

**APPLICATION  
FOR  
DESIGNATION OF THE HAMLET AT SUGAR RUN  
AS A COMMUNITY ENTERTAINMENT DISTRICT**

NoNA Master Development, LLC, an Ohio limited liability company (the “Applicant”) is the owner of the property located in New Albany, Ohio commonly known as “The Hamlet at Sugar Run” (“Sugar Run”) The Applicant hereby requests to create The Hamlet at Sugar Run Community Entertainment District (“SR CED”) pursuant to Ohio Revised Code Section 4301.80. The purpose of creating SR CED is to allow for commercial and retail development of the area. The following information is provided in response to the provisions of Ohio Revised Code Section 4301.80:

**1. Applicant’s Name and Address:**

NoNA Master Development, LLC  
c/o Laura Cooper Wedekind  
4016 Townsfair Way, Suite 201  
Columbus, Ohio 43219

**2. Map or Survey:**

Attached hereto as **Exhibit A** is a survey in sufficient detail to identify the boundaries of the proposed SR CED. Attached hereto as **Exhibit B** is a legal description of the proposed SR CED.

**3. General Statement of Nature and Types of Establishments:**

Sugar Run is a mixed-use project which plans to include a diverse mix of restaurants, bars, retail sales establishments, offices (collectively, “Commercial Establishments”) and various types residential living spaces (“Residential Establishments”). A current list of the types of establishments planned in Sugar Run are attached hereto in **Exhibit C**.

**4. Establishments Not Yet Developed and Time Frame for Completion:**

Exhibit C attached hereto identifies the establishments planned. The planned Commercial Establishments are to be developed by approximately the second quarter of 2026 and the Residential Establishments are to be developed by approximately the first quarter of 2029.

**5. Uses in Accord with Master Zoning Plan or Map:**

Sugar Run is in accord with the zoning map and plan. Attached hereto as **Exhibit D-1** is a copy of Ordinance No. O-40-2022 of the City Council of New Albany, which changed the zoning of Sugar Run from R-1 Residential Estate District to Infill Planned Unity District (“I-PUD”). Attached hereto as **Exhibit D-2** is a copy of the Official Zoning Map of the City of

New Albany. The Zoning Map shows (in lime green just south of Central College Road on the west side of the map) the land known as Sugar Run is zoned I-PUD.

**6. Surveyor's Certificate that CED Contains No Less than 20 Contiguous Acres:**

Attached to Exhibit B is a certification from a surveyor or engineer licensed under Chapter 4733 of the Revised Code indicating that the area encompassed by the proposed CED contains no less than twenty (20) contiguous acres.

**Mayor's Recommendation  
to the Legislative Authority**

*This Recommendation must be submitted to the legislative authority within  
thirty (30) days after receiving the Application.*

Sloan Spalding, Mayor of the City of New Albany, hereby recommends to New Albany City Council that this Application be \_\_\_\_\_ [insert approved or disapproved].

\_\_\_\_\_  
Sloan Spalding,  
Mayor of the City of New Albany

Date: \_\_\_\_\_, 2023

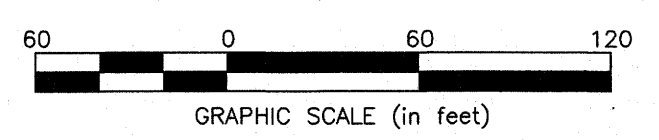
# **Exhibit A**

# ZONING EXHIBIT

## SECTION 13, QUARTER TOWNSHIP 2, TOWNSHIP 2, RANGE 16 UNITED STATES MILITARY LANDS CITY OF NEW ALBANY, COUNTY OF FRANKLIN, STATE OF OHIO



NOTE: The area encompassed by the proposed CED is more than 20 contiguous acres. The acreages shown on this exhibit are based on record information only, and not a field survey.



By Matthew A. Kirk 19 July 23  
Matthew A. Kirk  
Professional Surveyor No. 7865  
mkirk@emht.com

<b>EMHT</b> Evans, Mechwart, Hambleton & Titon, Inc. Engineers • Surveyors • Planners • Scientists 5500 New Albany Road, Columbus, OH 43054 Phone: 614.775.4500 Toll Free: 888.775.3448 emht.com		Date: July 19, 2023 Scale: 1" = 60' Job No: 2023-0187 Sheet: 1 of 1
REVISIONS		
MARK	DATE	DESCRIPTION

# **Exhibit B**

**26.5 ACRES**

Situated in the State of Ohio, County of Franklin, City of New Albany, in Section 13, Quarter Township 2, Township 2, Range 16, United States Military Lands, being comprised of all of the following tracts of land: those tracts conveyed to The New Albany Company, LLC by deeds of record in Official Records 14952J07 and 21256E01, and Instrument Numbers 200107120159281, 200110250246605, 201603170031803, 199804160090632, 199811122089607, 200007270148835, 199804160090633, 199911100282665, 201604080042971, and 202203070036529, those tracts conveyed to NONA Master Development, LLC by deeds of record in Instrument numbers 202205170075295, 202205180075664 and 202106280112895 (all references refer to the records of the Recorder's Office, Franklin County, Ohio) and more particularly bounded and described as follows:

BEGINNING at the northeasterly corner of that 0.824 acre tract conveyed to Terraza 7, LLC by deed of record in Instrument Number 202106230109913, in the southerly right of way line of Central College Road;

Thence the following courses and distances:

South 86° 12' 38" East, a distance of 957.13 feet to a point of curvature;

With the arc of a curve to the right, having a central angle of 52° 02' 34", a radius of 50.00 feet, an arc length of 45.42 feet, a chord bearing of South 60° 07' 08" East and chord distance of 43.87 feet to a point;

South 03° 27' 06" West, a distance of 483.28 feet to a point;

South 02° 24' 06" East, a distance of 98.05 feet to a point;

South 03° 27' 06" West, a distance of 89.32 feet to a point;

South 04° 43' 12" West, a distance of 60.69 feet to a point;

North 86° 08' 42" West, a distance of 3.66 feet to a point;

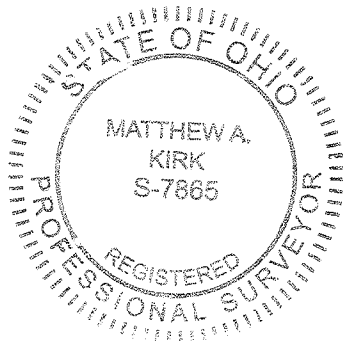
South 03° 24' 15" West, a distance of 179.85 feet to a point;

South 04° 39' 14" West, a distance of 224.43 feet to a point;

North 86° 02' 42" West, a distance of 1001.76 feet to a point; and

North 03° 41' 42" East, a distance of 1151.39 feet to the POINT OF BEGINNING, containing 26.51 acres of land, more or less.

The area encompassed by the proposed CED is more than 20 contiguous acres.



EVANS, MECHWART, HAMBLETON & TILTON, INC.

*Matthew A. Kirk*

Matthew A. Kirk  
Professional Surveyor No. 7865

19 JULY 23

Date

# **Exhibit C**



## **Description of Uses**

### **Establishments Planned:**

#### Commercial Establishments:

Restaurants

Bars

Retail Sales Establishments

Service-Oriented Retail

Spa and Beauty Establishments

Traditional Office

Co-working Office

#### Residential Establishments:

Residential (i.e. for-sale detached single family, for-sale attached single family, duplexes, and townhomes, and for-rent townhomes)

Senior living

# **Exhibit D-1**



**ORDINANCE O-40-2022**

**AN ORDINANCE TO AMEND THE ZONING ORDINANCE OF THE CITY OF NEW ALBANY BY AMENDING THE ZONING MAP TO REZONE 32.6+/- ACRES OF LAND GENERALLY LOCATED AT THE SOUTHWEST AND SOUTHEAST CORNERS OF NEW ALBANY CONDIT ROAD AND CENTRAL COLLEGE ROAD, FROM RESIDENTIAL ESTATE DISTRICT (R-1) TO INFILL PLANNED UNIT DEVELOPMENT (I-PUD) FOR AN AREA TO BE KNOWN AS THE "HAMLET AT SUGAR RUN ZONING DISTRICT" AS REQUESTED BY NONA MASTER DEVELOPMENT LLC; ATTN: YAROMIR STEINER AND BRYAN STONE C/O AARON UNDERHILL, ESQ.**

**WHEREAS**, council of the City of New Albany has determined that it is necessary to rezone certain property located in the city to promote orderly growth and development of lands; and

**WHEREAS**, the Rocky Fork – Blacklick Accord, New Albany Planning Commission and council on separate occasions have held public hearings and received public input into the amendment of the zoning ordinance; and

**WHEREAS**, pursuant to the application by NONA Master Development LLC, Attn: Yaromir Steiner and Bryan Stone c/o Aaron Underhill, Esq., the Rocky Fork – Blacklick Accord and Planning Commission have reviewed the proposed ordinance amendment and recommended its approval.

**NOW, THEREFORE, BE IT ORDAINED** by Council for the City of New Albany, Counties of Franklin and Licking, State of Ohio, that:

**Section 1.** Council hereby amends the Zoning Ordinance Map of the City of New Albany to change the zoning classification of the following described site:

- A. A 32.6+/- acre site within Franklin County, generally located at the southwest and southeast corners of New Albany Condit Road and Central College Road from its current zoning of Residential Estate (R-1) to Infill Planned Unit Development (I-PUD).
- B. The zoning district text and boundary map are hereby attached and marked Exhibit A.

**Section 2.** It is hereby found and determined that all formal actions of this council concerning and relating to the adoption of this legislation were adopted in an open meeting of council, and that all deliberations of the council and or any of its committees that resulted in such formal action were in meetings open to the public, in compliance with Section 121.22 of the Ohio Revised Code.

**Section 3.** Pursuant to Article 6.07(B) of the New Albany Charter, this ordinance shall become effective thirty (30) days after adoption.

CERTIFIED AS ADOPTED this 6 day of Dec, 2022.

**Attest:**



Sloan T. Spalding  
Mayor



Jennifer H. Mason  
Clerk of Council

**Approved as to form:**



Benjamin S. Albrecht  
Law Director

**Legislation dates:**

Prepared:	11/04/2022
Introduced:	11/15/2022
Revised:	11/23/2022 – exhibit A
Adopted:	12/06/2022
Effective:	01/05/2023

Permit # \_\_\_\_\_  
 Board \_\_\_\_\_  
 Mtg. Date \_\_\_\_\_



Community Development Planning Application

Project Information	Site Address <u>6841 New Albany Condit Road and others</u> Parcel Numbers <u>Please see attached list of subject property parcel numbers</u> Acres <u>32.6 +/- Acres</u> # of lots created _____																																																												
	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Choose Application Type</th> <th colspan="4" style="text-align: left;">Circle all Details that Apply</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> Appeal</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Certificate of Appropriateness</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Conditional Use</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Development Plan</td> <td style="border: 2px solid black; text-align: center;">Preliminary</td> <td>Final</td> <td>Comprehensive</td> <td>Amendment</td> </tr> <tr> <td><input type="checkbox"/> Plat</td> <td>Preliminary</td> <td>Final</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Lot Changes</td> <td>Combination</td> <td>Split</td> <td>Adjustment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Minor Commercial Subdivision</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Vacation</td> <td>Easement</td> <td></td> <td>Street</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Variance</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Extension Request</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Zoning</td> <td style="border: 2px solid black; text-align: center;">Amendment (rezoning)</td> <td></td> <td>Text Modification</td> <td></td> </tr> </tbody> </table>	Choose Application Type	Circle all Details that Apply				<input type="checkbox"/> Appeal					<input type="checkbox"/> Certificate of Appropriateness					<input type="checkbox"/> Conditional Use					<input checked="" type="checkbox"/> Development Plan	Preliminary	Final	Comprehensive	Amendment	<input type="checkbox"/> Plat	Preliminary	Final			<input type="checkbox"/> Lot Changes	Combination	Split	Adjustment		<input type="checkbox"/> Minor Commercial Subdivision					<input type="checkbox"/> Vacation	Easement		Street		<input type="checkbox"/> Variance					<input type="checkbox"/> Extension Request					<input checked="" type="checkbox"/> Zoning	Amendment (rezoning)		Text Modification	
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Description of Request: <u>The rezoning of 32.6 +/- acres from R-1 to I-PUD and preliminary development plan review of a mixed use "hamlet" development in accordance with the City's updated Strategic Plan.</u>																																																													
Contacts	Property Owner's Name: <u>Please see attached list of property owners.</u> Address: _____ City, State, Zip: _____ Phone number: _____ Fax: _____ Email: _____																																																												
	Applicant's Name: <u>Nona Master Development LLC, Attn: Yaromir Steiner and Bryan Stone</u> Address: <u>4016 Townsfair Way, Suite 201</u> City, State, Zip: <u>Columbus, OH 43219</u> Phone number: <u>216.831.4710</u> Fax: _____ Email: <u>bryan@axiomdev.com</u>																																																												
Signature	Site visits to the property by City of New Albany representatives are essential to process this application. The Owner/Applicant, as signed below, hereby authorizes Village of New Albany representatives, employees and appointed and elected officials to visit, photograph and post a notice on the property described in this application. I certify that the information here within and attached to this application is true, correct and complete.																																																												
	<table style="width:100%;"> <tr> <td style="width: 30%;">By:</td> <td style="width: 30%; text-align: center;"></td> <td style="width: 40%;"></td> </tr> <tr> <td>Signature of Owner</td> <td style="text-align: center;"><u>Aaron L. Underhill, Attorney for Owner</u></td> <td>Date: <u>8/23/2022</u></td> </tr> <tr> <td>Signature of Applicant</td> <td style="text-align: center;"></td> <td>Date: <u>8/23/2022</u></td> </tr> <tr> <td></td> <td style="text-align: center;"><u>Aaron L. Underhill, Attorney for Applicant</u></td> <td></td> </tr> </table>	By:			Signature of Owner	<u>Aaron L. Underhill, Attorney for Owner</u>	Date: <u>8/23/2022</u>	Signature of Applicant		Date: <u>8/23/2022</u>		<u>Aaron L. Underhill, Attorney for Applicant</u>																																																	
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	<u>Aaron L. Underhill, Attorney for Applicant</u>																																																												

**NoNA Zoning District**

**Property Owners and Parcel Numbers**

**NONA MASTER DEVELOPMENT LLC**

Attn: Yaromir Steiner and Bryan Stone

4016 Townsfair Way, Suite 201

Columbus, Ohio 43219

222-000675, 222-000685, 222-000686, 222-000670, 222-000676, 222-000678 and 222-000313

**The New Albany Company**

Attn: Thomas Rubey

8000 Walton Parkway, Suite 120

New Albany, Ohio 43054

Parcel Numbers: 222-000664, 222-000671, 222-000672, 222-000654, 222-000669, 222-000549, 222-000668, 222-001167, 222-000688, 222-000375, 222-000314, and 222-000673

**Robert E. Verst, Jr. and Roseanne I. Verst**

5772 Buckeye Parkway

Grove City, OH 43123

Parcel Number: 222-000376

**APPLICANT:**

NoNA Master Development LLC  
4016 Townsfair Way, Suite 201  
Columbus, OH 43219

**PROPERTY OWNER(S):**

NoNA Master Development LLC  
4016 Townsfair Way, Suite 201  
Columbus, OH 43219

The New Albany Company LLC  
8000 Walton Parkway, Suite 120  
New Albany, OH 43054

**ATTORNEY:**

Aaron L. Underhill  
Underhill & Hodge LLC  
8000 Walton Parkway, Suite 260  
New Albany, OH 43054

**SURROUNDING PROPERTY OWNERS:**

Ohiohealth Corp.  
3555 Olentangy River Road  
Columbus, OH 43214

5524 New Albany Road LLC  
1451 Rockville Poke, Suite 100  
Rockville, MD 20852

Albany Mazel LLC  
4924 Balboa Blvd., Suite 443  
Encino, CA 91316

Huntington National Bank  
7 Easton Oval  
Columbus, OH 43219

Terraza 7 LLC  
11995 El Camino Real  
San Diego, CA 92130

McGuire New Albany Property LLC  
700 N. Sandusky Avenue  
Bucyrus, OH 44820

Enclave at New Albany Homeowners'  
Association, Inc.  
P.O. Box 395  
Grove City, OH 43123

Darrel and Annette Kestner  
6810 New Albany Condit Road  
New Albany, OH 43054

CVG12 New Albany OH LLC  
P.O. Box 92129  
Southlake, TX 76092

Discover Properties LLC  
2500 Lake Cook Road  
Riverwoods, IL 60015

TFTFP LLC  
1991 Thistlewood Court  
Columbus, OH 43235

Michael S. Berk, Trustee  
6854 New Albany Condit Road  
New Albany, OH 43054

Village of New Albany  
99 W. Main Street  
New Albany, OH 43054

Jennifer and Jeremy Gregory  
5491 Steele Court  
New Albany, OH 43054

Junior and Malila Nguyen  
5501 Steele Court  
New Albany, OH 43054

Bradley and Abbey Griffith  
5511 Steele Court  
New Albany, OH 43054

Joshua and Lisa Masters  
5521 Steele Court  
New Albany, OH 43054

Ibrahima Dioum  
5531 Steele Court  
New Albany, OH 43054

Ellen Mackin  
5310 Snider Loop  
New Albany, OH 43054

Jennifer Haag  
1303 Poppy Hills Drive  
Blacklick, OH 43004

Larry Piper  
6690 Central College Road  
New Albany, OH 43054

Frederick Myers and Judy Doran  
6696 Central College Road  
New Albany, OH 43054

Central College Development LLC  
P.O. Box 1063  
New Albany, OH 43054

Svetlana Akulicheva and Michael  
Hoban  
5530 Steele Court  
New Albany, OH 43054

Jeffery and Megan Bauder  
5520 Steele Court  
New Albany, OH 43054

Robert and Karen Thompson  
5510 Steele Court  
New Albany, OH 43054

Dirwin and Chrisanta Clemans  
5500 Steele Court  
New Albany, OH 43054

Jay and Kara Sayre  
5486 Steele Court  
New Albany, OH 43054

Patrick and Maura Spangler  
5481 Steele Court  
New Albany, OH 43054

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**AFFIDAVIT OF FACTS**

I, Aaron L. Underhill, in my capacity as attorney for the applicant listed on the zoning/preliminary development plan application pertaining to 32.6+/- acres known as Franklin County Parcel Numbers 222-000675, 222-000685, 222-000686, 222-000670, 222-000676, 222-000678, 222-000313, 222-000664, 222-000671, 222-000672, 222-000654, 222-000669, 222-000549, 222-000668, 222-001167, 222-000688, 222-000375, 222-000314, 222-000673, and 222-000376, being first duly sworn, do hereby state and depose the following:

That accompanying this affidavit is a list of all property owners located within two hundred (200) feet of the parcel(s) that are the subject of the application and their addresses as appearing on the Franklin County Auditor's current tax list; and

That said list is based solely on the records of the Office of the Auditor of Franklin County, Ohio, as provided on its website on or about the date of this affidavit.

Further Affiant sayeth not.

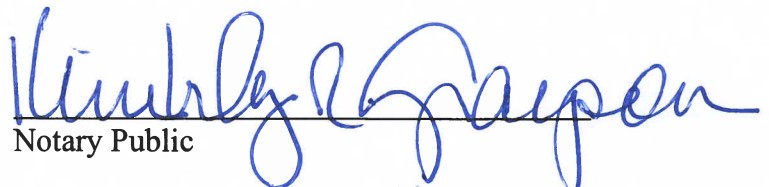
By:   
Aaron L. Underhill  
Attorney, Underhill & Hodge LLC

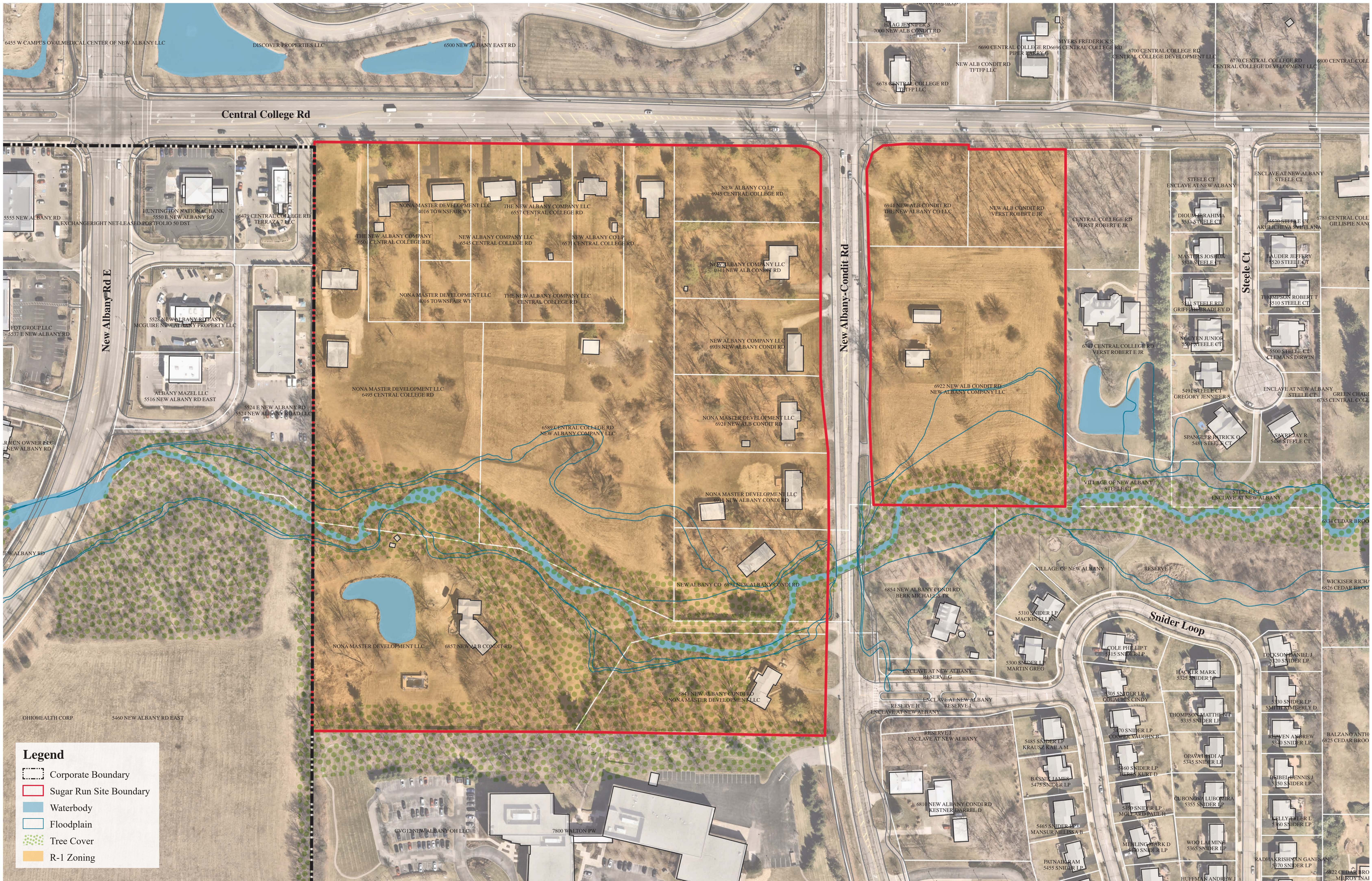
STATE OF OHIO  
COUNTY OF FRANKLIN SS.

The foregoing instrument was acknowledged before me on the 24<sup>th</sup> day of October 2022, by Aaron L. Underhill, who acknowledged the foregoing signature to be his voluntary act and deed.



KIMBERLY R. GRAYSON  
Notary Public, State of Ohio  
My Commission Expires  
01-11-2026

  
Notary Public  
My Commission Expires: 1-11-2026



**Legend**

- Corporate Boundary
- Sugar Run Site Boundary
- Waterbody
- Floodplain
- Tree Cover
- R-1 Zoning

Sugar Run | Vicinity Map

**6.228 ACRES**

Situated in the State of Ohio, County of Franklin, City of New Albany, in Section 13, Quarter Township 2, Township 2, Range 16, United States Military Lands, being comprised of all of those tracts of land conveyed to The New Albany Company, LLC by deeds of record in Instrument Numbers 200012080249008 and 200106250142592 (all references refer to the records of the Recorder's Office, Franklin County, Ohio) and more particularly bounded and described as follows:

BEGINNING at the northeasterly corner of that 1.015 acre tract conveyed to Robert E. Verst Jr. and Roseanne I. Verst as Tract One by deed of record in Instrument Number 201310180176801, in the southerly right of way line of Central College Road;

Thence the following courses and distances:

South 03° 33' 26" West, a distance of 707.27 feet to a point;

North 86° 11' 45" West, a distance of 373.79 feet to a point;

North 00° 03' 12" West, a distance of 139.91 feet to a point;

North 03° 28' 05" East, a distance of 179.94 feet to a point;

North 01° 58' 54" East, a distance of 336.97 feet to a point of curvature to the right;

With the arc of said curve, having a central angle of 90° 11' 37", a radius of 50.00 feet, an arc length of 78.71 feet, a chord bearing of North 48° 42' 36" East and chord distance of 70.83 feet to a point; and

South 86° 11' 45" East, a distance of 341.66 feet to the POINT OF BEGINNING, containing 6.228 acres of land, more or less.

**26.401 ACRES**

Situated in the State of Ohio, County of Franklin, City of New Albany, in Section 13, Quarter Township 2, Township 2, Range 16, United States Military Lands, being comprised of all of that tract of land conveyed to Kevin L. Komraus by deeds of record in Instrument Numbers 200209110224893 and 200209110224894, all of that tract of land conveyed to Ralph W. Fallon, Trustee by deed of record in Instrument Number 201012150170151, all of those tracts of land conveyed to SNAI, LLC by deeds of record in Instrument Numbers 201909170120440, 201909170120483, and 202006100081519, and all of those tracts of land conveyed to The New Albany Company, LLC by deeds of record in Official Records 14952J07 and 21256E01, and Instrument Numbers 200107120159281, 200110250246605, 201603170031803, 199804160090632, 199811122089607, 200007270148835, 199804160090633, 199911100282665, 201604080042971 (all references refer to the records of the Recorder's Office, Franklin County, Ohio) and more particularly bounded and described as follows:

BEGINNING at the northeasterly corner of that 0.824 acre tract conveyed to New Albany TB, LLC by deed of record in Instrument Number 201310180176797, in the southerly right of way line of Central College Road;

Thence the following courses and distances:

South 86° 08' 42" East, a distance of 954.78 feet to a point of curvature to the right;

With the arc of said curve, having a central angle of 15° 10' 39", a radius of 50.00 feet, an arc length of 13.24 feet, a chord bearing of South 41° 41' 11" East and chord distance of 13.21 feet to a point;

South 03° 27' 06" West, a distance of 483.28 feet to a point;

South 02° 24' 06" East, a distance of 98.05 feet to a point;

South 04° 26' 22" West, a distance of 552.82 feet to a point;

North 86° 29' 28" West, a distance of 241.57 feet to a point;

North 00° 51' 46" East, a distance of 5.40 feet to a point;

North 86° 20' 17" West, a distance of 757.51 feet to a point; and

North 03° 41' 21" East, a distance of 1141.40 feet to the POINT OF BEGINNING, containing 26.401 acres of land, more or less.

# NEW ALBANY

FOUNDED 1837

August 9, 2022

Mr. Steve Mayer  
The City of New Albany  
Community Development Planning  
99 West Main Street  
New Albany, Ohio 43054

Via Email: [smayer@newalbanyohio.gov](mailto:smayer@newalbanyohio.gov)

**RE: Application by NoNA Master Development, LLC to Rezone the Property Described Below and Amend the "Official Zoning Map" of the City of New Albany to create the "Hamlet at Sugar Run"**

Mr. Mayer:

This letter will serve to confirm that The New Albany Company LLC, as the owner of Franklin County Auditor's tax parcels 222-000673, 222-000688, 222-000668, 222-001167, 222-000549, 222-000669, 222-000654, 222-000672, 222-000671, 222-000664, 222-000314, and 222-000375 consents to NoNA Master Development, LLC's submittal of the application dated August 19, 2022 to modify the zoning applicable to such parcels.

Please contact me if you have any questions.

Sincerely,



Dick Roggenkamp  
Director of Real Estate  
The New Albany Company

Robert & Roseanne Verst  
6747 Central College Road  
New Albany, Ohio 43054

August 9, 2022

Mr. Steve Mayer  
City of New Albany, Ohio  
Community Development Planning  
99 West Main Street  
New Albany, Ohio 43054

Via Email: [smayer@newalbanyohio.gov](mailto:smayer@newalbanyohio.gov)

**RE: Application by NoNA Master Development, LLC to Rezone the Property Described Below and Amend the “Official Zoning Map” of the City of New Albany to create the “Hamlet at Sugar Run”**

Mr. Mayer:

This letter will serve to confirm that we, Robert E. Verst, Jr. and Roseanne I. Verst, owners of Franklin County Auditor’s tax parcel 222-000377, consent to NoNA Master Development, LLC’s submission of the application dated August 19, 2022, to modify the zoning of these tax parcels.

Please contact me if you have any questions.

Sincerely,

  
Robert E. Verst, Jr.

  
Roseanne I. Verst



Engineers, Surveyors, Planners, Scientists

August 22, 2022

Mr. Steve Mayer  
City of New Albany  
Development Department  
99 West Main Street  
New Albany, OH 43054

**Subject: Hamlet at Sugar Run – Environmental Compliance**

Dear Mr. Mayer,

This letter serves to inform the City of New Albany of environmental conditions associated with the Hamlet at Sugar Run project, located south of Central College Road, east and west of New Albany-Condit Road, and north of Walton Parkway, in the City of New Albany, Franklin County, Ohio. The property is approximately 32.6 acres in size and consists of a number of existing residential estate lots.

The majority of the property was delineated for Waters of the U.S. by the Environmental Department of EMH&T in 2021. The U.S. Army Corps of Engineers (USACE) reviewed the report and issued a Jurisdictional Determination agreeing that the property contained perennial Sugar Run, a small wetland on the south side of Sugar Run on the parcel east of New Albany-Condit Road, and a nonjurisdictional pond. The recently added parcels to the project boundary were reviewed by EMH&T and they do not contain any additional wetlands or streams.

The development concept does not appear to encroach upon any of the jurisdictional features. As a result, environmental permits will not be required from the USACE or Ohio EPA.

If you have any questions regarding this information or require additional documentation, please do not hesitate to contact me at (614) 775-4515.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.

A handwritten signature in blue ink that reads "Robert F. Milligan".

Robert F. Milligan  
Director of Environmental Services  
Principal

Cc: Brian Quackenbush, EMH&T



Engineers, Surveyors, Planners, Scientists

August 19, 2022

Mr. Justin Leyda  
SNAI, LLC  
4016 Townsfair Way  
Suite 201  
Columbus, Ohio 43219

Subject: The Hamlet at Sugar Run  
Utility and Stormwater Feasibility

Dear Justin,

As requested, I have prepared this letter to summarize utility availability and feasibility for the Hamlet at Sugar Run development that is being proposed on a 32.6 acre site located at the intersection of Central College Road and New Albany-Condit Road in New Albany, Ohio. A 5.4 acre portion of the site is located at the southeast corner and the remaining 25.2 acres is located at the southwest corner of this intersection. The development will include commercial space, single-family and multi-family residential, and senior housing. The existing utilities are more than adequate to service the development, and a detailed summary of connection points and requirements are as follows:

### **Sanitary Sewer**

There is an existing public 24-inch sanitary sewer constructed with RP-10226 that runs from West to East through the site and generally parallels Sugar Run. The sewer has a depth of approximately 20-25 feet and lies within a twenty foot (20') easement. The sewer is located north of Sugar Run west of New Albany-Condit-Road and south of Sugar Run east of New Albany-Condit Road. A 12-inch sewer constructed with CC-11734 is also located along the west property line that will service the area south of Sugar, and an 8-inch sewer constructed with CC-14436 is stubbed to the area north of Sugar Run on the east side of New Albany-Condit Road. In order to service the site, a new public main will be extended and a CC-Sanitary Sewer plan will be submitted to the City of New Albany and the City of Columbus for review and approval. The plan will also require approval by the Ohio EPA for a Permit to Install (PTI) prior to construction. Services will be extended from the main to service the various buildings and residential units.

### **Water Service**

An existing 16-inch public water main running along the south side of Central College Road, and an existing 12-inch public water main running under the east side of New Albany-Condit Road will provide domestic water service to the site. There are fire hydrants on these lines that will provide some fire protection for the proposed buildings, but private fire hydrants will likely be required to provide coverage necessary to meet Plain Township Fire Department regulations. If public streets are proposed with this project, a new 8-inch public main will be extended within the right-of-way to service the site and connect to Central College and New Albany-Condit Road. A new pressure test will be performed in the area to confirm the pressure and flow as needed to determine design



constraints for the proposed services. A separate water meter and corresponding water service plan will be required for each individual tax parcel to be served. The water service plans will be reviewed and approved by the City of New Albany and the City of Columbus Division of Water, who will also approve any new public mains along with the Ohio EPA. In order to tap into the public mains, the owner will pay water and sanitary capacity fees to both New Albany and Columbus. Credits towards the capacity fees will be provided for any previously paid capacity fees for water services to the existing houses.

### **Stormwater**

The highest points of the site vary from 1020 at the west property line to 1028 at the east property line, and the entire site drains to Sugar Run, which has a normal water elevation flow line that varies from 1008 at the west property line to 1020 at the bridge under New Albany-Condit Road. A stormwater management system will be required that provides an adequate storage volume necessary to meet peak flow limitations set forth by the City of New Albany, and post construction water quality requirements within the Ohio EPA General Construction Permit. The volume will be provided by a variety of Best Management Practices such as a wet basin, permeable pavement, bio-retention or underground detention. All above grade storage basins will be required to meet City of New Albany requirements for aesthetics for items such as landscaping and a maximum 6:1 side slope.

### **Stream Corridor Protection Zone and Floodplain**

Sugar Run runs through from west to east through the property and is located with a FEMA Zone AE Floodplain and Floodway. The floodplain elevation varies from 1010 at the west property line to 1025 just east of New Albany Condit Road. Any development within the floodplain will require compliance with City of New Albany Chapter 1155 for Flood Damage Reduction and a Floodplain Development permit will be required. Site planning will also need to accommodate a Stream Corridor Protection Zone (SCPZ). The width of the SCPZ is based on the drainage area, and a formula provided by the City of Columbus Stormwater Drainage Manual, and was determined to be 190 feet in total width.

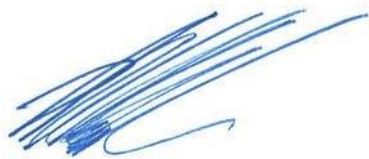
### **Electric and Telecommunications**

All new electric and telecommunications utilities will be fed underground from existing overhead lines on either Central College Road or New Albany-Condit Road. Any existing overhead lines within the site will be removed, but the overhead lines along the existing public roads will remain.

If you need any additional information, please contact me at 614-775-4390.

Sincerely,

EVANS, MECHWART, HAMBLETON & TILTON, INC.



Brian Quackenbush, PE  
Principal | Senior Project Manager



The City of New Albany  
Community Development Planning  
99 West Main Street  
P.O. Box 188  
New Albany, Ohio 43054  
Phone: 614-939-2254

In association with the Community Development Planning Application, please find an anticipated timeline associated with the development of the Hamlet at Sugar Run located near the intersection of Central College and New Albany Condit Roads.

With a key master planning element of the development being the preservation and enhancement of the Sugar Run Creek corridor, the creation of the new dedicated greenspace will be the first site improvement that is undertaken. It is our intention to start site work in Q2 of 2023. Once that public amenity has commenced construction, we will then transition to site grading, utility construction and the site work associated with the construction of the internal road network. It is anticipated that those site improvements could take up to 10 months to complete. Based on market conditions, construction of the vertical development within each of the sub areas will commence no sooner than the later of the approval an FDP for each subarea or four months after the start of underground utility construction.

Thanks.

A handwritten signature in black ink, appearing to read 'Justin Leyda'.

Justin Leyda  
Chief Development Strategist

The City of New Albany  
 Community Development Planning  
 99 West Main Street  
 P.O. Box 188  
 New Albany, Ohio 43054

**RE: School Impact Analysis – Hamlet at Sugar Run**

In connection with planning the development of the Hamlet at Sugar Run, we contracted an independent, nationally recognized, third-party consulting firm, Future Think, Inc., to study the potential impact of the proposed project on the student population of the New Albany Plain City School District (NAPLSD). The firm is very familiar with New Albany and the surrounding area and, in fact, consults for the NAPLSD and provides it with projections.

The consultant used an effective quantitative methodology to determine population load factors for different housing types. The starting point for the study was the actual 2020 student population data for a specific designated area around the City of New Albany. The data used to determine the student yields was sourced via the United States Census Bureau’s Public Use Microdata Data (PUMS). Data was also extracted from the American Community Survey’s (ACS) 5-year Estimates for 2016-2020 (2020) datasets. For all data, multiple variables were studied, including when structures were built, actual enrollment, grade levels, and the dates individuals moved into residences. Based on this effort, they have provided an actual real-life student yield projection for the community, eliminating any guesswork. Below is the actual number of students generated by a single unit of each housing type within the New Albany vicinity, generally covering the northeastern portions of Central Ohio.

Flats	0.102
Townhomes	0.146
Single Family Homes	0.499
<b>Total</b>	

Based on these yield factors, our proposed submission could generate approximately 37 students.

If we utilize the load factors that were shared in the fall of 2021 based on more regional and national (rather than local) ratios and trends, our submission could yield up to 52 students. This increase in numbers is the result of a higher ratio of student generation coming from single family and townhome residences outside of the New Albany area.

Therefore, it is projected that the proposed zoning could generate between 37 and 52 students. The property is currently zoned R-1, allowing one residential unit per 40,000 square feet of lot area. With 32.6 acres included in the site, the current zoning would allow 35 homes (32.6 acres x 43,560 square feet/acre = 1,420,056 total square feet on the site; 1,420,056 SF divided by 40,000 Sf = 35 units). Based on Future Think’s analysis establishing a 0.499 yield factor

for single family homes, the current zoning would generate 17.5 students. A more conservative yield factor of 0.8 students per single family home would equate to 28 students. Therefore, the proposed hamlet development will result in a net increase of 20 to 24 students compared to the current zoning of the property. However, the improved value of the site under the proposed plan will be significantly higher than if developed only with single-family homes, yielding a substantial positive financial impact on the NAPLSD.

Thanks.

A handwritten signature in black ink, appearing to read 'Justin Leyda', with a stylized flourish at the end.

Justin Leyda  
Chief Development Strategist



FutureThink

September 2, 2022

The City of New Albany  
Community Development Planning  
99 West Main Street  
P.O. Box 188  
New Albany, Ohio 43054

**RE: School Impact Analysis – Hamlet at Sugar Run**

To determine the potential number of students based on new housing, FutureThink looked at a variety of data: national and state averages, housing developments in the Central Ohio area, and housing developments in the New Albany-Plain Local School District.

Additionally, we accessed data via the the United States Census Bureau’s Public Use Microdata Sample (PUMS) for the New Albany area in northeastern Central Ohio (see attached map). Data was extracted from the American Community Survey’s (ACS) 5-Year Estimates for 2016-2020 (2020) datasets.

The ratio table is a cross-tabulation of six variables:

- BLD (Units in Structure)
- YBL ([Year] when structure first built)
- TEN (Tenure)
- MV ([Year] when moved into this house or apartment)
- SCH (Public School enrollment)
- SCHG (Grade level attending).

The data was further paired down by cross-tabulating it with the SCHG data, resulting in enrollment data for K-12, excluding preschool and college students.

Housing Type	Load Factor	Steiner Revised Plan	Number of Students
Flats	0.102	40	4
Townhomes	0.146	116	17
Single Family Homes	0.499	32	16
<b>Total</b>		<b>188</b>	<b>37</b>

We appreciate the opportunity to serve the New Albany community.

Sincerely,

Tracy V. Healy  
Owner/President

5685 Tynecastle Loop  
Dublin, OH 43016

614-264-2638  
www.futurethinkinc.com

# Columbus Far Northeast Gahanna & New Albany

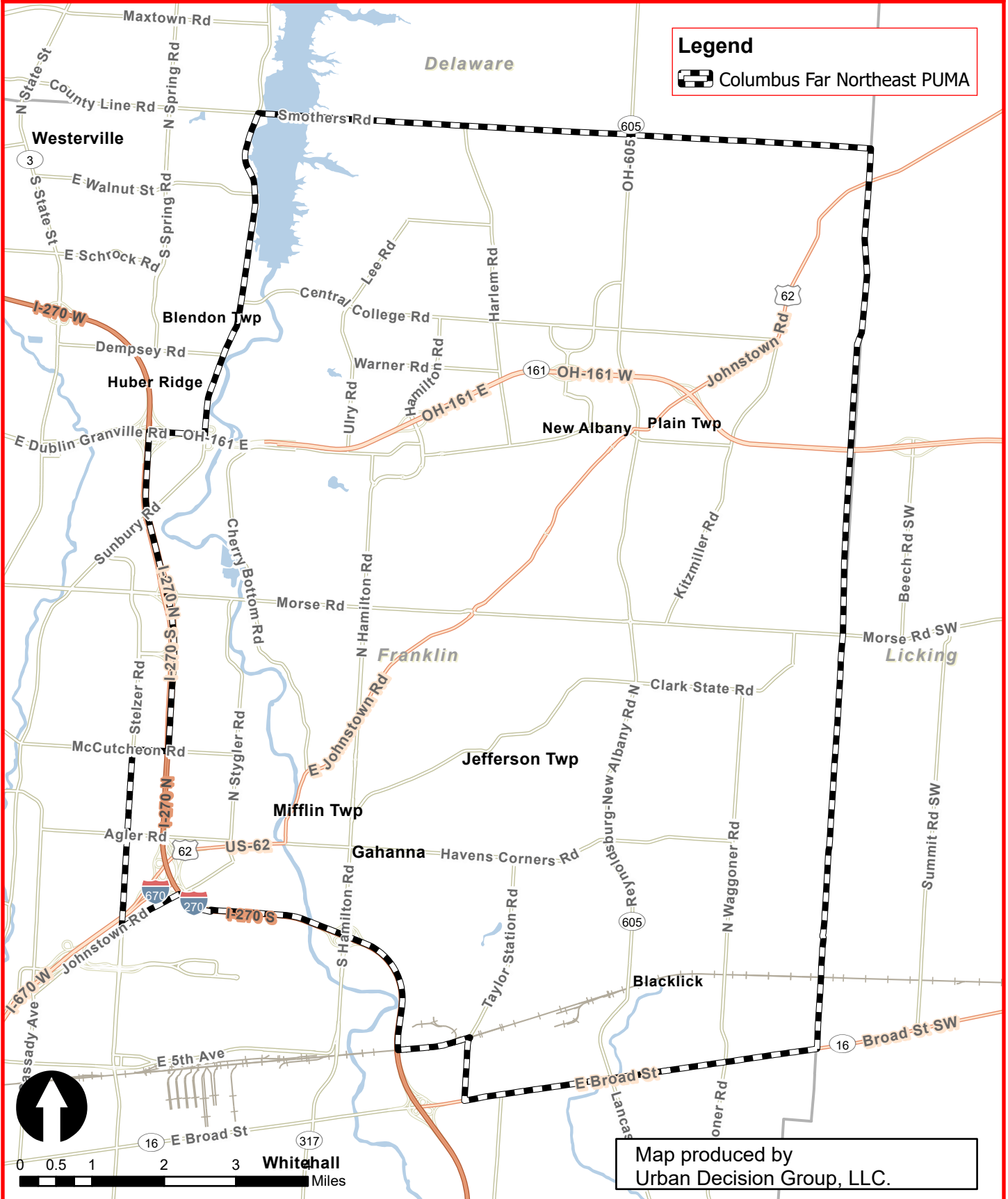
## Public Use Microdata Area (PUMA)



FutureThink

### Legend

 Columbus Far Northeast PUMA





# THE HAMLET

AT

## SUGAR RUN



STEINER



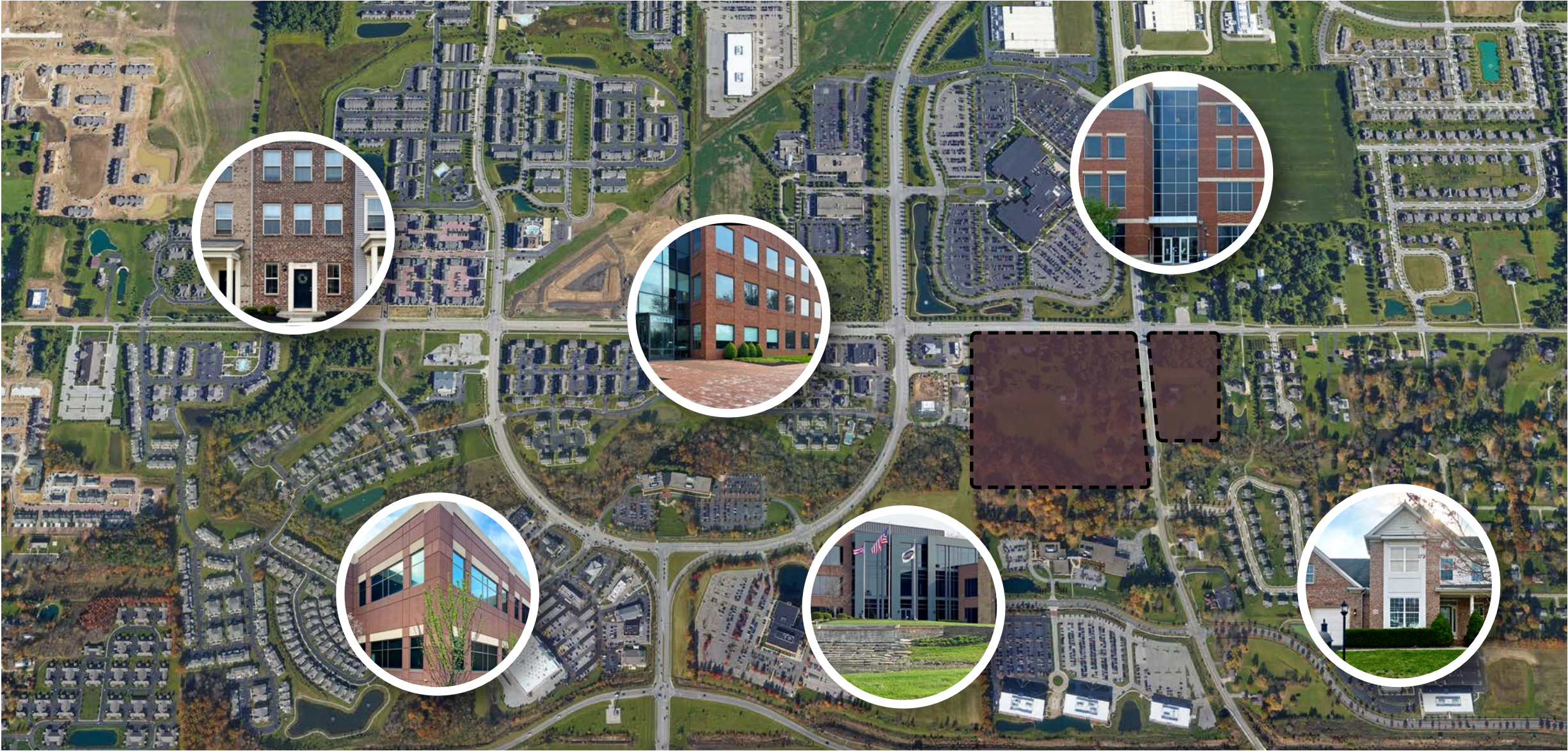
COMMUNITY  
INNOVATION  
PARTNERS

# The Site





# Neighborhood Context



# New City Guidelines

## DEVELOPMENT STANDARDS

The planning team tested various development scenarios to arrive at a preferred site plan (seep. 17), which then informed the creation of the following development standards. These new standards deviate slightly from the original hamlet development standards included in the Engage New Albany Strategic Plan (found on p. 74) because the hamlet concept has been further studied and its application in New Albany better defined. The following standards outline critical requirements to accomplish each of the essential components of a New Albany Hamlet. It is the city’s expectation that these standards be met and are integrated into any proposed zoning text during the 1-PUO rezoning process.

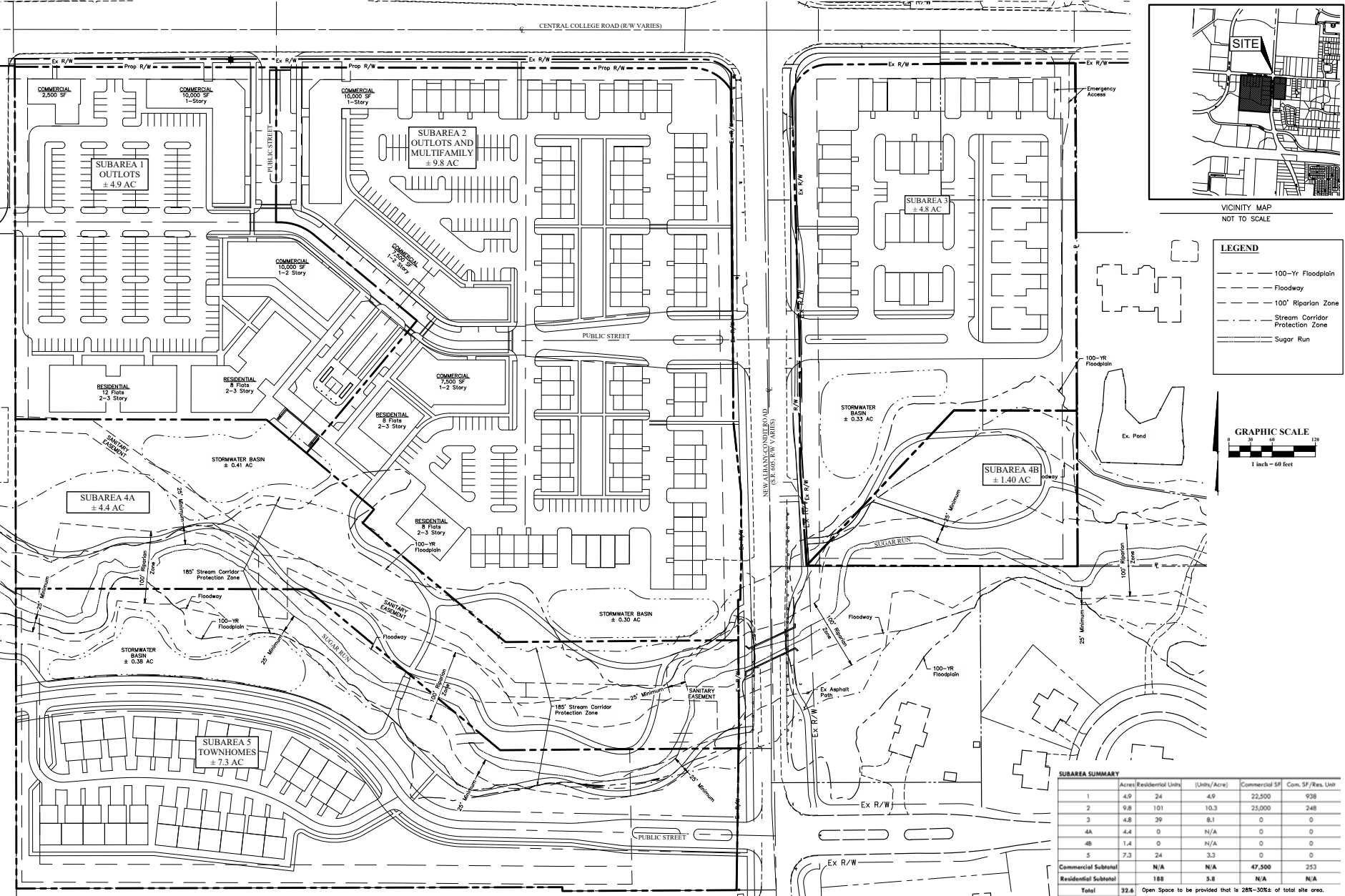
1. The gross density of a hamlet development is not to exceed six (6) dwelling units per acre.
2. A hamlet development should be comprised of about 75% developed land to 25% parks and open space.
3. A hamlet development should include a civic green space open to the public located near the center of the development.
4. A hamlet development should include a ratio of approximately 200 square feet of commercial uses for every 1 dwelling unit to ensure a vibrant mixed-use development. Commercial uses include administrative, business, and professional offices; retail stores; restaurants; hotels; and personal services. Drive thru businesses should be limited within the site in order to preserve the pedestrian-oriented character of a hamlet. Any commercial uses located south of the Sugar Run stream corridor may not count toward this ratio.
5. Commercial uses must include some mixed-use commercial located around the civic green.
6. Ground floor and commercial uses in a hamlet should be complementary in nature with other uses on-site to encourage activity throughout the day, rather than at peak times.
7. Buildings may not be taller than 50 feet in height around the civic green, at least 250 feet from Central College Road and SR 605/New Albany-Condit Road, nor taller than 40 feet at the perimeter.
8. Public streets within a hamlet should be lined by buildings, with exceptions for limited drives, public spaces, and properly screened parking.
9. Garages should face the rear of lots. No garage doors may face primary streets.
10. Parking must be integrated throughout the site through on-street parking on public streets, surface parking located behind primary buildings, limited surface parking located beside primary buildings, and structured parking. Surface parking lots must be properly screened from the street.
11. Drive locations should be kept to a minimum and the placement of buildings should encourage pedestrian activity.
12. Anyone seeking to build a hamlet development must submit a parking model to demonstrate sufficient parking is provided for the mix of residents, employees, and visitors to the site; shared parking among complementary uses is strongly encouraged on the site and the installation of excess parking is discouraged. If the tenants of the hamlet significantly change or if the use mix changes, the developer must resubmit the parking model to city zoning staff for review.
13. A hamlet development proposal must include an overall master plan for the area showing how it fits together appropriately in terms of connectivity, site layout, uses, and aesthetics.
14. A hamlet development is expected to go through the Planned Unit Development (PUD) rezoning process. The city’s Architectural Review Board (ARB) should review final development plans.
15. A hamlet development proposal must reference the applicable chapters of the New Albany Design Guidelines & Requirements (DGRs).



**Legend**

- Focus Area Boundary [dashed line]
- Proposed Single Family Homes [yellow box]
- Proposed Townhomes [orange box]
- Proposed Flats [light orange box]
- Proposed Commercial [red box]
- Proposed Assisted Living [purple box]
- Open Space/Green Corridors [green box]
- Stream Corridor Protection Zone [dashed red line]
- Floodplain [dotted line]
- Utility Easement [dashed yellow line]

# Our Vision



**SUBAREA SUMMARY**

	Acres	Residential Units	(Units/Acre)	Commercial SF	Com. SF/Res. Unit
1	4.9	24	4.9	22,500	938
2	9.8	101	10.3	25,000	248
3	4.8	39	8.1	0	0
4A	4.4	0	N/A	0	0
4B	1.4	0	N/A	0	0
5	7.3	24	3.3	0	0
<b>Commercial Subtotal</b>	N/A	N/A	N/A	<b>47,500</b>	<b>253</b>
<b>Residential Subtotal</b>	<b>188</b>	<b>5.8</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Total</b>	<b>32.6</b>	Open Space to be provided that is 285-30% of total site area.			

# Civic Green and Mixed-Use

- Mixed-Use Commercial uses fronting the Civic Green
- Pedestrian oriented retail and restaurant spaces lining the road
- Neighborhood oriented tenants located along Central College
- Upper floor small office and co-working space
- Approximately 26,000 SF of unique restaurant and retail space
- Approximately 14,000 SF of boutique office space



# Residential Townhomes

- 142 luxury attached for-sale townhomes
- Similar to Richmond Square or Keswick in the Village Center
- Private garages located in the rear of the unit
- Compact living with no maintenance living



# Residential - Single Family

- 6 luxurious and compact detached single family residences
- Low maintenance oriented lifestyle
- Private outdoor patio space
- Ground floor master



# Residential Flats

- 40 high end units with of a variety of product types
- For sale condos with private parking
- Boutique luxury rental flats
- All units fronting open space or parks





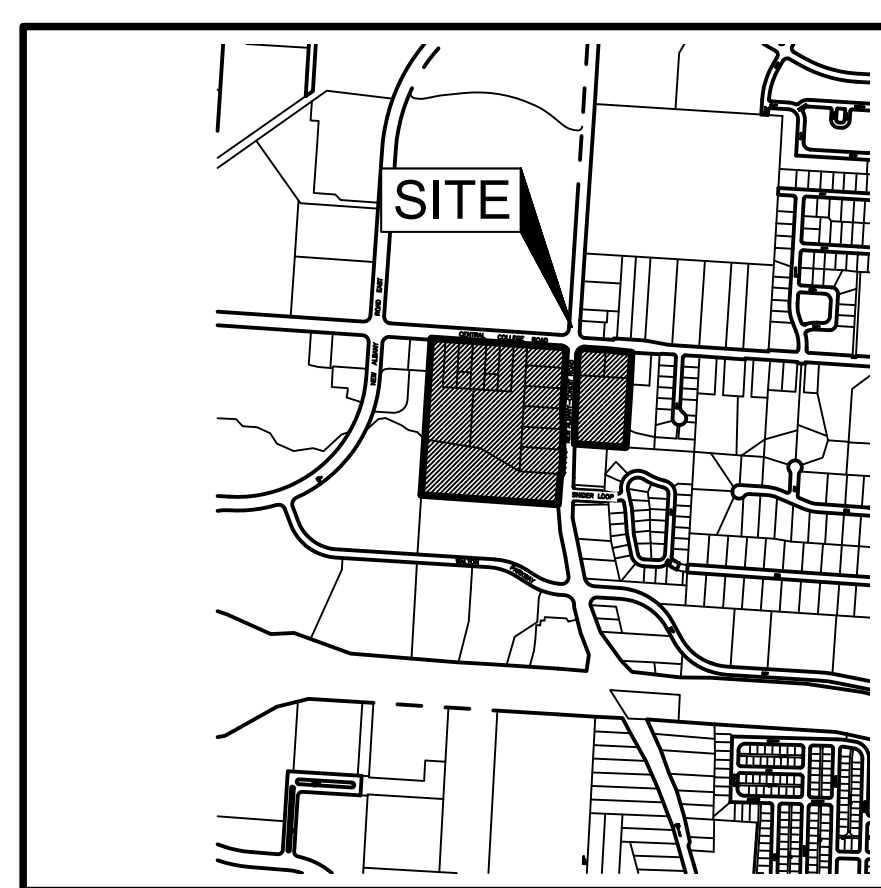
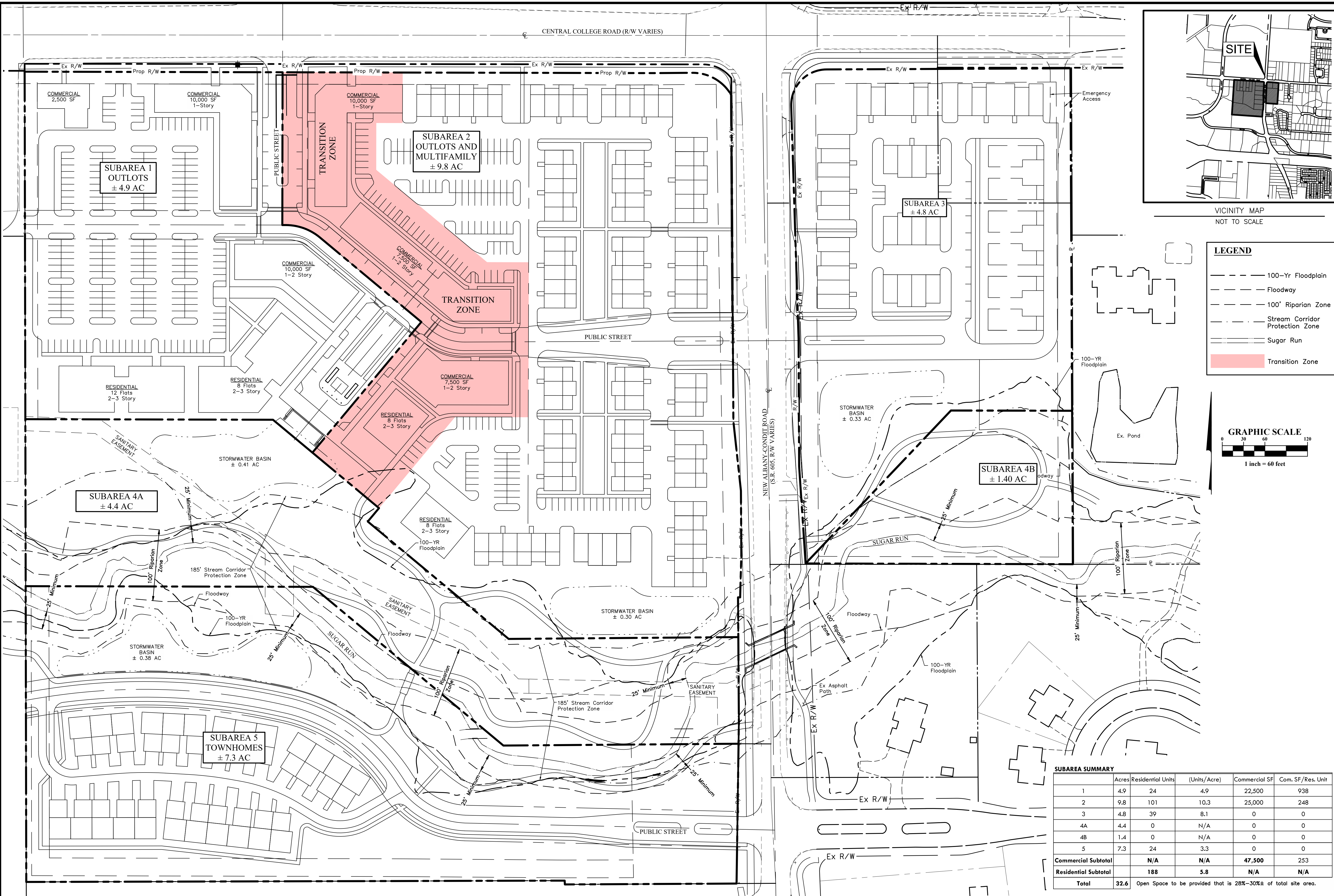
# THE HAMLET

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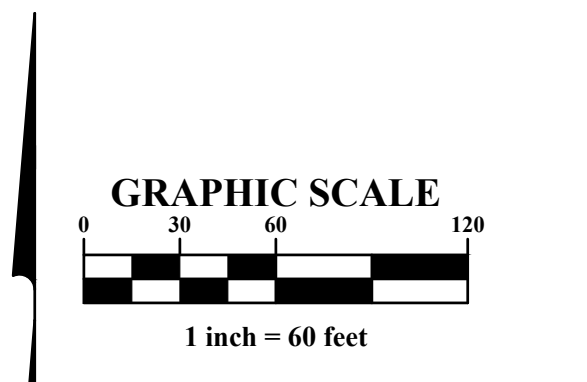
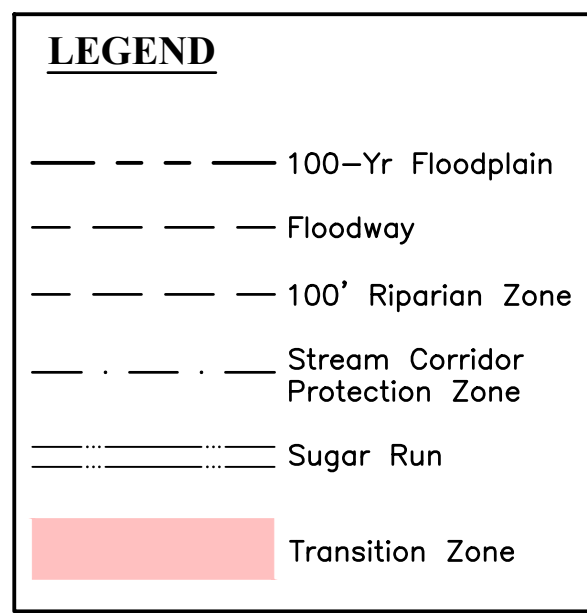
SUGAR RUN



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VICINITY MAP  
NOT TO SCALE



MARK	DATE	DESCRIPTION

CITY OF NEW ALBANY, FRANKLIN COUNTY, OHIO  
Zoning Exhibit  
**THE HAMLET AT SUGAR RUN**

**SUBAREA SUMMARY**

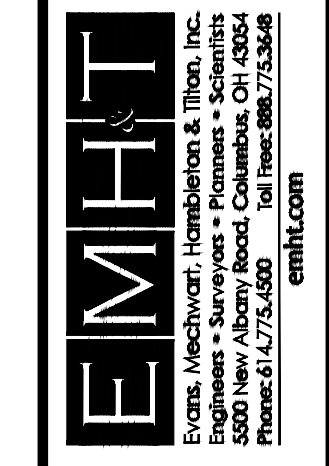
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<b>Total</b>	<b>32.6</b>	Open Space to be provided that is 28%-30%± of total site area.			

DATE  
October 27, 2022

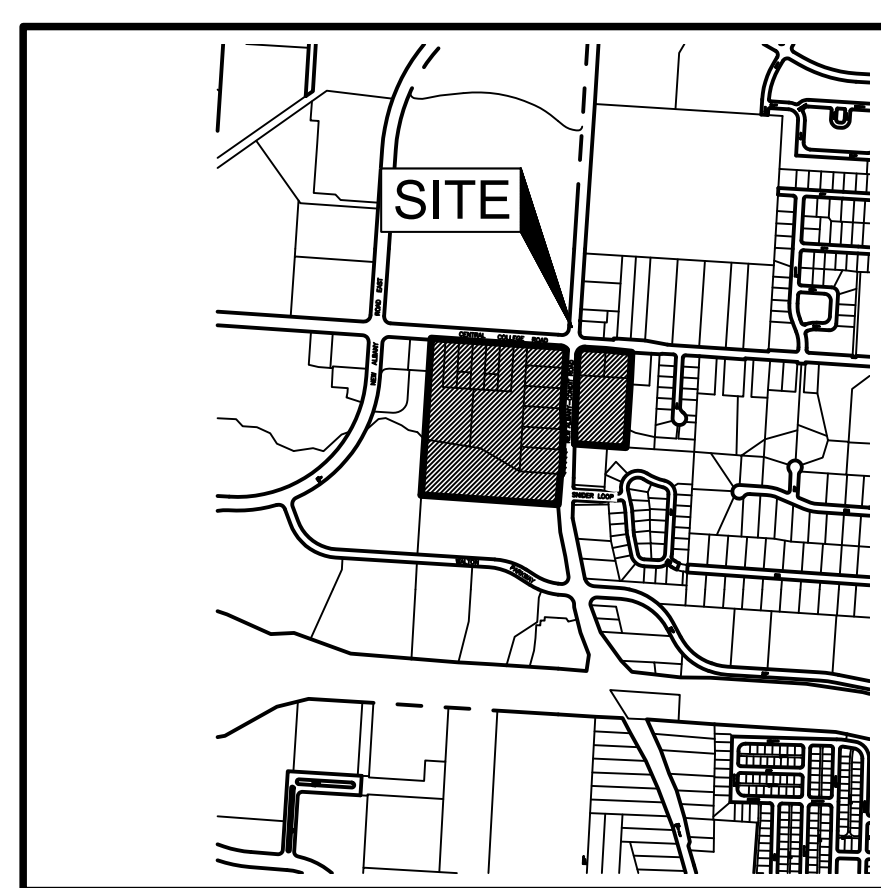
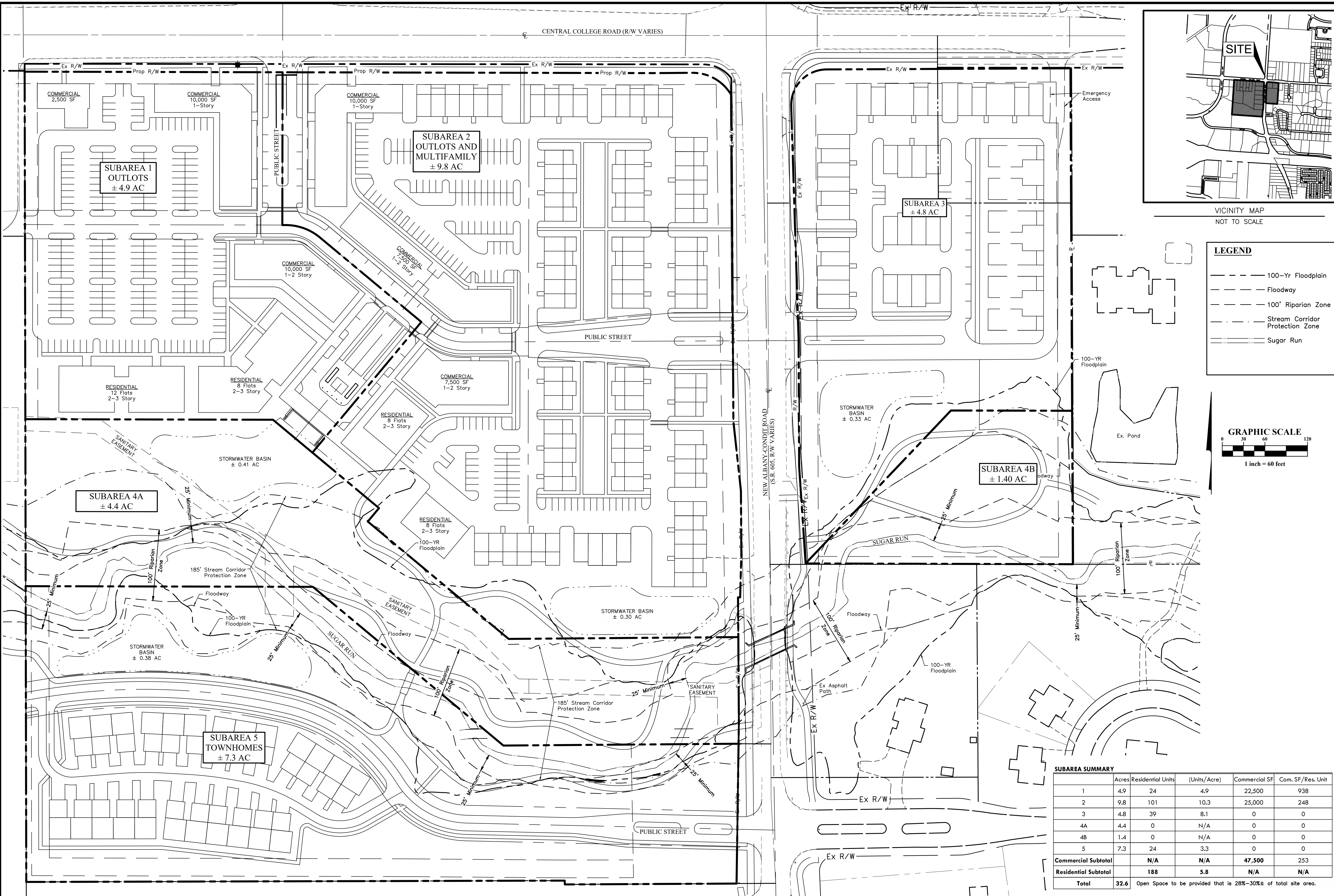
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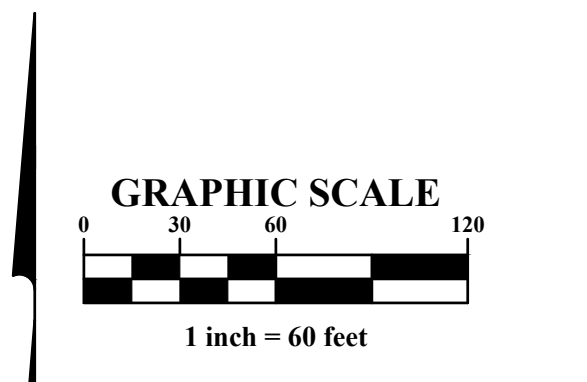
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VICINITY MAP  
NOT TO SCALE

**LEGEND**

- 100-Yr Floodplain
- - - Floodway
- - - 100' Riparian Zone
- - - Stream Corridor Protection Zone
- Sugar Run



**REVISIONS**

MARK	DATE	DESCRIPTION

CITY OF NEW ALBANY, FRANKLIN COUNTY, OHIO  
 Zoning Exhibit  
**THE HAMLET AT SUGAR RUN**



DATE  
October 27, 2022

SCALE  
1" = 60'

JOB NO.  
20200672

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**SUBAREA SUMMARY**

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<b>Total</b>	<b>32.6</b>	Open Space to be provided that is 28%-30%± of total site area.			

**THE HAMLET AT SUGAR RUN ZONING DISTRICT**  
**INFILL PLANNED UNIT DEVELOPMENT (I-PUD) TEXT**

**November 22, 2022**

**I. BACKGROUND AND ORGANIZATION OF THE DISTRICT:**

A. Introduction: The Hamlet at Sugar Run Zoning District (hereinafter, the “Zoning District”) seeks to facilitate the development of a “hamlet” as contemplated in a recent update to the Engage New Albany 2020 Strategic Plan and related amendments to City Code (the “New Hamlet Standards”). The applicant strives to create a truly unique mixed use community combining live, work, and play opportunities in a single, pedestrian-friendly environment. Sugar Run Creek and surrounding open spaces will provide an important core around which the site is planned and around which activity will revolve.

B. Location and Subareas: This Zoning District consists of 32.6+/- acres located to the southwest and southeast of the intersection of Central College Road and New Albany-Condit Road (a.k.a. State Route 605). It includes an assemblage of various township-era single family parcels that historically have been under fractured ownership and have been used as owner-occupied/renter-occupied residences but are now owned or controlled by a single business entity, namely the applicant. The development proposal includes 5 subareas:

1. Subarea 1: Subarea 1 consists of 5.0+/- acres located in the northwestern quadrant of the Zoning District. It is found to the south of and adjacent to Central College Road. Its western boundary is the corporate boundary line separating New Albany and the City of Columbus. This subarea will accommodate restaurant, retail, service-oriented, office, and similar development, as well residential units in limited locations as contemplated later in this text.

2. Subarea 2: Subarea 2 consists of 10.5+/- acres located to the southwest of, and adjacent, to the intersection of Central College Road and New Albany-Condit Road. This subarea will contain residential townhomes, a limited number of residential units to be constructed as “flats”, and related amenities, and will provide flexibility to allow for some commercial uses in the western portion of the subarea.

3. Subarea 3: Subarea 3 consists of 5.25+/- acres and is located to the southeast of and adjacent to the intersection of Central College Road and New Albany-Condit Road. This subarea is to be developed with single family residential and townhomes.

4. Subarea 4: Subarea 4 contains 4.4+/- acres. It is irregularly shaped to include the central portion of the Zoning District with an extension eastward to and across New Albany-Condit Road to encompass Sugar Run Creek. This subarea is intended to be the center of recreational and social activities to serve not only this Zoning District but also residents and visitors from throughout the City. It will contain parkland and open space in close proximity to commercial and residential uses.

5. Subarea 5: Subarea 5 consists of 7.4+/- acres and is the southern portion of the Zoning District. This subarea is intended to provide senior living opportunities with a limited mix of supporting uses, or a limited number of townhomes or single-family homes as provided later in this text. Notwithstanding the foregoing, if a senior living project is developed in Subarea 5, townhomes and/or single-family homes shall not be permitted unless such townhomes/single-family homes are a part of the senior living project's operations.

C. Development Standards: This text is intended to apply development standards and requirements that are particular to this Zoning District. Where it provides standards and/or requirements that conflict with those which are set forth in the Codified Ordinances, the provisions of this text shall govern. Where this text is silent on a particular standard or requirement and the Codified Ordinances address that item or standard, then development and operation of uses in this Zoning District shall comply with the relevant provisions of the Codified Ordinances. Development standards which are particular to each subarea are provided below. In addition, each subarea shall be subject to the generally applicable standards of Section II.

## **II. GENERALLY APPLICABLE STANDARDS:**

A. Use Ratio: Subject to any other applicable density requirements that may otherwise apply to this subarea as set forth in this zoning text, a minimum of 200 square feet of commercial tenant space shall be provided in this Zoning District for every residential unit that is constructed. Senior Living Uses (such term being defined in the standards which are applicable to Subarea 5 below) shall not be deemed to be commercial uses for purposes of meeting the minimum required ratio, nor shall they be deemed to be residential uses for which corresponding commercial development is required. A maximum of 6 residential units per gross acre shall be permitted within this Zoning District (individual subareas may exceed this density provided that the overall Zoning District meets this requirement).

B. Parkland and Open Space; Central Green: A minimum of 25% of the total area of the Zoning District shall be set aside as open space or dedicated parkland. Individual subareas are not required to meet this minimum standard. A central green space (a "Central Green") shall be provided to connect the parkland in Subarea 4 to uses and development within Subarea 1 and Subarea 2 and to provide a central point for recreation, social gatherings, and activity. The Central Green shall be located in Subarea 1 and may also extend into Subarea 2, with its final specifications

and configuration will be determined as part of a final development plan review and approval. With the first final development plan application that is filed in this Zoning District, a parks and open space plan shall be provided for review and approval by the Planning Commission which details acreages and boundaries of parkland and open space throughout the district.

C. Streets and Drives:

1. New Central Street and New Southern Street: A new public street shall be constructed from the western edge of the right-of-way of New Albany-Condit Road to the southern edge of the right-of-way of Central College Road, as generally shown in the preliminary development plan (the “New Central Street”). Additional access may be provided to and from an existing private road located to the west of and adjacent to Subarea 1 (located in the City of Columbus) to provide for a vehicular connection to New Albany Road East, if permission to use the private road is obtained from relevant parties or if said private road ever becomes a public street. The New Central Street shall be stubbed to the western boundary line of Subarea 1 and bollards shall be installed until such time as this connection is permitted.

Another new public street shall be constructed through Subarea 5 generally running east to west from the western edge of the right-of-way of New Albany-Condit Road to the western perimeter boundary line of Subarea 5 (the “New Southern Street”), where it shall be stubbed to connect to future development should it occur on property located to the west in the City of Columbus. The location of the New Southern Street as shown on the preliminary development plan is conceptual, and its final location shall be driven by the actual uses and development patterns within Subarea 5. If requested by the City of New Albany, the property owner shall dedicate additional right-of-way at the intersection of this street with New Albany-Condit Road in order to accommodate the installation of a roundabout. The amount of right-of-way needed at such time shall be determined by the city. The additional right-of-way dedicated to the City (if any) for a roundabout (i.e. over and above the right-of-way required to be dedicated in the absence of a roundabout) shall be credited toward the minimum open space and parkland requirements for the Zoning District.

The final alignments and designs of the New Central Street and the New Southern Street shall be reviewed as part of relevant final development plans and final plats. The New Central Street and the New Southern Street each shall have a minimum right-of-way width of 50 feet and a minimum pavement width of 26 feet measured face-of-curb to face-of-curb. On-street parking shall be permitted on one or both sides of the New Central Street and the New Southern Street except where such parking would interfere with safe access for vehicles or pedestrians, as determined at the time of approval of a final plat. The New Central Street shall be constructed along with the first development that occurs in

Subarea 1 or Subarea 2, and the New Southern Street shall be constructed along with the first development that occurs in Subarea 5.

2. Subarea 3 Entry Street: Vehicular access to and from Subarea 3 shall be provided using a new public street (the “Subarea 3 Entry Street”) which aligns with the intersection of New Albany-Condit Road and the New Central Street. The Subarea 3 Entry Street shall extend to the first intersection with an internal Alley (such term being later defined herein) within this subarea. The Subarea 3 Entry Street shall have a minimum right-of-way width of 50 feet and a minimum pavement width of 26 feet measured face-of-curb to face-of-curb. On-street parking shall be permitted on one or both sides of the Subarea 3 Entry Street except where such parking would interfere with safe access for vehicles or pedestrians, as determined at the time of approval of a final plat. The final alignment and design of the Subarea 3 Entry Street shall be reviewed as part of relevant final development plans and final plats. The Subarea 3 Entry Street shall be constructed along with the first development that occurs in Subarea 3.

3. Alleys; Private Drives: Any vehicular access route within this Zoning District other than the New Central Street, the New Southern Street, the Subarea 3 Entry Road, or a private access drive shall be deemed to be an “Alley”. An Alley is intended to provide access to parking areas and garages and/or to provide other internal routes of circulation where slower vehicle speeds are expected and encouraged as compared to typical public streets. All Alleys shall be public. Any Alley running behind only the rears of buildings shall have a minimum of 14 feet of right-of-way and a minimum of 14 feet of pavement, and shall not be required to include sidewalks, street trees, or tree lawns. An Alley that runs in the front of a building shall have a minimum of 20 feet of right-of-way and shall include a 5-foot wide concrete sidewalk on both sides of the Alley along with street trees either within the right-of-way or in an adjacent yard, with the number of street trees and required spacing to be determined as part of a final development plan that includes the Alley. Any vehicular access route in this Zoning District which is not the New Central Street, the New Southern Street, the Subarea 3 Entry Road, or an Alley shall be deemed to be a “private drive” which shall be owned and/or maintained by the relevant property owner or a property owners’ association. The locations of and specifications for private drives shall be approved as part of final development plans in this Zoning District.

4. Central College Road and New Albany-Condit Road Rights-of-Way. Rights-of-way shall be dedicated to the City for a distance of 50 feet southward from the centerline of Central College Road and for a distance of 40 feet to each side of the centerline of New Albany-Condit Road. Additional right-of-way shall be provided for a future northbound right turn lane on New Albany-Condit Road south of Central College. The final length shall be determined at the time of the FDP, consistent with the approved traffic study.

5. Street Trees. Street trees shall be required on both sides of the New Central Street, the New Southern Street, and the Subarea 3 Entry Road. shall be a minimum of 3 inches in caliper at installation and shall be spaced at an average distance of 30 feet on center. This requirement may be waived in areas where existing vegetation occurs. Notwithstanding the foregoing, tree spacing may deviate from this requirement if necessary or appropriate to provide a desirable streetscape, as approved as part of a final development plan. Street trees shall be shown on a final development plan for review and approval.

6. Rooftop Screening. Complete screening of all roof-top mounted equipment shall be required on all four sides of buildings with materials that are consistent and harmonious with the building's façade and character. Such screening shall be provided in order to screen the equipment from off-site view and to buffer sound generate by such equipment. Solar energy equipment shall be exempt from this requirement to the extent that any such screening would interfere with its functionality.

D. Preliminary Development Plan: The preliminary development plan that accompanies this text is intended, with respect to Subarea 1 and Subarea 5, to demonstrate possible layouts of potential uses, buildings, improvements, and amenities. In these subareas, the market will dictate and influence actual development patterns, which may differ from what is illustrated on the preliminary development plan given. The final development plan review process will provide details for individual developments within these subareas, and shall comply with the standards and requirements of this text unless otherwise approved at that review stage. Plans for Subarea 2, Subarea 3, and Subarea 4 are more refined at the time of the preliminary development plan review and generally provide accurate anticipated plans for development. Notwithstanding the foregoing, given the nature of this Zoning District as a mixed use development, proposed developments may provide some modifications to the preliminary development plans for these subareas at the time of final development plan reviews in order to integrate uses appropriately to further the goals of the development.

**III. SUBAREA 1:** The provisions of this Section III shall apply to Subarea 1.

A. Permitted Uses: The following permitted and conditional uses shall be allowed in Subarea 1:

1. The permitted uses contained in the Codified Ordinances of the City of New Albany, C-3 Business District, Section 1149.02, shall be permitted in Subarea 1. Conditional uses contained in Section 1149.03 of the Codified Ordinances shall be allowed in this subarea. Conditional uses shall comply and shall be reviewed in accordance with Chapter 1115 of the Codified Ordinances. Notwithstanding any of the foregoing, the following uses shall be prohibited in Subarea 1:

a. Funeral services.

- b. Self-service laundries.
- c. Gasoline service stations or retail convenience stores selling gasoline as an ancillary activity.
- d. Motor vehicle sales and service establishments.
- e. Car washes or similar uses.
- f. Carryout food and beverage establishments with drive-through facilities.
- g. Drive-throughs except for those serving banks or other financial institutions, pharmacies, or coffee shops. Drive-throughs shall not be permitted in conjunction with fast-food restaurants. For purposes of this text, a “coffee shop” shall be defined to mean a commercial operation in which coffee beans, espresso or espresso-based products, and/or brewed coffee are sold for public consumption. Pick-up windows and “curb-side pick up” locations shall be permitted. These shall be defined to mean “a dedicated parking spot or window from which food and/or beverages are picked up by a consumer in a motor vehicle who ordered the food and/or beverages from a location off-site.” Pick-up windows, “curb-side pick up” locations or permitted drive-throughs shall be reviewed as conditional uses and shall not be located on the front of a building which faces Central College Road.

2. “Ghost Kitchens”, defined to mean “professional food preparation and cooking facilities set up for the preparation of delivery-only meals. Delivery may be made to visitors of uses, places, or events within Subarea 3 or to locations elsewhere within and/or outside of the Zoning District.” A Ghost Kitchen need not be for a single restaurant and may contain kitchen space and facilities for more than one restaurant brand. It also may be permitted to be operated as part of or in conjunction with other permitted restaurants or permitted food concepts.

3. Special Event Venues: Special event venues such as, but not limited to, wedding venues, banquet facilities, and gathering venues for special occasions.

4. “Markets”, defined to mean “farmers markets, artisan and artist markets, craft markets, flea markets, antique markets, and similar markets. These permitted uses may be located indoors or outdoors. Markets may include Food Trucks, and other temporary outdoor food preparation concessions or providers shall be permitted only as part of a Market and not as stand-alone or independent uses.”

5. Arts. Artisan and artist creative spaces and galleries.



6. Nano Breweries: Nano breweries and beer gardens. A “Nano Brewery” is defined to mean “a brewery with on-site production of no more than 15 barrels per week.”

7. Distilleries: Distilleries. A “Distillery” is defined to mean “a small facility, consisting of no more than 5,000 gross square feet, from which liquor is manufactured on a limited basis for on-site or off-premises consumption.”

8. “Food Trucks”, defined to mean “licensed and operable motor vehicles or trailers with a kitchen where food is prepared for purchase by walk-up customers.” Food Trucks shall be subject to the following operational requirements:

a. Distance From Central Green: Food Trucks shall be located within the Central Green or no further than 100 feet from a perimeter boundary of the Central Green.

b. Power Source: Food Trucks shall be powered using a permanent electric source provided within the Zoning District. Outdoor generators shall not be permitted to be used to power Food Trucks.

c. Signs: Signage shall be permitted on the exteriors of Food Trucks without a permit being necessary if (a) it is painted on or permanently affixed to the Food Truck, or (b) consists of a menu or advertisement meant to provide information to on-site customers.

d. Trash Receptacles: At least one trash can/receptacle shall be provided near each food truck in a location that is not visible from adjacent public streets. No liquid waste or grease shall be disposed into sanitary sewers or storm drains.

9. “Seasonal Dining Spaces”, defined to mean “dining and/or beverage consumption spaces located outside of a permanent structure which provide for outdoor seating opportunities using inflatable bubbles or other means of shelter or separation and which utilize portable heating devices, as necessary.”

10. Limited Multi-Family: Multi-family residential units configured as “flats”, but only if a building containing such units fronts on the Central Green or on Sugar Run Creek.

B. Lot and Setback Commitments:

1. Application of C-3 Development Standards: Except as otherwise expressly set forth in this subsection II.B, the development standards contained in Codified Ordinances Section 1149.04 shall apply to this subarea.

2. Limitation on Individual Users: No single use or user shall occupy more than 10,000 square feet of gross floor area within a building.

3. Central College Road: There shall be a minimum pavement setback and a minimum building setback of 65 feet as measured from the centerline of Central College Road as it exists on the date that this text becomes legally effective.

4. Western Perimeter Boundary: A minimum pavement setback of 5 feet and a minimum building setback of 20 feet from the western perimeter boundary line.

5. Interior Boundaries: Setbacks from all internal property boundaries between adjoining parcels within this subarea or from shared boundary lines between subareas in this Zoning District shall be zero feet for pavement and buildings.

6. Lot Coverage: The maximum lot coverage shall be 90%. Lot coverage shall be defined as the area covered by buildings and impervious surfaces. Lot coverage shall be measured across the entire subarea, meaning that individual parcels within this subarea may exceed the maximum lot coverage percentage as long as the entire subarea does not exceed the maximum.

C. Access and Parking:

1. Vehicular Access: Vehicular access to and from Subarea 1 shall be provided from the New Central Street, which shall provide one full movement access point on each of Central College Road and New Albany-Condit Road.

2. Vehicular Parking: Given the integrated development program for this Zoning District, the applicant shall be required to submit a comprehensive shared parking model as part of the review and approval of the first final development plan in any of Subarea 1, Subarea 2, or Subarea 4. Parking to accommodate uses in Subarea 4 shall be provided in Subarea 1. The applicant shall provide an independent demand study and shared parking analysis that analyzes hourly and peak demands for commercial, office, parkland, and residential uses based on shared parking principles and ratios. Parking shall be provided in accordance with the parking demand study and shared parking analysis that is approved as part of one or more final development plans. If the mixture of uses in a subarea, where the parking model is required, substantially changes the model must be resubmitted to staff for review.

3. Bicycle Parking: Bicycle parking shall be provided at the rate of one space per 2,000 square feet of gross building floor area located in this subarea.

D. Architectural Standards:

1. Application of DGRs: Except as otherwise set forth in this text, the City's Design Guidelines and Requirements (DGRs) shall apply to this subarea, provided, however, that deviations from them shall be permitted if approved as part of a final development plan application.

2. Design Intent: The designs of buildings in this subarea shall be derived from examples of traditional American architecture, and/or vernacular architecture, and/or any complimentary style of architecture thereof taking into account the nature of the proposed use and the scale of the building. Buildings shall be designed to be seen from 360 degrees, where all four elevations shall meet a consistent level of design and design elements. Creative architectural design and character shall be supported when provided to improve the sustainability and reduce the environmental impact of a development proposal. Detailed architectural elevations shall be submitted for approval as part of a final development plan application.

3. Height: The maximum building height (as measured per the Codified Ordinances) shall not exceed (a) 40 feet if any portion of the building is located within 250 feet of the southern right-of-way of Central College Road, or (b) 50 feet in other locations. Architectural elements including, but not limited to, monitors, chimneys, and cupolas may exceed the height limitations of this text as permitted by the Codified Ordinances.

4. Features: The following architectural features shall be required and shall be scaled according to the size of the individual tenant. These features may be scaled to a group of smaller side-by-side tenants when architecturally appropriate:

a. Roofs may be sloped or flat;

b. Complete screening of all roof-mounted equipment shall be required on all four sides of buildings with materials that are consistent and harmonious with the building's façade and character. Such screening shall be provided in order to screen the equipment from off-site view and to buffer sound generated by such equipment; and

c. Complete screening of all ground-mounted mechanical and other equipment at ground level by walls, fencing, or landscaping that is consistent and harmonious with the materials on and character of the nearest primary building shall be required.

5. Exterior Elevations: All exterior elevations of each building shall be required to have the following characteristics:

a. Consistency of Finish: The palette of exterior finishes and color shall be cohesive and harmonious with the materials on and character on all sides of a building. Unfinished rear facades of buildings shall be prohibited.

b. Exterior Wall Finish: Brick, brick veneer, metal, cementitious products such as Hardiplank or its equivalent, wood, EIFS and composite material may be used as exterior wall finish materials where appropriate. Exterior wall finish materials must be used to complete massing elements. The application of brick or brick veneer to a single building façade is prohibited. Spandrel glass shall be permitted on the rear facades of buildings, while reflective or mirrored glass shall be prohibited.

c. Roof Materials: Acceptable materials for sloped roofs include dimensional asphalt shingles, natural and synthetic slate, cedar shake, and standing seam metal.

d. Fascias: When applicable, roof fascias shall be proportioned to the scale of the roof element.

e. Gutters and Downspouts: Sloped roofs shall be required to employ gutters and downspouts for drainage. All gutters shall be of a metal type and shall be painted to match fascias.

f. Exterior Doors: All exterior doors other than doors whose primary purpose is for the entry or exit of customers shall be made of a heavy gauge metal.

g. Prefabricated Buildings: Prefabricated metal buildings, untreated masonry block structures, and buildings featuring an exterior finish entirely of glass are prohibited.

6. Operable Doors: The requirement in the DGRs that an operable and active front door is to be provided along a public street shall apply along Central College Road only for multi-tenant buildings. Single-tenant buildings shall be exempt from this requirement provided that such buildings have a pedestrian entrance on one or both sides and further provided that the façade of a building facing Central College Road instead shall include an architectural feature or other design element that encourages pedestrian activity.

**IV. SUBAREA 2**: The provisions of this Section IV shall apply to Subarea 2.

A. Permitted Uses: Permitted uses in this subarea shall include:

1. Single-family attached or detached townhome residential units. A “detached townhome” shall be defined to mean “a residential unit that is designed in the same manner as an attached townhome product but which is detached from other townhomes but with a relatively small setback from other townhome units.”

2. Single-family detached homes.

3. Home occupations, subject to the regulations of Codified Ordinances Section 1165.07.

4. Uses which are permitted uses or conditional uses in Subarea 1 (provided that such conditional uses are reviewed and approved in accordance with Chapter 1115 of the Codified Ordinances), but only within the area that is delineated on the accompanying preliminary development plan as the “Transition Zone” (the “Transition Zone”). Food Trucks also shall be permitted to be operated within the Transition Zone. Uses that are permitted or conditional pursuant to this subsection shall be subject to the same development standards as apply to them in Subarea 1.

5. Model homes shall be permitted in this subarea to market permitted residential units in Subarea 1 and in Subarea 3. The model home shall be subject to the review and approval of the Planning Commission in accordance with Section 1133.04(d) of the Codified Ordinances. Notwithstanding anything to the contrary in the City’s Codified Ordinances, upon approval of a final plat by the City the developer may commence construction of the building containing the model home. Construction of the model home may occur in advance of, or in conjunction with, installation of public infrastructure for the subdivision. No occupancy or use of the model home shall be permitted until all relevant public infrastructure improvements serving the home are acted by the City.

B. Density, Unit, and Setback Requirements – Residential: The standards contained in this Section IV.B shall apply to townhome development:

1. Types of Units: Dwellings shall consist of attached or detached townhome units, attached units configured as “flats”, and/or detached single-family homes, provided that that no more than 20% of the homes in this subarea shall be detached single-family homes and no more than 20% of the units shall be “flats”. Buildings located along the Central College Road or New Albany-Condit Road shall front on those streets and shall consist of only attached townhomes.

2. Lot Size: There shall be no minimum lot width or size in this subarea. Townhomes may be located on individual fee simple lots or may be subject to a condominium form of ownership.

3. Lot Coverage. The maximum lot coverage shall be 90%. Lot coverage shall be defined as the area covered by buildings and impervious surfaces. Lot coverage shall

be measured across the entire subarea, meaning that individual parcels within this subarea may exceed the maximum lot coverage percentage as long as the entire subarea does not exceed the maximum.

4. Setbacks. The following setback requirements shall apply to this subarea:

a. Central College Road. There shall be a minimum pavement setback and a minimum building setback of 65 feet from the centerline of Central College Road as it exists on the date that this text becomes legally effective.

b. New Albany-Condit Road. There shall be a minimum pavement setback and a minimum building setback of 65 feet from the centerline of New Albany-Condit Road as it exists on the date that this text becomes legally effective.

c. Along New Street. There shall be a maximum building setback of 5 feet from the right-of-way of the New Street in order to ensure an urban-feeling edge of buildings along that street.

d. Front Yards. There shall be a zero front and rear yard setback requirement for all residential units, provided that front yard setbacks along public streets shall be provided as contemplated above.

d. Minimum Separation. The minimum separation between homes or buildings containing attached townhomes shall be 10 feet. There shall be a zero setback requirement between individual attached townhome units in a building. There shall be a minimum building separation of 5 feet between detached townhome units, and 10 feet between a detached townhome and another type of unit. There shall be a zero front yard setback requirement for all units.

C. Access and Parking:

1. Vehicular Access: Vehicular access to and from Subarea 2 shall be provided using a combination of the New Street and a private drive system within the subarea.

2. Off-Street Parking: A minimum two-car garage shall be provided within each townhome unit. A paved parking lot shall be provided in this subarea which shall provide for shared parking opportunities among residents and tenants/users of subareas in this Zoning District. Given the integrated development program for this Zoning District, the applicant shall be required to submit a comprehensive shared parking model as part of the review and approval of the first final development plan in any of Subarea 1, Subarea 2, or Subarea 4. Parking to accommodate uses in Subarea 4 shall be provided in Subarea 1. The applicant shall provide an independent demand study and shared parking analysis that analyzes hourly and peak demands for commercial, office, parkland, and residential uses based on shared parking principles and ratios. Parking shall be provided in accordance

with the parking demand study and shared parking analysis that is approved as part of one or more final development plans.

3. Parking Plan: Given the integrated development program for this Zoning District, the applicant shall be required to submit a comprehensive shared parking model as part of the review and approval of the first final development plan in this subarea or in Subareas 1 or 4. The applicant shall provide an independent demand study and shared parking analysis that analyzes hourly and peak demands for commercial, office, and residential uses based on shared parking principles and ratios. If the mixture of uses in a subarea, where the parking model is required, substantially changes the model must be resubmitted to staff for review.

4. Sidewalks: A public sidewalk shall be located within the right-of-way on both sides of the New Central Street. Public sidewalks shall be a minimum of 5 feet in width and private sidewalks shall be a minimum of 4 feet in width. All sidewalks shall be constructed of concrete.

D. Landscaping Plan: A landscaping plan shall be provided with a final development plan application for this subarea for review and approval by the City Landscape Architect. The landscaping plan shall provide specifications for required plantings on individual parcels and reserve areas and shall provide detailed requirements for landscaping along Central College Road and New Albany-Condit Road. The landscaping treatment shall be consistent along both sides of New Albany-Condit Road.

E. Architectural Standards:

1. Application of DGRs: Except as otherwise set forth in this text, the City's Design Guidelines and Requirements (DGRs) shall apply to this subarea, provided, however, that deviations from them shall be permitted if approved as part of a final development plan application.

2. Design Intent: The designs of buildings in this subarea shall be derived from examples of traditional American architecture, vernacular architecture, and/or any complimentary style of architecture. The intent for the character of the building designs in this subarea is to use Richmond Square in the City's Village Center as inspiration, although actual designs of buildings are likely to be designed to provide a distinct product. Examples of general design intent for townhomes are included along with the preliminary development plan, but specific designs shall be presented for approval as part of a final development plan. Buildings shall be designed to be seen from 360 degrees, where all four elevations shall meet a consistent level of design and design elements.

3. Maximum Building Height: The maximum height of buildings in this subarea shall be 40 feet, except that buildings within the Transition Zone and greater than 250 feet from the southern right-of-way of Central College Road shall have a maximum height of 50 feet.

4. Exterior Materials:

a. Appearance: Detailed architectural elevations shall be submitted for approval by the Planning Commission as part of a final development plan application.

b. Wall Finish Materials: Brick, brick veneer, cementitious/composite siding or equivalent, shall be permitted as primary and secondary exterior façade materials as well as for trim and accent elements. EIFS, wood, and aluminum also shall be permitted as trim or accent elements. The use of vinyl siding shall be prohibited. Exterior wall finish materials must be used to complete massing elements. Exposed foundation walls shall be prohibited.

c. Four-Sided Architecture: Four-sided architecture shall be required on all buildings, meaning that there shall be a cohesive use of design elements on all sides of the structure in a manner that creates continuity and balance among all facades.

5. Roofs: Roofs shall be sloped.

6. Garages:

a. Locations: Garages shall be attached and shall be located at the rear of each residential unit.

b. Designs: Individual bay doors or double wide garage doors that have the appearance of individual bay doors when closed shall be required. All garage doors shall contain decorative features and shall be of a color and style that is consistent with or complimentary to the architecture of the home. All garage doors shall be solid paneled but may have windows provided that the interior of the garage cannot be viewed at a height of 6 feet when standing in the middle of the adjacent private drive. If a garage door faces an Alley, it shall be exempt from the maximum width requirements contained in the DGRs.

c. Pedestrian Doors: All pedestrian garage doors shall be solid paneled.

F. Miscellaneous Standards:



1. Swimming Pools/Spas: Swimming pools shall be prohibited in this subarea. Spas shall be permitted in the rear yard but must be completely screened from adjoining properties and shall have a fence or building façade around it on all four sides in accordance with relevant provisions of the Codified Ordinances. Spas shall be flush with the top of surrounding paving, decking, or similar surfaces and shall have a minimum setback of 5 feet from any property line..

2. Storage:

a. Storage Sheds: Storage sheds shall be prohibited.

b. Equipment Storage: Storage of all maintenance equipment shall be within garages or otherwise screened from off-site view. Such items should not be visible from streets, common open spaces, or adjacent lots or developments.

c. Vehicle Storage: All campers, off-road vehicles, box trucks, and boats, must be parked within an enclosed garage. No undrivable vehicles or parts of vehicles may be stored outside.

3. Mailboxes: Due to recently enacted federal postal rules and regulations, individual mailboxes are no longer permitted to be located to the front of each home. Instead, cluster mailbox units shall be utilized at a single location. This location and the design of the cluster mailbox units shall be reviewed and approved as part of a final development plan for this subarea.

4. Garbage Cans: All garbage cans and other waste containers shall be kept in garages or within approved screened areas.

**V. SUBAREA 3**: The provisions of this Section V shall apply to Subarea 3.

A. Permitted Uses: Permitted uses in this subarea shall be as follows:

1. Single-family attached townhome residences.

2. Single-family detached residences.

3. Model homes shall be permitted in this subarea to market permitted residential units in Subarea 1 and in Subarea 3. Model homes shall be subject to the review and approval of the Planning Commission in accordance with Section 1133.04(d) of the Codified Ordinances. Notwithstanding anything to the contrary in the City's Codified Ordinances, upon approval of a final plat by the City the developer may commence construction of the building containing the model home. Construction of the model home may occur in advance of, or in conjunction with, installation of public infrastructure for the subdivision. No occupancy or use of the model home shall be permitted until all relevant public infrastructure improvements serving the home are acted by the City.

4. Home occupations, subject to the regulations of Codified Ordinances Section 1165.07.

B. Number of Units: There shall be a maximum of 45 homes in this subarea, with a maximum of 10 of these homes to be single-family detached dwelling units. Single-family detached dwelling units shall not front or back onto New Albany-Condit Road or Central College Road. Attached townhome dwelling units may front on these streets and shall not back onto them.

1. Lot Size: There shall be no minimum lot width or size in this subarea. Townhomes may be located on individual fee simple lots or may be subject to a condominium form of ownership.

2. Lot Coverage. The maximum lot coverage shall be 75%. Lot coverage shall be defined as the area covered by buildings and impervious surfaces. Lot coverage shall be measured across the entire subarea, meaning that individual parcels within this subarea may exceed the maximum lot coverage percentage as long as the entire subarea does not exceed the maximum.

3. Setbacks. The following setback requirements shall apply to this subarea:

a. Central College Road. There shall be a minimum pavement setback and a minimum building setback of 65 feet from the centerline of Central College Road as it exists on the date that this text becomes legally effective.

b. New Albany-Condit Road. There shall be a minimum pavement setback and a minimum building setback of 65 feet from the centerline of New Albany-Condit Road as it exists on the date that this text becomes legally effective.

c. Along Primary Entry Road. There shall be a maximum building setback of 5 feet from the edge of pavement of the Primary Entry Road (such term being later defined herein) to ensure an urban-feeling edge of buildings along that street..

d. Minimum Separation: The minimum separation between buildings shall be 10 feet. There shall be a zero setback requirement between individual townhome units in a building.

e. Front Yards. There shall be a zero front and rear yard setback requirement for all residential units, provided that front yard setbacks along public streets shall be provided as contemplated above.

C. Access and Parking:

1. Vehicular Access: Vehicular access to and from Subarea 3 shall be provided using the Subarea 3 Entry Street, which shall align with the intersection of New Albany-Condit Road and the New Street.

2. Off-Street Parking: A minimum two-car garage shall be provided within each residential unit. Parking may be provided on private drives.

3. Sidewalks: A public sidewalk shall be located within the right-of-way on both sides of the Subarea 3 Entry Street. Public sidewalks shall be a minimum of 5 feet in width and private sidewalks shall be a minimum of 4 feet in width. All sidewalks shall be constructed of concrete.

D. Landscaping Plan: A landscaping plan shall be provided with a final development plan application for this subarea for review and approval by the Planning Commission. The landscaping plan shall provide specifications for required plantings on individual parcels and reserve areas and shall provide detailed requirements for landscaping along Central College Road and New Albany-Condit Road. The landscaping treatment shall be consistent along both sides of New Albany-Condit Road.

E. Architectural Standards:

1. Application of DGRs: Except as otherwise set forth in this text, the City's Design Guidelines and Requirements (DGRs) shall apply to this subarea, provided, however, that deviations from them shall be permitted if approved as part of a final development plan application.

2. Design Intent: The designs of buildings in this subarea shall be derived from examples of traditional American architecture, vernacular architecture, and/or any complimentary style of architecture. The intent for the character of the building designs in this subarea is to use Richmond Square in the City's Village Center as inspiration, although actual designs of buildings are likely to be designed to provide a distinct product. Examples of general design intent for townhomes are included along with the preliminary development plan, but specific designs shall be presented for approval as part of a final development plan. Buildings shall be designed to be seen from 360 degrees, where all four elevations shall meet a consistent level of design and design elements.

3. Maximum Building Height: The maximum height of buildings in this subarea shall be 40 feet.

4. Exterior Materials:

a. Appearance: Detailed architectural elevations shall be submitted for approval by the Planning Commission as part of a final development plan application.

b. Wall Finish Materials: Brick, brick veneer, cementitious/composite siding or equivalent, shall be permitted as primary and secondary exterior façade materials as well as for trim and accent elements. EIFS, wood, and aluminum also shall be permitted as trim or accent elements. The use of vinyl siding shall be prohibited. Exterior wall finish materials must be used to complete massing elements. Exposed foundation walls shall be prohibited.

c. Four-Sided Architecture: Four-sided architecture shall be required on all buildings, meaning that there shall be a cohesive use of design elements on all sides of the structure in a manner that creates continuity and balance among all facades.

5. Roofs: Roofs shall be sloped.

F. Garages:

1. Locations: Garages shall be attached and shall be located to the rear of each residential unit.

2. Designs: Individual bay doors or double wide garage doors that have the appearance of individual bay doors when closed shall be required. All garage doors shall contain decorative features and shall be of a color and style that is consistent with or complimentary to the architecture of the home. All garage doors shall be solid paneled but may have windows provided that the interior of the garage cannot be viewed at a height of 6 feet when standing in the middle of the adjacent private drive. If a garage door faces an Alley, it shall be exempt from the maximum width requirements contained in the DGRs.

3. Pedestrian Doors: All pedestrian garage doors shall be solid paneled.

G. Miscellaneous Standards:

1. Swimming Pools/Spas: Swimming pools shall be prohibited in this subarea. Spas shall be permitted in the rear yard but must be completely screened from adjoining properties and shall have a fence or building façade around it on all four sides in accordance with relevant provisions of the Codified Ordinances. Spas shall be flush with the top of surrounding paving, decking, or similar surfaces and shall have a minimum setback of 5 feet from any property line...

2. Storage:

a. Storage Sheds: Storage sheds shall be prohibited.

b. Equipment Storage: Storage of all maintenance equipment shall be within garages or otherwise screened from off-site view. Such items should not be visible from streets, common open spaces, or adjacent lots or developments.

c. Vehicle Storage: All campers, off-road vehicles, box trucks, and boats, must be parked within an enclosed garage. No undrivable vehicles or parts of vehicles may be stored outside.

3. Mailboxes: Due to recently enacted federal postal rules and regulations, individual mailboxes are no longer permitted to be located to the front of each home. Instead, cluster mailbox units shall be utilized at a single location. This location and the design of the cluster mailbox units shall be reviewed and approved as part of a final development plan for this subarea.

4. Garbage Cans: All garbage cans and other waste containers shall be kept in garages or within approved screened areas.

**VI. SUBAREA 4**: The provisions of this Section VI shall apply to Subarea 4.

A. Intent: Subarea 4 is intended to be the core of this Zoning District and will serve as an organizing element which is an amenity for the hamlet and an attraction for the larger New Albany community. Using the Sugar Run Creek as the Zoning District's backbone, the goal will be to capitalize on its prominence by creating associated green space and leisure trails. Subarea 4 will provide an area serving recreational, entertainment, and social opportunities.

B. Permitted uses in this subarea shall include:

1. Parks/Open Space: Parks, open space, dog parks, public restrooms, and other customary amenities and activities related thereto.

2. Recreation: Athletic fields, athletic courts, playgrounds, and similar uses.

3. “Outdoor entertainment stages”, defined to mean stages that are covered or uncovered but not completely enclosed and from which concerts, theatre productions, and other artistic performances are given.

4. “Outdoor Markets”, defined to mean Markets (as described in the standards for Subarea 1 above) which are located in venues that are not completely enclosed within a structure.

5. Food Trucks, subject to the same development standards as apply to the operation of this uses in Subarea 1, except relating to the maximum distance requirement from the perimeter boundary of the Central Green.

C. Operational Requirements and Limitations: Given the unique nature of certain permitted uses in this subarea, certain operational requirements and limitations are being provided in order to ensure their appropriate operations, if such uses are operated in Subarea 4:

1. Recreational Uses: Athletic fields, athletic courts, playgrounds, and similar uses may be lighted, provided that such lighting is turned off by 10:00 P.M.

2. Outdoor Entertainment Stages: Performances from Outdoor Entertainment Stages shall not begin before 9:00 A.M. and shall be completed by no later than 10:00 P.M., except that on Memorial Day, Independence Day, and Labor Day (and their associated weekends) performances shall be completed by 11:00 P.M.

3. Outdoor Markets: Outdoor Markets shall be permitted to be operated for no more than 96 hours in a row and shall be permitted to be operational only between 9:00 A.M. and 10:00 P.M. Permanently located restaurants and other food service providers shall be exempt from this provision.

D. Minimum Setbacks:

1. New Albany-Condit Road: There shall be a minimum pavement and building setback of 65 feet from the centerline of New Albany-Condit Road as it exists on the date that this text becomes legally effective.

2. Stream Corridor Protection Zone: A “Stream Corridor Protection Zone” shall be provided along Sugar Run Creek for a minimum width of 100 feet, provided that a minimum of 25 feet shall be provided to each side of the centerline of the creek. The amount of the Stream Corridor Protection Zone that is located on either side of the creek may vary, provided that the foregoing minimums are met. Within the Stream Corridor Protection Zone, buildings and structures shall be prohibited. Pavement shall be prohibited within the Stream Corridor Protection Zone except for leisure paths. Benches, trash receptacles, and pet waste stations shall be permitted within the Stream Corridor Protection Zone in locations which are approved as part of a final development plan. The native understory within this area shall be maintained whenever possible, provided, however, that the removal of any invasive species shall be permitted.

3. Perimeter Boundaries: The minimum pavement setback shall be 0 feet and the minimum building setback shall be 10 feet from the northern boundary line of this subarea. There shall be a minimum pavement and building setback of 25 feet from the western and southern boundaries of this subarea.

4. Interior Parcel Lines: There shall be a zero pavement and building setback from all interior parcel lines within this subarea, provided that all applicable building code requirements are met.

E. Access and Parking:

1. Vehicular Access: There shall be no direct vehicular access to and from Subarea 4. One or more maintenance access and/or service drives may be installed to serve this subarea. An emergency access drive must be installed to serve the subarea from Central College Road. The final locations of such access drives shall be determined as part of a final development plan application within this subarea.

2. Parking Plan: Given the integrated development program for this Zoning District, the applicant shall be required to submit a comprehensive shared parking model as part of the review and approval of the first final development plan in any of Subarea 1, Subarea 2, or Subarea 4. The applicant shall provide an independent demand study and shared parking analysis that analyzes hourly and peak demands for commercial, office, parkland, and residential uses based on shared parking principles and ratios. Parking shall be provided in accordance with the parking demand study and shared parking analysis that is approved as part of one or more final development plans. If the mixture of uses in a subarea, where the parking model is required, substantially changes the model must be resubmitted to staff for review.

3. Off-Street Parking: Parking shall be provided in Subarea 1 to serve the permitted uses in this subarea as well as parking for uses in Subarea 1. Notwithstanding the foregoing, given the integrated development program for this zoning district, the applicant and the City will agree to a comprehensive shared parking model as part of the review and approval of the first final development plan in this subarea or in Subarea 1. The applicant will provide an independent demand study and shared parking analysis that analyzes peak commercial, office and residential uses based on shared parking principles and ratios.

F. Landscaping Plan: A landscaping plan shall be provided with a final development plan application for this subarea for review and approval by the Planning Commission. The landscaping plan shall provide specifications for required plantings on individual parcels and reserve areas and shall provide detailed requirements for screening, buffering, and/or landscaping along New Albany-Condit Road.

**VII. SUBAREA 5:** The provisions of this Section VII shall apply to Subarea 5.

A. Permitted Uses: Permitted uses in this subarea are set forth in this Section VII.A. Only one of the permitted uses shall be permitted to developed and operated in this subarea, it being the intent that no two permitted uses will be operated at the same time. An applicant for a final development plan shall elect to develop the subarea with one of the permitted uses listed in Sections VII.A.1 through VII.A.3 below, and once a final development plan is approved for the selected use and development commences in accordance with he approved final development plan, the permitted uses which were not

included in the approved final development plan shall not be allowed to be developed or operated in the subarea. For purposes of this limitation, the uses in Sections VII.A1 and VII.A.2 shall be deemed to be a single use.

1. Senior Living Uses: “Senior Living Uses” shall be defined to mean the development and operation of Assisted Living Facilities, Memory Care Facilities and Skilled Nursing Facilities, either individually or in some combination thereof, as well as any Independent Living Facility that is a component of a senior living community that includes an Assisted Living Facility. For purposes of this text, certain terms shall have the meanings provided below:

a. “Assisted Living Facilities” shall be defined to mean “facilities providing living accommodations for senior citizens, the elderly, and/or individuals with disabilities residing in individual units within a building that includes multiple living units and also provides assistance from on-site staff with respect to some activities of daily living such as, but not limited to, hygiene, dressing, provision of meals, dispensing and administration of medication, and mobility assistance.” Individual living units in such facilities may provide a living room, a kitchen, and one or more studio or self-contained bedrooms. These facilities may provide for common dining areas and meal preparation by on-site staff.

b. “Memory Care Facilities” shall be defined to mean “facilities providing for care of individuals living on-site who suffer from dementia or similar memory impairment conditions.” These facilities may include on-site nursing staff, physicians and caregivers. These types of facilities may have special security measures in place for the protection and safety of residents. Memory Care Facilities will have some elements which are similar to Assisted Living Facilities but are distinguished from them based on the nature of residents’ health and the elevated level of care that is necessary to be provided.

c. “Skilled Nursing Facilities” shall be defined to mean “facilities in a more institutional setting than Assisted Living or Independent Living Facilities, which require government-issued licenses in order to operate, and that customarily provide high and skilled levels of care due to residents’ complex medical problems, restrictions on mobility, and infirmities.” In these facilities, many residents generally require assistance with movement from one place to another, bathing, and other basic activities of daily living.

d. “Independent Living Facilities” shall be defined to mean “attached or detached residential units for senior residents aged 55 and over who largely have the ability to take care of their own basic needs.” These facilities have residents who are generally more active than in other senior living environments.



2. Senior Living Supporting Uses: Any uses ancillary to the operation of any Senior Living Use (“Senior Living Supporting Uses”) shall be permitted in association with the operation of a permitted Senior Living Use, provided that such uses are intended primarily for usage by residents and their families and guests and shall not be marketed (but will be open) to the general public. Senior Living Supporting Uses include, but are not limited to:

- a. Retail stores primarily engaged in selling merchandise for personal or household consumption;
- b. Cafes and restaurants with no drive-throughs;
- c. Coffee shops;
- d. Beauty salons, barber shops, nail salons, and spas;
- e. Pools;
- f. Theaters;
- g. Fitness centers;
- h. Gymnasiums;
- i. Areas of worship; and
- j. Medical service facilities.

3. Townhomes: Single-family attached townhome residential units in buildings containing no less than three units. Townhomes shall be permitted only if no Senior Living Uses and/or Senior Living Supporting Uses are developed or operated in Subarea 5. A maximum of 35 townhome units shall be permitted in this subarea. Home occupations shall be permitted in association with townhome units, subject to the regulations of Codified Ordinances Section 1165.07.

4. Single-Family Detached Residences: Single-family attached residences, but only if no Senior Living Uses or Senior Living Supporting Uses are developed or operated in Subarea 5. A maximum of 25 single-family detached units shall be permitted in this subarea. Home occupations shall be permitted in association with townhome units, subject to the regulations of Codified Ordinances Section 1165.07.

B. Conditional Uses: The following uses shall be conditional uses in this subarea, provided that the conditional uses comply with and are reviewed in accordance with Chapter 1115 of the Codified Ordinances:

1. Administrative, business, professional, and medical offices as provided in Codified Ordinances Section 1143.02(a), (b), and (c); and
2. Daycares and preschools.

C. Design Intent: The preliminary development plan for this subarea is intended to illustrate one site plan that conforms to the requirements of this zoning text. The final development plan for this subarea may differ from the preliminary development plan. Such differences shall be deemed to be permissible provided that the final development plan meets the requirements of this zoning text, subject to any waivers that are approved by the Planning Commission as part of a final development plan.

D. Lot and Setback Commitments:

1. Lot Coverage: The maximum lot coverage shall be 70%. Lot coverage shall be defined as the area covered by buildings and impervious surfaces. Lot coverage shall be measured across the entire subarea, meaning that individual parcels within this subarea may exceed the maximum lot coverage percentage as long as the entire subarea does not exceed the maximum.

2. Setbacks:

a. New Albany-Condit Road: There shall be a minimum pavement and building setback of 200 feet from the centerline of State Route 605/New Albany-Condit Road as it exists on the effective date of this text.

b. New Southern Street: There shall be a minimum building setback of 15 feet from the right-of-way of the New Southern Street.

c. Western Perimeter Boundary: There shall be a minimum pavement setback of 10 feet and a minimum building setback of 20 feet from the western perimeter boundary of this subarea.

d. Northern Perimeter Boundary: There shall be a minimum pavement setback of 0 feet and a minimum building setback of 20 feet from the northern perimeter boundary of this subarea.

e. Southern Perimeter Boundary: There shall be a minimum pavement setback of 10 feet and a minimum building setback of 20 feet from the southern perimeter boundary line of this subarea.

f. Interior Parcel Lines: There shall be a zero minimum setback required for buildings and pavement from interior parcel lines within this subarea.

g. Townhomes: Setback and building separation requirements for townhome units and buildings shall be the same as apply to such units and buildings for Subarea 2.

h. Single-Family Detached Units: Single-family detached units shall have a minimum side yard setback of 5 feet, a minimum front yard setback of 10 feet, and a minimum rear yard setback of 10 feet.

E. Access and Parking:

1. Vehicular Access: Vehicular access to and from Subarea 5 shall be provided from one full movement access point on New Albany-Condit Road at a new intersection with New Southern Street

2. Public Sidewalks: A public sidewalk shall be provided along one both sides of the new public street to be constructed in this subarea. This sidewalk shall be 5 feet in width and shall be constructed of concrete.

3. Vehicular Parking: Vehicular parking shall be provided at the following minimum rates for each permitted use type:

a. Assisted Living Facilities (including those that contain an Independent Living Facility component): 1 space per employee on the largest shift, plus 0.5 spaces per residential unit in the facility.

b. Memory Care Facilities: 1 space per employee on the largest shift, plus one space per 10 beds in the facility.

c. Skilled Nursing Facilities: 1 space per employee on the largest shift, plus one space per 10 beds in the facility.

d. Senior Living Supporting Uses: No additional parking required.

e. On-Street Parking: On-street parking shall be permitted along the new public street in this subarea in accordance with the Codified Ordinances. Each on-street parking space on this new street may be counted as one-half of one space for purposes of determining if minimum parking for uses in the subarea are being met.

f. Townhomes and Single-Family: Off-street parking for townhomes and single-family detached homes shall be provided at the minimum rate of three parking spaces per unit. At least two parking spaces shall be provided within an enclosed garage. Additional required off-street parking spaces for townhomes may be provided on driveways or in shared parking areas. Additional required off-street parking spaces for single-family detached homes shall be provided on driveways.

F. Architectural Standards:

1. Application of DGRs: The designs of buildings in this subarea shall be derived from examples of traditional American architecture, vernacular architecture, and/or any complimentary style of architecture thereof taking into account the nature of the proposed use and the scale of the building. Except as otherwise set forth in this text, the City's Design Guidelines and Requirements (DGRs) shall apply to this Zoning District, provided, however, that deviations from them shall be permitted if approved as part of a separate waiver application reviewed by Planning Commission in conjunction with a final development plan application.

2. Style: Buildings shall be designed to be seen from 360 degrees with the same caliber of finish on all facades/elevations. Building additions, whether attached or detached, but excluding carports, shall be of similar design, materials, and construction.

3. Height: The maximum building height (as measured per the Codified Ordinances) shall not exceed 50 feet for Senior Living Uses and 40 feet for townhomes. Architectural elements such as, but not limited to, monitors, chimneys, and cupolas may exceed the height limitations of this text as permitted by the Codified Ordinances.

4. Features: The following architectural features shall be required for Senior Living Uses and shall be scaled according to the size of the individual tenant. These features may be scaled to a group of smaller side-by-side tenants when architecturally appropriate:

a. Roofs may be sloped or flat;

b. Roof elements that emphasize and reduce the building scale at the building storefront such as, but not limited to, dormers, cupolas, roof spires, and hip and gable roofs;

c. Complete screening of all roof-mounted equipment shall be required on all four sides of buildings with materials that are consistent and harmonious with the building's façade and character. Such screening shall be provided in order to screen the equipment from off-site, ground-level view and to reasonably buffer sound generated by such equipment; and

d. Opaque screening of all ground-mounted mechanical and other equipment at ground level by walls, fencing, or landscaping that is consistent and harmonious with the character of the nearest primary building shall be required.

5. Exterior Elevations: Exterior designs for townhomes shall have the same requirements as apply to such units in Subarea 2. All exterior elevations of each building for other permitted uses in this Subarea 5 shall be required to have the following characteristics:

a. Consistency of Finish: The same palette of exterior finishes and color shall be used on all sides of a building. Unfinished rear facades of buildings shall be prohibited.

b. Exterior Wall Finish: Brick, brick veneer, metal, cementitious products such as Hardiplank or its equivalent, wood, EIFS and composite material may be used as exterior wall finish materials where appropriate. Exterior wall finish materials must be used to complete massing elements. The application of brick or brick veneer to only a single building façade is prohibited. Spandrel glass shall be permitted on the rear facades of buildings, while reflective or mirrored glass shall be prohibited. The use of vinyl as a building material is prohibited.

c. Roofs: Acceptable roof materials for sloped roofs include dimensional asphalt shingles, natural and synthetic slate, cedar shake, and standing seam metal.

d. Parapets: Parapets shall use a cornice with molded shapes made of any of the following durable materials: stone, cast stone, architectural pre-cast concrete, gypsum fiber reinforced concrete, expanded insulation finish system (EIFS), metal, cementitious products, vinyl, or similar materials.

e. Fascias: Roof fascias shall be proportioned to the scale of the roof element. The same material shall be used for fascias and cornices.

f. Gutters and Downspouts: Sloped roofs shall be required to employ gutters and downspouts for drainage. All gutters shall be of a metal type and shall be painted to match fascias.

g. Exterior Doors: All exterior doors other than doors whose primary purpose is for the entry or exit of customers shall be made of a heavy gauge metal.

h. Prefabricated Buildings: Except for any structures ancillary to a primary building located on a single parcel, prefabricated metal buildings, untreated masonry block structures, and buildings featuring an exterior finish entirely of glass are also prohibited.

**VIII. GENERALLY APPLICABLE STANDARDS AND PROCEDURES:** The provisions of this Section VIII shall apply to the entirety of the Zoning District unless otherwise expressly noted.

A. Parkland and Open Space Ownership and Maintenance Obligations: Areas determined as parkland at the time of a final development plan application shall be owned by the city. Areas identified as open space at the time of a final development plan application may be publicly or privately owned. Maintenance obligations for parkland and open space areas shall be determined at the time of a final development plan application.

B.

B. Traffic Study: A traffic study has been filed for the property that is located within this Zoning District. Improvements to the interior and adjacent public street network shall be provided by the developer(s) of this Zoning District as required (and with timing recommended) by the approved traffic study.

C. Leisure Trails; Mulched Paths: An asphalt leisure trail that is 8 feet in width shall be constructed along the Zoning District's frontages on Central College Road and the east and west sides of New Albany-Condit Road in locations which are reviewed and approved as part of a final development plan. Mulched paths may be permitted only along or near Sugar Run Creek, subject to the review and approval of city staff. The locations and specifications for leisure trails and mulched paths shall be approved as part of relevant final development plans.

D. Reciprocal Easements: A declaration of reciprocal easements or a reciprocal easement agreement shall be recorded against relevant real property within this Zoning District as necessary or desirable in order to provide for perpetual vehicular and pedestrian cross access, cross utility, cross parking, and other easements for the efficient development of the Zoning District. Maintenance of private drives and private sidewalks internal to this Zoning District shall be the responsibility of one or more forced and funded property owners' associations which are created for this purpose.

E. Loading and Service Areas: All loading and service areas shall be fully screened from the view of vehicles or pedestrian located on public street rights-of-way by the use of walls, fences, and/or landscaping.

F. Phasing of Improvements: The phasing of the development of this Zoning District is dependent upon market conditions. Each phase shall include an appropriate share of the proposed streets and circulation system, landscaping and outdoor spaces, screening and other site and architectural amenities of the entire project. The extent of these improvements shall be determined for each phase of a specific project at the time of the project's final development plan approval, and will not necessarily be based solely upon a proportional or equal share of the entire site. Requirements for a phased project may include off-site improvements.

G. Utilities: All new utilities shall be installed underground.

H. Service Areas and Dumpsters: All service areas and dumpsters shall be fully screened from all public streets and from adjacent properties located outside of this Zoning District at ground level with walls, fencing, landscaping, or some combination thereof. Walls shall be of the same materials used on nearby building walls and shall be complemented with landscaping. Exterior storage of materials, supplies, equipment, or products is prohibited.

I. Internal Buffering Exemption. The screening requirements of Codified Ordinances Section 1171.05 shall not apply to interior parcel or subarea boundaries in this Zoning District.

J. Graphics and Signage:

1. Intent. Based on the various uses contained within the “hamlet” that is being created by and through this Zoning District, signage needs are unique and require flexibility, not in an effort to deviate from the community standard but instead to properly and adequately identify uses, users, and tenants, and to promote efficient wayfinding. A master sign plan for one or more subareas shall be filed as part of a final development plan for review and approval by the Planning Commission. In the event of a conflict between this text and/or an approved master sign plan and a relevant provision of the Codified Ordinances, this text and/or the approved master sign plan shall govern. Where any signage standard is not addressed in this text and/or an approved master sign plan, the relevant provisions of the Codified Ordinances shall govern. All signs described in this section shall be designed so that they are consistent with the context of the building on which they are located in terms of scale, size, and design. Signs shall not block or cover any portions of architectural detailing, windows, entries or doorways.

2. Street and Entry Signage: This subarea shall utilize standard City of New Albany street regulatory signage. Entry feature signage at the entries into the Zoning District on Central College Road and State Route 605, shall be permitted with a design that is approved by the Planning Commission as part of a final development plan.

3. Types. The following types of signs shall be permitted in this Zoning District:

a. Wall Signs: A “Wall Sign” shall be defined for purposes of this text to mean “a sign attached to a building which identifies an occupant of that building.” Wall Signs shall be permitted as follows:

i. Subarea 1: For each single tenant building in Subarea 1, one Wall Sign shall be permitted on the façade of the building that is oriented toward Central College Road. For any multi-tenant building, a wall sign

may be located above the entry door for that tenant on both (A) the building façade which faces Central College Road and (B) the building façade that faces southward. The maximum permitted dimensions and heights for these signs shall be determined as part of an approved final development plan but shall be appropriately sized in relating to the architectural design of the building and shall be adequate to identify the building from off-site. Due to the unique environment that will be created in Subarea 1 and within the Transition Zone, creative wall signage may be employed in those locations. A master sign plan shall be presented for approval with a final development plan application for these areas.

ii. Other Subareas: No Wall Signs shall be permitted in Subarea 2 (outside of the Transition Zone) or Subarea 3

b. Ancillary Wall Signs. Ancillary wall signs (“Ancillary Wall Signs”) shall be permitted in order to identify particular uses within a building, to provide addresses for such uses, and to promote efficient wayfinding into the building(s). Ancillary Wall Signs shall be permitted on buildings in any location other than within Subarea 2 (outside of the Transition Zone) or Subarea 3 where they shall be prohibited. The permissible maximum dimensions of this type of sign shall be established in a final development plan along with general requirements for locations. It is the intent that once they are established, the applicant may relocate, remove, or replace these signs in accordance with the approved dimensions and requirements without the need to obtain approval of an amended final development plan application, but the applicant shall be required to obtain any necessary sign permits.

c. Window Signs. Window signs shall be permitted only as allowed under relevant provisions of the Codified Ordinances.

d. Primary Monument Signs. “Primary Monument Signs” shall be permitted as provided in this subsection, and are defined to mean “ground-mounted signs which identify an individual use or user or jointly identifies users or users within the Zoning District, and/or which identify the development as a whole within the Zoning District.” One Primary Monument Sign shall be permitted at the vehicular access point for this Zoning District along Central College Road and at both vehicular access points for this Zoning District from New Albany-Condit Road. These signs may be so-called “off-premises” signs. The final locations and dimensions of these signs shall be provided by the applicant in a final development plan.



e. Secondary Entry Monument Signs. “Secondary Monument Signs” shall be permitted to be located near each building to identify uses or users within that building. A Secondary Monument Sign is defined to mean “a sign which identifies uses and users to visitors, is located on the same parcel as the use or user which it identifies, and is not a Primary Monument Sign. The final locations and dimensions of these signs shall be provided by the applicant in a final development plan.

f. Directional Signs. “Directional Signs” shall be permitted internally within this Zoning District, and are defined to mean “signs used for purposes of directing vehicular and pedestrian traffic to particular locations and not for the primary purpose of advertising or identification.” The permissible maximum dimensions of this type of sign shall be established in a final development plan along with general requirements for locations, and it is the intent that once they are established the applicant may relocate, remove, or replace these signs in accordance with the approved dimensions and requirements without the need to obtain approval of an amended final development plan application, but the applicant shall be required to obtain any necessary sign permits.

M. Lighting:

1. Street Lighting: Public street lights may be removed, relocated, replaced, and/or supplemented if necessary to accommodate the installation and operation of access points onto public streets and to adequately light these areas, as approved as part of a final development plan. New street lights shall be the same or substantially similar style, color, and specifications as existing street lights.

2. Parking Lots and Driveways: All parking lot and private driveway lighting shall be cut-off type fixtures and down cast. Lighting along private drives internal to this subarea (if any) shall be presented for review and approval as part of a final development plan. Light poles within this subarea shall be black or New Albany green and constructed of metal. Parking lot lighting shall not exceed 18 feet in height. Parking lot lighting shall be from a controlled source in order to eliminate light spillage beyond the boundaries of the site.

3. Ground-Mounted Lighting: Landscape uplighting from a concealed source shall not be permitted. Any ground lighting that is permitted shall be shielded and landscaped.

4. Prohibited Lighting: No permanent colored lights or neon lights shall be used on the exterior of any building unless such lighted in located in Subarea 3 and is not visible from a public right-of-way.

5. Security Lighting: Security lighting, when used, shall be of a motion-sensor type.

6. Other Requirements: All other lighting on the site shall be in accordance with the City's Codified Ordinances.

N. Review Process; Appeals and Waivers:

1. Architectural Review Board: All final development plan applications in this Zoning District shall be reviewed by the City's Architectural Review Board (ARB) prior to being presented for review by the Planning Commission (PC). The ARB shall provide a recommendation of approval, approval with conditions, or disapproval of each final development plan application to the Planning Commission using the same review criteria for a final development plan application as is required to be applied by the Planning Commission pursuant to relevant provisions of the Codified Ordinances. The Planning Commission shall be the decision-making body as to the approval, approval with conditions, or disapproval of each final development plan application in accordance with the requirements of the Codified Ordinances and shall not be bound by the recommendation of the ARB.

2. Appeals:

a. Taking of Appeals: Appeals to the Board of Zoning Appeals concerning interpretation or administration of the text or the underlying zoning ordinance by the Zoning Officer or any other administrative official may be taken by any person aggrieved, including a tenant, or by a governmental officer, department, board, or bureau. Such appeal shall be taken within twenty days after the date of the decision by filing a notice of appeal specifying the grounds thereof with the officer from whom the appeal is taken and the Board of Zoning Appeals.

b. Imminent Peril: An appeal shall stay all proceedings in furtherance of the action appealed from, unless the Zoning Officer certifies to the Board of Zoning Appeals, after notice of appeal shall have been filed with them, that by reason of facts stated in the application a stay would, in his opinion, cause imminent peril to life or property. In such case, the proceeding shall not be stayed other than by a restraining order which may, on due cause shown, be granted by the Board of Zoning Appeals, after notice to the Zoning Officer or by judicial proceedings.

Waivers. Deviations from development standards in this text or in the Codified Ordinances are subject to the waiver process. A waiver to the standards may be approved by the Planning Commission (PC), after review and recommendation by the Architectural Review Board (ARB), upon the request of an

applicant as part of a final development plan application. The consideration of a waiver request shall be deemed to constitute an administrative proceeding. The PC shall be the decision-making body as to the approval, approval with conditions, or disapproval of each waiver application in accordance with the requirements of this text and shall not be bound by the recommendation of the ARB. In considering a request for a waiver, each of the ARB and the PC shall conduct a public meeting in conjunction with the application.

a. Application for Waiver. An applicant desiring to have a requirement of this zoning waived must apply for the waiver in conjunction with a final development plan application. The waiver request will be reviewed by the ARB (which shall provide a recommendation on the request to the PC) and the PC, which shall make the final decision to approve, approve with conditions, or disapprove the waiver. The applicant shall indicate the nature of the waiver sought and provide a statement explaining why the waiver should be granted. Any drawings or other materials needed to support the waiver application, as determined by city staff, shall be submitted with the waiver request.

b. Action by ARB and the PC. Along with its recommendation on a final development plan application, the ARB shall make a recommendation of any waiver requests. Along with its decision to approve, approve with conditions, or disapprove a final development plan application, the PC also shall make a decision to approve, approve with conditions, or disapprove a waiver request application. The ARB shall only recommend approval of, and the PC shall only approve (with or without supplementary conditions), the waiver application if they find that the waiver, if granted, would:

i. Provide an appropriate design or pattern of development considering the context in which the development is proposed and the purpose of the particular standard. In evaluating the context as it is used in the criteria, the reviewing body may consider the relationship of the proposed development with adjacent structures, the immediate neighborhood setting, and a broader vicinity to determine if the waiver is warranted;

ii. Substantially meet the intent of the standard that the applicant is attempting to seek a waiver from, and fit within the goals of the City's Strategic Plan;

iii. Be necessary for reasons of fairness due to unusual building, structure, or site – specific conditions; and

iv. Not detrimentally affect the public health, safety or general welfare.

# Sugar Run Development

## Traffic Impact Study

Prepared for: NoNA Master Development, LLC

October 13, 2022



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## I. Executive Summary

Carpenter Marty Transportation was retained to complete a traffic impact study (TIS) for the proposed mixed-use Sugar Run development located along Central College Road, SR-605 (New Albany-Condit Road), and New Albany Road E. in New Albany, Ohio. The TIS evaluates all of the proposed site access points as well as the signalized intersections of Walton Parkway and Central College Road with SR-605. The development is expected to have an Opening Year of 2024.

The analysis finds the following turn lanes are warranted for the proposed development:

- Central College Road & Discover Access / Site Access 2
  - 125' westbound left turn lane
- SR-605 & Site Access 3 / Site Access 4
  - 175' northbound left turn lane
  - 175' southbound left turn lane
- SR-605 & Snider Loop / Site Access 5
  - 175' northbound left turn lane
  - 175' southbound left turn lane

All turn lanes listed are Build improvements and are inclusive of a 50' diverging taper. Based on the results of the capacity analysis, no additional improvements are required or recommended for the study area. New, updated count data was collected at all off-site study intersections while school was in session to ensure the highest peak hours of the day were evaluated.



## II. Purpose of Report & Study Objectives

The purpose of this traffic analysis and report is to document the potential traffic impacts of the proposed mixed-use Sugar Run development located in the southwest and southeast corners of the intersection of Central College Road & SR-605 in New Albany, Ohio. This analysis and report are being required by the City of New Albany as part of the development approval process. A Memorandum of Understanding (MOU) was provided to the City for review. The MOU and comments provided can be found in **Appendix A**.

## III. Proposed Development

### A. Off-Site Developments

The study area is bounded by Central College Road to the north, SR-605 to the east, and Walton Parkway to the south. The surrounding area includes restaurants and retail development to the west, office buildings to the north and south, and residential development to the east.

### B. On-Site Development

#### Location

The majority of the site is located on the south side of Central College Road and the west side of SR-605. A small portion of the site is located on the east side of SR-605. **Figure 1** shows the location of the proposed site in central Ohio and **Figure 2** shows the study area.

*Figure 1 – Location in Central Ohio (New Albany limits outlined in red)*

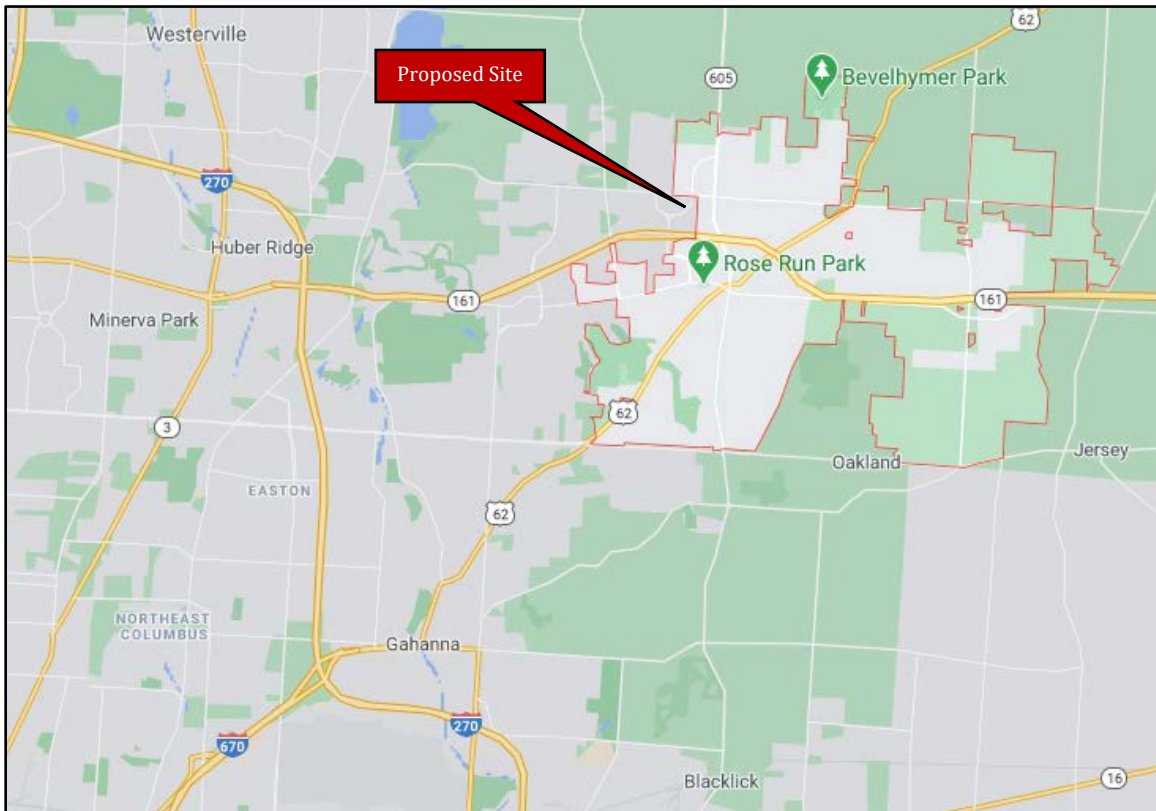


Figure 2 – Location of the Proposed Development (Yellow), Site Drives, and Study Intersections



### Land Use & Intensity

The site is currently developed with several single-family homes. The site is proposed to develop as a mixed-use site with the following land uses and sizes:

- 40 multifamily units
- 116 single-family attached homes (townhomes)
- 32 single-family detached homes
- 17,500 SF of office space
- 30,000 SF of mixed retail space

Five access points are proposed for the development:

- One existing right-in, right-out (RIRO) access on New Albany Road E. just south of the intersection with Central College Road (Site Access 1). Note that this access is

contingent upon a cross access agreement between property owners, which is currently in process.

- One full access aligned with the existing Discover Complex Access intersection on Central College Road (Site Access 2)
- Two full access points on SR-605
  - One located between Central College Road and Snider Loop, accessing the development on both sides of SR-605 (Site Access 3/4)
  - One tying into the existing intersection with Snider Loop (Site Access 5)

It should be noted that an additional access to Central College Road is provided via cross access to the existing Taco Bell development. However, site traffic using this access is expected to be negligible, so the access was not included in this TIS.

The site plan is provided in **Appendix A**.

## IV. Area Conditions

### A. Area of Influence

The study intersections for the proposed development are listed below. Numbers correspond to **Figure 2**.

1. SR-605 & Central College Road
2. SR-605 & Snider Loop / Site Access 5
3. SR-605 & Walton Parkway
4. New Albany Road E. & Site Access 1
5. Central College Road & Site Access 2
6. SR-605 & Site Access 3/Site Access 4

### B. Jurisdictions

All access points and study intersections are under City of New Albany jurisdiction with the exception of the New Albany Road E. & Site Access 1 intersection which is under the City of Columbus jurisdiction.

### C. Traffic Volumes & Conditions

AM and PM peak hour turning movement counts were collected for the following study intersections in September 2022 while school was in session:

- SR-605 & Central College Road
- SR-605 & Snider Loop / Site Access 5
- SR-605 & Walton Parkway
- New Albany Road E. & Site Access 1

Counts were collected from 7:00–9:00 AM and from 2:00–6:00 PM to ensure the highest volume peak hours were utilized, inclusive of school peak hours. All count data can be found in **Appendix B**.

## V. Projected Traffic

### A. Background Traffic

For analysis, the Opening Year of the development is 2024 and the Design, or Horizon Year, is 2034. In order to project the count data to the Opening and Horizon Years, linear, annual growth rates from various sources were used. The Mid-Ohio Regional Planning Commission (MORPC) provided annual, linear growth rates for the intersection of SR-605 and Central College Road for a previously completed traffic access study. All other growth rates were derived from a City of New Albany Transportation study completed by Carpenter Marty Transportation and were calculated based on the comparison of 2020 ADT count data to 2050 MORPC ADT data provided by the City of New Albany. **Table 1** below shows the growth rates utilized in the TIS.

Table 1 – Growth Rates

Location	Linear Annual Growth Rate
New Albany Road E. e/o Walton Parkway	1.3%
Central College Road e/o SR-605	1.3%
Central College Road w/o SR-605	1.1%
SR-605 n/o Central College Road	1.7%
SR-605 s/o Central College Road	1.3%
Walton Parkway e/o SR-605	3.0%
Walton Parkway w/o SR-605	3.0%
SR-605 n/o Walton Parkway	1.2%
SR-605 s/o Walton Parkway	1.8%

Growth rates were applied to the count data to develop Background traffic for the Opening and Horizon Years. All growth rate data can be found in **Appendix B**.

### B. Site Traffic

#### Trip Generation

Trips for the proposed site development were generated using ITE practices and the *Trip Generation Manual*, 11<sup>th</sup> edition, via the OTISS program<sup>1</sup>. Land use codes (*LUC*) 220 – Multifamily Housing (Low-Rise), 215 – Single-Family Attached Housing, 210 – Single-Family Detached Housing, 710 – General Office Building, and 822 – Strip Retail Plaza (<40k) were used to generate trips for the proposed development. ITE recommended internal capture and pass-by rates were applied. **Table 2** shows a summary of the trip generation for the proposed development. The full trip generation details can be found in **Appendix C**.

<sup>1</sup> Online Traffic Impact Study Software developed by ITE and Transoft Solutions.

Table 2 – Proposed Sugar Run Site Trip Generation Summary

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
<b>220 – Multifamily Housing (Low-Rise)</b>	40 Dwelling Units	8	27	15	10
Internal		0	0	2	1
Pass-By		0	0	0	0
Non-Pass-By		8	27	13	9
<b>215 – Single-Family Attached Housing</b>	116 Dwelling Units	17	38	37	28
Internal		0	0	6	3
Pass-By		0	0	0	0
Non-Pass-By		17	38	31	25
<b>210 – Single-Family Detached Housing</b>	32 Dwelling Units	7	20	21	13
Internal		0	0	3	2
Pass-By		0	0	0	0
Non-Pass-By		7	20	18	11
<b>710 – General Office Building</b>	17,500 SF	33	4	7	32
Internal		1	1	2	7
Pass-By		0	0	0	0
Non-Pass-By		32	3	5	27
<b>822 – Strip Retail Plaza (&lt;40k)</b>	30,000 SF	36	24	85	85
Internal		1	1	13	13
Pass-By		0	0	24	24
Non-Pass-By		35	23	48	48
<b>TOTAL</b>		<b>101</b>	<b>113</b>	<b>165</b>	<b>168</b>
<b>Internal</b>		<b>2</b>	<b>2</b>	<b>26</b>	<b>26</b>
<b>Pass-By</b>		<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>
<b>Non-Pass-By</b>		<b>99</b>	<b>111</b>	<b>115</b>	<b>118</b>

Site Access 2 for the proposed development is aligned with an access to the existing Discover Complex office park on the north side of Central College Road. Trips were generated for this development and applied to the access assuming the development is open and operational. It is our understanding that the Discover Complex building is mostly unused, and the access is currently closed. However, trips were still generated and applied to the access to produce conservative results. The City of New Albany has indicated that the Discover Complex is expected to be redeveloped in the future which will require its own traffic impact study. *LUC 710 – General Office Building* was used to generate trips for the development. It was assumed that 25% of the Discover Complex office building traffic utilizes the Central College Road access opposite of Site Access 2. It should also be noted that trips for this development were only applied to the turning movements of the access point to represent an access opposing Site Access 2.

**Table 3** below summarizes the trip generation for the above-described Discover Complex. Existing development trip generation details can be found in **Appendix C**.

Table 3 – Background Discover Complex Trip Generation Summary

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
710 – General Office Building	333,200 SF	292	48	57	300

Discover Complex traffic was added to Background traffic to produce No Build traffic. Site traffic was distributed to/from the site based on count data, existing traffic patterns in the area, proximity to other land uses and major roadways/state routes, and engineering judgment. Proposed Sugar Run site traffic was added to the No Build traffic to produce Build traffic for the Opening and Horizon Years. The full volume calculations can be found in **Appendix D**.

## VI. Traffic Analysis

### A. Turn Lane Warrant Analysis

Turn lane warrant analysis was conducted at all unsignalized intersections using standard ODOT turn lane warrant graphs. If a turn lane was warranted in any particular scenario, the length was calculated using methodologies in the ODOT Location and Design (L&D) Manual and the turn lane was included in the capacity analysis for Build scenarios, as described further in this report. Turn lane lengths are based on the posted speed of each roadway within the study area. Said posted speeds are described below.

- SR-605
  - 45 MPH north of Walton Parkway
  - 35 MPH south of Walton Parkway
- Central College Road
  - 35 MPH west of SR-605
  - 45 MPH east of SR-605
- New Albany Road E.
  - 35 MPH

### B. Capacity Analysis

The HCM 6<sup>th</sup> Edition module of Synchro Version 11 software was used to analyze capacity at all study intersections. Level of service (LOS) of D and E are typical for urbanized areas with high volumes of traffic where LOS of A, B, and C are more typical for lower volume, less dense areas. A minimum LOS of D for the overall intersection/approaches and LOS E for each individual movement during peak traffic hours is considered acceptable at each intersection based on both City of New Albany and City of Columbus criteria. If an intersection fell below these criteria, mitigation strategies were developed to bring each movement or intersection back to an acceptable LOS. **Table 4** below summarizes LOS/delay criteria for unsignalized and signalized intersections.

Table 4 – LOS Criteria

LOS	Signalized Intersection Delay (sec)	Unsignalized Intersection Delay (sec)
A	≤ 10	≤ 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

## VII. Results

### A. Turn Lane Warrant Analysis

The below list summarizes the turn lanes which meet warrants at the various unsignalized study intersections. All turn lane lengths are inclusive of a 50’ diverging taper. The full turn lane warrant analysis can be found in **Appendix E**.

- Central College Road & Discover Access / Site Access 2
  - 125’ westbound left turn lane
- SR-605 & Site Access 3 / Site Access 4
  - 175’ northbound left turn lane
  - 175’ southbound left turn lane
- SR-605 & Snider Loop / Site Access 5
  - 175’ northbound left turn lane
  - 175’ southbound left turn lane

### B. Capacity Analysis

Results of the capacity analysis can be seen in **Table 5**. Baseline capacity analysis utilizes planning-level signal timings and assumes all warranted turn lanes are installed. The full capacity analysis can be found in **Appendix F**.

Table 5 – Baseline Capacity Analysis Summary

Intersection*	Approach or Movement	Opening Year				Horizon Year			
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build
(1) SR-605 & Central College Rd <b>Signalized</b>	EB	C/27.6	C/27.5	C/34.8	D/35.9	C/27.9	C/28.1	D/38.4	D/38.6
	WB	C/24.4	C/24.8	C/31.2	C/31.6	C/25.1	C/25.9	C/32.0	C/32.0
	NB	B/19.2	B/19.9	A/6.9	A/7.5	C/20.6	C/21.3	A/9.2	B/10.6
	SB	C/21.0	C/21.2	B/18.9	B/19.0	C/22.5	C/22.6	B/19.9	C/20.3
	<b>TOTAL</b>	<b>C/22.7</b>	<b>C/23.0</b>	<b>C/21.0</b>	<b>C/21.6</b>	<b>C/23.7</b>	<b>C/24.1</b>	<b>C/22.9</b>	<b>C/23.6</b>
(2) SR-605 & Snider Loop / Site Access 5 <b>Unsignalized</b>	EB	---	C/18.6	---	C/22.2	---	C/21.1	---	D/26.6
	WB	C/19.5	D/25.9	C/21.8	D/30.1	C/22.4	D/31.0	D/26.0	<b>E/37.5</b>
	NBL	---	A/8.8	---	A/8.6	---	A/9.0	---	A/8.8
	SBL	A/8.2	A/8.2	A/8.9	A/9.0	A/8.3	A/8.4	A/9.2	A/9.3
(3) SR-605 & Walton Pkwy <b>Signalized</b>	EB	D/38.0	D/38.0	D/35.7	D/35.2	D/37.4	D/37.3	C/33.1	C/32.7
	WB	C/34.4	C/34.5	D/38.7	D/38.4	C/31.7	C/31.8	D/37.8	D/37.9
	NB	A/7.9	A/8.1	A/7.2	A/7.7	B/11.4	B/11.8	B/10.3	B/11.0
	SB	A/7.8	A/8.1	A/1.0	A/1.1	B/11.0	B/11.6	A/1.5	A/1.8
	<b>TOTAL</b>	<b>B/16.1</b>	<b>B/16.0</b>	<b>B/14.7</b>	<b>B/14.5</b>	<b>B/18.6</b>	<b>B/18.8</b>	<b>B/16.4</b>	<b>B/16.3</b>
(4) New Albany Rd E. & Site Access 1 <b>Unsignalized</b>	WBR	A/8.8	A/8.9	A/9.4	A/9.5	A/8.9	A/9.0	A/9.5	A/9.6
(5) Central College Rd & Discover Access / Site Access 2 <b>Unsignalized</b>	EBL	A/8.0	A/8.0	A/8.0	A/8.0	A/8.1	A/8.1	A/8.1	A/8.1
	WBL	---	A/7.8	---	A/8.2	---	A/7.8	---	A/8.3
	NB	---	B/12.3	---	C/15.3	---	B/12.6	---	C/16.5
	SB	B/10.6	B/12.1	B/11.6	B/13.3	B/10.9	B/12.5	A/9.4	B/14.2
(6) SR-605 & Site Access 3 / Site Access 4	EB	---	C/15.9	---	C/21.5	---	C/17.9	---	D/26.3
	WB	---	C/18.4	---	C/24.7	---	C/21.4	---	D/30.2
	NBL	---	A/8.8	---	A/8.7	---	A/9.0	---	A/8.9
	SBL	---	A/8.2	---	A/8.9	---	A/8.3	---	A/9.2

\*Numbers correspond to **Figure 2**

As seen above in **Table 5**, all intersections operate with acceptable LOS/delay with the exception of the westbound approach of the SR-605 & Snider Loop / Site Access 5 intersection in the Horizon Year PM Build scenario only. However, it should be noted that the width of the westbound approach of the intersection varies from roughly 26' to 30'. Thus, it is expected that the single-lane approach operates as a de facto two-lane approach in real-world conditions, separating left and right turning vehicles. Additionally, the volume to capacity (V/C) ratio for the approach is 0.136, well under 1.0, and the calculated, 95<sup>th</sup> percentile queue length is 0.5 vehicles. Thus, this result is acceptable, and no mitigation is necessary.

## VIII. Recommendations and Conclusions

Based on the results of the turn lane warrant analysis, the following turn lane installations are recommended as a part of the proposed development. All turn lanes are inclusive of 50' diverging tapers.

- Central College Road & Discover Access / Site Access 2
  - 125' westbound left turn lane
- SR-605 & Site Access 3 / Site Access 4
  - 175' northbound left turn lane
  - 175' southbound left turn lane
- SR-605 & Snider Loop / Site Access 5



- 175' northbound left turn lane
- 175' southbound left turn lane

The above listed improvements are triggered by the proposed development traffic and are recommended as Build improvements. It should be noted that there are ongoing discussions between the developer and the City of New Albany regarding a change of the roadway classification of SR-605 and a potential reduction in speed limit due to the number of existing and proposed site development access points. Reducing the speed limit and design speed of the roadway would reduce the required lengths of the warranted turn lanes described above. It is recommended that the required turn lane lengths be reevaluated if a speed limit reduction is implemented.

Based on the results of the capacity analysis, no additional improvements are required and thus, none are recommended.

Concerns have been expressed regarding the proposed development and potential impacts on traffic during school peak hours. This occurs for a 15-20 minute period in the early afternoon south along SR-605 near Chatham Greene Drive (approximately  $\frac{3}{4}$  miles south of the proposed development) and into the downtown area. The developer has agreed to work with the City of New Albany on potential solutions to these existing issues.

However, it should be noted that the proposed development is not expected to add significant school peak hour traffic to the surrounding area and the majority of site generated traffic will be expected during typical roadway AM and PM peak hours. School peak traffic volumes typically occur over a period of 15-20 minutes in both the morning and early afternoon hours versus a disbursement of traffic over an entire peak hour, which results in a lower peak hour factor.

The count data collected for this TIS includes both the typical AM and PM Peak hours of the day along with the AM and PM Peak hours of school traffic. The TIS herein evaluates the highest volume AM peak hour and highest volume PM peak hour of each intersection in the study area. The AM peak hour occurs during both the school peak and overall morning peak. The PM peak hour occurs approximately between 4:45 PM and 5:45 PM and the school PM Peak hour occurs approximately from 3:15 PM to 4:15 PM.

Comparison of the PM Peak hour to the school PM peak hour shows traffic volumes are approximately 40% lower during the school PM Peak hour compared to the overall PM Peak hour. Due to the lower peak hour factor for the school PM peak hour, most of the traffic volumes occur over a 15-20 minute period, and the volumes are significantly lower for the rest of the hour.

The analysis herein evaluates the worst-case conditions for both the AM and PM Peaks, and proposed development impacts to the school 15-20 minute peak are expected to be negligible. About 63% of the PM site trips are related to the office and retail portion of the development, which are not expected to impact the school PM peak hour.

It is our understanding that there are ongoing discussions between the City of New Albany and the school district to determine improvements to the school peak issue. Improvements are still to be determined, but mitigation for the school peak traffic is required with or without the proposed development.

## **IX. Appendices**

Appendix A – MOU & Site Plan

Appendix B – Count Data and Growth Rate Data

Appendix C – Trip Generation

Appendix D – Volume Calculations

Appendix E – Turn Lane Warrant Analysis

Appendix F – Capacity Analysis

# Appendix A

## MOU & Site Plan



## Traffic Study Memorandum of Understanding

**RE:** Sugar Run New Albany Traffic Impact Study

**To:** City of New Albany

**From:** Carpenter Marty Transportation

**Date:** October 3, 2022

---

Carpenter Marty Transportation was retained to complete a traffic impact study for the proposed Sugar Run development located in the southwest and southeast quadrants of SR-605 & Central College Road in New Albany. The development is proposed to be mixed-use residential and commercial.

The following access points are proposed:

- Cross access connection to existing right-in, right-out access on New Albany Road E.
- Full access to Central College Road aligning with the former Discover building full access
- Full access to SR-605 shared by the development on both sides of SR-605
- Full access to SR-605 aligning with Snider Loop

A draft concept plan showing the proposed development and access points is provided in the **Attachment**.

Trips for the proposed site were generated based on Institute of Transportation Engineers (ITE) practices and the Trip Generation Manual, 11th edition. Land use codes (LUC) 220 – *Multifamily Housing (Low-Rise) – Not Close to Rail Transit*, 215 – *Single-Family Detached Housing*, 210 – *Single-Family Detached Housing*, 710 – *General Office Building*, and 822 – *Strip Retail Plaza (<40k)* were utilized to generate trips for the proposed development. ITE recommended internal capture and pass-by reductions were applied. **Table 1** shows the trip generation of the expected entering/exiting trips for the AM and PM peaks for the entire development. The ITE trip generation outputs can be found in the **Attachment**.

**Table 1 - Site Trip Generation Summary**

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
<b>220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit</b>	40 Dwelling Units	<b>8</b>	<b>27</b>	<b>15</b>	<b>10</b>
<b>Internal</b>		0	0	2	1
<b>Non-Pass-By</b>		8	27	13	9
<b>Pass-By</b>		0	0	0	0
<b>215 - Single-Family Attached Housing</b>	116 Dwelling Units	<b>17</b>	<b>38</b>	<b>37</b>	<b>28</b>
<b>Internal</b>		0	0	6	3
<b>Non-Pass-By</b>		17	38	31	25
<b>Pass-By</b>		0	0	0	0
<b>210 - Single-Family Detached Housing</b>	32 Dwelling Units	<b>7</b>	<b>20</b>	<b>21</b>	<b>13</b>
<b>Internal</b>		0	0	3	2
<b>Non-Pass-By</b>		7	20	18	11
<b>Pass-By</b>		0	0	0	0
<b>710 - General Office Building</b>	17.5k SF	<b>33</b>	<b>4</b>	<b>7</b>	<b>32</b>
<b>Internal</b>		1	1	2	7
<b>Non-Pass-By</b>		32	3	5	27
<b>Pass-By</b>		0	0	0	0
<b>710 - Strip Retail Plaza (&lt;40k)</b>	30k SF	<b>36</b>	<b>24</b>	<b>85</b>	<b>85</b>
<b>Internal</b>		1	1	13	13
<b>Non-Pass-By</b>		35	23	48	48
<b>Pass-By</b>		0	0	24	24
<b>TOTAL</b>		<b>101</b>	<b>113</b>	<b>165</b>	<b>168</b>
<b>Internal</b>		<b>2</b>	<b>2</b>	<b>26</b>	<b>26</b>
<b>Non-Pass-By</b>		<b>99</b>	<b>111</b>	<b>115</b>	<b>118</b>
<b>Pass-By</b>		<b>0</b>	<b>0</b>	<b>24</b>	<b>24</b>

**Table 2** summarizes the recommended traffic study scope for the proposed development. The proposed scope is derived from the previous traffic impact study of this property.

**Table 2 – Traffic Study Scope**

Data Collection	Obtain peak hour count data from 7-9 AM and 2-6 PM at the following intersections while school is in session: 1) SR-605 & Central College Road 2) Existing RIRO access point to New Albany Road E. 3) SR-605 & Snider Loop 4) SR-605 & Walton Parkway
Analysis	Generate trips for the proposed development using ITE land use codes and the OTISS program. Assign traffic to the proposed site access points using a distribution determined from count data, area knowledge/travel patterns, previously completed traffic studies, and engineering judgment. Trip generation is provided with this MOU for preliminary review.
Analysis	Develop Opening Day (2024) and Horizon Year (2034) traffic plates for Build, No Build, AM, and PM Peaks based on growth rates that will be obtained from MORPC, calculated using historic data. Provide volume calculations and growth rates to the City of New Albany for preliminary review and approval.
Analysis	Perform turn lane warrant analyses at all unsignalized study intersections based on ODOT criteria and standard ODOT turn lane warrant graphs. Design lengths for any turn lanes which meet warrants. Calculate required turn lane lengths for existing turn lanes, if necessary.
Analysis	Use Synchro 11 software to perform capacity analysis the intersection at the following intersections: 1) SR-605 & Central College Road 2) New Albany Road E. & RIRO Access 3) Central College Road & Full Access 4) SR-605 & Shared Full Access East & West 5) SR-605 & Snider Loop / Full Access 6) SR-605 & Walton Parkway If acceptable LOS is not obtained under Build or No Build conditions, determine what improvements are necessary to obtain acceptable LOS.
Report	Develop a report that documents what is necessary to satisfy the City of New Albany which generally includes analysis, results, conclusions, and recommendations. Coordination with the City of Columbus on the New Albany Road E. & RIRO Access intersection will be conducted.

If you have any questions or comments, please contact me at 614-656-2421 or [dlaurent@cmtran.com](mailto:dlaurent@cmtran.com).

Sincerely,

Drew Laurent, AICP  
 Transportation Planner  
 Carpenter Marty Transportation

October 3, 2022

**RE: Disposition of Comments for the Sugar Run New Albany TIS MOU submittal dated 9/2/22**

The Sugar Run New Albany TIS MOU was submitted on September 2, 2022. TE.P. Farris, on the behalf of the City of New Albany, provided comments by September 7, 2022. The comments are provided below, followed by the Carpenter Marty Transportation (CM) response in red.

- 1) Please include the study of the intersection of SR 605 at Walton Parkway, which had also been studied in the previous TIS.

**CM Response: Complied.**

- 2) The New Albany Road E. and RIRO Access is within City of Columbus jurisdiction. As with a previous TIS for this site, coordination with City of Columbus will be needed on review of that access location, and those review comments provided to the City of New Albany as part of a TIS.

**CM Response: Will comply.**

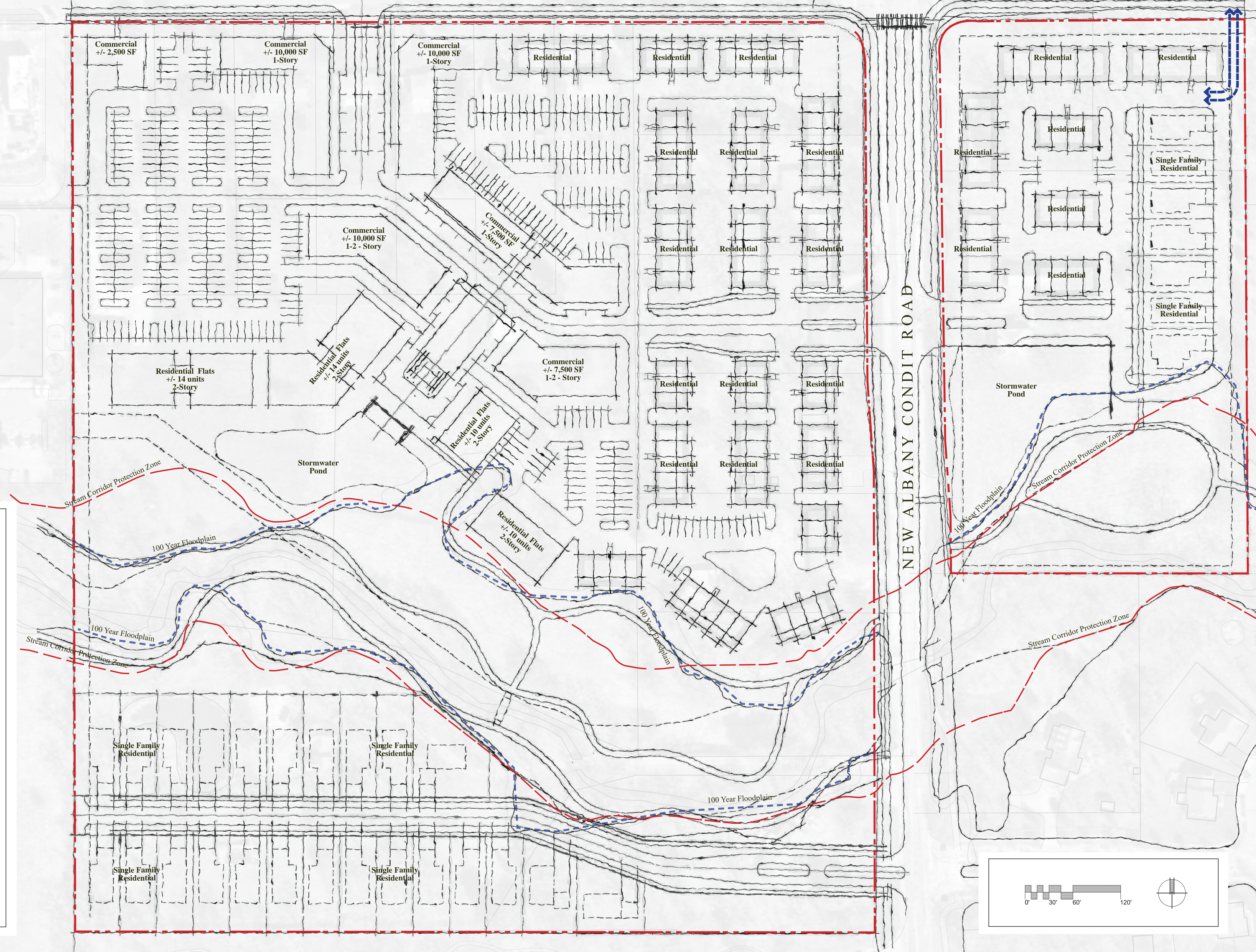
- 3) This TIS may have improvement recommendations and road improvement issues similar to those identified in a previous TIS for this site. This may include but not be limited to addressing geometric design issues/constraints of improvements that had been identified in the previous TIS.

**CM Response: Noted.**

CENTRAL COLLEGE ROAD

NEW ALBANY ROAD EAST

NEW ALBANY CONDIT ROAD



**SITE DATA**

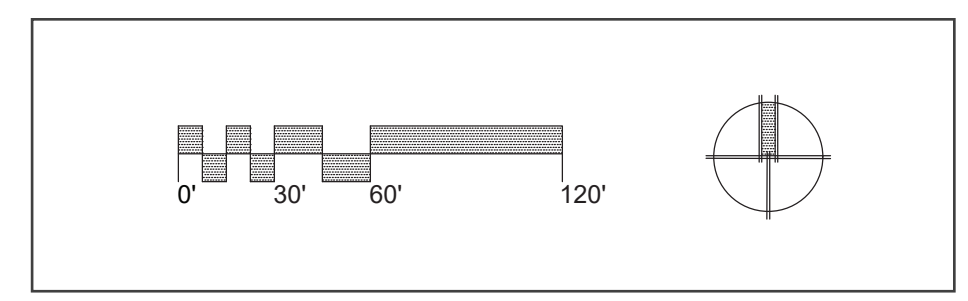
Total Acreage	33 ac
Developed Land	24.48 ac (75%)
Open Space	8.52 ac (25%)

**DEVELOPMENT DATA**

Residential Units	~ 188 units
Multi-Family	~ 40 units
Townhomes	~ 116 units
Single Family	~ 32 units

Density	~ 5.7 du/ac
Total Commercial	~ 47,500 SF
Residential to Commercial Ratio	1 du/252 SF

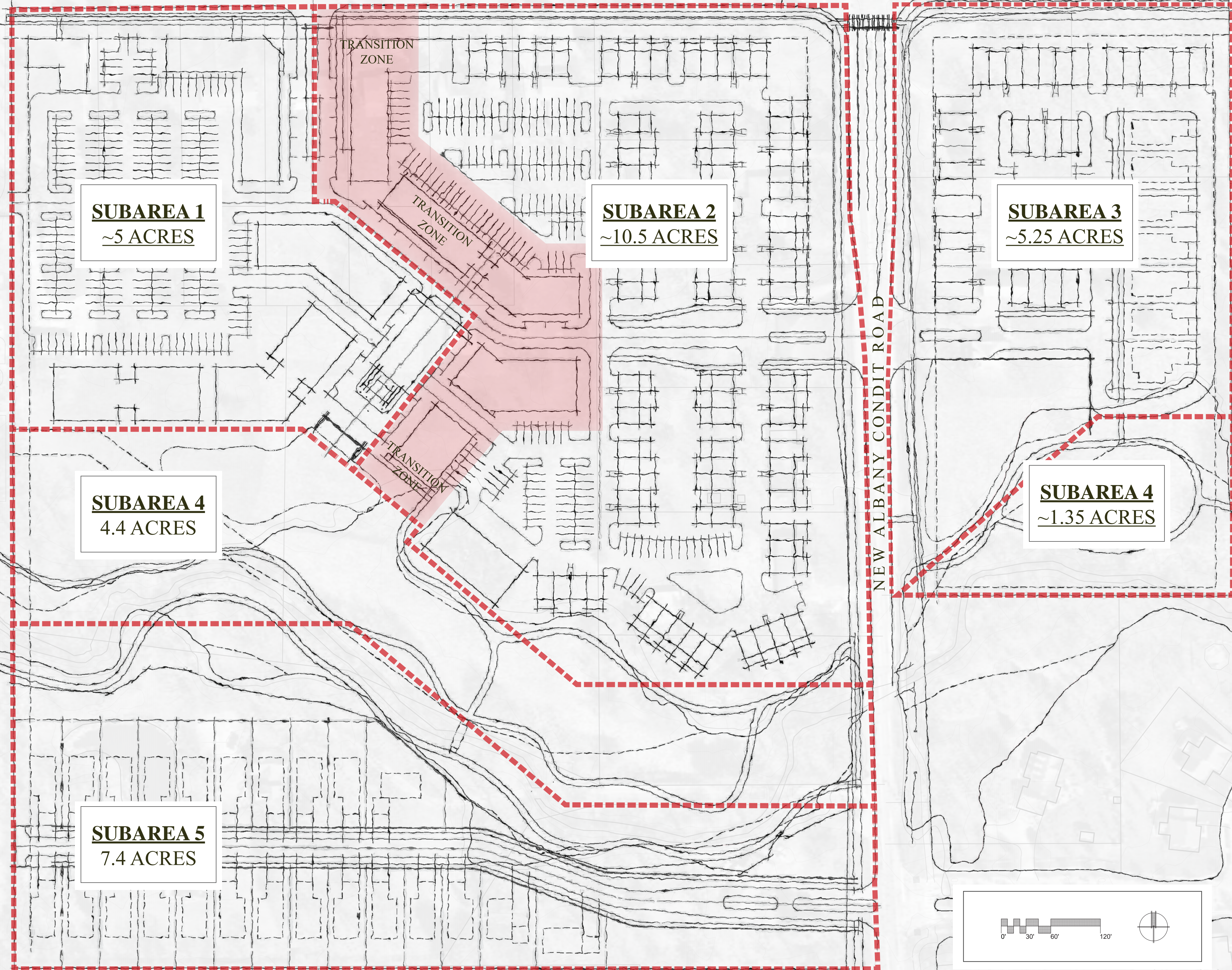
Traditional Stormwater	~ 1.5 ac
------------------------	----------





CENTRAL COLLEGE ROAD

NEW ALBANY ROAD EAST



**SUBAREA 1**  
~5 ACRES

**SUBAREA 2**  
~10.5 ACRES

**SUBAREA 3**  
~5.25 ACRES

**SUBAREA 4**  
4.4 ACRES

**SUBAREA 4**  
~1.35 ACRES

**SUBAREA 5**  
7.4 ACRES

**SUGAR RUN SUBAREA PLAN**  
22 AUGUST 2022

# Appendix B

## Count Data & Growth Rate Data



**New Albany Road E & RIRO Access - TMC**

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993487, Location: 40.097524, -82.817567

Leg Direction	Walgreens Drive Eastbound					Huntington Drive Westbound					New Albany Road E Northbound					New Albany Road E Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-09-27 7:00AM	0	0	0	0	0	0	0	0	0	0	0	86	0	0	86	0	111	0	0	111	197
7:15AM	0	0	1	0	1	1	0	1	0	2	0	81	1	0	82	0	139	0	0	139	224
7:30AM	0	0	4	0	4	1	0	1	0	2	0	81	2	0	83	0	155	3	0	158	247
7:45AM	0	0	0	0	0	0	0	2	0	2	1	101	2	0	104	0	133	1	0	134	240
Hourly Total	0	0	5	0	5	2	0	4	0	6	1	349	5	0	355	0	538	4	0	542	908
8:00AM	0	0	2	0	2	1	0	0	0	1	1	77	0	0	78	0	117	3	0	120	201
8:15AM	0	0	2	0	2	0	0	1	0	1	2	75	3	0	80	0	128	1	0	129	212
8:30AM	0	0	2	0	2	0	0	2	0	2	2	98	4	0	104	0	78	3	0	81	189
8:45AM	0	0	3	0	3	0	0	2	0	2	2	83	3	0	88	1	92	0	0	93	186
Hourly Total	0	0	9	0	9	1	0	5	0	6	7	333	10	0	350	1	415	7	0	423	788
2:00PM	0	0	6	0	6	1	0	3	0	4	4	57	6	0	67	0	59	5	0	64	141
2:15PM	0	0	8	0	8	0	1	4	0	5	7	100	5	0	112	0	65	3	0	68	193
2:30PM	0	0	10	0	10	3	0	8	0	11	3	86	7	0	96	1	74	4	0	79	196
2:45PM	0	0	4	0	4	0	0	1	0	1	4	80	4	0	88	0	78	4	0	82	175
Hourly Total	0	0	28	0	28	4	1	16	0	21	18	323	22	0	363	1	276	16	0	293	705
3:00PM	0	0	5	0	5	4	2	5	0	11	6	89	12	0	107	0	88	6	0	94	217
3:15PM	0	0	11	0	11	0	0	3	0	3	4	102	9	0	115	0	77	10	0	87	216
3:30PM	0	0	5	0	5	0	0	11	0	11	6	102	8	0	116	0	109	6	0	115	247
3:45PM	0	0	5	0	5	2	0	7	0	9	9	117	4	0	130	0	72	5	0	77	221
Hourly Total	0	0	26	0	26	6	2	26	0	34	25	410	33	0	468	0	346	27	0	373	901
4:00PM	0	0	6	0	6	1	0	4	0	5	4	118	9	0	131	0	88	4	0	92	234
4:15PM	0	0	4	0	4	1	0	0	0	1	11	103	5	0	119	0	79	3	0	82	206
4:30PM	0	0	5	0	5	0	0	7	0	7	3	96	8	0	107	0	98	3	0	101	220
4:45PM	0	0	9	0	9	2	2	3	0	7	9	97	11	0	117	1	76	3	0	80	213
Hourly Total	0	0	24	0	24	4	2	14	0	20	27	414	33	0	474	1	341	13	0	355	873
5:00PM	0	0	9	0	9	0	0	7	0	7	7	117	6	0	130	0	113	1	0	114	260
5:15PM	0	0	7	0	7	0	0	5	0	5	4	134	7	0	145	0	83	10	0	93	250
5:30PM	0	0	8	0	8	1	1	3	0	5	4	139	7	0	150	0	103	6	0	109	272
5:45PM	0	0	7	0	7	1	0	4	0	5	8	160	7	0	175	0	87	8	0	95	282
Hourly Total	0	0	31	0	31	2	1	19	0	22	23	550	27	0	600	0	386	25	0	411	1064
<b>Total</b>	0	0	123	0	123	19	6	84	0	109	101	2379	130	0	2610	3	2302	92	0	2397	5239
<b>% Approach</b>	0%	0%	100%	0%	-	17.4%	5.5%	77.1%	0%	-	3.9%	91.1%	5.0%	0%	-	0.1%	96.0%	3.8%	0%	-	-
<b>% Total</b>	0%	0%	2.3%	0%	2.3%	0.4%	0.1%	1.6%	0%	2.1%	1.9%	45.4%	2.5%	0%	49.8%	0.1%	43.9%	1.8%	0%	45.8%	-
<b>Lights</b>	0	0	121	0	121	19	6	84	0	109	101	2312	127	0	2540	3	2246	91	0	2340	5110
<b>% Lights</b>	0%	0%	98.4%	0%	98.4%	100%	100%	100%	0%	100%	100%	97.2%	97.7%	0%	97.3%	100%	97.6%	98.9%	0%	97.6%	97.5%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10	0	10	0	0	10	20
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%	0%	0%	0.4%	0%	0.4%	0%	0%	0.4%	0.4%
<b>Buses and Single-Unit Trucks</b>	0	0	2	0	2	0	0	0	0	0	0	57	3	0	60	0	46	1	0	47	109
<b>% Buses and Single-Unit Trucks</b>	0%	0%	1.6%	0%	1.6%	0%	0%	0%	0%	0%	0%	2.4%	2.3%	0%	2.3%	0%	2.0%	1.1%	0%	2.0%	2.1%

\* L: Left, R: Right, T: Thru, U: U-Turn

**New Albany Road E & RIRO Access - TMC**

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

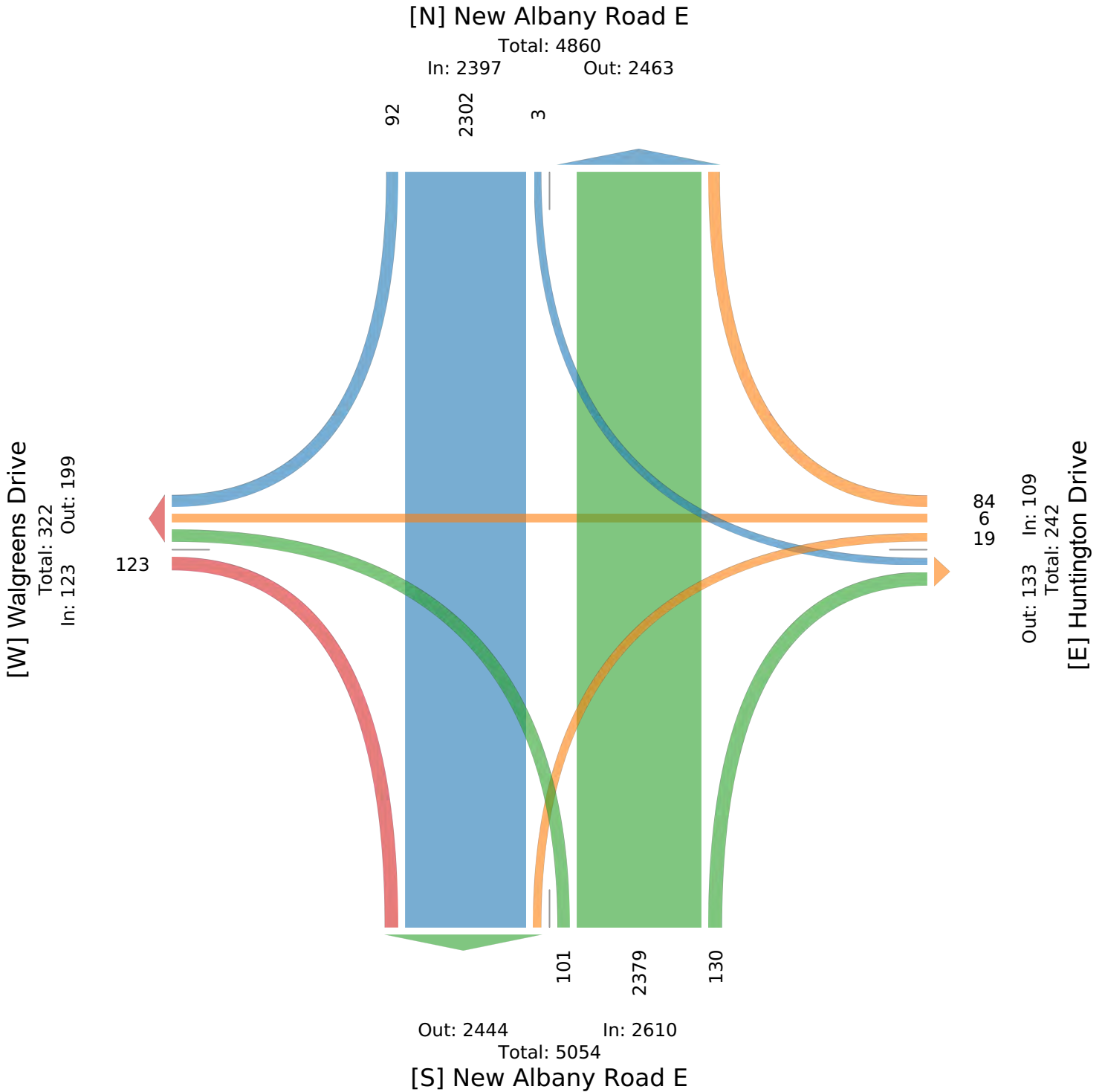
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993487, Location: 40.097524, -82.817567

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



**New Albany Road E & RIRO Access - TMC**

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Sep 27, 2022

AM Peak (7:15 AM - 8:15 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993487, Location: 40.097524, -82.817567

Leg Direction	Walgreens Drive Eastbound					Huntington Drive Westbound					New Albany Road E Northbound					New Albany Road E Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-09-27 7:15AM	0	0	1	0	1	1	0	1	0	2	0	81	1	0	82	0	139	0	0	139	224
7:30AM	0	0	4	0	4	1	0	1	0	2	0	81	2	0	83	0	155	3	0	158	247
7:45AM	0	0	0	0	0	0	0	2	0	2	1	101	2	0	104	0	133	1	0	134	240
8:00AM	0	0	2	0	2	1	0	0	0	1	1	77	0	0	78	0	117	3	0	120	201
<b>Total</b>	0	0	7	0	7	3	0	4	0	7	2	340	5	0	347	0	544	7	0	551	912
<b>% Approach</b>	0%	0%	100%	0%	-	42.9%	0%	57.1%	0%	-	0.6%	98.0%	1.4%	0%	-	0%	98.7%	1.3%	0%	-	-
<b>% Total</b>	0%	0%	0.8%	0%	<b>0.8%</b>	0.3%	0%	0.4%	0%	<b>0.8%</b>	0.2%	37.3%	0.5%	0%	<b>38.0%</b>	0%	59.6%	0.8%	0%	<b>60.4%</b>	-
<b>PHF</b>	-	-	0.438	-	<b>0.438</b>	0.750	-	0.500	-	<b>0.875</b>	0.500	0.842	0.625	-	<b>0.834</b>	-	0.877	0.583	-	<b>0.872</b>	0.923
<b>Lights</b>	0	0	7	0	7	3	0	4	0	7	2	327	5	0	334	0	530	7	0	537	885
<b>% Lights</b>	0%	0%	100%	0%	<b>100%</b>	100%	0%	100%	0%	<b>100%</b>	100%	96.2%	100%	0%	<b>96.3%</b>	0%	97.4%	100%	0%	<b>97.5%</b>	97.0%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0.9%	0%	0%	<b>0.9%</b>	0.5%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	0	9	0	0	9	22
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	3.8%	0%	0%	<b>3.7%</b>	0%	1.7%	0%	0%	<b>1.6%</b>	2.4%

\* L: Left, R: Right, T: Thru, U: U-Turn

**New Albany Road E & RIRO Access - TMC**

Tue Sep 27, 2022

AM Peak (7:15 AM - 8:15 AM)

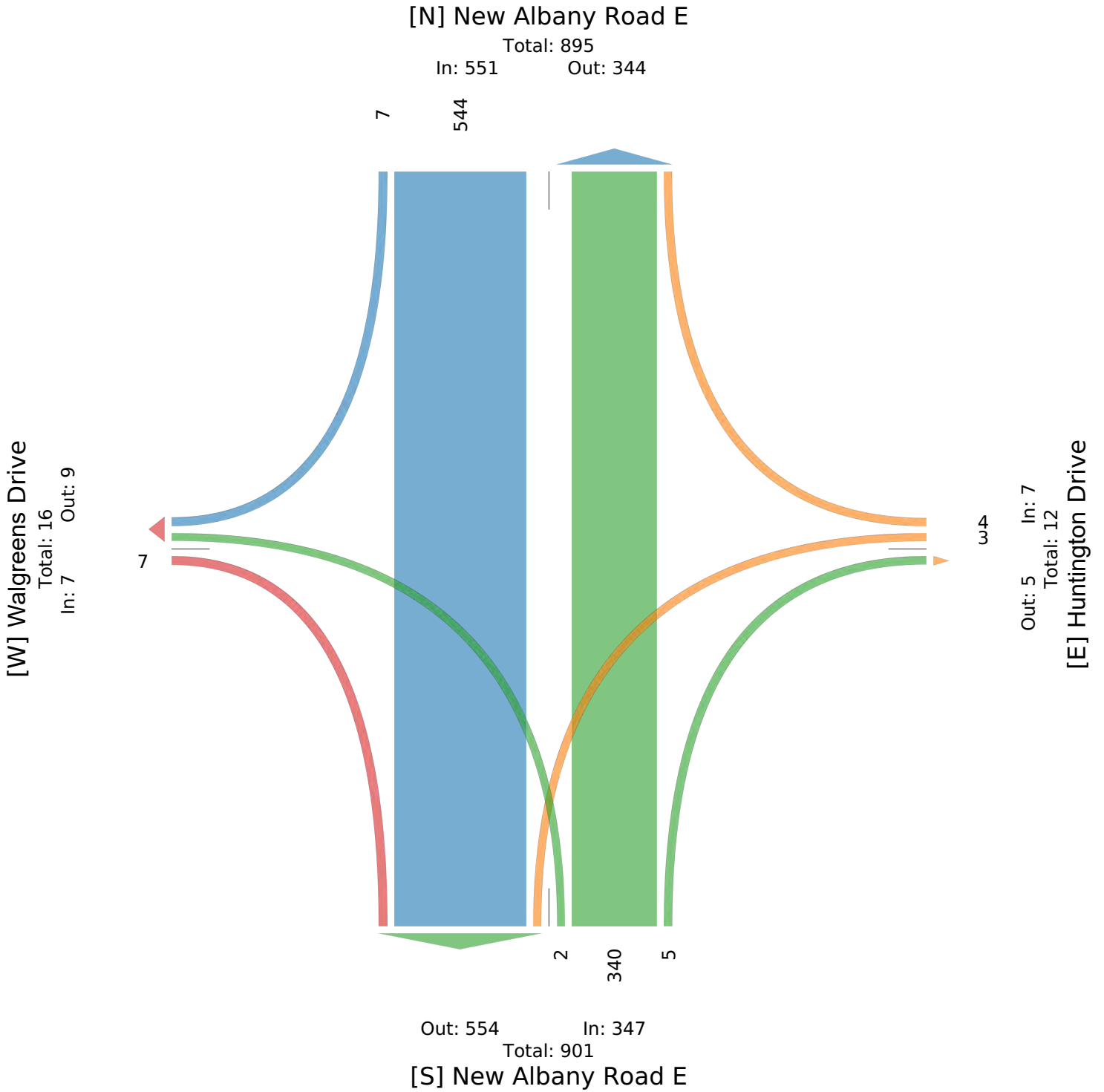
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993487, Location: 40.097524, -82.817567

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



**New Albany Road E & RIRO Access - TMC**

Tue Sep 27, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993487, Location: 40.097524, -82.817567

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Walgreens Drive Eastbound					Huntington Drive Westbound					New Albany Road E Northbound					New Albany Road E Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-09-27 5:00PM	0	0	9	0	<b>9</b>	0	0	7	0	<b>7</b>	7	117	6	0	<b>130</b>	0	113	1	0	<b>114</b>	<b>260</b>
5:15PM	0	0	7	0	<b>7</b>	0	0	5	0	<b>5</b>	4	134	7	0	<b>145</b>	0	83	10	0	<b>93</b>	<b>250</b>
5:30PM	0	0	8	0	<b>8</b>	1	1	3	0	<b>5</b>	4	139	7	0	<b>150</b>	0	103	6	0	<b>109</b>	<b>272</b>
5:45PM	0	0	7	0	<b>7</b>	1	0	4	0	<b>5</b>	8	160	7	0	<b>175</b>	0	87	8	0	<b>95</b>	<b>282</b>
<b>Total</b>	0	0	31	0	<b>31</b>	2	1	19	0	<b>22</b>	23	550	27	0	<b>600</b>	0	386	25	0	<b>411</b>	<b>1064</b>
<b>% Approach</b>	0%	0%	100%	0%	-	9.1%	4.5%	86.4%	0%	-	3.8%	91.7%	4.5%	0%	-	0%	93.9%	6.1%	0%	-	-
<b>% Total</b>	0%	0%	2.9%	0%	<b>2.9%</b>	0.2%	0.1%	1.8%	0%	<b>2.1%</b>	2.2%	51.7%	2.5%	0%	<b>56.4%</b>	0%	36.3%	2.3%	0%	<b>38.6%</b>	-
<b>PHF</b>	-	-	0.861	-	<b>0.861</b>	0.500	0.250	0.679	-	<b>0.786</b>	0.719	0.859	0.964	-	<b>0.857</b>	-	0.854	0.625	-	<b>0.901</b>	0.943
<b>Lights</b>	0	0	31	0	<b>31</b>	2	1	19	0	<b>22</b>	23	545	27	0	<b>595</b>	0	386	25	0	<b>411</b>	1059
<b>% Lights</b>	0%	0%	100%	0%	<b>100%</b>	100%	100%	100%	0%	<b>100%</b>	100%	99.1%	100%	0%	<b>99.2%</b>	0%	100%	100%	0%	<b>100%</b>	99.5%
<b>Articulated Trucks</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	2	0	0	<b>2</b>	0	0	0	0	<b>0</b>	2
<b>% Articulated Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0.4%	0%	0%	<b>0.3%</b>	0%	0%	0%	0%	<b>0%</b>	0.2%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	<b>0</b>	0	0	0	0	<b>0</b>	0	3	0	0	<b>3</b>	0	0	0	0	<b>0</b>	3
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	<b>0%</b>	0%	0%	0%	0%	<b>0%</b>	0%	0.5%	0%	0%	<b>0.5%</b>	0%	0%	0%	0%	<b>0%</b>	0.3%

\* L: Left, R: Right, T: Thru, U: U-Turn

**New Albany Road E & RIRO Access - TMC**

Tue Sep 27, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

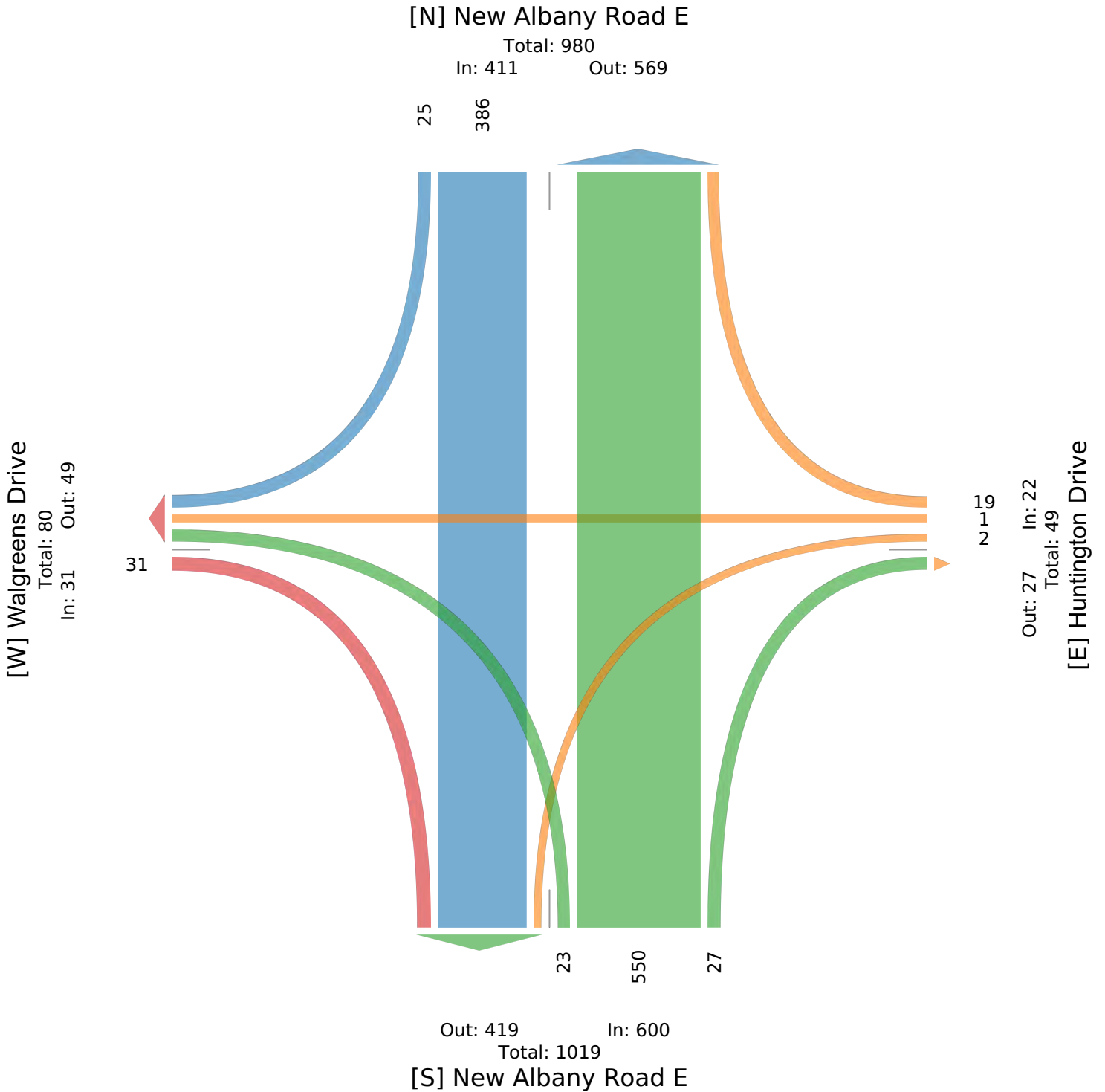
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993487, Location: 40.097524, -82.817567

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US





SR-605 & Central College Road - TMC

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993495, Location: 40.098076, -82.812418

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Central College Road Westbound					Central College Road Eastbound					SR-605 Southbound					SR-605 Northbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-09-27 7:00AM	12	24	3	0	39	2	7	8	0	17	2	47	5	0	54	10	31	2	0	43	153
7:15AM	46	42	3	0	91	2	16	22	0	40	1	89	5	0	95	10	33	7	0	50	276
7:30AM	60	56	6	0	122	3	22	25	0	50	6	94	8	0	108	13	38	18	0	69	349
7:45AM	10	57	10	0	77	11	34	24	0	69	8	65	1	0	74	28	56	18	0	102	322
Hourly Total	128	179	22	0	329	18	79	79	0	176	17	295	19	0	331	61	158	45	0	264	1100
8:00AM	44	53	7	0	104	1	34	29	0	64	15	67	6	0	88	25	48	10	0	83	339
8:15AM	28	36	3	0	67	4	34	23	0	61	14	60	7	0	81	15	63	30	0	108	317
8:30AM	11	28	4	0	43	7	48	20	0	75	13	65	3	0	81	14	40	17	0	71	270
8:45AM	20	26	2	0	48	3	28	21	0	52	14	67	4	0	85	8	35	7	0	50	235
Hourly Total	103	143	16	0	262	15	144	93	0	252	56	259	20	0	335	62	186	64	0	312	1161
2:00PM	9	19	6	0	34	11	27	12	0	50	2	28	4	0	34	15	50	7	0	72	190
2:15PM	18	14	3	0	35	3	37	19	0	59	4	33	4	0	41	19	56	17	0	92	227
2:30PM	18	13	3	0	34	3	33	16	0	52	1	48	3	0	52	14	58	15	0	87	225
2:45PM	17	25	7	0	49	10	27	18	0	55	1	35	8	0	44	20	35	2	0	57	205
Hourly Total	62	71	19	0	152	27	124	65	0	216	8	144	19	0	171	68	199	41	0	308	847
3:00PM	7	20	2	0	29	10	21	15	0	46	2	34	6	0	42	22	38	26	0	86	203
3:15PM	12	27	4	0	43	6	41	17	0	64	1	37	9	0	47	18	65	14	0	97	251
3:30PM	15	33	4	0	52	9	35	17	0	61	3	38	7	0	48	23	61	17	0	101	262
3:45PM	15	19	2	0	36	5	51	20	0	76	3	40	7	0	50	16	57	18	0	91	253
Hourly Total	49	99	12	0	160	30	148	69	0	247	9	149	29	0	187	79	221	75	0	375	969
4:00PM	12	24	7	0	43	8	32	14	0	54	5	46	4	0	55	25	85	11	0	121	273
4:15PM	14	25	8	0	47	11	38	12	0	61	5	46	4	0	55	18	81	8	0	107	270
4:30PM	28	37	9	0	74	6	55	25	0	86	3	51	6	0	60	19	80	21	0	120	340
4:45PM	23	43	8	0	74	9	40	24	0	73	6	63	8	0	77	24	76	36	0	136	360
Hourly Total	77	129	32	0	238	34	165	75	0	274	19	206	22	0	247	86	322	76	0	484	1243
5:00PM	27	43	5	0	75	7	47	35	0	89	4	64	13	0	81	34	92	9	0	135	380
5:15PM	37	53	22	0	112	12	53	38	0	103	7	75	8	0	90	32	104	28	0	164	469
5:30PM	20	45	16	0	81	17	54	16	0	87	8	54	5	0	67	27	89	20	0	136	371
5:45PM	30	58	9	0	97	16	57	28	0	101	5	55	5	0	65	28	100	27	0	155	418
Hourly Total	114	199	52	0	365	52	211	117	0	380	24	248	31	0	303	121	385	84	0	590	1638
<b>Total</b>	533	820	153	0	1506	176	871	498	0	1545	133	1301	140	0	1574	477	1471	385	0	2333	6958
<b>% Approach</b>	35.4%	54.4%	10.2%	0%	-	11.4%	56.4%	32.2%	0%	-	8.4%	82.7%	8.9%	0%	-	20.4%	63.1%	16.5%	0%	-	-
<b>% Total</b>	7.7%	11.8%	2.2%	0%	21.6%	2.5%	12.5%	7.2%	0%	22.2%	1.9%	18.7%	2.0%	0%	22.6%	6.9%	21.1%	5.5%	0%	33.5%	-
<b>Lights</b>	524	811	147	0	1482	174	864	477	0	1515	130	1258	139	0	1527	460	1413	363	0	2236	6760
<b>% Lights</b>	98.3%	98.9%	96.1%	0%	98.4%	98.9%	99.2%	95.8%	0%	98.1%	97.7%	96.7%	99.3%	0%	97.0%	96.4%	96.1%	94.3%	0%	95.8%	97.2%
<b>Articulated Trucks</b>	0	0	1	0	1	0	1	1	0	2	0	11	0	0	11	1	7	0	0	8	22
<b>% Articulated Trucks</b>	0%	0%	0.7%	0%	0.1%	0%	0.1%	0.2%	0%	0.1%	0%	0.8%	0%	0%	0.7%	0.2%	0.5%	0%	0%	0.3%	0.3%
<b>Buses and Single-Unit Trucks</b>	9	9	5	0	23	2	6	20	0	28	3	32	1	0	36	16	51	22	0	89	176
<b>% Buses and Single-Unit Trucks</b>	1.7%	1.1%	3.3%	0%	1.5%	1.1%	0.7%	4.0%	0%	1.8%	2.3%	2.5%	0.7%	0%	2.3%	3.4%	3.5%	5.7%	0%	3.8%	2.5%

\* L: Left, R: Right, T: Thru, U: U-Turn

**SR-605 & Central College Road - TMC**

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

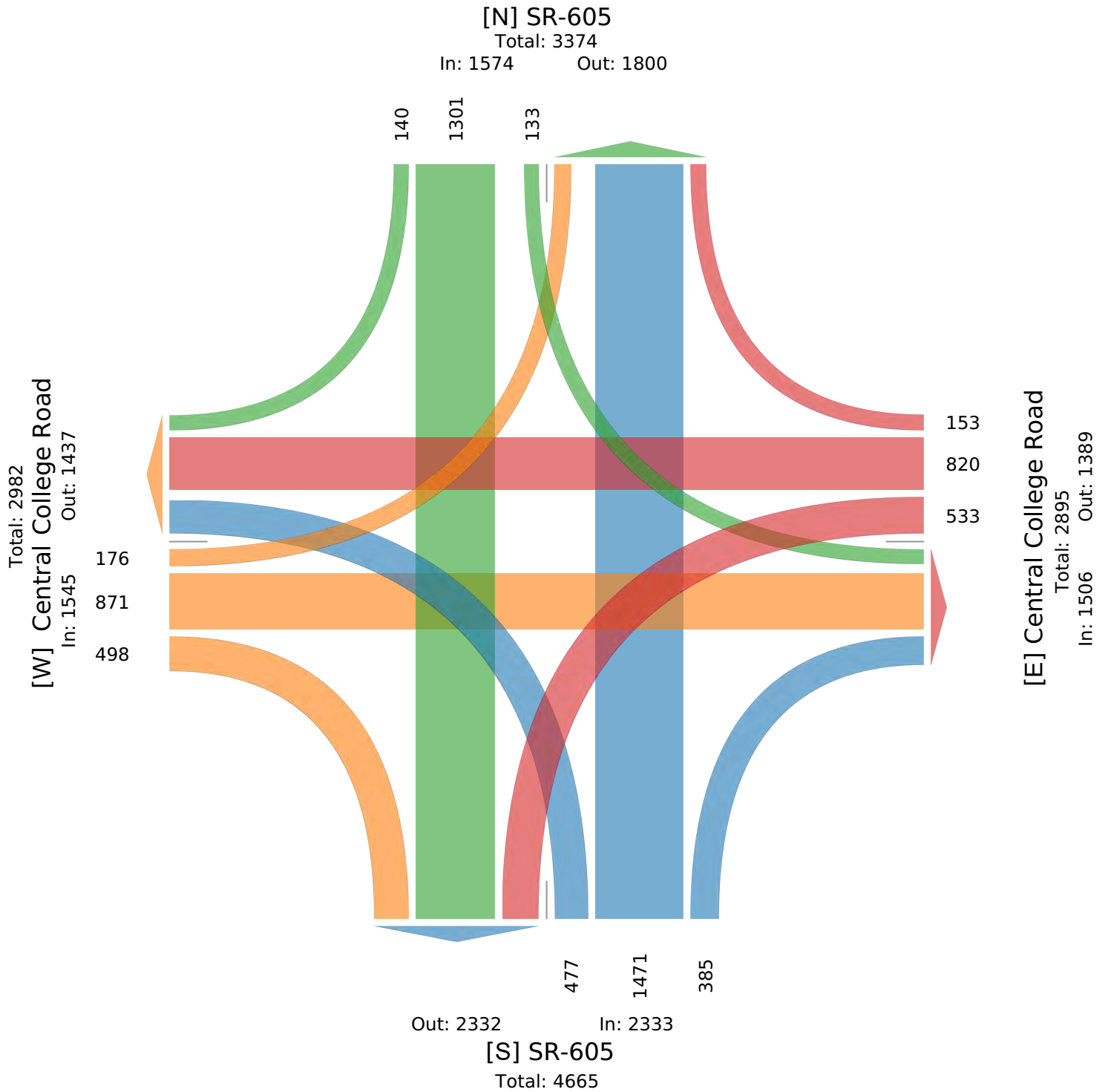
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993495, Location: 40.098076, -82.812418

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



SR-605 & Central College Road - TMC

Tue Sep 27, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993495, Location: 40.098076, -82.812418

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Central College Road Westbound					Central College Road Eastbound					SR-605 Southbound					SR-605 Northbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-09-27 7:30AM	60	56	6	0	122	3	22	25	0	50	6	94	8	0	108	13	38	18	0	69	349
7:45AM	10	57	10	0	77	11	34	24	0	69	8	65	1	0	74	28	56	18	0	102	322
8:00AM	44	53	7	0	104	1	34	29	0	64	15	67	6	0	88	25	48	10	0	83	339
8:15AM	28	36	3	0	67	4	34	23	0	61	14	60	7	0	81	15	63	30	0	108	317
<b>Total</b>	142	202	26	0	370	19	124	101	0	244	43	286	22	0	351	81	205	76	0	362	1327
<b>% Approach</b>	38.4%	54.6%	7.0%	0%	-	7.8%	50.8%	41.4%	0%	-	12.3%	81.5%	6.3%	0%	-	22.4%	56.6%	21.0%	0%	-	-
<b>% Total</b>	10.7%	15.2%	2.0%	0%	27.9%	1.4%	9.3%	7.6%	0%	18.4%	3.2%	21.6%	1.7%	0%	26.5%	6.1%	15.4%	5.7%	0%	27.3%	-
<b>PHF</b>	0.592	0.886	0.650	-	0.758	0.432	0.912	0.871	-	0.884	0.717	0.761	0.688	-	0.813	0.723	0.813	0.633	-	0.838	0.951
<b>Lights</b>	138	201	26	0	365	19	123	96	0	238	43	278	22	0	343	76	191	72	0	339	1285
<b>% Lights</b>	97.2%	99.5%	100%	0%	98.6%	100%	99.2%	95.0%	0%	97.5%	100%	97.2%	100%	0%	97.7%	93.8%	93.2%	94.7%	0%	93.6%	96.8%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	4	0	0	4	5
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0%	2.0%	0%	0%	1.1%	0.4%
<b>Buses and Single-Unit Trucks</b>	4	1	0	0	5	0	1	5	0	6	0	7	0	0	7	5	10	4	0	19	37
<b>% Buses and Single-Unit Trucks</b>	2.8%	0.5%	0%	0%	1.4%	0%	0.8%	5.0%	0%	2.5%	0%	2.4%	0%	0%	2.0%	6.2%	4.9%	5.3%	0%	5.2%	2.8%

\* L: Left, R: Right, T: Thru, U: U-Turn

**SR-605 & Central College Road - TMC**

Tue Sep 27, 2022

AM Peak (7:30 AM - 8:30 AM)

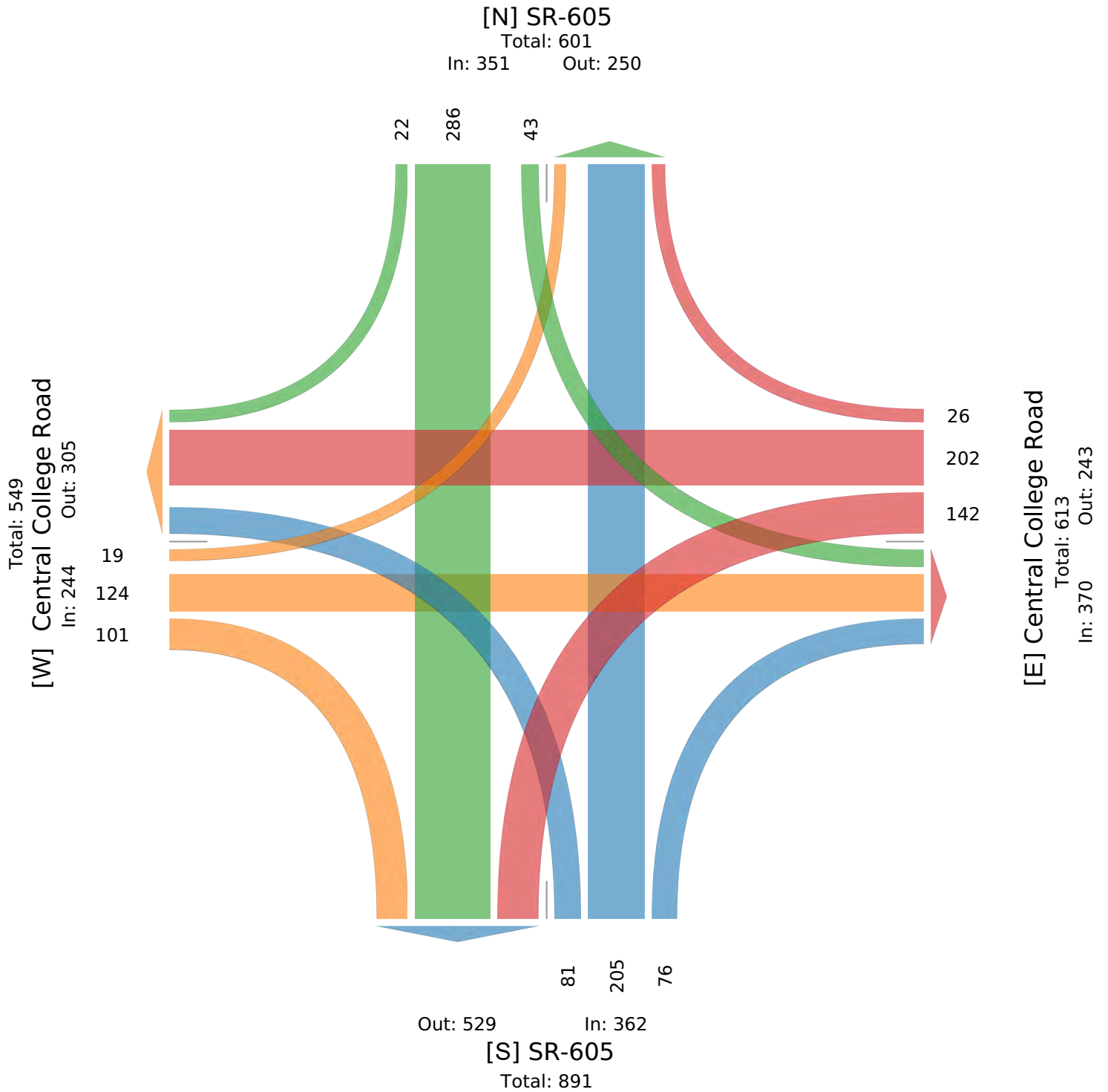
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993495, Location: 40.098076, -82.812418

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



SR-605 & Central College Road - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Sep 27, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993495, Location: 40.098076, -82.812418

Leg Direction	Central College Road Westbound					Central College Road Eastbound					SR-605 Southbound					SR-605 Northbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-09-27 5:00PM	27	43	5	0	75	7	47	35	0	89	4	64	13	0	81	34	92	9	0	135	380
5:15PM	37	53	22	0	112	12	53	38	0	103	7	75	8	0	90	32	104	28	0	164	469
5:30PM	20	45	16	0	81	17	54	16	0	87	8	54	5	0	67	27	89	20	0	136	371
5:45PM	30	58	9	0	97	16	57	28	0	101	5	55	5	0	65	28	100	27	0	155	418
<b>Total</b>	114	199	52	0	365	52	211	117	0	380	24	248	31	0	303	121	385	84	0	590	1638
<b>% Approach</b>	31.2%	54.5%	14.2%	0%	-	13.7%	55.5%	30.8%	0%	-	7.9%	81.8%	10.2%	0%	-	20.5%	65.3%	14.2%	0%	-	-
<b>% Total</b>	7.0%	12.1%	3.2%	0%	22.3%	3.2%	12.9%	7.1%	0%	23.2%	1.5%	15.1%	1.9%	0%	18.5%	7.4%	23.5%	5.1%	0%	36.0%	-
<b>PHF</b>	0.770	0.858	0.591	-	0.815	0.765	0.925	0.770	-	0.922	0.750	0.827	0.596	-	0.842	0.890	0.925	0.750	-	0.899	0.873
<b>Lights</b>	114	199	52	0	365	52	209	116	0	377	24	247	31	0	302	120	378	84	0	582	1626
<b>% Lights</b>	100%	100%	100%	0%	100%	100%	99.1%	99.1%	0%	99.2%	100%	99.6%	100%	0%	99.7%	99.2%	98.2%	100%	0%	98.6%	99.3%
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.4%	0%	0%	0.3%	0%	0.3%	0%	0%	0.2%	0.1%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	1	6	0	0	7	10
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	0%	0%	0.9%	0.9%	0%	0.8%	0%	0%	0%	0%	0%	0.8%	1.6%	0%	0%	1.2%	0.6%

\* L: Left, R: Right, T: Thru, U: U-Turn

**SR-605 & Central College Road - TMC**

Tue Sep 27, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

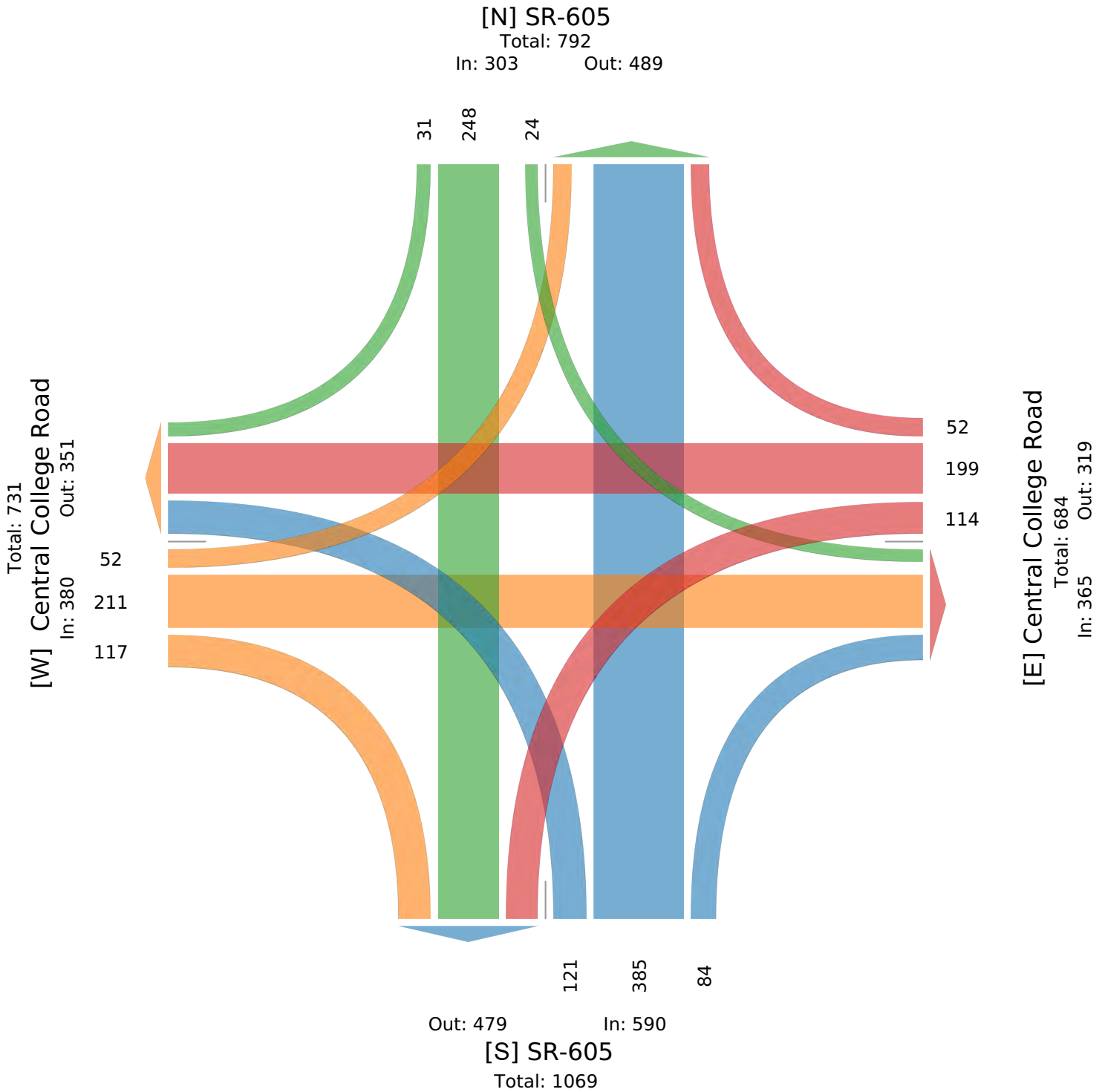
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993495, Location: 40.098076, -82.812418

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



SR-605 & Snider Loop - TMC

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993467, Location: 40.094979, -82.812529

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Snider Loop Westbound				SR-605 Northbound				SR-605 Southbound				Int
	L	R	U	App	T	R	U	App	L	T	U	App	
2022-09-27 7:00AM	2	1	0	3	47	0	0	47	1	69	0	70	120
7:15AM	4	0	0	4	49	1	1	51	0	160	0	160	215
7:30AM	8	0	0	8	82	5	0	87	0	174	0	174	269
7:45AM	2	0	0	2	92	0	0	92	1	103	0	104	198
Hourly Total	16	1	0	17	270	6	1	277	2	506	0	508	802
8:00AM	10	0	0	10	81	0	0	81	1	138	0	139	230
8:15AM	2	1	0	3	110	4	1	115	1	110	0	111	229
8:30AM	2	1	0	3	73	2	0	75	2	90	0	92	170
8:45AM	2	2	0	4	46	1	0	47	1	110	0	111	162
Hourly Total	16	4	0	20	310	7	1	318	5	448	0	453	791
2:00PM	1	0	0	1	74	1	0	75	1	52	0	53	129
2:15PM	5	0	0	5	98	2	0	100	1	68	0	69	174
2:30PM	2	1	0	3	76	1	0	77	0	86	0	86	166
2:45PM	2	0	0	2	52	2	0	54	0	64	0	64	120
Hourly Total	10	1	0	11	300	6	0	306	2	270	0	272	589
3:00PM	2	0	0	2	101	2	1	104	1	57	0	58	164
3:15PM	4	0	0	4	90	3	0	93	2	64	0	66	163
3:30PM	4	3	0	7	97	2	0	99	0	72	0	72	178
3:45PM	0	0	0	0	99	2	0	101	0	72	0	72	173
Hourly Total	10	3	0	13	387	9	1	397	3	265	0	268	678
4:00PM	1	0	0	1	116	2	0	118	0	73	0	73	192
4:15PM	1	2	0	3	107	5	0	112	1	76	0	77	192
4:30PM	2	0	0	2	121	1	0	122	0	99	0	99	223
4:45PM	2	0	0	2	139	9	2	150	0	110	1	111	263
Hourly Total	6	2	0	8	483	17	2	502	1	358	1	360	870
5:00PM	3	0	0	3	130	0	0	130	1	128	0	129	262
5:15PM	3	3	0	6	174	2	0	176	0	145	0	145	327
5:30PM	3	0	0	3	136	3	0	139	2	91	0	93	235
5:45PM	4	0	0	4	142	6	1	149	0	111	2	113	266
Hourly Total	13	3	0	16	582	11	1	594	3	475	2	480	1090
<b>Total</b>	71	14	0	85	2332	56	6	2394	16	2322	3	2341	4820
<b>% Approach</b>	83.5%	16.5%	0%	-	97.4%	2.3%	0.3%	-	0.7%	99.2%	0.1%	-	-
<b>% Total</b>	1.5%	0.3%	0%	1.8%	48.4%	1.2%	0.1%	49.7%	0.3%	48.2%	0.1%	48.6%	-
<b>Lights</b>	71	14	0	85	2239	56	4	2299	15	2245	2	2262	4646
<b>% Lights</b>	100%	100%	0%	100%	96.0%	100%	66.7%	96.0%	93.8%	96.7%	66.7%	96.6%	96.4%
<b>Articulated Trucks</b>	0	0	0	0	4	0	0	4	1	6	0	7	11
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0.2%	0%	0%	0.2%	6.3%	0.3%	0%	0.3%	0.2%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	89	0	2	91	0	71	1	72	163
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	3.8%	0%	33.3%	3.8%	0%	3.1%	33.3%	3.1%	3.4%

\*L: Left, R: Right, T: Thru, U: U-Turn

SR-605 & Snider Loop - TMC

Tue Sep 27, 2022

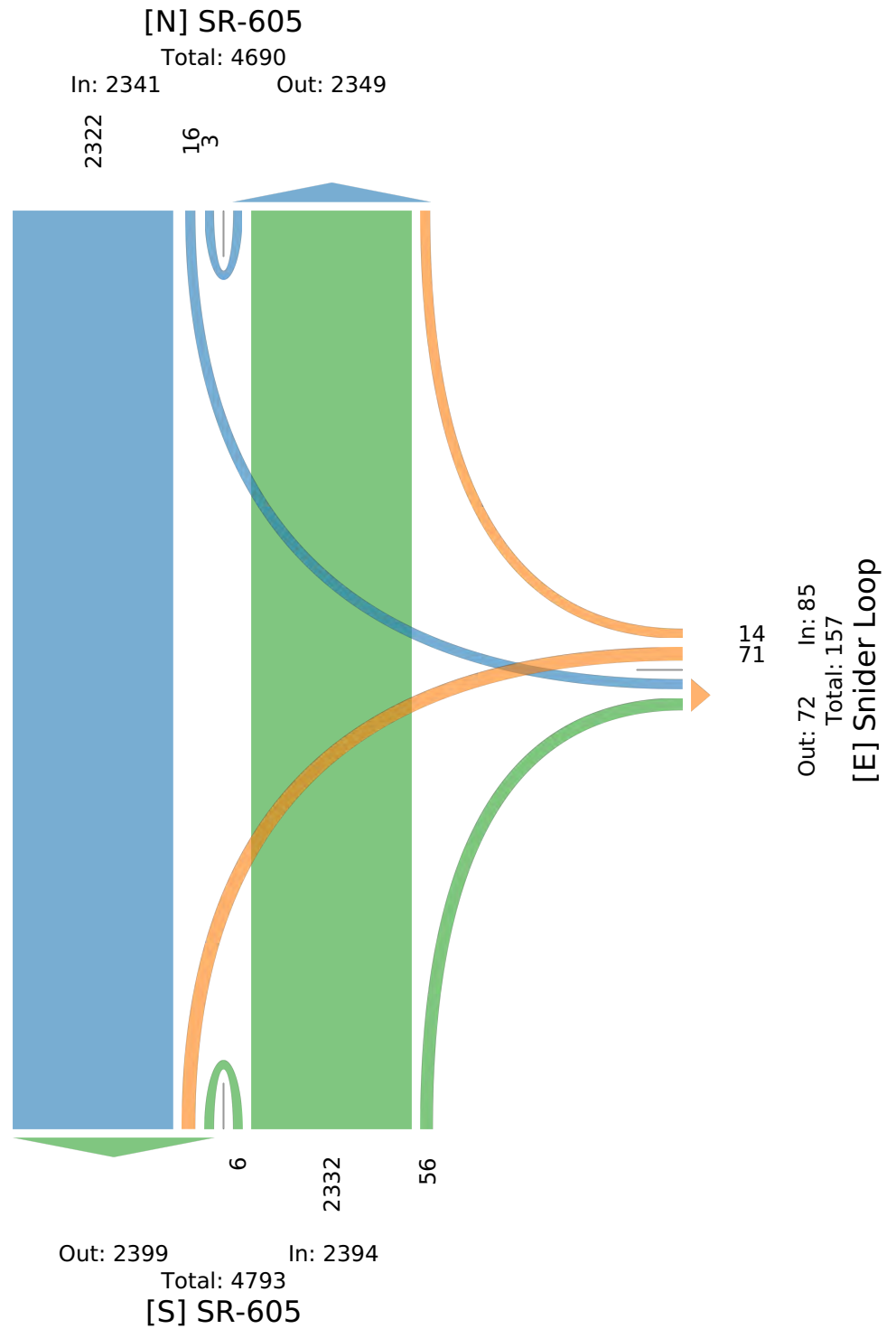
Full Length (7 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993467, Location: 40.094979, -82.812529

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US





**SR-605 & Snider Loop - TMC**

Tue Sep 27, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993467, Location: 40.094979, -82.812529

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Snider Loop Westbound				SR-605 Northbound				SR-605 Southbound				Int
	L	R	U	App	T	R	U	App	L	T	U	App	
Time													
2022-09-27 7:30AM	8	0	0	<b>8</b>	82	5	0	<b>87</b>	0	174	0	<b>174</b>	<b>269</b>
7:45AM	2	0	0	<b>2</b>	92	0	0	<b>92</b>	1	103	0	<b>104</b>	<b>198</b>
8:00AM	10	0	0	<b>10</b>	81	0	0	<b>81</b>	1	138	0	<b>139</b>	<b>230</b>
8:15AM	2	1	0	<b>3</b>	110	4	1	<b>115</b>	1	110	0	<b>111</b>	<b>229</b>
<b>Total</b>	<b>22</b>	<b>1</b>	<b>0</b>	<b>23</b>	<b>365</b>	<b>9</b>	<b>1</b>	<b>375</b>	<b>3</b>	<b>525</b>	<b>0</b>	<b>528</b>	<b>926</b>
<b>% Approach</b>	95.7%	4.3%	0%	-	97.3%	2.4%	0.3%	-	0.6%	99.4%	0%	-	-
<b>% Total</b>	2.4%	0.1%	0%	<b>2.5%</b>	39.4%	1.0%	0.1%	<b>40.5%</b>	0.3%	56.7%	0%	<b>57.0%</b>	-
<b>PHF</b>	0.550	0.250	-	<b>0.575</b>	0.830	0.450	0.250	<b>0.815</b>	0.750	0.754	-	<b>0.759</b>	0.861
<b>Lights</b>	22	1	0	<b>23</b>	342	9	1	<b>352</b>	3	509	0	<b>512</b>	887
<b>% Lights</b>	100%	100%	0%	<b>100%</b>	93.7%	100%	100%	<b>93.9%</b>	100%	97.0%	0%	<b>97.0%</b>	95.8%
<b>Articulated Trucks</b>	0	0	0	<b>0</b>	2	0	0	<b>2</b>	0	1	0	<b>1</b>	3
<b>% Articulated Trucks</b>	0%	0%	0%	<b>0%</b>	0.5%	0%	0%	<b>0.5%</b>	0%	0.2%	0%	<b>0.2%</b>	0.3%
<b>Buses and Single-Unit Trucks</b>	0	0	0	<b>0</b>	21	0	0	<b>21</b>	0	15	0	<b>15</b>	36
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	<b>0%</b>	5.8%	0%	0%	<b>5.6%</b>	0%	2.9%	0%	<b>2.8%</b>	3.9%

\* L: Left, R: Right, T: Thru, U: U-Turn

SR-605 & Snider Loop - TMC

Tue Sep 27, 2022

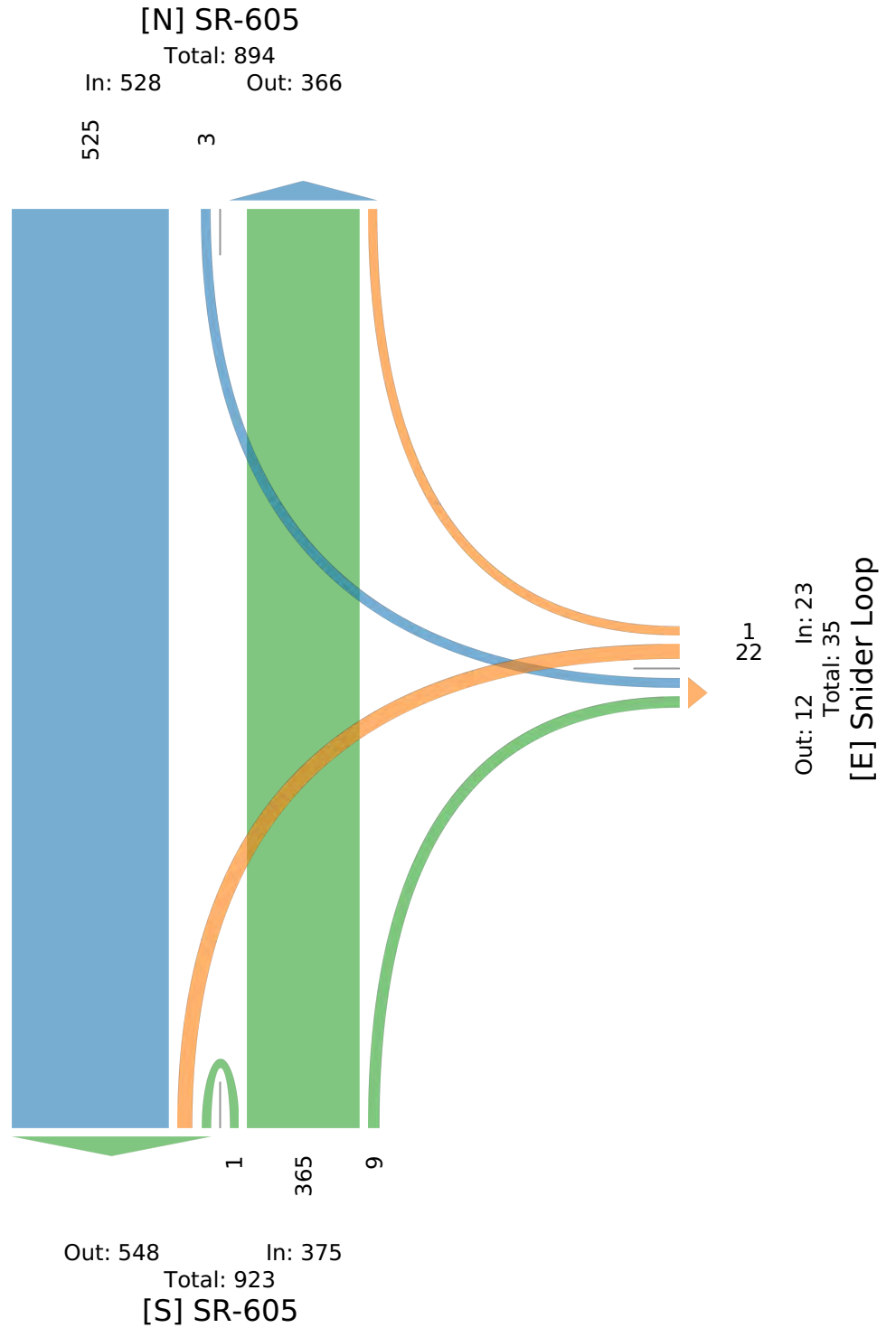
AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993467, Location: 40.094979, -82.812529

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US



SR-605 & Snider Loop - TMC

Tue Sep 27, 2022

PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993467, Location: 40.094979, -82.812529

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Snider Loop Westbound				SR-605 Northbound				SR-605 Southbound				Int
	L	R	U	App	T	R	U	App	L	T	U	App	
2022-09-27 5:00PM	3	0	0	3	130	0	0	130	1	128	0	129	262
5:15PM	3	3	0	6	174	2	0	176	0	145	0	145	327
5:30PM	3	0	0	3	136	3	0	139	2	91	0	93	235
5:45PM	4	0	0	4	142	6	1	149	0	111	2	113	266
<b>Total</b>	13	3	0	16	582	11	1	594	3	475	2	480	1090
<b>% Approach</b>	81.3%	18.8%	0%	-	98.0%	1.9%	0.2%	-	0.6%	99.0%	0.4%	-	-
<b>% Total</b>	1.2%	0.3%	0%	1.5%	53.4%	1.0%	0.1%	54.5%	0.3%	43.6%	0.2%	44.0%	-
<b>PHF</b>	0.813	0.250	-	0.667	0.836	0.458	0.250	0.844	0.375	0.819	0.250	0.828	0.833
<b>Lights</b>	13	3	0	16	574	11	1	586	3	474	2	479	1081
<b>% Lights</b>	100%	100%	0%	100%	98.6%	100%	100%	98.7%	100%	99.8%	100%	99.8%	99.2%
<b>Articulated Trucks</b>	0	0	0	0	1	0	0	1	0	0	0	0	1
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0.2%	0%	0%	0.2%	0%	0%	0%	0%	0.1%
<b>Buses and Single-Unit Trucks</b>	0	0	0	0	7	0	0	7	0	1	0	1	8
<b>% Buses and Single-Unit Trucks</b>	0%	0%	0%	0%	1.2%	0%	0%	1.2%	0%	0.2%	0%	0.2%	0.7%

\* L: Left, R: Right, T: Thru, U: U-Turn

**SR-605 & Snider Loop - TMC**

Tue Sep 27, 2022

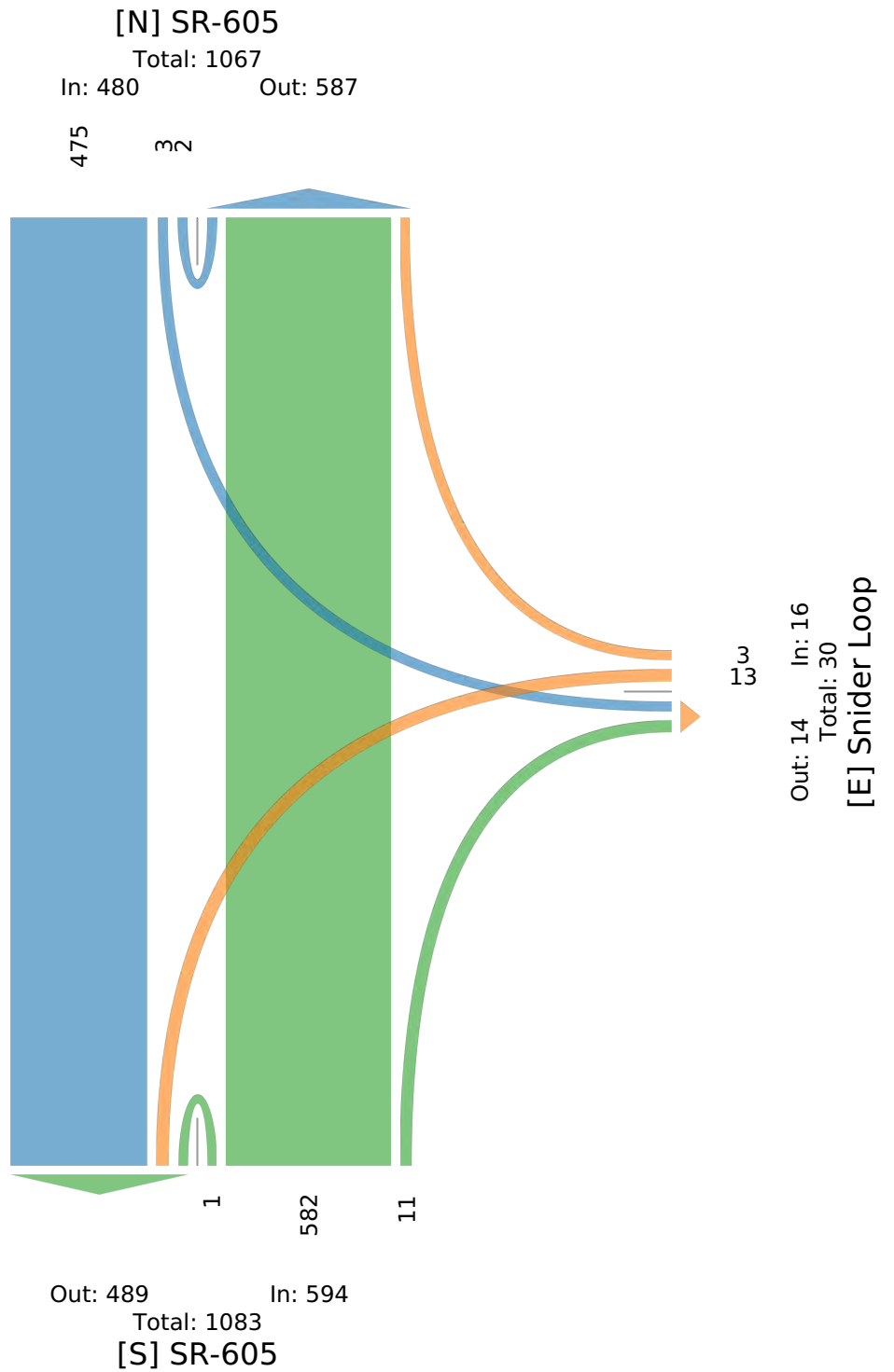
PM Peak (5 PM - 6 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993467, Location: 40.094979, -82.812529

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US



**SR-605 & Walton Parkway - TMC**

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993460, Location: 40.09303, -82.812182

Leg Direction	Walton Parkway Eastbound					Walton Parkway Westbound					SR-605 Northbound					SR-605 Southbound					Int
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	
2022-09-27 7:00AM	1	8	12	0	21	3	4	3	0	10	10	42	3	0	55	13	50	3	0	66	152
7:15AM	2	9	20	0	31	3	2	5	0	10	8	44	2	0	54	17	126	2	0	145	240
7:30AM	1	31	38	0	70	6	17	18	0	41	23	51	13	0	87	24	162	8	0	194	392
7:45AM	0	24	14	0	38	7	22	21	0	50	20	74	9	0	103	26	71	5	0	102	293
Hourly Total	4	72	84	0	160	19	45	47	0	111	61	211	27	0	299	80	409	18	0	507	1077
8:00AM	3	34	17	0	54	3	15	13	4	35	31	52	15	0	98	29	100	6	0	135	322
8:15AM	2	30	36	0	68	8	7	16	0	31	40	97	11	0	148	23	85	6	1	115	362
8:30AM	3	21	16	0	40	2	13	6	0	21	24	64	6	0	94	18	72	1	0	91	246
8:45AM	0	19	15	0	34	6	7	3	0	16	11	46	6	0	63	29	80	7	0	116	229
Hourly Total	8	104	84	0	196	19	42	38	4	103	106	259	38	0	403	99	337	20	1	457	1159
2:00PM	3	8	7	0	18	22	4	15	0	41	11	54	6	1	72	3	44	0	1	48	179
2:15PM	2	6	9	0	17	7	9	10	0	26	20	81	6	0	107	8	65	2	0	75	225
2:30PM	2	6	10	0	18	1	6	4	0	11	22	80	7	0	109	9	74	2	0	85	223
2:45PM	1	2	28	0	31	6	7	9	0	22	6	47	1	0	54	10	59	3	0	72	179
Hourly Total	8	22	54	0	84	36	26	38	0	100	59	262	20	1	342	30	242	7	1	280	806
3:00PM	1	5	15	0	21	7	15	6	0	28	29	79	5	0	113	3	42	1	0	46	208
3:15PM	3	4	15	0	22	4	10	15	1	30	38	84	3	0	125	9	64	3	0	76	253
3:30PM	3	9	20	0	32	6	6	12	0	24	22	87	3	0	112	8	64	1	0	73	241
3:45PM	3	2	8	0	13	6	11	6	0	23	24	83	12	0	119	12	62	0	0	74	229
Hourly Total	10	20	58	0	88	23	42	39	1	105	113	333	23	0	469	32	232	5	0	269	931
4:00PM	4	6	22	0	32	4	19	29	0	52	17	87	3	0	107	12	60	2	0	74	265
4:15PM	6	7	13	0	26	9	12	17	0	38	18	83	2	0	103	6	63	2	0	71	238
4:30PM	5	6	13	0	24	5	22	26	0	53	17	93	6	0	116	15	90	2	1	108	301
4:45PM	4	16	21	0	41	9	21	26	0	56	13	109	1	0	123	12	96	3	0	111	331
Hourly Total	19	35	69	0	123	27	74	98	0	199	65	372	12	0	449	45	309	9	1	364	1135
5:00PM	2	7	35	0	44	21	37	34	0	92	13	89	3	0	105	5	114	6	0	125	366
5:15PM	9	16	32	0	57	13	25	27	0	65	13	124	8	0	145	7	141	2	1	151	418
5:30PM	7	6	25	0	38	12	25	21	0	58	24	114	8	0	146	10	84	2	0	96	338
5:45PM	9	6	14	0	29	10	11	23	0	44	18	124	2	0	144	9	105	0	0	114	331
Hourly Total	27	35	106	0	168	56	98	105	0	259	68	451	21	0	540	31	444	10	1	486	1453
<b>Total</b>	76	288	455	0	819	180	327	365	5	877	472	1888	141	1	2502	317	1973	69	4	2363	6561
<b>% Approach</b>	9.3%	35.2%	55.6%	0%	-	20.5%	37.3%	41.6%	0.6%	-	18.9%	75.5%	5.6%	0%	-	13.4%	83.5%	2.9%	0.2%	-	-
<b>% Total</b>	1.2%	4.4%	6.9%	0%	12.5%	2.7%	5.0%	5.6%	0.1%	13.4%	7.2%	28.8%	2.1%	0%	38.1%	4.8%	30.1%	1.1%	0.1%	36.0%	-
<b>Lights</b>	75	282	419	0	776	141	323	351	2	817	438	1810	125	1	2374	305	1908	67	4	2284	6251
<b>% Lights</b>	98.7%	97.9%	92.1%	0%	94.7%	78.3%	98.8%	96.2%	40.0%	93.2%	92.8%	95.9%	88.7%	100%	94.9%	96.2%	96.7%	97.1%	100%	96.7%	95.3%
<b>Articulated Trucks</b>	0	0	0	0	0	1	0	0	0	1	0	3	0	0	3	0	7	0	0	7	11
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0.6%	0%	0%	0%	0.1%	0%	0.2%	0%	0%	0.1%	0%	0.4%	0%	0%	0.3%	0.2%
<b>Buses and Single-Unit Trucks</b>	1	6	36	0	43	38	4	14	3	59	34	75	16	0	125	12	58	2	0	72	299
<b>% Buses and Single-Unit Trucks</b>	1.3%	2.1%	7.9%	0%	5.3%	21.1%	1.2%	3.8%	60.0%	6.7%	7.2%	4.0%	11.3%	0%	5.0%	3.8%	2.9%	2.9%	0%	3.0%	4.6%

\* L: Left, R: Right, T: Thru, U: U-Turn

**SR-605 & Walton Parkway - TMC**

Tue Sep 27, 2022

Full Length (7 AM-9 AM, 2 PM-6 PM)

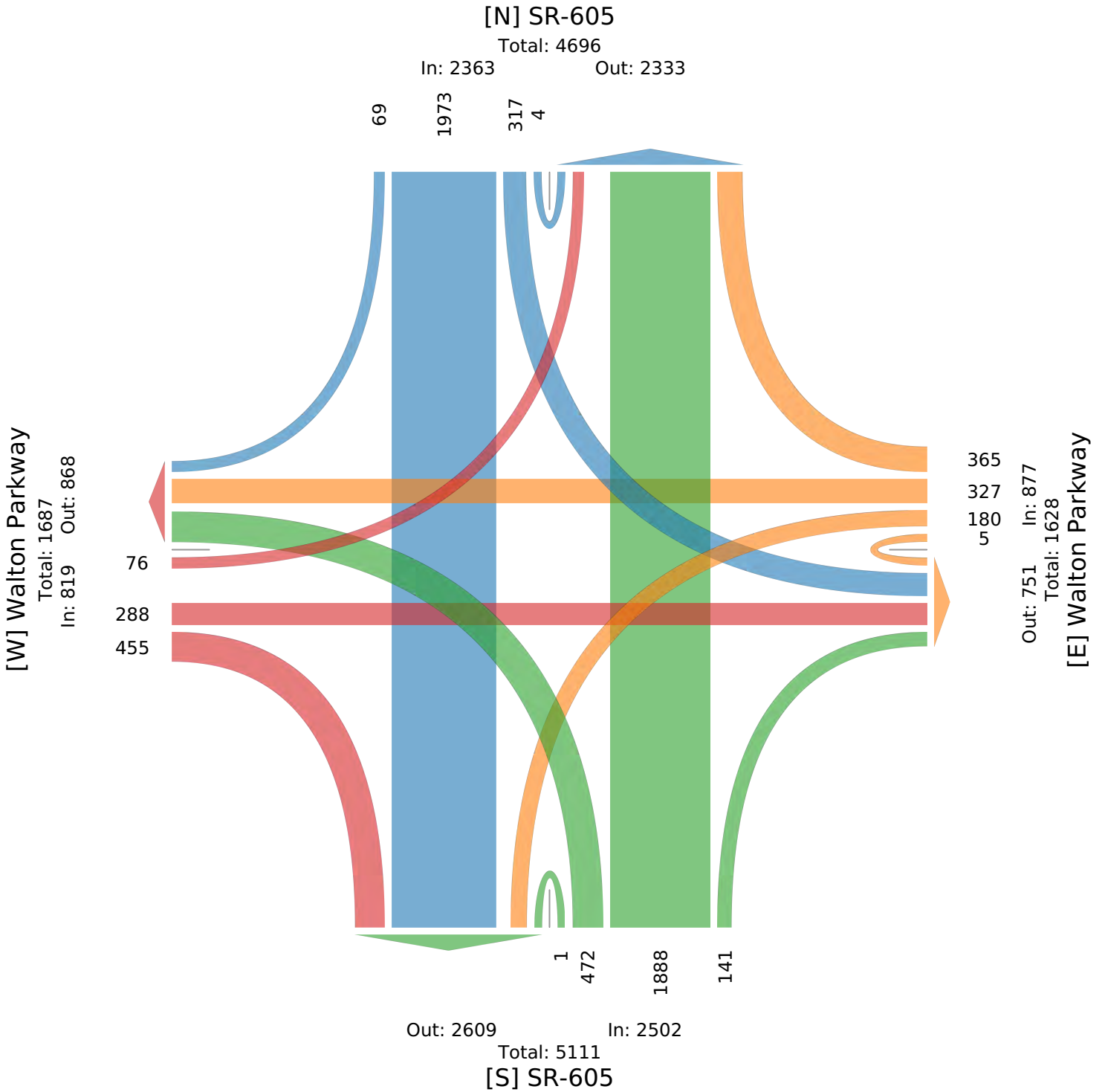
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993460, Location: 40.09303, -82.812182

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



SR-605 & Walton Parkway - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Sep 27, 2022

AM Peak (7:30 AM - 8:30 AM)

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993460, Location: 40.09303, -82.812182

Leg Direction	Walton Parkway Eastbound					Walton Parkway Westbound					SR-605 Northbound					SR-605 Southbound					Int	
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App		
2022-09-27 7:30AM	1	31	38	0	70	6	17	18	0	41	23	51	13	0	87	24	162	8	0	194	392	
7:45AM	0	24	14	0	38	7	22	21	0	50	20	74	9	0	103	26	71	5	0	102	293	
8:00AM	3	34	17	0	54	3	15	13	4	35	31	52	15	0	98	29	100	6	0	135	322	
8:15AM	2	30	36	0	68	8	7	16	0	31	40	97	11	0	148	23	85	6	1	115	362	
<b>Total</b>	6	119	105	0	230	24	61	68	4	157	114	274	48	0	436	102	418	25	1	546	1369	
<b>% Approach</b>	2.6%	51.7%	45.7%	0%	-	15.3%	38.9%	43.3%	2.5%	-	26.1%	62.8%	11.0%	0%	-	18.7%	76.6%	4.6%	0.2%	-	-	
<b>% Total</b>	0.4%	8.7%	7.7%	0%	16.8%	1.8%	4.5%	5.0%	0.3%	11.5%	8.3%	20.0%	3.5%	0%	31.8%	7.5%	30.5%	1.8%	0.1%	39.9%	-	
<b>PHF</b>	0.500	0.875	0.691	-	0.821	0.750	0.693	0.810	0.250	0.785	0.713	0.706	0.800	-	0.736	0.879	0.645	0.781	0.250	0.704	0.873	
<b>Lights</b>	6	118	91	0	215	17	60	66	2	145	105	256	40	0	401	100	403	25	1	529	1290	
<b>% Lights</b>	100%	99.2%	86.7%	0%	93.5%	70.8%	98.4%	97.1%	50.0%	92.4%	92.1%	93.4%	83.3%	0%	92.0%	98.0%	96.4%	100%	100%	96.9%	94.2%	
<b>Articulated Trucks</b>	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	0	1	0	0	0	1	3
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	4.2%	0%	0%	0%	0.6%	0%	0.4%	0%	0%	0.2%	0%	0.2%	0%	0%	0.2%	0.2%	
<b>Buses and Single-Unit Trucks</b>	0	1	14	0	15	6	1	2	2	11	9	17	8	0	34	2	14	0	0	16	76	
<b>% Buses and Single-Unit Trucks</b>	0%	0.8%	13.3%	0%	6.5%	25.0%	1.6%	2.9%	50.0%	7.0%	7.9%	6.2%	16.7%	0%	7.8%	2.0%	3.3%	0%	0%	2.9%	5.6%	

\*L: Left, R: Right, T: Thru, U: U-Turn

**SR-605 & Walton Parkway - TMC**

Tue Sep 27, 2022

AM Peak (7:30 AM - 8:30 AM)

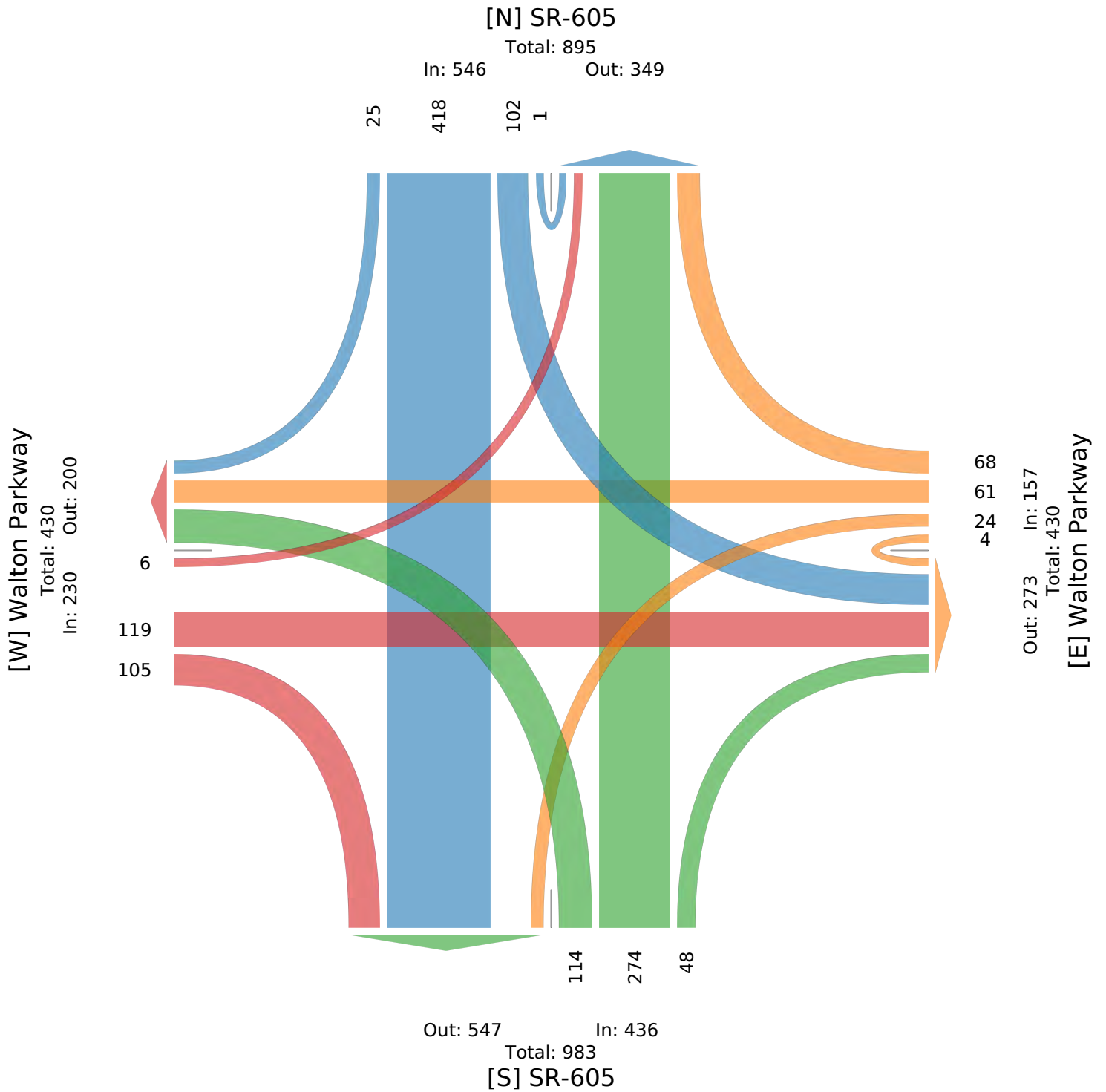
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993460, Location: 40.09303, -82.812182

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US





SR-605 & Walton Parkway - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.  
6612 Singletree Drive, Columbus, OH, 43229, US

Tue Sep 27, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993460, Location: 40.09303, -82.812182

Leg Direction	Walton Parkway Eastbound					Walton Parkway Westbound					SR-605 Northbound					SR-605 Southbound					Int	
	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App		
2022-09-27 4:45PM	4	16	21	0	41	9	21	26	0	56	13	109	1	0	123	12	96	3	0	111	331	
5:00PM	2	7	35	0	44	21	37	34	0	92	13	89	3	0	105	5	114	6	0	125	366	
5:15PM	9	16	32	0	57	13	25	27	0	65	13	124	8	0	145	7	141	2	1	151	418	
5:30PM	7	6	25	0	38	12	25	21	0	58	24	114	8	0	146	10	84	2	0	96	338	
<b>Total</b>	22	45	113	0	180	55	108	108	0	271	63	436	20	0	519	34	435	13	1	483	1453	
<b>% Approach</b>	12.2%	25.0%	62.8%	0%	-	20.3%	39.9%	39.9%	0%	-	12.1%	84.0%	3.9%	0%	-	7.0%	90.1%	2.7%	0.2%	-	-	
<b>% Total</b>	1.5%	3.1%	7.8%	0%	12.4%	3.8%	7.4%	7.4%	0%	18.7%	4.3%	30.0%	1.4%	0%	35.7%	2.3%	29.9%	0.9%	0.1%	33.2%	-	
<b>PHF</b>	0.611	0.703	0.807	-	0.789	0.655	0.730	0.794	-	0.736	0.656	0.879	0.625	-	0.889	0.708	0.771	0.542	0.250	0.800	0.869	
<b>Lights</b>	22	44	113	0	179	55	107	107	0	269	63	429	20	0	512	34	432	13	1	480	1440	
<b>% Lights</b>	100%	97.8%	100%	0%	99.4%	100%	99.1%	99.1%	0%	99.3%	100%	98.4%	100%	0%	98.7%	100%	99.3%	100%	100%	99.4%	99.1%	
<b>Articulated Trucks</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0	1	2
<b>% Articulated Trucks</b>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	0%	0.2%	0%	0%	0.2%	0.1%	
<b>Buses and Single-Unit Trucks</b>	0	1	0	0	1	0	1	1	0	2	0	6	0	0	6	0	2	0	0	2	11	
<b>% Buses and Single-Unit Trucks</b>	0%	2.2%	0%	0%	0.6%	0%	0.9%	0.9%	0%	0.7%	0%	1.4%	0%	0%	1.2%	0%	0.5%	0%	0%	0.4%	0.8%	

\* L: Left, R: Right, T: Thru, U: U-Turn

SR-605 & Walton Parkway - TMC

Tue Sep 27, 2022

PM Peak (4:45 PM - 5:45 PM) - Overall Peak Hour

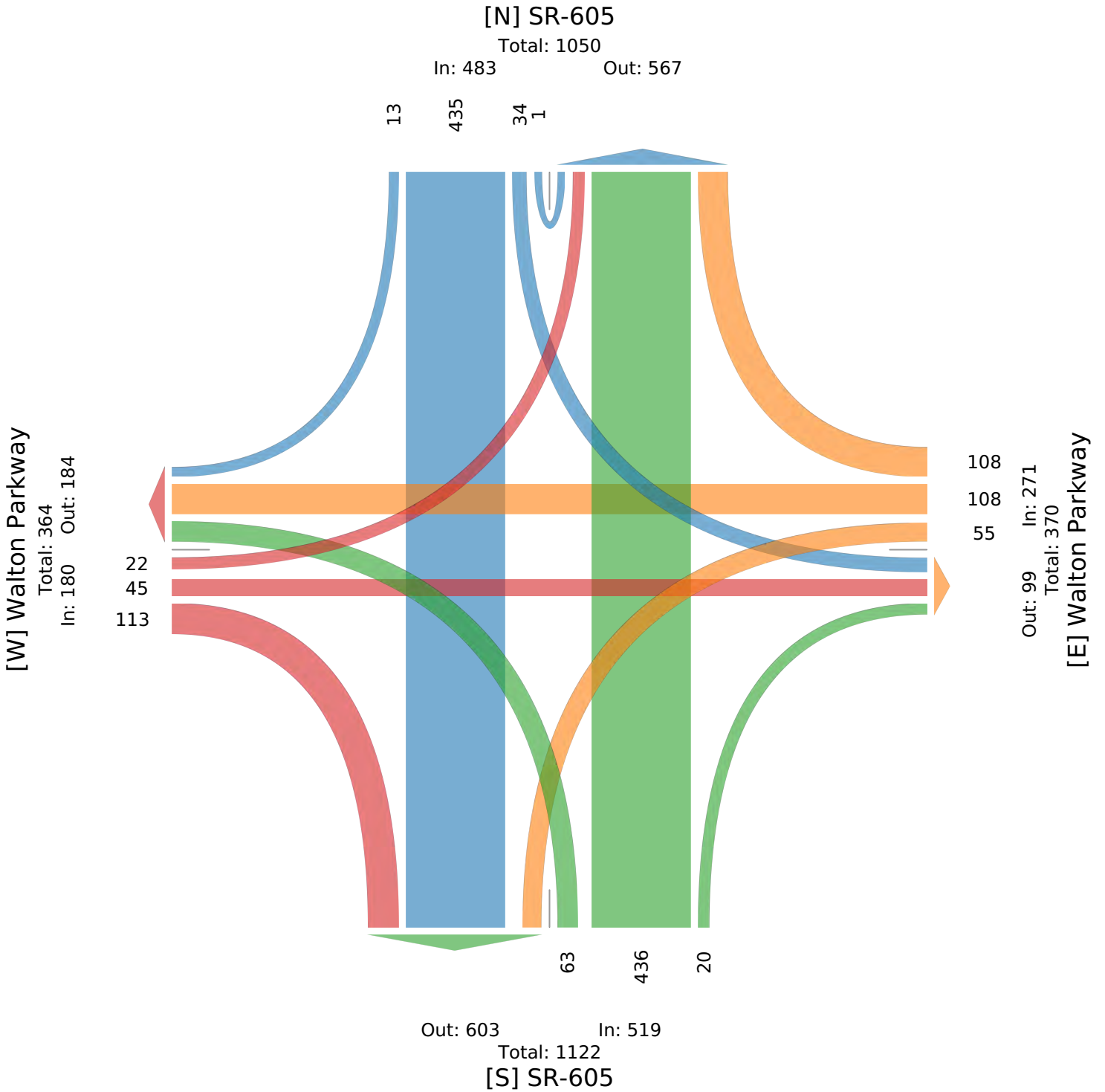
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)

All Movements

ID: 993460, Location: 40.09303, -82.812182

Provided by: Carpenter Marty (CM) Transportation Inc.

6612 Singletree Drive, Columbus, OH, 43229, US



## Chelsea Cousins

---

**From:** Hwashik Jang <hjang@morpc.org>  
**Sent:** Friday, March 6, 2020 3:16 PM  
**To:** Chelsea Cousins  
**Cc:** Drew Laurent; Nick Gill; Zhuojun Jiang  
**Subject:** RE: Growth Rate Request - New Albany Microbrewery

Chelsea,

We have completed processing growth rates for your study intersection. Please use linear annual growth rates as summarized below.

<u>Location</u>	<u>Linear Annual Growth Rate</u>
Central College Rd e/o SR 605	1.30%
SR 605 n/o Central College Rd	1.70%
Central College Rd w/o SR 605	1.10%
SR 605 s/o Central College Rd	1.30%

Note: The above rate was derived based on planning level analysis by using MORPC's regional travel demand model.

If you have any questions, please let me know.

Thanks,

### HWASHIK JANG

Senior Planner | Mid-Ohio Regional Planning Commission

T: 614.233.4145 | [hjang@morpc.org](mailto:hjang@morpc.org)

111 Liberty Street, Suite 100 | Columbus, OH 43215



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**From:** Chelsea Cousins <ccousins@cmtran.com>  
**Sent:** Monday, February 3, 2020 10:22 AM  
**To:** Hwashik Jang <hjang@morpc.org>; Nick Gill <NGILL@morpc.org>; Zhuojun Jiang <zjiang@morpc.org>  
**Cc:** Drew Laurent <dlaurent@cmtran.com>  
**Subject:** Growth Rate Request - New Albany Microbrewery

All,

We would like to request growth rates for the intersection of New Albany-Condit Road & Central College Road in New Albany, OH. We are conducting a traffic study for a development in the northeast corner of the intersection. The site is proposed to develop as a microbrewery. The opening year will be 2020 with a 10 year horizon. The study will be reviewed by the City of New Albany. See the attached count and preliminary site plan for your use.

Thank you,

**Chelsea Cousins, EIT**

Segment	2020 Count ADT	2050 MORPC ADT	ADT Site Traffic Removed	2050 No Build ADT	Growth Rate
New Albany Road W- West of New Albany Rd	19100	21400	382	21018	1.00%
New Albany Road E- East of New Albany Rd	17900	24900	0	24900	1.30%
New Albany Road- New Albany Rd to SR-161 Westbound Ramps	30300	37400	382	37018	1.00%
New Albany Road- SR-161 Westbound Ramps to SR-161 Eastbound Ramps	22400	27300	3917	23383	1.00%
New Albany Road- SR-161 Eastbound Ramps to Fodor Rd	13900	17200	7452	9748	1.00%
SR-161 Eastbound Exit Ramp to New Albany Rd	12800	16000	3535	12465	1.00%
SR-161 Westbound Exit Ramp to New Albany Rd	3400	3300	0	3300	1.00%
Fodor Road- West of New Albany Rd	5700	5900	0	5900	1.00%
Fodor Road- New Albany Rd to Dublin Granville Road	9000	11200	7452	3748	1.00%
Swickard Woods Boulevard- North of Fodor Rd	900	1800	0	1800	3.00%
Dublin Granville Road- West of Fodor Rd/Market St	6800	13700	647	13053	3.00%
Dublin Granville Road- Fodor Rd/Market St to High St	3300	7900	2520	5380	2.10%
Dublin Granville Road- High St to Kitzmiller Rd	2800	5000	560	4440	1.95%
Dublin Granville Road- East of Kitzmiller Rd	3000	6800	0	6800	3.00%
Kitzmiller Road- North of Dublin Granville Rd	3900	10300	0	10300	3.00%
Kitzmiller Road- South of Dublin Granville Rd	2600	5400	0	5400	3.00%
Market Street- Dublin Granville Rd to Main St	9600	16000	4553	11447	1.00%
Market Street- Main St to High St	4000	7400	2515	4885	1.00%
Main Street- South of Market St to Thurston Hall Blvd/Theisen Rd	9200	14600	6145	8455	1.00%
Johnstown Road- Thurston Hall Blvd/Theisen Rd to SR-161 Eastbound Ramps	9500	16300	9758	6542	1.00%
Johnstown Road- SR-161 Eastbound Ramps to SR-161 Westbound Ramps	17600	25100	5526	19574	1.00%

Segment	2020 Count ADT	2050 MORPC ADT	ADT Site Traffic Removed	2050 No Build ADT	Growth Rate
Johnstown Road- SR-161 Westbound Ramps to Walton Pkwy	26200	37700	1294	36406	1.30%
SR-161 Eastbound Exit Ramp to Johnstown Rd	10600	13100	348	12752	1.00%
SR-161 Westbound Exit Ramp to Johnstown Rd	2500	4600	3884	716	1.00%
High Street/New Albany-Condit Road- South of Market St to Walton Pkwy	9000	15500	1781	13719	1.75%
New Albany-Condit Road- North of Walton Pkwy	9600	14200	1105	13095	1.21%
Walton Parkway- New Albany Rd to East of New Albany-Condit Rd	3800	9100	0	9100	3.00%
3rd Street- Dublin Granville Rd to Main St	700	400	1492	-1092	1.00%

\*If the calculated growth rate was less than 1%, a minimum of 1% was used. Likewise, if the calculated growth rate was greater than 3%, a maximum of 3% was used.

# Appendix C

## Trip Generation



**Scenario - 1**

Scenario Name: AM Peak  
 Dev. phase: 1  
 Analyst Note:  
 Warning:  
 User Group:  
 No. of Years to Project: 0  
 Traffic:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	Dwelling Units	40	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) $T = 0.31(X) + 22.85$	8 24%	27 76%	35
215 - Single-Family Attached Housing Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	Dwelling Units	116	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) $T = 0.52(X) - 5.70$	17 31%	38 69%	55
210 - Single-Family Detached Housing Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	Dwelling Units	32	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LOG) $\ln(T) = 0.91\ln(X) + 0.12$	7 26%	20 74%	27
710 - General Office Building Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	1000 Sq. Ft. GFA	17.5	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LOG) $\ln(T) = 0.86\ln(X) + 1.16$	33 88%	4 12%	37
822 - Strip Retail Plaza (<40k) Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	1000 Sq. Ft. GLA	30	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LOG) $\ln(T) = 0.66\ln(X) + 1.84$	36 60%	24 40%	60

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	24	76
215 - Single-Family Attached Housing	100	100	1	1	31	69
210 - Single-Family Detached Housing	100	100	1	1	26	74
710 - General Office Building	99	100	1.1	1.1	88	12
822 - Strip Retail Plaza (<40k)	100	100	1	1	60	40

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	8	27	0	0	8	27
		35		0		35
215 - Single-Family Attached Housing	17	38	0	0	17	38
		55		0		55
210 - Single-Family Detached Housing	7	20	0	0	7	20
		27		0		27
710 - General Office Building	36	5	0	0	36	5
		41		0		41
822 - Strip Retail Plaza (<40k)	36	24	0	0	36	24
		60		0		60

**INTERNAL VEHICLE TRIP REDUCTION**

**LAND USE GROUP ASSIGNMENT:**

Land Use	Land Use Group
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	Residential
215 - Single-Family Attached Housing	Residential
210 - Single-Family Detached Housing	Residential
710 - General Office Building	Office
822 - Strip Retail Plaza (<40k)	Retail

**BALANCED PERSON TRIPS:**

220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit				215 - Single-Family Attached Housing			
Persons Exit	PAF	UIPTC	Unconstrained Demand	Unconstrained Demand	UIPTC	PAF	Persons Entry
27	1	0	0	0	0	1	17
Persons Entry	PAF	UIPTC	Unconstrained Demand	Unconstrained Demand	UIPTC	PAF	Persons Exit
8	1	0	0	0	0	1	38

220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit					210 - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
27	1	0	0	0	0	0	1	7	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
8	1	0	0	0	0	0	1	20	
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit					710 - General Office Building				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
27	1	0.6666666666666666	0	0	0	1	1	37	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
8	1	0	0	0	0	0.3333333333333333	1	5	
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
27	1	0.3333333333333333	0	0	2	5.666666666666667	1	36	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
8	1	0.6666666666666666	0	0	1	4.666666666666667	1	24	
215 - Single-Family Attached Housing					210 - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
38	1	0	0	0	0	0	1	7	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
17	1	0	0	0	0	0	1	20	
215 - Single-Family Attached Housing					710 - General Office Building				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
38	1	0.6666666666666666	0	0	0	1	1	37	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
17	1	0	0	0	0	0.3333333333333333	1	5	
215 - Single-Family Attached Housing					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
38	1	0.3333333333333333	0	0	2	5.666666666666667	1	36	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
17	1	0.6666666666666666	0	0	1	4.666666666666667	1	24	
210 - Single-Family Detached Housing					710 - General Office Building				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
20	1	0.6666666666666666	0	0	0	1	1	37	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
7	1	0	0	0	0	0.3333333333333333	1	5	
210 - Single-Family Detached Housing					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
20	1	0.3333333333333333	0	0	2	5.666666666666667	1	36	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
7	1	0.6666666666666666	0	0	1	4.666666666666667	1	24	
710 - General Office Building					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
5	1	28	1	1	11	32	1	36	



Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
37	1	4	1	1	7	29	1	24

**INTERNAL PERSON TRIPS:**

**220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit**

Internal Person Trips From	Entry	Exit	Total
215 - Single-Family Attached Housing	0	0	0
210 - Single-Family Detached Housing	0	0	0
710 - General Office Building	0	0	0
822 - Strip Retail Plaza (<40k)	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**215 - Single-Family Attached Housing**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit	0	0	0
210 - Single-Family Detached Housing	0	0	0
710 - General Office Building	0	0	0
822 - Strip Retail Plaza (<40k)	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**210 - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	0
710 - General Office Building	0	0	0
822 - Strip Retail Plaza (<40k)	0	0	0
<b>Total Internal Person Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>

**710 - General Office Building**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	0
210 - Single-Family Detached Housing	0	0	0
822 - Strip Retail Plaza (<40k)	1	1	3
<b>Total Internal Person Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>

**822 - Strip Retail Plaza (<40k)**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	0
210 - Single-Family Detached Housing	0	0	0
710 - General Office Building	1	1	3
<b>Total Internal Person Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>

**INTERNAL VEHICLE TRIPS AND CAPTURE:**

**220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	8	27	35
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**215 - Single-Family Attached Housing**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	17	38	55
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**210 - Single-Family Detached Housing**

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-

Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>0</b>	<b>0</b>	<b>0</b>
Total External Vehicle Trips	7	20	27
<b>Internal Vehicle Trip Capture</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>

**710 - General Office Building**

Total Internal Person Trips	1	1	2
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>
Total External Vehicle Trips	32	3	35
<b>Internal Vehicle Trip Capture</b>	<b>3%</b>	<b>22%</b>	<b>0%</b>

**822 - Strip Retail Plaza (<40k)**

Total Internal Person Trips	1	1	2
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>1</b>	<b>1</b>	<b>2</b>
Total External Vehicle Trips	35	23	58
<b>Internal Vehicle Trip Capture</b>	<b>3%</b>	<b>4%</b>	<b>0%</b>

**PASS-BY VEHICLE TRIP REDUCTION**

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	8	27	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	17	38	0.00%	0.00%	0	0
210 - Single-Family Detached Housing	7	20	0.00%	0.00%	0	0
710 - General Office Building	32	3	0.00%	0.00%	0	0
822 - Strip Retail Plaza (<40k)	35	23	0.00%	0.00%	0	0

**DIVERTED VEHICLE TRIP REDUCTION**

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	8	27	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	17	38	0.00%	0.00%	0	0
210 - Single-Family Detached Housing	7	20	0.00%	0.00%	0	0
710 - General Office Building	32	3	0.00%	0.00%	0	0
822 - Strip Retail Plaza (<40k)	35	23	0.00%	0.00%	0	0

**EXTRA VEHICLE TRIP REDUCTION**

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	8	27	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	17	38	0.00%	0.00%	0	0
210 - Single-Family Detached Housing	7	20	0.00%	0.00%	0	0
710 - General Office Building	32	3	0.00%	0.00%	0	0
822 - Strip Retail Plaza (<40k)	35	23	0.00%	0.00%	0	0

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	8	27	35
215 - Single-Family Attached Housing	17	38	55
210 - Single-Family Detached Housing	7	20	27
710 - General Office Building	32	3	35
822 - Strip Retail Plaza (<40k)	35	23	58

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	101	113	214

Internal Vehicle Trips	2	2	4
External Vehicle Trips	99	111	210
Internal Vehicle Trip Capture	2%	2%	2%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	99	111	210

Scenario - 2	
Scenario Name: PM Peak	User Group:
Dev. phase: 1	No. of Years to Project 0
Analyst Note:	Traffic :
Warning:	

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	Dwelling Units	40	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.61	15 60%	10 40%	25
215 - Single-Family Attached Housing Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	Dwelling Units	116	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 0.60(X) - 3.93	37 57%	28 43%	65
210 - Single-Family Detached Housing Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	Dwelling Units	32	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.94Ln(X) + 0.27	21 63%	13 37%	34
710 - General Office Building Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	1000 Sq. Ft. GFA	17.5	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.83Ln(X) + 1.29	7 17%	32 83%	39
822 - Strip Retail Plaza (<40k) Data Source: Trip Generation Manual, 11th Ed	General Urban/Suburban	1000 Sq. Ft. GLA	30	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.71Ln(X) + 2.72	85 50%	85 50%	170

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	100	100	1	1	60	40
215 - Single-Family Attached Housing	100	100	1	1	57	43
210 - Single-Family Detached Housing	100	100	1	1	63	37
710 - General Office Building	100	99	1.1	1.1	17	83
822 - Strip Retail Plaza (<40k)	100	100	1	1	50	50

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	15	10	0	0	15	10
		25		0		25
215 - Single-Family Attached Housing	37	28	0	0	37	28
		65		0		65
210 - Single-Family Detached Housing	21	13	0	0	21	13
		34		0		34
710 - General Office Building	7	36	0	0	7	36
		43		0		43
822 - Strip Retail Plaza (<40k)	85	85	0	0	85	85
		170		0		170

**INTERNAL VEHICLE TRIP REDUCTION**

**LAND USE GROUP ASSIGNMENT:**

Land Use	Land Use Group
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	Residential
215 - Single-Family Attached Housing	Residential
210 - Single-Family Detached Housing	Residential
710 - General Office Building	Office
822 - Strip Retail Plaza (<40k)	Retail

**BALANCED PERSON TRIPS:**

220 - Multifamily Housing (Low-Rise)-Close to Rail Transit				215 - Single-Family Attached Housing			
Persons Exit	PAF	UIPTC	Unconstrained Demand	Unconstrained Demand	UIPTC	PAF	Persons Entry
10	1	0	0	0	0	1	37
Persons Entry	PAF	UIPTC	Unconstrained Demand	Unconstrained Demand	UIPTC	PAF	Persons Exit
15	1	0	0	0	0	1	28

220 - Multifamily Housing (Low-Rise)-Close to Rail Transit					210 - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
10	1	0	0	0	0	0	1	21	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
15	1	0	0	0	0	0	1	13	
220 - Multifamily Housing (Low-Rise)-Close to Rail Transit					710 - General Office Building				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
10	1	1.33333333333333	0	0	1	19	1	7	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
15	1	1.33333333333333	0	0	0	0.66666666666666	1	36	
220 - Multifamily Housing (Low-Rise)-Close to Rail Transit					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
10	1	14	1	1	3	3.33333333333335	1	85	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
15	1	15.3333333333333	2	2	7	8.66666666666666	1	85	
215 - Single-Family Attached Housing					210 - Single-Family Detached Housing				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
28	1	0	0	0	0	0	1	21	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
37	1	0	0	0	0	0	1	13	
215 - Single-Family Attached Housing					710 - General Office Building				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
28	1	1.33333333333333	0	0	1	19	1	7	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
37	1	1.33333333333333	0	0	0	0.66666666666666	1	36	
215 - Single-Family Attached Housing					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
28	1	14	4	3	3	3.33333333333335	1	85	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
37	1	15.3333333333333	6	6	7	8.66666666666666	1	85	
210 - Single-Family Detached Housing					710 - General Office Building				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
13	1	1.33333333333333	0	0	1	19	1	7	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
21	1	1.33333333333333	0	0	0	0.66666666666666	1	36	
210 - Single-Family Detached Housing					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
13	1	14	2	2	3	3.33333333333335	1	85	
Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<==== BALANCED <<<====	Unconstrained Demand	UIPTC	PAF	Persons Exit	
21	1	15.3333333333333	3	3	7	8.66666666666666	1	85	
710 - General Office Building					822 - Strip Retail Plaza (<40k)				
Persons Exit	PAF	UIPTC	Unconstrained Demand	====>> BALANCED <<====	Unconstrained Demand	UIPTC	PAF	Persons Entry	
36	1	20	7	7	7	8	1	85	

Persons Entry	PAF	UIPTC	Unconstrained Demand	<<<== BALANCED <<<==	Unconstrained Demand	UIPTC	PAF	Persons Exit
7	1	31	2	2	2	2	1	85

**INTERNAL PERSON TRIPS:**

**220 - Multifamily Housing (Low-Rise)-Close to Rail Transit**

Internal Person Trips From	Entry	Exit	Total
215 - Single-Family Attached Housing	0	0	0
210 - Single-Family Detached Housing	0	0	0
710 - General Office Building	0	0	0
822 - Strip Retail Plaza (<40k)	2	1	4
<b>Total Internal Person Trips</b>	<b>2</b>	<b>1</b>	<b>3</b>

**215 - Single-Family Attached Housing**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Close to Rail Transit	0	0	0
210 - Single-Family Detached Housing	0	0	0
710 - General Office Building	0	0	1
822 - Strip Retail Plaza (<40k)	6	3	9
<b>Total Internal Person Trips</b>	<b>6</b>	<b>3</b>	<b>9</b>

**210 - Single-Family Detached Housing**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	0
710 - General Office Building	0	0	0
822 - Strip Retail Plaza (<40k)	3	2	5
<b>Total Internal Person Trips</b>	<b>3</b>	<b>2</b>	<b>5</b>

**710 - General Office Building**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Close to Rail Transit	0	0	0
215 - Single-Family Attached Housing	0	0	1
210 - Single-Family Detached Housing	0	0	0
822 - Strip Retail Plaza (<40k)	2	7	8
<b>Total Internal Person Trips</b>	<b>2</b>	<b>7</b>	<b>9</b>

**822 - Strip Retail Plaza (<40k)**

Internal Person Trips From	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise)-Close to Rail Transit	1	2	4
215 - Single-Family Attached Housing	3	6	9
210 - Single-Family Detached Housing	2	3	5
710 - General Office Building	7	2	8
<b>Total Internal Person Trips</b>	<b>13</b>	<b>13</b>	<b>26</b>

**INTERNAL VEHICLE TRIPS AND CAPTURE:**

**220 - Multifamily Housing (Low-Rise)-Close to Rail Transit**

Total Internal Person Trips	2	1	3
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>2</b>	<b>1</b>	<b>3</b>
Total External Vehicle Trips	13	9	22
<b>Internal Vehicle Trip Capture</b>	<b>14%</b>	<b>10%</b>	<b>0%</b>

**215 - Single-Family Attached Housing**

Total Internal Person Trips	6	3	9
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>6</b>	<b>3</b>	<b>9</b>
Total External Vehicle Trips	31	25	56
<b>Internal Vehicle Trip Capture</b>	<b>16%</b>	<b>11%</b>	<b>0%</b>

**210 - Single-Family Detached Housing**

Total Internal Person Trips	3	2	5
Vehicle Mode Share	100%	100%	-

Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>3</b>	<b>2</b>	<b>5</b>
Total External Vehicle Trips	18	11	29
<b>Internal Vehicle Trip Capture</b>	<b>14%</b>	<b>16%</b>	<b>0%</b>

**710 - General Office Building**

Total Internal Person Trips	2	7	9
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>2</b>	<b>7</b>	<b>9</b>
Total External Vehicle Trips	5	25	30
<b>Internal Vehicle Trip Capture</b>	<b>30%</b>	<b>22%</b>	<b>0%</b>

**822 - Strip Retail Plaza (<40k)**

Total Internal Person Trips	13	13	26
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
<b>Total Vehicle Internal Trips</b>	<b>13</b>	<b>13</b>	<b>26</b>
Total External Vehicle Trips	72	72	144
<b>Internal Vehicle Trip Capture</b>	<b>15%</b>	<b>15%</b>	<b>0%</b>

**PASS-BY VEHICLE TRIP REDUCTION**

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	13	9	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	31	25	0.00%	0.00%	0	0
210 - Single-Family Detached Housing	18	11	0.00%	0.00%	0	0
710 - General Office Building	5	25	0.00%	0.00%	0	0
822 - Strip Retail Plaza (<40k)	72	72	34.00%	34.00%	24	24

**DIVERTED VEHICLE TRIP REDUCTION**

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	13	9	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	31	25	0.00%	0.00%	0	0
210 - Single-Family Detached Housing	18	11	0.00%	0.00%	0	0
710 - General Office Building	5	25	0.00%	0.00%	0	0
822 - Strip Retail Plaza (<40k)	72	72	0.00%	0.00%	0	0

**EXTRA VEHICLE TRIP REDUCTION**

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	13	9	0.00%	0.00%	0	0
215 - Single-Family Attached Housing	31	25	0.00%	0.00%	0	0
210 - Single-Family Detached Housing	18	11	0.00%	0.00%	0	0
710 - General Office Building	5	25	0.00%	0.00%	0	0
822 - Strip Retail Plaza (<40k)	48	48	0.00%	0.00%	0	0

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Close to Rail Transit	13	9	22
215 - Single-Family Attached Housing	31	25	56
210 - Single-Family Detached Housing	18	11	29
710 - General Office Building	5	25	30
822 - Strip Retail Plaza (<40k)	48	48	96

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	165	168	333

Internal Vehicle Trips	26	26	52
External Vehicle Trips	139	142	281
Internal Vehicle Trip Capture	16%	15%	16%
Pass-by Vehicle Trips	24	24	48
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	115	118	233



**Scenario - 2**

Scenario Name: Background AM Peak

User Group:

Dev. phase: 1

No. of Years to Project 0  
Traffic :

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
710 - General Office Building Data Source: Trip Gen Manual, 10th Ed +	General Urban/Suburban	1000 Sq. Ft. GFA	333.2	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	292	48	340
$T = 0.94(X) + 26.49$					86%	14%		
210 - Single-Family Detached Housing Data Source: Trip Gen Manual, 10th Ed +	General Urban/Suburban	Dwelling Units	50	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	10	30	40
$T = 0.71(X) + 4.80$					25%	75%		

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	100	1	1	86	14
210 - Single-Family Detached Housing	100	100	1	1	25	75

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	292	48	0	0	292	48
	340		0		340	
210 - Single-Family Detached Housing	10	30	0	0	10	30
	40		0		40	

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	292	48	340
210 - Single-Family Detached Housing	10	30	40

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	302	78	380
External Vehicle Trips	302	78	380
New Vehicle Trips	302	78	380

**Scenario - 3**

Scenario Name: Background PM Peak

User Group:

Dev. phase: 1

No. of Years to Project Traffic : 0

Analyst Note:

Warning:

**VEHICLE TRIPS BEFORE REDUCTION**

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
710 - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	333.2	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG)	57	300	357
Data Source: Trip Gen Manual, 10th Ed +					$\ln(T) = 0.95\ln(X) + 0.36$	16%	84%	
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	50	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG)	33	19	52
Data Source: Trip Gen Manual, 10th Ed +					$\ln(T) = 0.96\ln(X) + 0.20$	63%	37%	

**VEHICLE TO PERSON TRIP CONVERSION**

**BASELINE SITE VEHICLE CHARACTERISTICS:**

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
710 - General Office Building	100	100	1	1	16	84
210 - Single-Family Detached Housing	100	100	1	1	63	37

**ESTIMATED BASELINE SITE PERSON TRIPS:**

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
710 - General Office Building	57	300	0	0	57	300
		357		0		357
210 - Single-Family Detached Housing	33	19	0	0	33	19
		52		0		52

**NEW VEHICLE TRIPS**

Land Use	New Vehicle Trips		
	Entry	Exit	Total
710 - General Office Building	57	300	357
210 - Single-Family Detached Housing	33	19	52

**RESULTS**

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	90	319	409
External Vehicle Trips	90	319	409
New Vehicle Trips	90	319	409

# Appendix D

## Volume Calculations

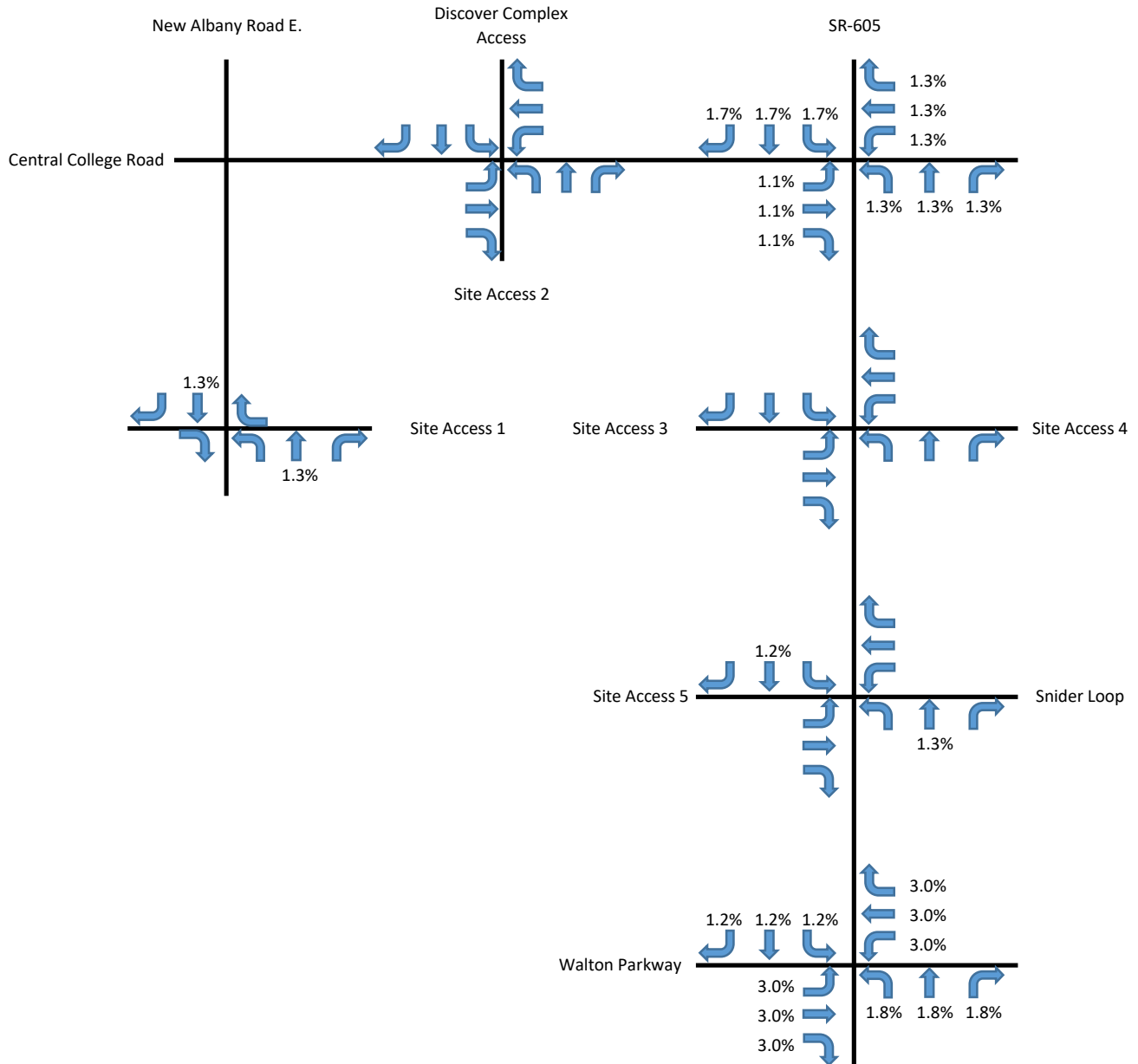


Sugar Run New Albany TIS  
Traffic Volume Calculations




Year	Period	Scenario	Plate
		Growth Rates	

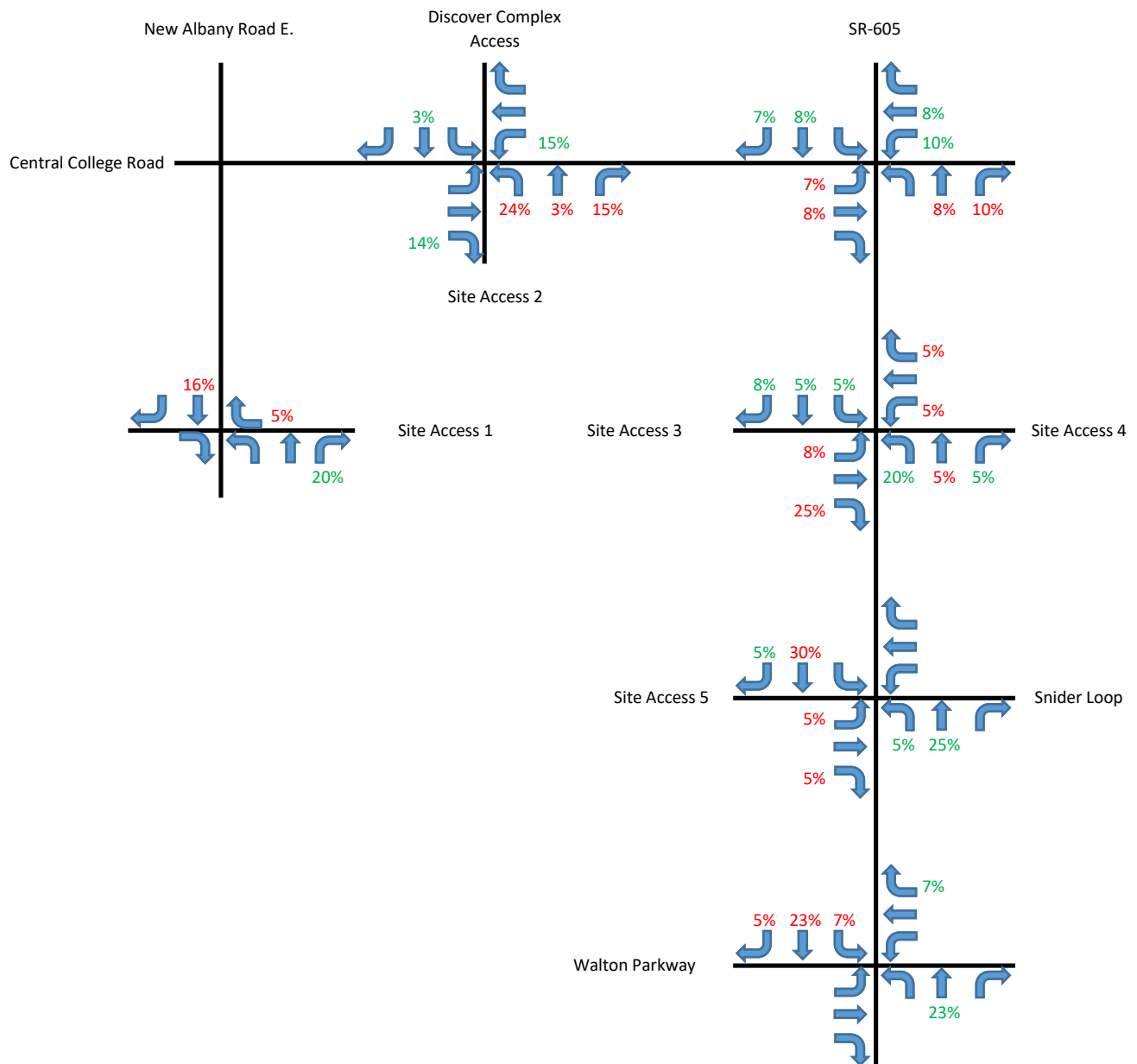
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Sugar Run New Albany TIS  
Traffic Volume Calculations

	Year	Period	Scenario	Plate
			Non-Pass-By Distribution	

^  
N

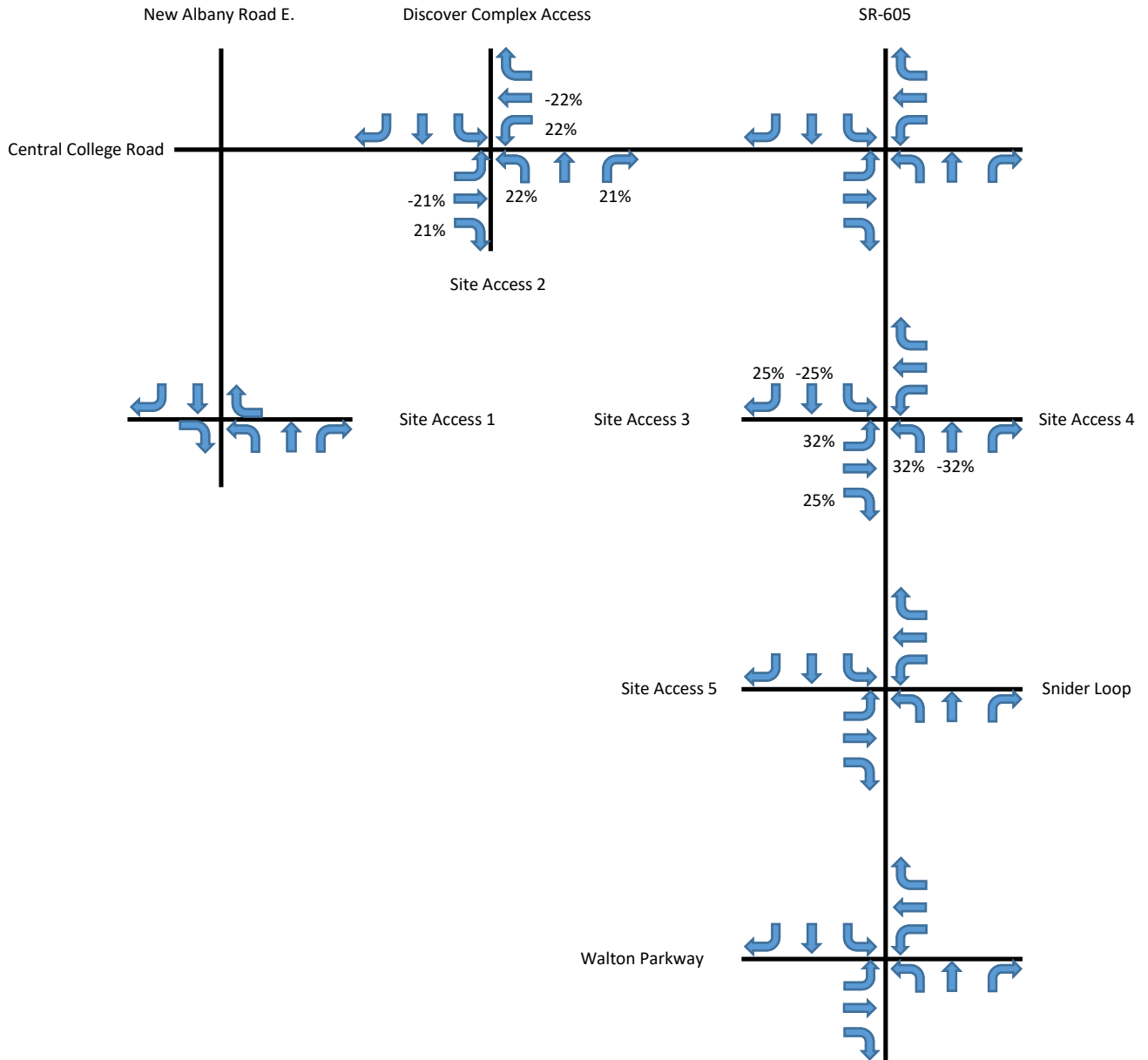


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
		Pass-By Distribution	

^  
N

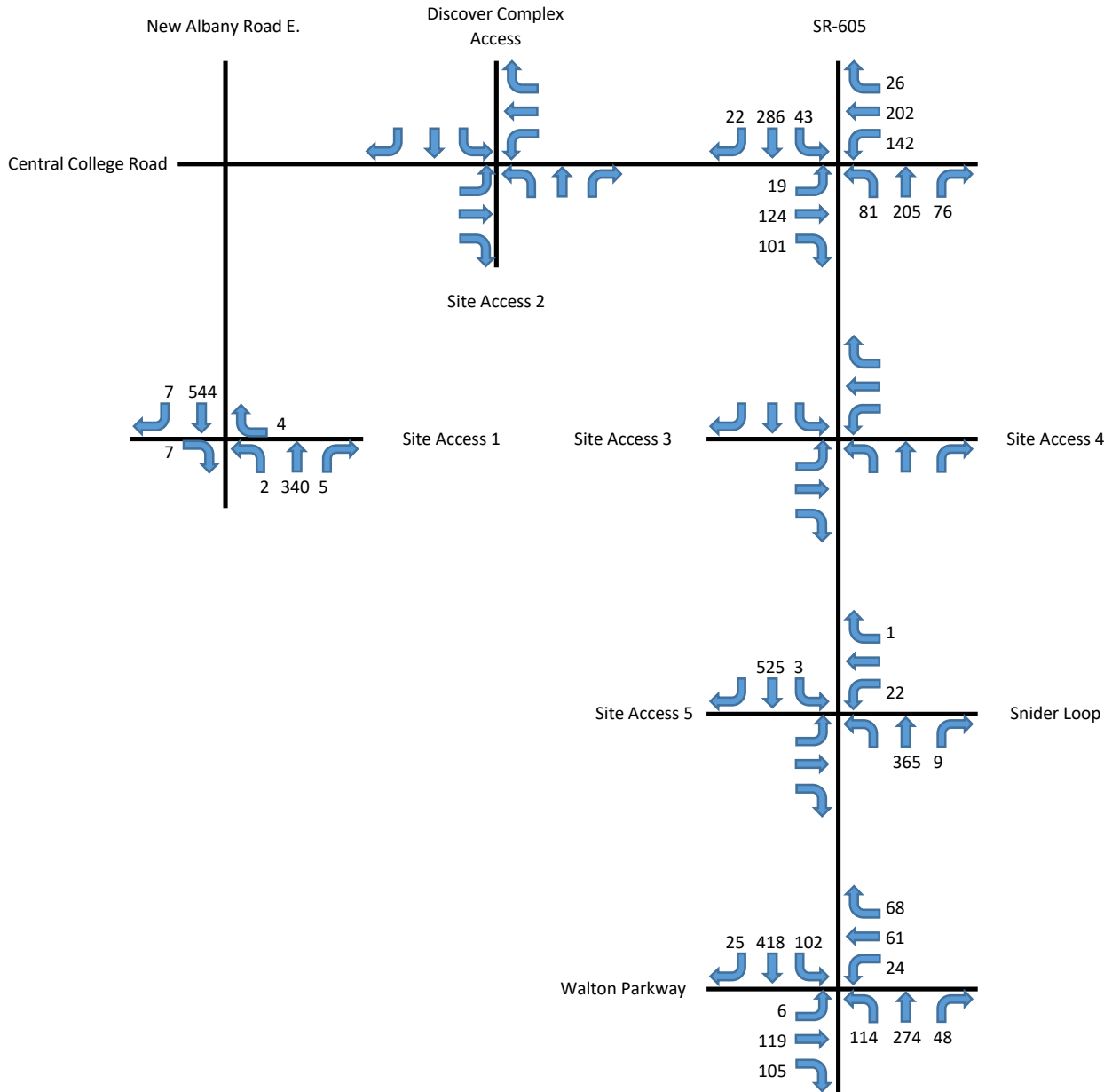


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	AM	Count	

^  
N

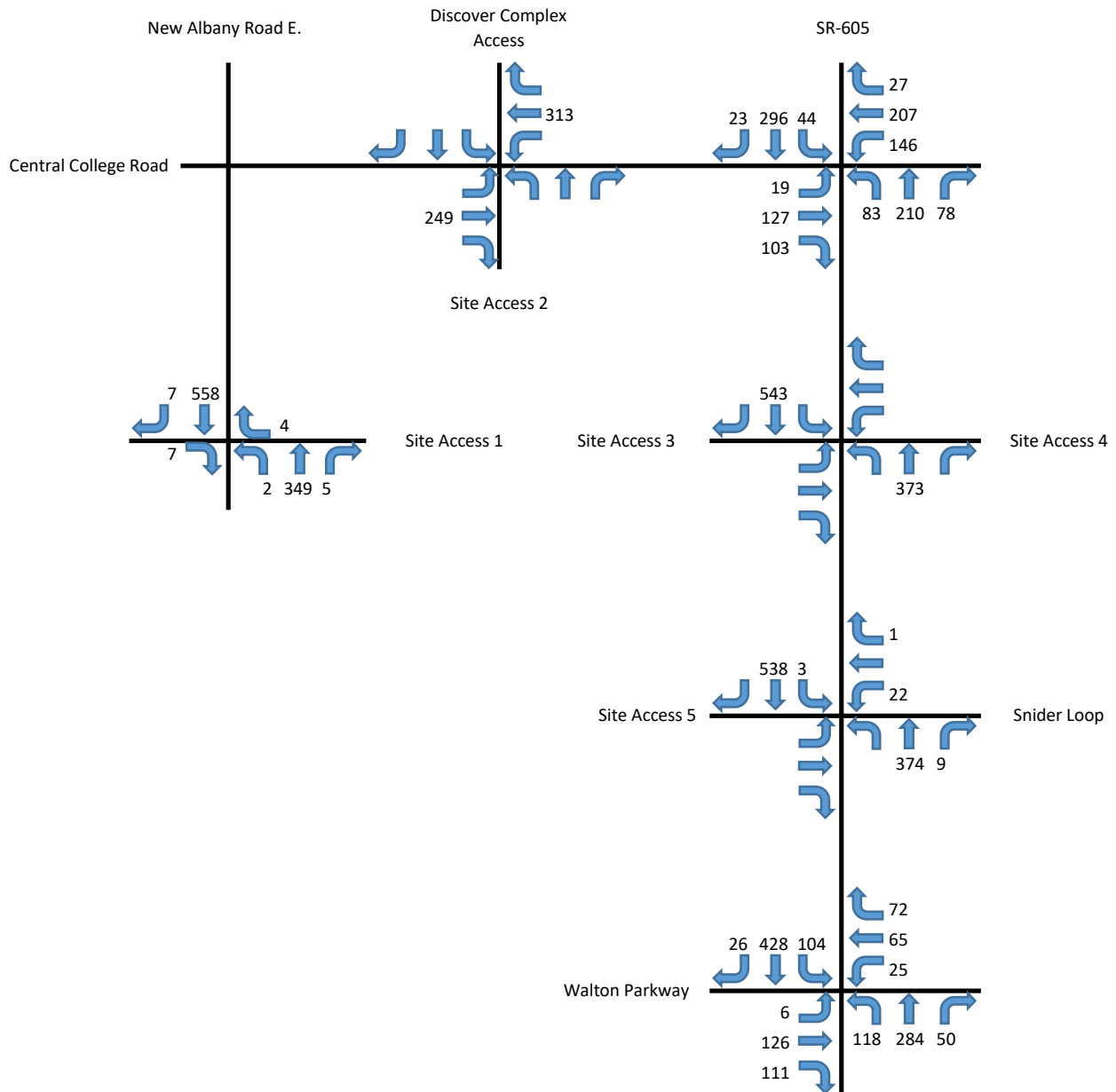


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2024	AM	Background	A1

^  
N





## Sugar Run New Albany TIS Traffic Volume Calculations

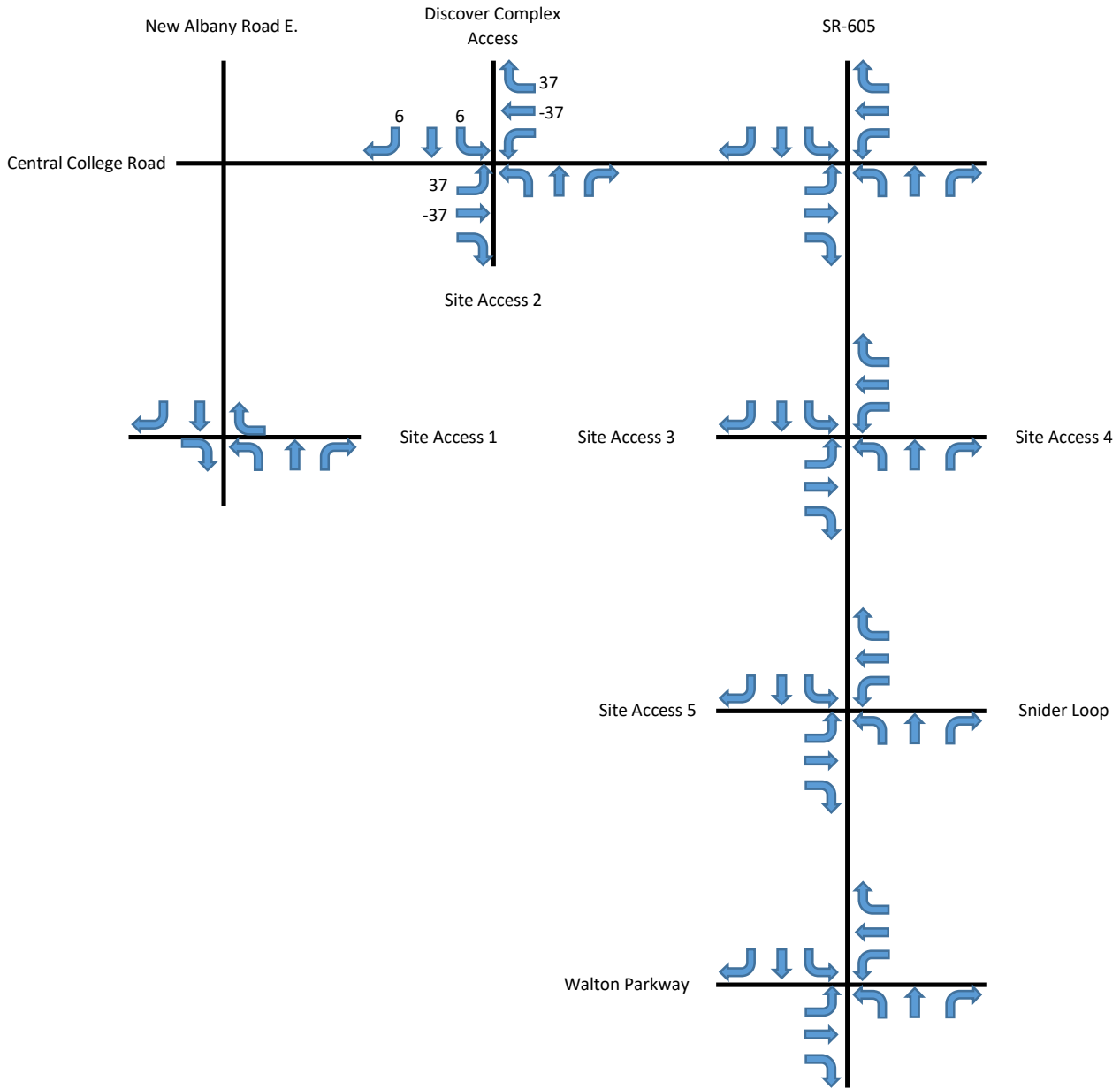


Year	Period	Scenario	Plate
	AM	Background Traffic - Discover Office Building	B1

^  
N

	Total	Using Access
Entry	292	73
Exit	48	12

\* It was assumed that 25% of the traffic generated by the Discover office building utilizes the Central College Road access. It was also assumed that there was an even 50/50 split coming from/going to the east/west.

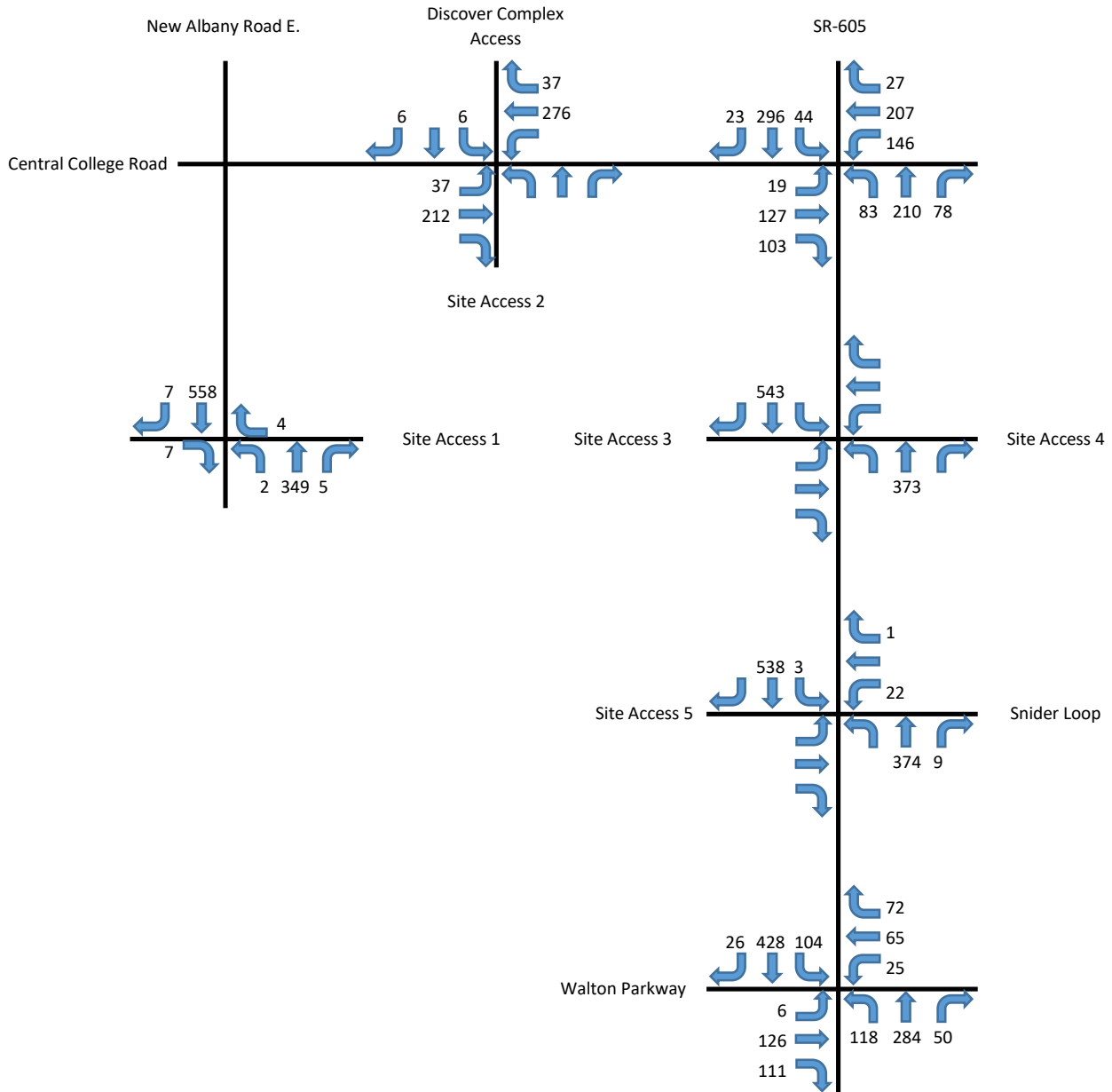


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2024	AM	No Build	C1 = A1 + B1

^  
N



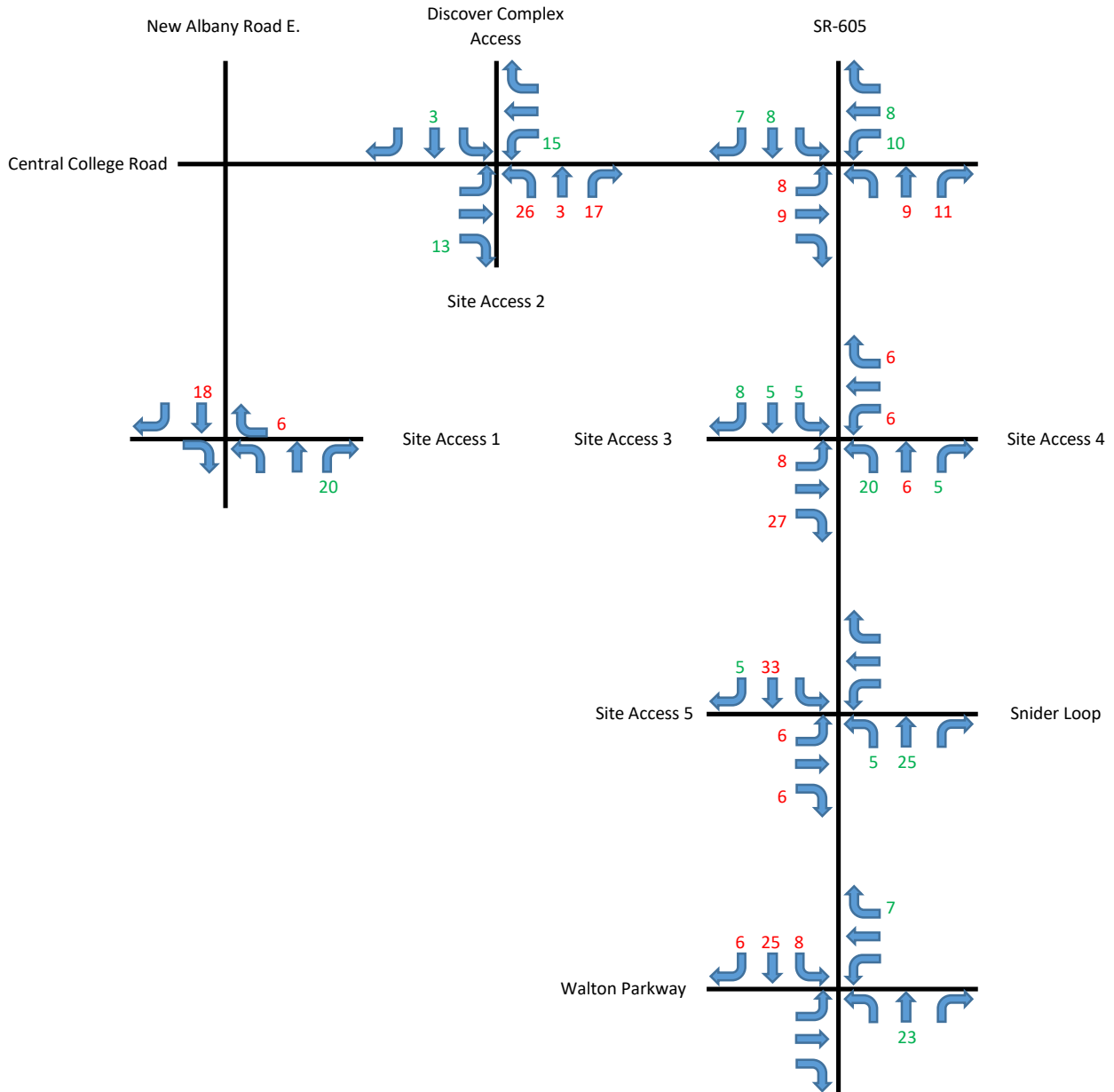
Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
	AM	Non-Pass-By Traffic	D1

^

N	Entry	99
	Exit	111

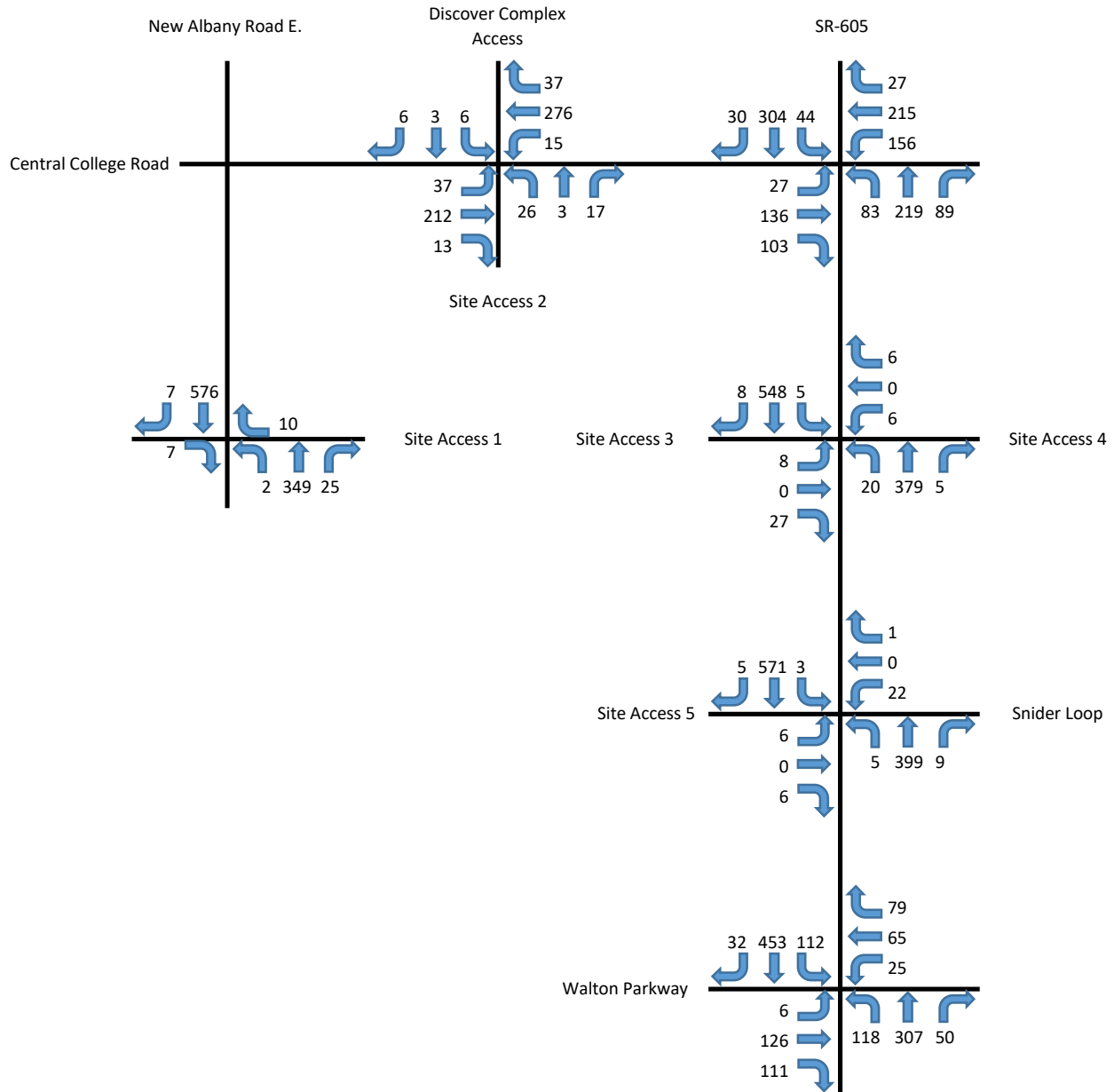


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2024	AM	Build	E1 = C1 + D1

^  
N

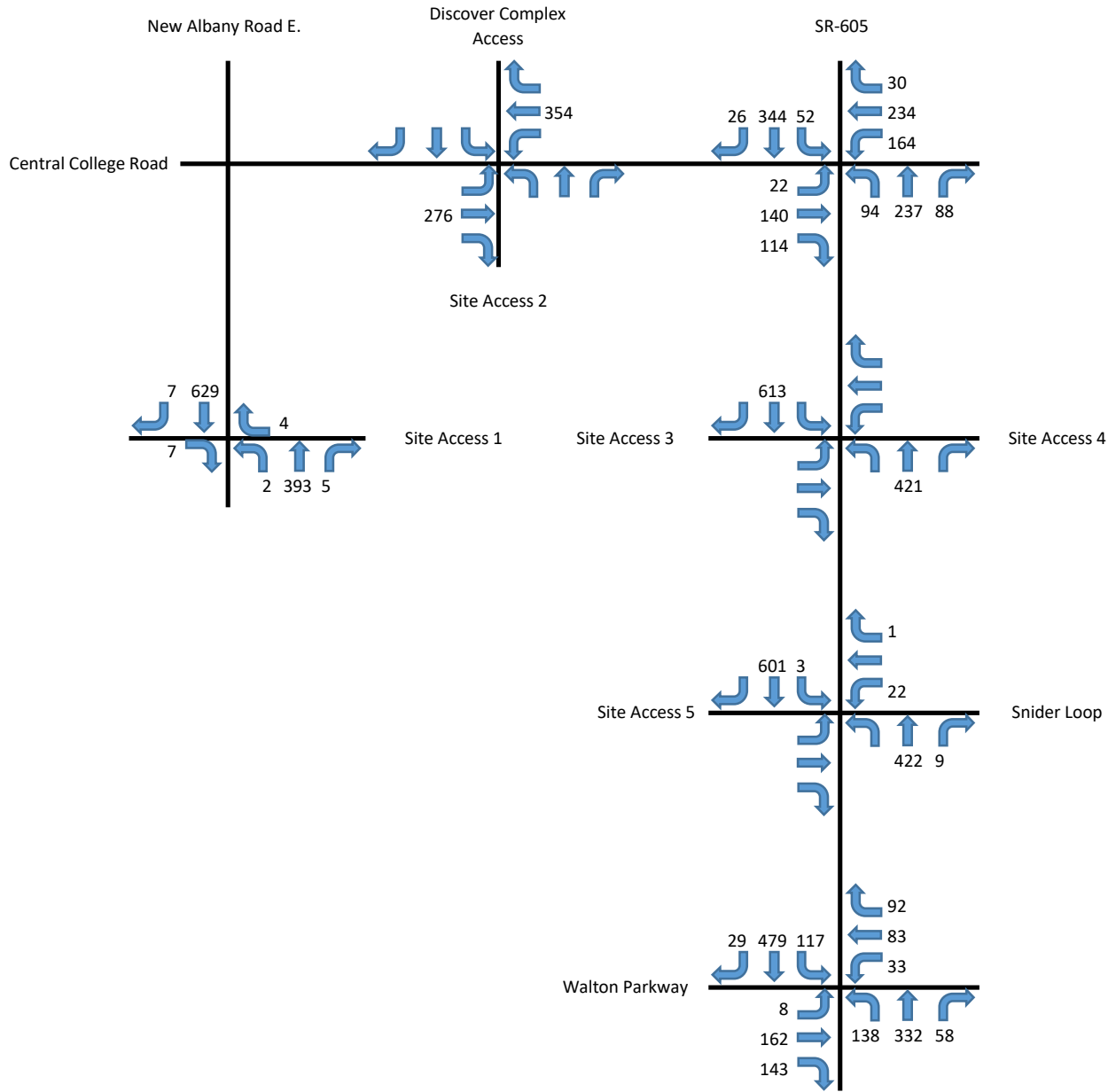


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2034	AM	Background	F1

^  
N

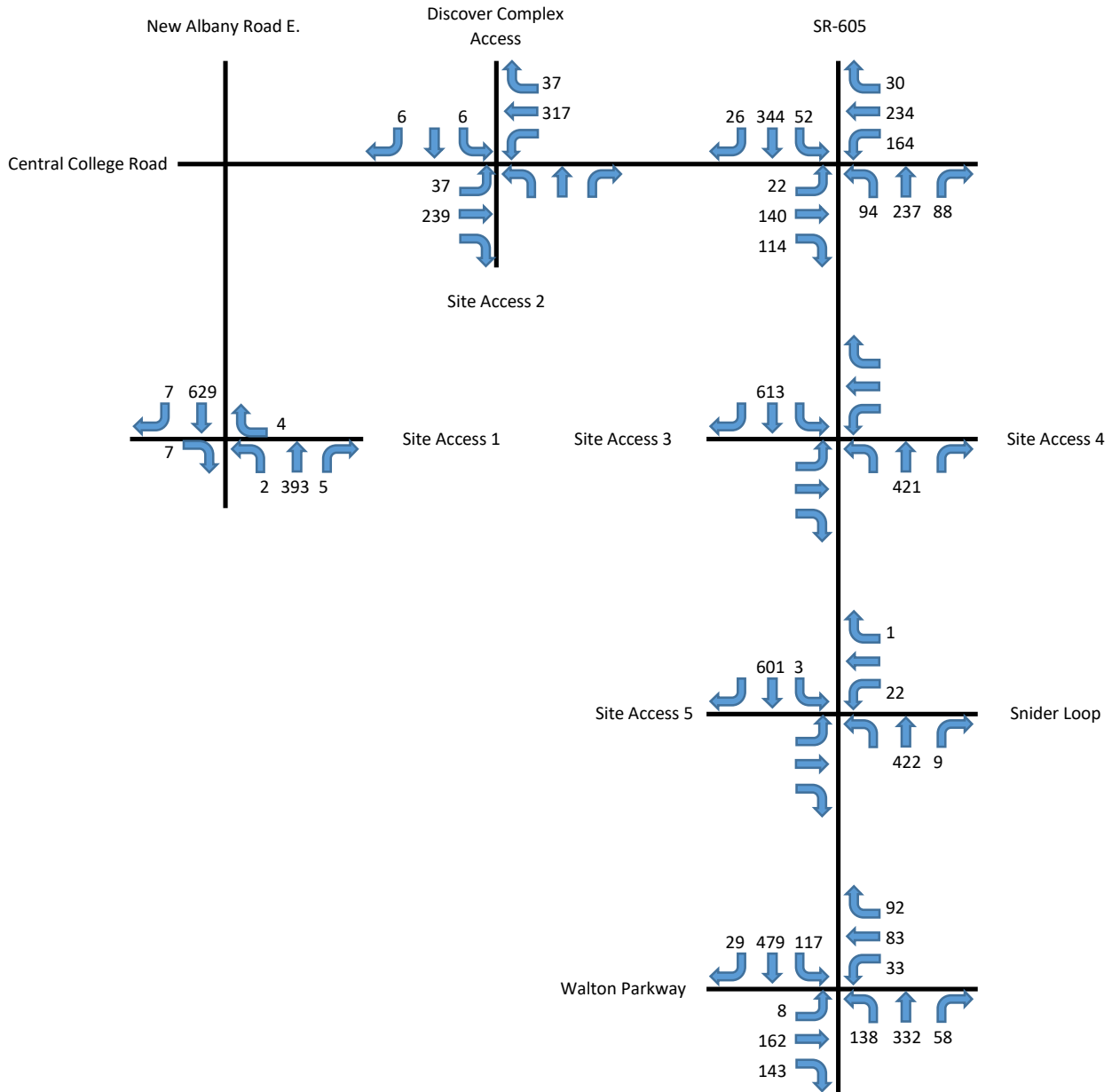


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2034	AM	No Build	G1 = B1 + F1

^  
N

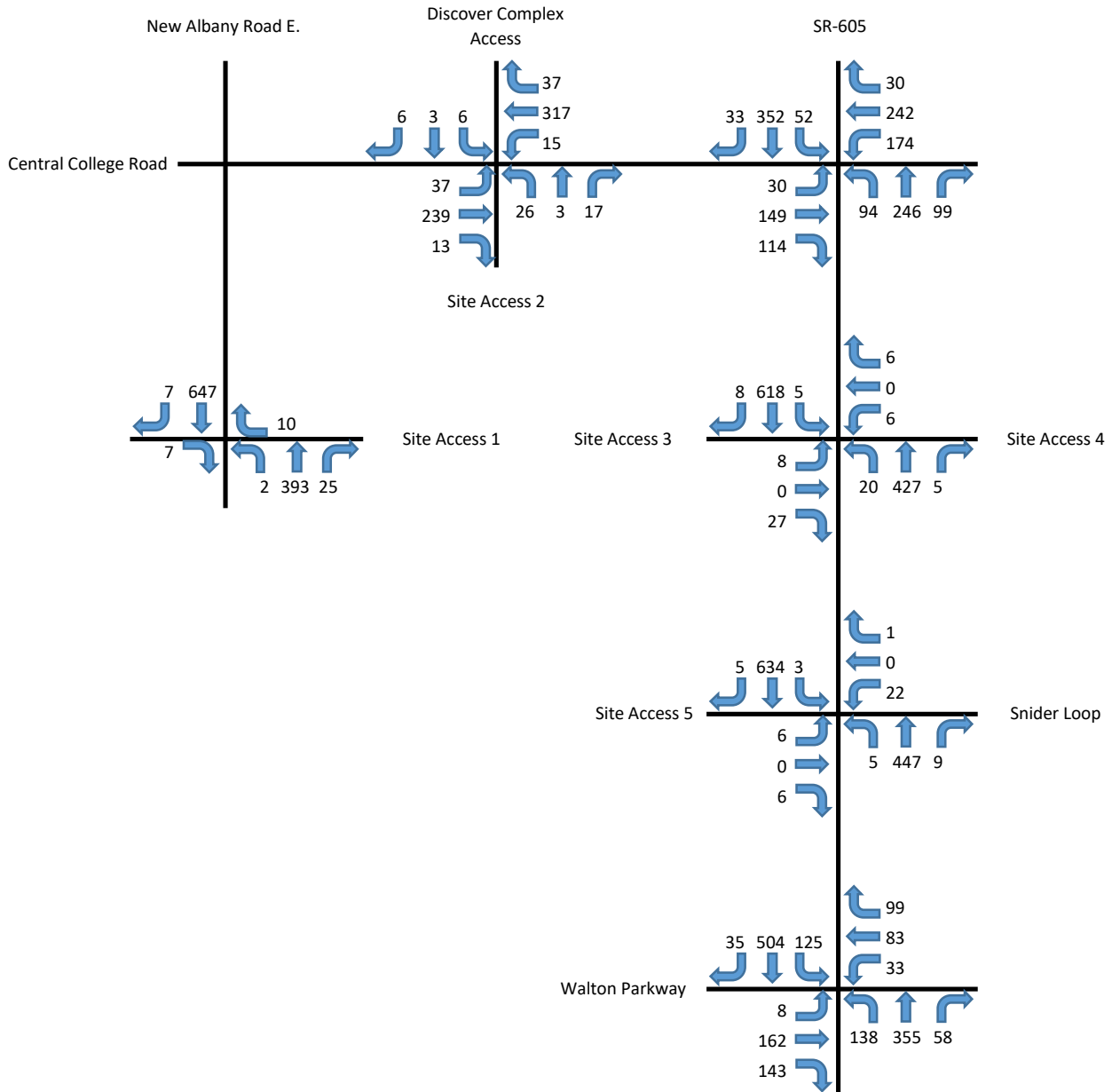


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2034	AM	Build	H1 = D1 + G1

^  
N

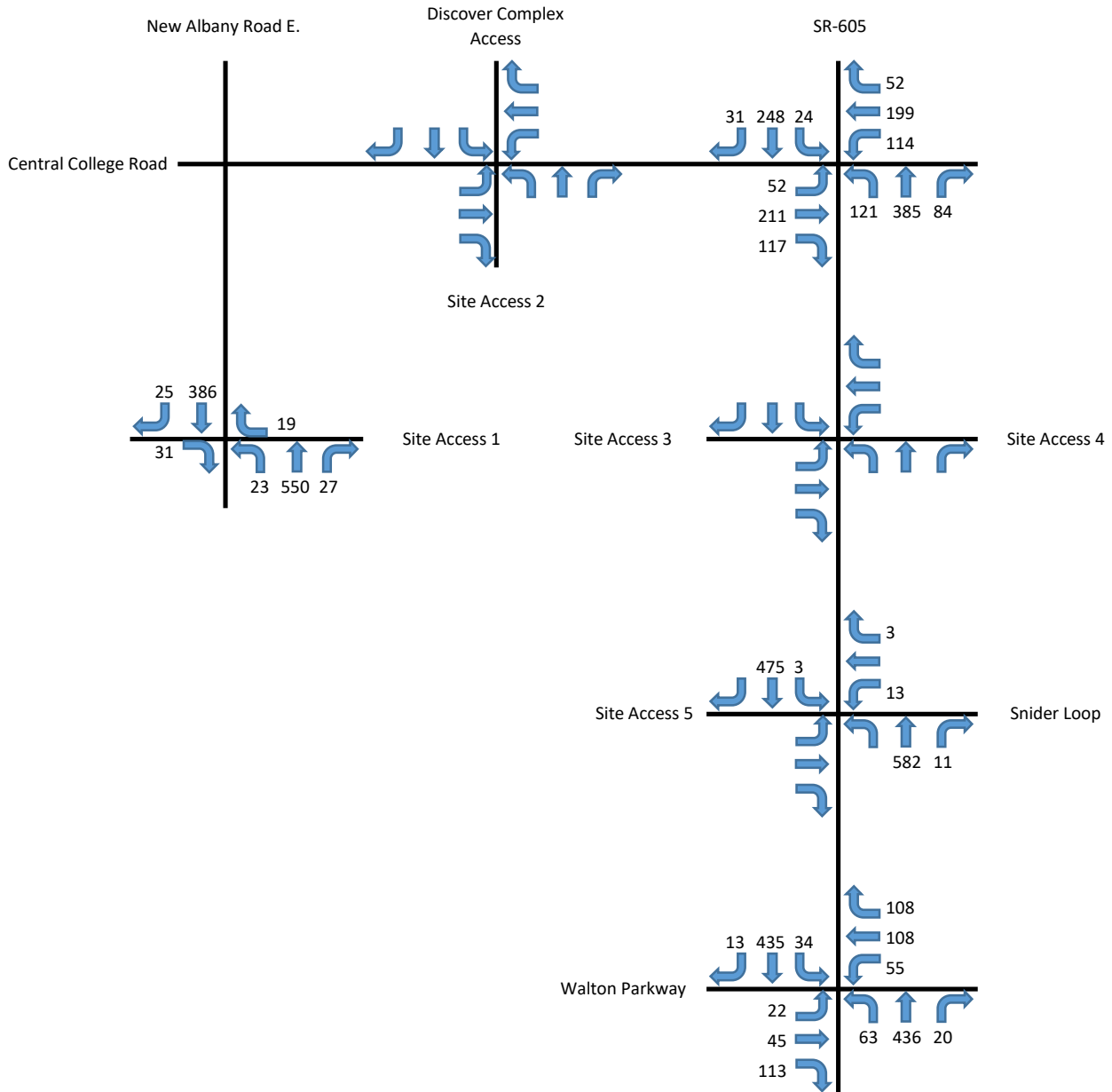


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2022	PM	Count	

^  
N



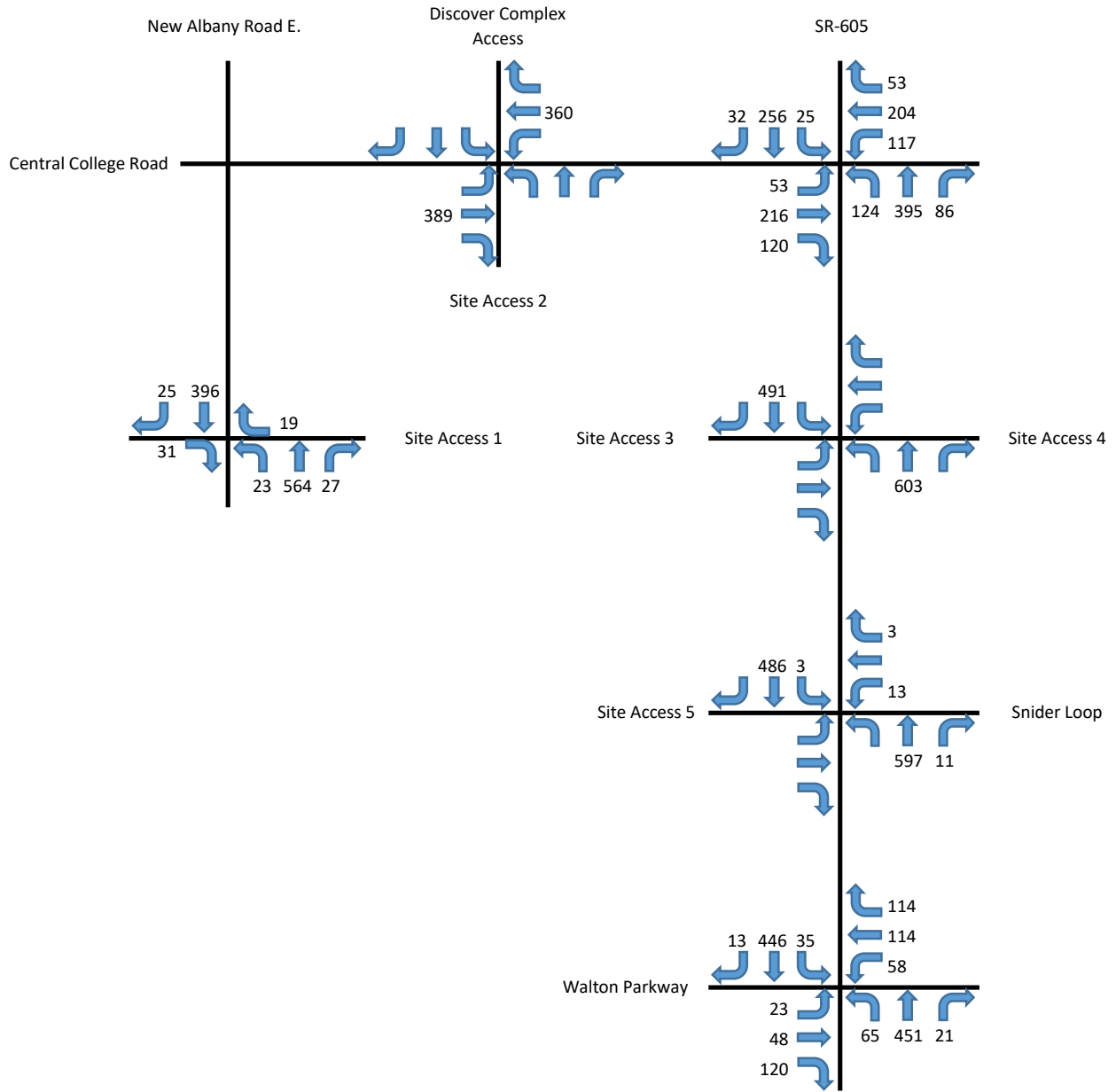


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2024	PM	Background	A2

^  
N



## Sugar Run New Albany TIS Traffic Volume Calculations

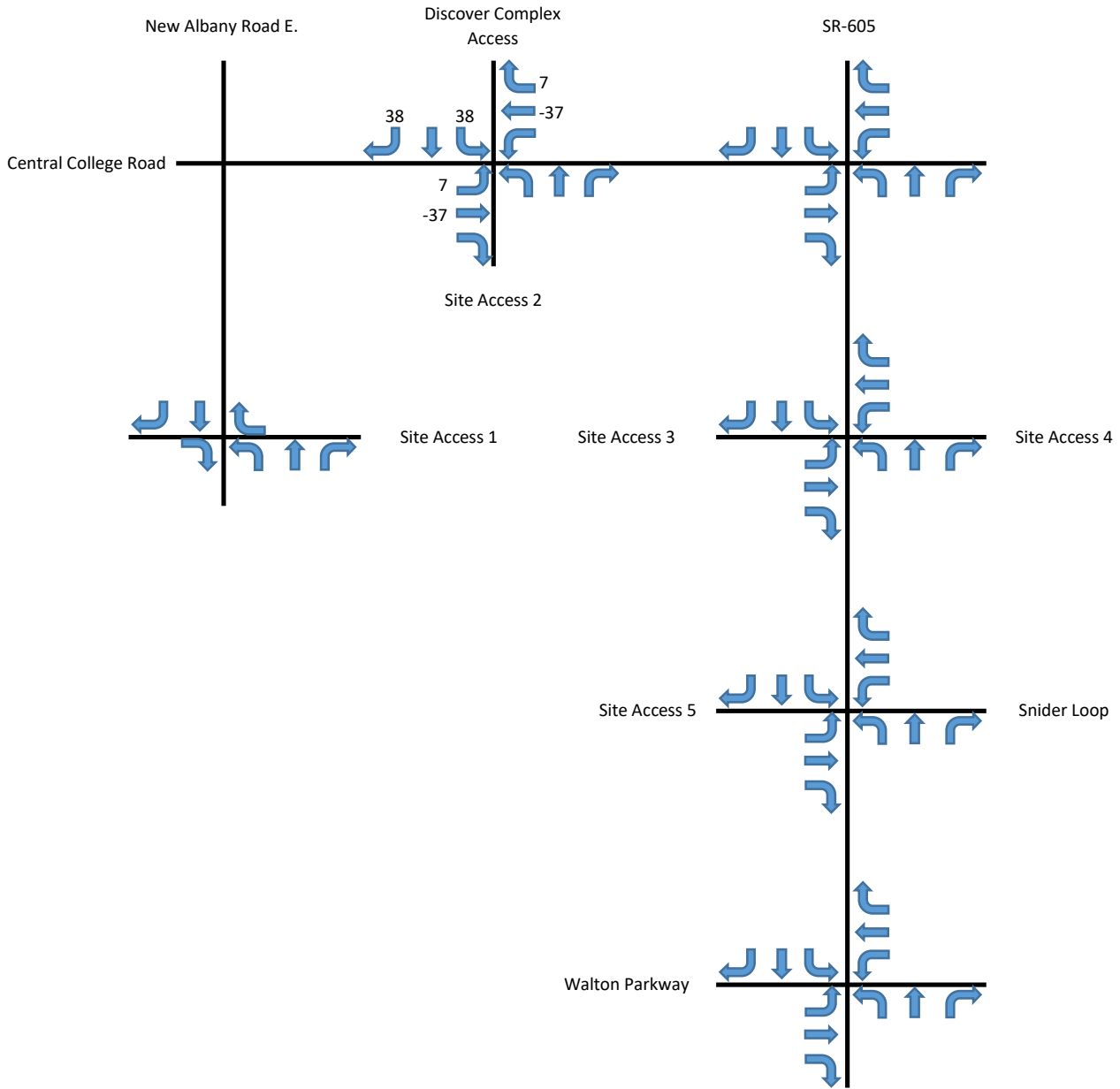


Year	Period	Scenario	Plate
	PM	Background Traffic - Discover Office Building	B2

^  
N

	Total	Using Access
Entry	57	14
Exit	300	75

\* It was assumed that 25% of the traffic generated by the Discover office building utilizes the Central College Road access. It was also assumed that there was an even 50/50 split coming from/going to the east/west.

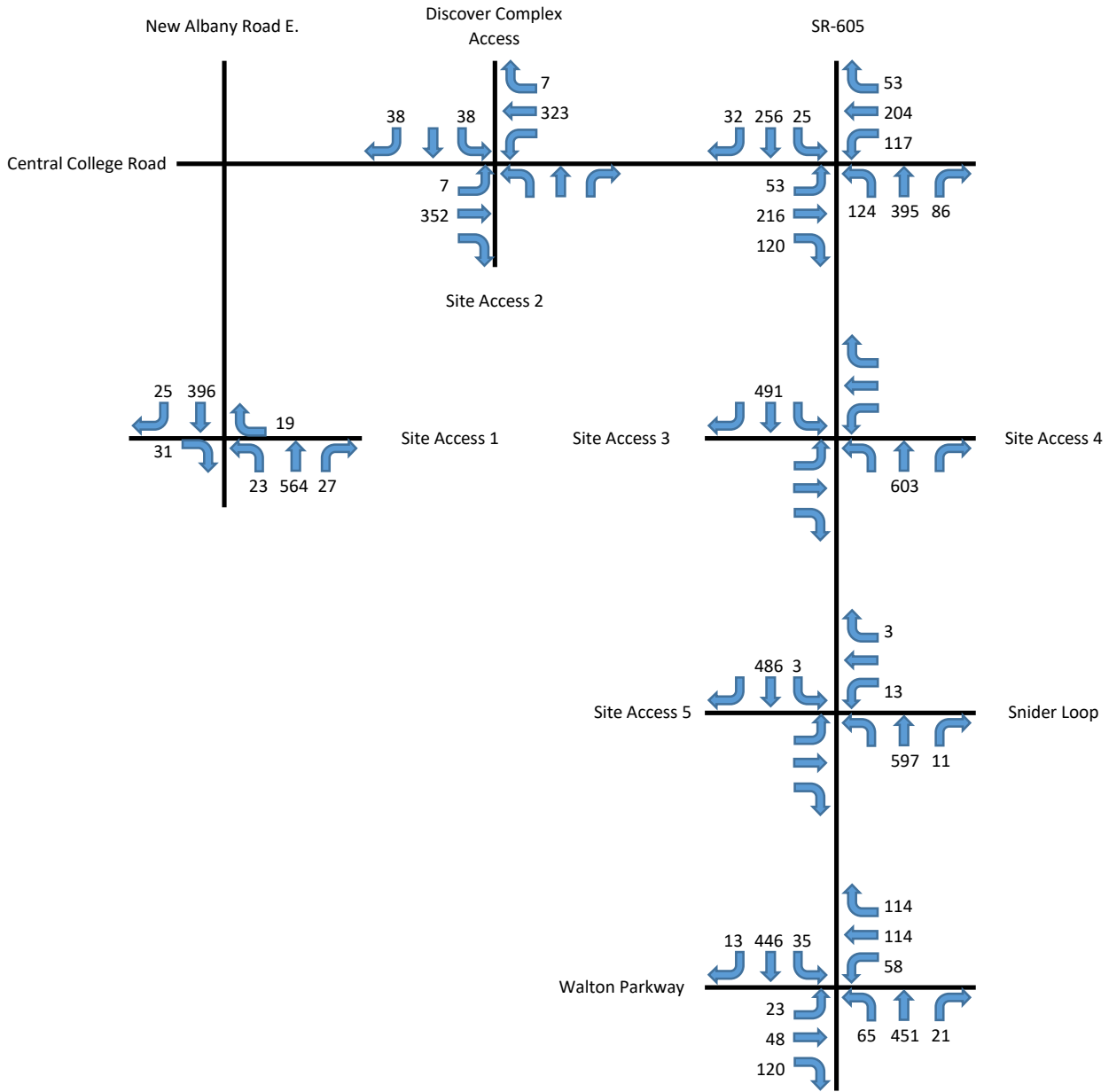


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2024	PM	No Build	C2 = A2 + B2

^  
N



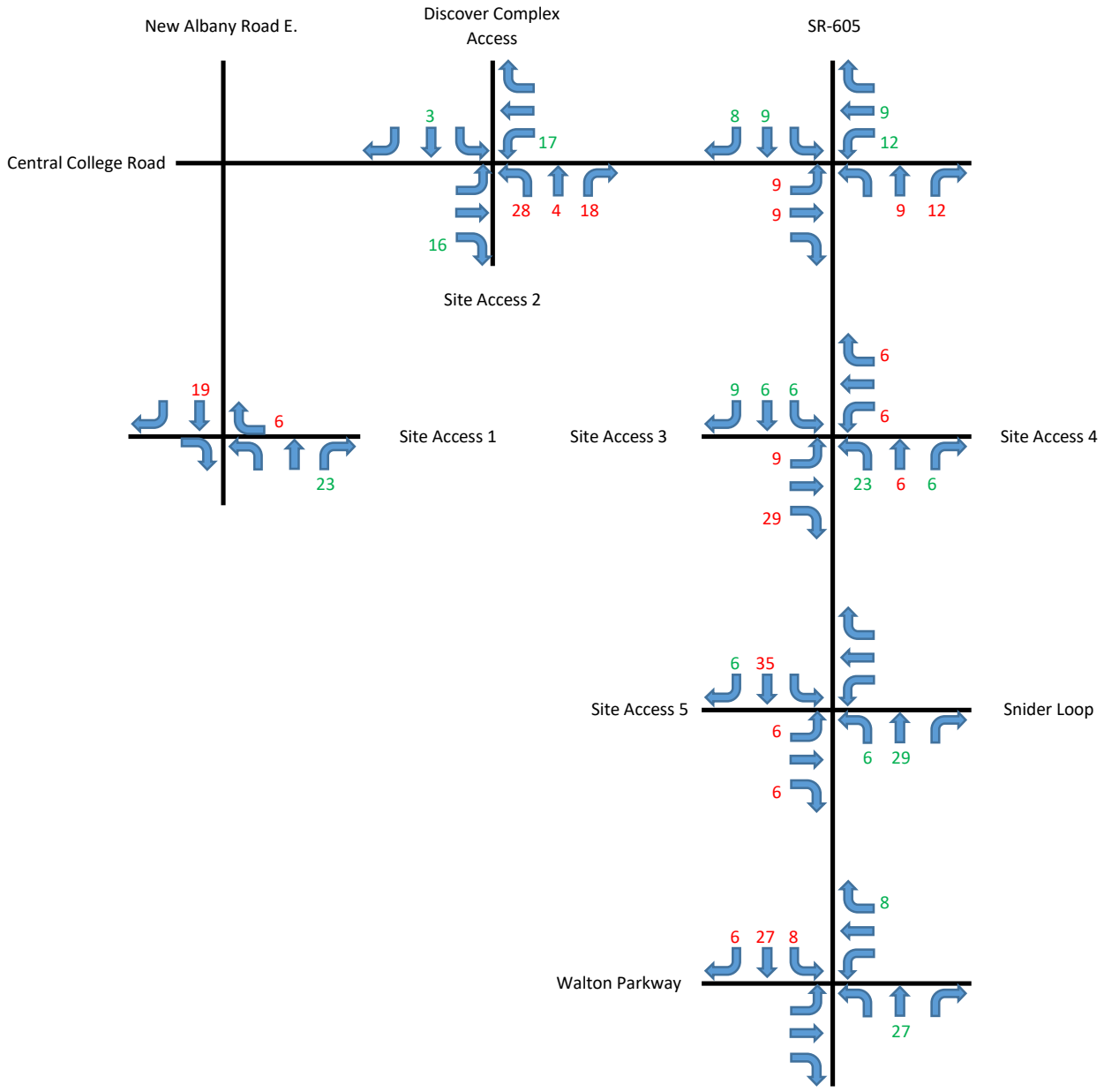
Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
	PM	Non-Pass-By Traffic	D2

^

N	Entry	115
	Exit	118



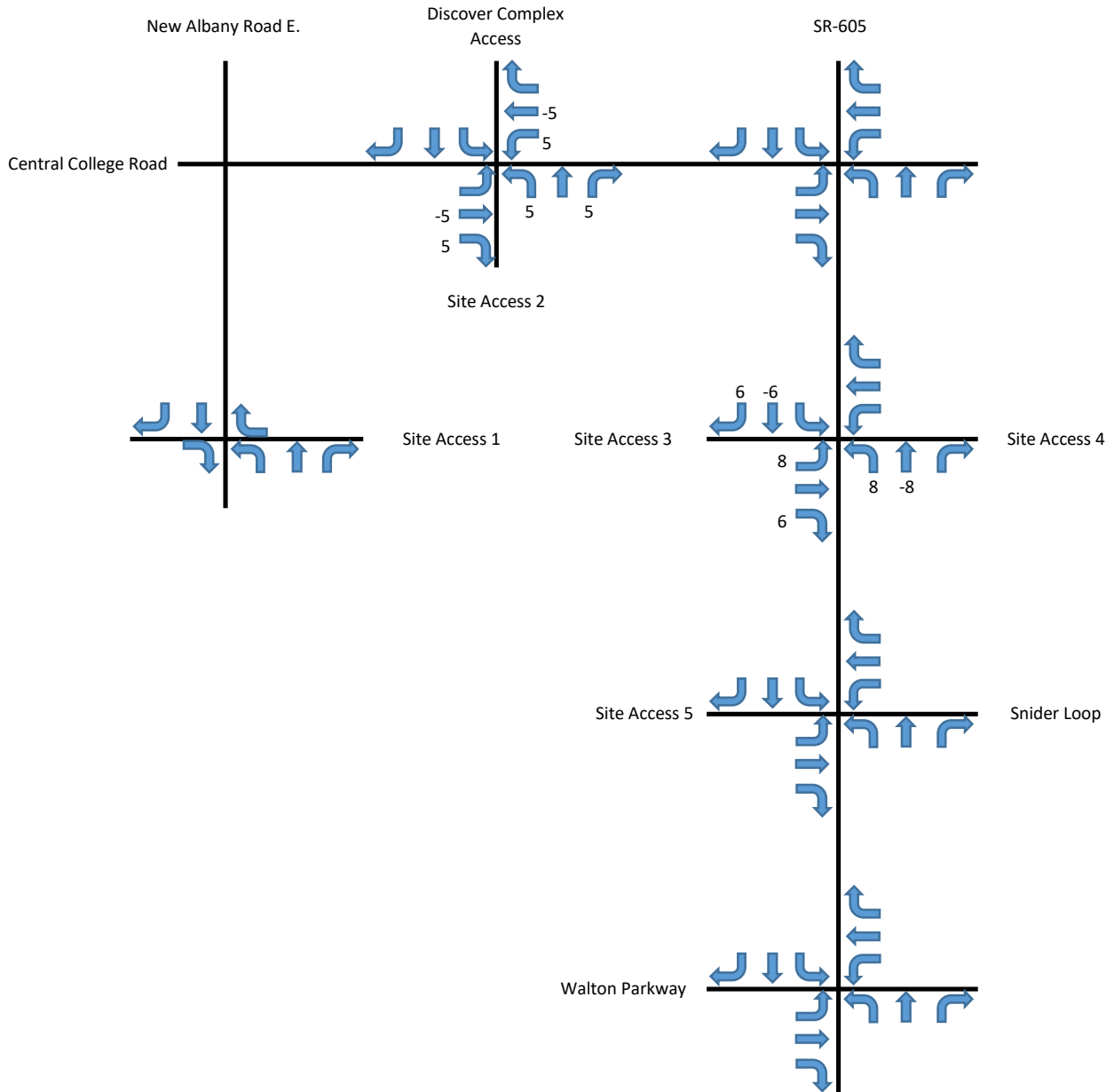
Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
	PM	Pass-By Traffic	E2

^  
N

Entry	24
Exit	24
<b>Average</b>	<b>24</b>

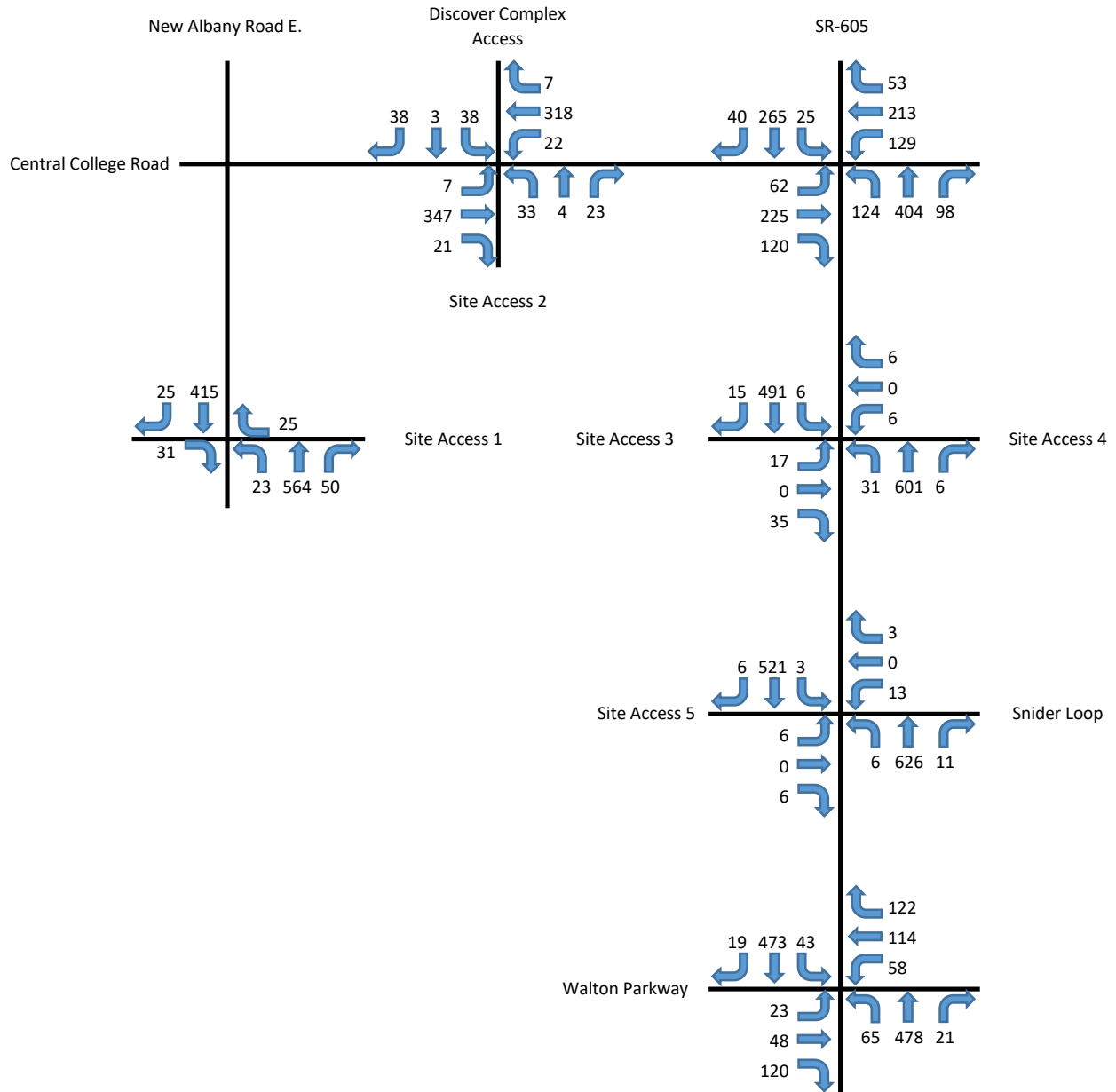


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2024	PM	Build	F2 = C2 + D2 + E2

^  
N

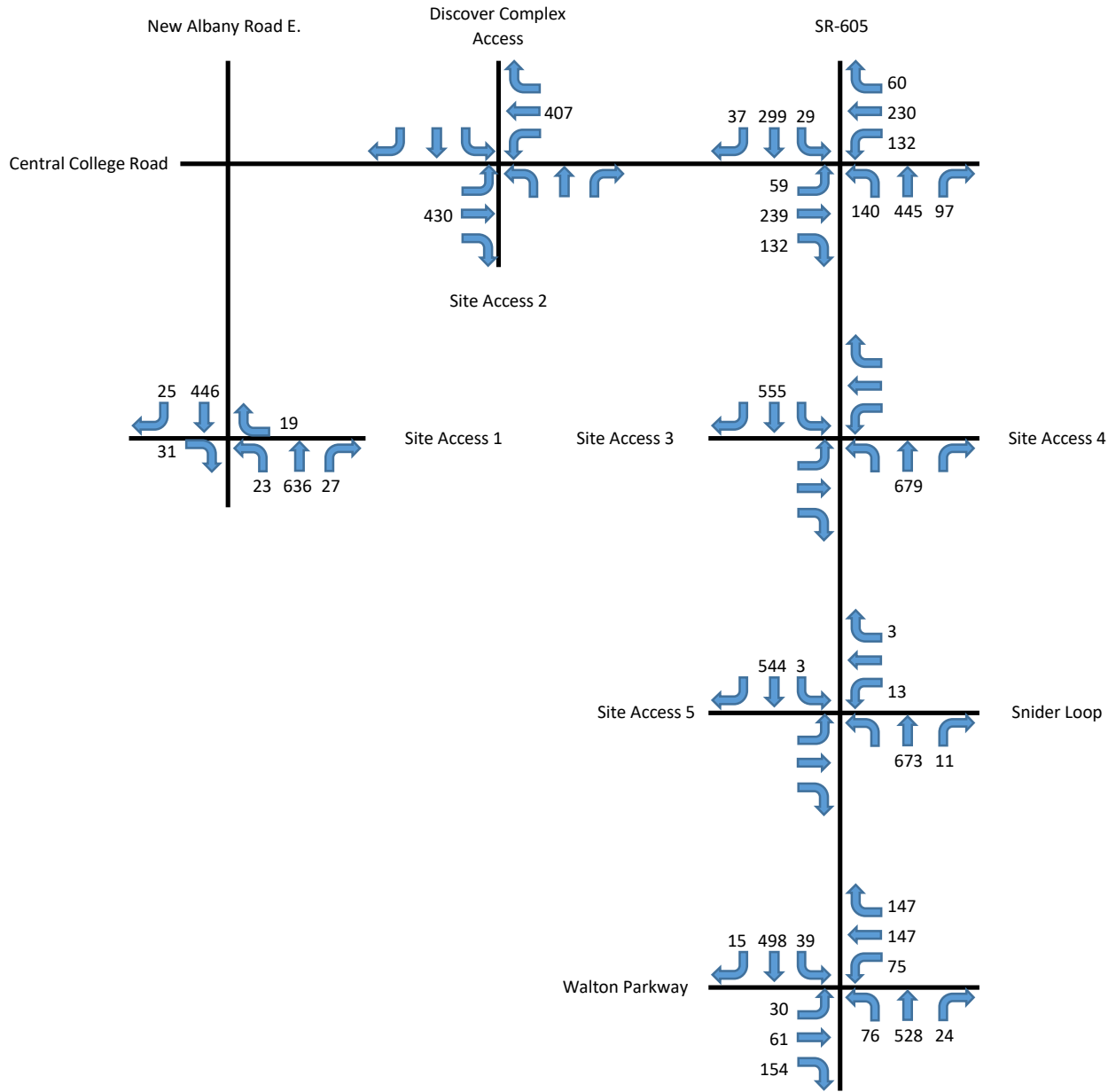


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2034	PM	Background	G2

^  
N

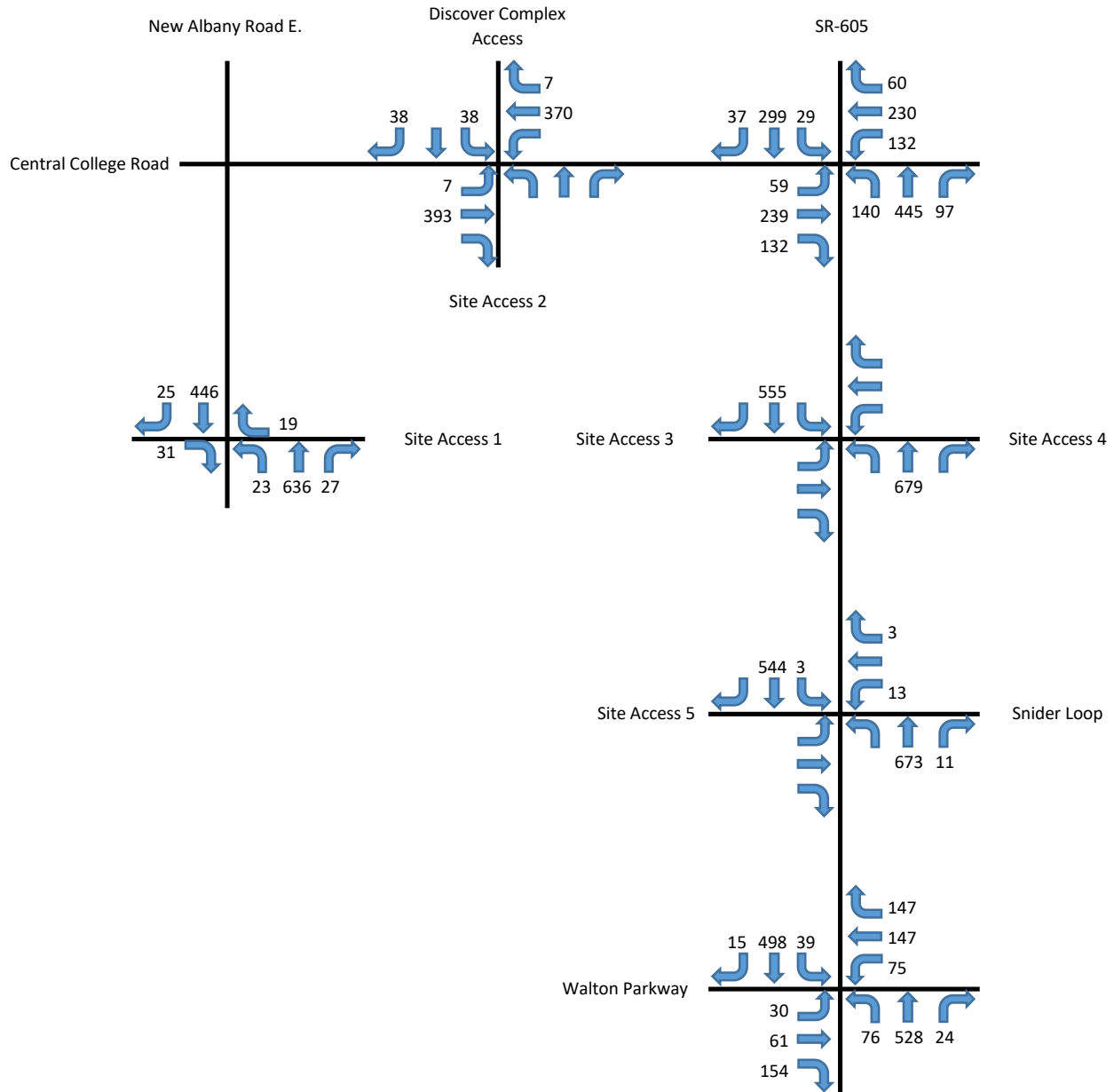


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2034	PM	No Build	H2 = B2 + G2

^  
N



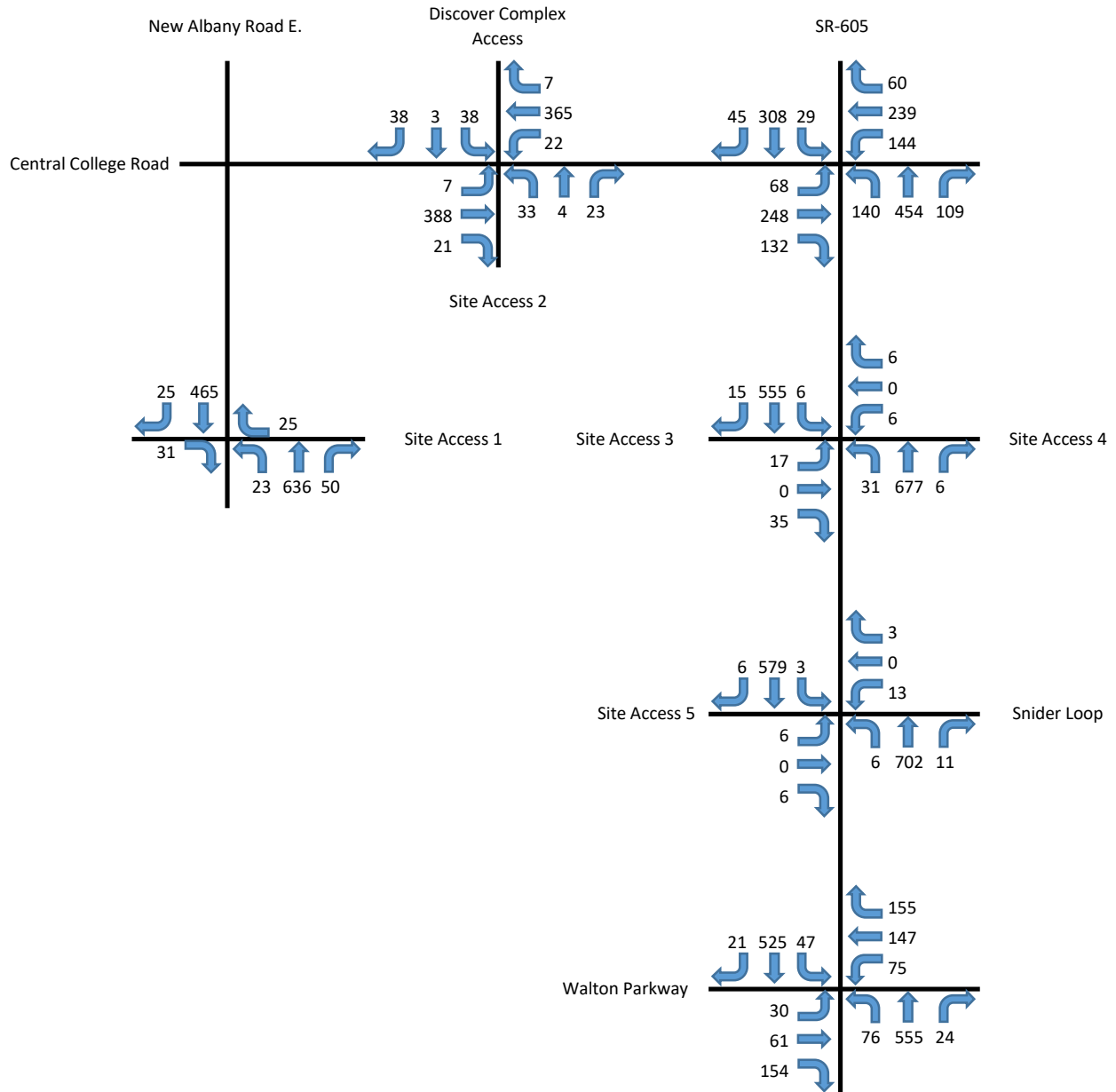


Sugar Run New Albany TIS  
Traffic Volume Calculations



Year	Period	Scenario	Plate
2034	PM	Build	I2 = D2 + E2 + H2

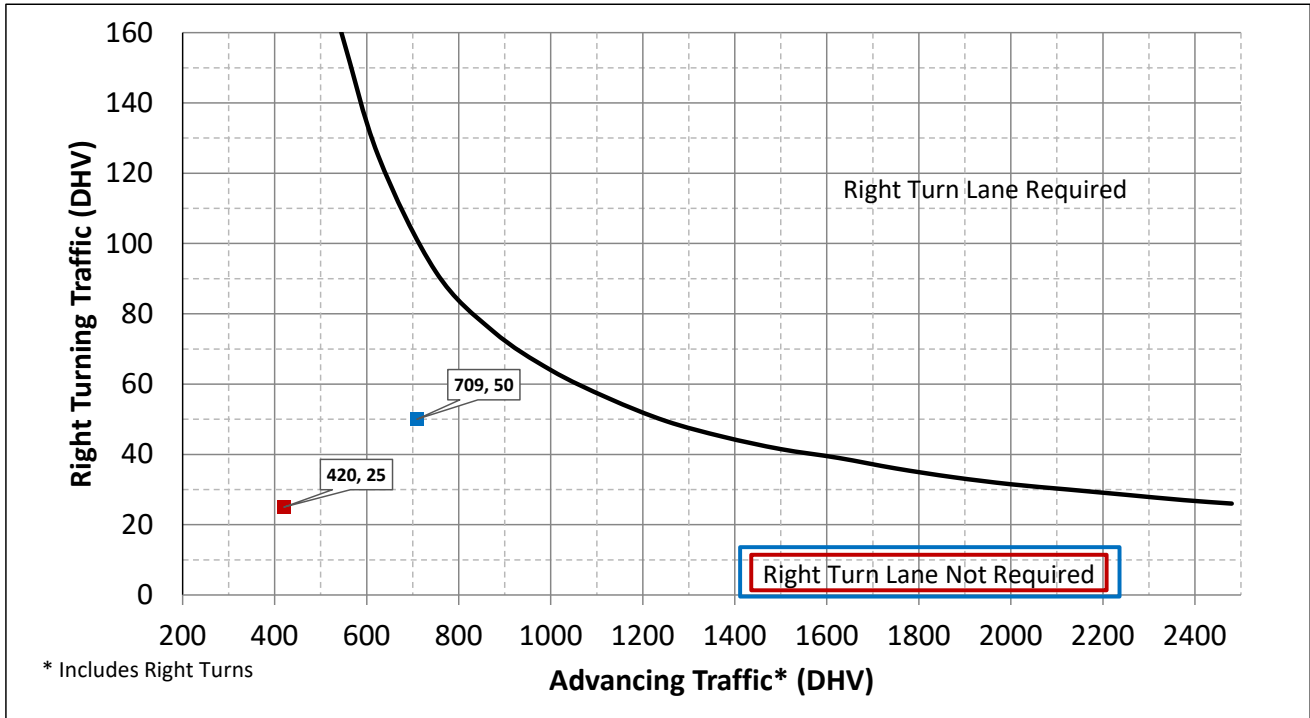
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N



# Appendix E

## Turn Lane Warrant Analysis

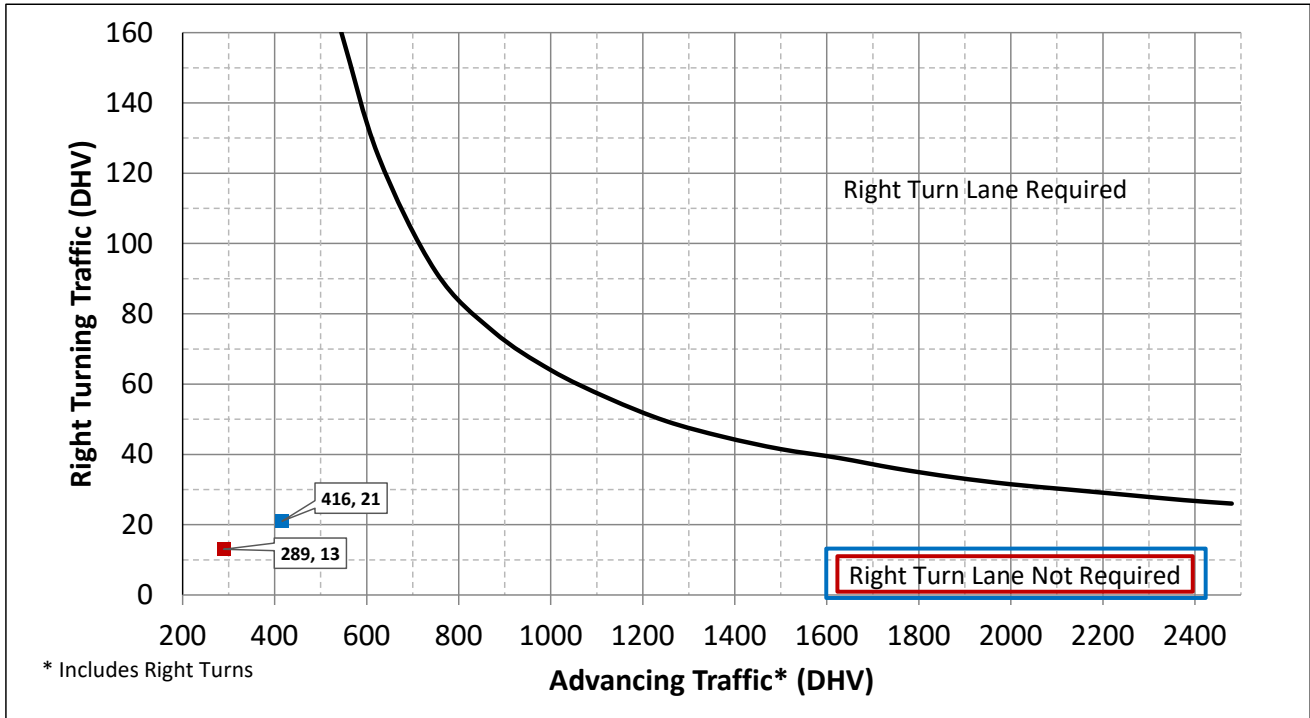
**4-Lane Highway Right Turn Lane Warrant**  
( = < 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	35	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	25	VPH	
	Advancing Traffic	420	VPH	
	Right Turn Percentage	6%		
	Location Type	Through Road		
	Condition	A		
	Vehicles/Cycle	1		
	Turn Lane Length	100		* Turn Lane Length includes 50 ft diverging taper
	<b>PM Peak</b>	Design Speed	35	mph
Traffic Control		Unsignalized		
Cycle Length		Unsignalized		
Cycles Per Hour		60	Assume 60	
Turn Lane Volume		50	VPH	
Advancing Traffic		709	VPH	
Right Turn Percentage		7%		
Location Type		Through Road		
Condition		A		
Vehicles/Cycle		1		
Turn Lane Length		100		* Turn Lane Length includes 50 ft diverging taper
<b>Is Right Turn Warrant Met</b>		No	No Right Turn Lane Required	includes 50 ft diverging taper

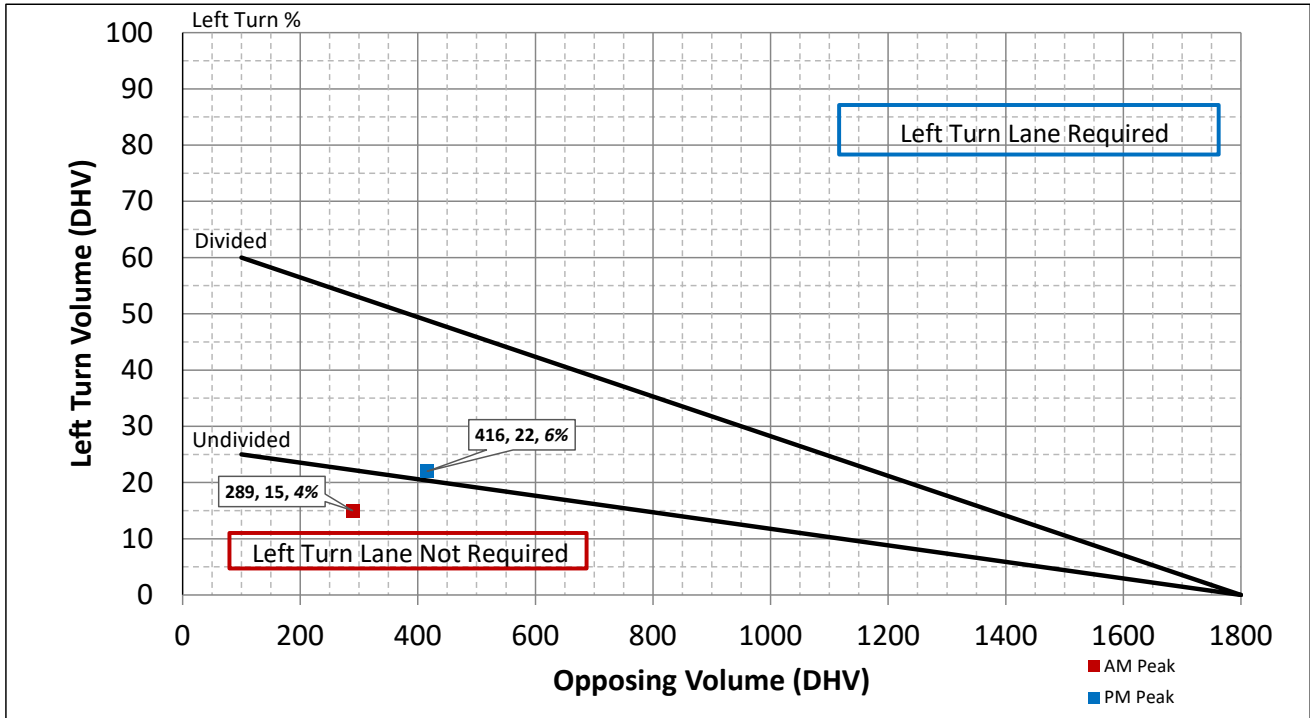
**4-Lane Highway Right Turn Lane Warrant**  
( = < 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	35	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	13	VPH	
	Advancing Traffic	289	VPH	
	Right Turn Percentage	4%		
	Location Type	Through Road		
	Condition	A		
	Vehicles/Cycle	1		
	Turn Lane Length	100		* Turn Lane Length includes 50 ft diverging taper
	<b>PM Peak</b>	Design Speed	35	mph
Traffic Control		Unsignalized		
Cycle Length		Unsignalized		
Cycles Per Hour		60	Assume 60	
Turn Lane Volume		21	VPH	
Advancing Traffic		416	VPH	
Right Turn Percentage		5%		
Location Type		Through Road		
Condition		A		
Vehicles/Cycle		1		
Turn Lane Length		100		* Turn Lane Length includes 50 ft diverging taper
<b>Is Right Turn Warrant Met</b>		No	No Right Turn Lane Required	includes 50 ft diverging taper

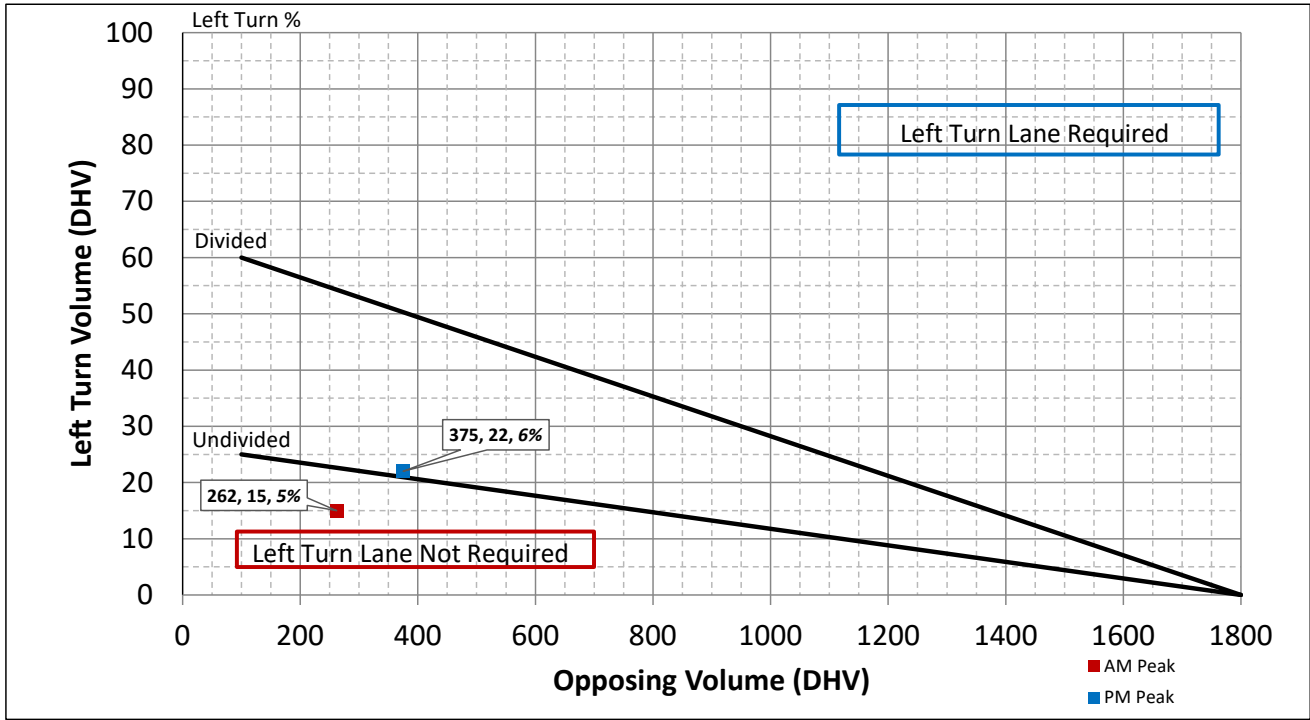
**4-Lane Highway Left Turn Lane Warrant**



**Turn Lane Length Calculations**

		Design Speed	35	mph
<b>AM Peak</b>	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60		Assume 60
	Turn Lane Volume	15		VPH
	Advancing Traffic	369		VPH
	Opposing Volume	289		VPH
	Left Turn Percentage	4%		
	Location Type	Through Road		
	Condition	A		
	Vehicles/Cycle	1		
	Turn Lane Length	100		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
	Approach Taper	245		
	<b>PM Peak</b>	Design Speed	35	
Traffic Control		Unsignalized		
Cycle Length		Unsignalized		
Cycles Per Hour		60		Assume 60
Turn Lane Volume		22		VPH
Advancing Traffic		394		VPH
Opposing Volume		416		VPH
Left Turn Percentage		6%		
Location Type		Through Road		
Condition		A		
Vehicles/Cycle		1		
Turn Lane Length		100		* Turn Lane Length includes 50 ft diverging taper
Offset Width		12		
Approach Taper		245		
<b>Is Left Turn Warrant Met</b>		Yes		See Above

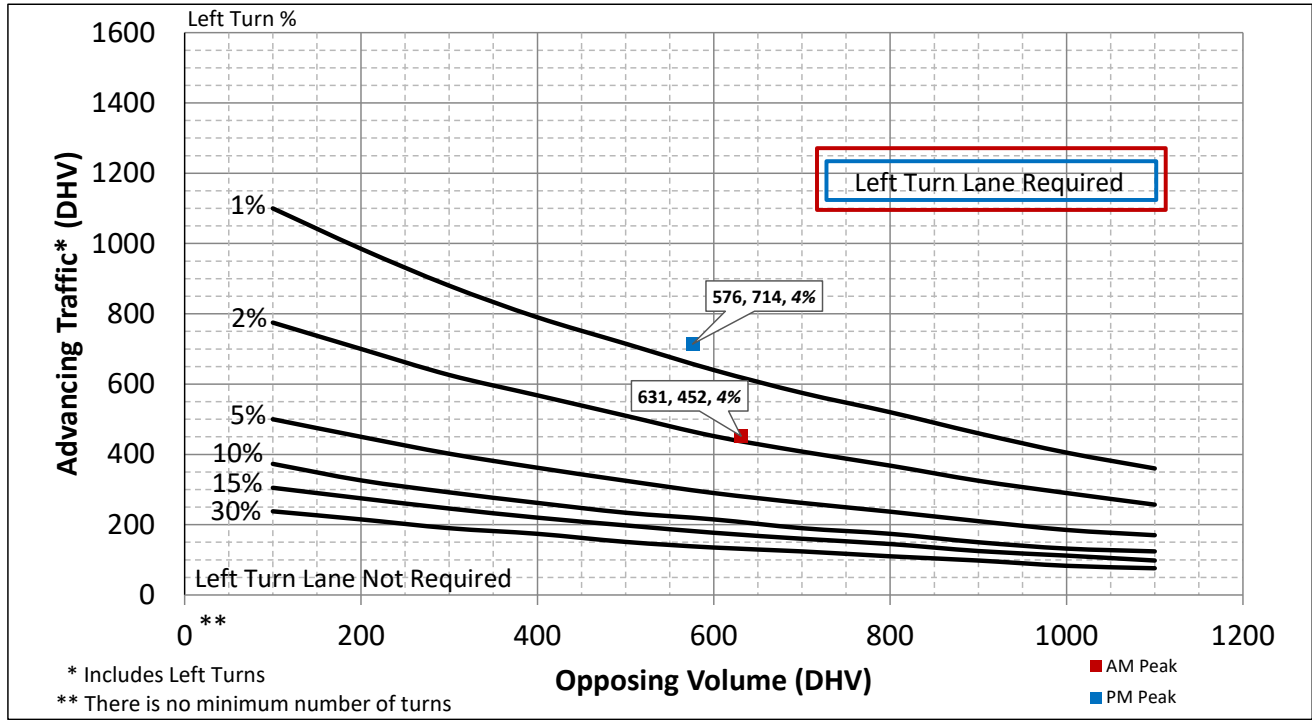
**4-Lane Highway Left Turn Lane Warrant**



**Turn Lane Length Calculations**

Peak	Design Speed	35	mph
AM Peak	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	15	VPH
	Advancing Traffic	328	VPH
	Opposing Volume	262	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	245	
	PM Peak	Design Speed	35
Traffic Control		Unsignalized	
Cycle Length		Unsignalized	
Cycles Per Hour		60	Assume 60
Turn Lane Volume		22	VPH
Advancing Traffic		347	VPH
Opposing Volume		375	VPH
Left Turn Percentage		6%	
Location Type		Through Road	
Condition		A	
Vehicles/Cycle		1	
Turn Lane Length		100	* Turn Lane Length includes 50 ft diverging taper
Offset Width		12	
Approach Taper		245	
Is Left Turn Warrant Met	Yes	See Above	

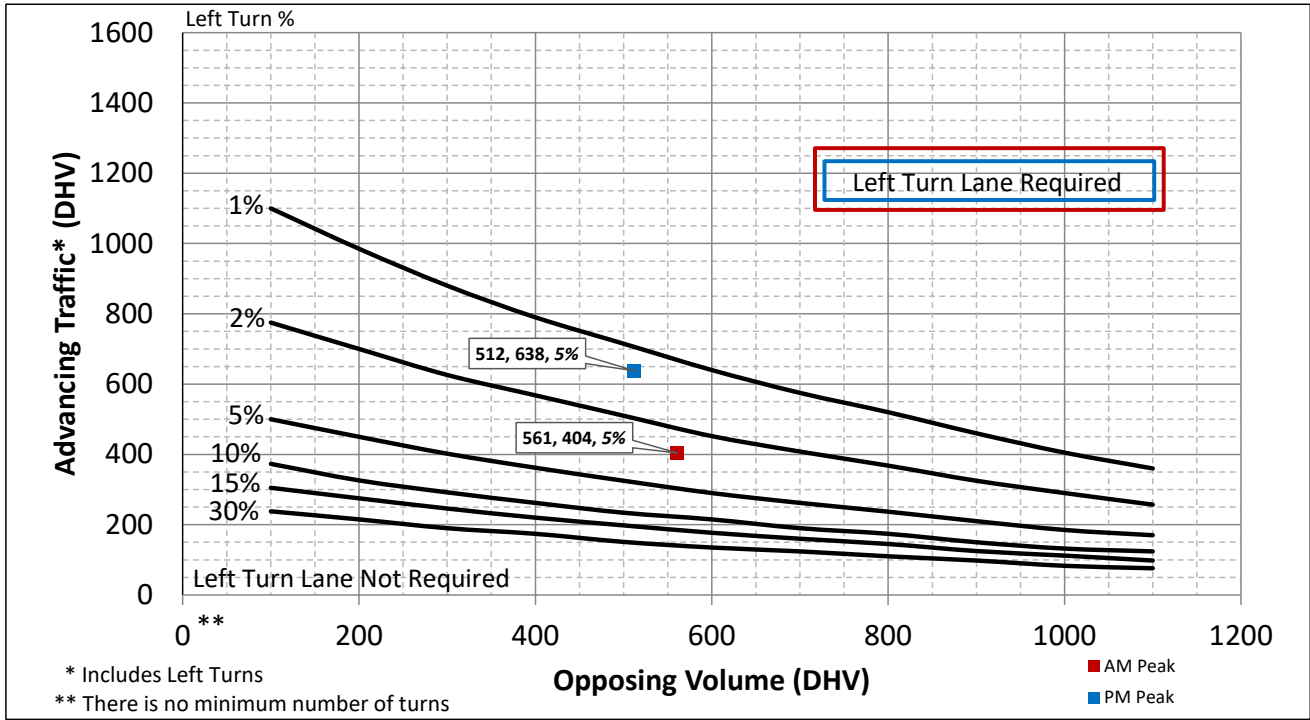
**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed )



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	20	VPH
	Advancing Traffic	452	VPH
	Opposing Volume	631	VPH
	Left Turn Percentage	4%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
<b>PM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	31	VPH
	Advancing Traffic	714	VPH
	Opposing Volume	576	VPH
	Left Turn Percentage	4%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
<b>Is Left Turn Warrant Met</b>		Yes	See Above

**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed )

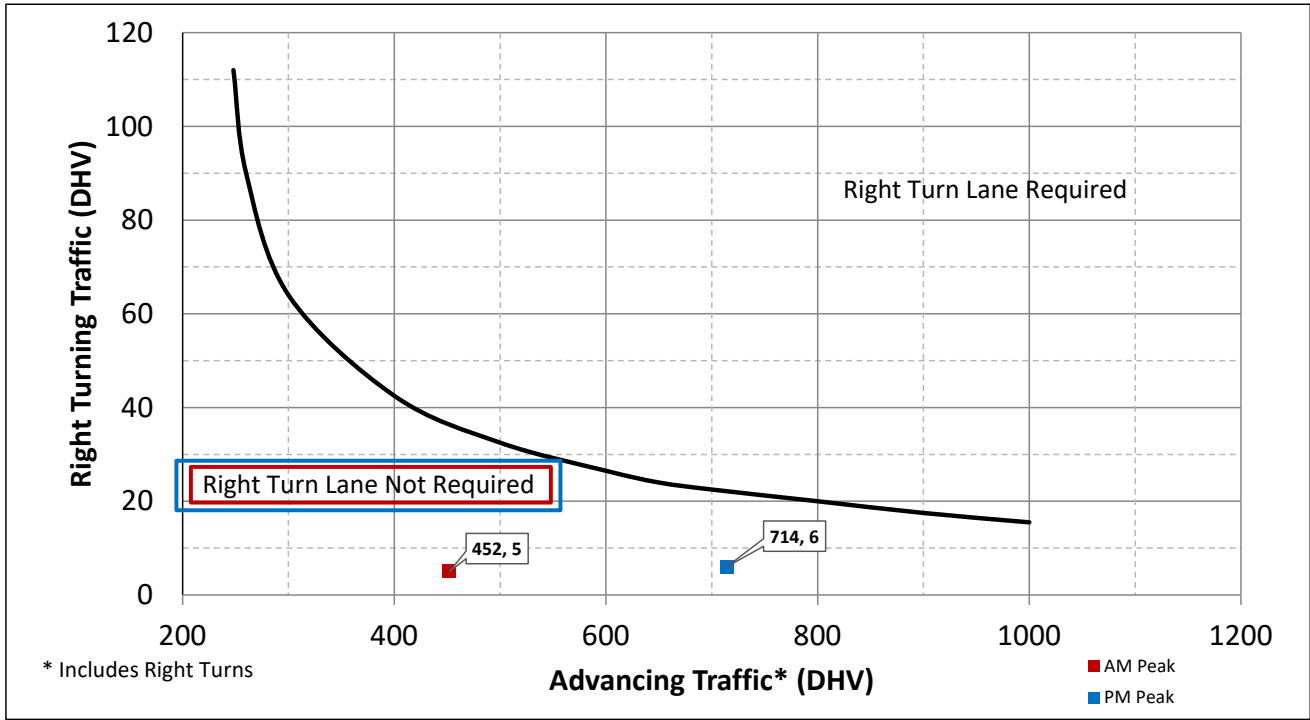


**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	20	VPH	
	Advancing Traffic	404	VPH	
	Opposing Volume	561	VPH	
	Left Turn Percentage	5%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
Approach Taper	405			
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	31	VPH	
	Advancing Traffic	638	VPH	
	Opposing Volume	512	VPH	
	Left Turn Percentage	5%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
Approach Taper	405			
Is Left Turn Warrant Met	Yes		See Above	



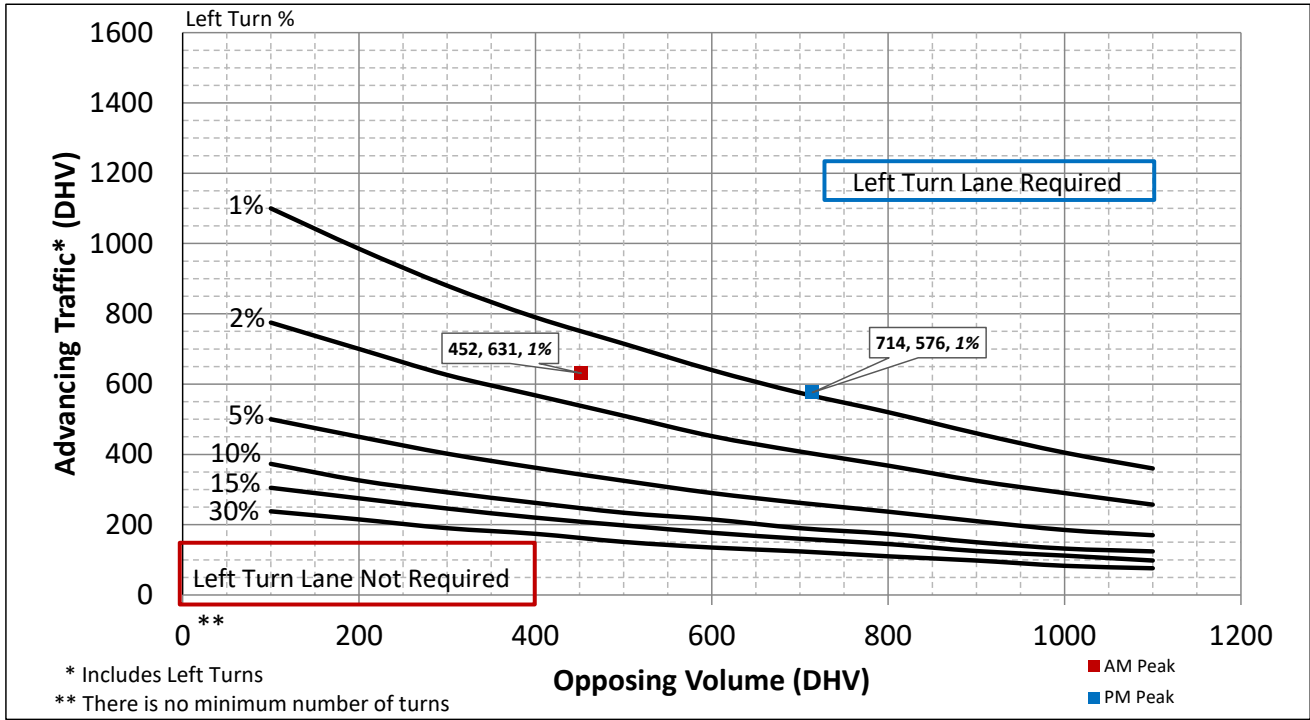
**2-Lane Highway Right Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	5	VPH	
	Advancing Traffic	452	VPH	
	Right Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	6	VPH	
	Advancing Traffic	714	VPH	
	Right Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>Is Right Turn Warrant Met</b>		No	No Right Turn Lane Required	includes 50 ft diverging taper

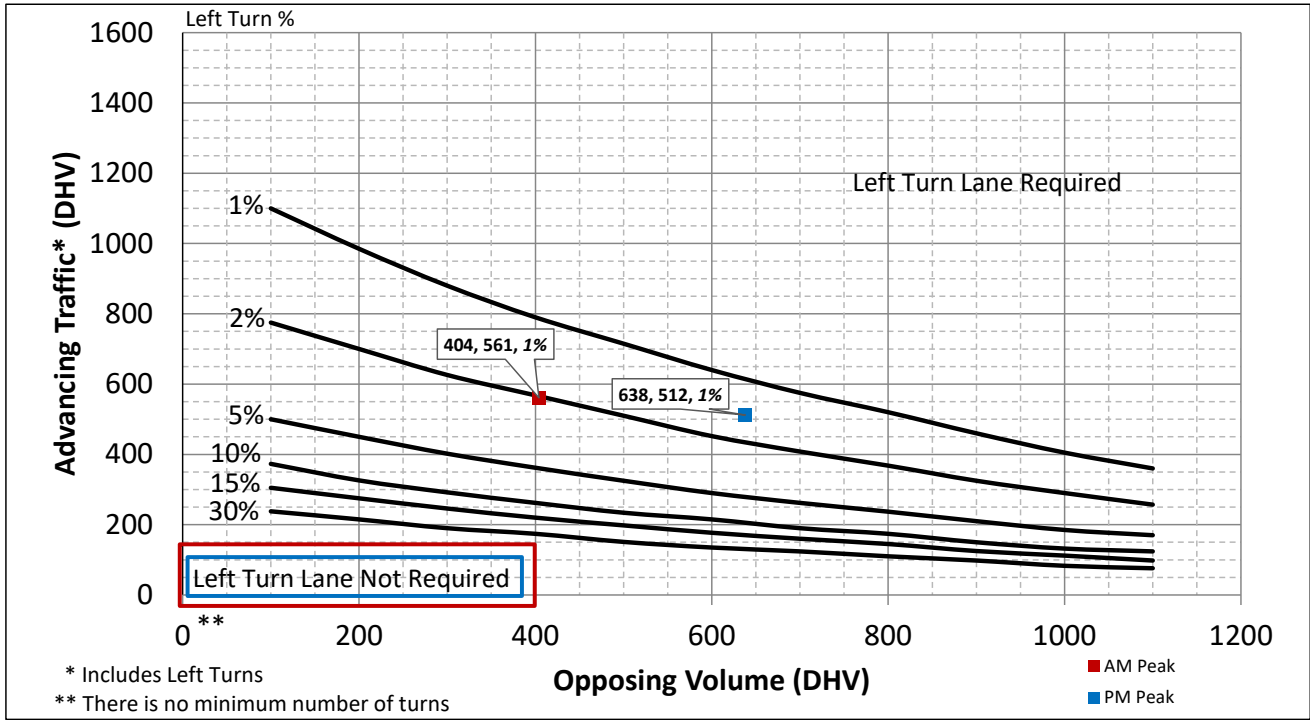
**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed )



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	5	VPH
	Advancing Traffic	631	VPH
	Opposing Volume	452	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Approach Taper	405	
<b>PM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	6	VPH
	Advancing Traffic	576	VPH
	Opposing Volume	714	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Approach Taper	405	
<b>Is Left Turn Warrant Met</b>		Yes	See Above

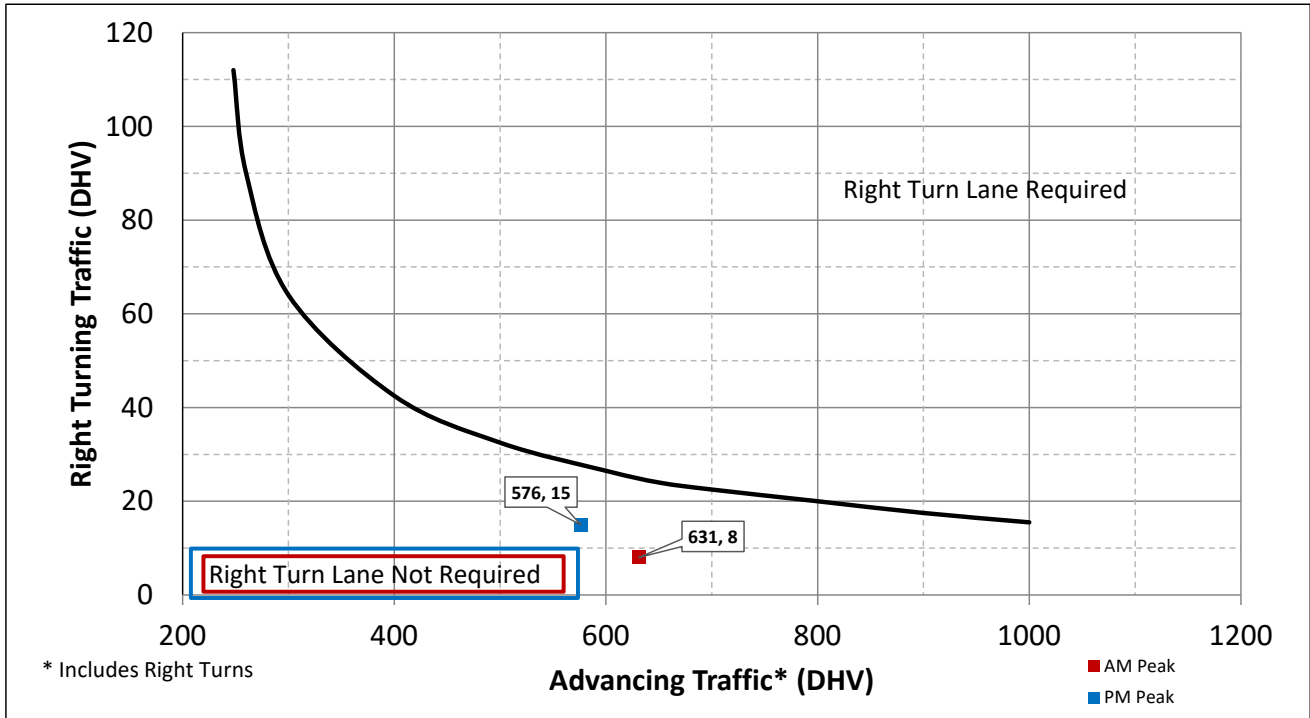
**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed )



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	5	VPH	
	Advancing Traffic	561	VPH	
	Opposing Volume	404	VPH	
	Left Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
Approach Taper	405			
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	6	VPH	
	Advancing Traffic	512	VPH	
	Opposing Volume	638	VPH	
	Left Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
Approach Taper	405			
<b>Is Left Turn Warrant Met</b>		No	<b>No Left Turn Lane Required</b>	

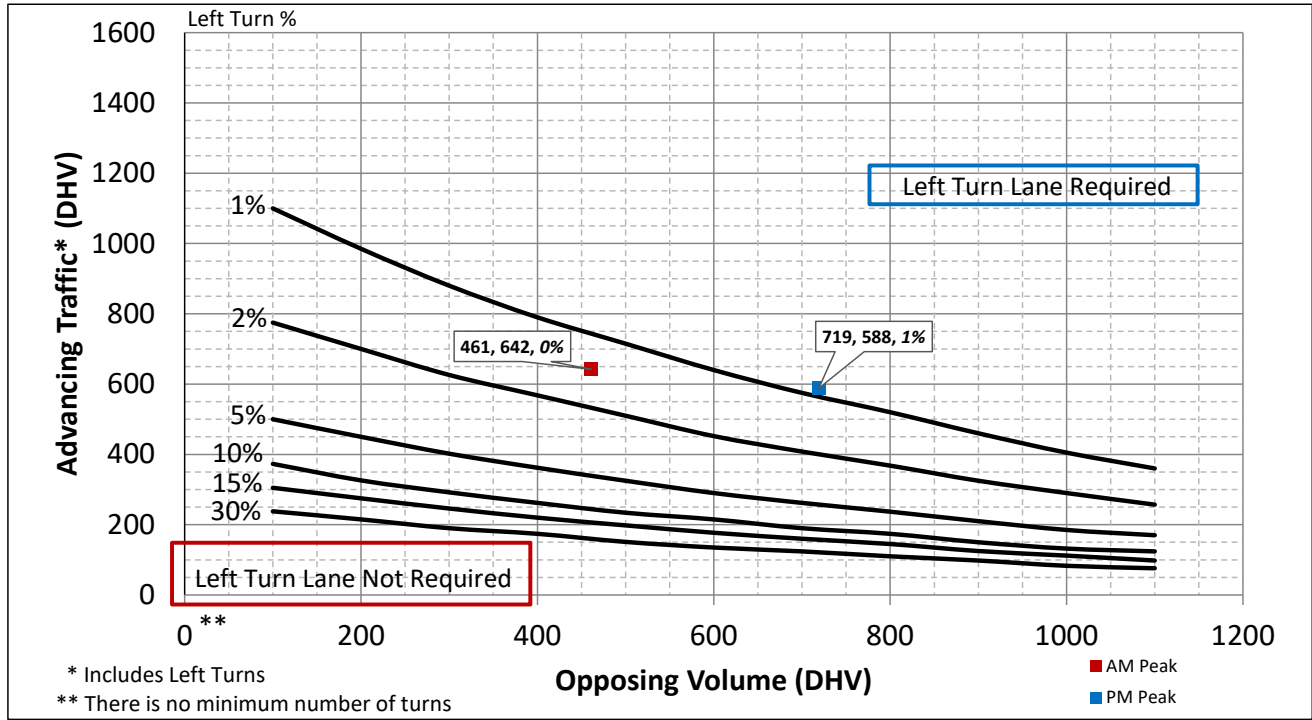
**2-Lane Highway Right Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	8	VPH	
	Advancing Traffic	631	VPH	
	Right Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	15	VPH	
	Advancing Traffic	576	VPH	
	Right Turn Percentage	3%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>Is Right Turn Warrant Met</b>		No	No Right Turn Lane Required	includes 50 ft diverging taper

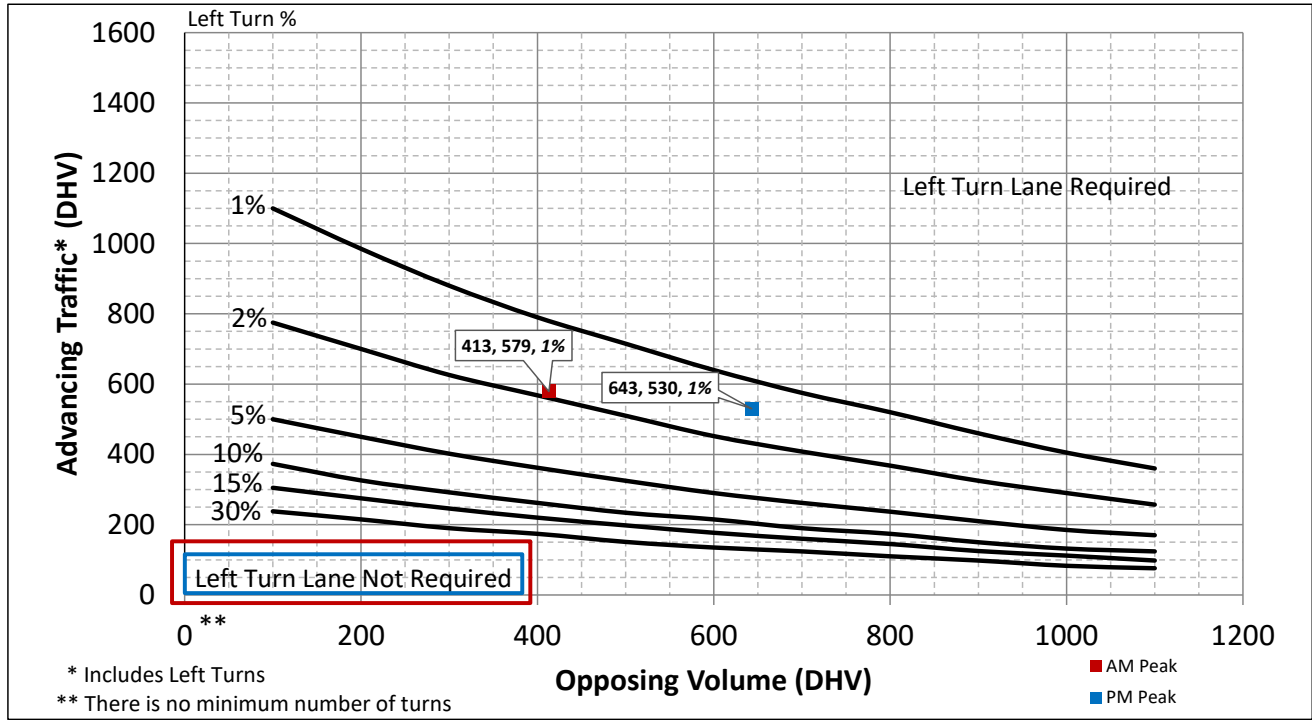
**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	3	VPH
	Advancing Traffic	642	VPH
	Opposing Volume	461	VPH
	Left Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Approach Taper	405	
<b>PM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	3	VPH
	Advancing Traffic	588	VPH
	Opposing Volume	719	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Approach Taper	405	
<b>Is Left Turn Warrant Met</b>	<b>Yes</b>	<b>See Above</b>	

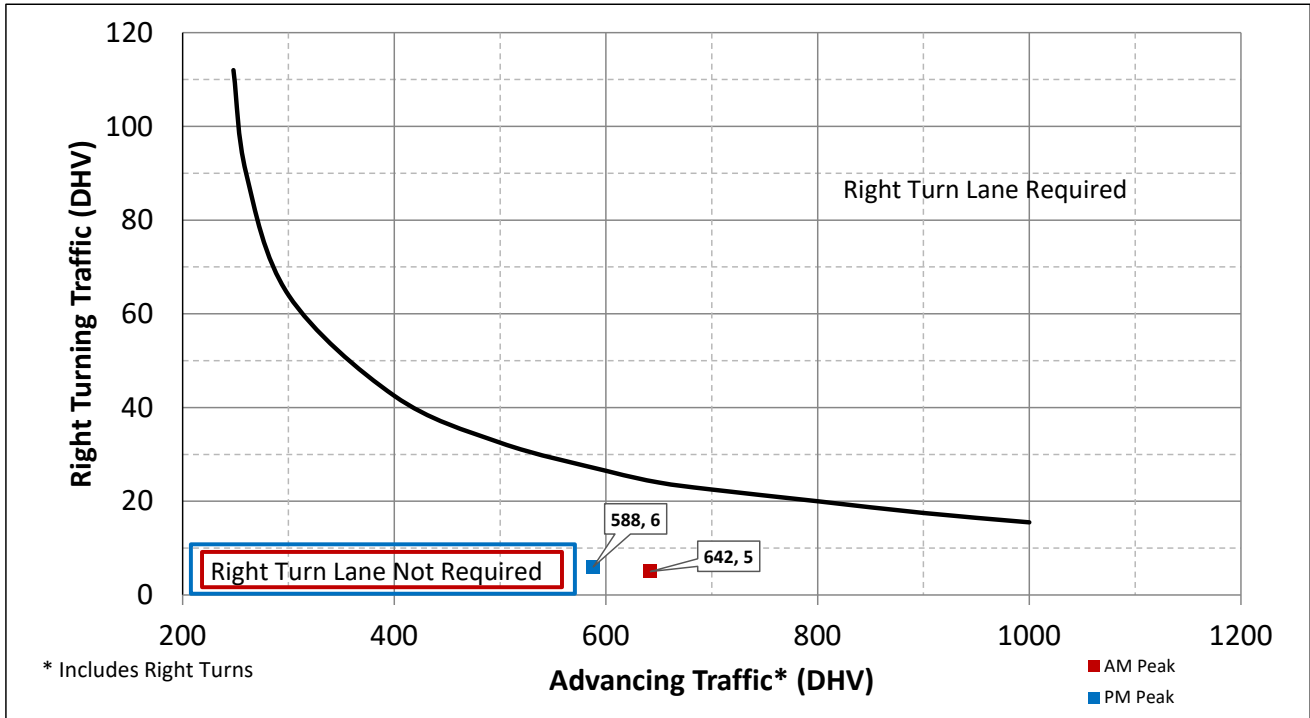
**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	3	VPH	
	Advancing Traffic	579	VPH	
	Opposing Volume	413	VPH	
	Left Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
Approach Taper	405			
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	3	VPH	
	Advancing Traffic	530	VPH	
	Opposing Volume	643	VPH	
	Left Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
Approach Taper	405			
<b>Is Left Turn Warrant Met</b>		No	<b>No Left Turn Lane Required</b>	

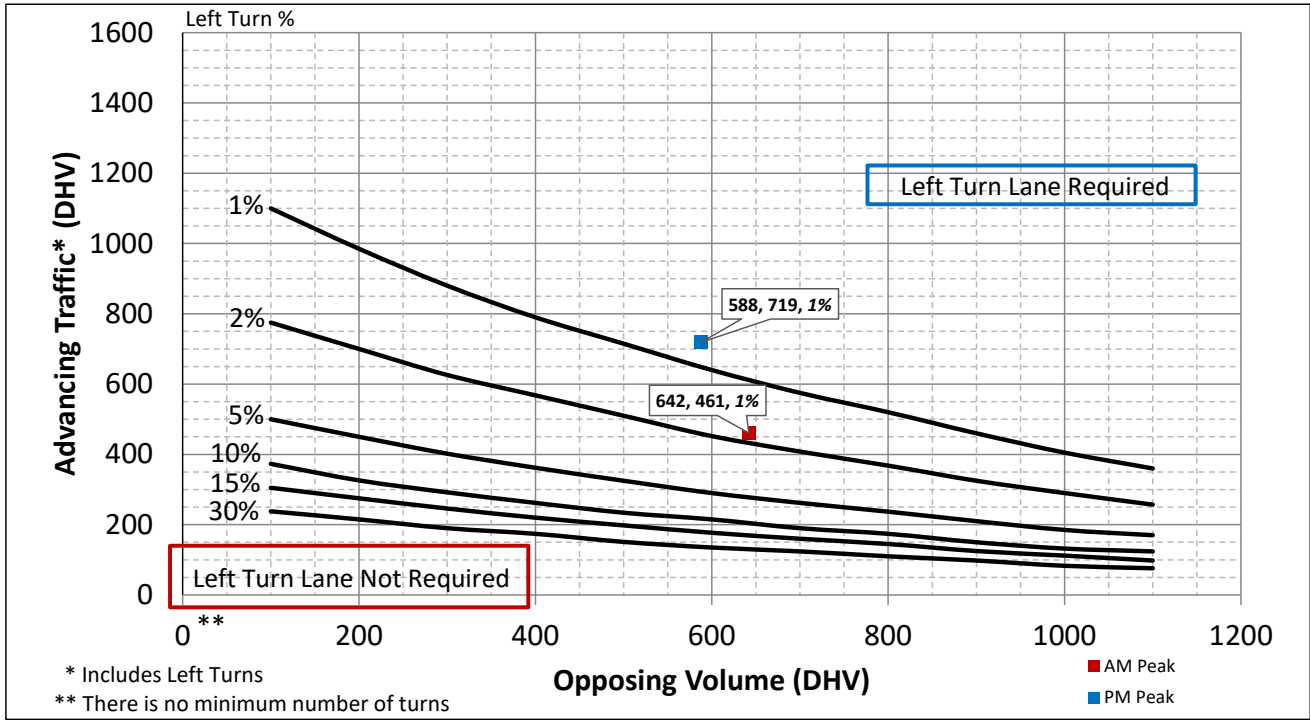
**2-Lane Highway Right Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	5	VPH	
	Advancing Traffic	642	VPH	
	Right Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	6	VPH	
	Advancing Traffic	588	VPH	
	Right Turn Percentage	1%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>Is Right Turn Warrant Met</b>		No	No Right Turn Lane Required	includes 50 ft diverging taper

**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)

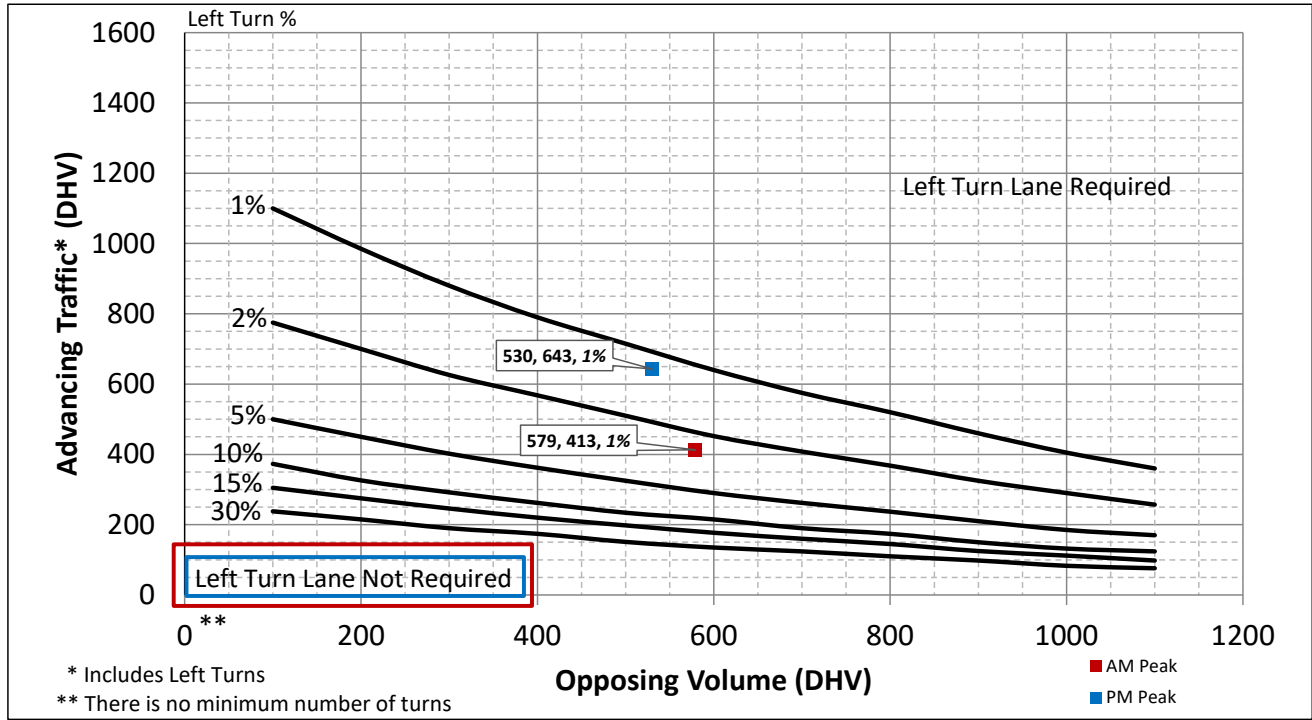


**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	5	VPH
	Advancing Traffic	461	VPH
	Opposing Volume	642	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Approach Taper	405	
<b>PM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	6	VPH
	Advancing Traffic	719	VPH
	Opposing Volume	588	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Approach Taper	405	
<b>Is Left Turn Warrant Met</b>	<b>Yes</b>	<b>See Above</b>	



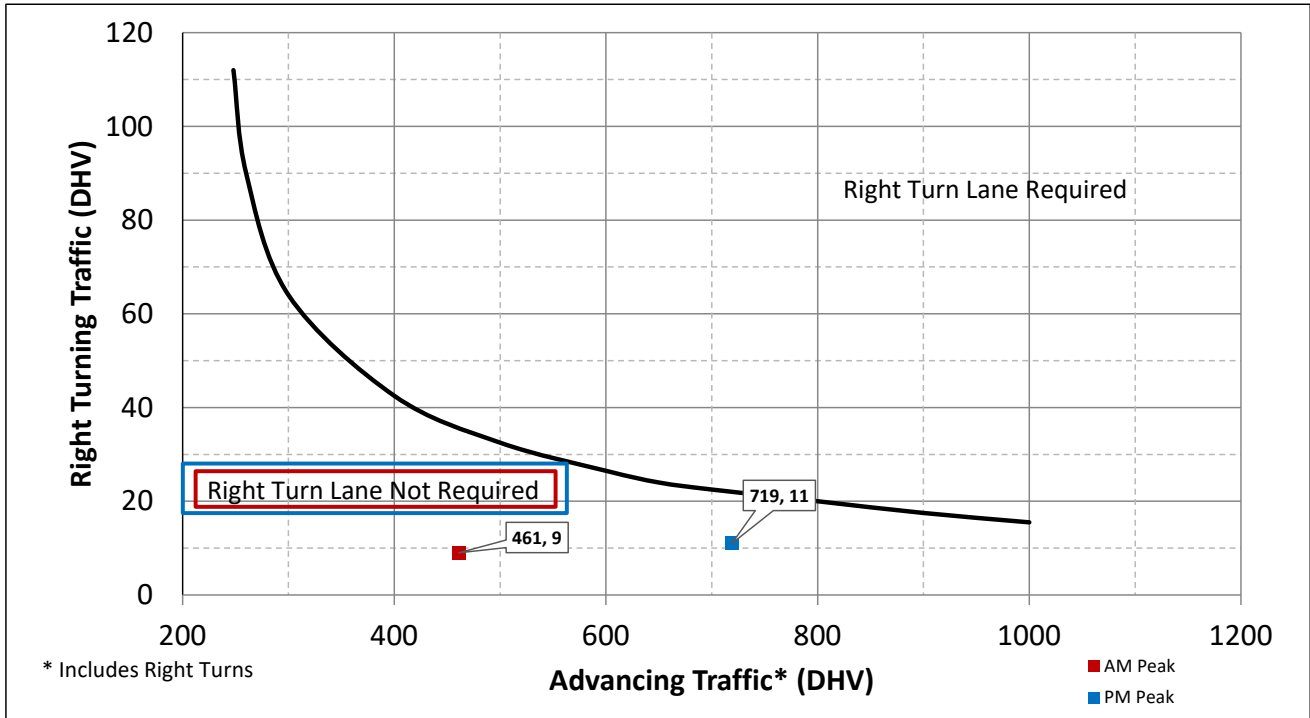
**2-Lane Highway Left Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	5	VPH
	Advancing Traffic	413	VPH
	Opposing Volume	579	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
<b>PM Peak</b>	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	6	VPH
	Advancing Traffic	643	VPH
	Opposing Volume	530	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
<b>Is Left Turn Warrant Met</b>		No	<b>No Left Turn Lane Required</b>

**2-Lane Highway Right Turn Lane Warrant**  
( > 40 mph or 70 kph Posted Speed)



**Turn Lane Length Calculations**

<b>AM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	9	VPH	
	Advancing Traffic	461	VPH	
	Right Turn Percentage	2%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>PM Peak</b>	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	Assume 60	
	Turn Lane Volume	11	VPH	
	Advancing Traffic	719	VPH	
	Right Turn Percentage	2%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
<b>Is Right Turn Warrant Met</b>		No	No Right Turn Lane Required	includes 50 ft diverging taper

# Appendix F

## Capacity Analysis



Timing Report, Sorted By Phase  
 3: New Albany-Condit Road & Central College Road

10/11/2022

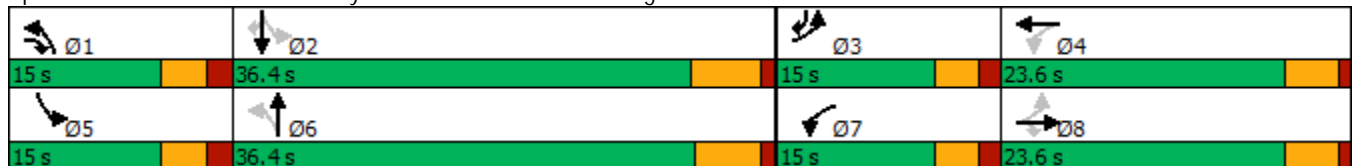


Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	15	36.4	15	23.6	15	36.4	15	23.6
Maximum Split (%)	16.7%	40.4%	16.7%	26.2%	16.7%	40.4%	16.7%	26.2%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.4	66.4	0	15	51.4	66.4
End Time (s)	15	51.4	66.4	0	15	51.4	66.4	0
Yield/Force Off (s)	10.2	45.7	62	85.4	10.2	46	62	85.4
Yield/Force Off 170(s)	10.2	45.7	62	74.4	10.2	35	62	85.4
Local Start Time (s)	75	0	36.4	51.4	75	0	36.4	51.4
Local Yield (s)	85.2	30.7	47	70.4	85.2	31	47	70.4
Local Yield 170(s)	85.2	30.7	47	59.4	85.2	20	47	70.4

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	85

Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	127	103	146	207	27	83	210	78	44	296	23
Future Volume (veh/h)	19	127	103	146	207	27	83	210	78	44	296	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	138	112	159	225	29	90	228	85	48	322	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	335	450	422	791	101	515	508	189	508	686	654
Arrive On Green	0.05	0.18	0.18	0.12	0.25	0.25	0.10	0.39	0.39	0.08	0.37	0.37
Sat Flow, veh/h	1781	1870	1585	1781	3171	404	1781	1299	484	1781	1870	1585
Grp Volume(v), veh/h	21	138	112	159	125	129	90	0	313	48	322	25
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1798	1781	0	1783	1781	1870	1585
Q Serve(g_s), s	0.8	5.5	4.6	5.6	4.8	4.9	2.4	0.0	10.9	1.3	11.0	0.8
Cycle Q Clear(g_c), s	0.8	5.5	4.6	5.6	4.8	4.9	2.4	0.0	10.9	1.3	11.0	0.8
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	370	335	450	422	443	449	515	0	697	508	686	654
V/C Ratio(X)	0.06	0.41	0.25	0.38	0.28	0.29	0.17	0.00	0.45	0.09	0.47	0.04
Avail Cap(c_a), veh/h	513	424	526	440	443	449	546	0	697	582	686	654
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	30.4	23.1	21.7	25.4	25.4	13.1	0.0	18.8	13.6	20.3	14.7
Incr Delay (d2), s/veh	0.1	0.8	0.3	0.6	0.3	0.4	0.2	0.0	2.1	0.1	2.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.5	1.7	2.2	1.9	2.0	0.8	0.0	4.4	0.5	4.7	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	31.3	23.4	22.2	25.7	25.8	13.3	0.0	20.9	13.7	22.6	14.8
LnGrp LOS	C	C	C	C	C	C	B	A	C	B	C	B
Approach Vol, veh/h		271			413			403			395	
Approach Delay, s/veh		27.6			24.4			19.2			21.0	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	36.4	8.3	25.5	11.5	38.4	14.2	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.7	* 11	19.0	* 10	* 31	* 11	19.0				
Max Q Clear Time (g_c+I1), s	4.4	13.0	2.8	6.9	3.3	12.9	7.6	7.5				
Green Ext Time (p_c), s	0.1	1.6	0.0	0.9	0.0	1.6	0.1	0.8				

### Intersection Summary

HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# Timing Report, Sorted By Phase

## 12: New Albany-Condit Road & Walton Parkway

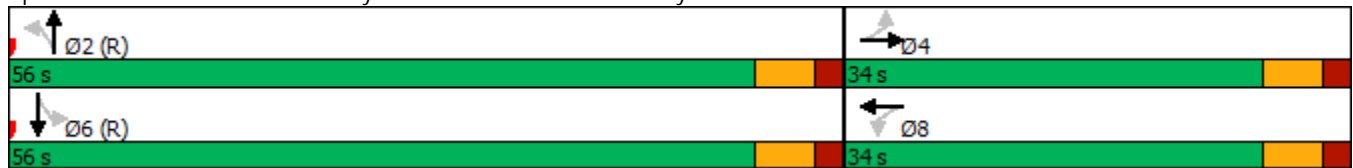
10/11/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	56	34	56	34
Maximum Split (%)	62.2%	37.8%	62.2%	37.8%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	56	0	56
End Time (s)	56	0	56	0
Yield/Force Off (s)	50	84	50	84
Yield/Force Off 170(s)	50	84	50	84
Local Start Time (s)	0	56	0	56
Local Yield (s)	50	84	50	84
Local Yield 170(s)	50	84	50	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



HCM 6th Signalized Intersection Summary  
 12: New Albany-Condit Road & Walton Parkway

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	→		↶	→		↶	→		↶	→	↶
Traffic Volume (veh/h)	6	126	111	25	65	72	118	284	50	104	428	26
Future Volume (veh/h)	6	126	111	25	65	72	118	284	50	104	428	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	137	121	27	71	78	128	309	54	113	465	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	225	178	157	139	158	174	580	1043	182	682	1174	71
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1239	916	809	1121	814	895	904	1551	271	1019	1746	105
Grp Volume(v), veh/h	7	0	258	27	0	149	128	0	363	113	0	493
Grp Sat Flow(s),veh/h/ln	1239	0	1725	1121	0	1709	904	0	1822	1019	0	1851
Q Serve(g_s), s	0.5	0.0	12.8	2.1	0.0	6.9	6.6	0.0	7.3	4.6	0.0	10.7
Cycle Q Clear(g_c), s	7.4	0.0	12.8	14.9	0.0	6.9	17.3	0.0	7.3	11.9	0.0	10.7
Prop In Lane	1.00		0.47	1.00		0.52	1.00		0.15	1.00		0.06
Lane Grp Cap(c), veh/h	225	0	335	139	0	332	580	0	1225	682	0	1245
V/C Ratio(X)	0.03	0.00	0.77	0.19	0.00	0.45	0.22	0.00	0.30	0.17	0.00	0.40
Avail Cap(c_a), veh/h	370	0	537	270	0	532	580	0	1225	682	0	1245
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	34.4	41.4	0.0	32.0	10.4	0.0	6.0	8.5	0.0	6.6
Incr Delay (d2), s/veh	0.1	0.0	3.8	0.7	0.0	1.0	0.9	0.0	0.6	0.5	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.5	0.6	0.0	2.9	1.3	0.0	2.5	0.9	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.3	0.0	38.1	42.1	0.0	33.0	11.3	0.0	6.6	9.0	0.0	7.5
LnGrp LOS	D	A	D	D	A	C	B	A	A	A	A	A
Approach Vol, veh/h		265			176			491				606
Approach Delay, s/veh		38.0			34.4			7.9				7.8
Approach LOS		D			C			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		66.5		23.5		66.5		23.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0		50.0		28.0				
Max Q Clear Time (g_c+I1), s		19.3		14.8		13.9		16.9				
Green Ext Time (p_c), s		3.1		1.2		3.6		0.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.1								
HCM 6th LOS				B								

HCM 6th TWSC  
 21: New Albany-Condit Road & Snider Loop

10/11/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	22	1	374	9	3	538
Future Vol, veh/h	22	1	374	9	3	538
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, %	2	2	2	2	2	2
Mvmt Flow	24	1	407	10	3	585

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1003	412	0	0	417	0
Stage 1	412	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	268	640	-	-	1142	-
Stage 1	669	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	267	640	-	-	1142	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	551	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0
HCM LOS	C		



















Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	274	1142
HCM Lane V/C Ratio	-	-	0.091	0.003
HCM Control Delay (s)	-	-	19.5	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.3	0



# HCM Unsignalized Intersection Capacity Analysis

## 8: New Albany Road E & Private Drive

10/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	0	0	4	2	349	5	0	558	7
Future Volume (Veh/h)	0	0	7	0	0	4	2	349	5	0	558	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	8	0	0	4	2	379	5	0	607	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	714	999	308	697	1000	97	615			384		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	714	999	308	697	1000	97	615			384		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	317	242	688	323	241	940	961			1171		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2				
Volume Total	8	4	65	126	126	68	405	210				
Volume Left	0	0	2	0	0	0	0	0				
Volume Right	8	4	0	0	0	5	0	8				
cSH	688	940	961	1700	1700	1700	1700	1700				
Volume to Capacity	0.01	0.00	0.00	0.07	0.07	0.04	0.24	0.12				
Queue Length 95th (ft)	1	0	0	0	0	0	0	0				
Control Delay (s)	10.3	8.8	0.3	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A	A									
Approach Delay (s)	10.3	8.8	0.0				0.0					
Approach LOS	B	A										
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			25.6%		ICU Level of Service					A		
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis

## 16: Central College Road & Discover Complex Access

10/11/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	37	212	276	37	6	6			
Future Volume (Veh/h)	37	212	276	37	6	6			
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	40	230	300	40	7	7			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type		None	None						
Median storage (veh)									
Upstream signal (ft)			679						
pX, platoon unblocked	0.98				0.98	0.98			
vC, conflicting volume	340				515	170			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	282				461	109			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	97				99	99			
cM capacity (veh/h)	1250				501	905			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1	SB 2	SB 3
Volume Total	20	20	115	115	200	140	7	4	4
Volume Left	20	20	0	0	0	0	7	0	0
Volume Right	0	0	0	0	0	40	0	4	4
cSH	1250	1250	1700	1700	1700	1700	501	905	905
Volume to Capacity	0.03	0.03	0.07	0.07	0.12	0.08	0.01	0.00	0.00
Queue Length 95th (ft)	2	2	0	0	0	0	1	0	0
Control Delay (s)	8.0	8.0	0.0	0.0	0.0	0.0	12.3	9.0	9.0
Lane LOS	A	A					B	A	A
Approach Delay (s)	1.2				0.0		10.6		
Approach LOS							B		
Intersection Summary									
Average Delay			0.7						
Intersection Capacity Utilization			25.5%		ICU Level of Service				A
Analysis Period (min)			15						

Timing Report, Sorted By Phase  
 3: New Albany-Condit Road & Central College Road

10/11/2022



Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	15	36	15	24	15	36	15	24
Maximum Split (%)	16.7%	40.0%	16.7%	26.7%	16.7%	40.0%	16.7%	26.7%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51	66	0	15	51	66
End Time (s)	15	51	66	0	15	51	66	0
Yield/Force Off (s)	10.2	45.3	61.6	85.4	10.2	45.6	61.6	85.4
Yield/Force Off 170(s)	10.2	45.3	61.6	74.4	10.2	34.6	61.6	85.4
Local Start Time (s)	75	0	36	51	75	0	36	51
Local Yield (s)	85.2	30.3	46.6	70.4	85.2	30.6	46.6	70.4
Local Yield 170(s)	85.2	30.3	46.6	59.4	85.2	19.6	46.6	70.4

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	85

Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	136	103	156	215	27	83	219	89	44	304	30
Future Volume (veh/h)	27	136	103	156	215	27	83	219	89	44	304	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	148	112	170	234	29	90	238	97	48	330	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	337	452	418	761	93	505	490	200	487	680	669
Arrive On Green	0.06	0.18	0.18	0.12	0.24	0.24	0.11	0.39	0.39	0.08	0.36	0.36
Sat Flow, veh/h	1781	1870	1585	1781	3186	390	1781	1263	515	1781	1870	1585
Grp Volume(v), veh/h	29	148	112	170	129	134	90	0	335	48	330	33
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1800	1781	0	1778	1781	1870	1585
Q Serve(g_s), s	1.1	5.9	4.5	6.0	5.0	5.1	2.4	0.0	11.8	1.3	11.4	1.0
Cycle Q Clear(g_c), s	1.1	5.9	4.5	6.0	5.0	5.1	2.4	0.0	11.8	1.3	11.4	1.0
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	389	337	452	418	424	430	505	0	690	487	680	669
V/C Ratio(X)	0.07	0.44	0.25	0.41	0.30	0.31	0.18	0.00	0.49	0.10	0.49	0.05
Avail Cap(c_a), veh/h	511	435	535	435	424	430	536	0	690	561	680	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	30.4	22.9	21.6	26.0	26.1	13.3	0.0	19.2	13.8	20.5	14.2
Incr Delay (d2), s/veh	0.1	0.9	0.3	0.6	0.4	0.4	0.2	0.0	2.4	0.1	2.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.6	1.7	2.4	2.0	2.1	0.9	0.0	4.8	0.5	4.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.6	31.3	23.2	22.3	26.4	26.5	13.4	0.0	21.7	13.9	23.0	14.4
LnGrp LOS	C	C	C	C	C	C	B	A	C	B	C	B
Approach Vol, veh/h		289			433			425			411	
Approach Delay, s/veh		27.5			24.8			19.9			21.2	
Approach LOS		C			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	36.0	9.3	24.5	11.5	38.0	14.2	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.3	* 11	19.4	* 10	* 31	* 11	19.4				
Max Q Clear Time (g_c+I1), s	4.4	13.4	3.1	7.1	3.3	13.8	8.0	7.9				
Green Ext Time (p_c), s	0.1	1.6	0.0	1.0	0.0	1.6	0.1	0.8				

### Intersection Summary

HCM 6th Ctrl Delay	23.0
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	8	0	27	6	0	6	20	379	5	3	548	8
Future Vol, veh/h	8	0	27	6	0	6	20	379	5	3	548	8
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	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	29	7	0	7	22	412	5	3	596	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1069	1068	601	1080	1070	415	605	0	0	417	0	0
Stage 1	607	607	-	459	459	-	-	-	-	-	-	-
Stage 2	462	461	-	621	611	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	199	222	500	196	221	637	973	-	-	1142	-	-
Stage 1	483	486	-	582	566	-	-	-	-	-	-	-
Stage 2	580	565	-	475	484	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	193	216	500	181	215	637	973	-	-	1142	-	-
Mov Cap-2 Maneuver	193	216	-	181	215	-	-	-	-	-	-	-
Stage 1	472	485	-	569	553	-	-	-	-	-	-	-
Stage 2	561	552	-	446	483	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.9		18.4		0.4		0	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	973	-	-	367	282	1142	-
HCM Lane V/C Ratio	0.022	-	-	0.104	0.046	0.003	-
HCM Control Delay (s)	8.8	-	-	15.9	18.4	8.2	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-

Timing Report, Sorted By Phase  
 12: New Albany-Condit Road & Walton Parkway

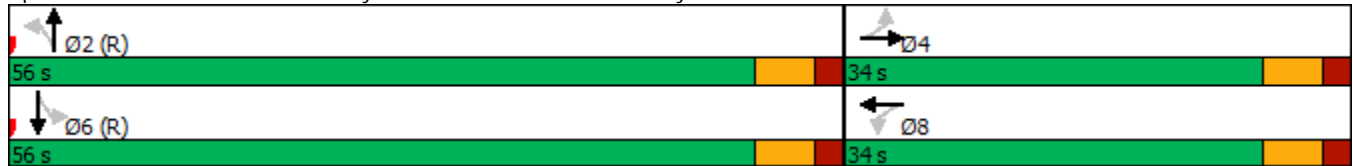
10/11/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	56	34	56	34
Maximum Split (%)	62.2%	37.8%	62.2%	37.8%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	56	0	56
End Time (s)	56	0	56	0
Yield/Force Off (s)	50	84	50	84
Yield/Force Off 170(s)	50	84	50	84
Local Start Time (s)	0	56	0	56
Local Yield (s)	50	84	50	84
Local Yield 170(s)	50	84	50	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



# HCM 6th Signalized Intersection Summary

## 12: New Albany-Condit Road & Walton Parkway

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	6	126	111	25	65	79	118	307	50	112	453	32
Future Volume (veh/h)	6	126	111	25	65	79	118	307	50	112	453	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	137	121	27	71	86	128	334	54	122	492	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	219	178	157	139	150	181	554	1056	171	661	1160	83
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1230	916	809	1121	770	933	876	1571	254	996	1726	123
Grp Volume(v), veh/h	7	0	258	27	0	157	128	0	388	122	0	527
Grp Sat Flow(s),veh/h/ln	1230	0	1725	1121	0	1702	876	0	1825	996	0	1848
Q Serve(g_s), s	0.5	0.0	12.8	2.1	0.0	7.4	7.1	0.0	8.0	5.2	0.0	11.8
Cycle Q Clear(g_c), s	7.8	0.0	12.8	14.9	0.0	7.4	18.8	0.0	8.0	13.2	0.0	11.8
Prop In Lane	1.00		0.47	1.00		0.55	1.00		0.14	1.00		0.07
Lane Grp Cap(c), veh/h	219	0	336	139	0	331	554	0	1226	661	0	1242
V/C Ratio(X)	0.03	0.00	0.77	0.19	0.00	0.47	0.23	0.00	0.32	0.18	0.00	0.42
Avail Cap(c_a), veh/h	362	0	537	270	0	530	554	0	1226	661	0	1242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	34.3	41.4	0.0	32.2	11.1	0.0	6.1	8.9	0.0	6.8
Incr Delay (d2), s/veh	0.1	0.0	3.7	0.7	0.0	1.1	1.0	0.0	0.7	0.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.5	0.6	0.0	3.0	1.4	0.0	2.7	1.1	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.7	0.0	38.1	42.0	0.0	33.2	12.1	0.0	6.8	9.5	0.0	7.8
LnGrp LOS	D	A	D	D	A	C	B	A	A	A	A	A
Approach Vol, veh/h		265			184			516			649	
Approach Delay, s/veh		38.0			34.5			8.1			8.1	
Approach LOS		D			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		66.5		23.5		66.5		23.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0		50.0		28.0				
Max Q Clear Time (g_c+I1), s		20.8		14.8		15.2		16.9				
Green Ext Time (p_c), s		3.3		1.2		4.0		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.0								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	6	22	0	1	5	399	9	3	571	5
Future Vol, veh/h	6	0	6	22	0	1	5	399	9	3	571	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	7	24	0	1	5	434	10	3	621	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1080	1084	624	1082	1081	439	626	0	0	444	0	0
Stage 1	630	630	-	449	449	-	-	-	-	-	-	-
Stage 2	450	454	-	633	632	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	196	217	485	195	218	618	956	-	-	1116	-	-
Stage 1	470	475	-	589	572	-	-	-	-	-	-	-
Stage 2	589	569	-	468	474	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	194	215	485	191	216	618	956	-	-	1116	-	-
Mov Cap-2 Maneuver	194	215	-	191	216	-	-	-	-	-	-	-
Stage 1	468	474	-	586	569	-	-	-	-	-	-	-
Stage 2	585	566	-	460	473	-	-	-	-	-	-	-



















Approach	EB		WB		NB		SB			
HCM Control Delay, s	18.6		25.9		0.1		0			
HCM LOS	C		D							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	956	-	-	277	197	1116	-
HCM Lane V/C Ratio	0.006	-	-	0.047	0.127	0.003	-
HCM Control Delay (s)	8.8	-	-	18.6	25.9	8.2	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-



HCM Unsignalized Intersection Capacity Analysis  
 8: New Albany Road E & Private Drive/Site Access 1





















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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	7	0	0	10	2	349	25	0	576	7	
Future Volume (Veh/h)	0	0	7	0	0	10	2	349	25	0	576	7	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	8	0	0	11	2	379	27	0	626	8	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type								None			None		
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	740	1040	317	718	1030	108	634			406			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	740	1040	317	718	1030	108	634			406			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	100	100	99	100	100	99	100			100			
cM capacity (veh/h)	301	228	679	312	231	925	945			1149			
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2					
Volume Total	8	11	65	126	126	90	417	217					
Volume Left	0	0	2	0	0	0	0	0					
Volume Right	8	11	0	0	0	27	0	8					
cSH	679	925	945	1700	1700	1700	1700	1700					
Volume to Capacity	0.01	0.01	0.00	0.07	0.07	0.05	0.25	0.13					
Queue Length 95th (ft)	1	1	0	0	0	0	0	0					
Control Delay (s)	10.4	8.9	0.3	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	A	A										
Approach Delay (s)	10.4	8.9	0.0										
Approach LOS	B	A											
Intersection Summary													
Average Delay			0.2										
Intersection Capacity Utilization			26.1%	ICU Level of Service					A				
Analysis Period (min)			15										

# HCM Unsignalized Intersection Capacity Analysis

## 16: Site Access 2/Discover Complex Access & Central College Road

10/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	212	13	15	276	37	26	3	17	6	3	6
Future Volume (Veh/h)	37	212	13	15	276	37	26	3	17	6	3	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	230	14	16	300	40	28	3	18	7	3	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					679							
pX, platoon unblocked	0.98						0.98	0.98		0.98	0.98	0.98
vC, conflicting volume	340			244			508	689	122	566	676	170
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	291			244			462	647	122	522	633	118
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			94	99	98	98	99	99
cM capacity (veh/h)	1245			1319			452	365	906	405	371	895
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2	SB 3	
Volume Total	20	20	153	91	16	200	140	49	7	5	5	
Volume Left	20	20	0	0	16	0	0	28	7	0	0	
Volume Right	0	0	0	14	0	0	40	18	0	2	5	
cSH	1245	1245	1700	1700	1319	1700	1700	544	405	499	895	
Volume to Capacity	0.03	0.03	0.09	0.05	0.01	0.12	0.08	0.09	0.02	0.01	0.01	
Queue Length 95th (ft)	2	2	0	0	1	0	0	7	1	1	0	
Control Delay (s)	8.0	8.0	0.0	0.0	7.8	0.0	0.0	12.3	14.1	12.3	9.0	
Lane LOS	A	A			A			B	B	B	A	
Approach Delay (s)	1.1				0.3			12.3	12.1			
Approach LOS								B	B			
Intersection Summary												
Average Delay			1.8									
Intersection Capacity Utilization			31.4%		ICU Level of Service				A			
Analysis Period (min)			15									

# Timing Report, Sorted By Phase

## 3: New Albany-Condit Road & Central College Road

10/11/2022

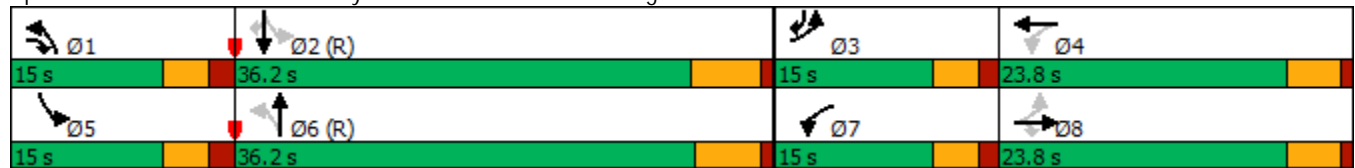


Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	15	36.2	15	23.8	15	36.2	15	23.8
Maximum Split (%)	16.7%	40.2%	16.7%	26.4%	16.7%	40.2%	16.7%	26.4%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.2	66.2	0	15	51.2	66.2
End Time (s)	15	51.2	66.2	0	15	51.2	66.2	0
Yield/Force Off (s)	10.2	45.5	61.8	85.4	10.2	45.8	61.8	85.4
Yield/Force Off 170(s)	10.2	45.5	61.8	74.4	10.2	34.8	61.8	85.4
Local Start Time (s)	75	0	36.2	51.2	75	0	36.2	51.2
Local Yield (s)	85.2	30.5	46.8	70.4	85.2	30.8	46.8	70.4
Local Yield 170(s)	85.2	30.5	46.8	59.4	85.2	19.8	46.8	70.4

### Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	85
Offset: 15 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green	

### Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	216	120	117	204	53	124	395	86	25	256	32
Future Volume (veh/h)	53	216	120	117	204	53	124	395	86	25	256	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	58	235	130	127	222	58	135	429	93	27	278	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	360	312	434	317	527	135	590	679	147	525	754	773
Arrive On Green	0.09	0.17	0.17	0.11	0.19	0.19	0.21	0.91	0.91	0.05	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	1781	2802	716	1781	1489	323	1781	1870	1585
Grp Volume(v), veh/h	58	235	130	127	139	141	135	0	522	27	278	35
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1741	1781	0	1812	1781	1870	1585
Q Serve(g_s), s	2.3	10.8	5.8	5.0	6.2	6.4	3.3	0.0	5.4	0.8	9.4	1.0
Cycle Q Clear(g_c), s	2.3	10.8	5.8	5.0	6.2	6.4	3.3	0.0	5.4	0.8	9.4	1.0
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	360	312	434	317	334	328	590	0	826	525	754	773
V/C Ratio(X)	0.16	0.75	0.30	0.40	0.42	0.43	0.23	0.00	0.63	0.05	0.37	0.05
Avail Cap(c_a), veh/h	418	399	508	338	379	372	600	0	826	630	754	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	35.7	25.8	26.3	32.2	32.3	10.1	0.0	2.4	13.5	18.8	12.1
Incr Delay (d2), s/veh	0.2	6.0	0.4	0.8	0.8	0.9	0.2	0.0	3.7	0.0	1.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.3	2.2	2.1	2.6	2.6	1.1	0.0	1.7	0.3	3.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	41.7	26.2	27.2	33.0	33.2	10.3	0.0	6.1	13.5	20.2	12.2
LnGrp LOS	C	D	C	C	C	C	B	A	A	B	C	B
Approach Vol, veh/h		423			407			657			340	
Approach Delay, s/veh		34.8			31.2			6.9			18.9	
Approach LOS		C			C			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	42.0	12.1	21.5	9.7	46.7	14.0	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.5	* 11	19.2	* 10	* 31	* 11	19.2				
Max Q Clear Time (g_c+I1), s	5.3	11.4	4.3	8.4	2.8	7.4	7.0	12.8				
Green Ext Time (p_c), s	0.1	1.4	0.0	1.0	0.0	3.1	0.1	0.9				

### Intersection Summary

HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase  
 12: New Albany-Condit Road & Walton Parkway

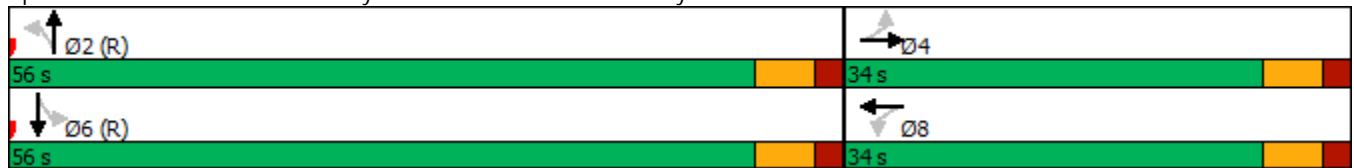
10/11/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	56	34	56	34
Maximum Split (%)	62.2%	37.8%	62.2%	37.8%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	56	0	56
End Time (s)	56	0	56	0
Yield/Force Off (s)	50	84	50	84
Yield/Force Off 170(s)	50	84	50	84
Local Start Time (s)	0	56	0	56
Local Yield (s)	50	84	50	84
Local Yield 170(s)	50	84	50	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



HCM 6th Signalized Intersection Summary  
 12: New Albany-Condit Road & Walton Parkway

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	23	48	120	58	114	114	65	451	21	35	446	13
Future Volume (veh/h)	23	48	120	58	114	114	65	451	21	35	446	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	52	130	63	124	124	71	490	23	38	485	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	90	224	188	163	163	689	1200	56	571	1225	35
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.68	0.68	0.68	1.00	1.00	1.00
Sat Flow, veh/h	1132	474	1184	1202	858	858	899	1772	83	887	1809	52
Grp Volume(v), veh/h	25	0	182	63	0	248	71	0	513	38	0	499
Grp Sat Flow(s),veh/h/ln	1132	0	1657	1202	0	1716	899	0	1855	887	0	1861
Q Serve(g_s), s	1.9	0.0	9.0	4.5	0.0	12.3	2.5	0.0	11.1	0.7	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	9.0	13.5	0.0	12.3	2.5	0.0	11.1	11.9	0.0	0.0
Prop In Lane	1.00		0.71	1.00		0.50	1.00		0.04	1.00		0.03
Lane Grp Cap(c), veh/h	140	0	314	188	0	325	689	0	1256	571	0	1260
V/C Ratio(X)	0.18	0.00	0.58	0.34	0.00	0.76	0.10	0.00	0.41	0.07	0.00	0.40
Avail Cap(c_a), veh/h	277	0	516	334	0	534	689	0	1256	571	0	1260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	0.0	33.2	39.4	0.0	34.6	5.1	0.0	6.5	1.1	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.7	1.0	0.0	3.7	0.3	0.0	1.0	0.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.7	1.4	0.0	5.3	0.4	0.0	3.9	0.0	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	0.0	34.9	40.4	0.0	38.3	5.4	0.0	7.5	1.3	0.0	0.9
LnGrp LOS	D	A	C	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		207			311			584				537
Approach Delay, s/veh		35.7			38.7			7.2				1.0
Approach LOS		D			D			A				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		66.9		23.1		66.9		23.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0		50.0		28.0				
Max Q Clear Time (g_c+I1), s		13.1		16.2		13.9		15.5				
Green Ext Time (p_c), s		4.0		0.8		3.3		1.3				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				14.7								
HCM 6th LOS				B								

HCM 6th TWSC  
 21: New Albany-Condit Road & Snider Loop

10/11/2022

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	13	3	597	11	3	486
Future Vol, veh/h	13	3	597	11	3	486
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, %	2	2	2	2	2	2
Mvmt Flow	14	3	649	12	3	528

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1189	655	0	0	661	0
Stage 1	655	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	208	466	-	-	927	-
Stage 1	517	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	207	466	-	-	927	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	585	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.8	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	231	927
HCM Lane V/C Ratio	-	-	0.075	0.004
HCM Control Delay (s)	-	-	21.8	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.2	0

# HCM Unsignalized Intersection Capacity Analysis

## 8: New Albany Road E & Private Drive

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations			↗			↗		↔↔↔			↕↕		
Traffic Volume (veh/h)	0	0	31	0	0	19	23	564	27	0	396	25	
Future Volume (Veh/h)	0	0	31	0	0	19	23	564	27	0	396	25	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	34	0	0	21	25	613	29	0	430	27	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type													
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	668	1136	228	926	1134	168	457			642			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	668	1136	228	926	1134	168	457			642			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	100	100	96	100	100	98	98			100			
cM capacity (veh/h)	330	196	774	210	197	847	1100			939			
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>NB 3</b>	<b>NB 4</b>	<b>SB 1</b>	<b>SB 2</b>					
Volume Total	34	21	127	204	204	131	287	170					
Volume Left	0	0	25	0	0	0	0	0					
Volume Right	34	21	0	0	0	29	0	27					
cSH	774	847	1100	1700	1700	1700	1700	1700					
Volume to Capacity	0.04	0.02	0.02	0.12	0.12	0.08	0.17	0.10					
Queue Length 95th (ft)	3	2	2	0	0	0	0	0					
Control Delay (s)	9.9	9.4	1.8	0.0	0.0	0.0	0.0	0.0					
Lane LOS	A	A	A										
Approach Delay (s)	9.9	9.4	0.3						0.0				
Approach LOS	A	A											
<b>Intersection Summary</b>													
Average Delay			0.6										
Intersection Capacity Utilization			27.4%	ICU Level of Service				A					
Analysis Period (min)			15										



HCM Unsignalized Intersection Capacity Analysis  
 16: Central College Road & Discover Complex Access

10/11/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR				
Lane Configurations	↖↖	↑↑	↗↗		↙	↘↘				
Traffic Volume (veh/h)	7	352	323	7	38	38				
Future Volume (Veh/h)	7	352	323	7	38	38				
Sign Control	Free		Free	Stop						
Grade	0%		0%	0%						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				
Hourly flow rate (vph)	8	383	351	8	41	41				
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type	None		None							
Median storage (veh)										
Upstream signal (ft)	679									
pX, platoon unblocked										
vC, conflicting volume	359					562	180			
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	359					562	180			
tC, single (s)	4.1					6.8	6.9			
tC, 2 stage (s)										
tF (s)	2.2					3.5	3.3			
p0 queue free %	99					91	95			
cM capacity (veh/h)	1196					454	832			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1	SB 2	SB 3	
Volume Total	4	4	192	192	234	125	41	20	20	
Volume Left	4	4	0	0	0	0	41	0	0	
Volume Right	0	0	0	0	0	8	0	20	20	
cSH	1196	1196	1700	1700	1700	1700	454	832	832	
Volume to Capacity	0.01	0.01	0.11	0.11	0.14	0.07	0.09	0.02	0.02	
Queue Length 95th (ft)	1	1	0	0	0	0	7	2	2	
Control Delay (s)	8.0	8.0	0.0	0.0	0.0	0.0	13.7	9.4	9.4	
Lane LOS	A	A					B	A	A	
Approach Delay (s)	0.2					0.0	11.6			
Approach LOS							B			
Intersection Summary										
Average Delay			1.2							
Intersection Capacity Utilization			19.7%	ICU Level of Service				A		
Analysis Period (min)	15									

Timing Report, Sorted By Phase  
 3: New Albany-Condit Road & Central College Road

10/12/2022



Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	15	36.2	15	23.8	15	36.2	15	23.8
Maximum Split (%)	16.7%	40.2%	16.7%	26.4%	16.7%	40.2%	16.7%	26.4%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.2	66.2	0	15	51.2	66.2
End Time (s)	15	51.2	66.2	0	15	51.2	66.2	0
Yield/Force Off (s)	10.2	45.5	61.8	85.4	10.2	45.8	61.8	85.4
Yield/Force Off 170(s)	10.2	45.5	61.8	74.4	10.2	34.8	61.8	85.4
Local Start Time (s)	75	0	36.2	51.2	75	0	36.2	51.2
Local Yield (s)	85.2	30.5	46.8	70.4	85.2	30.8	46.8	70.4
Local Yield 170(s)	85.2	30.5	46.8	59.4	85.2	19.8	46.8	70.4

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	85
Offset: 15 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green	

Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	225	120	129	213	53	124	404	98	25	265	40
Future Volume (veh/h)	62	225	120	129	213	53	124	404	98	25	265	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	245	130	140	232	58	135	439	107	27	288	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	360	312	434	313	521	128	578	660	161	508	751	780
Arrive On Green	0.09	0.17	0.17	0.11	0.18	0.18	0.21	0.91	0.91	0.05	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	1781	2830	693	1781	1453	354	1781	1870	1585
Grp Volume(v), veh/h	67	245	130	140	144	146	135	0	546	27	288	43
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1746	1781	0	1807	1781	1870	1585
Q Serve(g_s), s	2.6	11.3	5.8	5.6	6.5	6.7	3.3	0.0	6.3	0.8	9.8	1.3
Cycle Q Clear(g_c), s	2.6	11.3	5.8	5.6	6.5	6.7	3.3	0.0	6.3	0.8	9.8	1.3
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.20	1.00		1.00
Lane Grp Cap(c), veh/h	360	312	434	313	327	321	578	0	821	508	751	780
V/C Ratio(X)	0.19	0.79	0.30	0.45	0.44	0.45	0.23	0.00	0.67	0.05	0.38	0.06
Avail Cap(c_a), veh/h	409	399	508	331	379	372	589	0	821	613	751	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	36.0	25.8	26.5	32.6	32.7	10.2	0.0	2.5	13.5	19.0	11.9
Incr Delay (d2), s/veh	0.2	7.7	0.4	1.0	0.9	1.0	0.2	0.0	4.2	0.0	1.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	5.7	2.2	2.3	2.7	2.8	1.1	0.0	1.9	0.3	4.1	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.2	43.7	26.2	27.5	33.5	33.7	10.4	0.0	6.8	13.6	20.5	12.1
LnGrp LOS	C	D	C	C	C	C	B	A	A	B	C	B
Approach Vol, veh/h		442			430			681			358	
Approach Delay, s/veh		35.9			31.6			7.5			19.0	
Approach LOS		D			C			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	41.8	12.5	21.2	9.7	46.6	14.1	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.5	* 11	19.2	* 10	* 31	* 11	19.2				
Max Q Clear Time (g_c+I1), s	5.3	11.8	4.6	8.7	2.8	8.3	7.6	13.3				
Green Ext Time (p_c), s	0.1	1.4	0.1	1.0	0.0	3.3	0.1	0.9				

### Intersection Summary

HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	17	0	35	6	0	6	31	601	6	6	491	15
Future Vol, veh/h	17	0	35	6	0	6	31	601	6	6	491	15
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	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	38	7	0	7	34	653	7	7	534	16

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1284	1284	542	1300	1289	657	550	0	0	660	0	0
Stage 1	556	556	-	725	725	-	-	-	-	-	-	-
Stage 2	728	728	-	575	564	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	165	540	138	164	465	1020	-	-	928	-	-
Stage 1	515	513	-	416	430	-	-	-	-	-	-	-
Stage 2	415	429	-	503	508	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	136	158	540	124	157	465	1020	-	-	928	-	-
Mov Cap-2 Maneuver	136	158	-	124	157	-	-	-	-	-	-	-
Stage 1	498	509	-	402	416	-	-	-	-	-	-	-
Stage 2	396	415	-	464	504	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.5		24.7		0.4		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1020	-	-	274	196	928	-
HCM Lane V/C Ratio	0.033	-	-	0.206	0.067	0.007	-
HCM Control Delay (s)	8.7	-	-	21.5	24.7	8.9	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.2	0	-

Timing Report, Sorted By Phase  
 12: New Albany-Condit Road & Walton Parkway

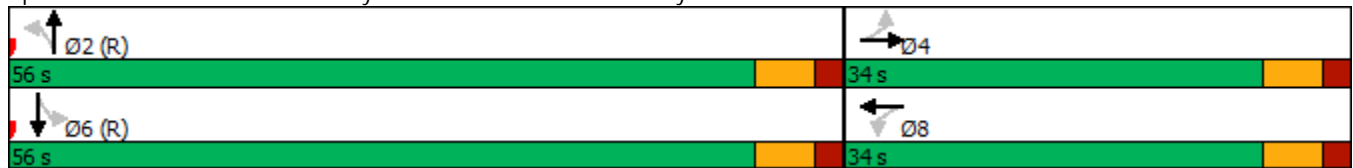
10/12/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	56	34	56	34
Maximum Split (%)	62.2%	37.8%	62.2%	37.8%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	56	0	56
End Time (s)	56	0	56	0
Yield/Force Off (s)	50	84	50	84
Yield/Force Off 170(s)	50	84	50	84
Local Start Time (s)	0	56	0	56
Local Yield (s)	50	84	50	84
Local Yield 170(s)	50	84	50	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



# HCM 6th Signalized Intersection Summary

## 12: New Albany-Condit Road & Walton Parkway

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	48	120	58	114	122	65	478	21	43	473	19
Future Volume (veh/h)	23	48	120	58	114	122	65	478	21	43	473	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	52	130	63	124	133	71	520	23	47	514	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	139	92	231	195	161	173	664	1194	53	543	1199	49
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.67	0.67	0.67	1.00	1.00	1.00
Sat Flow, veh/h	1123	474	1184	1202	826	885	870	1778	79	863	1784	73
Grp Volume(v), veh/h	25	0	182	63	0	257	71	0	543	47	0	535
Grp Sat Flow(s),veh/h/ln	1123	0	1657	1202	0	1711	870	0	1856	863	0	1857
Q Serve(g_s), s	1.9	0.0	8.9	4.5	0.0	12.8	2.6	0.0	12.2	1.1	0.0	0.0
Cycle Q Clear(g_c), s	14.8	0.0	8.9	13.4	0.0	12.8	2.6	0.0	12.2	13.3	0.0	0.0
Prop In Lane	1.00		0.71	1.00		0.52	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	139	0	323	195	0	333	664	0	1247	543	0	1248
V/C Ratio(X)	0.18	0.00	0.56	0.32	0.00	0.77	0.11	0.00	0.44	0.09	0.00	0.43
Avail Cap(c_a), veh/h	269	0	516	335	0	532	664	0	1247	543	0	1248
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.3	0.0	32.8	38.8	0.0	34.3	5.3	0.0	6.9	1.3	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	1.5	1.0	0.0	3.8	0.3	0.0	1.1	0.3	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.6	1.3	0.0	5.5	0.5	0.0	4.3	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	0.0	34.3	39.8	0.0	38.1	5.6	0.0	8.0	1.7	0.0	1.1
LnGrp LOS	D	A	C	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		207			320			614			582	
Approach Delay, s/veh		35.2			38.4			7.7			1.1	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		66.5		23.5		66.5		23.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		50.0		28.0		50.0		28.0				
Max Q Clear Time (g_c+I1), s		14.2		16.8		15.3		15.4				
Green Ext Time (p_c), s		4.3		0.8		3.7		1.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				14.5								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	6	13	0	3	6	626	11	3	521	6
Future Vol, veh/h	6	0	6	13	0	3	6	626	11	3	521	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	7	14	0	3	7	680	12	3	566	7



















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1278	1282	570	1279	1279	686	573	0	0	692	0	0
Stage 1	576	576	-	700	700	-	-	-	-	-	-	-
Stage 2	702	706	-	579	579	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	143	165	521	143	166	447	1000	-	-	903	-	-
Stage 1	503	502	-	430	441	-	-	-	-	-	-	-
Stage 2	429	439	-	501	501	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	141	163	521	140	164	447	1000	-	-	903	-	-
Mov Cap-2 Maneuver	141	163	-	140	164	-	-	-	-	-	-	-
Stage 1	499	500	-	427	438	-	-	-	-	-	-	-
Stage 2	423	436	-	493	499	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	22.2		30.1		0.1		0.1	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1000	-	-	222	161	903	-
HCM Lane V/C Ratio	0.007	-	-	0.059	0.108	0.004	-
HCM Control Delay (s)	8.6	-	-	22.2	30.1	9	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-

HCM Unsignalized Intersection Capacity Analysis  
 8: New Albany Road E & Private Drive/Site Access 1

10/11/2022





















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	31	0	0	25	23	564	50	0	415	25
Future Volume (Veh/h)	0	0	31	0	0	25	23	564	50	0	415	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	34	0	0	27	25	613	54	0	451	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	695	1182	239	950	1168	180	478			667		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	695	1182	239	950	1168	180	478			667		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	100	100	97	98			100		
cM capacity (veh/h)	313	184	762	202	188	831	1081			919		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2				
Volume Total	34	27	127	204	204	156	301	177				
Volume Left	0	0	25	0	0	0	0	0				
Volume Right	34	27	0	0	0	54	0	27				
cSH	762	831	1081	1700	1700	1700	1700	1700				
Volume to Capacity	0.04	0.03	0.02	0.12	0.12	0.09	0.18	0.10				
Queue Length 95th (ft)	3	3	2	0	0	0	0	0				
Control Delay (s)	9.9	9.5	1.8	0.0	0.0	0.0	0.0	0.0				
Lane LOS	A	A	A									
Approach Delay (s)	9.9	9.5	0.3				0.0					
Approach LOS	A	A										
Intersection Summary												
Average Delay			0.7									
Intersection Capacity Utilization			28.3%		ICU Level of Service				A			
Analysis Period (min)			15									



# HCM Unsignalized Intersection Capacity Analysis

## 16: Site Access 2/Discover Complex Access & Central College Road

10/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	347	21	22	318	7	33	4	23	38	3	38
Future Volume (Veh/h)	7	347	21	22	318	7	33	4	23	38	3	38
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	377	23	24	346	8	36	4	25	41	3	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					679							
pX, platoon unblocked												
vC, conflicting volume	354			400			668	806	200	630	814	177
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	354			400			668	806	200	630	814	177
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			89	99	97	88	99	95
cM capacity (veh/h)	1201			1155			318	305	808	344	302	835
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2	SB 3	
Volume Total	4	4	251	149	24	231	123	65	41	17	27	
Volume Left	4	4	0	0	24	0	0	36	41	0	0	
Volume Right	0	0	0	23	0	0	8	25	0	14	27	
cSH	1201	1201	1700	1700	1155	1700	1700	413	344	634	835	
Volume to Capacity	0.01	0.01	0.15	0.09	0.02	0.14	0.07	0.16	0.12	0.03	0.03	
Queue Length 95th (ft)	1	1	0	0	2	0	0	14	10	2	3	
Control Delay (s)	8.0	8.0	0.0	0.0	8.2	0.0	0.0	15.3	16.9	10.8	9.5	
Lane LOS	A	A			A			C	C	B	A	
Approach Delay (s)	0.2				0.5			15.3	13.3			
Approach LOS								C	B			
Intersection Summary												
Average Delay			2.6									
Intersection Capacity Utilization			33.7%			ICU Level of Service			A			
Analysis Period (min)			15									

Timing Report, Sorted By Phase  
 3: New Albany-Condit Road & Central College Road

10/11/2022

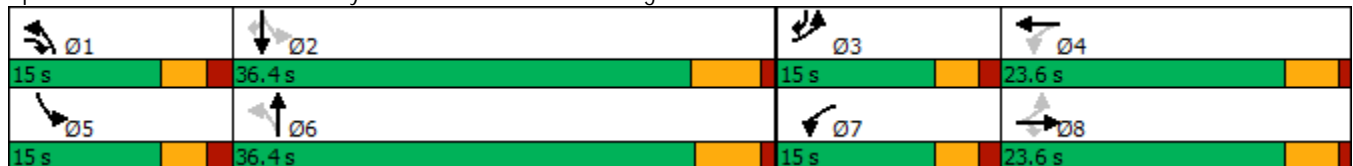


Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	15	36.4	15	23.6	15	36.4	15	23.6
Maximum Split (%)	16.7%	40.4%	16.7%	26.2%	16.7%	40.4%	16.7%	26.2%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.4	66.4	0	15	51.4	66.4
End Time (s)	15	51.4	66.4	0	15	51.4	66.4	0
Yield/Force Off (s)	10.2	45.7	62	85.4	10.2	46	62	85.4
Yield/Force Off 170(s)	10.2	45.7	62	74.4	10.2	35	62	85.4
Local Start Time (s)	75	0	36.4	51.4	75	0	36.4	51.4
Local Yield (s)	85.2	30.7	47	70.4	85.2	31	47	70.4
Local Yield 170(s)	85.2	30.7	47	59.4	85.2	20	47	70.4

Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	85

Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	140	114	164	234	30	94	237	88	52	344	26
Future Volume (veh/h)	22	140	114	164	234	30	94	237	88	52	344	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	152	124	178	254	33	102	258	96	57	374	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	334	454	411	774	99	481	501	186	481	683	659
Arrive On Green	0.05	0.18	0.18	0.12	0.24	0.24	0.11	0.39	0.39	0.09	0.36	0.36
Sat Flow, veh/h	1781	1870	1585	1781	3167	407	1781	1300	484	1781	1870	1585
Grp Volume(v), veh/h	24	152	124	178	141	146	102	0	354	57	374	28
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1797	1781	0	1783	1781	1870	1585
Q Serve(g_s), s	0.9	6.1	5.1	6.4	5.5	5.6	2.7	0.0	12.8	1.5	13.4	0.9
Cycle Q Clear(g_c), s	0.9	6.1	5.1	6.4	5.5	5.6	2.7	0.0	12.8	1.5	13.4	0.9
Prop In Lane	1.00		1.00	1.00		0.23	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	370	334	454	411	434	439	481	0	687	481	683	659
V/C Ratio(X)	0.06	0.46	0.27	0.43	0.33	0.33	0.21	0.00	0.52	0.12	0.55	0.04
Avail Cap(c_a), veh/h	504	422	529	427	434	439	504	0	687	541	683	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	30.9	23.2	22.1	26.1	26.1	13.6	0.0	19.8	13.8	21.2	14.6
Incr Delay (d2), s/veh	0.1	1.0	0.3	0.7	0.4	0.4	0.2	0.0	2.7	0.1	3.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.8	1.9	2.5	2.2	2.3	1.0	0.0	5.3	0.5	5.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	31.9	23.6	22.9	26.5	26.6	13.8	0.0	22.6	13.9	24.3	14.7
LnGrp LOS	C	C	C	C	C	C	B	A	C	B	C	B
Approach Vol, veh/h		300			465			456			459	
Approach Delay, s/veh		27.9			25.1			20.6			22.5	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	36.4	8.7	25.2	12.2	38.1	14.2	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.7	* 11	19.0	* 10	* 31	* 11	19.0				
Max Q Clear Time (g_c+I1), s	4.7	15.4	2.9	7.6	3.5	14.8	8.4	8.1				
Green Ext Time (p_c), s	0.1	1.8	0.0	1.1	0.0	1.7	0.1	0.9				

### Intersection Summary

HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase  
 12: New Albany-Condit Road & Walton Parkway

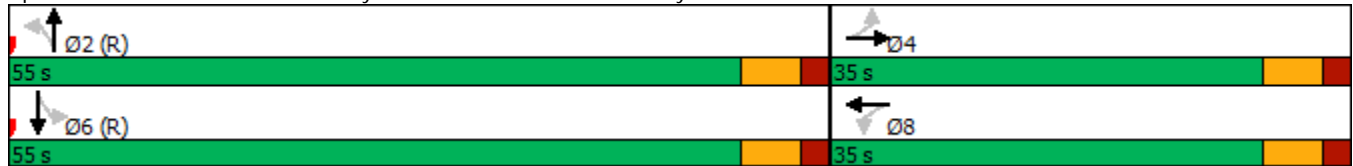
10/11/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	55	35	55	35
Maximum Split (%)	61.1%	38.9%	61.1%	38.9%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	55	0	55
End Time (s)	55	0	55	0
Yield/Force Off (s)	49	84	49	84
Yield/Force Off 170(s)	49	84	49	84
Local Start Time (s)	0	55	0	55
Local Yield (s)	49	84	49	84
Local Yield 170(s)	49	84	49	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



# HCM 6th Signalized Intersection Summary

## 12: New Albany-Condit Road & Walton Parkway

10/11/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	8	162	143	33	83	92	138	332	58	117	479	29
Future Volume (veh/h)	8	162	143	33	83	92	138	332	58	117	479	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	176	155	36	90	100	150	361	63	127	521	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	223	196	146	197	218	476	967	169	571	1088	67
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1193	917	808	1049	809	899	855	1551	271	963	1744	107
Grp Volume(v), veh/h	9	0	331	36	0	190	150	0	424	127	0	553
Grp Sat Flow(s),veh/h/ln	1193	0	1725	1049	0	1709	855	0	1822	963	0	1851
Q Serve(g_s), s	0.6	0.0	16.2	3.0	0.0	8.5	10.3	0.0	10.3	6.7	0.0	14.4
Cycle Q Clear(g_c), s	9.1	0.0	16.2	19.2	0.0	8.5	24.7	0.0	10.3	17.0	0.0	14.4
Prop In Lane	1.00		0.47	1.00		0.53	1.00		0.15	1.00		0.06
Lane Grp Cap(c), veh/h	257	0	419	146	0	415	476	0	1136	571	0	1155
V/C Ratio(X)	0.04	0.00	0.79	0.25	0.00	0.46	0.31	0.00	0.37	0.22	0.00	0.48
Avail Cap(c_a), veh/h	351	0	556	229	0	551	476	0	1136	571	0	1155
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	0.0	31.9	40.9	0.0	29.0	15.7	0.0	8.3	12.5	0.0	9.1
Incr Delay (d2), s/veh	0.1	0.0	5.6	0.9	0.0	0.8	1.7	0.0	0.9	0.9	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	7.1	0.8	0.0	3.5	2.1	0.0	3.8	1.4	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	0.0	37.5	41.8	0.0	29.8	17.4	0.0	9.2	13.4	0.0	10.5
LnGrp LOS	C	A	D	D	A	C	B	A	A	B	A	B
Approach Vol, veh/h		340			226			574			680	
Approach Delay, s/veh		37.4			31.7			11.4			11.0	
Approach LOS		D			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.1		27.9		62.1		27.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		49.0		29.0		49.0		29.0				
Max Q Clear Time (g_c+I1), s		26.7		18.2		19.0		21.2				
Green Ext Time (p_c), s		3.6		1.5		4.2		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.6								
HCM 6th LOS				B								

HCM 6th TWSC  
21: New Albany-Condit Road & Snider Loop

10/11/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	22	1	422	9	3	601
Future Vol, veh/h	22	1	422	9	3	601
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, %	2	2	2	2	2	2
Mvmt Flow	24	1	459	10	3	653



















Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1123	464	0	0	469	0
Stage 1	464	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	227	598	-	-	1093	-
Stage 1	633	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	226	598	-	-	1093	-
Mov Cap-2 Maneuver	226	-	-	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	513	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	232	1093
HCM Lane V/C Ratio	-	-	0.108	0.003
HCM Control Delay (s)	-	-	22.4	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM Unsignalized Intersection Capacity Analysis  
 8: New Albany Road E & Private Drive

10/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	7	0	0	4	2	393	5	0	629	7
Future Volume (Veh/h)	0	0	7	0	0	4	2	393	5	0	629	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	8	0	0	4	2	427	5	0	684	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	803	1124	346	784	1126	109	692			432		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	803	1124	346	784	1126	109	692			432		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	273	204	650	280	203	923	899			1124		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2				
Volume Total	8	4	73	142	142	76	456	236				
Volume Left	0	0	2	0	0	0	0	0				
Volume Right	8	4	0	0	0	5	0	8				
cSH	650	923	899	1700	1700	1700	1700	1700				
Volume to Capacity	0.01	0.00	0.00	0.08	0.08	0.04	0.27	0.14				
Queue Length 95th (ft)	1	0	0	0	0	0	0	0				
Control Delay (s)	10.6	8.9	0.3	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A	A									
Approach Delay (s)	10.6	8.9	0.0				0.0					
Approach LOS	B	A										
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			27.6%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis

## 16: Central College Road & Discover Complex Access

10/11/2022



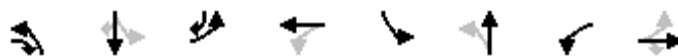
Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations									
Traffic Volume (veh/h)	37	239	317	37	6	6			
Future Volume (Veh/h)	37	239	317	37	6	6			
Sign Control		Free	Free		Stop				
Grade		0%	0%		0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	40	260	345	40	7	7			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type		None	None						
Median storage (veh)									
Upstream signal (ft)			679						
pX, platoon unblocked	0.97				0.97	0.97			
vC, conflicting volume	385				575	192			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	297				494	98			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	97				99	99			
cM capacity (veh/h)	1220				472	908			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1	SB 2	SB 3
Volume Total	20	20	130	130	230	155	7	4	4
Volume Left	20	20	0	0	0	0	7	0	0
Volume Right	0	0	0	0	0	40	0	4	4
cSH	1220	1220	1700	1700	1700	1700	472	908	908
Volume to Capacity	0.03	0.03	0.08	0.08	0.14	0.09	0.01	0.00	0.00
Queue Length 95th (ft)	3	3	0	0	0	0	1	0	0
Control Delay (s)	8.1	8.1	0.0	0.0	0.0	0.0	12.7	9.0	9.0
Lane LOS	A	A					B	A	A
Approach Delay (s)	1.1				0.0		10.9		
Approach LOS							B		
Intersection Summary									
Average Delay			0.7						
Intersection Capacity Utilization			25.8%		ICU Level of Service				A
Analysis Period (min)			15						



# Timing Report, Sorted By Phase

## 3: New Albany-Condit Road & Central College Road

10/12/2022

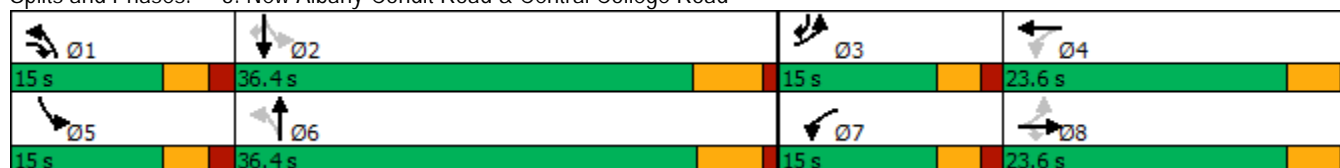


Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	Max	None	None
Maximum Split (s)	15	36.4	15	23.6	15	36.4	15	23.6
Maximum Split (%)	16.7%	40.4%	16.7%	26.2%	16.7%	40.4%	16.7%	26.2%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.4	66.4	0	15	51.4	66.4
End Time (s)	15	51.4	66.4	0	15	51.4	66.4	0
Yield/Force Off (s)	10.2	45.7	62	85.4	10.2	46	62	85.4
Yield/Force Off 170(s)	10.2	45.7	62	74.4	10.2	35	62	85.4
Local Start Time (s)	75	0	36.4	51.4	75	0	36.4	51.4
Local Yield (s)	85.2	30.7	47	70.4	85.2	31	47	70.4
Local Yield 170(s)	85.2	30.7	47	59.4	85.2	20	47	70.4

### Intersection Summary

Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	85

Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	149	114	174	242	30	94	246	99	52	352	33
Future Volume (veh/h)	30	149	114	174	242	30	94	246	99	52	352	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	162	124	189	263	33	102	267	108	57	383	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	375	333	454	404	737	92	472	488	197	464	682	679
Arrive On Green	0.06	0.18	0.18	0.12	0.23	0.23	0.11	0.39	0.39	0.09	0.36	0.36
Sat Flow, veh/h	1781	1870	1585	1781	3181	395	1781	1266	512	1781	1870	1585
Grp Volume(v), veh/h	33	162	124	189	146	150	102	0	375	57	383	36
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1799	1781	0	1778	1781	1870	1585
Q Serve(g_s), s	1.2	6.6	5.1	6.8	5.8	5.9	2.7	0.0	13.8	1.5	13.8	1.1
Cycle Q Clear(g_c), s	1.2	6.6	5.1	6.8	5.8	5.9	2.7	0.0	13.8	1.5	13.8	1.1
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.29	1.00		1.00
Lane Grp Cap(c), veh/h	375	333	454	404	412	417	472	0	685	464	682	679
V/C Ratio(X)	0.09	0.49	0.27	0.47	0.35	0.36	0.22	0.00	0.55	0.12	0.56	0.05
Avail Cap(c_a), veh/h	485	422	529	420	412	417	496	0	685	524	682	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	31.1	23.3	22.3	27.1	27.1	13.7	0.0	20.2	14.0	21.4	14.1
Incr Delay (d2), s/veh	0.1	1.1	0.3	0.8	0.5	0.5	0.2	0.0	3.1	0.1	3.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.0	1.9	2.7	2.3	2.4	1.0	0.0	5.7	0.5	5.9	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	32.2	23.6	23.2	27.6	27.6	13.9	0.0	23.3	14.1	24.7	14.2
LnGrp LOS	C	C	C	C	C	C	B	A	C	B	C	B
Approach Vol, veh/h		319			485			477			476	
Approach Delay, s/veh		28.1			25.9			21.3			22.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	36.4	9.8	24.1	12.2	38.1	14.3	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.7	* 11	19.0	* 10	* 31	* 11	19.0				
Max Q Clear Time (g_c+I1), s	4.7	15.8	3.2	7.9	3.5	15.8	8.8	8.6				
Green Ext Time (p_c), s	0.1	1.8	0.0	1.1	0.0	1.8	0.1	0.9				

### Intersection Summary

HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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	8	0	27	6	0	6	20	427	5	5	618	8
Future Vol, veh/h	8	0	27	6	0	6	20	427	5	5	618	8
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	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	29	7	0	7	22	464	5	5	672	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1201	1200	677	1212	1202	467	681	0	0	469	0	0
Stage 1	687	687	-	511	511	-	-	-	-	-	-	-
Stage 2	514	513	-	701	691	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	162	185	453	159	185	596	912	-	-	1093	-	-
Stage 1	437	447	-	545	537	-	-	-	-	-	-	-
Stage 2	543	536	-	429	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	157	180	453	145	180	596	912	-	-	1093	-	-
Mov Cap-2 Maneuver	157	180	-	145	180	-	-	-	-	-	-	-
Stage 1	427	445	-	532	524	-	-	-	-	-	-	-
Stage 2	524	523	-	399	444	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.9		21.4		0.4		0.1	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	912	-	-	317	233	1093	-
HCM Lane V/C Ratio	0.024	-	-	0.12	0.056	0.005	-
HCM Control Delay (s)	9	-	-	17.9	21.4	8.3	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.2	0	-

Timing Report, Sorted By Phase  
 12: New Albany-Condit Road & Walton Parkway

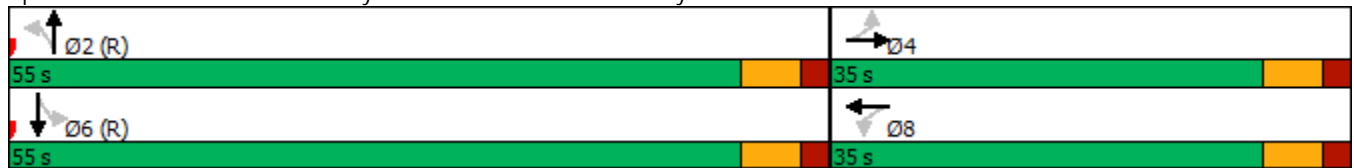
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Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	55	35	55	35
Maximum Split (%)	61.1%	38.9%	61.1%	38.9%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	55	0	55
End Time (s)	55	0	55	0
Yield/Force Off (s)	49	84	49	84
Yield/Force Off 170(s)	49	84	49	84
Local Start Time (s)	0	55	0	55
Local Yield (s)	49	84	49	84
Local Yield 170(s)	49	84	49	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



# HCM 6th Signalized Intersection Summary

## 12: New Albany-Condit Road & Walton Parkway

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↷		↶	↷	
Traffic Volume (veh/h)	8	162	143	33	83	99	138	355	58	125	504	35
Future Volume (veh/h)	8	162	143	33	83	99	138	355	58	125	504	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	9	176	155	36	90	108	150	386	63	136	548	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	223	196	147	188	226	452	978	160	551	1078	75
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	0.62	0.62	0.62
Sat Flow, veh/h	1185	917	808	1049	774	929	829	1568	256	941	1729	120
Grp Volume(v), veh/h	9	0	331	36	0	198	150	0	449	136	0	586
Grp Sat Flow(s),veh/h/ln	1185	0	1725	1049	0	1703	829	0	1824	941	0	1849
Q Serve(g_s), s	0.6	0.0	16.2	3.0	0.0	9.0	11.0	0.0	11.1	7.6	0.0	15.7
Cycle Q Clear(g_c), s	9.6	0.0	16.2	19.2	0.0	9.0	26.7	0.0	11.1	18.7	0.0	15.7
Prop In Lane	1.00		0.47	1.00		0.55	1.00		0.14	1.00		0.06
Lane Grp Cap(c), veh/h	250	0	419	147	0	414	452	0	1137	551	0	1153
V/C Ratio(X)	0.04	0.00	0.79	0.25	0.00	0.48	0.33	0.00	0.39	0.25	0.00	0.51
Avail Cap(c_a), veh/h	344	0	556	230	0	549	452	0	1137	551	0	1153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.3	0.0	31.9	40.9	0.0	29.2	16.7	0.0	8.5	13.1	0.0	9.3
Incr Delay (d2), s/veh	0.1	0.0	5.5	0.9	0.0	0.9	2.0	0.0	1.0	1.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	7.1	0.8	0.0	3.6	2.2	0.0	4.1	1.6	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.0	37.4	41.7	0.0	30.0	18.7	0.0	9.5	14.2	0.0	10.9
LnGrp LOS	C	A	D	D	A	C	B	A	A	B	A	B
Approach Vol, veh/h		340			234			599			722	
Approach Delay, s/veh		37.3			31.8			11.8			11.6	
Approach LOS		D			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.1		27.9		62.1		27.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		49.0		29.0		49.0		29.0				
Max Q Clear Time (g_c+I1), s		28.7		18.2		20.7		21.2				
Green Ext Time (p_c), s		3.7		1.5		4.6		0.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				18.8								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	6	22	0	1	5	447	9	3	634	5
Future Vol, veh/h	6	0	6	22	0	1	5	447	9	3	634	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	7	24	0	1	5	486	10	3	689	5



















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1200	1204	692	1202	1201	491	694	0	0	496	0	0
Stage 1	698	698	-	501	501	-	-	-	-	-	-	-
Stage 2	502	506	-	701	700	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	162	184	444	161	185	578	901	-	-	1068	-	-
Stage 1	431	442	-	552	543	-	-	-	-	-	-	-
Stage 2	552	540	-	429	441	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	161	182	444	158	183	578	901	-	-	1068	-	-
Mov Cap-2 Maneuver	161	182	-	158	183	-	-	-	-	-	-	-
Stage 1	428	441	-	549	540	-	-	-	-	-	-	-
Stage 2	548	537	-	422	440	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.1		31		0.1		0	
HCM LOS	C		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	901	-	-	236	163	1068	-
HCM Lane V/C Ratio	0.006	-	-	0.055	0.153	0.003	-
HCM Control Delay (s)	9	-	-	21.1	31	8.4	-
HCM Lane LOS	A	-	-	C	D	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-





















HCM Unsignalized Intersection Capacity Analysis  
 8: New Albany Road E & Private Drive/Site Access 1

10/12/2022

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	0	0	7	0	0	10	2	393	25	0	647	7	
Future Volume (Veh/h)	0	0	7	0	0	10	2	393	25	0	647	7	
Sign Control	Stop			Stop			Free			Free			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	0	0	8	0	0	11	2	427	27	0	703	8	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type							None	None					
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	829	1165	356	804	1156	120	711			454			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	829	1165	356	804	1156	120	711			454			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	100	100	99	100	100	99	100			100			
cM capacity (veh/h)	259	192	641	270	195	909	884			1103			
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2					
Volume Total	8	11	73	142	142	98	469	242					
Volume Left	0	0	2	0	0	0	0	0					
Volume Right	8	11	0	0	0	27	0	8					
cSH	641	909	884	1700	1700	1700	1700	1700					
Volume to Capacity	0.01	0.01	0.00	0.08	0.08	0.06	0.28	0.14					
Queue Length 95th (ft)	1	1	0	0	0	0	0	0					
Control Delay (s)	10.7	9.0	0.3	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	A	A										
Approach Delay (s)	10.7	9.0	0.0					0.0					
Approach LOS	B	A											
Intersection Summary													
Average Delay			0.2										
Intersection Capacity Utilization			28.1%	ICU Level of Service				A					
Analysis Period (min)			15										

HCM Unsignalized Intersection Capacity Analysis  
 16: Site Access 2/Discover Complex Access & Central College Road

10/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	239	13	15	317	37	26	3	17	6	3	6
Future Volume (Veh/h)	37	239	13	15	317	37	26	3	17	6	3	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	40	260	14	16	345	40	28	3	18	7	3	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					679							
pX, platoon unblocked	0.97						0.97	0.97		0.97	0.97	0.97
vC, conflicting volume	385			274			560	764	137	626	751	192
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	303			274			483	694	137	552	680	104
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			93	99	98	98	99	99
cM capacity (veh/h)	1217			1286			430	338	886	380	344	902
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2	SB 3	
Volume Total	20	20	173	101	16	230	155	49	7	5	5	
Volume Left	20	20	0	0	16	0	0	28	7	0	0	
Volume Right	0	0	0	14	0	0	40	18	0	2	5	
cSH	1217	1217	1700	1700	1286	1700	1700	520	380	472	902	
Volume to Capacity	0.03	0.03	0.10	0.06	0.01	0.14	0.09	0.09	0.02	0.01	0.01	
Queue Length 95th (ft)	3	3	0	0	1	0	0	8	1	1	0	
Control Delay (s)	8.1	8.1	0.0	0.0	7.8	0.0	0.0	12.6	14.7	12.7	9.0	
Lane LOS	A	A			A			B	B	B	A	
Approach Delay (s)	1.0				0.3			12.6	12.5			
Approach LOS								B	B			
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			31.8%		ICU Level of Service				A			
Analysis Period (min)			15									



Timing Report, Sorted By Phase  
 3: New Albany-Condit Road & Central College Road

10/12/2022



Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	15	36.4	15	23.6	15	36.4	15	23.6
Maximum Split (%)	16.7%	40.4%	16.7%	26.2%	16.7%	40.4%	16.7%	26.2%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.4	66.4	0	15	51.4	66.4
End Time (s)	15	51.4	66.4	0	15	51.4	66.4	0
Yield/Force Off (s)	10.2	45.7	62	85.4	10.2	46	62	85.4
Yield/Force Off 170(s)	10.2	45.7	62	74.4	10.2	35	62	85.4
Local Start Time (s)	75	0	36.4	51.4	75	0	36.4	51.4
Local Yield (s)	85.2	30.7	47	70.4	85.2	31	47	70.4
Local Yield 170(s)	85.2	30.7	47	59.4	85.2	20	47	70.4

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	85
Offset: 15 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green	

Splits and Phases: 3: New Albany-Condit Road & Central College Road



# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	239	132	132	230	60	140	445	97	29	299	37
Future Volume (veh/h)	59	239	132	132	230	60	140	445	97	29	299	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	64	260	143	143	250	65	152	484	105	32	325	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	349	312	436	304	522	133	552	666	145	478	748	775
Arrive On Green	0.09	0.17	0.17	0.11	0.19	0.19	0.22	0.89	0.89	0.06	0.40	0.40
Sat Flow, veh/h	1781	1870	1585	1781	2804	715	1781	1489	323	1781	1870	1585
Grp Volume(v), veh/h	64	260	143	143	157	158	152	0	589	32	325	40
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1742	1781	0	1812	1781	1870	1585
Q Serve(g_s), s	2.5	12.1	6.5	5.7	7.1	7.3	3.9	0.0	8.8	0.9	11.4	1.2
Cycle Q Clear(g_c), s	2.5	12.1	6.5	5.7	7.1	7.3	3.9	0.0	8.8	0.9	11.4	1.2
Prop In Lane	1.00		1.00	1.00		0.41	1.00		0.18	1.00		1.00
Lane Grp Cap(c), veh/h	349	312	436	304	330	324	552	0	811	478	748	775
V/C Ratio(X)	0.18	0.83	0.33	0.47	0.47	0.49	0.28	0.00	0.73	0.07	0.43	0.05
Avail Cap(c_a), veh/h	401	395	507	321	375	368	560	0	811	571	748	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	36.3	26.0	26.7	32.7	32.8	10.6	0.0	3.1	13.4	19.6	12.1
Incr Delay (d2), s/veh	0.2	11.7	0.4	1.1	1.1	1.1	0.3	0.0	5.6	0.1	1.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.4	2.4	2.4	3.0	3.0	1.2	0.0	2.5	0.3	4.8	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	48.0	26.4	27.8	33.8	33.9	10.9	0.0	8.7	13.5	21.4	12.2
LnGrp LOS	C	D	C	C	C	C	B	A	A	B	C	B
Approach Vol, veh/h		467			458			741			397	
Approach Delay, s/veh		38.4			32.0			9.2			19.9	
Approach LOS		D			C			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	41.7	12.4	21.3	10.3	46.0	14.1	19.6				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.7	* 11	19.0	* 10	* 31	* 11	19.0				
Max Q Clear Time (g_c+I1), s	5.9	13.4	4.5	9.3	2.9	10.8	7.7	14.1				
Green Ext Time (p_c), s	0.1	1.6	0.0	1.1	0.0	3.5	0.1	0.9				

### Intersection Summary

HCM 6th Ctrl Delay	22.9
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Timing Report, Sorted By Phase  
 12: New Albany-Condit Road & Walton Parkway

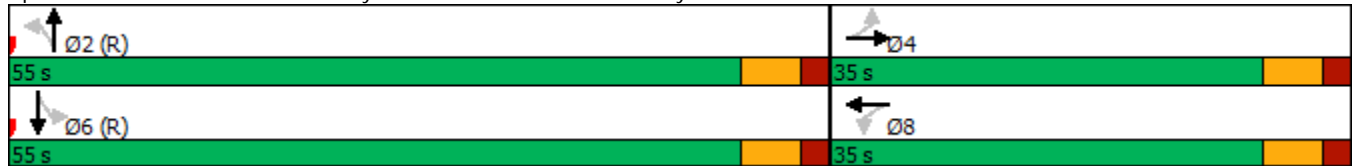
10/12/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	55	35	55	35
Maximum Split (%)	61.1%	38.9%	61.1%	38.9%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	55	0	55
End Time (s)	55	0	55	0
Yield/Force Off (s)	49	84	49	84
Yield/Force Off 170(s)	49	84	49	84
Local Start Time (s)	0	55	0	55
Local Yield (s)	49	84	49	84
Local Yield 170(s)	49	84	49	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



# HCM 6th Signalized Intersection Summary

## 12: New Albany-Condit Road & Walton Parkway

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	30	61	154	75	147	147	76	528	24	39	498	15
Future Volume (veh/h)	30	61	154	75	147	147	76	528	24	39	498	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	66	167	82	160	160	83	574	26	42	541	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	111	282	209	204	204	616	1117	51	450	1137	34
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.63	0.63	0.63	1.00	1.00	1.00
Sat Flow, veh/h	1060	469	1187	1147	858	858	852	1775	80	819	1807	53
Grp Volume(v), veh/h	33	0	233	82	0	320	83	0	600	42	0	557
Grp Sat Flow(s),veh/h/ln	1060	0	1657	1147	0	1716	852	0	1856	819	0	1861
Q Serve(g_s), s	2.7	0.0	11.2	6.1	0.0	15.7	3.6	0.0	15.9	1.4	0.0	0.0
Cycle Q Clear(g_c), s	18.4	0.0	11.2	17.4	0.0	15.7	3.6	0.0	15.9	17.4	0.0	0.0
Prop In Lane	1.00		0.72	1.00		0.50	1.00		0.04	1.00		0.03
Lane Grp Cap(c), veh/h	146	0	393	209	0	407	616	0	1168	450	0	1171
V/C Ratio(X)	0.23	0.00	0.59	0.39	0.00	0.79	0.13	0.00	0.51	0.09	0.00	0.48
Avail Cap(c_a), veh/h	236	0	534	307	0	553	616	0	1168	450	0	1171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	30.5	38.2	0.0	32.2	6.9	0.0	9.1	2.4	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	1.4	1.2	0.0	5.2	0.5	0.0	1.6	0.4	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.5	1.8	0.0	6.9	0.6	0.0	6.0	0.1	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	31.9	39.4	0.0	37.4	7.3	0.0	10.8	2.9	0.0	1.4
LnGrp LOS	D	A	C	D	A	D	A	A	B	A	A	A
Approach Vol, veh/h		266			402			683				599
Approach Delay, s/veh		33.1			37.8			10.3				1.5
Approach LOS		C			D			B				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.6		27.4		62.6		27.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		49.0		29.0		49.0		29.0				
Max Q Clear Time (g_c+I1), s		17.9		20.4		19.4		19.4				
Green Ext Time (p_c), s		4.9		0.9		3.8		1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.4								
HCM 6th LOS				B								

HCM 6th TWSC  
 21: New Albany-Condit Road & Snider Loop

10/12/2022

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	3	673	11	3	544
Future Vol, veh/h	13	3	673	11	3	544
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, %	2	2	2	2	2	2
Mvmt Flow	14	3	732	12	3	591

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1335	738	0	0	744
Stage 1	738	-	-	-	-
Stage 2	597	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	169	418	-	-	864
Stage 1	473	-	-	-	-
Stage 2	550	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	168	418	-	-	864
Mov Cap-2 Maneuver	168	-	-	-	-
Stage 1	473	-	-	-	-
Stage 2	547	-	-	-	-



















Approach	WB	NB	SB
HCM Control Delay, s	26	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	189	864
HCM Lane V/C Ratio	-	-	0.092	0.004
HCM Control Delay (s)	-	-	26	9.2
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.3	0

# HCM Unsignalized Intersection Capacity Analysis

## 8: New Albany Road E & Private Drive

10/11/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	31	0	0	19	23	636	27	0	446	25
Future Volume (Veh/h)	0	0	31	0	0	19	23	636	27	0	446	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	34	0	0	21	25	691	29	0	485	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	742	1268	256	1032	1268	187	512			720		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	742	1268	256	1032	1268	187	512			720		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	97	98			100		
cM capacity (veh/h)	291	163	743	175	163	823	1050			877		
<b>Direction, Lane #</b>	<b>EB 1</b>	<b>WB 1</b>	<b>NB 1</b>	<b>NB 2</b>	<b>NB 3</b>	<b>NB 4</b>	<b>SB 1</b>	<b>SB 2</b>				
Volume Total	34	21	140	230	230	144	323	189				
Volume Left	0	0	25	0	0	0	0	0				
Volume Right	34	21	0	0	0	29	0	27				
cSH	743	823	1050	1700	1700	1700	1700	1700				
Volume to Capacity	0.05	0.03	0.02	0.14	0.14	0.08	0.19	0.11				
Queue Length 95th (ft)	4	2	2	0	0	0	0	0				
Control Delay (s)	10.1	9.5	1.7	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A	A									
Approach Delay (s)	10.1	9.5	0.3				0.0					
Approach LOS	B	A										
<b>Intersection Summary</b>												
Average Delay			0.6									
Intersection Capacity Utilization			29.8%			ICU Level of Service				A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
 16: Central College Road & Discover Complex Access

10/11/2022



Movement	EBL	EBT	WBT	WBR	SBL	SBR			
Lane Configurations	↖↗	↑↑	↑↗		↘	↘↗			
Traffic Volume (veh/h)	7	393	370	7	38	38			
Future Volume (Veh/h)	7	393	370	7	38	38			
Sign Control	Free		Free	Stop					
Grade	0%		0%	0%					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Hourly flow rate (vph)	8	427	402	8	41	41			
Pedestrians									
Lane Width (ft)									
Walking Speed (ft/s)									
Percent Blockage									
Right turn flare (veh)									
Median type	None		None						
Median storage (veh)									
Upstream signal (ft)	679								
pX, platoon unblocked	0.99				0.99	0.99			
vC, conflicting volume	410				636	205			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	375				603	167			
tC, single (s)	4.1				6.8	6.9			
tC, 2 stage (s)									
tF (s)	2.2				3.5	3.3			
p0 queue free %	99				90	95			
cM capacity (veh/h)	1165				422	837			
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	SB 1	SB 2	SB 3
Volume Total	4	4	214	214	268	142	41	20	20
Volume Left	4	4	0	0	0	0	41	0	0
Volume Right	0	0	0	0	0	8	0	20	20
cSH	1165	1165	1700	1700	1700	1700	422	837	837
Volume to Capacity	0.01	0.01	0.13	0.13	0.16	0.08	0.10	0.02	0.02
Queue Length 95th (ft)	1	1	0	0	0	0	8	2	2
Control Delay (s)	8.1	8.1	0.0	0.0	0.0	0.0	14.5	9.4	9.4
Lane LOS	A	A					B	A	A
Approach Delay (s)	0.1				0.0	11.9			
Approach LOS							B		
Intersection Summary									
Average Delay			1.1						
Intersection Capacity Utilization			20.9%		ICU Level of Service			A	
Analysis Period (min)	15								

Timing Report, Sorted By Phase  
 3: New Albany-Condit Road & Central College Road

10/12/2022



Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	EBL	WBTL	SBL	NBTL	WBL	EBTL
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	None	C-Max	None	None
Maximum Split (s)	15	36.2	15	23.8	15	36.2	15	23.8
Maximum Split (%)	16.7%	40.2%	16.7%	26.4%	16.7%	40.2%	16.7%	26.4%
Minimum Split (s)	15	26.7	15	23.6	15	26.4	15	23
Yellow Time (s)	3	4.7	3	3.6	3	4.4	3	3.6
All-Red Time (s)	1.8	1	1.4	1	1.8	1	1.4	1
Minimum Initial (s)	10	20	10	15	10	20	10	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7		7		
Flash Dont Walk (s)				11		11		
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	15	51.2	66.2	0	15	51.2	66.2
End Time (s)	15	51.2	66.2	0	15	51.2	66.2	0
Yield/Force Off (s)	10.2	45.5	61.8	85.4	10.2	45.8	61.8	85.4
Yield/Force Off 170(s)	10.2	45.5	61.8	74.4	10.2	34.8	61.8	85.4
Local Start Time (s)	75	0	36.2	51.2	75	0	36.2	51.2
Local Yield (s)	85.2	30.5	46.8	70.4	85.2	30.8	46.8	70.4
Local Yield 170(s)	85.2	30.5	46.8	59.4	85.2	19.8	46.8	70.4

Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	85
Offset: 15 (17%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green	

Splits and Phases: 3: New Albany-Condit Road & Central College Road





# HCM 6th Signalized Intersection Summary

## 3: New Albany-Condit Road & Central College Road

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	248	132	144	239	60	140	454	109	29	308	45
Future Volume (veh/h)	68	248	132	144	239	60	140	454	109	29	308	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	270	143	157	260	65	152	493	118	32	335	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	321	444	305	528	130	536	644	154	449	738	774
Arrive On Green	0.09	0.17	0.17	0.11	0.19	0.19	0.22	0.88	0.88	0.06	0.39	0.39
Sat Flow, veh/h	1781	1870	1585	1781	2828	694	1781	1458	349	1781	1870	1585
Grp Volume(v), veh/h	74	270	143	157	162	163	152	0	611	32	335	49
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1777	1745	1781	0	1808	1781	1870	1585
Q Serve(g_s), s	2.9	12.6	6.4	6.3	7.3	7.6	3.9	0.0	10.9	0.9	11.9	1.5
Cycle Q Clear(g_c), s	2.9	12.6	6.4	6.3	7.3	7.6	3.9	0.0	10.9	0.9	11.9	1.5
Prop In Lane	1.00		1.00	1.00		0.40	1.00		0.19	1.00		1.00
Lane Grp Cap(c), veh/h	355	321	444	305	332	326	536	0	799	449	738	774
V/C Ratio(X)	0.21	0.84	0.32	0.52	0.49	0.50	0.28	0.00	0.77	0.07	0.45	0.06
Avail Cap(c_a), veh/h	398	399	510	321	379	372	544	0	799	542	738	774
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	36.1	25.6	26.6	32.7	32.8	11.0	0.0	3.6	13.8	20.1	12.2
Incr Delay (d2), s/veh	0.3	12.5	0.4	1.3	1.1	1.2	0.3	0.0	6.9	0.1	2.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.7	2.4	2.6	3.1	3.1	1.3	0.0	3.0	0.3	5.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	48.7	26.1	28.0	33.8	34.0	11.2	0.0	10.5	13.9	22.1	12.3
LnGrp LOS	C	D	C	C	C	C	B	A	B	B	C	B
Approach Vol, veh/h		487			482			763			416	
Approach Delay, s/veh		38.6			32.0			10.6			20.3	
Approach LOS		D			C			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.6	41.2	12.8	21.4	10.3	45.5	14.2	20.0				
Change Period (Y+Rc), s	* 4.8	5.7	* 4.4	4.6	* 4.8	* 5.7	* 4.4	4.6				
Max Green Setting (Gmax), s	* 10	30.5	* 11	19.2	* 10	* 31	* 11	19.2				
Max Q Clear Time (g_c+I1), s	5.9	13.9	4.9	9.6	2.9	12.9	8.3	14.6				
Green Ext Time (p_c), s	0.1	1.7	0.1	1.1	0.0	3.5	0.1	0.8				

### Intersection Summary

HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

### Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	17	0	35	6	0	6	31	677	6	6	555	15
Future Vol, veh/h	17	0	35	6	0	6	31	677	6	6	555	15
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	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	38	7	0	7	34	736	7	7	603	16

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1436	1436	611	1452	1441	740	619	0	0	743	0	0
Stage 1	625	625	-	808	808	-	-	-	-	-	-	-
Stage 2	811	811	-	644	633	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	111	133	494	108	133	417	961	-	-	864	-	-
Stage 1	473	477	-	375	394	-	-	-	-	-	-	-
Stage 2	373	393	-	461	473	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	106	127	494	96	127	417	961	-	-	864	-	-
Mov Cap-2 Maneuver	106	127	-	96	127	-	-	-	-	-	-	-
Stage 1	456	473	-	362	380	-	-	-	-	-	-	-
Stage 2	354	379	-	422	469	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.3		30.2		0.4		0.1	
HCM LOS	D		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	961	-	-	225	156	864	-
HCM Lane V/C Ratio	0.035	-	-	0.251	0.084	0.008	-
HCM Control Delay (s)	8.9	-	-	26.3	30.2	9.2	-
HCM Lane LOS	A	-	-	D	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.3	0	-

# Timing Report, Sorted By Phase

## 12: New Albany-Condit Road & Walton Parkway

10/12/2022



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	C-Min	None	C-Min	None
Maximum Split (s)	55	35	55	35
Maximum Split (%)	61.1%	38.9%	61.1%	38.9%
Minimum Split (s)	26	16	26	16
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	20	10
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	55	0	55
End Time (s)	55	0	55	0
Yield/Force Off (s)	49	84	49	84
Yield/Force Off 170(s)	49	84	49	84
Local Start Time (s)	0	55	0	55
Local Yield (s)	49	84	49	84
Local Yield 170(s)	49	84	49	84

### Intersection Summary

Cycle Length	90
Control Type	Actuated-Coordinated
Natural Cycle	45
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	

Splits and Phases: 12: New Albany-Condit Road & Walton Parkway



HCM 6th Signalized Intersection Summary  
 12: New Albany-Condit Road & Walton Parkway

10/12/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (veh/h)	30	61	154	75	147	155	76	555	24	47	525	21
Future Volume (veh/h)	30	61	154	75	147	155	76	555	24	47	525	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	66	167	82	160	168	83	603	26	51	571	23
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	146	114	287	215	202	212	594	1112	48	425	1115	45
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.62	0.62	0.62	1.00	1.00	1.00
Sat Flow, veh/h	1052	469	1187	1147	835	877	823	1780	77	797	1785	72
Grp Volume(v), veh/h	33	0	233	82	0	328	83	0	629	51	0	594
Grp Sat Flow(s),veh/h/ln	1052	0	1657	1147	0	1712	823	0	1857	797	0	1857
Q Serve(g_s), s	2.7	0.0	11.2	6.1	0.0	16.2	3.8	0.0	17.3	2.0	0.0	0.0
Cycle Q Clear(g_c), s	18.9	0.0	11.2	17.3	0.0	16.2	3.8	0.0	17.3	19.3	0.0	0.0
Prop In Lane	1.00		0.72	1.00		0.51	1.00		0.04	1.00		0.04
Lane Grp Cap(c), veh/h	146	0	401	215	0	415	594	0	1160	425	0	1160
V/C Ratio(X)	0.23	0.00	0.58	0.38	0.00	0.79	0.14	0.00	0.54	0.12	0.00	0.51
Avail Cap(c_a), veh/h	230	0	534	307	0	552	594	0	1160	425	0	1160
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.8	0.0	30.1	37.7	0.0	32.0	7.1	0.0	9.6	3.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	1.3	1.1	0.0	5.7	0.5	0.0	1.8	0.6	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	4.4	1.7	0.0	7.1	0.7	0.0	6.5	0.2	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	0.0	31.4	38.8	0.0	37.6	7.5	0.0	11.4	3.5	0.0	1.6
LnGrp LOS	D	A	C	D	A	D	A	A	B	A	A	A
Approach Vol, veh/h		266			410			712				645
Approach Delay, s/veh		32.7			37.9			11.0				1.8
Approach LOS		C			D			B				A
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.2		27.8		62.2		27.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		49.0		29.0		49.0		29.0				
Max Q Clear Time (g_c+I1), s		19.3		20.9		21.3		19.3				
Green Ext Time (p_c), s		5.2		0.9		4.2		1.6				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				16.3								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	6	13	0	3	6	702	11	3	579	6
Future Vol, veh/h	6	0	6	13	0	3	6	702	11	3	579	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	7	14	0	3	7	763	12	3	629	7



















Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1424	1428	633	1425	1425	769	636	0	0	775	0	0
Stage 1	639	639	-	783	783	-	-	-	-	-	-	-
Stage 2	785	789	-	642	642	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	113	135	480	113	136	401	947	-	-	841	-	-
Stage 1	464	470	-	387	404	-	-	-	-	-	-	-
Stage 2	386	402	-	463	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	111	134	480	111	135	401	947	-	-	841	-	-
Mov Cap-2 Maneuver	111	134	-	111	135	-	-	-	-	-	-	-
Stage 1	461	468	-	384	401	-	-	-	-	-	-	-
Stage 2	380	399	-	455	467	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.6		37.5		0.1		0	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	947	-	-	180	128	841	-
HCM Lane V/C Ratio	0.007	-	-	0.072	0.136	0.004	-
HCM Control Delay (s)	8.8	-	-	26.6	37.5	9.3	-
HCM Lane LOS	A	-	-	D	E	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	-

HCM Unsignalized Intersection Capacity Analysis  
 8: New Albany Road E & Private Drive/Site Access 1





























10/12/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	31	0	0	25	23	636	50	0	465	25
Future Volume (Veh/h)	0	0	31	0	0	25	23	636	50	0	465	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	34	0	0	27	25	691	54	0	505	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	768	1314	266	1054	1300	200	532			745		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	768	1314	266	1054	1300	200	532			745		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	97	98			100		
cM capacity (veh/h)	276	153	732	169	156	808	1032			859		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2				
Volume Total	34	27	140	230	230	169	337	195				
Volume Left	0	0	25	0	0	0	0	0				
Volume Right	34	27	0	0	0	54	0	27				
cSH	732	808	1032	1700	1700	1700	1700	1700				
Volume to Capacity	0.05	0.03	0.02	0.14	0.14	0.10	0.20	0.11				
Queue Length 95th (ft)	4	3	2	0	0	0	0	0				
Control Delay (s)	10.2	9.6	1.7	0.0	0.0	0.0	0.0	0.0				
Lane LOS	B	A	A									
Approach Delay (s)	10.2	9.6	0.3				0.0					
Approach LOS	B	A										
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			30.3%		ICU Level of Service				A			
Analysis Period (min)			15									

# HCM Unsignalized Intersection Capacity Analysis

## 16: Site Access 2/Discover Complex Access & Central College Road

10/12/2022

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations	 	 		 	 			 		 	 	 		
Traffic Volume (veh/h)	7	388	21	22	365	7	33	4	23	38	3	38		
Future Volume (Veh/h)	7	388	21	22	365	7	33	4	23	38	3	38		
Sign Control	Free			Free			Stop			Stop				
Grade	0%			0%			0%			0%				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Hourly flow rate (vph)	8	422	23	24	397	8	36	4	25	41	3	41		
Pedestrians														
Lane Width (ft)														
Walking Speed (ft/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None			None										
Median storage (veh)														
Upstream signal (ft)	679													
pX, platoon unblocked	0.99							0.99	0.99			0.99	0.99	0.99
vC, conflicting volume	405				445				738	902	222	703	910	202
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	389				445				725	890	222	689	897	186
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)														
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99				98				87	99	97	87	99	95
cM capacity (veh/h)	1159				1112				287	271	781	309	268	820
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2	SB 3			
Volume Total	4	4	281	164	24	265	140	65	41	17	27			
Volume Left	4	4	0	0	24	0	0	36	41	0	0			
Volume Right	0	0	0	23	0	0	8	25	0	14	27			
cSH	1159	1159	1700	1700	1112	1700	1700	377	309	598	820			
Volume to Capacity	0.01	0.01	0.17	0.10	0.02	0.16	0.08	0.17	0.13	0.03	0.03			
Queue Length 95th (ft)	1	1	0	0	2	0	0	15	11	2	3			
Control Delay (s)	8.1	8.1	0.0	0.0	8.3	0.0	0.0	16.5	18.4	11.2	9.5			
Lane LOS	A	A			A			C	C	B	A			
Approach Delay (s)	0.1				0.5				16.5	14.2				
Approach LOS							C			B				
Intersection Summary														
Average Delay				2.5										
Intersection Capacity Utilization				34.8%			ICU Level of Service			A				
Analysis Period (min)	15													

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕		↕	↕	↕		↕	↕	
Traffic Vol, veh/h	6	0	6	22	0	1	5	447	9	3	634	5
Future Vol, veh/h	6	0	6	22	0	1	5	447	9	3	634	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	175	-	-	175	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	7	24	0	1	5	486	10	3	689	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1200	1204	692	1202	-	491	694	0	0	496	0	0
Stage 1	698	698	-	501	-	-	-	-	-	-	-	-
Stage 2	502	506	-	701	-	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	162	184	444	161	0	578	901	-	-	1068	-	-
Stage 1	431	442	-	552	0	-	-	-	-	-	-	-
Stage 2	552	540	-	429	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	161	182	444	158	-	578	901	-	-	1068	-	-
Mov Cap-2 Maneuver	161	182	-	158	-	-	-	-	-	-	-	-
Stage 1	428	441	-	549	-	-	-	-	-	-	-	-
Stage 2	548	537	-	422	-	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	21.1		30.9		0.1			0		
HCM LOS	C		D							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	901	-	-	236	158	578	1068
HCM Lane V/C Ratio	0.006	-	-	0.055	0.151	0.002	0.003
HCM Control Delay (s)	9	-	-	21.1	31.8	11.2	8.4
HCM Lane LOS	A	-	-	C	D	B	A
HCM 95th %tile Q(veh)	0	-	-	0.2	0.5	0	0



# **Exhibit D-2**



