24			88	32				
11:15		95	33			96	33				
11:30		131	25			116	30				
11:45		123	11	481	93	106	15	406	110	887	203
Total		3935	4576			3325	5688			7260	10264
Percent		46.2%	53.8%			36.9%	63.1%			41.4%	58.6%
Grand Total		3935	4576			3325	5688			7260	10264
Percent		46.2%	53.8%			36.9%	63.1%			41.4%	58.6%
ADT		ADT 17,524		AADT 17,524							

All Traffic Data Services, Inc

Page 1

alltrafficdata.net

Site Code: 2

Station ID: 2

MONROE DRIVE WEST OF ALLEN CREEK ROAD

Start Time	24-Oct-19 Thu	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	26			4	31				
12:15		1	31			0	24				
12:30		1	20			1	23				
12:45		3	23	12	100	1	24	6	102	18	202
01:00		2	27			3	18				
01:15		3	18			1	21				
01:30		2	21			2	27				
01:45		1	18	8	84	0	24	6	90	14	174
02:00		0	28			0	22				
02:15		3	26			3	21				
02:30		0	40			2	23				
02:45		1	32	4	126	1	19	6	85	10	211
03:00		5	28			2	27				
03:15		0	25			2	23				
03:30		3	36			4	25				
03:45		2	25	10	114	2	32	10	107	20	221
04:00		2	54			2	28				
04:15		1	39			1	34				
04:30		1	52			6	30				
04:45		3	58	7	203	6	20	15	112	22	315
05:00		1	64			6	26				
05:15		3	37			5	37				
05:30		4	64			15	26				
05:45		7	65	15	230	20	35	46	124	61	354
06:00		9	39			16	40				
06:15		16	30			27	36				
06:30		15	32			31	15				
06:45		16	34	56	135	47	17	121	108	177	243
07:00		14	44			35	30				
07:15		21	26			27	28				
07:30		36	14			44	51				
07:45		19	14	90	98	65	16	171	125	261	223
08:00		24	10			47	15				
08:15		30	7			17	14				
08:30		16	9			18	16				
08:45		26	12	96	38	18	40	100	85	196	123
09:00		18	9			23	25				
09:15		19	10			13	9				
09:30		17	5			19	16				
09:45		15	4	69	28	15	4	70	54	139	82
10:00		19	2			12	6				
10:15		16	4			19	3				
10:30		18	2			16	6				
10:45		15	4	68	12	14	3	61	18	129	30
11:00		10	3			20	5				
11:15		21	2			18	4				
11:30		23	7			21	12				
11:45		28	1	82	13	30	3	89	24	171	37
Total		517	1181			701	1034			1218	2215
Percent		30.4%	69.6%			40.4%	59.6%			35.5%	64.5%
Grand Total		517	1181			701	1034			1218	2215
Percent		30.4%	69.6%			40.4%	59.6%			35.5%	64.5%
ADT		ADT 3,433		AADT 3,433							

All Traffic Data Services, Inc

Page 1

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Site Code: 3
Station ID: 3
HWY-129 NORTH OF GAINES MILL ROAD

Start Time	24-Oct-19 Thu	NB		Hour Totals		Direction 2		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		38	227			59	246				
12:15		44	221			49	226				
12:30		32	259			54	276				
12:45		37	260	151	967	28	232	190	980	341	1947
01:00		18	204			33	240				
01:15		26	210			32	287				
01:30		24	249			30	209				
01:45		16	222	84	885	39	246	134	982	218	1867
02:00		18	238			28	287				
02:15		20	250			45	278				
02:30		28	254			30	271				
02:45		44	275	110	1017	26	310	129	1146	239	2163
03:00		25	286			40	300				
03:15		21	314			33	361				
03:30		62	302			34	380				
03:45		48	304	156	1206	37	413	144	1454	300	2660
04:00		34	316			38	399				
04:15		62	322			42	496				
04:30		100	317			51	464				
04:45		130	397	326	1352	46	460	177	1819	503	3171
05:00		136	344			54	490				
05:15		194	320			90	498				
05:30		273	337			104	523				
05:45		268	355	871	1356	100	456	348	1967	1219	3323
06:00		322	300			148	388				
06:15		394	312			190	406				
06:30		403	270			188	394				
06:45		454	234	1573	1116	212	302	738	1490	2311	2606
07:00		439	201			222	346				
07:15		534	226			194	369				
07:30		641	208			212	326				
07:45		548	169	2162	804	176	298	804	1339	2966	2143
08:00		396	174			194	270				
08:15		353	124			198	284				
08:30		337	142			196	232				
08:45		294	130	1380	570	158	236	746	1022	2126	1592
09:00		231	104			156	227				
09:15		245	122			185	167				
09:30		268	96			186	168				
09:45		244	103	988	425	192	143	719	705	1707	1130
10:00		211	74			198	158				
10:15		216	102			194	150				
10:30		232	94			186	128				
10:45		234	66	893	336	186	104	764	540	1657	876
11:00		162	56			186	106				
11:15		231	69			206	108				
11:30		257	61			202	86				
11:45		222	47	872	233	228	54	822	354	1694	587
Total		9566	10267			5715	13798			15281	24065
Percent		48.2%	51.8%			29.3%	70.7%			38.8%	61.2%
Grand Total		9566	10267			5715	13798			15281	24065
Percent		48.2%	51.8%			29.3%	70.7%			38.8%	61.2%

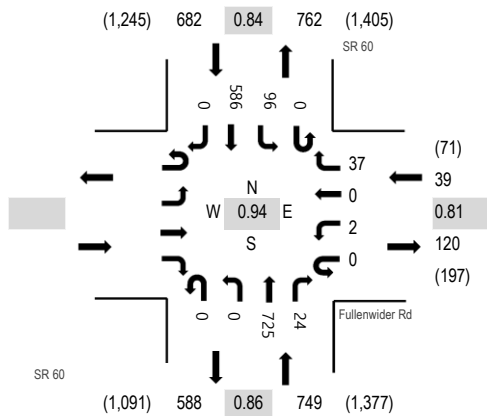
ADT ADT 39,346 AADT 39,346



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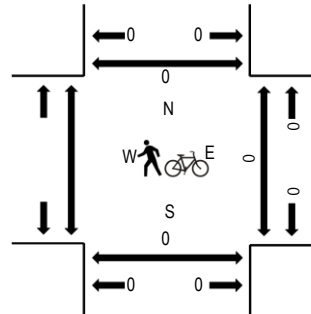
Location: #1 SR 60 & Fullenwider Rd AM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 06:45 AM - 07:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				Fullenwider Rd Westbound				SR 60 Northbound				SR 60 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM					0	0	0	8	0	0	162	4	0	19	158	0	351	1,450	0	0	0	0
6:45 AM					0	1	0	9	0	0	161	10	0	23	189	0	393	1,470	0	0	0	0
7:00 AM					0	0	0	9	0	0	185	6	0	27	137	0	364	1,393	0	0	0	0
7:15 AM					0	0	0	12	0	0	162	6	0	25	137	0	342	1,314	0	0	0	0
7:30 AM					0	1	0	7	0	0	217	2	0	21	123	0	371	1,243	0	0	0	0
7:45 AM					0	1	0	6	0	0	163	6	0	23	117	0	316		0	0	0	0
8:00 AM					0	0	0	10	0	0	133	2	0	10	130	0	285		0	0	0	0
8:15 AM					0	1	0	6	0	0	155	3	0	10	96	0	271		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	8	0	0	7	0	0	3	19	0	37
Lights					0	1	0	22	0	0	696	24	0	91	523	0	1,357
Mediums					0	1	0	7	0	0	22	0	0	2	44	0	76
Total					0	2	0	37	0	0	725	24	0	96	586	0	1,470

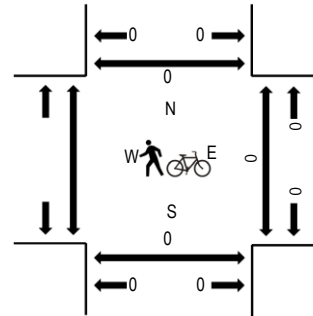
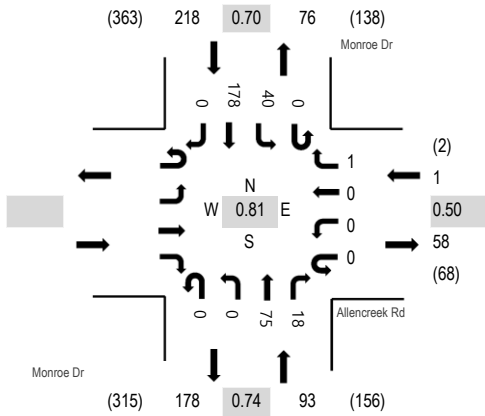


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Location: #2 Monroe Dr & Allencreek Rd AM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				Allencreek Rd Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
6:30 AM					0	0	0	0	0	0	15	0	0	0	36	0	51	222		0	0	0	
6:45 AM					0	0	0	1	0	0	15	0	0	0	1	52	0	69	260		0	0	0
7:00 AM					0	0	0	0	0	0	12	1	0	0	1	29	0	43	287		0	0	0
7:15 AM					0	0	0	0	0	0	11	7	0	0	9	32	0	59	312		0	0	0
7:30 AM					0	0	0	1	0	0	23	9	0	0	15	41	0	89	299		0	0	0
7:45 AM					0	0	0	0	0	0	16	2	0	0	13	65	0	96		0	0	0	
8:00 AM					0	0	0	0	0	0	25	0	0	0	3	40	0	68		0	0	0	
8:15 AM					0	0	0	0	0	0	19	1	0	0	6	20	0	46		0	0	0	

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	1	0	0	0	2	0	3
Lights					0	0	0	1	0	0	66	18	0	40	166	0	291
Mediums					0	0	0	0	0	0	8	0	0	0	10	0	18
Total					0	0	0	1	0	0	75	18	0	40	178	0	312

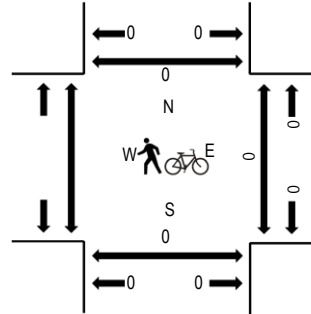
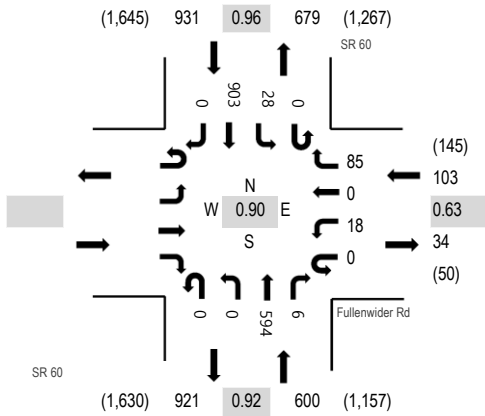


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Location: #1 SR 60 & Fullenwider Rd PM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles

Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				Fullenwider Rd Westbound				SR 60 Northbound				SR 60 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM					0	4	0	21	0	0	141	4	0	13	192	0	375	1,634	0	0	0	0
4:45 PM					0	4	0	19	0	0	130	1	0	7	242	0	403	1,632	0	0	0	0
5:00 PM					0	9	0	32	0	0	166	1	0	6	242	0	456	1,572	0	0	0	0
5:15 PM					0	1	0	13	0	0	157	0	0	2	227	0	400	1,433	0	0	0	0
5:30 PM					0	2	0	4	0	0	135	0	0	3	229	0	373	1,313	0	0	0	0
5:45 PM					0	2	0	12	0	0	156	1	0	2	170	0	343		0	0	0	0
6:00 PM					0	5	0	13	0	0	129	0	0	5	165	0	317		0	0	0	0
6:15 PM					0	1	0	3	0	0	136	0	0	5	135	0	280		0	0	0	0

Peak Rolling Hour Flow Rates

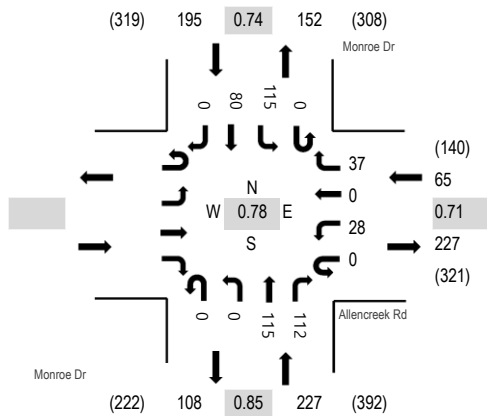
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	2	0	0	12	2	0	3	11	0	30
Lights					0	18	0	78	0	0	557	4	0	18	863	0	1,538
Mediums					0	0	0	5	0	0	25	0	0	7	29	0	66
Total					0	18	0	85	0	0	594	6	0	28	903	0	1,634



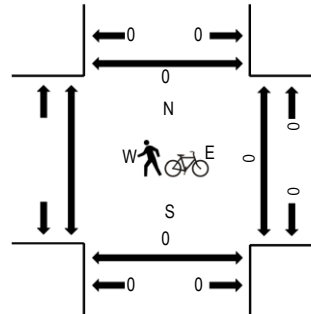
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Location: #2 Monroe Dr & Allencreek Rd PM
Date and Start Time: Thursday, October 24, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:45 PM - 06:00 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Eastbound				Allencreek Rd Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM					0	0	0	0	0	0	38	9	0	6	22	0	75	380	0	0	0	0
4:45 PM					0	0	0	3	0	0	39	13	0	8	21	0	84	415	0	0	0	0
5:00 PM					0	4	0	9	0	0	48	19	0	16	22	0	118	487	0	0	0	0
5:15 PM					0	6	0	10	0	0	24	13	0	24	26	0	103	482	0	0	0	0
5:30 PM					0	9	0	3	0	0	23	35	0	29	11	0	110	471	0	0	0	0
5:45 PM					0	9	0	15	0	0	20	45	0	46	21	0	156		0	0	0	0
6:00 PM					0	20	0	14	0	0	20	17	0	22	20	0	113		0	0	0	0
6:15 PM					0	16	0	22	0	0	20	9	0	10	15	0	92		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	1	0	0	2	0	3
Lights					0	28	0	37	0	0	114	110	0	115	71	0	475
Mediums					0	0	0	0	0	0	1	1	0	0	7	0	9
Total					0	28	0	37	0	0	115	112	0	115	80	0	487



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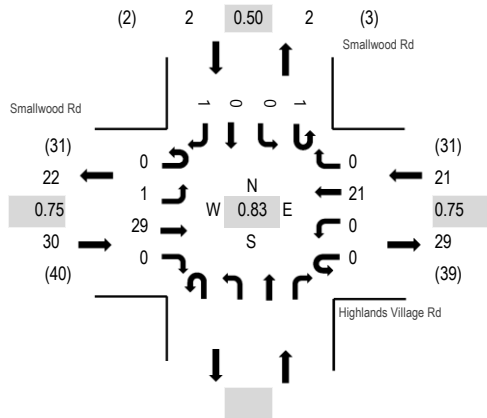
Location: #1 Smallwood Rd & Highlands Village Rd AM

Date and Start Time: Tuesday, November 19, 2019

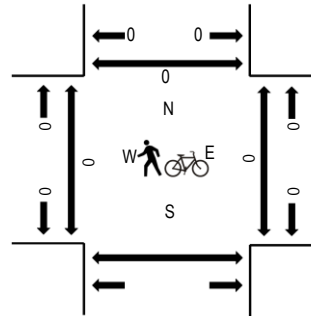
Peak Hour: 06:30 AM - 07:30 AM

Peak 15-Minutes: 06:30 AM - 06:45 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Smallwood Rd Eastbound				Highlands Village Rd Westbound				Northbound				Smallwood Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	0	8	0	0	0	0	7	0				1	0	0	0	16	53	0	0	0	0
6:45 AM	0	0	10	0	0	0	0	5	0				0	0	0	0	15	44	0	0	0	0
7:00 AM	0	0	6	0	0	0	0	3	0				0	0	0	0	9	34	0	0	0	0
7:15 AM	0	1	5	0	0	0	0	6	0				0	0	0	1	13	30	0	0	0	0
7:30 AM	0	0	5	0	0	0	0	2	0				0	0	0	0	7	20	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	3	1				0	0	0	0	5		0	0	0	0
8:00 AM	0	0	3	0	0	0	0	2	0				0	0	0	0	5		0	0	0	0
8:15 AM	0	0	1	0	0	0	0	2	0				0	0	0	0	3		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0					0	0	0	0	0
Lights	0	1	29	0	0	0	17	0					1	0	0	1	49
Mediums	0	0	0	0	0	0	4	0					0	0	0	0	4
Total	0	1	29	0	0	0	21	0					1	0	0	1	53



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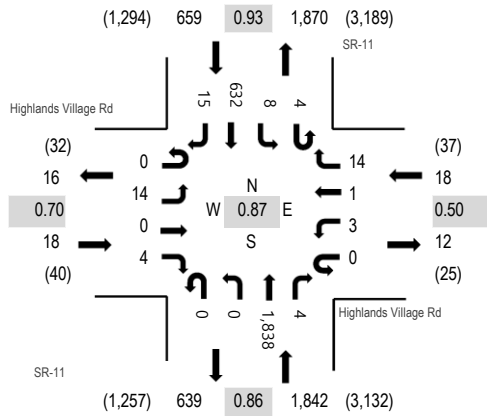
Location: #2 SR-11 & Highlands Village Rd AM

Date and Start Time: Tuesday, November 19, 2019

Peak Hour: 07:00 AM - 08:00 AM

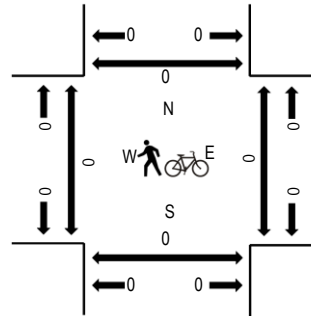
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Highlands Village Rd Eastbound				Highlands Village Rd Westbound				SR-11 Northbound				SR-11 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	8	0	0	0	0	1	11	0	2	337	5	0	1	160	4	529	2,189	0	0	0	0
6:45 AM	0	10	0	0	0	0	0	2	0	0	307	0	0	0	149	5	473	2,390	0	0	0	0
7:00 AM	0	4	0	1	0	0	0	2	0	0	386	1	1	2	149	3	549	2,537	0	0	0	0
7:15 AM	0	4	0	1	0	2	1	5	0	0	453	0	0	4	162	6	638	2,523	0	0	0	0
7:30 AM	0	5	0	2	0	0	0	5	0	0	532	3	1	1	179	2	730	2,314	0	0	0	0
7:45 AM	0	1	0	0	0	1	0	2	0	0	467	0	2	1	142	4	620		0	0	0	0
8:00 AM	0	2	0	0	0	2	0	3	0	0	352	1	0	5	168	2	535		0	0	0	0
8:15 AM	0	2	0	0	0	0	0	0	1	0	284	1	1	0	138	2	429		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	52	0	0	0	33	0	85
Lights	0	14	0	4	0	3	1	12	0	0	1,733	3	4	6	570	14	2,364
Mediums	0	0	0	0	0	0	0	2	0	0	53	1	0	2	29	1	88
Total	0	14	0	4	0	3	1	14	0	0	1,838	4	4	8	632	15	2,537



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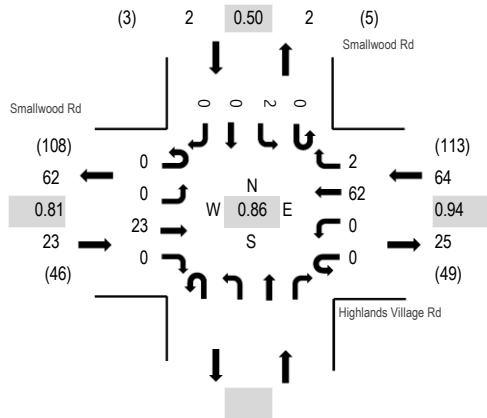
Location: #1 Smallwood Rd & Highlands Village Rd PM

Date and Start Time: Tuesday, November 19, 2019

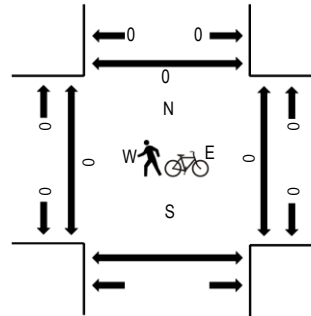
Peak Hour: 05:30 PM - 06:30 PM

Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Smallwood Rd Eastbound				Highlands Village Rd Westbound				Northbound				Smallwood Rd Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	0	2	0	0	0	0	8	1				0	0	0	0	11	73	0	0		0
4:45 PM	0	0	9	0	0	0	0	13	1				0	0	0	0	23	88	0	0		0
5:00 PM	0	0	6	0	0	0	0	14	0				0	1	0	0	21	88	0	0		0
5:15 PM	0	0	6	0	0	0	0	11	1				0	0	0	0	18	86	0	0		0
5:30 PM	0	0	8	0	0	0	0	16	1				0	1	0	0	26	89	0	0		0
5:45 PM	0	0	7	0	0	0	0	16	0				0	0	0	0	23		0	0		0
6:00 PM	0	0	5	0	0	0	0	14	0				0	0	0	0	19		0	0		0
6:15 PM	0	0	3	0	0	0	0	16	1				0	1	0	0	21		0	0		0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0					0	0	0	0	0
Lights	0	0	22	0	0	0	62	2					0	2	0	0	88
Mediums	0	0	1	0	0	0	0	0					0	0	0	0	1
Total	0	0	23	0	0	0	62	2					0	2	0	0	89



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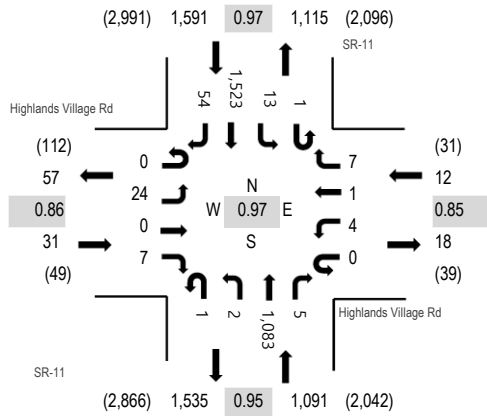
Location: #2 SR-11 & Highlands Village Rd PM

Date and Start Time: Tuesday, November 19, 2019

Peak Hour: 04:45 PM - 05:45 PM

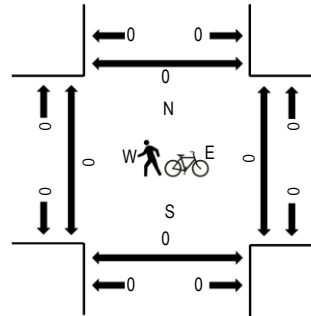
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Highlands Village Rd Eastbound				Highlands Village Rd Westbound				SR-11 Northbound				SR-11 Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	2	0	0	0	1	0	6	0	0	278	1	0	6	373	9	676	2,717	0	0	0	0
4:45 PM	0	8	0	1	0	1	1	2	0	0	278	0	0	3	382	14	690	2,725	0	0	0	0
5:00 PM	0	6	0	1	0	0	0	1	0	0	279	1	0	3	395	13	699	2,664	0	0	0	0
5:15 PM	0	6	0	0	0	1	0	1	0	2	242	2	0	4	384	10	652	2,485	0	0	0	0
5:30 PM	0	4	0	5	0	2	0	3	1	0	284	2	1	3	362	17	684	2,396	0	0	0	0
5:45 PM	0	5	1	0	0	1	1	3	0	0	229	1	1	3	369	15	629		0	0	0	0
6:00 PM	0	5	0	0	0	0	0	5	0	0	210	0	0	7	279	14	520		0	1	0	0
6:15 PM	0	5	0	0	0	0	0	2	0	1	230	1	0	1	308	15	563		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	43	0	0	0	42	0	85
Lights	0	23	0	7	0	4	1	7	1	2	1,018	5	1	13	1,458	53	2,593
Mediums	0	1	0	0	0	0	0	0	0	0	22	0	0	0	23	1	47
Total	0	24	0	7	0	4	1	7	1	2	1,083	5	1	13	1,523	54	2,725



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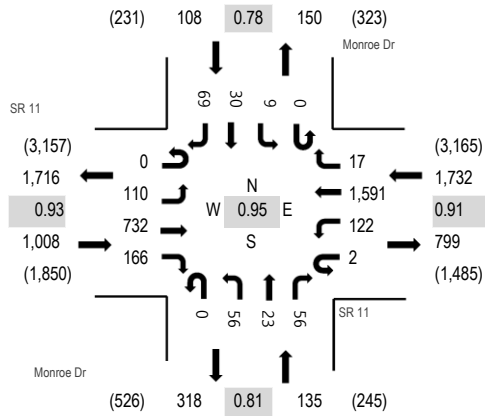
Location: #1 Monroe Dr & SR 11 AM

Date and Start Time: Wednesday, December 4, 2019

Peak Hour: 07:00 AM - 08:00 AM

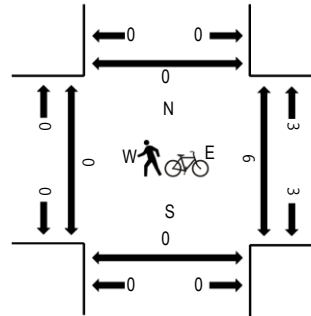
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	SR 11 Eastbound				SR 11 Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:30 AM	0	26	153	25	0	24	351	13	0	7	3	1	0	1	6	30	640	2,781	0	0	0	0
6:45 AM	0	32	169	19	3	35	354	18	0	4	9	19	0	3	11	26	702	2,929	0	1	0	0
7:00 AM	0	24	176	32	1	28	346	8	0	14	0	13	0	5	4	10	661	2,983	0	3	0	0
7:15 AM	0	31	189	51	1	31	410	3	0	11	6	17	0	1	9	18	778	2,947	0	1	0	0
7:30 AM	0	26	170	43	0	30	441	3	0	18	13	13	0	2	9	20	788	2,710	0	0	0	0
7:45 AM	0	29	197	40	0	33	394	3	0	13	4	13	0	1	8	21	756		0	2	0	0
8:00 AM	0	38	163	30	0	22	314	3	0	17	11	6	0	1	2	18	625		0	0	0	0
8:15 AM	0	15	152	20	1	7	285	3	0	17	2	14	0	0	7	18	541		0	2	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	6	32	4	0	2	45	1	0	2	0	4	0	0	2	2	100
Lights	0	101	674	151	2	117	1,509	14	0	40	22	39	0	9	26	61	2,765
Mediums	0	3	26	11	0	3	37	2	0	14	1	13	0	0	2	6	118
Total	0	110	732	166	2	122	1,591	17	0	56	23	56	0	9	30	69	2,983



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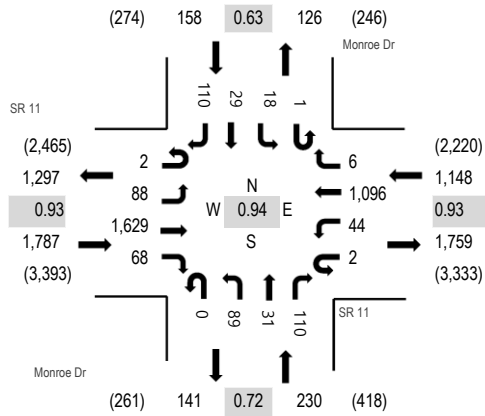
Location: #1 Monroe Dr & SR 11 PM

Date and Start Time: Wednesday, December 4, 2019

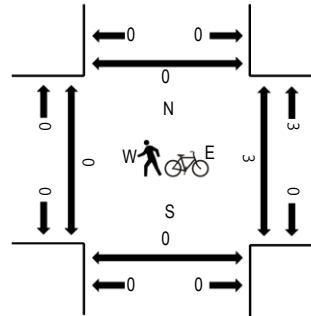
Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	SR 11 Eastbound				SR 11 Westbound				Monroe Dr Northbound				Monroe Dr Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:30 PM	0	25	366	17	0	12	247	6	0	24	11	25	0	5	8	35	781	3,270	0	3	0	0
4:45 PM	1	22	375	28	0	17	266	0	0	12	10	21	0	2	9	20	783	3,323	0	2	0	0
5:00 PM	1	14	388	15	0	10	240	2	0	40	10	33	0	12	5	56	826	3,297	0	0	0	0
5:15 PM	0	24	451	11	1	8	299	1	0	20	6	28	1	2	9	19	880	3,254	0	0	0	0
5:30 PM	0	28	415	14	1	9	291	3	0	17	5	28	0	2	6	15	834	3,035	0	1	0	0
5:45 PM	0	14	416	15	0	11	230	3	0	20	6	17	0	1	5	19	757		0	0	0	0
6:00 PM	0	16	394	8	0	13	279	3	0	19	8	20	0	2	5	16	783		0	0	0	0
6:15 PM	0	16	309	10	0	12	250	6	0	14	6	18	0	1	4	15	661		0	1	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	41	4	0	5	33	0	0	2	0	3	0	1	2	1	92
Lights	2	86	1,562	62	2	36	1,050	5	0	86	29	106	1	17	27	109	3,180
Mediums	0	2	26	2	0	3	13	1	0	1	2	1	0	0	0	0	51
Total	2	88	1,629	68	2	44	1,096	6	0	89	31	110	1	18	29	110	3,323



Appendix C

Synchro and HCM Reports

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	37	725	24	96	586
Future Volume (vph)	2	37	725	24	96	586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.872		0.996			
Flt Protected	0.998					0.993
Satd. Flow (prot)	1169	0	1822	0	0	1713
Flt Permitted	0.998					0.993
Satd. Flow (perm)	1169	0	1822	0	0	1713
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	50%	41%	4%	0%	5%	11%
Adj. Flow (vph)	2	39	771	26	102	623
Shared Lane Traffic (%)						
Lane Group Flow (vph)	41	0	797	0	0	725
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 89.1%				ICU Level of Service E		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	37	725	24	96	586
Future Vol, veh/h	2	37	725	24	96	586
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	41	4	0	5	11
Mvmt Flow	2	39	771	26	102	623
Major/Minor						
	Minor1		Major1		Major2	
Conflicting Flow All	1611	784	0	0	797	0
Stage 1	784	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Critical Hdwy	6.9	6.61	-	-	4.15	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.669	-	-	2.245	-
Pot Cap-1 Maneuver	89	338	-	-	812	-
Stage 1	376	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	72	338	-	-	812	-
Mov Cap-2 Maneuver	72	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Approach						
	WB		NB		SB	
HCM Control Delay, s	19.8		0		1.4	
HCM LOS	C					
Minor Lane/Major Mvmt						
	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	284	812	-	
HCM Lane V/C Ratio	-	-	0.146	0.126	-	
HCM Control Delay (s)	-	-	19.8	10.1	0	
HCM Lane LOS	-	-	C	B	A	
HCM 95th %tile Q(veh)	-	-	0.5	0.4	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1	75	18	40	178
Future Volume (vph)	0	1	75	18	40	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.974			
Flt Protected						0.991
Satd. Flow (prot)	1900	1615	1687	0	0	1781
Flt Permitted						0.991
Satd. Flow (perm)	1900	1615	1687	0	0	1781
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	12%	0%	0%	7%
Adj. Flow (vph)	0	1	93	22	49	220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1	115	0	0	269
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 21.6%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	75	18	40	178
Future Vol, veh/h	0	1	75	18	40	178
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	0	0	12	0	0	7
Mvmt Flow	0	1	93	22	49	220
Major/Minor						
	Minor1	Major1	Major2			
Conflicting Flow All	422	104	0	0	115	0
Stage 1	104	-	-	-	-	-
Stage 2	318	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	592	956	-	-	1487	-
Stage 1	925	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	570	956	-	-	1487	-
Mov Cap-2 Maneuver	570	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Approach						
	WB	NB	SB			
HCM Control Delay, s	8.8	0	1.4			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	956	1487	-
HCM Lane V/C Ratio	-	-	-	0.001	0.033	-
HCM Control Delay (s)	-	-	0	8.8	7.5	0
HCM Lane LOS	-	-	A	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	0.1	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	110	732	166	2	122	1591	17	56	23	56	9	30
Future Volume (vph)	110	732	166	2	122	1591	17	56	23	56	9	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		0	135	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98								0.99	
Frt			0.850				0.850		0.893			0.896
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3343	1482	0	1737	3438	1369	1399	1385	0	1805	1516
Flt Permitted	0.096				0.338			0.650			0.703	
Satd. Flow (perm)	169	3343	1445	0	618	3438	1369	957	1385	0	1321	1516
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			175				76		59			64
Link Speed (mph)		45			45			45				45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Confl. Peds. (#/hr)			6								6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	8%	9%	0%	4%	5%	18%	29%	4%	30%	0%	13%
Adj. Flow (vph)	116	771	175	2	128	1675	18	59	24	59	9	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	771	175	0	130	1675	18	59	83	0	9	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases	1	6			5	2			4			8
Permitted Phases	6		6	5	2		2	4			8	
Detector Phase	1	6	6	5	5	2	2	4	4		8	8
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	69
Future Volume (vph)	69
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	12%
Adj. Flow (vph)	73
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4	12.4
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0		30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%		20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6		22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)	114.8	106.5	106.5		114.6	106.3	106.3	16.0	16.0		16.0	16.0
Actuated g/C Ratio	0.77	0.71	0.71		0.76	0.71	0.71	0.11	0.11		0.11	0.11
v/c Ratio	0.55	0.32	0.16		0.24	0.69	0.02	0.58	0.41		0.06	0.48
Control Delay	17.3	9.2	1.5		4.9	15.3	0.1	84.4	27.9		57.9	33.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	17.3	9.2	1.5		4.9	15.3	0.1	84.4	27.9		57.9	33.3
LOS	B	A	A		A	B	A	F	C		E	C
Approach Delay		8.8				14.4			51.4			35.3
Approach LOS		A				B			D			D
Queue Length 50th (ft)	20	137	0		23	447	0	56	22		8	37
Queue Length 95th (ft)	62	206	27		47	641	0	104	73		26	97
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180			135	
Base Capacity (vph)	231	2373	1077		556	2436	992	144	258		199	282
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	0.50	0.32	0.16		0.23	0.69	0.02	0.41	0.32		0.05	0.37

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 14.9

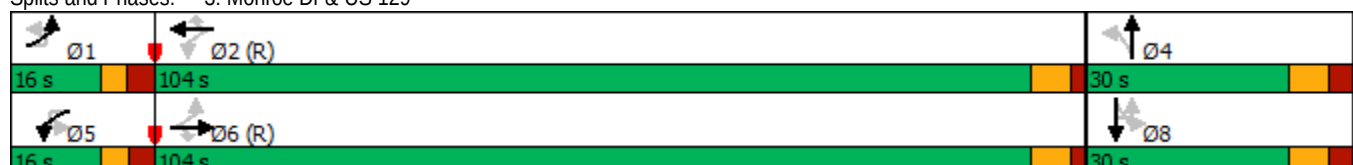
Intersection LOS: B

Intersection Capacity Utilization 76.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3: Monroe Dr & US 129





Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
4: US 129 & Highlands Village Rd

Existing AM
12/10/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	0	4	3	1	14	0	1838	4	4	8	632
Future Volume (vph)	14	0	4	3	1	14	0	1838	4	4	8	632
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	0		0	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	0.95	1.00	0.95
Frt		0.968				0.850			0.850			
Flt Protected		0.963			0.964						0.950	
Satd. Flow (prot)	0	1771	0	0	1832	1417	1900	3406	1292	0	1555	3282
Flt Permitted		0.963			0.964						0.950	
Satd. Flow (perm)	0	1771	0	0	1832	1417	1900	3406	1292	0	1555	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		424			653			2889				1747
Travel Time (s)		11.6			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	14%	0%	6%	25%	0%	25%	10%
Adj. Flow (vph)	16	0	5	3	1	16	0	2113	5	5	9	726
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	4	16	0	2113	5	0	14	726
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			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												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	15
Future Volume (vph)	15
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1509
Flt Permitted	
Satd. Flow (perm)	1509
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	7%
Adj. Flow (vph)	17
Shared Lane Traffic (%)	
Lane Group Flow (vph)	17
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	1.8												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	14	0	4	3	1	14	0	1838	4	4	8	632	15
Future Vol, veh/h	14	0	4	3	1	14	0	1838	4	4	8	632	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	14	0	6	25	0	25	10	7
Mvmt Flow	16	0	5	3	1	16	0	2113	5	5	9	726	17
Major/Minor	Minor2		Minor1		Major1		Major2						
Conflicting Flow All	1811	2872	363	2504	2884	1057	743	0	0	2113	2118	0	0
Stage 1	754	754	-	2113	2113	-	-	-	-	-	-	-	-
Stage 2	1057	2118	-	391	771	-	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	7.18	4.1	-	-	6.4	4.6	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.44	2.2	-	-	2.5	2.45	-	-
Pot Cap-1 Maneuver	50	17	640	15	16	202	873	-	-	64	185	-	-
Stage 1	372	420	-	53	93	-	-	-	-	-	-	-	-
Stage 2	244	92	-	610	413	-	-	-	-	-	-	-	-
Platoon blocked, %													
Mov Cap-1 Maneuver	39	15	640	13	14	202	873	-	-	109	109	-	-
Mov Cap-2 Maneuver	39	15	-	13	14	-	-	-	-	-	-	-	-
Stage 1	372	366	-	53	93	-	-	-	-	-	-	-	-
Stage 2	222	92	-	528	360	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB						
HCM Control Delay, s	124.1		106.1		0		0.8						
HCM LOS	F		F										
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	873	-	-	49	13	202	109	-	-				
HCM Lane V/C Ratio	-	-	-	0.422	0.354	0.08	0.127	-	-				
HCM Control Delay (s)	0	-	-	124.1	391.9	24.4	42.7	-	-				
HCM Lane LOS	A	-	-	F	F	C	E	-	-				
HCM 95th %tile Q(veh)	0	-	-	1.5	0.9	0.3	0.4	-	-				



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations		↕	↕			↕	
Traffic Volume (vph)	1	29	21	0	1	0	1
Future Volume (vph)	1	29	21	0	1	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.932	
Flt Protected		0.999				0.976	
Satd. Flow (prot)	0	1898	1597	0	0	1728	0
Flt Permitted		0.999				0.976	
Satd. Flow (perm)	0	1898	1597	0	0	1728	0
Link Speed (mph)		25	30			25	
Link Distance (ft)		1416	424			1013	
Travel Time (s)		38.6	9.6			27.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	19%	0%	0%	0%	0%
Adj. Flow (vph)	1	35	25	0	1	0	1
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	36	25	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	R NA	Left	Right
Median Width(ft)		0	0			12	
Link Offset(ft)		0	0			0	
Crosswalk Width(ft)		16	16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	9	15	9
Sign Control		Free	Free			Stop	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	13.3%			ICU Level of Service A			
Analysis Period (min)	15						

Intersection							
Int Delay, s/veh	0.4						
Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	1	29	21	0	1	0	1
Future Vol, veh/h	1	29	21	0	1	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	0	-
Grade, %	-	0	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	19	0	0	0	0
Mvmt Flow	1	35	25	0	1	0	1
Major/Minor	Major1	Major2		Minor2			
Conflicting Flow All	25	0	-	0	0	62	25
Stage 1	-	-	-	-	0	25	-
Stage 2	-	-	-	-	0	37	-
Critical Hdwy	4.1	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1603	-	-	-	0	949	1057
Stage 1	-	-	-	-	0	1003	-
Stage 2	-	-	-	-	0	991	-
Platoon blocked, %		-	-	-	-		
Mov Cap-1 Maneuver	1603	-	-	-	0	948	1057
Mov Cap-2 Maneuver	-	-	-	-	0	948	-
Stage 1	-	-	-	-	0	1002	-
Stage 2	-	-	-	-	0	991	-
Approach	EB	WB		SB			
HCM Control Delay, s	0.2	0		8.4			
HCM LOS	A						
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1603	-	-	-	1057		
HCM Lane V/C Ratio	0.001	-	-	-	0.001		
HCM Control Delay (s)	7.2	0	-	-	8.4		
HCM Lane LOS	A	A	-	-	A		
HCM 95th %tile Q(veh)	0	-	-	-	0		

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	18	85	594	6	28	903
Future Volume (vph)	18	85	594	6	28	903
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889		0.999			
Flt Protected	0.991					0.999
Satd. Flow (prot)	1570	0	1786	0	0	1808
Flt Permitted	0.991					0.999
Satd. Flow (perm)	1570	0	1786	0	0	1808
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	8%	6%	33%	36%	4%
Adj. Flow (vph)	20	94	660	7	31	1003
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	0	667	0	0	1034
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 83.0%				ICU Level of Service E		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	85	594	6	28	903
Future Vol, veh/h	18	85	594	6	28	903
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	8	6	33	36	4
Mvmt Flow	20	94	660	7	31	1003
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1729	664	0	0	667	0
Stage 1	664	-	-	-	-	-
Stage 2	1065	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.46	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.524	-
Pot Cap-1 Maneuver	98	450	-	-	782	-
Stage 1	516	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	89	450	-	-	782	-
Mov Cap-2 Maneuver	89	-	-	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	28.8	0	0.3			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	263	782	-	
HCM Lane V/C Ratio	-	-	0.435	0.04	-	
HCM Control Delay (s)	-	-	28.8	9.8	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	2.1	0.1	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	37	115	112	115	80
Future Volume (vph)	28	37	115	112	115	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.933			
Flt Protected	0.950					0.971
Satd. Flow (prot)	1805	1615	1747	0	0	1765
Flt Permitted	0.950					0.971
Satd. Flow (perm)	1805	1615	1747	0	0	1765
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	1%	2%	0%	11%
Adj. Flow (vph)	36	47	147	144	147	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	47	291	0	0	250
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 36.8%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	37	115	112	115	80
Future Vol, veh/h	28	37	115	112	115	80
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	1	2	0	11
Mvmt Flow	36	47	147	144	147	103
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	616	219	0	0	291	0
Stage 1	219	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	457	826	-	-	1282	-
Stage 1	822	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	401	826	-	-	1282	-
Mov Cap-2 Maneuver	401	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.9	0	4.8			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	401	826	1282	-
HCM Lane V/C Ratio	-	-	0.09	0.057	0.115	-
HCM Control Delay (s)	-	-	14.9	9.6	8.2	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	0.4	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	2	88	1629	68	2	44	1096	6	89	31	110	1
Future Volume (vph)	2	88	1629	68	2	44	1096	6	89	31	110	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		280		0		312		300	180		0	
Storage Lanes		1		1		1		1	1		0	
Taper Length (ft)		25				25			25			
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										0.99		
Frt				0.850				0.850		0.883		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1482	0	1539	3471	1380	1752	1585	0	0
Flt Permitted		0.198				0.089			0.505			
Satd. Flow (perm)	0	369	3471	1482	0	144	3471	1380	932	1585	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70		96		
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Confl. Peds. (#/hr)											3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	9%	0%	18%	4%	17%	3%	6%	4%	0%
Adj. Flow (vph)	2	94	1733	72	2	47	1166	6	95	33	117	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	1733	72	0	49	1166	6	95	150	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2		1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100		20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	custom	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm
Protected Phases		1	6			5	2			4		
Permitted Phases	1	6		6	5	2		2	4			8
Detector Phase	1	1	6	6	5	5	2	2	4	4		8
Switch Phase												

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	18	29	110
Future Volume (vph)	18	29	110
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	135		0
Storage Lanes	1		0
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Ped Bike Factor	1.00		
Frt		0.881	
Flt Protected	0.950		
Satd. Flow (prot)	1708	1637	0
Flt Permitted	0.499		
Satd. Flow (perm)	893	1637	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		103	
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Confl. Peds. (#/hr)	3		
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	6%	7%	1%
Adj. Flow (vph)	19	31	117
Shared Lane Traffic (%)			
Lane Group Flow (vph)	20	148	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		Cl+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	
Protected Phases		8	
Permitted Phases	8		
Detector Phase	8	8	
Switch Phase			

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0		35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%		21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6		27.6
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None
Act Effct Green (s)		121.5	114.9	114.9		118.6	111.6	111.6	21.2	21.2		
Actuated g/c Ratio		0.76	0.72	0.72		0.74	0.70	0.70	0.13	0.13		
v/c Ratio		0.28	0.70	0.07		0.30	0.48	0.01	0.77	0.51		
Control Delay		6.7	16.2	2.2		9.6	12.6	0.0	102.6	29.7		
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		6.7	16.2	2.2		9.6	12.6	0.0	102.6	29.7		
LOS		A	B	A		A	B	A	F	C		
Approach Delay			15.2				12.4			58.0		
Approach LOS			B				B			E		
Queue Length 50th (ft)		21	531	1		10	275	0	97	51		
Queue Length 95th (ft)		41	714	19		24	379	0	162	123		
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)		280				312		300	180			
Base Capacity (vph)		420	2491	1083		188	2420	983	160	352		
Starvation Cap Reductn		0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.23	0.70	0.07		0.26	0.48	0.01	0.59	0.43		

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 17.9

Intersection LOS: B

Intersection Capacity Utilization 84.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3: Monroe Dr & US 129





Lane Group	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0	
Minimum Split (s)	12.4	12.4	
Total Split (s)	35.0	35.0	
Total Split (%)	21.9%	21.9%	
Maximum Green (s)	27.6	27.6	
Yellow Time (s)	4.4	4.4	
All-Red Time (s)	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	7.4	7.4	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	
Recall Mode	None	None	
Act Effct Green (s)	21.2	21.2	
Actuated g/C Ratio	0.13	0.13	
v/c Ratio	0.17	0.48	
Control Delay	62.2	26.0	
Queue Delay	0.0	0.0	
Total Delay	62.2	26.0	
LOS	E	C	
Approach Delay		30.3	
Approach LOS		C	
Queue Length 50th (ft)	19	42	
Queue Length 95th (ft)	47	113	
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)	135		
Base Capacity (vph)	154	367	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.13	0.40	
Intersection Summary			

Lanes, Volumes, Timings
4: US 129 & Highlands Village Rd

Existing PM
12/12/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	24	0	7	4	1	7	1	2	1083	5	1	13
Future Volume (vph)	24	0	7	4	1	7	1	2	1083	5	1	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	0		0	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt		0.970				0.850				0.850		
Flt Protected		0.962			0.962			0.950				0.950
Satd. Flow (prot)	0	1719	0	0	1828	1615	0	1805	3406	1615	0	1805
Flt Permitted		0.962			0.962			0.950				0.950
Satd. Flow (perm)	0	1719	0	0	1828	1615	0	1805	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		269			653				2889			
Travel Time (s)		7.3			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	25	0	7	4	1	7	1	2	1116	5	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	5	7	0	3	1116	5	0	14
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 57.2%	ICU Level of Service B											
Analysis Period (min) 15												



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	1523	54
Future Volume (vph)	1523	54
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1583
Flt Permitted		
Satd. Flow (perm)	3471	1583
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	2%
Adj. Flow (vph)	1570	56
Shared Lane Traffic (%)		
Lane Group Flow (vph)	1570	56
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

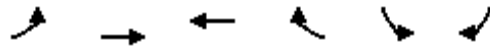
Intersection															
Int Delay, s/veh	4.7														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Vol, veh/h	24	0	7	4	1	7	1	2	1083	5	1	13	1523	54	
Future Vol, veh/h	24	0	7	4	1	7	1	2	1083	5	1	13	1523	54	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	Yield	-	-	-	None	-	-	-	None	
Storage Length	-	-	-	-	-	0	-	150	-	110	-	150	-	150	
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-	
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97	97	97	
Heavy Vehicles, %	4	0	0	0	0	0	0	0	6	0	0	0	4	2	
Mvmt Flow	25	0	7	4	1	7	1	2	1116	5	1	13	1570	56	

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	2163	2725	785	1935	2776	558	1570	1626	0	0	1116	1121	0	0
Stage 1	1598	1598	-	1122	1122	-	-	-	-	-	-	-	-	-
Stage 2	565	1127	-	813	1654	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.5	6.9	7.5	6.5	6.9	6.4	4.1	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4	3.3	3.5	4	3.3	2.5	2.2	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	26	21	340	41	19	478	145	405	-	-	285	631	-	-
Stage 1	109	167	-	223	284	-	-	-	-	-	-	-	-	-
Stage 2	472	282	-	343	157	-	-	-	-	-	-	-	-	-
Platoon blocked, %									-	-			-	-
Mov Cap-1 Maneuver	~ 24	20	340	39	18	478	250	250	-	-	579	579	-	-
Mov Cap-2 Maneuver	~ 24	20	-	39	18	-	-	-	-	-	-	-	-	-
Stage 1	108	163	-	220	281	-	-	-	-	-	-	-	-	-
Stage 2	458	279	-	328	153	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB				SB					
HCM Control Delay, s	\$ 380		64.9		0.1				0.1					
HCM LOS	F		F											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	250	-	-	30	32	478	579	-	-
HCM Lane V/C Ratio	0.012	-	-	1.065	0.161	0.015	0.025	-	-
HCM Control Delay (s)	19.6	-	-	\$ 380	138	12.6	11.4	-	-
HCM Lane LOS	C	-	-	F	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	3.6	0.5	0	0.1	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	23	62	2	2	0
Future Volume (vph)	0	23	62	2	2	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996					
Flt Protected	0.950					
Satd. Flow (prot)	0	1827	1892	0	1805	0
Flt Permitted	0.950					
Satd. Flow (perm)	0	1827	1892	0	1805	0
Link Speed (mph)	25		30	25		
Link Distance (ft)	1416		269	945		
Travel Time (s)	38.6		6.1	25.8		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	0	27	72	2	2	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	27	74	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)	0		0	12		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control	Free		Free	Stop		
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	23	62	2	2	0
Future Vol, veh/h	0	23	62	2	2	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	27	72	2	2	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	74	0	100
Stage 1	-	-	73
Stage 2	-	-	27
Critical Hdwy	4.1	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	2.2	-	3.5
Pot Cap-1 Maneuver	1538	-	904
Stage 1	-	-	955
Stage 2	-	-	1001
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1538	-	904
Mov Cap-2 Maneuver	-	-	904
Stage 1	-	-	955
Stage 2	-	-	1001

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1538	-	-	-	904
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	62	1218	40	161	984
Future Volume (vph)	3	62	1218	40	161	984
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871		0.996			
Flt Protected	0.998					0.993
Satd. Flow (prot)	1168	0	1822	0	0	1713
Flt Permitted	0.998					0.993
Satd. Flow (perm)	1168	0	1822	0	0	1713
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	50%	41%	4%	0%	5%	11%
Adj. Flow (vph)	3	66	1296	43	171	1047
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	1339	0	0	1218
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 141.2%				ICU Level of Service H		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	12.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	62	1218	40	161	984
Future Vol, veh/h	3	62	1218	40	161	984
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	41	4	0	5	11
Mvmt Flow	3	66	1296	43	171	1047
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2707	1318	0	0	1339	0
Stage 1	1318	-	-	-	-	-
Stage 2	1389	-	-	-	-	-
Critical Hdwy	6.9	6.61	-	-	4.15	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.669	-	-	2.245	-
Pot Cap-1 Maneuver	16	159	-	-	505	-
Stage 1	199	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 3	159	-	-	505	-
Mov Cap-2 Maneuver	~ 3	-	-	-	-	-
Stage 1	38	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	\$ 436.5	0		2.2		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	47	505	-	
HCM Lane V/C Ratio	-	-	1.471	0.339	-	
HCM Control Delay (s)	-	-	\$ 436.5	15.7	0	
HCM Lane LOS	-	-	F	C	A	
HCM 95th %tile Q(veh)	-	-	6.7	1.5	-	
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)	0	2	126	30	67	299
Future Volume (vph)	0	2	126	30	67	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.974			
Flt Protected						0.991
Satd. Flow (prot)	1900	1615	1687	0	0	1781
Flt Permitted						0.991
Satd. Flow (perm)	1900	1615	1687	0	0	1781
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	0%	12%	0%	0%	7%
Adj. Flow (vph)	0	2	156	37	83	369
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	2	193	0	0	452
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 34.6%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection							
Int Delay, s/veh	1						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Vol, veh/h	0	2	126	30	67	299	
Future Vol, veh/h	0	2	126	30	67	299	
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	65	-	-	-	-	
Veh in Median Storage, #	0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	81	81	81	81	81	81	
Heavy Vehicles, %	0	0	12	0	0	7	
Mvmt Flow	0	2	156	37	83	369	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	710	175	0	0	193	0	
Stage 1	175	-	-	-	-	-	
Stage 2	535	-	-	-	-	-	
Critical Hdwy	6.4	6.2	-	-	4.1	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.3	-	-	2.2	-	
Pot Cap-1 Maneuver	403	874	-	-	1392	-	
Stage 1	860	-	-	-	-	-	
Stage 2	591	-	-	-	-	-	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	373	874	-	-	1392	-	
Mov Cap-2 Maneuver	373	-	-	-	-	-	
Stage 1	796	-	-	-	-	-	
Stage 2	591	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	9.1	0		1.4			
HCM LOS	A						
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)		-	-	-	874	1392	-
HCM Lane V/C Ratio		-	-	-	0.003	0.059	-
HCM Control Delay (s)		-	-	0	9.1	7.8	0
HCM Lane LOS		-	-	A	A	A	A
HCM 95th %tile Q(veh)		-	-	-	0	0.2	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	185	1229	279	3	205	2672	29	94	39	94	15	50
Future Volume (vph)	185	1229	279	3	205	2672	29	94	39	94	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		0	135	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.98								0.99	
Frt			0.850				0.850		0.894			0.895
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3343	1482	0	1736	3438	1369	1399	1388	0	1805	1514
Flt Permitted	0.041				0.159			0.466			0.569	
Satd. Flow (perm)	72	3343	1445	0	291	3438	1369	686	1388	0	1071	1514
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			294				76		68			65
Link Speed (mph)		45			45			45				45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Confl. Peds. (#/hr)			6								6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	8%	9%	0%	4%	5%	18%	29%	4%	30%	0%	13%
Adj. Flow (vph)	195	1294	294	3	216	2813	31	99	41	99	16	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1294	294	0	219	2813	31	99	140	0	16	175
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases	1	6			5	2			4			8
Permitted Phases	6		6	5	2		2	4			8	
Detector Phase	1	6	6	5	5	2	2	4	4		8	8
Switch Phase												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	116
Future Volume (vph)	116
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	12%
Adj. Flow (vph)	122
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4	12.4
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0		30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%		20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6		22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)	108.4	98.2	98.2		107.8	97.8	97.8	22.6	22.6		22.6	22.6
Actuated g/C Ratio	0.72	0.65	0.65		0.72	0.65	0.65	0.15	0.15		0.15	0.15
v/c Ratio	1.23	0.59	0.28		0.73	1.26	0.03	0.96	0.53		0.10	0.62
Control Delay	184.4	16.0	1.7		22.2	145.0	0.1	140.7	37.7		56.9	47.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	184.4	16.0	1.7		22.2	145.0	0.1	140.7	37.7		56.9	47.4
LOS	F	B	A		C	F	A	F	D		E	D
Approach Delay		32.1				134.7			80.4			48.2
Approach LOS		C				F			F			D
Queue Length 50th (ft)	~187	356	0		52	~1806	0	98	64		14	102
Queue Length 95th (ft)	#355	420	33		102	#1916	0	#222	140		38	188
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180			135	
Base Capacity (vph)	158	2188	1047		307	2241	919	103	266		161	283
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	1.23	0.59	0.28		0.71	1.26	0.03	0.96	0.53		0.10	0.62

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 94.4

Intersection LOS: F

Intersection Capacity Utilization 121.6%

ICU Level of Service H

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: 3: Monroe Dr & US 129



Lane Group	SBR
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	24	0	7	5	2	24	0	3087	7	7	13	1061
Future Volume (vph)	24	0	7	5	2	24	0	3087	7	7	13	1061
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	0		0	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	0.95	1.00	0.95
Frt		0.970				0.850			0.850			
Flt Protected		0.963			0.964						0.950	
Satd. Flow (prot)	0	1775	0	0	1832	1417	1900	3406	1292	0	1552	3282
Flt Permitted		0.963			0.964						0.950	
Satd. Flow (perm)	0	1775	0	0	1832	1417	1900	3406	1292	0	1552	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		424			653			2889				1747
Travel Time (s)		11.6			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	14%	0%	6%	25%	0%	25%	10%
Adj. Flow (vph)	28	0	8	6	2	28	0	3548	8	8	15	1220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	36	0	0	8	28	0	3548	8	0	23	1220
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	102.0%											
Analysis Period (min)	15											
	ICU Level of Service G											

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1509
Flt Permitted	
Satd. Flow (perm)	1509
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	7%
Adj. Flow (vph)	29
Shared Lane Traffic (%)	
Lane Group Flow (vph)	29
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	6.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	24	0	7	5	2	24	0	3087	7	7	13	1061	25
Future Vol, veh/h	24	0	7	5	2	24	0	3087	7	7	13	1061	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	14	0	6	25	0	25	10	7
Mvmt Flow	28	0	8	6	2	28	0	3548	8	8	15	1220	29

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	3041	4822	610	4204	4843	1774	1249	0
Stage 1	1266	1266	-	3548	3548	-	-	-
Stage 2	1775	3556	-	656	1295	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	7.18	4.1	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.44	2.2	-
Pot Cap-1 Maneuver	~ 6	1	442	~ 1	~ 1	63	564	-
Stage 1	182	242	-	6	16	-	-	-
Stage 2	88	16	-	426	235	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	442	-	0	63	564	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-
Stage 1	182	0	-	6	16	-	-	-
Stage 2	42	16	-	-	0	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			0	25
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	564	-	-	-	-	63	~ 10	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.438	2.299	-	-
HCM Control Delay (s)	0	-	-	-	-	100.8	\$ 1383	-	-
HCM Lane LOS	A	-	-	-	-	F	F	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	1.7	3.9	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	2	49	35	0	2	0	2
Future Volume (vph)	2	49	35	0	2	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't						0.932	
Flt Protected		0.998				0.976	
Satd. Flow (prot)	0	1896	1597	0	0	1728	0
Flt Permitted		0.998				0.976	
Satd. Flow (perm)	0	1896	1597	0	0	1728	0
Link Speed (mph)		30	25			25	
Link Distance (ft)		1416	424			1013	
Travel Time (s)		32.2	11.6			27.6	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	19%	0%	0%	0%	0%
Adj. Flow (vph)	2	59	42	0	2	0	2
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	61	42	0	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	R NA	Left	Right
Median Width(ft)		0	0			12	
Link Offset(ft)		0	0			0	
Crosswalk Width(ft)		16	16			16	
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	9	15	9
Sign Control		Free	Free			Stop	
Intersection Summary							
Area Type:	Other						
Control Type:	Unsignalized						
Intersection Capacity Utilization	14.2%			ICU Level of Service A			
Analysis Period (min)	15						

Intersection							
Int Delay, s/veh	0.5						
Movement	EBL	EBT	WBT	WBR	SBU	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	2	49	35	0	2	0	2
Future Vol, veh/h	2	49	35	0	2	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	-	0	-
Grade, %	-	0	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	19	0	0	0	0
Mvmt Flow	2	59	42	0	2	0	2
Major/Minor	Major1	Major2		Minor2			
Conflicting Flow All	42	0	-	0	0	105	42
Stage 1	-	-	-	-	0	42	-
Stage 2	-	-	-	-	0	63	-
Critical Hdwy	4.1	-	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1580	-	-	-	0	898	1034
Stage 1	-	-	-	-	0	986	-
Stage 2	-	-	-	-	0	965	-
Platoon blocked, %		-	-	-	-		
Mov Cap-1 Maneuver	1580	-	-	-	0	897	1034
Mov Cap-2 Maneuver	-	-	-	-	0	897	-
Stage 1	-	-	-	-	0	985	-
Stage 2	-	-	-	-	0	965	-
Approach	EB	WB		SB			
HCM Control Delay, s	0.3	0		8.5			
HCM LOS	A						
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	1580	-	-	-	1034		
HCM Lane V/C Ratio	0.002	-	-	-	0.002		
HCM Control Delay (s)	7.3	0	-	-	8.5		
HCM Lane LOS	A	A	-	-	A		
HCM 95th %tile Q(veh)	0	-	-	-	0		

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	143	998	10	47	1517
Future Volume (vph)	30	143	998	10	47	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.888		0.999			
Flt Protected	0.991					0.999
Satd. Flow (prot)	1568	0	1786	0	0	1808
Flt Permitted	0.991					0.999
Satd. Flow (perm)	1568	0	1786	0	0	1808
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	8%	6%	33%	36%	4%
Adj. Flow (vph)	33	159	1109	11	52	1686
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	0	1120	0	0	1738
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 134.9%				ICU Level of Service H		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	143	998	10	47	1517
Future Vol, veh/h	30	143	998	10	47	1517
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	8	6	33	36	4
Mvmt Flow	33	159	1109	11	52	1686
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2905	1115	0	0	1120	0
Stage 1	1115	-	-	-	-	-
Stage 2	1790	-	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.46	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.524	-
Pot Cap-1 Maneuver	~ 18	246	-	-	514	-
Stage 1	316	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	0	246	-	-	514	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	57.4	0	0.4			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	246	514	-	
HCM Lane V/C Ratio	-	-	0.781	0.102	-	
HCM Control Delay (s)	-	-	57.4	12.8	0	
HCM Lane LOS	-	-	F	B	A	
HCM 95th %tile Q(veh)	-	-	5.8	0.3	-	
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)	47	62	193	188	193	134
Future Volume (vph)	47	62	193	188	193	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.933			
Flt Protected	0.950					0.971
Satd. Flow (prot)	1805	1615	1747	0	0	1765
Flt Permitted	0.950					0.971
Satd. Flow (perm)	1805	1615	1747	0	0	1765
Link Speed (mph)	45		45			45
Link Distance (ft)	6268		1559			1338
Travel Time (s)	95.0		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	0%	0%	1%	2%	0%	11%
Adj. Flow (vph)	60	79	247	241	247	172
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	79	488	0	0	419
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 52.7%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	62	193	188	193	134
Future Vol, veh/h	47	62	193	188	193	134
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	1	2	0	11
Mvmt Flow	60	79	247	241	247	172
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1034	368	0	0	488	0
Stage 1	368	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	259	682	-	-	1086	-
Stage 1	704	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	194	682	-	-	1086	-
Mov Cap-2 Maneuver	194	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	19.9	0	5.5			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	194	682	1086	-
HCM Lane V/C Ratio	-	-	0.311	0.117	0.228	-
HCM Control Delay (s)	-	-	31.7	11	9.3	0
HCM Lane LOS	-	-	D	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.4	0.9	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	148	2736	114	3	74	1841	10	149	52	185	2
Future Volume (vph)	3	148	2736	114	3	74	1841	10	149	52	185	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		280		0		312		300	180		0	
Storage Lanes		1		1		1		1	1		0	
Taper Length (ft)		25				25			25			
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850				0.850		0.883		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1482	0	1538	3471	1380	1752	1606	0	0
Flt Permitted		0.038				0.040			0.301			
Satd. Flow (perm)	0	71	3471	1482	0	65	3471	1380	555	1606	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70		91		
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	9%	0%	18%	4%	17%	3%	6%	4%	0%
Adj. Flow (vph)	3	157	2911	121	3	79	1959	11	159	55	197	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	2911	121	0	82	1959	11	159	252	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2		1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100		20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6		20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			CI+Ex				CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA		Perm
Protected Phases	1	1	6		5	5	2			4		
Permitted Phases	6	6		6	2	2		2	4			8
Detector Phase	1	1	6	6	5	5	2	2	4	4		8
Switch Phase												
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	30	49	185
Future Volume (vph)	30	49	185
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	135		0
Storage Lanes	1		0
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Frt		0.881	
Flt Protected	0.950		
Satd. Flow (prot)	1709	1637	0
Flt Permitted	0.294		
Satd. Flow (perm)	529	1637	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		102	
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	6%	7%	1%
Adj. Flow (vph)	32	52	197
Shared Lane Traffic (%)			
Lane Group Flow (vph)	34	249	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	CI+Ex	CI+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		CI+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	
Protected Phases		8	
Permitted Phases	8		
Detector Phase	8	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	
Minimum Split (s)	12.4	12.4	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0		35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%		21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6		27.6
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None
Act Effct Green (s)		118.3	104.7	104.7		107.9	99.3	99.3	27.6	27.6		
Actuated g/C Ratio		0.74	0.65	0.65		0.67	0.62	0.62	0.17	0.17		
v/c Ratio		0.82	1.28	0.12		0.69	0.91	0.01	1.67	0.72		
Control Delay		73.0	157.6	4.9		61.1	34.3	0.0	382.4	51.8		
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		73.0	157.6	4.9		61.1	34.3	0.0	382.4	51.8		
LOS		E	F	A		E	C	A	F	D		
Approach Delay			147.6				35.2			179.7		
Approach LOS			F				D			F		
Queue Length 50th (ft)		114	~2036	18		40	924	0	~241	163		
Queue Length 95th (ft)		#224	#2136	44		#117	1059	0	#397	270		
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)		280				312		300	180			
Base Capacity (vph)		212	2270	994		128	2154	883	95	352		
Starvation Cap Reductn		0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.75	1.28	0.12		0.64	0.91	0.01	1.67	0.72		

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.67

Intersection Signal Delay: 106.3

Intersection LOS: F

Intersection Capacity Utilization 124.5%

ICU Level of Service H

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: 3: Monroe Dr & US 129





Lane Group	SBL	SBT	SBR
Total Split (s)	35.0	35.0	
Total Split (%)	21.9%	21.9%	
Maximum Green (s)	27.6	27.6	
Yellow Time (s)	4.4	4.4	
All-Red Time (s)	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	7.4	7.4	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	
Recall Mode	None	None	
Act Effct Green (s)	27.6	27.6	
Actuated g/C Ratio	0.17	0.17	
v/c Ratio	0.37	0.68	
Control Delay	72.0	46.4	
Queue Delay	0.0	0.0	
Total Delay	72.0	46.4	
LOS	E	D	
Approach Delay		49.5	
Approach LOS		D	
Queue Length 50th (ft)	32	147	
Queue Length 95th (ft)	72	252	
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)	135		
Base Capacity (vph)	91	366	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.37	0.68	
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	40	0	12	7	2	12	2	3	1819	8	2	22
Future Volume (vph)	40	0	12	7	2	12	2	3	1819	8	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	0		0	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt		0.969				0.850				0.850		
Flt Protected		0.963			0.963			0.950				0.950
Satd. Flow (prot)	0	1720	0	0	1830	1615	0	1805	3406	1615	0	1805
Flt Permitted		0.963			0.963			0.950				0.950
Satd. Flow (perm)	0	1720	0	0	1830	1615	0	1805	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		424			653				2889			
Travel Time (s)		11.6			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%
Adj. Flow (vph)	41	0	12	7	2	12	2	3	1875	8	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	9	12	0	5	1875	8	0	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 87.0%	ICU Level of Service E											
Analysis Period (min) 15												



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	2558	91
Future Volume (vph)	2558	91
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1583
Flt Permitted		
Satd. Flow (perm)	3471	1583
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	2%
Adj. Flow (vph)	2637	94
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2637	94
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

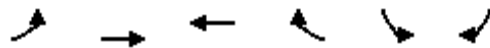
Intersection														
Int Delay, s/veh	9.5													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Vol, veh/h	40	0	12	7	2	12	2	3	1819	8	2	22	2558	91
Future Vol, veh/h	40	0	12	7	2	12	2	3	1819	8	2	22	2558	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	-	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	4	0	0	0	0	0	0	0	6	0	0	0	4	2
Mvmt Flow	41	0	12	7	2	12	2	3	1875	8	2	23	2637	94

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	3636	4580	1319	3254	4666	938	2637	2731	0	0	1875	1883	0	0
Stage 1	2687	2687	-	1885	1885	-	-	-	-	-	-	-	-	-
Stage 2	949	1893	-	1369	2781	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.58	6.5	6.9	7.5	6.5	6.9	6.4	4.1	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.58	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.54	4	3.3	3.5	4	3.3	2.5	2.2	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 2	1	150	~ 4	~ 1	269	29	150	-	-	92	323	-	-
Stage 1	~ 21	47	-	75	121	-	-	-	-	-	-	-	-	-
Stage 2	276	120	-	157	42	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	1	150	~ 3	~ 1	269	53	53	-	-	264	264	-	-
Mov Cap-2 Maneuver	-	1	-	~ 3	~ 1	-	-	-	-	-	-	-	-	-
Stage 1	~ 19	43	-	68	110	-	-	-	-	-	-	-	-	-
Stage 2	234	109	-	130	38	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 2037.2	0.2	0.2
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	53	-	-	-	2	269	264	-	-
HCM Lane V/C Ratio	0.097	-	-	-	4.639	0.046	0.094	-	-
HCM Control Delay (s)	79.9	-	-	\$ 4728.1	19	20	-	-	-
HCM Lane LOS	F	-	-	-	F	C	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4	0.1	0.3	-	-

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



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	39	104	3	3	0
Future Volume (vph)	0	39	104	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997					
Flt Protected	0.950					
Satd. Flow (prot)	0	1827	1894	0	1805	0
Flt Permitted	0.950					
Satd. Flow (perm)	0	1827	1894	0	1805	0
Link Speed (mph)	25		30	25		
Link Distance (ft)	1416		424	1013		
Travel Time (s)	38.6		9.6	27.6		
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	4%	0%	0%	0%	0%
Adj. Flow (vph)	0	45	121	3	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	45	124	0	3	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)	0		0	12		
Link Offset(ft)	0		0	0		
Crosswalk Width(ft)	16		16	16		
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control	Free		Free	Stop		
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 15.7%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	39	104	3	3	0
Future Vol, veh/h	0	39	104	3	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	4	0	0	0	0
Mvmt Flow	0	45	121	3	3	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	124	0	-	0	168	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1475	-	-	-	827	933
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	827	933
Mov Cap-2 Maneuver	-	-	-	-	827	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	983	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		9.4		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1475	-	-	-	827	
HCM Lane V/C Ratio	-	-	-	-	0.004	
HCM Control Delay (s)	0	-	-	-	9.4	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	173	1218	196	715	984
Future Volume (vph)	30	173	1218	196	715	984
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885		0.981			
Flt Protected	0.993					0.979
Satd. Flow (prot)	1304	0	1799	0	0	1728
Flt Permitted	0.993					0.979
Satd. Flow (perm)	1304	0	1799	0	0	1728
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	30%	4%	1%	3%	11%
Adj. Flow (vph)	32	184	1296	209	761	1047
Shared Lane Traffic (%)						
Lane Group Flow (vph)	216	0	1505	0	0	1808
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 189.7%				ICU Level of Service H		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	94.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	173	1218	196	715	984
Future Vol, veh/h	30	173	1218	196	715	984
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	17	30	4	1	3	11
Mvmt Flow	32	184	1296	209	761	1047
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	3970	1401	0	0	1505	0
Stage 1	1401	-	-	-	-	-
Stage 2	2569	-	-	-	-	-
Critical Hdwy	6.57	6.5	-	-	4.13	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.57	-	-	2.227	-
Pot Cap-1 Maneuver	~ 3	~ 149	-	-	~ 442	-
Stage 1	211	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	~ 149	-	-	~ 442	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	291.5	0		149.8		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	149	~ 442	-	
HCM Lane V/C Ratio	-	-	1.449	1.721	-	
HCM Control Delay (s)	-	-	291.5	\$ 355.9	0	
HCM Lane LOS	-	-	F	F	A	
HCM 95th %tile Q(veh)	-	-	14.1	46	-	
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)	3	10	148	46	100	396
Future Volume (vph)	3	10	148	46	100	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.968			
Flt Protected	0.950					0.990
Satd. Flow (prot)	1357	1242	1632	0	0	1788
Flt Permitted	0.950					0.990
Satd. Flow (perm)	1357	1242	1632	0	0	1788
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	33%	30%	16%	2%	2%	6%
Adj. Flow (vph)	4	12	183	57	123	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	12	240	0	0	612
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 50.3%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	10	148	46	100	396
Future Vol, veh/h	3	10	148	46	100	396
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	33	30	16	2	2	6
Mvmt Flow	4	12	183	57	123	489
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	947	212	0	0	240	0
Stage 1	212	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Critical Hdwy	6.73	6.5	-	-	4.12	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.57	-	-	2.218	-
Pot Cap-1 Maneuver	255	763	-	-	1327	-
Stage 1	755	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	223	763	-	-	1327	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.5	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	223	763	1327	-
HCM Lane V/C Ratio	-	-	0.017	0.016	0.093	-
HCM Control Delay (s)	-	-	21.4	9.8	8	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	0.3	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Future Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		0	135	
Storage Lanes	1		1		1		1	1		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850				0.850		0.894			0.895
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3406	1495	0	1736	3406	1380	1378	1377	0	1805	1520
Flt Permitted	0.041				0.049			0.466			0.569	
Satd. Flow (perm)	72	3406	1495	0	90	3406	1380	676	1377	0	1081	1520
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			330				76		68			65
Link Speed (mph)		45				45			45			45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	6%	8%	0%	4%	6%	17%	31%	5%	31%	0%	14%
Adj. Flow (vph)	195	1873	429	3	216	2922	31	131	41	99	16	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1873	429	0	219	2922	31	131	140	0	16	175
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2		1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100		20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0		0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm	NA
Protected Phases	1	6			5	2			4			8
Permitted Phases	6		6	5	2		2	4			8	
Detector Phase	1	6	6	5	5	2	2	4	4		8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4	12.4

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	116
Future Volume (vph)	116
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	0
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	11%
Adj. Flow (vph)	122
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0		30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%		20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6		22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None	None
Act Effct Green (s)	108.0	97.8	97.8		108.2	97.8	97.8	22.6	22.6		22.6	22.6
Actuated g/C Ratio	0.72	0.65	0.65		0.72	0.65	0.65	0.15	0.15		0.15	0.15
v/c Ratio	1.23	0.84	0.39		1.25	1.32	0.03	1.30	0.53		0.10	0.62
Control Delay	185.1	24.9	3.7		185.9	171.6	0.1	236.7	37.8		56.9	47.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	185.1	24.9	3.7		185.9	171.6	0.1	236.7	37.8		56.9	47.3
LOS	F	C	A		F	F	A	F	D		E	D
Approach Delay		33.7				170.9			134.0			48.1
Approach LOS		C				F			F			D
Queue Length 50th (ft)	~187	702	34		~206	~1934	0	~162	64		14	102
Queue Length 95th (ft)	#355	818	82		#381	#2041	0	#304	140		38	188
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180			135	
Base Capacity (vph)	158	2220	1089		175	2220	926	101	265		162	284
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	1.23	0.84	0.39		1.25	1.32	0.03	1.30	0.53		0.10	0.62

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 109.6

Intersection LOS: F

Intersection Capacity Utilization 126.1%

ICU Level of Service H

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: 3: Monroe Dr & US 129





Lane Group	SBR
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Future Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	0		0	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	0.95	1.00	0.95
Frt		0.938				0.850			0.850			
Flt Protected		0.974			0.964		0.950				0.950	
Satd. Flow (prot)	0	1225	0	0	1832	1429	1480	3406	1252	0	1570	3282
Flt Permitted		0.974			0.964		0.950				0.950	
Satd. Flow (perm)	0	1225	0	0	1832	1429	1480	3406	1252	0	1570	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		254			653			2889				1747
Travel Time (s)		6.9			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	16%	0%	72%	0%	0%	13%	22%	6%	29%	0%	23%	10%
Adj. Flow (vph)	147	0	125	6	2	28	226	3548	8	8	15	1220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	272	0	0	8	28	226	3548	8	0	23	1220
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 119.1%	ICU Level of Service H											
Analysis Period (min) 15												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	575
Future Volume (vph)	575
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	2%
Adj. Flow (vph)	661
Shared Lane Traffic (%)	
Lane Group Flow (vph)	661
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection													
Int Delay, s/veh	8.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575
Future Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	0	150	-	110	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	16	0	72	0	0	13	22	6	29	0	23	10	2
Mvmt Flow	147	0	125	6	2	28	226	3548	8	8	15	1220	661

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	3493	5274	610	4656	5927	1774	1881	0
Stage 1	1266	1266	-	4000	4000	-	-	-
Stage 2	2227	4008	-	656	1927	-	-	-
Critical Hdwy	7.82	6.5	8.34	7.5	6.5	7.16	4.54	-
Critical Hdwy Stg 1	6.82	5.5	-	6.5	5.5	-	-	-
Critical Hdwy Stg 2	6.82	5.5	-	6.5	5.5	-	-	-
Follow-up Hdwy	3.66	4	4.02	3.5	4	3.43	2.42	-
Pot Cap-1 Maneuver	~ 2	0	301	0	0	64	245	-
Stage 1	159	242	-	~ 3	9	-	-	-
Stage 2	~ 37	9	-	426	115	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	301	-	0	64	245	-
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-
Stage 1	~ 12	0	-	0	~ 1	-	-	-
Stage 2	-	1	-	-	0	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			4.9	16.6
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	245	-	-	-	-	64	~ 10	-	-
HCM Lane V/C Ratio	0.924	-	-	-	-	0.431	2.299	-	-
HCM Control Delay (s)	82.7	-	-	-	-	98.5	1377.1	-	-
HCM Lane LOS	F	-	-	-	-	F	F	-	-
HCM 95th %tile Q(veh)	8.1	-	-	-	-	1.7	3.9	-	-

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)	2	2	0	0	2	49	0	107	0	35	694	0
Future Volume (vph)	2	2	0	0	2	49	0	107	0	35	694	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869											
Flt Protected	0.976											
Satd. Flow (prot)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Flt Permitted	0.976											
Satd. Flow (perm)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Link Speed (mph)	25											
Link Distance (ft)	1001											
Travel Time (s)	27.3											
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	91%	0%	20%	8%	0%
Adj. Flow (vph)	2	2	0	0	2	59	0	129	0	42	836	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	61	0	0	129	0	0	878	0
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)	0											
Link Offset(ft)	0											
Crosswalk Width(ft)	16											
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.1%											
Analysis Period (min)	15											
ICU Level of Service B												

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
Future Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	91	0	20	8	0
Mvmt Flow	2	2	0	0	2	59	0	129	0	42	836	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1080	1049	836	1050	1049	129	836	0	0	129	0	0
Stage 1	920	920	-	129	129	-	-	-	-	-	-	-
Stage 2	160	129	-	921	920	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	197	229	370	207	229	926	807	-	-	1353	-	-
Stage 1	327	352	-	880	793	-	-	-	-	-	-	-
Stage 2	847	793	-	327	352	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	216	370	196	216	926	807	-	-	1353	-	-
Mov Cap-2 Maneuver	175	216	-	196	216	-	-	-	-	-	-	-
Stage 1	327	332	-	880	793	-	-	-	-	-	-	-
Stage 2	791	793	-	306	332	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.1		9.7		0		0.4	
HCM LOS	C		A					

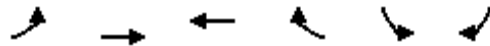
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	193	820	1353	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.075	0.031	-	-
HCM Control Delay (s)	0	-	-	24.1	9.7	7.7	0	-
HCM Lane LOS	A	-	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	146	13	148	590	5
Future Volume (vph)	16	146	13	148	590	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.878				0.999	
Flt Protected	0.995			0.996		
Satd. Flow (prot)	1621	0	0	1341	1787	0
Flt Permitted	0.995			0.996		
Satd. Flow (perm)	1621	0	0	1341	1787	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	2%	31%	42%	6%	33%
Adj. Flow (vph)	17	159	14	161	641	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	176	0	0	175	646	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 47.9%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	146	13	148	590	5
Future Vol, veh/h	16	146	13	148	590	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	31	42	6	33
Mvmt Flow	17	159	14	161	641	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	833	644	646	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.46	6.22	4.41	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.479	-	-	-
Pot Cap-1 Maneuver	333	473	815	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	327	473	815	-	-	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	17.9	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	815	-	453	-	-	
HCM Lane V/C Ratio	0.017	-	0.389	-	-	
HCM Control Delay (s)	9.5	0	17.9	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	29	97	0	211	294
Future Volume (vph)	0	29	97	0	211	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.980
Satd. Flow (prot)	1226	0	1203	0	0	1729
Flt Permitted						0.980
Satd. Flow (perm)	1226	0	1203	0	0	1729
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	34%	58%	0%	3%	11%
Adj. Flow (vph)	0	32	105	0	229	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	105	0	0	549
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 43.8%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	97	0	211	294
Future Vol, veh/h	0	29	97	0	211	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	34	58	0	3	11
Mvmt Flow	0	32	105	0	229	320
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	883	105	0	0	105	0
Stage 1	105	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Critical Hdwy	6.4	6.54	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.606	-	-	2.227	-
Pot Cap-1 Maneuver	319	869	-	-	1480	-
Stage 1	924	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	259	869	-	-	1480	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		3.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	869	1480	-	
HCM Lane V/C Ratio	-	-	0.036	0.155	-	
HCM Control Delay (s)	-	-	9.3	7.9	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.5	-	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	370	57	77	212	33
Future Volume (vph)	9	370	57	77	212	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.922		0.982	
Flt Protected		0.999			0.959	
Satd. Flow (prot)	0	1878	1291	0	1597	0
Flt Permitted		0.999			0.959	
Satd. Flow (perm)	0	1878	1291	0	1597	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	44%	0%	0%	62%	13%	6%
Adj. Flow (vph)	10	402	62	84	230	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	412	146	0	266	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	47.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	370	57	77	212	33
Future Vol, veh/h	9	370	57	77	212	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	44	0	0	62	13	6
Mvmt Flow	10	402	62	84	230	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	146	0	-	0	526	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	4.54	-	-	-	6.53	6.26
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.596	-	-	-	3.617	3.354
Pot Cap-1 Maneuver	1215	-	-	-	494	940
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1215	-	-	-	489	940
Mov Cap-2 Maneuver	-	-	-	-	489	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	639	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		18.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1215	-	-	-	523	
HCM Lane V/C Ratio	0.008	-	-	-	0.509	
HCM Control Delay (s)	8	0	-	-	18.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	2.9	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	184	687	998	45	180	1517
Future Volume (vph)	184	687	998	45	180	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893		0.994			
Flt Protected	0.990					0.995
Satd. Flow (prot)	1638	0	1778	0	0	1790
Flt Permitted	0.990					0.995
Satd. Flow (perm)	1638	0	1778	0	0	1790
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	6%	11%	19%	4%
Adj. Flow (vph)	204	763	1109	50	200	1686
Shared Lane Traffic (%)						
Lane Group Flow (vph)	967	0	1159	0	0	1886
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	207.6%			ICU Level of Service H		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	330.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	184	687	998	45	180	1517
Future Vol, veh/h	184	687	998	45	180	1517
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	3	6	11	19	4
Mvmt Flow	204	763	1109	50	200	1686
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3220	1134	0	0	1159	0
Stage 1	1134	-	-	-	-	-
Stage 2	2086	-	-	-	-	-
Critical Hdwy	6.41	6.23	-	-	4.29	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.327	-	-	2.371	-
Pot Cap-1 Maneuver	~ 11	~ 245	-	-	546	-
Stage 1	308	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	0	~ 245	-	-	546	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	\$ 1366.6	0	1.6			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	245	546	-	
HCM Lane V/C Ratio	-	-	3.95	0.366	-	
HCM Control Delay (s)	-	-	\$ 1366.6	15.4	0	
HCM Lane LOS	-	-	F	C	A	
HCM 95th %tile Q(veh)	-	-	94.2	1.7	-	
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)	63	94	288	192	202	159
Future Volume (vph)	63	94	288	192	202	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.946			
Flt Protected	0.950					0.973
Satd. Flow (prot)	1770	1599	1762	0	0	1739
Flt Permitted	0.950					0.973
Satd. Flow (perm)	1770	1599	1762	0	0	1739
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	2%	2%	1%	13%
Adj. Flow (vph)	81	121	369	246	259	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	121	615	0	0	463
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 59.9%	ICU Level of Service B					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	7.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	94	288	192	202	159
Future Vol, veh/h	63	94	288	192	202	159
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	65	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	1	2	2	1	13
Mvmt Flow	81	121	369	246	259	204
Major/Minor						
	Minor1	Major1	Major2			
Conflicting Flow All	1214	492	0	0	615	0
Stage 1	492	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.42	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	201	579	-	-	970	-
Stage 1	615	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	140	579	-	-	970	-
Mov Cap-2 Maneuver	140	-	-	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Approach						
	WB	NB	SB			
HCM Control Delay, s	32.1	0	5.6			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	140	579	970	-
HCM Lane V/C Ratio	-	-	0.577	0.208	0.267	-
HCM Control Delay (s)	-	-	61	12.8	10.1	0
HCM Lane LOS	-	-	F	B	B	A
HCM 95th %tile Q(veh)	-	-	2.9	0.8	1.1	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Future Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Fr't				0.850				0.850		0.883		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1455	0	1538	3471	1346	1752	1606	0	0
Flt Permitted		0.038				0.040			0.301			
Satd. Flow (perm)	0	71	3471	1455	0	65	3471	1346	555	1606	0	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70		90		
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	11%	0%	18%	4%	20%	3%	6%	4%	0%
Adj. Flow (vph)	3	157	3047	157	3	79	2534	11	293	55	197	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	3047	157	0	82	2534	11	293	252	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2		1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru		Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100		20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			Cl+Ex				Cl+Ex			Cl+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	custom	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA		Perm
Protected Phases		1	6			5	2			4		
Permitted Phases	1	6		6	5	2		2	4			8
Detector Phase	1	1	6	6	5	5	2	2	4	4		8
Switch Phase												
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4		12.4
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0		35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%		21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6		27.6



Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	30	49	185
Future Volume (vph)	30	49	185
Ideal Flow (vphpl)	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00
Fr t		0.881	
Flt Protected	0.950		
Satd. Flow (prot)	1693	1640	0
Flt Permitted	0.294		
Satd. Flow (perm)	524	1640	0
Right Turn on Red			Yes
Satd. Flow (RTOR)		93	
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	1%
Adj. Flow (vph)	32	52	197
Shared Lane Traffic (%)			
Lane Group Flow (vph)	34	249	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	
Detector Template	Left	Thru	
Leading Detector (ft)	20	100	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	6	
Detector 1 Type	CI+Ex	CI+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		CI+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	
Protected Phases		8	
Permitted Phases	8		
Detector Phase	8	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	
Minimum Split (s)	12.4	12.4	
Total Split (s)	35.0	35.0	
Total Split (%)	21.9%	21.9%	
Maximum Green (s)	27.6	27.6	

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4		4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0		3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4		
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0		5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None		None
Act Effct Green (s)		118.3	104.7	104.7		107.9	99.3	99.3	27.6	27.6		
Actuated g/C Ratio		0.74	0.65	0.65		0.67	0.62	0.62	0.17	0.17		
v/c Ratio		0.82	1.34	0.16		0.69	1.18	0.01	3.08	0.72		
Control Delay		73.0	183.8	6.3		61.1	114.0	0.0	985.2	52.2		
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total Delay		73.0	183.8	6.3		61.1	114.0	0.0	985.2	52.2		
LOS		E	F	A		E	F	A	F	D		
Approach Delay			170.2				111.9			553.8		
Approach LOS			F				F			F		
Queue Length 50th (ft)		114	~2191	32		40	~1680	0	~531	164		
Queue Length 95th (ft)		#224	#2286	63		#117	#1794	0	#729	271		
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)												
Base Capacity (vph)		212	2270	976		128	2154	862	95	351		
Starvation Cap Reductn		0	0	0		0	0	0	0	0		
Spillback Cap Reductn		0	0	0		0	0	0	0	0		
Storage Cap Reductn		0	0	0		0	0	0	0	0		
Reduced v/c Ratio		0.75	1.34	0.16		0.64	1.18	0.01	3.08	0.72		

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 3.08

Intersection Signal Delay: 173.5

Intersection LOS: F

Intersection Capacity Utilization 135.1%

ICU Level of Service H

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: 3: Monroe Dr & US 129





Lane Group	SBL	SBT	SBR
Yellow Time (s)	4.4	4.4	
All-Red Time (s)	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	7.4	7.4	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	
Recall Mode	None	None	
Act Effct Green (s)	27.6	27.6	
Actuated g/C Ratio	0.17	0.17	
v/c Ratio	0.38	0.69	
Control Delay	72.4	49.5	
Queue Delay	0.0	0.0	
Total Delay	72.4	49.5	
LOS	E	D	
Approach Delay		52.3	
Approach LOS		D	
Queue Length 50th (ft)	32	157	
Queue Length 95th (ft)	72	262	
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)			
Base Capacity (vph)	90	359	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.38	0.69	
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Future Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	0		0	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt		0.966				0.850				0.850		
Flt Protected		0.964			0.963			0.950				0.950
Satd. Flow (prot)	0	1681	0	0	1830	1615	0	1159	3406	1615	0	1805
Flt Permitted		0.964			0.963			0.950				0.950
Satd. Flow (perm)	0	1681	0	0	1830	1615	0	1159	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		254			653				2889			
Travel Time (s)		6.9			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Heavy Vehicles (%)	2%	0%	15%	0%	0%	0%	0%	57%	6%	0%	0%	0%
Adj. Flow (vph)	599	0	200	7	2	12	2	87	1875	8	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	799	0	0	9	12	0	89	1875	8	0	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	128.8%											
Analysis Period (min)	15											
ICU Level of Service H												



Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	2558	219
Future Volume (vph)	2558	219
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1524
Flt Permitted		
Satd. Flow (perm)	3471	1524
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	6%
Adj. Flow (vph)	2637	226
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2637	226
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

Intersection															
Int Delay, s/veh	1.2														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations															
Traffic Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Future Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	-	None	
Storage Length	-	-	-	-	-	0	-	150	-	110	-	150	-	150	
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-	
Peak Hour Factor	97	97	97	97	97	97	92	97	97	97	92	97	97	97	
Heavy Vehicles, %	2	0	15	0	0	0	0	57	6	0	0	0	4	6	
Mvmt Flow	599	0	200	7	2	12	2	87	1875	8	2	23	2637	226	

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	3804	4748	1319	3422	4966	938	2637	2863	0	0	1875	1883	0	0
Stage 1	2687	2687	-	2053	2053	-	-	-	-	-	-	-	-	-
Stage 2	1117	2061	-	1369	2913	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	7.2	7.5	6.5	6.9	6.4	5.24	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.45	3.5	4	3.3	2.5	2.77	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 1	1	~ 131	~ 3	~ 1	269	29	~ 50	-	-	92	323	-	-
Stage 1	~ 22	47	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 221	98	-	157	35	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	1	~ 131	-	~ 1	269	138	138	-	-	262	262	-	-
Mov Cap-2 Maneuver	-	1	-	-	~ 1	-	-	-	-	-	-	-	-	-
Stage 1	~ 22	43	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 206	98	-	-	32	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB				SB					
HCM Control Delay, s					3.1				0.2					
HCM LOS	-		-											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	138	-	-	-	-	269	262	-	-
HCM Lane V/C Ratio	0.643	-	-	-	-	0.046	0.095	-	-
HCM Control Delay (s)	69.5	-	-	-	-	19	20.2	-	-
HCM Lane LOS	F	-	-	-	-	C	C	-	-
HCM 95th %tile Q(veh)	3.5	-	-	-	-	0.1	0.3	-	-

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	0	0	0	39	0	687	0	104	150	3		
Future Volume (vph)	3	0	0	0	0	39	0	687	0	104	150	3		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	0.865											0.999		
Flt Protected	0.950											0.980		
Satd. Flow (prot)	0	1805	0	0	1565	0	0	1810	0	0	1501	0		
Flt Permitted	0.950											0.980		
Satd. Flow (perm)	0	1805	0	0	1565	0	0	1810	0	0	1501	0		
Link Speed (mph)	25											30		
Link Distance (ft)	1001											1156	4656	254
Travel Time (s)	27.3											31.5	105.8	5.8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	5%	0%	0%	41%	0%		
Adj. Flow (vph)	3	0	0	0	0	45	0	799	0	121	174	3		
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	3	0	0	45	0	0	799	0	0	298	0		
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)	0											0		
Link Offset(ft)	0											0		
Crosswalk Width(ft)	16											16		
Two way Left Turn Lane														
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Turning Speed (mph)	15	9		15	9		15	9		15	9			
Sign Control	Stop			Stop			Free			Free				
Intersection Summary														
Area Type:	Other													
Control Type: Unsignalized														
Intersection Capacity Utilization 63.3%														
ICU Level of Service B														
Analysis Period (min) 15														

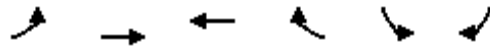
Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Future Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	5	0	5	0	0	41	0
Mvmt Flow	3	0	0	0	0	45	0	799	0	121	174	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1240	1217	176	1217	1218	799	177	0	0	799	0	0
Stage 1	418	418	-	799	799	-	-	-	-	-	-	-
Stage 2	822	799	-	418	419	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.25	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.345	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	153	182	872	159	182	381	1411	-	-	833	-	-
Stage 1	616	594	-	382	401	-	-	-	-	-	-	-
Stage 2	371	401	-	616	593	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	153	872	139	153	381	1411	-	-	833	-	-
Mov Cap-2 Maneuver	118	153	-	139	153	-	-	-	-	-	-	-
Stage 1	616	498	-	382	401	-	-	-	-	-	-	-
Stage 2	327	401	-	517	498	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	36.4		15.7		0		4.1					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1411	-	-	118	381	833	-	-				
HCM Lane V/C Ratio	-	-	-	0.03	0.119	0.145	-	-				
HCM Control Delay (s)	0	-	-	36.4	15.7	10.1	0	-				
HCM Lane LOS	A	-	-	E	C	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.5	-	-				

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	394	157	573	159	16
Future Volume (vph)	4	394	157	573	159	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.866				0.988	
Flt Protected				0.989		
Satd. Flow (prot)	1610	0	0	1818	1522	0
Flt Permitted				0.989		
Satd. Flow (perm)	1610	0	0	1818	1522	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	2%	1%	4%	25%	6%
Adj. Flow (vph)	4	428	171	623	173	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	432	0	0	794	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 82.8%				ICU Level of Service E		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	394	157	573	159	16
Future Vol, veh/h	4	394	157	573	159	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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	2	1	4	25	6
Mvmt Flow	4	428	171	623	173	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1147	182	190	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Critical Hdwy	6.65	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	198	861	1390	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	161	861	1390	-	-	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	1.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1390	-	825	-	-	
HCM Lane V/C Ratio	0.123	-	0.524	-	-	
HCM Control Delay (s)	8	0	14.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	3.1	-	-	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	220	281	0	411	91
Future Volume (vph)	0	220	281	0	411	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected						0.961
Satd. Flow (prot)	1611	0	1776	0	0	1682
Flt Permitted						0.961
Satd. Flow (perm)	1611	0	1776	0	0	1682
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	7%	0%	2%	38%
Adj. Flow (vph)	0	239	305	0	447	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	0	305	0	0	546
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 66.0%				ICU Level of Service C		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	220	281	0	411	91
Future Vol, veh/h	0	220	281	0	411	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	7	0	2	38
Mvmt Flow	0	239	305	0	447	99
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1298	305	0	0	305	0
Stage 1	305	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	180	735	-	-	1256	-
Stage 1	752	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	112	735	-	-	1256	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.2	0		7.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	735	1256	-	
HCM Lane V/C Ratio	-	-	0.325	0.356	-	
HCM Control Delay (s)	-	-	12.2	9.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1.4	1.6	-	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	80	366	201	70	10
Future Volume (vph)	33	80	366	201	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952		0.983	
Flt Protected		0.986			0.958	
Satd. Flow (prot)	0	1841	1753	0	1266	0
Flt Permitted		0.986			0.958	
Satd. Flow (perm)	0	1841	1753	0	1266	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	0%	9%	43%	30%
Adj. Flow (vph)	36	87	398	218	76	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	616	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	44.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	80	366	201	70	10
Future Vol, veh/h	33	80	366	201	70	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	9	43	30
Mvmt Flow	36	87	398	218	76	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	616	0	-	0	666	507
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	159	-
Critical Hdwy	4.16	-	-	-	6.83	6.5
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.254	-	-	-	3.887	3.57
Pot Cap-1 Maneuver	945	-	-	-	367	514
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	945	-	-	-	352	514
Mov Cap-2 Maneuver	-	-	-	-	352	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	779	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		17.9		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	945	-	-	-	366	
HCM Lane V/C Ratio	0.038	-	-	-	0.238	
HCM Control Delay (s)	9	0	-	-	17.9	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9	

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	30	173	1218	196	715	984
Future Volume (vph)	30	173	1218	196	715	984
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1543	1242	1827	1599	1752	1712
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1543	1242	1827	1599	1752	1712
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	17%	30%	4%	1%	3%	11%
Adj. Flow (vph)	32	184	1296	209	761	1047
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	184	1296	209	761	1047
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	117.1%			ICU Level of Service H		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	76.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	173	1218	196	715	984
Future Vol, veh/h	30	173	1218	196	715	984
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	0	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	17	30	4	1	3	11
Mvmt Flow	32	184	1296	209	761	1047
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3865	1296	0	0	1505	0
Stage 1	1296	-	-	-	-	-
Stage 2	2569	-	-	-	-	-
Critical Hdwy	6.57	6.5	-	-	4.13	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.57	-	-	2.227	-
Pot Cap-1 Maneuver	~ 3	~ 173	-	-	~ 442	-
Stage 1	239	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	~ 173	-	-	~ 442	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s		0	149.8			
HCM LOS	-					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	173	~ 442	-
HCM Lane V/C Ratio	-	-	-	1.064	1.721	-
HCM Control Delay (s)	-	-	-	141	355.9	-
HCM Lane LOS	-	-	-	F	F	-
HCM 95th %tile Q(veh)	-	-	-	9	46	-
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)	3	10	148	46	100	396
Future Volume (vph)	3	10	148	46	100	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1357	1242	1638	1583	1770	1792
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1357	1242	1638	1583	1770	1792
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	33%	30%	16%	2%	2%	6%
Adj. Flow (vph)	4	12	183	57	123	489
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	12	183	57	123	489
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 30.8%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	10	148	46	100	396
Future Vol, veh/h	3	10	148	46	100	396
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	65	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	33	30	16	2	2	6
Mvmt Flow	4	12	183	57	123	489
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	918	183	0	0	240	0
Stage 1	183	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Critical Hdwy	6.73	6.5	-	-	4.12	-
Critical Hdwy Stg 1	5.73	-	-	-	-	-
Critical Hdwy Stg 2	5.73	-	-	-	-	-
Follow-up Hdwy	3.797	3.57	-	-	2.218	-
Pot Cap-1 Maneuver	266	792	-	-	1327	-
Stage 1	779	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	792	-	-	1327	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12	0	1.6			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	241	792	1327	-
HCM Lane V/C Ratio	-	-	0.015	0.016	0.093	-
HCM Control Delay (s)	-	-	20.2	9.6	8	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	0.3	-

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Future Volume (vph)	185	1779	408	3	205	2776	29	124	39	94	15	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	280		0		312		300	180		100	135	
Storage Lanes	1		1		1		1	1		1	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850				0.850			0.850		
Flt Protected	0.950				0.950			0.950			0.950	
Satd. Flow (prot)	1671	3406	1495	0	1736	3406	1380	1378	1810	1233	1805	1667
Flt Permitted	0.041				0.049			0.722			0.730	
Satd. Flow (perm)	72	3406	1495	0	90	3406	1380	1047	1810	1233	1387	1667
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			330				76			99		
Link Speed (mph)		45				45			45			45
Link Distance (ft)		1708				910			1012			1352
Travel Time (s)		25.9				13.8			15.3			20.5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	8%	6%	8%	0%	4%	6%	17%	31%	5%	31%	0%	14%
Adj. Flow (vph)	195	1873	429	3	216	2922	31	131	41	99	16	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1873	429	0	219	2922	31	131	41	99	16	53
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1	1	2	1	1	2	1	1	2
Detector Template	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left	Thru
Leading Detector (ft)	20	100	20	20	20	100	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	20	6	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94				94			94			94
Detector 2 Size(ft)		6				6			6			6
Detector 2 Type		Cl+Ex				Cl+Ex			Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0			0.0			0.0
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases	1	6		5	5	2			4			8
Permitted Phases	6		6	2	2		2	4		4	8	
Detector Phase	1	6	6	5	5	2	2	4	4	4	8	8
Switch Phase												
Minimum Initial (s)	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4	12.4	12.4	12.4

Lane Group	SBR
Lane Configurations	7
Traffic Volume (vph)	116
Future Volume (vph)	116
Ideal Flow (vphpl)	1900
Storage Length (ft)	100
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1455
Flt Permitted	
Satd. Flow (perm)	1455
Right Turn on Red	Yes
Satd. Flow (RTOR)	103
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Heavy Vehicles (%)	11%
Adj. Flow (vph)	122
Shared Lane Traffic (%)	
Lane Group Flow (vph)	122
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	8
Detector Phase	8
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	12.4

												
Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Total Split (s)	16.0	104.0	104.0	16.0	16.0	104.0	104.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.7%	69.3%	69.3%	10.7%	10.7%	69.3%	69.3%	20.0%	20.0%	20.0%	20.0%	20.0%
Maximum Green (s)	10.0	97.8	97.8	10.1	10.1	97.8	97.8	22.6	22.6	22.6	22.6	22.6
Yellow Time (s)	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4	7.4	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Vehicle Extension (s)	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None	None
Act Effct Green (s)	108.9	97.8	97.8		109.1	97.8	97.8	21.7	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.73	0.65	0.65		0.73	0.65	0.65	0.14	0.14	0.14	0.14	0.14
v/c Ratio	1.16	0.84	0.39		1.18	1.32	0.03	0.87	0.16	0.38	0.08	0.22
Control Delay	157.9	24.9	3.7		159.3	171.6	0.1	107.3	57.2	14.2	56.1	58.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	157.9	24.9	3.7		159.3	171.6	0.1	107.3	57.2	14.2	56.1	58.7
LOS	F	C	A		F	F	A	F	E	B	E	E
Approach Delay		31.6				169.1			65.7			32.8
Approach LOS		C				F			E			C
Queue Length 50th (ft)	~187	702	34		~206	~1934	0	126	35	0	14	46
Queue Length 95th (ft)	#355	818	82		#381	#2041	0	#248	74	55	37	91
Internal Link Dist (ft)		1628				830			932			1272
Turn Bay Length (ft)	280				312		300	180		100	135	
Base Capacity (vph)	168	2220	1089		186	2220	926	157	272	269	208	251
Starvation Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0		0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.84	0.39		1.18	1.32	0.03	0.83	0.15	0.37	0.08	0.21

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 104 (69%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.32

Intersection Signal Delay: 104.3

Intersection LOS: F

Intersection Capacity Utilization 123.5%

ICU Level of Service H

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: 3: Monroe Dr & US 129



Lane Group	SBR
Total Split (s)	30.0
Total Split (%)	20.0%
Maximum Green (s)	22.6
Yellow Time (s)	4.4
All-Red Time (s)	3.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	7.4
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	5.0
Recall Mode	None
Act Effct Green (s)	21.7
Actuated g/C Ratio	0.14
v/c Ratio	0.41
Control Delay	18.5
Queue Delay	0.0
Total Delay	18.5
LOS	B
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	16
Queue Length 95th (ft)	79
Internal Link Dist (ft)	
Turn Bay Length (ft)	100
Base Capacity (vph)	306
Starvation Cap Reductn	0
Spillback Cap Reductn	0
Storage Cap Reductn	0
Reduced v/c Ratio	0.40
Intersection Summary	

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Future Volume (vph)	128	0	109	5	2	24	197	3087	7	7	13	1061
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		110		150	
Storage Lanes	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	0.95	1.00	0.95
Frt			0.850			0.850			0.850			
Flt Protected		0.950			0.964		0.950				0.950	
Satd. Flow (prot)	0	1556	939	0	1832	1429	1480	3406	1252	0	1570	3282
Flt Permitted		0.950			0.964		0.950				0.950	
Satd. Flow (perm)	0	1556	939	0	1832	1429	1480	3406	1252	0	1570	3282
Link Speed (mph)		25			30			55				55
Link Distance (ft)		254			653			2889				1747
Travel Time (s)		6.9			14.8			35.8				21.7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	16%	0%	72%	0%	0%	13%	22%	6%	29%	0%	23%	10%
Adj. Flow (vph)	147	0	125	6	2	28	226	3548	8	8	15	1220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	125	0	8	28	226	3548	8	0	23	1220
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	R NA	Left	Left
Median Width(ft)		0			0			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	9	15	
Sign Control		Stop			Stop			Free				Free
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	112.4%											
Analysis Period (min)	15											
ICU Level of Service H												

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	575
Future Volume (vph)	575
Ideal Flow (vphpl)	1900
Storage Length (ft)	150
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.87
Heavy Vehicles (%)	2%
Adj. Flow (vph)	661
Shared Lane Traffic (%)	
Lane Group Flow (vph)	661
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Sign Control	
Intersection Summary	

Intersection														
Int Delay, s/veh	8.4													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
Lane Configurations		↕	↕		↕	↕	↕	↕↕	↕		↕	↕↕	↕	
Traffic Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575	
Future Vol, veh/h	128	0	109	5	2	24	197	3087	7	7	13	1061	575	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	None	
Storage Length	-	-	0	-	-	0	150	-	110	-	150	-	150	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-	
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87	87	
Heavy Vehicles, %	16	0	72	0	0	13	22	6	29	0	23	10	2	
Mvmt Flow	147	0	125	6	2	28	226	3548	8	8	15	1220	661	
Major/Minor	Minor2		Minor1		Major1		Major2							
Conflicting Flow All	3493	5274	610	4656	5927	1774	1881	0	0	3548	3556	0	0	
Stage 1	1266	1266	-	4000	4000	-	-	-	-	-	-	-	-	
Stage 2	2227	4008	-	656	1927	-	-	-	-	-	-	-	-	
Critical Hdwy	7.82	6.5	8.34	7.5	6.5	7.16	4.54	-	-	6.4	4.56	-	-	
Critical Hdwy Stg 1	6.82	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	
Critical Hdwy Stg 2	6.82	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	
Follow-up Hdwy	3.66	4	4.02	3.5	4	3.43	2.42	-	-	2.5	2.43	-	-	
Pot Cap-1 Maneuver	~ 2	0	301	0	0	64	245	-	-	~ 7	43	-	-	
Stage 1	159	242	-	~ 3	9	-	-	-	-	-	-	-	-	
Stage 2	~ 37	9	-	426	115	-	-	-	-	-	-	-	-	
Platoon blocked, %								-	-			-	-	
Mov Cap-1 Maneuver	-	0	301	-	0	64	245	-	-	10	~ 10	-	-	
Mov Cap-2 Maneuver	-	0	-	-	0	-	-	-	-	-	-	-	-	
Stage 1	~ 12	0	-	0	~ 1	-	-	-	-	-	-	-	-	
Stage 2	-	1	-	-	0	-	-	-	-	-	-	-	-	
Approach	EB		WB		NB		SB							
HCM Control Delay, s							4.9		16.6					
HCM LOS	-													
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR				
Capacity (veh/h)	245	-	-	-	301	-	64	~ 10	-	-				
HCM Lane V/C Ratio	0.924	-	-	-	0.416	-	0.431	2.299	-	-				
HCM Control Delay (s)	82.7	-	-	-	25.2	-	98.5	1377.1	-	-				
HCM Lane LOS	F	-	-	-	D	-	F	F	-	-				
HCM 95th %tile Q(veh)	8.1	-	-	-	2	-	1.7	3.9	-	-				
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)	2	2	0	0	2	49	0	107	0	35	694	0
Future Volume (vph)	2	2	0	0	2	49	0	107	0	35	694	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frts	0.869											
Flt Protected	0.976											0.998
Satd. Flow (prot)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Flt Permitted	0.976											0.998
Satd. Flow (perm)	0	1854	0	0	1651	0	0	995	0	0	1746	0
Link Speed (mph)	25											
Link Distance (ft)	1001											
Travel Time (s)	27.3											
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	91%	0%	20%	8%	0%
Adj. Flow (vph)	2	2	0	0	2	59	0	129	0	42	836	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	4	0	0	61	0	0	129	0	0	878	0
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)	0											
Link Offset(ft)	0											
Crosswalk Width(ft)	16											
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control	Stop											
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.1%											
Analysis Period (min)	15											

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
Future Vol, veh/h	2	2	0	0	2	49	0	107	0	35	694	0
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	91	0	20	8	0
Mvmt Flow	2	2	0	0	2	59	0	129	0	42	836	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1080	1049	836	1050	1049	129	836	0	0	129	0	0
Stage 1	920	920	-	129	129	-	-	-	-	-	-	-
Stage 2	160	129	-	921	920	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.3	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.38	-	-
Pot Cap-1 Maneuver	197	229	370	207	229	926	807	-	-	1353	-	-
Stage 1	327	352	-	880	793	-	-	-	-	-	-	-
Stage 2	847	793	-	327	352	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	175	216	370	196	216	926	807	-	-	1353	-	-
Mov Cap-2 Maneuver	175	216	-	196	216	-	-	-	-	-	-	-
Stage 1	327	332	-	880	793	-	-	-	-	-	-	-
Stage 2	791	793	-	306	332	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.1		9.7		0		0.4	
HCM LOS	C		A					

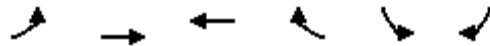
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	807	-	-	193	820	1353	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.075	0.031	-	-
HCM Control Delay (s)	0	-	-	24.1	9.7	7.7	0	-
HCM Lane LOS	A	-	-	C	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	146	13	148	590	5
Future Volume (vph)	16	146	13	148	590	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.999	
Flt Protected	0.950			0.996		
Satd. Flow (prot)	1703	1583	0	1341	1787	0
Flt Permitted	0.950			0.996		
Satd. Flow (perm)	1703	1583	0	1341	1787	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	2%	31%	42%	6%	33%
Adj. Flow (vph)	17	159	14	161	641	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	159	0	175	646	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 47.1%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	146	13	148	590	5
Future Vol, veh/h	16	146	13	148	590	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	2	31	42	6	33
Mvmt Flow	17	159	14	161	641	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	833	644	646	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	189	-	-	-	-	-
Critical Hdwy	6.46	6.22	4.41	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.318	2.479	-	-	-
Pot Cap-1 Maneuver	333	473	815	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	327	473	815	-	-	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.4	0.8		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	815	-	327	473	-	-
HCM Lane V/C Ratio	0.017	-	0.053	0.336	-	-
HCM Control Delay (s)	9.5	0	16.6	16.4	-	-
HCM Lane LOS	A	A	C	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	1.5	-	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	29	97	0	211	294
Future Volume (vph)	0	29	97	0	211	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100		0	0	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	1900	1205	1203	0	1752	1712
Flt Permitted					0.950	
Satd. Flow (perm)	1900	1205	1203	0	1752	1712
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	34%	58%	0%	3%	11%
Adj. Flow (vph)	0	32	105	0	229	320
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	32	105	0	229	320
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 21.7%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	97	0	211	294
Future Vol, veh/h	0	29	97	0	211	294
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	100	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	34	58	0	3	11
Mvmt Flow	0	32	105	0	229	320
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	883	105	0	0	105	0
Stage 1	105	-	-	-	-	-
Stage 2	778	-	-	-	-	-
Critical Hdwy	6.4	6.54	-	-	4.13	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.606	-	-	2.227	-
Pot Cap-1 Maneuver	319	869	-	-	1480	-
Stage 1	924	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	270	869	-	-	1480	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	456	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		3.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	869	1480	-
HCM Lane V/C Ratio	-	-	-	0.036	0.155	-
HCM Control Delay (s)	-	-	0	9.3	7.9	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.1	0.5	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	9	370	57	77	212	33
Future Volume (vph)	9	370	57	77	212	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	0	0
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1878	1900	997	1597	1524
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1878	1900	997	1597	1524
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	44%	0%	0%	62%	13%	6%
Adj. Flow (vph)	10	402	62	84	230	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	412	62	84	230	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 45.0%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	370	57	77	212	33
Future Vol, veh/h	9	370	57	77	212	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	44	0	0	62	13	6
Mvmt Flow	10	402	62	84	230	36
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	146	0	-	0	484	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	4.54	-	-	-	6.53	6.26
Critical Hdwy Stg 1	-	-	-	-	5.53	-
Critical Hdwy Stg 2	-	-	-	-	5.53	-
Follow-up Hdwy	2.596	-	-	-	3.617	3.354
Pot Cap-1 Maneuver	1215	-	-	-	522	992
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1215	-	-	-	516	992
Mov Cap-2 Maneuver	-	-	-	-	516	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	639	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		16.3		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1215	-	-	-	516	992
HCM Lane V/C Ratio	0.008	-	-	-	0.447	0.036
HCM Control Delay (s)	8	0	-	-	17.5	8.8
HCM Lane LOS	A	A	-	-	C	A
HCM 95th %tile Q(veh)	0	-	-	-	2.3	0.1

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	184	687	998	45	180	1517
Future Volume (vph)	184	687	998	45	180	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1568	1792	1455	1517	1827
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1787	1568	1792	1455	1517	1827
Link Speed (mph)	35		55			55
Link Distance (ft)	6348		3110			1181
Travel Time (s)	123.7		38.6			14.6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	3%	6%	11%	19%	4%
Adj. Flow (vph)	204	763	1109	50	200	1686
Shared Lane Traffic (%)						
Lane Group Flow (vph)	204	763	1109	50	200	1686
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 101.7%				ICU Level of Service G		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	879.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	184	687	998	45	180	1517
Future Vol, veh/h	184	687	998	45	180	1517
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	0	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	1	3	6	11	19	4
Mvmt Flow	204	763	1109	50	200	1686
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	3195	1109	0	0	1159	0
Stage 1	1109	-	-	-	-	-
Stage 2	2086	-	-	-	-	-
Critical Hdwy	6.41	6.23	-	-	4.29	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.327	-	-	2.371	-
Pot Cap-1 Maneuver	~ 11	~ 254	-	-	546	-
Stage 1	317	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 7	~ 254	-	-	546	-
Mov Cap-2 Maneuver	~ 7	-	-	-	-	-
Stage 1	~ 201	-	-	-	-	-
Stage 2	~ 104	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	\$ 3642.5	0	1.6			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	7	254	546	-
HCM Lane V/C Ratio	-	-	29.206	3.005	0.366	-
HCM Control Delay (s)	-	-	\$ 13724	\$ 942.3	15.4	-
HCM Lane LOS	-	-	F	F	C	-
HCM 95th %tile Q(veh)	-	-	27.5	67.9	1.7	-
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)	63	94	288	192	202	159
Future Volume (vph)	63	94	288	192	202	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	65		0	0	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1599	1863	1583	1787	1681
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1599	1863	1583	1787	1681
Link Speed (mph)	45		45			45
Link Distance (ft)	5762		1559			1338
Travel Time (s)	87.3		23.6			20.3
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	1%	2%	2%	1%	13%
Adj. Flow (vph)	81	121	369	246	259	204
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	121	369	246	259	204
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 39.8%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	94	288	192	202	159
Future Vol, veh/h	63	94	288	192	202	159
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	65	-	0	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	1	2	2	1	13
Mvmt Flow	81	121	369	246	259	204
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1091	369	0	0	615	0
Stage 1	369	-	-	-	-	-
Stage 2	722	-	-	-	-	-
Critical Hdwy	6.42	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	238	679	-	-	970	-
Stage 1	699	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	174	679	-	-	970	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	481	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	23.8	0	5.6			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	174	679	970	-
HCM Lane V/C Ratio	-	-	0.464	0.177	0.267	-
HCM Control Delay (s)	-	-	42.4	11.4	10.1	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	2.2	0.6	1.1	-

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Future Volume (vph)	3	148	2864	148	3	74	2382	10	275	52	185	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		280		0		312		300	180		100	
Storage Lanes		1		1		1		1	1		1	
Taper Length (ft)		25				25			25			
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00
Frt				0.850				0.850			0.850	
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1770	3471	1455	0	1538	3471	1346	1752	1792	1553	0
Flt Permitted		0.038				0.040			0.723			
Satd. Flow (perm)	0	71	3471	1455	0	65	3471	1346	1334	1792	1553	0
Right Turn on Red				Yes				Yes			Yes	
Satd. Flow (RTOR)				70				70			90	
Link Speed (mph)			45				45			45		
Link Distance (ft)			1708				910			1012		
Travel Time (s)			25.9				13.8			15.3		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	2%	4%	11%	0%	18%	4%	20%	3%	6%	4%	0%
Adj. Flow (vph)	3	157	3047	157	3	79	2534	11	293	55	197	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	3047	157	0	82	2534	11	293	55	197	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	R NA
Median Width(ft)			12				12			12		
Link Offset(ft)			0				0			0		
Crosswalk Width(ft)			16				16			16		
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9	15		9	9	15		9	15		9	9
Number of Detectors	1	1	2	1	1	1	2	1	1	2	1	1
Detector Template	Left	Left	Thru	Right	Left	Left	Thru	Right	Left	Thru	Right	Left
Leading Detector (ft)	20	20	100	20	20	20	100	20	20	100	20	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	20	6	20	20	6	20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94				94			94		
Detector 2 Size(ft)			6				6			6		
Detector 2 Type			CI+Ex				CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)			0.0				0.0			0.0		
Turn Type	custom	pm+pt	NA	Perm	custom	pm+pt	NA	Perm	Perm	NA	Perm	Perm
Protected Phases		1	6			5	2			4		
Permitted Phases	1	6		6	5	2		2	4		4	8
Detector Phase	1	1	6	6	5	5	2	2	4	4	4	8
Switch Phase												
Minimum Initial (s)	5.0	5.0	12.0	12.0	5.0	5.0	12.0	12.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	40.2	40.2	10.9	10.9	43.2	43.2	12.4	12.4	12.4	12.4

			
Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	30	49	185
Future Volume (vph)	30	49	185
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	135		100
Storage Lanes	1		1
Taper Length (ft)	25		
Lane Util. Factor	1.00	1.00	1.00
Frt			0.850
Flt Protected	0.950		
Satd. Flow (prot)	1693	1792	1599
Flt Permitted	0.721		
Satd. Flow (perm)	1285	1792	1599
Right Turn on Red			Yes
Satd. Flow (RTOR)			93
Link Speed (mph)		45	
Link Distance (ft)		1352	
Travel Time (s)		20.5	
Peak Hour Factor	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	1%
Adj. Flow (vph)	32	52	197
Shared Lane Traffic (%)			
Lane Group Flow (vph)	34	52	197
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		12	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15		9
Number of Detectors	1	2	1
Detector Template	Left	Thru	Right
Leading Detector (ft)	20	100	20
Trailing Detector (ft)	0	0	0
Detector 1 Position(ft)	0	0	0
Detector 1 Size(ft)	20	6	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0
Detector 2 Position(ft)		94	
Detector 2 Size(ft)		6	
Detector 2 Type		CI+Ex	
Detector 2 Channel			
Detector 2 Extend (s)		0.0	
Turn Type	Perm	NA	Perm
Protected Phases		8	
Permitted Phases	8		8
Detector Phase	8	8	8
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	12.4	12.4	12.4

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Total Split (s)	21.0	21.0	110.0	110.0	15.0	15.0	104.0	104.0	35.0	35.0	35.0	35.0
Total Split (%)	13.1%	13.1%	68.8%	68.8%	9.4%	9.4%	65.0%	65.0%	21.9%	21.9%	21.9%	21.9%
Maximum Green (s)	15.0	15.0	103.8	103.8	9.1	9.1	97.8	97.8	27.6	27.6	27.6	27.6
Yellow Time (s)	3.0	3.0	4.5	4.5	3.1	3.1	4.5	4.5	4.4	4.4	4.4	4.4
All-Red Time (s)	3.0	3.0	1.7	1.7	2.8	2.8	1.7	1.7	3.0	3.0	3.0	3.0
Lost Time Adjust (s)		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.2	6.2		5.9	6.2	6.2	7.4	7.4	7.4	
Lead/Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
Vehicle Extension (s)	3.0	3.0	6.0	6.0	3.0	3.0	6.0	6.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	C-Min	C-Min	None	None	C-Min	C-Min	None	None	None	None
Act Effct Green (s)		118.3	104.7	104.7		107.9	99.3	99.3	27.6	27.6	27.6	
Actuated g/C Ratio		0.74	0.65	0.65		0.67	0.62	0.62	0.17	0.17	0.17	
v/c Ratio		0.82	1.34	0.16		0.69	1.18	0.01	1.27	0.18	0.58	
Control Delay		73.0	183.8	6.3		61.1	114.0	0.0	203.2	58.3	39.8	
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay		73.0	183.8	6.3		61.1	114.0	0.0	203.2	58.3	39.8	
LOS		E	F	A		E	F	A	F	E	D	
Approach Delay			170.2				111.9			129.5		
Approach LOS			F				F			F		
Queue Length 50th (ft)		114	~2191	32		40	~1680	0	~386	50	103	
Queue Length 95th (ft)		#224	#2286	63		#117	#1794	0	#583	95	194	
Internal Link Dist (ft)			1628				830			932		
Turn Bay Length (ft)		280				312		300	180		100	
Base Capacity (vph)		212	2270	976		128	2154	862	230	309	342	
Starvation Cap Reductn		0	0	0		0	0	0	0	0	0	
Spillback Cap Reductn		0	0	0		0	0	0	0	0	0	
Storage Cap Reductn		0	0	0		0	0	0	0	0	0	
Reduced v/c Ratio		0.75	1.34	0.16		0.64	1.18	0.01	1.27	0.18	0.58	

Intersection Summary

Area Type: Other

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 76 (48%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.34

Intersection Signal Delay: 139.3

Intersection LOS: F

Intersection Capacity Utilization 123.4%

ICU Level of Service H

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: 3: Monroe Dr & US 129

		
Ø1	Ø2 (R)	Ø4
21 s	104 s	35 s
		
Ø5	Ø6 (R)	Ø8
15 s	110 s	35 s



Lane Group	SBL	SBT	SBR
Total Split (s)	35.0	35.0	35.0
Total Split (%)	21.9%	21.9%	21.9%
Maximum Green (s)	27.6	27.6	27.6
Yellow Time (s)	4.4	4.4	4.4
All-Red Time (s)	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	5.0	5.0	5.0
Recall Mode	None	None	None
Act Effct Green (s)	27.6	27.6	27.6
Actuated g/C Ratio	0.17	0.17	0.17
v/c Ratio	0.15	0.17	0.56
Control Delay	58.5	58.1	38.1
Queue Delay	0.0	0.0	0.0
Total Delay	58.5	58.1	38.1
LOS	E	E	D
Approach Delay		44.3	
Approach LOS		D	
Queue Length 50th (ft)	31	47	100
Queue Length 95th (ft)	66	90	189
Internal Link Dist (ft)		1272	
Turn Bay Length (ft)	135		100
Base Capacity (vph)	221	309	352
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.15	0.17	0.56
Intersection Summary			

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Future Volume (vph)	581	0	194	7	2	12	2	84	1819	8	2	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0		150		110		150
Storage Lanes	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	0.95	1.00	0.95	1.00	0.95	1.00
Frt			0.850			0.850				0.850		
Flt Protected		0.950			0.963			0.950				0.950
Satd. Flow (prot)	0	1770	1404	0	1830	1615	0	1159	3406	1615	0	1805
Flt Permitted		0.950			0.963			0.950				0.950
Satd. Flow (perm)	0	1770	1404	0	1830	1615	0	1159	3406	1615	0	1805
Link Speed (mph)		25			30				55			
Link Distance (ft)		254			653				2889			
Travel Time (s)		6.9			14.8				35.8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.97	0.97	0.97	0.92	0.97
Heavy Vehicles (%)	2%	0%	15%	0%	0%	0%	0%	57%	6%	0%	0%	0%
Adj. Flow (vph)	599	0	200	7	2	12	2	87	1875	8	2	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	599	200	0	9	12	0	89	1875	8	0	25
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			0				12			
Link Offset(ft)		0			0				0			
Crosswalk Width(ft)		16			16				16			
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization 117.0%												
ICU Level of Service H												
Analysis Period (min) 15												

		
Lane Group	SBT	SBR
Lane Configurations	  	  
Traffic Volume (vph)	2558	219
Future Volume (vph)	2558	219
Ideal Flow (vphpl)	1900	1900
Storage Length (ft)		150
Storage Lanes		1
Taper Length (ft)		
Lane Util. Factor	0.95	1.00
Frt		0.850
Flt Protected		
Satd. Flow (prot)	3471	1524
Flt Permitted		
Satd. Flow (perm)	3471	1524
Link Speed (mph)	55	
Link Distance (ft)	1747	
Travel Time (s)	21.7	
Peak Hour Factor	0.97	0.97
Heavy Vehicles (%)	4%	6%
Adj. Flow (vph)	2637	226
Shared Lane Traffic (%)		
Lane Group Flow (vph)	2637	226
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	12	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.00	1.00
Turning Speed (mph)		9
Sign Control	Free	
Intersection Summary		

Intersection															
Int Delay, s/veh	1.2														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations		↕	↕		↕	↕		↕	↕		↕	↕		↕	↕
Traffic Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Future Vol, veh/h	581	0	194	7	2	12	2	84	1819	8	2	22	2558	219	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	-	-	None	None
Storage Length	-	-	0	-	-	0	-	150	-	110	-	150	-	150	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	0	-	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-	-
Peak Hour Factor	97	97	97	97	97	97	92	97	97	97	92	97	97	97	97
Heavy Vehicles, %	2	0	15	0	0	0	0	57	6	0	0	0	4	6	6
Mvmt Flow	599	0	200	7	2	12	2	87	1875	8	2	23	2637	226	

Major/Minor	Minor2		Minor1		Major1				Major2					
Conflicting Flow All	3804	4748	1319	3422	4966	938	2637	2863	0	0	1875	1883	0	0
Stage 1	2687	2687	-	2053	2053	-	-	-	-	-	-	-	-	-
Stage 2	1117	2061	-	1369	2913	-	-	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	7.2	7.5	6.5	6.9	6.4	5.24	-	-	6.4	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.45	3.5	4	3.3	2.5	2.77	-	-	2.5	2.2	-	-
Pot Cap-1 Maneuver	~ 1	1	~ 131	~ 3	~ 1	269	29	~ 50	-	-	92	323	-	-
Stage 1	~ 22	47	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 221	98	-	157	35	-	-	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	1	~ 131	-	~ 1	269	138	138	-	-	262	262	-	-
Mov Cap-2 Maneuver	-	1	-	-	~ 1	-	-	-	-	-	-	-	-	-
Stage 1	~ 22	43	-	58	99	-	-	-	-	-	-	-	-	-
Stage 2	~ 206	98	-	-	32	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB				SB					
HCM Control Delay, s					3.1				0.2					
HCM LOS	-		-											

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	138	-	-	-	131	-	269	262	-	-
HCM Lane V/C Ratio	0.643	-	-	-	1.527	-	0.046	0.095	-	-
HCM Control Delay (s)	69.5	-	-	-	\$ 332.4	-	19	20.2	-	-
HCM Lane LOS	F	-	-	-	F	-	C	C	-	-
HCM 95th %tile Q(veh)	3.5	-	-	-	14	-	0.1	0.3	-	-

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	0	0	0	39	0	687	0	104	150	3	
Future Volume (vph)	3	0	0	0	0	39	0	687	0	104	150	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt						0.865					0.999		
Flt Protected	0.950												0.980
Satd. Flow (prot)	0	1805	0	0	1565	0	0	1810	0	0	1501	0	
Flt Permitted	0.950												0.980
Satd. Flow (perm)	0	1805	0	0	1565	0	0	1810	0	0	1501	0	
Link Speed (mph)	25												30
Link Distance (ft)	1001												254
Travel Time (s)	27.3												5.8
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	5%	0%	0%	41%	0%	
Adj. Flow (vph)	3	0	0	0	0	45	0	799	0	121	174	3	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	3	0	0	45	0	0	799	0	0	298	0	
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)	0												0
Link Offset(ft)	0												0
Crosswalk Width(ft)	16												16
Two way Left Turn Lane													
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9		15	9		15	9		15	9		
Sign Control	Stop		Stop					Free			Free		
Intersection Summary													
Area Type:	Other												
Control Type: Unsignalized													
Intersection Capacity Utilization 63.3%													
ICU Level of Service B													
Analysis Period (min) 15													

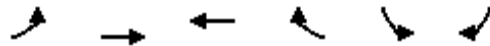
Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Future Vol, veh/h	3	0	0	0	0	39	0	687	0	104	150	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	5	0	5	0	0	41	0
Mvmt Flow	3	0	0	0	0	45	0	799	0	121	174	3
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1240	1217	176	1217	1218	799	177	0	0	799	0	0
Stage 1	418	418	-	799	799	-	-	-	-	-	-	-
Stage 2	822	799	-	418	419	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.25	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.345	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	153	182	872	159	182	381	1411	-	-	833	-	-
Stage 1	616	594	-	382	401	-	-	-	-	-	-	-
Stage 2	371	401	-	616	593	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	153	872	139	153	381	1411	-	-	833	-	-
Mov Cap-2 Maneuver	118	153	-	139	153	-	-	-	-	-	-	-
Stage 1	616	498	-	382	401	-	-	-	-	-	-	-
Stage 2	327	401	-	517	498	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	36.4		15.7		0		4.1					
HCM LOS	E		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1411	-	-	118	381	833	-	-				
HCM Lane V/C Ratio	-	-	-	0.03	0.119	0.145	-	-				
HCM Control Delay (s)	0	-	-	36.4	15.7	10.1	0	-				
HCM Lane LOS	A	-	-	E	C	B	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0.5	-	-				

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	394	157	573	159	16
Future Volume (vph)	4	394	157	573	159	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.988	
Flt Protected	0.950			0.989		
Satd. Flow (prot)	1444	1583	0	1818	1522	0
Flt Permitted	0.950			0.989		
Satd. Flow (perm)	1444	1583	0	1818	1522	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	5762			953	4656	
Travel Time (s)	131.0			21.7	105.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	25%	2%	1%	4%	25%	6%
Adj. Flow (vph)	4	428	171	623	173	17
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	428	0	794	190	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 61.5%				ICU Level of Service B		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	394	157	573	159	16
Future Vol, veh/h	4	394	157	573	159	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	100	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	25	2	1	4	25	6
Mvmt Flow	4	428	171	623	173	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1147	182	190	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Critical Hdwy	6.65	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.65	-	-	-	-	-
Critical Hdwy Stg 2	5.65	-	-	-	-	-
Follow-up Hdwy	3.725	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	198	861	1390	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	161	861	1390	-	-	-
Mov Cap-2 Maneuver	161	-	-	-	-	-
Stage 1	647	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.3	1.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1390	-	161	861	-	-
HCM Lane V/C Ratio	0.123	-	0.027	0.497	-	-
HCM Control Delay (s)	8	0	28	13.2	-	-
HCM Lane LOS	A	A	D	B	-	-
HCM 95th %tile Q(veh)	0.4	-	0.1	2.8	-	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	220	281	0	411	91
Future Volume (vph)	0	220	281	0	411	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100		0	0	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				
Flt Protected					0.950	
Satd. Flow (prot)	1900	1583	1776	0	1770	1377
Flt Permitted					0.950	
Satd. Flow (perm)	1900	1583	1776	0	1770	1377
Link Speed (mph)	30		30			30
Link Distance (ft)	1655		3412			953
Travel Time (s)	37.6		77.5			21.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	7%	0%	2%	38%
Adj. Flow (vph)	0	239	305	0	447	99
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	239	305	0	447	99
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 44.2%	ICU Level of Service A					
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	6.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	220	281	0	411	91
Future Vol, veh/h	0	220	281	0	411	91
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	100	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	7	0	2	38
Mvmt Flow	0	239	305	0	447	99
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1298	305	0	0	305	0
Stage 1	305	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	180	735	-	-	1256	-
Stage 1	752	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	116	735	-	-	1256	-
Mov Cap-2 Maneuver	116	-	-	-	-	-
Stage 1	484	-	-	-	-	-
Stage 2	362	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.2	0	7.7			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	735	1256	-
HCM Lane V/C Ratio	-	-	-	0.325	0.356	-
HCM Control Delay (s)	-	-	0	12.2	9.4	-
HCM Lane LOS	-	-	A	B	A	-
HCM 95th %tile Q(veh)	-	-	-	1.4	1.6	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕	↕	↕	↕
Traffic Volume (vph)	33	80	366	201	70	10
Future Volume (vph)	33	80	366	201	70	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			0	0	0
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected		0.986			0.950	
Satd. Flow (prot)	0	1841	1900	1482	1262	1242
Flt Permitted		0.986			0.950	
Satd. Flow (perm)	0	1841	1900	1482	1262	1242
Link Speed (mph)		30	30		30	
Link Distance (ft)		6348	1982		3412	
Travel Time (s)		144.3	45.0		77.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	0%	9%	43%	30%
Adj. Flow (vph)	36	87	398	218	76	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	123	398	218	76	11
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 39.2%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	80	366	201	70	10
Future Vol, veh/h	33	80	366	201	70	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	0	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	9	43	30
Mvmt Flow	36	87	398	218	76	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	616	0	-	0	557	398
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	159	-
Critical Hdwy	4.16	-	-	-	6.83	6.5
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.254	-	-	-	3.887	3.57
Pot Cap-1 Maneuver	945	-	-	-	428	595
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	945	-	-	-	411	595
Mov Cap-2 Maneuver	-	-	-	-	411	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	779	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		15.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	945	-	-	-	411	595
HCM Lane V/C Ratio	0.038	-	-	-	0.185	0.018
HCM Control Delay (s)	9	0	-	-	15.7	11.2
HCM Lane LOS	A	A	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0.1

CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 5/18/2020

Presenter: Matt Tate

Item of Business: Request from **Kevin Pethel** to rezone a 1.30± acres tract located southwest of the intersection of Crow Road and White Sulphur Road, having road frontage on the north side of Beverly Road (a/k/a **2092 Crow Road and 2005 White Sulphur Road**) from Residential-I (R-I) to Light Industrial (L-I).
Ward Number: Two
Tax Parcel Number(s): 09-124-000-038 (Part)
Request: Plumbing and electrical contractor office/warehouse

Meeting Date: 6/9/2020

Purpose of Request:

The applicant is proposing to rezone the subject property from Residential-I (R-I) to Light Industrial (L-I) for a plumbing and electrical contractors office/warehouse. According to the applicant there will be 7 full time employees and a part time office assistant working normally Monday through Friday between 7:30 AM and 6:30 PM. The property contains an existing 5,000 square foot metal building currently owned by the adjacent Faith Baptist Church which will be converted to the proposed use with associated parking. Access will remain from Crow Road and necessary parking will be provided. The applicant intends to fence and gate the property and two roll up doors will be added to the building for warehousing of materials.

History/Background:

Facts & Issues for Consideration:

Department Recommendation:

Planning staff recommended approval with six conditions. See the staff recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
☐ Staff Recommendation Report	Report
☐ Location Maps	Backup Material
☐ Narrative	Backup Material
☐ Plat	Backup Material
☐ Site Plan	Backup Material
☐ Photos	Backup Material

**GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION**

Applicant Kevin Pethel
Property Owner Faith Baptist Church
Location 2092 Crow Road &
2005 White Sulphur Road
Request Rezone from R-I to L-I
Total Acres 1.3± acres
Ward Two
Proposed Use Plumbing and electrical contractor
office/warehouse
Planning Division Staff Recommendation **Approval with G-B zoning, with conditions**
Date June 9, 2020

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

The applicant is proposing to rezone the subject property from Residential-I (R-I) to Light Industrial (L-I) for a plumbing and electrical contractor office/warehouse. According to the applicant there will be 7 full time employees and a part time office assistant working normally Monday through Friday between 7:30 AM and 6:30 PM. The property contains an existing 5,000 square foot metal building currently owned by the adjacent Faith Baptist Church which will be converted to the proposed use with associated parking. Access will remain from Crow Road which is maintained by Hall County and onsite parking will be provided. The applicant intends to fence and gate the property and two roll up doors will be added to the building for warehousing of materials.

▪ **Adjacent Land Use and Zoning**

Location	Use	Zoning
North	Church, Single-family homes	Residential-I (R-I) City Agricultural Residential-III (AR-III) County
South	New Horizons Lanier Park long term care facility	General Business (G-B) City
East	Vacant home	Residential-II (R-II) City
West	Single-family homes	Agricultural Residential-III (AR-III) County

The property is located within the Limestone Parkway Overlay Zone.

▪ **Other Departmental Comments**

The Hall County Environmental Health Department commented that the property should be served by public sewer through the City of Gainesville. The existing septic tank is to be pumped, crushed, and filled by DPH certified installer/pumper.

There were no departmental comments for this request.

▪ **Zoning History**

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

2019 – A request by Matthew Magnus and Ryan Chambers to rezone the subject 1.3± acres tract located at 2092 Crow Road and 2005 White Sulphur Road from Residential-I (R-I) to Light Industrial (L-I) was conditionally approved for an HVAC contractor office/warehouse by the Planning and Appeals Board. However, the request was withdrawn at the City Council meeting.

2018 – A request by Limestone Greenway, LLC to annex a 75.12± acres tract with a zoning of Planned Unit Development (P-U-D) located at 0 and 2065 Limestone Parkway was conditionally approved for a mixed-use development.

2014 – A request by Waffle House Inc. to amend a condition of zoning on a 3.21± acres tract located at 2551 Limestone Parkway zoned General Business, with conditions (G-B-c) was approved for a Waffle House restaurant.

2013 – A request by the City of Gainesville to annex 115 unincorporated island parcels and right-of-way totaling 197.07± acres in size was approved with conditions.

Analysis

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

The subject property is currently being used for non-residential purposes and is located along Crow Road which is considered a residential street. The surrounding area includes a mixture of residential, office, medical services, public uses and limited retail uses. The surrounding properties are zoned Agricultural Residential-III (AR-III), Residential-I (R-I), General Business (G-B) and Light Industrial (L-I). The proposal could be considered suitable given the property has been used for non-residential purposes for many years. The property contains an older warehouse building owned and used for non-residential purposes by the adjacent Faith Baptist Church.

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

The adjacent and nearby residential uses should be minimally impacted given the hours of operation and nature of the proposed business. The interior and exterior of the existing warehouse building will be improved and all plumbing/electrical work will be housed inside the building. According to the applicant there will be no noise, vibrations or odors from the proposed use. There will be approximately 7 full time employees and a part time office assistant working normally Monday through Friday between 7:30 AM and 6:30 PM. The existing driveway and parking will be improved with additional evergreen vegetation to enhance the dense buffer that currently exists. Parking and any future expansion will be required to meet stormwater detention and water quality standards.

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

It is staff's opinion that the proposal is consistent with the Comprehensive Plan. The Future Development Map for the City of Gainesville places the subject property within the *Mixed Use General* land use category. This category includes areas containing or planned for a mixture of land uses including office, neighborhood retail, and residential.

According to the Character Area map for the City of Gainesville, the subject property is located within the *Limestone Medical Corridor* Character Area. The Limestone Parkway corridor area is an employment corridor that is envisioned as one of the priority growth areas and is not anticipated to expand Gainesville's traditional neighborhood fabric. Land uses allowed within this area include public / institutional, low-density residential, medium-density residential, multi-family residential, mixed-use, commercial, and parks / recreation / conservation.

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

The proposed use requires the property to be rezoned for non-residential purposes. The property could continue to be used by the adjacent church under its current zoning of Residential-I (R-I) as churches are permitted by right within all zoning districts. Given the property's proximity to the neighboring church and Beverly Road, it appears reasonable that the property could be rezoned. However, staff would recommend a zoning of General Business (G-B) rather than Light Industrial (L-I) based on the adjacent zonings. The use is similar to contractor's establishment which allows for the storage of materials and overnight parking of work vehicles.

(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?

The proposed use will have minimal impacts to public facilities. Water and sewer capacity is adequate to serve the proposed use. The Gainesville Fire and Police Departments currently respond to the property and nearest City of Gainesville Fire Station #2 is approximately 9 miles from the subject property. Hall County Fire Station #7 is approximately 3 miles from the property off of East Crescent Drive. There will be no impacts to the City school system.

According to the "Trip Generation Manual" as published by the Institute of Transportation Engineers, the proposed use at build out could generate approximately 26± new trips per weekday. The trip generation is based on a total of 8 employees for the use.

(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 surrounding area has experienced a mixture of residential and non-residential growth due to nearby Exit 24 /I-985, Jesse Jewell Parkway, Limestone Parkway and White Sulphur Road. Nearby Northeast Georgia Medical Center has also impacted the area greatly by attracting numerous new residential, office and commercial uses. It is staff's opinion that given the property has been used for warehousing purposes, the proposal appears suitable and is consistent with existing and expected uses of the Comprehensive Plan.

(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?

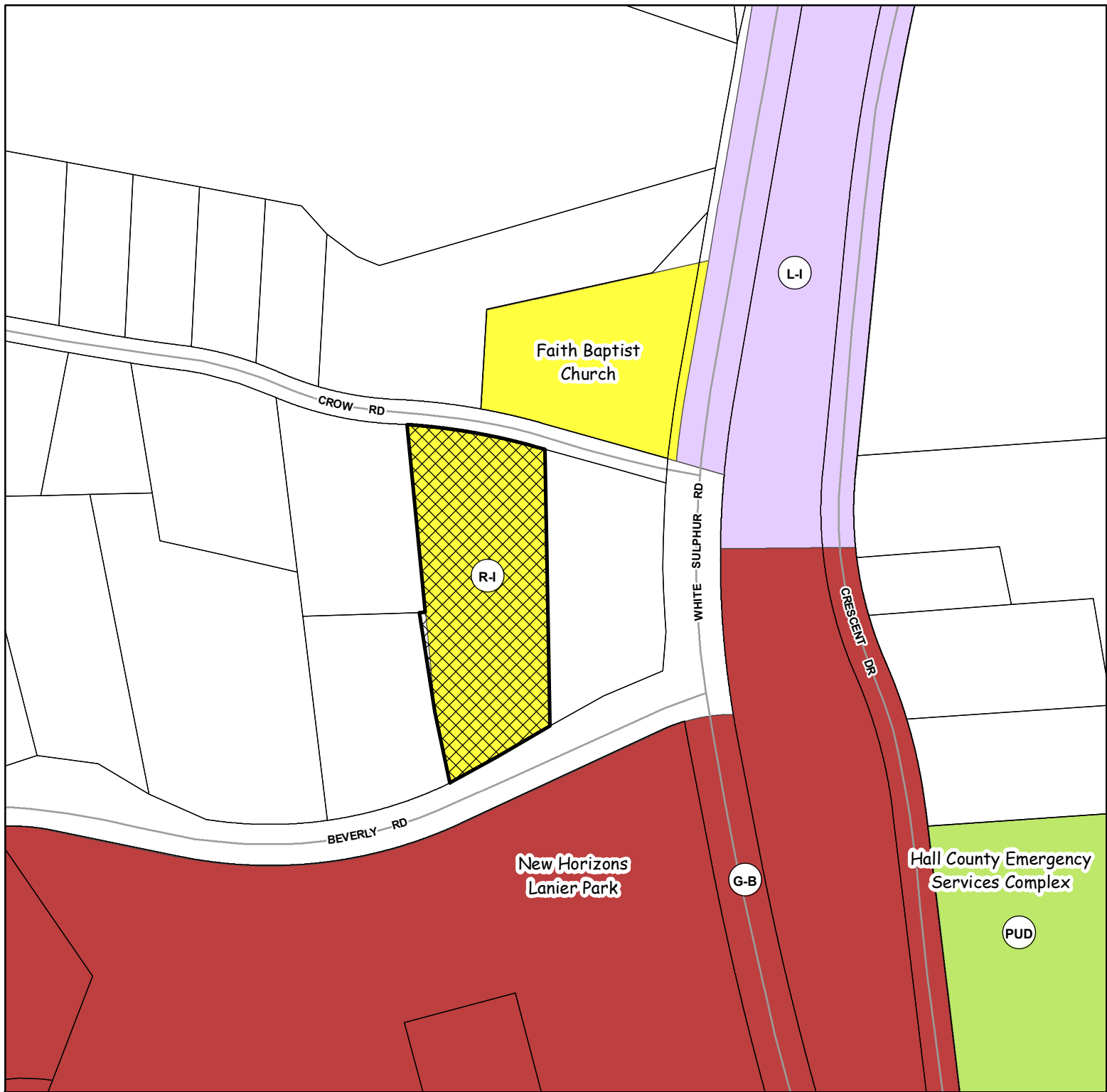
Based on the subject property's proximity to other nearby non-residential properties, the proposal with the zoning conditions recommended by staff appears to promote a reasonable balance between the promotion of the public health, safety, morality, or general welfare, and the right to unrestricted use of property.

▪ **Staff Recommendation**

The Planning Division staff is recommending **conditional approval** of this rezoning request with **General Business (G-B) zoning**, based on the Comprehensive Plan and the surrounding mixture of uses.

Conditions

1. The subject property shall be limited to the proposed plumbing and electrical contractor office/warehouse use and the permitted uses within the Neighborhood Business (N-B) zoning district excluding a convenience store, dollar-type store, coin laundry facility, convenience store, tobacco or vaping store, massage parlor or tattoo parlor.
2. The exterior walls of the existing metal building or any future building shall be painted similarly to the existing color or an earth tone color. In addition, a minimum 3-foot high brick or stone water table shall be required on the exterior walls facing north, east and south.
3. The existing trees located within the subject property shall remain except for what is only necessary to be removed for the development. If deemed necessary, the required tree/landscape plan shall provide for additional evergreen trees and deciduous trees to be planted to help screen the building, parking area and detention pond from Beverly Road, Crow Road and the adjacent properties. The number, location, spacing, size and type of trees planted shall be subject to the approval of the Director of Community and Economic Development Department.
4. There shall be no freestanding signs permitted fronting Crow Road.
5. All access point design for the subject property shall require review and approval by the Hall County Public Works Department and the Gainesville Public Works Department Director. All required access/traffic/sidewalk improvements associated with the proposed development shall be constructed at the full expense of the property owner/developer.
6. An updated as-built survey/plat of the subject property, indicating existing conditions and all improvements shall be recorded prior to obtaining a Certificate of Occupancy for the future use.



Applicant:

KEVIN PETHEL

REZONING REQUEST

Request:

Rezone 1.30+/- acres from Residential-I (R-I) to Light Industrial (L-I) for a plumbing and electrical contractor office/warehouse

Subject Property Address:

2092 Crow Road; and
2005 White Sulphur Road

Tax Parcel:

09-124-000-038 (Part)

Meeting Date: 06/09/2020

Map Prepared: 05/13/2020



Subject Property



0 100 200 300 400 Feet

1" = 167'



CITY OF

GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT





Applicant:

KEVIN PETHEL

REZONING REQUEST

Request:

Rezone 1.30+/- acres from Residential-I (R-I) to Light Industrial (L-I) for a plumbing and electrical contractor office/warehouse

Subject Property Address:
2092 Crow Road; and
2005 White Sulphur Road

Tax Parcel:
09-124-000-038 (Part)

Meeting Date: 06/09/2020

Map Prepared: 05/13/2020



Subject Property

Aerial from 2018

0 100 200 300 400 Feet

1" = 167'



CITY OF
GAINESVILLE

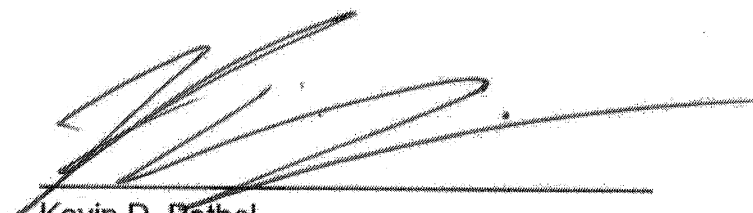
COMMUNITY AND ECONOMIC DEVELOPMENT



Pethel Services LLC
Kevin Pethel
PO Box 907954
Gainesville, GA 30501

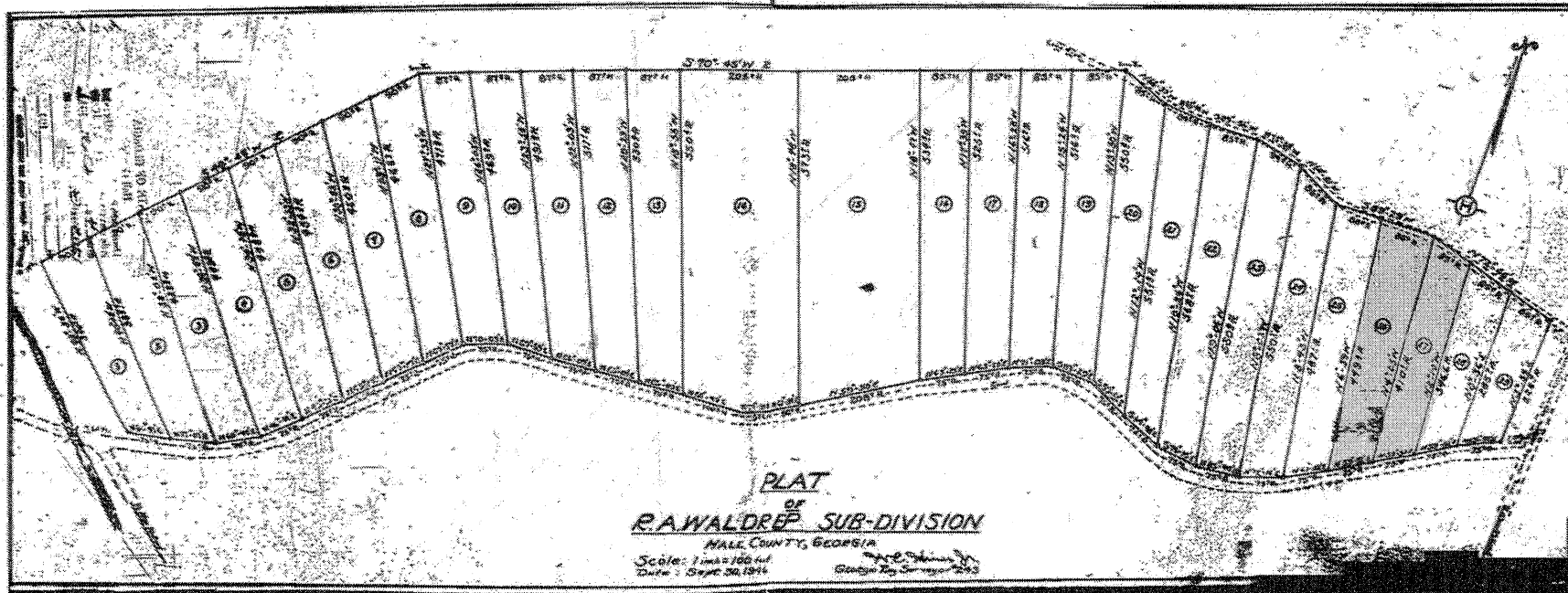
My name is Kevin Pethel and I am the sole proprietor of Pethel Services LLC. I am a licensed electrician and licensed plumber. I started Pethel Services in 2009 and presently employ seven (7) full time employees in my company as well as a part time office assistant. Most of the work that we do is on job sites or service work in homes. The building that I am wanting to purchase will be used to house my office and warehouse for the materials used on the job. We normally work Monday through Friday, but occasionally on Saturdays. I have four (4) company vans, and they will be parked on the premises at night and on weekends. My employees come into the shop in the mornings around 7:30 a.m. and leave by 8:00 a.m. for the work sites to work during the day. Their personal vehicles will be parked at the shop during the work day while they are on the job. The vans will come back to the shop at the end of the work day, which is usually between 5 p.m. to 6:30 p.m., and will be parked until the next work day. Other than employees, the only vehicles coming to the building would be suppliers that deliver materials from electrical and plumbing suppliers.

I do plan to put a fence around the parking area of the building and plan to put a gate at the entrance to the parking lot. There are trees surrounding the building at this time and I do not plan to cut any trees or remove this barrier between the building and other adjoining properties. There is presently a dusk to dawn light on the power pole next to the building and I plan to leave the light there at this time. I do not plan to put a sign on the building or on the road, because my company is not open to the public and I do not need to display a sign for my business. I do plan to modify the building by putting in two (2) roll up garage doors on the side of the building to have access to the warehouse for materials used on our jobs.



Kevin D. Pethel
Pethel Services LLC

February 21, 2020



Recorded Oct 29 1914. Hall County, Ga.





CITY OF GAINESVILLE

AGENDA REQUEST

Date Submitted: 5/18/2020

Presenter: Matt Tate

Item of Business: Request from **Juan Luna** for a special use on a 1.66± acres tract located on the southwest side of the intersection of Washington Street and West Avenue, east of John Morrow Jr. Parkway (a/k/a **0, 903, 915, 919, 921, 925 and 927 Washington Street, SW**), having a zoning of Neighborhood Business (N-B).

Ward Number: Four

Tax Parcel Number(s): 01-046-001-024A, 025, 026, 027, 028, 029 and 037

Request: 20 multi-family apartments

Meeting Date: 6/9/2020

Purpose of Request:

The applicant is requesting special use approval to develop 20 townhome style apartments within two, 2-story buildings. The property consists of seven lots to be combined which contain two older rental homes that will be demolished. The apartment units will be approximately 1,137 square feet in size, with two bedrooms and two baths. Surface level parking will be provided and two driveways are proposed along Washington Street. Surrounding uses include single family rental homes, office, retail commercial strip center and a bank.

History/Background:

Facts & Issues for Consideration:

Department Recommendation:

Planning staff recommended approval with five conditions. See the staff recommendation report for details.

Department Director:

Rusty Ligon

If funding is involved, are funds approved within the current budget?

N/A

Amount Requested:

Source of Funds:

Finance Comments:

Administrative Comments:

ATTACHMENTS:

Description	Type
☐ Staff Recommendation Report	Report
☐ Location Maps	Backup Material
☐ Narrative	Backup Material
☐ Survey	Backup Material
☐ Site Plan	Backup Material
☐ Front Elevation	Backup Material
☐ Floor Plan	Backup Material

**GAINESVILLE PLANNING and APPEALS BOARD
STAFF RECOMMENDATION**

Applicant and Property Owner..... Juan Luna
Location..... 0, 903, 915, 919, 921, 925 and 927
Washington Street, SW
Request..... Special use within N-B zoning
Total Acres 1.66± acres
Ward..... Four
Proposed Use..... 20 multi-family apartments
Planning Division Staff Recommendation **Approval, with conditions**
Date..... June 9, 2020

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

The applicant is requesting special use approval to develop 20 townhome style apartments within Neighborhood Business (N-B) zoning. The property is comprised of an assemblage of seven lots that will be combined and the two existing rental homes will be demolished. A total of two, 2-story buildings are proposed consisting of 16 units and 4 units. Each apartment unit will be approximately 1,137 square feet in size, consisting of two bedrooms and two baths. Surface level parking will be provided and two driveways are proposed from Washington Street. The exterior of the proposed structures will include a mixture of brick, stone and cementitious siding. Other details include 6:12 pitched roofs with architectural shingles and the open stairwells will provide decorative gated entrances. Stormwater detention will be provided behind the larger apartment building adjacent to the existing stream buffer.

▪ **Adjacent Land Use and Zoning**

Location	Use	Zoning
North	Rental homes; Retail strip center, Bank	Neighborhood Business (N-B)
South	Rental home, Washington Street Commons Shopping Center	Residential-II (R-II) Reginal Business (R-B)
East	Rental homes, Small retail shop	Neighborhood Business (N-B)
West	Office building	Neighborhood Business (N-B)

▪ **Other Departmental Comments**

There were no departmental comments for this request.

▪ **Zoning History**

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

2018 – A request by KRM 2016, LLC for a special use within Neighborhood Business (N-B) zoning on a 0.82± acre tract located at 520 Washington Street, NW was conditionally approved for five duplex apartments.

▪ **Staff Analysis**

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

The proposed residential use appears to be supported by the mixture of surrounding uses and zonings. The surrounding uses include residential, office, retail and a bank with zonings of Residential-II (R-II), Neighborhood Business (N-B) and Regional Business (R-B).

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

The proposed use should have minimal affects to the surrounding and nearby properties as the property has historically been used for residential purposes containing as many as seven rental homes. Parking, stormwater detention and landscaping will be provided that will improve the function and aesthetics of the property. Traffic generated from the property will increase due to the additional units but the five existing driveways on Washington Street will be reduced to two driveways that meet code to better handle access.

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

The Gainesville 2030 Future Development Map places the subject property within the *Mixed-Use General* land use category. This category includes areas containing or planned for a mixture of land uses including office, neighborhood retail, and residential which are consistent with the proposal.

According to the Character Area map for the City of Gainesville, the subject property is located within the *Longwood Cove* Character Area. Future development or redevelopment of Longwood Cove must consider the presence of the lake and extend its character further inland. Other aging strip commercial centers like Washington Square and Gainesville West could be redeveloped as mixed-use with mixed-income residential to expand the city's quality affordable housing inventory. However, taming John Morrow Parkway traffic and increasing walkability are essential for any successful residential development. Redeveloping underutilized land and buildings may enable commercial / residential growth. Land uses allowed in Longwood Cove are medium-density residential, multi-family residential, mixed-use, commercial, public / institutional, and parks / recreation / conservation.

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

The property is zoned Neighborhood Business (N-B) which is intended for neighborhood scale commercial and office uses, but allows residential where appropriate as a special use. The property has historically functioned as residential and could support additional housing, light office or light commercial given the surrounding properties. The additional housing proposed could provide for quality housing close to downtown that is within density range at 12 dwelling units per acre.

(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?

City water, sewer and public safety services are currently provided to the property. Gainesville Fire Station #1 is located off of Queen City Parkway and is approximately 1.1± miles from the subject property.

The proposal will slightly increase ingress and egress traffic movements along Washington Street which provides direct connection to downtown Gainesville from the Lakeshore Mall area. This segment of Washington Street consists of two travel lanes with a center turn lane and

sidewalks on both sides of the street. According to the Institute of Transportation Engineers (ITE) Trip Generation Handbook (9th Edition), the duplex apartments on average could generate 133± new trips per day, 11± A.M. and 14± P.M. peak hour trips.

The proposed use should have minimal impacts on the Gainesville City School System given there are 20 residential units proposed. Nearby larger residential developments such as the Towne Creek Apartments have children that attend City schools.

(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 Comprehensive Plan identifies the need for quality housing within the downtown area. The subject property is conducive for residential purposes as it is situated within an area that is walkable to office, retail, restaurant and public uses. Development along the Washington Street corridor has consisted of small specialty shops, professional offices, as well as multi-family residential and limited single-family residential.

(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?

Based on the Comprehensive Plan and the adjacent mixture of uses, the proposed special use request with the recommended conditions appears to reflect a reasonable balance between the promotion of the public health, safety, morality, or general welfare and the right to unrestricted use of property.

▪ **Additional Special Use Criteria**

(1) The type of street providing access to the subject property is adequate to serve the proposed Special Use.

The existing street appears adequate to serve the proposed development. Washington Street serves as a connector road between the downtown central business district and the Lakeshore Mall/Dawsonville Highway regional shopping district. A traffic signal is located adjacent to the property at the intersection of Washington Street and West Avenue. Improved access will be provided for the development and the number of curb cuts will be reduced from five existing driveways to two proposed driveways.

(2) Access into and out of the property adequately provides for traffic and pedestrian safety, the anticipated volume of traffic flow, and access by emergency vehicles.

The applicant's concept plan appears to provide for sufficient access for pedestrian safety, parking and access for emergency vehicles. Sidewalks are currently present and will be provided as part of the development.

(3) Public facilities such as schools, water or sewer utilities, and police or fire protection are adequate to serve the Special Use.

The existing public facilities are adequate to serve the proposed use given its small scale.

(4) Refuse, service, parking and loading areas on the property are located and screened to protect other properties in the area from such adverse effects as noise, light, glare or odor.

The proposed residential use is less intense than some of the neighboring uses. The development will be required to provide for the needed parking and landscape to reduce any impacts on adjacent properties. An enclosed dumpster will be provided for solid waste.

(5) The hours and manner of operation of the Special Use have no adverse effects on other properties in the area.

The proposal is for residential apartments which by nature are considered less intense than some office/commercial uses. The apartment units will be occupied throughout all hours of the day similar to the existing residential uses and should have little to no adverse effects on nearby properties.

(6) The height, size and location of the buildings or other structures proposed on the property are compatible with the height, size or location of buildings or other structures on neighboring properties.

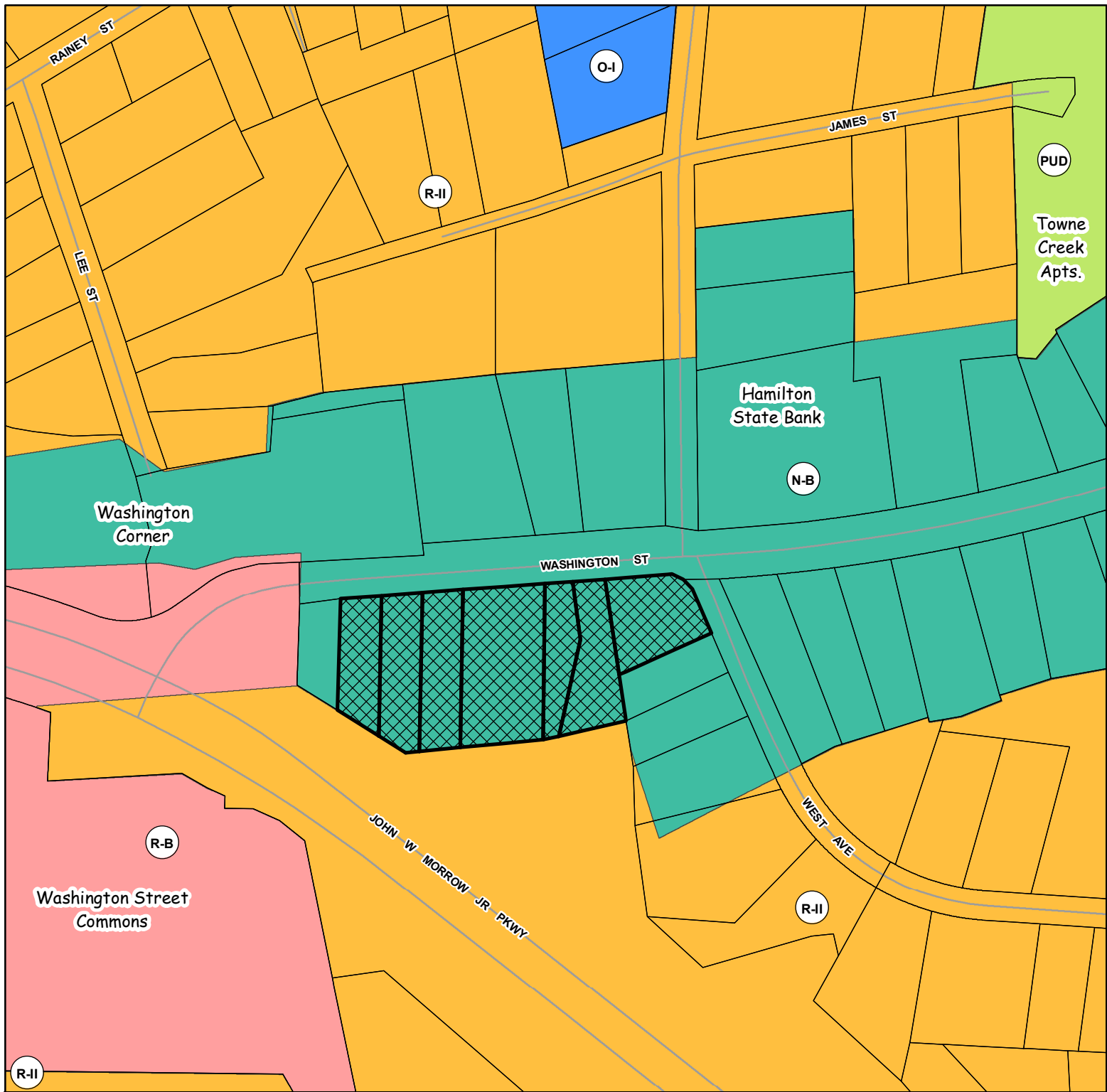
The apartment units are two stories and the size and location of the proposed structures appear consistent with other structures located along Washington Street which include a variety of residential, office, semi-public and commercial uses.

▪ **Staff Recommendation**

The Planning Division staff is recommending **conditional approval** of this Special Use request based on the Comprehensive Plan and the adjacent mixture of uses.

Conditions

1. All of the existing structures shall be demolished and removed from the subject property.
2. The proposed townhome style apartments shall be generally consistent with the standards depicted on the architectural elevations and pictures provided with this special use application to include a mixture of exterior brick, stone cementitious siding materials, decorative gated entrances and minimum 6:12 pitched roof.
3. The owner/developer shall screen the proposed stormwater detention pond, dumpster pad and the rear and sides of the 4-unit apartment building with a mixture of evergreen trees. The location, spacing, size and type of trees planted shall be subject to the approval of the Director of the Community and Economic Development Department.
4. All access point design for the subject property shall be submitted for review by the Gainesville Public Works Director. The 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. As determined by the Public Works Director, the existing curb and sidewalk shall be repaired or replaced along Washington Street and West Avenue in front of the development.
5. An updated as-built boundary survey/plat of the subject property, indicating the existing stormwater easement and all improvements required for the proposed use, shall be recorded prior to obtaining a Certificate of Occupancy.



Applicant:

JUAN LUNA

SPECIAL USE REQUEST

Request:

Special use for 20 multi-family apartments on a 1.66+/- acres tract within Neighborhood Business (N-B) zoning district

Subject Property Address:

0, 903, 915, 919, 925 and 927 Washington Street, SW

Tax Parcel:

01-046-001-024A, 025, 026, 027, 028, 029 and 037

Meeting Date: 06/09/2020

Map Prepared: 05/13/2020



Subject Property



0 100 200 300 400 Feet

1" = 167'



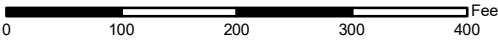
CITY OF

GAINESVILLE

COMMUNITY AND ECONOMIC DEVELOPMENT





Applicant:		JUAN LUNA		 Subject Property Aerial from 2018  1" = 167' 
Request:		SPECIAL USE REQUEST		
Request:		Special use for 20 multi-family apartments on a 1.66+/- acres tract within Neighborhood Business (N-B) zoning district		 CITY OF GAINESVILLE COMMUNITY AND ECONOMIC DEVELOPMENT 
Subject Property Address:		Tax Parcel:		
0, 903, 915, 919, 925 and 927 Washington Street, SW		01-046-001-024A, 025, 026, 027, 028, 029 and 037		
Meeting Date: 06/09/2020		Map Prepared: 05/13/2020		Page 464 of 470

REQUEST FOR SPECIAL USE PERMIT

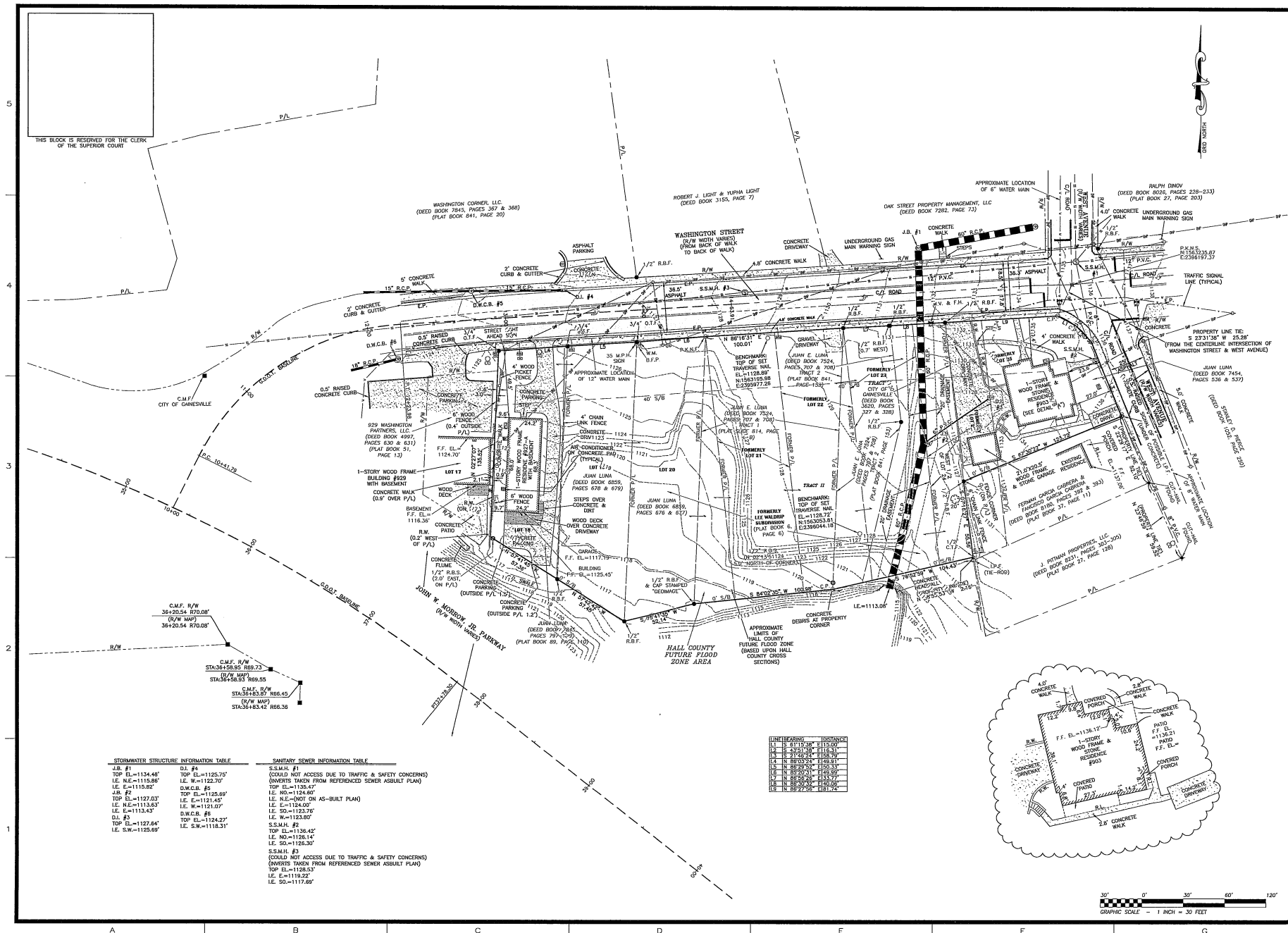
NARRATIVE

WASHINGTON MANOR

WASHINGTON STREET, GAINESVILLE, GEORGIA

April 24, 2020

This project consists of 20 new apartments on a 1.66 acre site. The property has most recently been occupied by rental homes. This proposal includes an assemblage of 7 parcels. The two existing houses will be demolished and replaced with townhome style apartments. The apartments will be marketed toward young couples and college students. The rent is anticipated to be \$1,400.00 per month. The apartments are on one level in two story buildings. Each apartment is 1,137 square feet. Total area for each floor is 11,370 square feet. Total area for two floors is 22,740 square feet. Apartments will be two bedrooms with two baths. The apartment buildings are designed to provide architectural appeal by breaking up the roof lines and by using a combination of brick, stone and siding exterior materials. Parking will be provided to meet existing codes. Landscape areas will be included in the site plan.



STORMWATER STRUCTURE INFORMATION TABLE

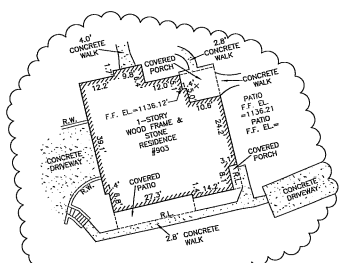
J.B. #1	D.I. #4
TOP EL.=1134.48'	TOP EL.=1125.75'
I.E. N.E.=1115.88'	I.E. W.=1122.75'
I.E. E.=1115.82'	D.W.C.B. #5
J.B. #2	TOP EL.=1125.69'
TOP EL.=1127.03'	I.E. E.=1121.45'
I.E. N.E.=1113.43'	I.E. W.=1121.07'
I.E. E.=1113.43'	D.W.C.B. #6
D.I. #1	TOP EL.=1124.37'
TOP EL.=1127.64'	I.E. S.W.=1118.31'
I.E. S.W.=1125.09'	

SANITARY SEWER INFORMATION TABLE

S.S.M.H. #1
(COULD NOT ACCESS DUE TO TRAFFIC & SAFETY CONCERNS)
(OWNERS TAKEN FROM REFERENCED SEWER AS-BUILT PLAN)
TOP EL.=1125.47'
I.E. N.E.=1124.60'
I.E. W.=1124.60'
I.E. E.=1121.45'
I.E. N.E.=1124.00'
I.E. S.O.=1123.76'
I.E. W.=1123.80'
S.S.M.H. #2
TOP EL.=1136.42'
I.E. N.O.=1126.14'
I.E. S.O.=1126.30'
S.S.M.H. #3
(COULD NOT ACCESS DUE TO TRAFFIC & SAFETY CONCERNS)
(OWNERS TAKEN FROM REFERENCED SEWER AS-BUILT PLAN)
TOP EL.=1128.53'
I.E. E.=1119.22'
I.E. S.O.=1117.89'

LINE/STATION INFORMATION TABLE

LINE	STATION	DESCRIPTION
1	1134.48	TOP OF SET
2	1134.48	TOP OF SET
3	1134.48	TOP OF SET
4	1134.48	TOP OF SET
5	1134.48	TOP OF SET
6	1134.48	TOP OF SET
7	1134.48	TOP OF SET
8	1134.48	TOP OF SET
9	1134.48	TOP OF SET
10	1134.48	TOP OF SET



REGISTERED PROFESSIONAL LAND SURVEYORS

PATTON LAND SURVEYING, LLC

P.O. BOX 266
GAINESVILLE, GA 30603
PHONE: (770) 532-6492
FAX: (770) 532-1995
www.pattonsurveying.com

COMPUTATIONS BY: C.M.K.
DRAWN BY: R.N. & J.L.
CHECKED BY: C.M.P.

COMMISSION & TOPOGRAPHIC SURVEY FOR:

JUAN LUNA

- LOCATED IN -

LAND LOT 154
9TH LAND DISTRICT
HALL COUNTY, GEORGIA

REVISIONS

NO.	DATE	DESCRIPTION

SHEET NUMBER:

2 of 2

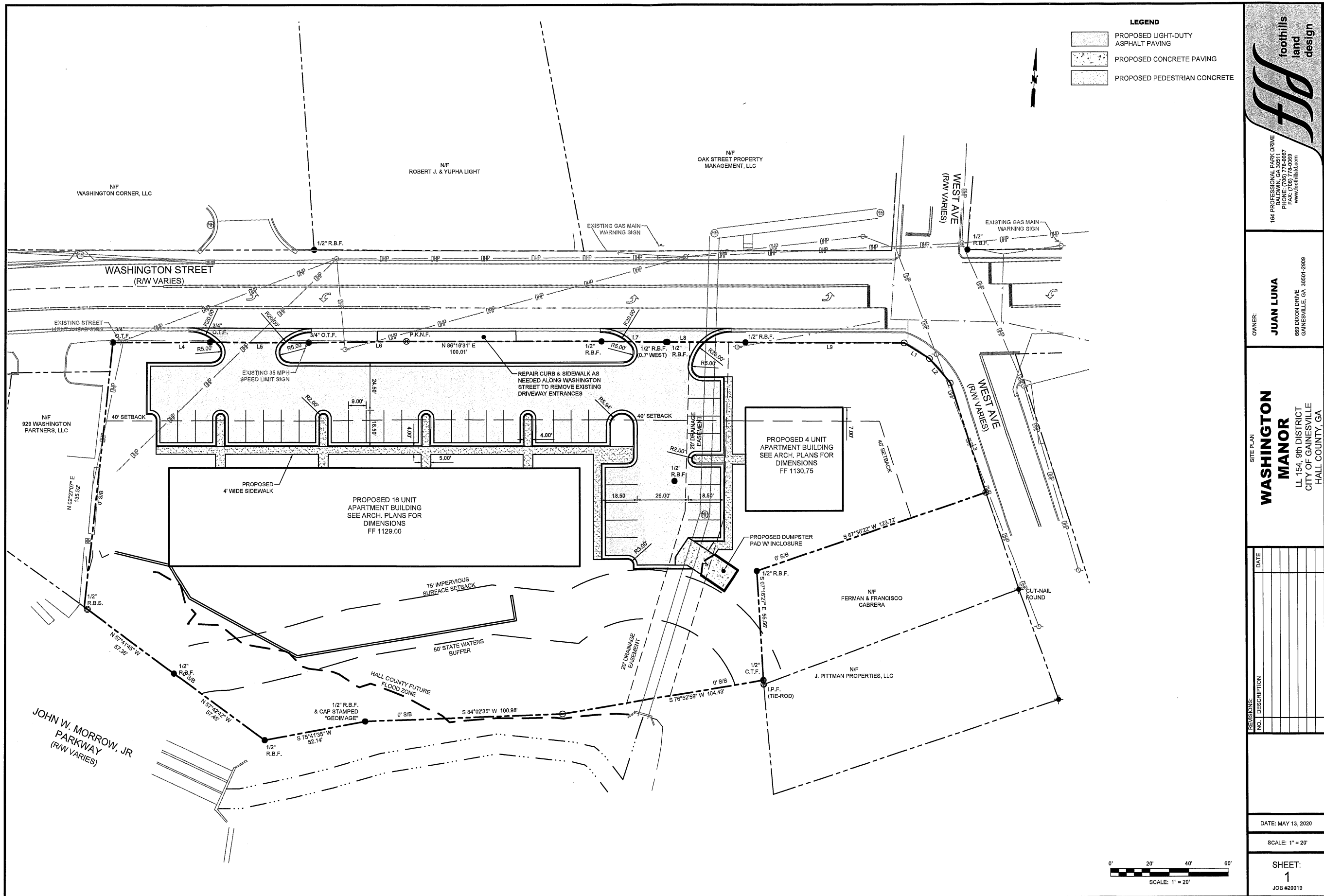
SCALE: 1" = 30'

SURVEY DATE: 04/13/2020

PLAT DATE: 04/13/2020

20-037.dwg

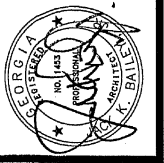
JN. 20-037



foothills
land
design

184 PROFESSIONAL PARK DRIVE
GAINESVILLE, FL 32609
PHONE: (786) 778-0087
FAX: (786) 778-0089
www.foothillsland.com

OWNER:
JUAN LUNA
689 DIXON DRIVE
GAINESVILLE, GA 32601-2909



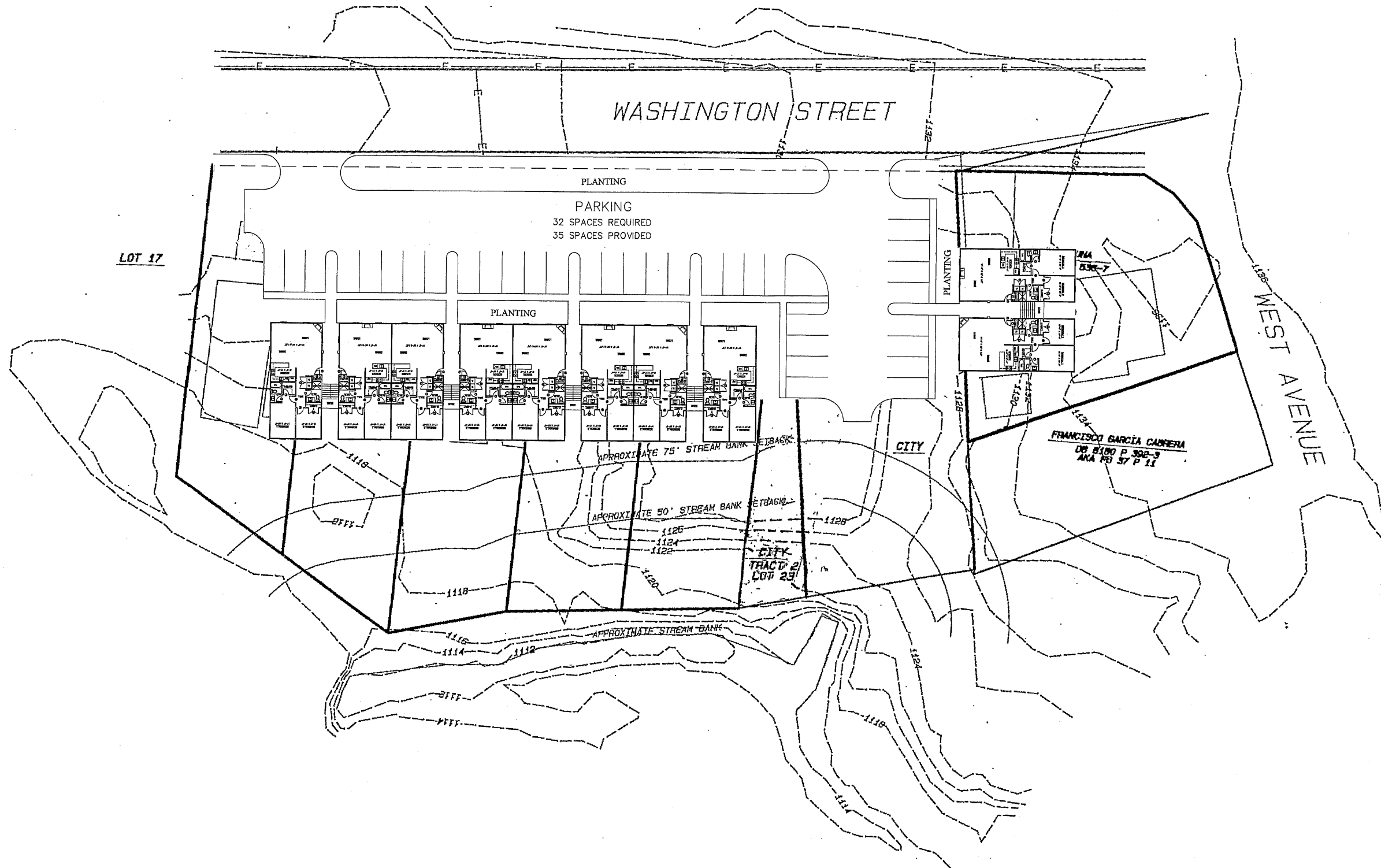
Architects
Gainesville, Georgia 30601
770.534.0812

Bailey Associates

WASHINGTON MANOR
GAINESVILLE, GEORGIA

Project No 19040
Drawn By JKB
Checked By
Date JAN. 14, 2020
Revisions

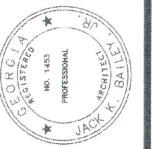
C1
OF 1





FRONT ELEVATION

1/8" = 1'-0"



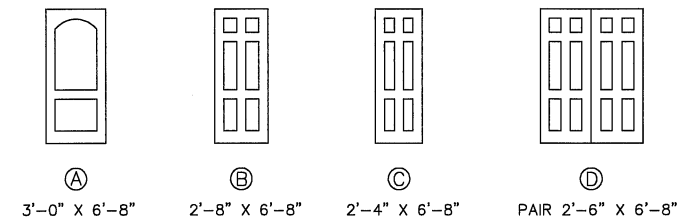
Architects
Gainesville
Georgia 30601
770 534 0612

Bailey Associates

WASHINGTON MANOR
GAINESVILLE, GEORGIA

Project No 19040
Drawn By JKB
Checked By
Date APR. 24, 2020
Revisions
MAY 4, 2020

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OF 2



DOORS

FINISHES

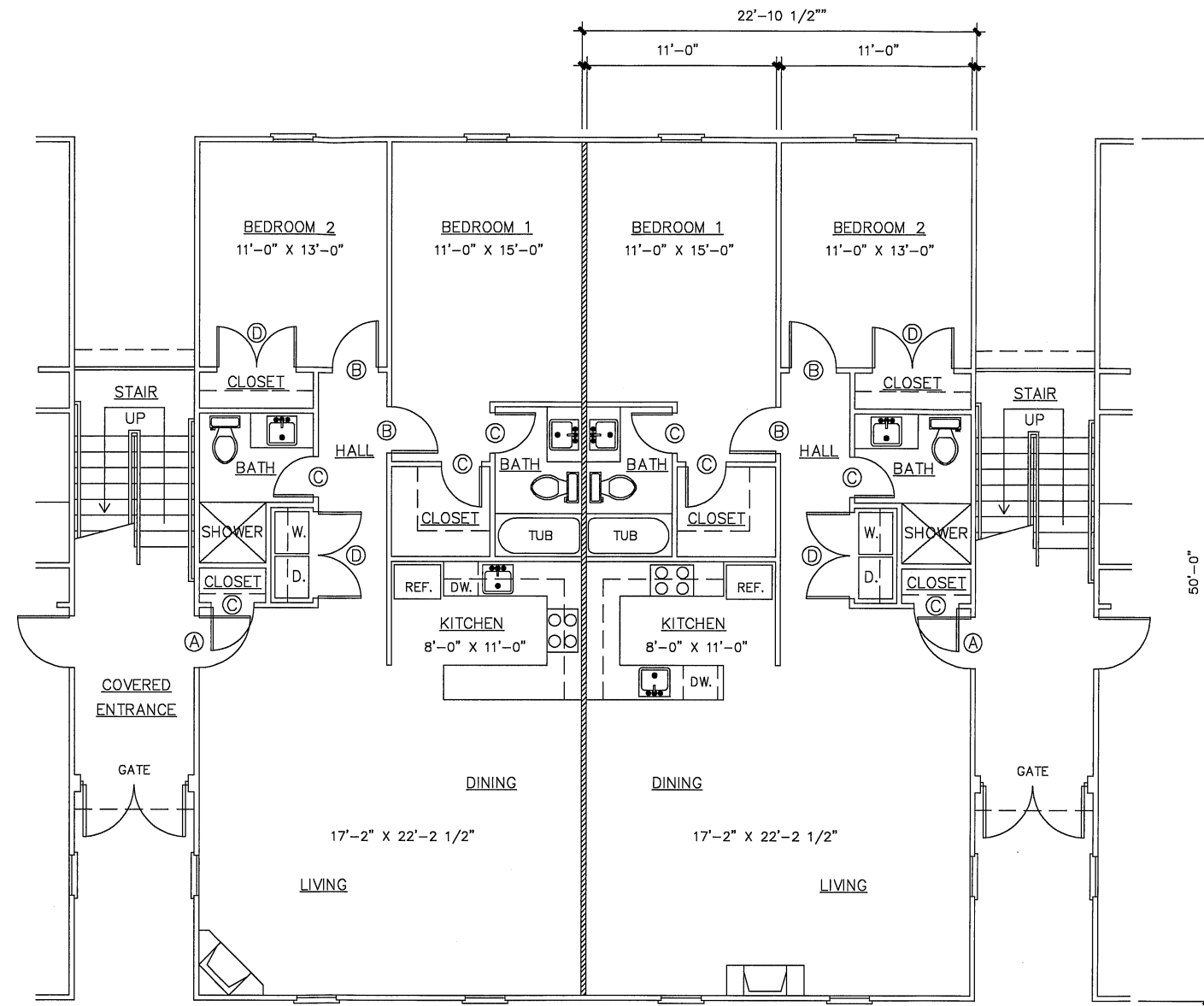
FLOORS

WALLS GYPSUM BOARD, PAINTED

CEILINGS GYPSUM BOARD, PAINTED

CABINETS

ALL CABINETS TO BE WOOD, STAINED
WITH LAMINATED GRANITE TOPS



UNIT A

UNIT B

FLOOR PLAN

1/4" = 1'-0"



Architects
Gainesville
Georgia 30601
770 534 0612

Bailey Associates

WASHINGTON MANOR
GAINESVILLE, GEORGIA

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Drawn By JKB
Checked By
Date JAN. 14, 2020
Revisions
MAY 4, 2020

A1

OF 2