

AGENDA
JAMES CITY COUNTY BOARD OF SUPERVISORS
REGULAR MEETING
COUNTY GOVERNMENT CENTER BOARD ROOM
101 MOUNTS BAY ROAD, WILLIAMSBURG, VA 23185

June 10, 2025

5:00 PM

A. CALL TO ORDER

B. ROLL CALL

C. MOMENT OF SILENCE

D. PLEDGE OF ALLEGIANCE

1. Pledge Leader - Henry Lampitt, a 5th grade student at Stonehouse Elementary School

E. PUBLIC COMMENT

F. CONSENT CALENDAR

1. Contract Award - \$87,120 – Zoning Ordinance Reorganization
2. Proposed Street Name Change - Portion of Greensprings Plantation Drive to Greensprings Resort Drive
3. Resolutions of support for the Virginia Department of Transportation Revenue Sharing Program - Fiscal Years 2029-2030

G. PUBLIC HEARING(S)

1. Amendment to the Adopted Budget for a Grant Award - \$8,000,000 - Department of Historic Resources - Preservation Virginia for the Exclusive Support of the Historic Jamestowne Flooding Mitigation Project
2. SUP-25-0002. 2010 Old Route 60 W Evolution House Group Home
3. SUP-25-0003/HW-25-0001. James City County Government Center
4. Resolutions of support for the Virginia Department of Transportation - Transportation Alternatives Program - Fiscal Years 2027-2028
5. Vacation of Rights-of-Way Parallel and Perpendicular to Sycamore Landing Road

H. BOARD CONSIDERATION(S)

I. BOARD REQUESTS AND DIRECTIVES

J. REPORTS OF THE COUNTY ADMINISTRATOR

K. CLOSED SESSION

1. Discussion of the award of a public contract involving the expenditure of public funds, and discussion of the terms or scope of such contract, where discussion in an open session would adversely affect the bargaining position or negotiating strategy of the public body, pursuant to Section 2.2-3711(A)(29) of the Code of Virginia, and pertaining to the contract for the joint operation of schools between the County and the City of Williamsburg.
2. Certification of Closed Session

L. ADJOURNMENT

1. Adjourn until 1 pm on June 24, 2025 for the Business Meeting

MEMORANDUM

DATE: June 10, 2025

TO: The Board of Supervisors

FROM: Paul D. Holt, III, Director of Community Development

SUBJECT: Contract Award - \$87,120 - Zoning Ordinance Reorganization

At the Board of Supervisors Retreat on March 2, 2024, several staff discussed the need to reorganize the current Zoning Ordinance. Specifically, the James City County Zoning Ordinance was first adopted on March 1, 1969, and the basic organization of this important document has generally been the same since that time. The Zoning Ordinance is considered a living document that changes to reflect the vision of the community. The Ordinance has grown considerably over the years through countless amendments for the addition of land uses, definitions, special regulations, overlay districts, and more.

The most recent comprehensive updates occurred in 1985, 1999, and 2012. However, many of the updates were done piecemeal making it difficult to catch inconsistencies of varying types throughout all the Ordinance sections. Further, reorganization of the Zoning Ordinance can provide many benefits including:

- Allowing for a comprehensive review of references to ensure accuracy.
- Matching definition terms with use terms.
- Creation of a land use table to allow the user to look for uses without having to go to each district separately.
- Exploring innovative search or viewing options to allow the user to easily find answers to common inquiries such as setbacks, height limitations, etc.

Additionally, the Zoning Ordinance is accompanied by a zoning map. The last official zoning map was adopted by the Board of Supervisors in 1986. Each approved rezoning application since that time serves as an amendment to that map. A byproduct of this process could include a review of the existing zoning areas to ensure they are correctly mapped, include required symbol of proffers on applicable land, removal of underlying zoning on public streets, etc., and possible adoption of a digital map.

A Request for Proposals (RFP) was solicited from qualified firms. Four (4) qualified firms submitted proposals to be considered for contract award. In these proposals, each firm described their past experience, qualifications, project approach and timeline, and cost of total project.

A team of staff members from the Departments of Community Development and County Administration and the County Attorney's Office evaluated each of the proposals and selected one firm, Kendig Keast. The Kendig Keast proposal will also incorporate the integration of the County Code of Ordinances into a new platform for posting to the web. Staff recommends the contract award for a five (5) year term, with annual maintenance costs paid in future years.

Contract Award - \$87,120 - Zoning Ordinance Reorganization

June 10, 2025

Page 2

Staff recommends approval of the attached resolution awarding a contract to Kendig Keast in the amount of \$87,120.

PDH/ap

CA-ZOReorg-mem

Attachment

RESOLUTION

CONTRACT AWARD - \$87,120 - ZONING ORDINANCE REORGANIZATION

WHEREAS, a Request for Proposals (RFP) has been advertised and evaluated to develop a reorganization of the Zoning Ordinance; and

WHEREAS, four firms submitted proposals and Kendig Keast was determined to be the most fully qualified firm that best meets the needs of James City County, as defined in the RFP; and

WHEREAS, previously authorized budget funds are available to fund this project.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes the contract award in the amount of \$87,120 to Kendig Keast for the Reorganization of the Zoning Ordinance and the incorporation and integration of the County Code of Ordinances into a new platform for posting to the web.

BE IT FURTHER RESOLVED by the Board of Supervisors of James City County, Virginia, that this contract is awarded for a five (5) year term, with annual maintenance costs paid in future years.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES

AYE NAY ABSTAIN ABSENT

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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

CA-ZOReorg-res

MEMORANDUM

DATE: June 10, 2025

TO: The Board of Supervisors

FROM: Will Albiston, Planner

SUBJECT: Proposed Street Name Change - Portion of Greensprings Plantation Drive to Greensprings Resort Drive

Mr. Clifford Reynolds, representing the Greensprings Vacation Resort Owners Association, has requested the Board of Supervisors rename a portion of Greensprings Plantation Drive to Greensprings Resort Drive. This portion of the street begins at the intersection with Monticello Avenue and continues north throughout the resort. According to the applicant, the proposed name change was sent out in the Owners Association newsletter to all owners and no responses in opposition were received. The applicant has also confirmed that the Owners Association Board of Directors voted unanimously in support of the name change.

In addition to the name change, Mr. Reynolds has requested to renumber the property addresses to align with the unit numbers. This renumbering is an administrative action which staff will execute should the name change request be approved by the Board of Supervisors.

Section 19-56(b) of the James City County Subdivision Ordinance requires approval of the Board of Supervisors for all street name changes.

The Real Estate Assessments Division, Planning Division, Police Department, Fire Department, 911 Center, and the Williamsburg Post Office have no objections to the proposed street name change. Notification of the proposed street name change was sent to all adjacent property owners.

Staff Recommendation

Staff recommends approval of the attached resolution that renames the portion of the street currently named Greensprings Plantation Drive to Greensprings Resort Drive.

WA/ap
PropStNameChg-mem

Attachments:

1. Resolution
2. Location Map
3. Greensprings Plantation Resort Phase IV Plat
4. Applicant Request
5. Greensprings Vacation Resort Owners Association Consent Letter

RESOLUTION

PROPOSED STREET NAME CHANGE - PORTION OF GREENSPRINGS

PLANTATION DRIVE TO GREENSPRINGS RESORT DRIVE

WHEREAS, an application has been received requesting that the Board of Supervisors change the name of a portion of “Greensprings Plantation Drive” to “Greensprings Resort Drive”; and

WHEREAS, Section 19-56(b) of the James City County Subdivision Ordinance provides for street names to be changed upon approval by the Board of Supervisors; and

WHEREAS, the proposed street name change has been reviewed with the Real Estate Assessments Division, Planning Division, Police Department, Fire Department, 911 Center, and the Williamsburg Post Office, and these agencies have found it acceptable.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, does hereby approve renaming a portion of the street “Greensprings Plantation Drive” to “Greensprings Resort Drive.”

BE IT FURTHER RESOLVED the portion of “Greensprings Plantation Drive” to be renamed to “Greensprings Resort Drive” is identified as that portion of right-of-way existing on the north side of Monticello Avenue as shown in a subdivision plat titled “GREENSPRINGS PLANTATION RESORT PHASE IV” and recorded in Plat Book 69, Page 62 at the Clerk’s Office for the Williamsburg/James City County Circuit Court.

BE IT FURTHER RESOLVED that the Deputy Clerk shall send a certified copy of this resolution to the Clerk of the Circuit Court in accordance with Section 15.2-2019 of the Code of Virginia, as amended.

James O. Icenhour, Jr.
Chair, Board of Supervisors

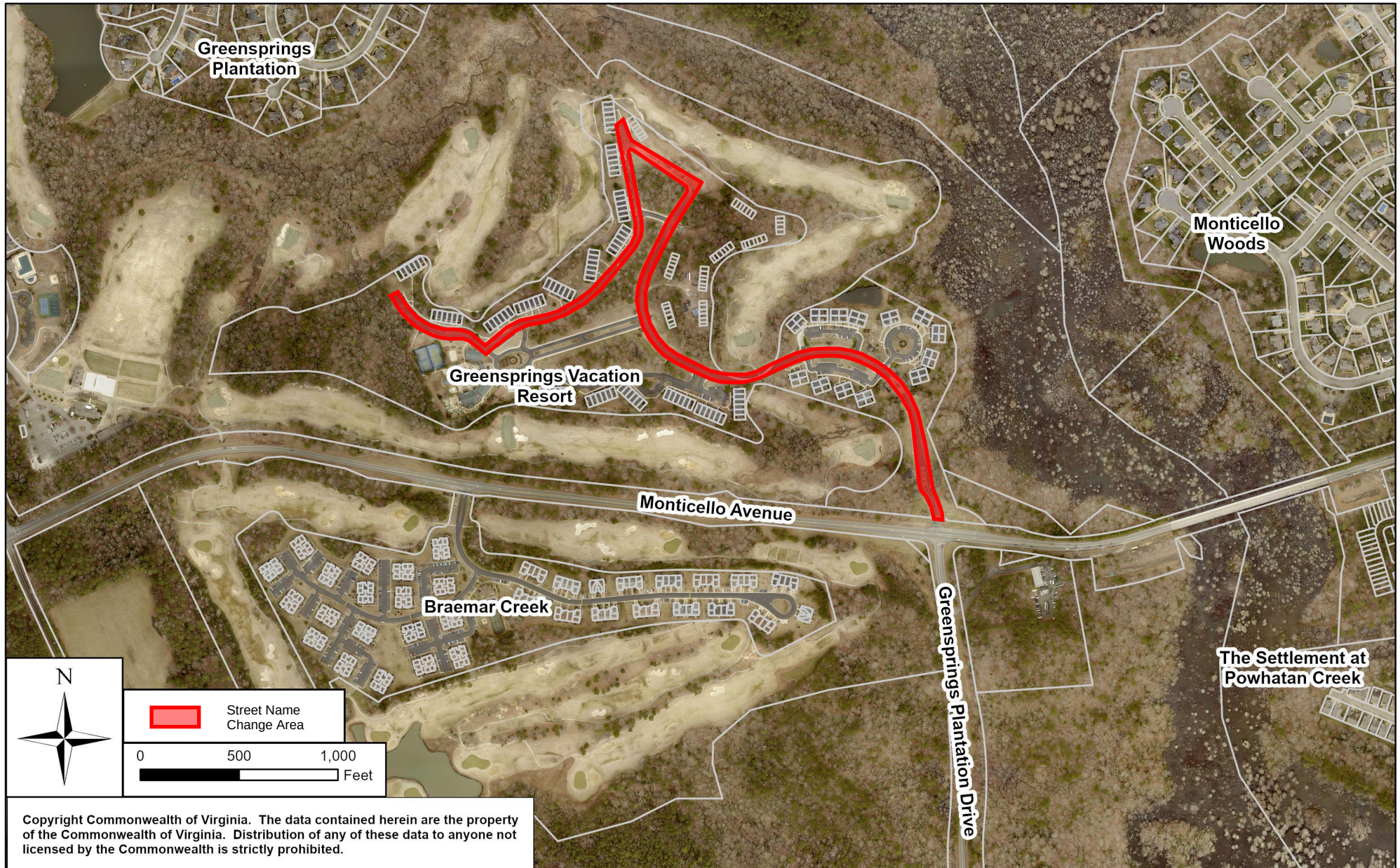
ATTEST:

		VOTES			
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	LARSON	_____	_____	_____	_____
	MCGLENNON	_____	_____	_____	_____
	ICENHOUR	_____	_____	_____	_____

Teresa J. Saeed
Deputy Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

Proposed Street Name Change Portion of Greensprings Plantation Drive to Greensprings Resort Drive



NOTES:

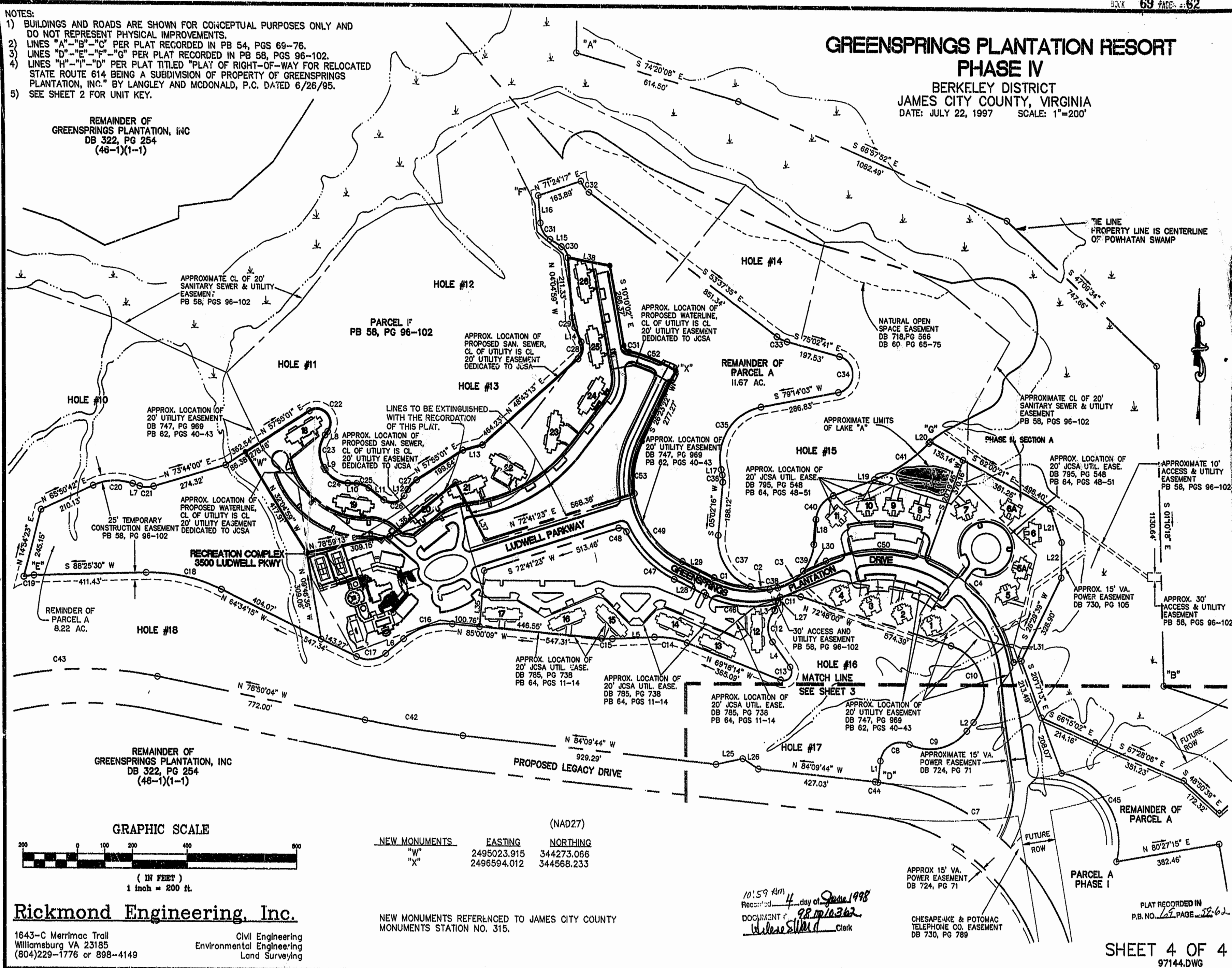
- 1) BUILDINGS AND ROADS ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY AND DO NOT REPRESENT PHYSICAL IMPROVEMENTS.
- 2) LINES "A"-"B"-"C" PER PLAT RECORDED IN PB 54, PGS 69-76.
- 3) LINES "D"-"E"-"F"-"G" PER PLAT RECORDED IN PB 58, PGS 96-102.
- 4) LINES "H"-"I"-"D" PER PLAT TITLED "PLAT OF RIGHT-OF-WAY FOR RELOCATED STATE ROUTE 614 BEING A SUBDIVISION OF PROPERTY OF GREENSPRINGS PLANTATION, INC." BY LANGLEY AND McDONALD, P.C. DATED 6/26/95.
- 5) SEE SHEET 2 FOR UNIT KEY.

REMAINDER OF
GREENSPRINGS PLANTATION, INC
DB 322, PG 254
(48-1)(1-1)

GREENSPRINGS PLANTATION RESORT PHASE IV

BERKELEY DISTRICT
JAMES CITY COUNTY, VIRGINIA
DATE: JULY 22, 1997 SCALE: 1"=200'

DATE: JULY 22, 1997 SCALE: 1"=200'



Rickmond Engineering, Inc.

1643-C Merrimac Trail
Williamsburg VA 23185
(804)229-1776 or 898-4149

Civil Engineering
Environmental Engineering
Land Surveying

NEW MONUMENTS REFERENCED TO JAMES CITY COUNTY
MONUMENTS STATION NO. 315.

10:59 AM
Recorded 4 day of June 1998
DOCUMENT # 98 mp 10362
W. L. S. H. D. Clerk

CHESAPEAKE & POTOMAC
TELEPHONE CO. EASEMENT
DB 730, PG 789

PLAT RECORDED IN
P.B. NO. 109 PAGE 59-62

SHEET 4 OF 4
97144.DWG

Board of Supervisors
James City County
101 Mounts Bay Road
Building D
Williamsburg, VA 23185

Dear Chair Jim Icenhour, Vice Chair John J. McGlennon, and Board Members: Ruth Larson, Michael J. Hipple, and Barbara E. Null,

As I am sure you are aware, we requested and received approval from the county to remove the word "Plantation" from our Monument sign. It still has the Greensprings Plantation Insignia and the word "Greensprings", all in the appropriate colors. With the term "Plantation" being offensive to some of our employees, owners, members and guests, we would also like to request the name of the road be changed to eliminate Plantation from the road name.

We are only requesting this be changed from Monticello through our property, so it would not affect anyone else. The portion of Greensprings Plantation Drive from John Tyler Highway to Monticello Ave. can stay as it currently is. As there is already a Greensprings Road elsewhere in Williamsburg, we would like to have it renamed to Greensprings Resort Drive. We are requesting your approval to do this. It would only change one street sign which is at the corner of Monticello and Greensprings, a Hilton Vacation Club entrance.

In addition to changing the road name, we are also requesting to have the street addresses changed to match our unit numbers. Currently each building and unit is labeled with its Street Address on the building as well as at each unit, but each building also has a building number, and each unit has a unit number. As you can picture, this makes it difficult with all the numbers for Owners, Members and Guests to find their unit. Unit 2, for example, has a street address of 11 so at the unit door there has signs with both numbers 2 and 11. Then large and seeable on the building is both the Building Number, 1, as well as the address range, so this building shows 11-14 Greensprings Plantation well as a large 1.

As the street would have a new name, changing to our unit numbers would make a smooth transition. Our units are numbered sequentially with a couple exceptions. We would provide a chart and new proposed street numbers for each unit. This will help make it clear for everyone staying here as well as any emergency vehicles that need to come on property as the buildings will only have the Street Address and the units would have the street address.

Please let me know if you need any additional information.

Sincerely,

Clifford Reynolds
General Manager
Greensprings, A Hilton Vacation Club
3500 Ludwell Parkway, Williamsburg, VA 23188

**ACTION TAKEN BY UNANIMOUS WRITTEN CONSENT
OF THE BOARD OF DIRECTORS**

GREENSPRINGS VACATION RESORT OWNERS ASSOCIATION

May 20, 2025

The undersigned, being all of the members of the Board of Directors (the “**Board**”) of Greensprings Vacation Resort Owners Association, a Virginia not-for-profit corporation (the “**Association**”), acting pursuant to the Bylaws of the Association and the laws of the Commonwealth of Virginia, hereby vote for, consent to, authorize, and adopt the following resolutions with the same force and effect as if taken at a duly called meeting of the Board. The Board hereby instructs the Secretary of the Association to enter this Unanimous Written Consent (the “**Consent**”) into the official minutes of the Association.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves and authorizes the name change of *Greensprings Plantation Drive* to *Greensprings Resort Drive*, along with the corresponding renumbering of the property addresses to align with the unit numbers;

FURTHER RESOLVED, that the officers of the Association, acting individually and in their respective capacities, are hereby authorized and directed to take any and all actions necessary or appropriate to carry out the intent of this Consent;

FURTHER RESOLVED, that any and all actions previously taken by the officers of the Association in connection with the matters contemplated by this Consent are hereby ratified, confirmed, and approved in all respects.

The execution of this Consent by the undersigned constitutes a waiver of any requirement for a formal meeting to conduct the business described herein.

This Consent may be executed in multiple counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same document. Signatures delivered electronically or by facsimile shall be deemed effective and binding in lieu of original signatures.

This Consent has been executed and is deemed adopted and effective as of the date first written above.

Signed by:
By: Cheryl Pelosi
Print: Cheryl Pelosi, President

Signed by:
By: Elliott Waters
Print: Elliott Waters, Vice President

DocuSigned by:
By: Jackie Smullen
Print: Jackie Smullen, Secretary/Treasurer

DocuSigned by:
By: Mary Brammer
Print: Mary Brammer, Director

Signed by:
By: Jason Toste
Print: Jason Toste, Director

MEMORANDUM

DATE: June 10, 2025

TO: The Board of Supervisors

FROM: Paul D. Holt, III, Director of Community Development

SUBJECT: The Virginia Department of Transportation Revenue Sharing Program - Fiscal Years 2029-2030

Every other year, the Virginia Department of Transportation (VDOT) invites localities to participate in the Revenue Sharing Program. The program provides funding to construct, reconstruct, improve, or maintain the highway system. The program matches local dollars on a one-to-one basis up to \$10 million per locality. As a competitive program, VDOT prioritizes eligible projects into one of the following four categories:

- Priority 1 Construction Projects that have previously received Revenue Sharing funding as part of the Program application process.
- Priority 2 Construction Projects that meet a transportation need identified in the Statewide Transportation Plan (VTRANS) or when funding will accelerate advertisement of a project in a locality's capital improvement plan.
- Priority 3 Projects that address deficient pavement resurfacing and bridge rehabilitation.
- Priority 4 Projects do not meet Priorities 1-3 criteria but are otherwise an eligible project.

The County typically uses revenue sharing to provide funding for small projects, immediately needed improvements, or to supplement funding on existing projects. This year, staff is recommending four projects for Board consideration:

1. Additional funding for the proposed traffic signal at the intersection of Centerville Road and Jolly Pond Road.
2. Improvements to the intersection of Longhill Road and Warhill Trail.
3. Improvements to the two roads within the Skiffes Creek Industrial Park.
4. Safety Improvements to the Jamestown Road and Greensprings Road Intersection.

As each cycle of the VDOT Revenue Sharing Program is a different application year, this submission would not impact projects awarded in previous years.

For the first project, Centerville Road and Jolly Pond Road is currently an unsignalized intersection. Centerville Road heading eastbound consists of one through lane and a left-turn lane. Centerville Road, westbound, consists of one through lane with a right-turn slip lane to Jolly Pond Road. Jolly Pond Road has a right-turn lane and a left-turn lane onto Centerville Road. In 2023, James City County received Revenue Share funds for this project. Since that time, costs have increased and additional funding via this updated application is necessary. This application would be considered a "Priority 1" project under VDOT criteria since it is a construction project that has previously received Revenue Sharing funding as part of the Program application process.

The Longhill Road and Warhill Trail Intersection Improvements project (one of the two entrances and exits to the Warhill Sports Complex) will add a new traffic signal and intersection improvements on Warhill Trail. These improvements will directly support the proposed new facility for the General Services

Department, future additional facilities at the Warhill Sports Complex, and are in line with both the Longhill Road Corridor Study and the Warhill Trail Traffic Impact Analysis. Staff believes this application would be considered a “Priority 2” project under VDOT criteria listed above.

The Skiffes Creek Industrial Park Improvements project would bring the existing roadway sections into conformance with VDOT requirements. These improvements include road resurfacing, drainage improvements, and improved sight lines for Manufacture Drive and Commerce Boulevard. The Skiffes Creek Industrial Park was constructed by a private developer several decades ago. This project is intended to correct the current deficiencies with the goal of being able to dedicate these streets to VDOT. This application would be considered a “Priority 3” project under VDOT criteria.

The Jamestown Road and Greensprings Road Improvements project provides intersection improvements to replace the curve on Greensprings Road as vehicles travel towards Jamestown Road. By creating a new intersection, this would better align Jamestown Road with Greensprings Road and remove a safety issue of vehicles going too fast around the existing curve. Improvements include adding appropriate signage, improving sight distance, a new intersection with Jamestown Road along with appropriate striping, realigning the Virginia Capital Trail crossing, and grading to address stormwater. Staff believes this application will be considered a “Priority 2” project under VDOT criteria.

To meet the VDOT Revenue Sharing Program requirements, staff has included an individual resolution for each project listed above. Staff recommends the adoption of the attached resolutions authorizing the County to participate in the Fiscal Years 2029-2030 Revenue Sharing Program. Should any one of the five projects receive funding through this cycle of Revenue Sharing funding process, staff will bring back a resolution to appropriate the funds to the Board of Supervisors.

PDH/md

RevShareFY29-30-mem

Attachments:

1. Resolution of Support - Longhill Road and Warhill Trail Intersection Improvements
2. Resolution of Support - Centerville Road and Jolly Pond Road Traffic Signal
3. Resolution of Support - Skiffes Creek Industrial Park Improvements
4. Resolution of Support - Jamestown Road and Greensprings Road Intersection Improvements
5. Longhill Road and Warhill Trail Intersection Improvements Location Map
6. Centerville Road and Jolly Pond Road Traffic Signal Location Map
7. Skiffes Creek Industrial Park Improvements Location Map
8. Jamestown Road and Greensprings Road Intersection Improvements Location Map

RESOLUTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVENUE SHARING PROGRAM - FISCAL YEARS 2029 AND 2030

LONGHILL ROAD AND WARHILL TRAIL INTERSECTION IMPROVEMENTS

WHEREAS, the Board of Supervisors of James City County, Virginia (the “County”), desires for the County to submit an application requesting Revenue Sharing funds through the Virginia Department of Transportation (VDOT) Fiscal Years (FY) 2029 and 2030 Revenue Sharing Program; and

WHEREAS, the County will provide a fifty percent (50%) match Revenue Sharing Program funds as part of the FY 2029 or FY 2030 budget, consistent with the year of the award; and

WHEREAS, the combined funding from the County and VDOT is requested to fund the Longhill Road and Warhill Trail Intersection Improvements project.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby supports this application through the VDOT Revenue Sharing Program and further approves a County contribution toward this project, and hereby authorizes the County Administrator to sign the necessary applications, agreements, and other documentation necessary to administer this revenue sharing project.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

		VOTES			
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	ICENHOUR	_____	_____	_____	_____

Teresa J. Saeed
Deputy Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

RESOLUTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVENUE SHARING PROGRAM - FISCAL YEARS 2029 AND 2030

CENTERVILLE ROAD AND JOLLY POND ROAD TRAFFIC SIGNAL

WHEREAS, the Board of Supervisors of James City County, Virginia (the “County”), desires for the County to submit an application requesting Revenue Sharing funds through the Virginia Department of Transportation (VDOT) Fiscal Years (FY) 2029 and 2030 Revenue Sharing Program; and

WHEREAS, the County will provide a fifty percent (50%) match Revenue Sharing Program funds as part of the FY 2029 or FY 2030 budget, consistent with the year of the award; and

WHEREAS, the combined funding from the County and VDOT is requested to fund the Centerville Road and Jolly Pond Road Traffic Signal project.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby supports this application through the VDOT Revenue Sharing Program and further approves a County contribution toward this project, and hereby authorizes the County Administrator to sign the necessary applications, agreements, and other documentation necessary to administer this revenue sharing project.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

		VOTES			
		<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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Teresa J. Saeed
Deputy Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

RESOLUTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVENUE SHARING PROGRAM - FISCAL YEARS 2029 AND 2030

SKIFFES CREEK INDUSTRIAL PARK IMPROVEMENTS

WHEREAS, the Board of Supervisors of James City County, Virginia (the “County”), desires for the County to submit an application requesting Revenue Sharing funds through the Virginia Department of Transportation (VDOT) Fiscal Years (FY) 2029 and 2030 Revenue Sharing Program; and

WHEREAS, the County will provide a fifty percent (50%) match Revenue Sharing Program funds as part of the FY 2029 or FY 2030 budget, consistent with the year of the award; and

WHEREAS, the combined funding from the County and VDOT is requested to fund the Skiffes Creek Industrial Park Improvements project.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby supports this application through the VDOT Revenue Sharing Program and further approves a County contribution toward this project, and hereby authorizes the County Administrator to sign the necessary applications, agreements, and other documentation necessary to administer this revenue sharing project.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES

<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

RESOLUTION

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVENUE SHARING PROGRAM - FISCAL YEARS 2029 AND 2030

SKIFFES CREEK INDUSTRIAL PARK IMPROVEMENTS

WHEREAS, the Board of Supervisors of James City County, Virginia (the “County”), desires for the County to submit an application requesting Revenue Sharing funds through the Virginia Department of Transportation (VDOT) Fiscal Years (FY) 2029 and 2030 Revenue Sharing Program; and

WHEREAS, the County will provide a fifty percent (50%) match Revenue Sharing Program funds as part of the FY 2029 or FY 2030 budget, consistent with the year of the award; and

WHEREAS, the combined funding from the County and VDOT is requested to fund the Skiffes Creek Industrial Park Improvements project.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby supports this application through the VDOT Revenue Sharing Program and further approves a County contribution toward this project, and hereby authorizes the County Administrator to sign the necessary applications, agreements, and other documentation necessary to administer this revenue sharing project.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES

<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

Longhill Road and Warhill Trail Signal



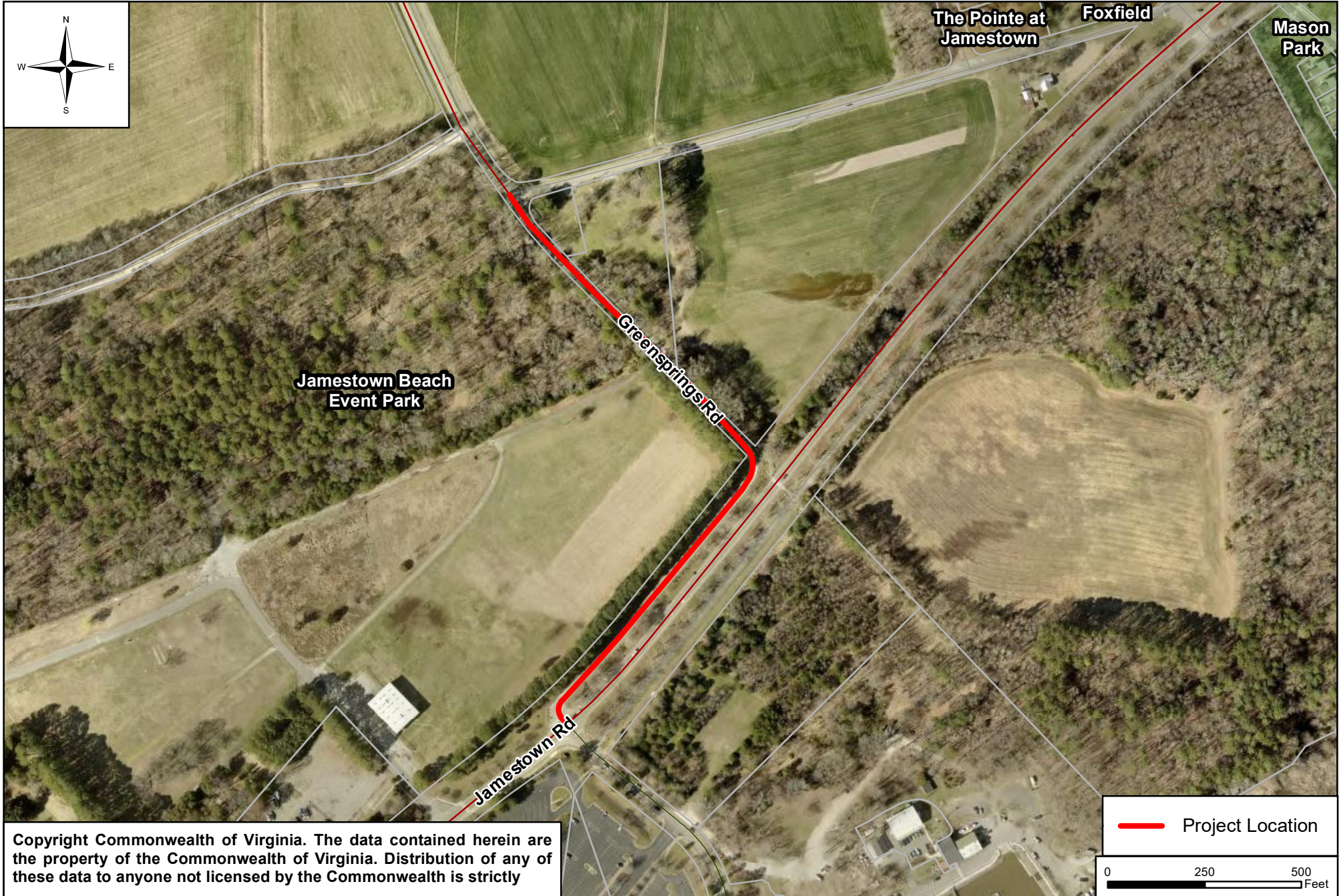
Centerville Road and Jolly Pond Road Traffic Signal



Skiffes Creek Industrial Park Improvements



Jamestown Road and Greensprings Road Roadway Improvements



MEMORANDUM

DATE: June 10, 2025

TO: The Board of Supervisors

FROM: Paul D. Holt, III, Director of Community Development

SUBJECT: Amendment to the Adopted Budget for a Grant Award - \$8,000,000 - Department of Historic Resources - Preservation Virginia for the Exclusive Support of the Historic Jamestowne Flooding Mitigation Project

Funding was appropriated in the 2024/2025 Virginia State Budget to be distributed through the Virginia Department of Historic Resources (DHR). Within that appropriation, \$8,000,000 was awarded to Preservation Virginia for the Exclusive Support of the Historic Jamestowne Flooding Mitigation Project.

Preservation Virginia and its subsidiary, the Jamestown Rediscovery Foundation, are engaged in a process to address the urgent need to protect 22.5 acres at Jamestown, America's Birthplace, to preserve Virginians' and the American public's access to Jamestown's archaeology, landscape, and museum spaces. Funds from the grant award will be used to address immediate flood protection measures to protect archaeological and structural resources.

Because Preservation Virginia is a privately funded organization, the award letter indicates that the funds cannot be provided directly to the Preservation Virginia from the Commonwealth and, instead, must pass through the appropriate local government (in this case, the County). The deadline for the funds to be transferred from the Commonwealth to the County is mid-June, 2025; however, the funds will be disbursed by the County to Preservation Virginia as soon as the necessary Memorandum of Understanding (MOU) is executed and written notification to release funds is received from DHR. The County's sole responsibilities will be to: (1) accept the grant funds from the Commonwealth; and (2) distribute the grant funds to Preservation Virginia upon receipt of written notification to release funds from DHR. The foregoing limited County responsibilities will be memorialized in a three-party MOU/Grant Agreement executed by the parties following adoption of the attached resolution, subject to approval as to form by the County Attorney's Office.

The County will receive \$8,000,000 from the Commonwealth and then distribute such funds to the recipient when DHR directs the County to release the funds. As such, no direct impact/cost to the County is anticipated. The term of the MOU is for a period of two years from the effective date and may be extended upon written mutual agreement. Preservation Virginia will be responsible for maintaining accurate records on the use of the grant funds and submitting a final project report to DHR and the County within 30 days of the full expenditure of the grant funds.

The *Code of Virginia*, §15.2-2507, requires a public hearing when amendments to the budget to adjust the aggregate amount to be appropriated exceed 1% of total expenditures, which for Fiscal Year (FY) 2025 totals \$2,831,806. The public hearing is to consider an amendment to the FY2025 Adopted Budget for funding received by the County from the Virginia Department of Historic Resources (DHR).

Staff recommends acceptance of these grant funds and approval of the attached resolution.

PDH/ap
GA-HistJmstwne-mem
Attachment

RESOLUTION

AMENDMENT TO THE ADOPTED BUDGET FOR A GRANT AWARD - \$8,000,000 - DEPARTMENT OF HISTORIC RESOURCES -

PRESERVATION VIRGINIA FOR THE EXCLUSIVE SUPPORT OF THE HISTORIC JAMESTOWNE FLOODING MITIGATION PROJECT

WHEREAS, the Virginia Department of Historic Resources (DHR) has awarded \$8,000,000 to Preservation Virginia for the Exclusive Support of the Historic Jamestowne Flooding Mitigation Project; and

WHEREAS, Preservation Virginia and its subsidiary, the Jamestown Rediscovery Foundation, are engaged in a process to address the urgent need to protect 22.5 acres at Jamestown, America's Birthplace, to preserve Virginians' and the American public's access to Jamestown's archaeology, landscape, and museum spaces; and

WHEREAS, funds from the appropriation will be used to address immediate flood protection measures to protect archaeological and structural resources; and

WHEREAS, because Preservation Virginia is a privately funded organization, the award letter indicates that the funds cannot be provided directly to Preservation Virginia from the Commonwealth and, instead, must pass through the appropriate local government (in this case, the County); and

WHEREAS, the deadline for the funds to be transferred from the Commonwealth to the County is mid-June 2025; however, the funds will be disbursed by the County to Preservation Virginia as soon as the necessary Memorandum of Understanding (MOU) is executed and written notification to release funds is received from DHR; and

WHEREAS, the County's sole responsibilities will be to: (1) accept the grant funds from the Commonwealth; and (2) distribute the grant funds to Preservation Virginia upon receipt of written notification to release funds from DHR; and

WHEREAS, there is no local match required.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, hereby authorizes the acceptance and appropriation of funds to the Special Projects/Grants Fund as follows and also authorizes the County Administrator to enter into a MOU with DHR and Preservation Virginia for the purposes of providing these funds to Preservation Virginia in order to implement these grant funds:

Revenue:

State - DHR Award	<u>\$8,000,000</u>
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Expenditure:

Preservation Virginia Flooding Mitigation at Historic Jamestowne	<u>\$8,000,000</u>
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James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES			
<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

GA-HistJamstwne-res

Memorandum of Understanding

Among

The Virginia Department of Historic Resources

And

James City County

And

Preservation Virginia

For the

Administration of the FY 2024-2025 State Grant for Historic Preservation

The Commonwealth of Virginia through the Department of Historic Resources will provide \$8,000,000 to Preservation Virginia for the exclusive support of the Historic Jamestowne Flooding Mitigation Project (hereinafter “the Project”).

This Memorandum of Understanding (hereinafter “MOU”) establishes a partnership among the Virginia Department of Historic Resources (hereinafter “DHR”), James City County, an official subdivision of the Commonwealth (hereinafter “the Local Government”), and Preservation Virginia (hereinafter “the Recipient”).

I. MISSION

DHR is the State Historic Preservation Office of the Commonwealth. DHR fosters, encourages, and supports the stewardship and use of Virginia’s significant architectural, archaeological, and historic resources as valuable assets for the economic, educational, social, and cultural benefit of citizens and communities. A significant responsibility is the administration and review of state and federal historic preservation grant programs for financial and programmatic compliance. DHR is authorized to administer state grants to non-state agencies under the Code of Virginia.

Preservation Virginia and its subsidiary, the Jamestown Rediscovery Foundation, are engaged in a process to address the urgent need to protect our 22.5 acres at Jamestown, America’s Birthplace, to preserve Virginians’ and the American public’s access to Jamestown’s archaeology, landscape and museum spaces. Funds shall be used to address immediate flood protection measures to protect archaeological and structural resources.

Together, the Parties enter into this MOU to mutually promote efforts to execute the Project. Accordingly, DHR, the Local Government and the Recipient operating under this MOU agree as follows:

II. PURPOSE AND SCOPE

DHR, the Local Government, and the Recipient will cooperate to ensure the correct and timely administration of the grant and the appropriate use and disbursement of its funds.

1. The “Partners” are forming a collaboration to comply with the provisions of The “Partners” are forming a collaboration to comply with the provisions of the 2024 Appropriation Act.

2. The collaboration is intended to benefit the citizens of James City County and the Commonwealth.
3. Each organization which is a party to this MOU is responsible for its own expenses related to this MOU.
4. There will be an exchange of funds between the parties for tasks associated with this MOU as outlined below.

III. RESPONSIBILITIES

Each party will appoint a person to serve as the official contact and coordinate the activities of each organization in carrying out this MOU. The initial appointees of each organization are:

DHR: Stephanie Williams, Deputy Director of Administration
Stephanie.williams@dhr.virginia.gov
(804) 482-6802
2801 Kensington Ave., Richmond, VA 23221

Local Government: Paul D. Holt, III, Director of Community Development
James City County
Paul.Holt@jamescitycountyva.gov
(757) 253-6671
101 Mount Bay Road, Building A
Williamsburg, VA 23185

Recipient: Cheryl Greenday, Chief Financial Officer
Preservation Virginia
Cgreenday@preservationvirginia.org
(804) 357-1184
204 West Franklin Street, Richmond, VA 23220

DHR will:

- Transfer award funding in the amount of \$8,000,000 to the Local Government upon full execution of this MOU, but no later than June 30, 2025;
- Authorize and instruct the Local Government to transfer funds to the Recipient upon full execution of this MOU;
- Instruct the Recipient on the procedures for maintaining the financial records of the grant;

The Local Government will:

- Serve as fiscal conduit for the Project by receiving and transferring the grant funds in full to the Recipient upon full execution of this MOU.

The Recipient will:

- Submit project information form.

EXHIBIT A

Name of Recipient:	
Project Director Name:	Project Director Title:
Project Director Phone:	Project Director Email:
Grant Period: End date ____/____/____	
Project Title:	

Final Report Instructions: Please answer all questions within this document. Label all pages with the name of the Recipient organization. The final project worksheet, and all supporting materials, including copies of all invoices and receipts, must be submitted to DHR with this report.

Project Description

1. Summarize the results of the project accomplished under this grant.
2. Describe any differences between the planned results as stated in the Project Scope of Work and the actual results. (*N/A is an allowable response*)

Financial Information

Please describe how the state funds were allocated to your project.

Note: You may indicate non-state funds that were used to complete the project, however, no matching funding is required.

Experience

Answers to the following questions will help us improve the administration of this grant program.

1. What were the major successes or obstacles you faced in implementing your grant project and what additional assistance (from partner organizations, the community, DHR, etc.) would have benefited your organization?
2. Provide a quote and citation/author that describes how this project has benefited the local community and the Commonwealth and how it has furthered the public's knowledge of significant historical/cultural event(s) that shaped the nation. This quote may be used by the Commonwealth and/or DHR in publications or other social media.

Final date due: _____ Final date submitted: _____

Recipients Official's Signature: _____ Date: _____

Printed Name: _____ Phone: _____

Email: _____

Date Final approved by DHR: _____

DHR Grant Manager Signature: _____

**SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

SUMMARY FACTS

Applicants: Mr. Greg Davis and Mr. Benming Zhang of Kaufman & Canoles, P.C.

Landowner: Mai Homes 2 LLC

Proposal: To allow a group home or residential facility for nine or more adults.

Location: 2010 Old Route 60 West

Tax Map/Parcel No.: 1110100007B

Property Acreage: ± 5.38 acres

Zoning: A-1, General Agricultural

Comprehensive Plan: Rural Lands

Primary Service Area: Outside

Staff Contact: Allison Jackura, Planner III

PUBLIC HEARING DATES

Planning Commission: May 7, 2025, 6:00 p.m.

Board of Supervisors: June 10, 2025, 5:00 p.m.

FACTORS FAVORABLE

1. There is adequate off-street parking.
2. The applicants have acknowledged that, should this application be approved, they will obtain the proper permits through the County and Virginia Department of Health (VDH).
3. There will be trained staff on-site at all times during operation of the group home.
4. The proposed group home provides a needed service for individuals seeking to reintegrate into the community after suffering from an addiction disorder.
5. Impacts: See Impact Analysis on Pages 5-6.
6. See Comprehensive Plan Analysis on Page 7.

FACTORS UNFAVORABLE

1. Staff does not identify any unfavorable factors.
2. Impacts: See Impact Analysis on Pages 5-6.

PLANNING COMMISSION RECOMMENDATION

At its May 7, 2025, Regular Meeting, the Planning Commission recommended approval of this application with staff-proposed conditions and changes recommended by a Commissioner by a vote of 7-0.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

**PROPOSED CHANGES MADE SINCE THE PLANNING
COMMISSION MEETING**

At the Planning Commission meeting, Commissioner Frank Polster, recommended two changes in the proposed conditions. Firstly, that the group home be required to allow periodic inspections in order to verify compliance with the maximum capacity. Staff drafted updated proposed conditions which staff finds addresses the indicated concerns while maintaining the ability to reasonably enforce the proposed condition to verify maximum occupancy.

Secondly, that the fence and/or signage required by Condition No. 8 be installed prior to approval of the updated Certificate of Occupancy. During review of the proposed change to Condition No. 8, staff identified that the specific proposed wording would unintentionally limit the applicants in their placement of the fencing or signage. Staff is proposing a slight modification to allow flexibility in the exact placement of the fencing or signage, whether it is on the property line or more internal of that.

Further, staff is recommending the addition of language to Condition No. 12 that requires recordation of the Special Use Permit (SUP) conditions against the property. This change was identified as important in this case as there are physical improvements within the building which would not be permitted by the Zoning Ordinance should the group home use cease. Any potential buyer should be aware that they could not purchase the property, cease the group home use, and continue to have the existing building as currently built as that would be an unpermitted two-family dwelling.

The conditions included in this package include the proposed changes for the Board consideration.

SUMMARY STAFF RECOMMENDATION

Per the Impact Analysis noted below, staff finds the proposed use will not negatively impact surrounding property nor is it expected to negatively impact Levels of Service (LOS) for roads or other public services. Per the Comprehensive Plan analysis noted below, staff finds that the proposed use fills a housing need within the County. Staff, therefore, recommends the Board of Supervisors approve this application with proposed conditions for consideration (Attachment No. 1).

PROJECT DESCRIPTION

Mr. Greg Davis and Mr. Benming Zhang of Kaufman & Canoles, P.C., have applied on behalf of Mr. Jeffrey Carver and Mr. Ryan Whatley of Evolution House, LLC, for an SUP to allow a group home or residential facility for nine or more adults within the A-1, General Agricultural Zoning District at 2010 Old Route 60 West (James City County Real Estate Tax Map Parcel No. 1110100007B).

Group homes are defined in the Zoning Ordinance as “*A residential facility in which individuals with mental illness, mental retardation or developmental disabilities reside with one or more resident counselors or other staff persons, and which is licensed by the Department of Behavioral Health and Development Services. Mental illness and developmental disability shall not include current illegal use of or addiction to a controlled substance as provided for in the Code of Virginia.*”

The Code of Virginia and the Federal Fair Housing Act (FHA) prohibit discrimination in housing based upon a person’s disability. Individuals recovering from an addiction are considered to be disabled under the FHA, and therefore, the Zoning Ordinance recognizes when eight or fewer of these recovering individuals are living together within a home, they are permitted by-right similarly to

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

a single-family home. In the A-1 Zoning District, when nine or more individuals are residing in one of these residential facilities, an SUP is required.

The Evolution House group home use is located at the subject property and is currently in operation within the existing single-family home. The proposal would bring the existing use into conformance with the Zoning Ordinance. At the same time, the applicants are working with the Building Official, Fire Marshal, and the VDH to bring into conformance already completed renovations and make necessary additional improvements within the home to ensure life safety codes and sewer capacity for the operation are met.

The proposal includes housing up to 24 individuals at a time, who would not typically have personal vehicles while living there. Employees would always be on-site to ensure compliance with rules put in place by the group home and provide support to the residents. No active drug or alcohol use would be permitted on-site. The applicants indicated that drug testing occurs randomly at least three times per week and can be performed any time if there is a reason to suspect a lapse.

Building and Sewer Capacity

The applicants have been coordinating with the Building Official, the Fire Marshal, the VDH, and the Zoning Administrator to navigate how to bring the existing structure and septic system into compliance with building code, fire safety, septic regulations, and the Zoning Ordinance. The applicants requested that they do not proceed with the improvements, citing cost concerns, until verifying that the proposed use is permitted by the Zoning Ordinance. Condition Nos. 2 and 3 would require they obtain those necessary approvals within a 12-month period, and establishes the maximum occupancy as the lesser of the various capacity limitations, respectively.

Parking and Traffic

While a Traffic Impact Analysis is not warranted for this facility, parking and traffic could be an impact to the neighbors and surrounding area if there were no limitations. The applicants are proposing to have two vans which will be driven by employees to shuttle residents to off-site appointments, work, and other activities, and notes that residents do not typically have vehicles on-site but there are occasions where that may happen. Additionally, visitors are permitted on Sunday and it is possible that multiple residents have many visitors on a single Sunday. For that reason, staff is proposing a parking condition to mitigate the potential impact. Condition No. 11 requires on-site parking to be located on suitable surfaces only, location of a handicap parking space nearest to the residence, and maintaining clear access along the driveway sufficient to allow fire apparatus to reach the residence in the event of an emergency. From a site visit and visual assessment, staff finds that there is adequate parking for the proposed operation within the area at the front of the residence and the area near the two accessory structures on-site.

Life Safety and Security

The required Virginia Department of Behavioral Health and Developmental Services (DBHDS) license requires policies and practices which ensure life safety in the building, including training for staff, evacuation plans, and posted information within the building. DBHDS staff also perform unannounced site visits and require annual license renewal. Further, Condition No. 5 requires the operator to establish an “Emergency and Safety Plan” for emergency situations including overdose and evacuation routes. Such plan would be required to be reviewed for approval by the James City County Fire Marshal and Chief of Police.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

PLANNING AND ZONING HISTORY

The County received a complaint that there was an unpermitted group home operating at 2010 Old Route 60 West in the fall of 2023. After meeting with the operators of the group home to make them aware of the Zoning Ordinance requirements, the operators submitted a conceptual plan to fully understand the appropriate steps forward in December 2023. Staff provided those steps in January 2024.

The applicants, representing the operators of the group home, submitted the required SUP application in March 2025. The Fire Marshal visited the property during this time to require certain bedrooms within the basement to be left unoccupied as they did not have the necessary means of egress. Planning staff also conducted a tour of the property on April 10, 2025, in order to understand the proposed use.

SURROUNDING ZONING AND DEVELOPMENT

This property is located along Richmond Road and Old Route 60 West. To the west is Empire Metal Services, a recycling center across Old Route 60 West, and to the east is a vacant property next to a residence which also operates as the Williamsburg Heating & Air Conditioning, Inc. Across Richmond Road to the south is a property protected within the Mill Creek Agricultural and Forestal District, and to the north is a single-family residence on approximately 32 acres.

- The following table lists the information on the adjacent parcels:

	ZONING DESIGNATION	EXISTING LAND USE	FUTURE LAND USE DESIGNATION
NORTH	A-1, General Agricultural	Single- Family Residential	Rural Lands
SOUTH	A-1, General Agricultural	Vacant	Rural Lands
EAST	A-1, General Agricultural	Vacant; Single- Family Residential; and Commercial	Rural Lands
WEST	A-1, General Agricultural	Industrial	Rural Lands

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing

Impacts/Potentially Unfavorable Conditions	Status <i>(No Mitigation Required/Mitigated/Not Fully Mitigated)</i>	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
<u>Public Transportation: Vehicular</u>	<u>Mitigated</u>	- The proposal is not anticipated to generate significant traffic as the narrative indicates that the residents generally will not have individual personal vehicles while living on-site. Residents will be transported by staff-driven vans for medical appointments and other trips. - The subject property is located on Richmond Road and Old Route 60 West, publicly maintained roads that are classified by the Virginia Department of Transportation as other principal arterial and local road, respectively. Staff finds that the roads are adequate for this use.
<u>Public Transportation: Bicycle/Pedestrian</u>	<u>No Mitigation Required</u>	- The James City County Sidewalk Master Plan and the Regional Bikeways Plan indicate that a multiuse path is proposed on the north side of Richmond Road. The subject property has approximately 165 feet of frontage along Richmond Road which currently does not have the indicated multiuse path. However, Zoning Ordinance Section 24-35 would not require installation of the path for this proposal, as a site plan or major subdivision are not required at this time. - This property is not within walking distance of a Williamsburg Area Transit Authority bus route.
<u>Public Safety</u>	<u>Mitigated</u>	- Fire Station 1 on Forge Road serves this area of the County and is approximately 3.4 miles from the proposed group home. - Condition No. 11 requires parking not block fire apparatus access to the building.
<u>Public Schools</u>	<u>No Mitigation Required</u>	- N/A since no new residential dwelling units are proposed.
<u>Public Parks and Recreation</u>	<u>No Mitigation Required</u>	- N/A since no new residential dwelling units are proposed.
<u>Public Libraries and Cultural Centers</u>	<u>No Mitigation Required</u>	- Staff finds this project does not generate impacts that require mitigation.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

Impacts/Potentially Unfavorable Conditions	Status <i>(No Mitigation Required/Mitigated/Not Fully Mitigated)</i>	- Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
<u>Groundwater and Drinking Water Resources</u>	<u>No Mitigation Required</u>	- The property is served by a private well and private septic system. - The proposal does not generate impacts that require mitigation to groundwater or drinking water resources.
<u>Watersheds, Streams, and Reservoirs</u> Project is located in the Diascund Creek Watershed.	<u>No Mitigation Required</u>	- No new impervious surface is proposed as part of this SUP request. Should exterior site improvements be made in the future, those improvements would be subject to environmental review at that time.
<u>Cultural/Historic</u>	<u>No Mitigation Required</u>	- No new impervious surface is proposed as part of this SUP request. The subject property has no known cultural resources on-site.
<u>Nearby and Surrounding Properties</u>	<u>Mitigated</u>	- The use will operate similar to a residential home, the subject property must adhere to the County's Noise Ordinance, and the existing property has large setbacks on all sides which are wooded. Future expansions of the use would require an SUP amendment.
<u>Community Character</u>	<u>Mitigated</u>	- Richmond Road is designated as a wooded Community Character Corridor. The proposal does not include any alteration that would affect the existing landscaping. - This parcel is not located within a Community Character Area.
<u>Covenants and Restrictions</u>	<u>No Mitigation Required</u>	- The applicants have verified that they are not aware of any covenants or restrictions on the property that prohibit the proposed use.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0002. 2010 Old Route 60 West Evolution House Group Home
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

COMPREHENSIVE PLAN

The site is designated Rural Lands on the Comprehensive Plan Land Use Map. All surrounding properties are designated Rural Lands.

Per the adopted Comprehensive Plan, appropriate primary uses include traditional agricultural and forestal activities, but also innovative agriculture, horticulture, silviculture, specialty or niche farming, commercial and noncommercial equine opportunities, agri-tourism, rural-based public or commercial recreation, rural-support businesses and certain public or semi-public and institutional uses that require a spacious site and are compatible with the natural and rural surroundings. The Comprehensive Plan further notes that generally residential development is not recommended, but that any such residences should be at a density of one residence per 20 acres or less. The use is proposing to operate within an existing single-family residence and would not increase the existing residential density within the Rural Lands.

Per the adopted Comprehensive Plan language, uses in Rural Lands should reflect and enhance the rural character of the County. Particular attention should be given to locating structures and uses outside of sensitive areas, and maintaining existing topography, vegetation, trees, and tree lines to the maximum extent possible, especially along roads and uses. The proposal utilizes the existing improvements, and does not include removing existing wooded areas of the property.

Within the Housing Chapter of the Comprehensive Plan, Housing Goal 2 states “Promote housing production that results in housing choices for all County residents and workers and is designed to respect the County’s unique natural, historic, and cultural resources.” While this is typically thought of as a goal for low-income and workforce housing, it applies also to individuals seeking a suitable housing situation given their disabilities. Group homes provide a unique support structure for those recovering from addictions, which assists those County residents who need such support.

Additionally, Housing Goal 3 states “Provide adequate housing opportunities for special needs populations, including persons with all forms of disabilities, and senior citizens.” This proposal provides an important type of housing for those with a disability and does it in a location with little to no expected impacts. Staff have proposed a set of conditions to mitigate possible impacts.

STAFF RECOMMENDATION

Per the Impact Analysis noted above, staff finds the proposed use will not negatively impact surrounding property nor is it expected to negatively impact LOS for roads or other public services. Per the Comprehensive Plan Analysis noted above, staff finds that the proposed use fills a housing need within the County. Staff, therefore, recommends the Board of Supervisors approve this application with proposed conditions for consideration (Attachment No. 1).

AJ/ap
SUP25-2EvolHs

Attachments:

1. Resolution
2. Location Map
3. Master Plan
4. Applicant Narrative
5. Proposed Resident Handbook
6. Current Floor Plan
7. Unapproved Minutes of the May 7, 2025, Planning Commission Regular Meeting

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

RESOLUTION

CASE NO. SUP-25-0002. 2010 OLD ROUTE 60 WEST EVOLUTION HOUSE GROUP HOME

WHEREAS, the Board of Supervisors of James City County, Virginia (the “Board”), has adopted by Ordinance specific land uses that shall be subjected to a Special Use Permit (“SUP”) process; and

WHEREAS, Mr. Greg Davis, on behalf of Evolution House, LLC, has applied for an SUP to allow for a group home with more than eight individuals located at 2010 Old Route 60 West and further identified as James City County Real Estate Tax Map Parcel No. 1110100007B (the “Property”); and

WHEREAS, the Planning Commission, following its public hearing on May 7, 2025, recommended approval of Case No. SUP-25-0002 by a vote of 7-0; and

WHEREAS, a public hearing was advertised, adjoining property owners notified, and a hearing conducted on Case No. SUP-25-0002; and

WHEREAS, the Board of Supervisors of James City County, Virginia, finds this use to be consistent with good zoning practices and the 2045 Comprehensive Plan Land Use Map designation for the Property.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, after consideration of the factors in Section 24-9 of the James City County Code (the “County Code”), does hereby approve the issuance of Case No. SUP-25-0002 as described herein with the following conditions:

1. Master Plan. This SUP shall permit a Group Home on the property located at 2010 Old Route 60 West and further identified as James City County Real Estate Tax Map Parcel No. 1110100007B (the “Property”). The use and layout of the Property shall be generally as shown on the document entitled “JCC SUP-25-0002. 2010 Old Route 60 West - Evolution House Group Home” and date stamped April 23, 2025 (the “Master Plan”), with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance, as amended.
2. Commencement. Evidence of a business license, updated Certificate of Occupancy, and approved change in use from the Virginia Department of Health for the Property shall be provided to the Director of Planning within 12 months from the issuance of the SUP, or this SUP shall be void.
3. Number of Resident Occupants. Occupancy at the Property shall be limited the lesser of the following: i) 24 occupants at any time; ii) the building occupancy number as established by the Building Official on the issued Certificate of Occupancy; iii) the maximum occupancy as established by the Virginia Department of Health for the on-site sewage system capacity; or iv) the maximum licensed capacity as established by the Virginia Department of Behavioral Health and Development Services.

4. Occupancy Verification. On or before January 30 of each year, the Zoning Administrator shall be provided with a notarized statement certifying actual occupants for the previous year. Such data shall include the total number of full-time occupants residing at the Property for each day of the prior calendar year. At any point in the operation of the Group Home, if the Zoning Administrator, Fire Marshal, or Building Official has reason to suspect a violation of the maximum capacity, the operator shall provide access for the purpose of verifying capacity within 24 hours of any written or verbal notice.
5. Emergency and Safety Procedures. An Emergency and Safety Plan that defines protocols and procedures for emergency situations including overdose procedures and evacuation routes shall be submitted and approved by the James City County Fire Marshal and the James City County Chief of Police prior to the issuance of the updated Certificate of Occupancy.
6. Signage. No exterior signage related to the use of the Group Home shall be permitted on the Property.
7. Access. No new ingress or egress points, driveways, or access paths shall be created to any public road.
8. Property Boundary and Fencing. On or within the Property's interior side and rear boundaries as generally shown on the Master Plan, there shall be fencing and/or signage stating no trespassing or entry onto adjoining properties. No barbed wire fencing shall be used on the Property. Additional signage shall be posted near the adjacent private lake/pond that prohibits fishing. All such fencing and/or signage shall be installed prior to issuance of the updated Certificate of Occupancy.
9. Staffing. Employees of the Group Home shall be present on the Property at all times while there are residents on-site.
10. Screening. No sex offender pursuant to Section 9.1-900 of the Code of Virginia, 1950, as amended (the "Virginia Code") shall be permitted to reside on the Property. No person who is a felon convicted of a single "act of violence" (i.e. violent criminals) as defined by Section 19.2-297.1 of the Virginia Code shall be permitted to reside on the Property. Provided however, that such a convicted felon may be permitted to reside on the Property if a Virginia Licensed Clinical Social Worker (LCSW) or Virginia Certified Substance Abuse Counselor (CSAC) determines that the facts and circumstances of such applicants justify admission to the programs conducted there based upon time between conviction and present day, the felonious act committed, and circumstances which allow a reasonable conclusion that recurrence of acts of violence are unlikely. In order to permit residence on the Property by such felon, the determination of the LCSW or CSAC shall be reviewed and a second approval granted by a Virginia Licensed Professional Counselor. A list of any and all residents admitted who have been convicted of any "act of violence" as defined above shall be maintained at the Property and provided to the County Director of Planning or Chief of Police at any time upon request.
11. Parking. Parking shall be only on gravel, stone, asphalt, or concrete parking surface, shall provide for one van-accessible handicap parking space closest to the house entrance, and shall not block emergency access as indicated on the Master Plan.

12. Ceasing the Use. If the Group Home ceases to operate, the building shall be converted to a permitted use and obtain all necessary permits and approvals for such use prior to continuing occupancy of the property, and this SUP shall automatically be void if such cessation continues for a two-year period. A certified copy of the Board of Supervisors' SUP resolution shall be recorded against the Property in the Williamsburg/James City County Circuit Court prior to issuance of an updated Certificate of Occupancy for the Project. Proof of recordation shall be provided to the Zoning Administrator.
13. Licensing. The applicants shall obtain and maintain all applicable licenses to conduct the Group Home, including, but not limited to, those that may be required by the Virginia Department of Behavioral Health and Developmental Services.
14. Severance Clause. This SUP is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES

<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

SUP25-2EvolHs-res

JCC SUP25-0002 - 2010 Old Route 60 West Evolution House Group Home



SUP-25-0002. 2010 Old Route 60 West - Evolution House Group Home



Property Information

1110100007B
2010 Old Route 60 West
Toano, VA 23168
A1-General Agriculture
2045 Comp. Plan: Rural Lands
Parcel Acreage: 5.38
PSA: Outside

General Notes

1. No changes to water/sewer utilities.
2. This site does not appear to be located in the Resource Protection Area.
3. This site does appear to be located in Zone X on Flood Insurance Rate Map 51095C0039D, effective 12/16/15.
4. No outdoor lighting is proposed.
5. Call Miss Utility at 811 to mark any utilities prior to construction.

Sheet Index

1. Cover Page
2. Location Map
3. Site Details
4. Parking Details



Adjacent Properties

1110100013
Ivy Hill LLC & Silverman, Barbara L
C/O Ellen Lightman
5 Farrington Ct
Baltimore, MD 21209-2507
A-1, General Agricultural

1110100007A
Blanding, Leland & Suzanne &
Harty, John E Life Estate
2020 Old Richmond Rd W
Toano, VA 23168-8828
A-1, General Agricultural

1110100008
Greenwave Toano Property Owner LLC
4010 Rainetree RD - STE 300
Chesapeake, VA 23321-3700
A-1 General Agricultural

1110100007
Johnson, Brian Dale Trustee &
Shanna Lee Trustee
8896 Richmond Rd W
Toano, VA 23168-8815

April 23, 2025

Maps Not To Scale

SUP-25-0002. 2010 Old Route 60 West - Evolution House Group Home



SUP-25-0002. 2010 Old Route 60 West - Evolution House Group Home

Old Richmond Road Property



- Legend:
- Red: Property Line
 - Orange: Existing 6' Privacy Fence
 - Yellow: Proposed.. in process 3-wire t-post fence barbed (posted "no trespassing" on our side of the fence)

SUP-25-0002. 2010 Old Route 60 West - Evolution House Group Home



Narrative to Accompany Special Use Permit Application Our Client: Evolution House

Overview

This Narrative accompanies an application for a special use permit to allow the operation of a group home of more than 8 residents at 2010 Old Richmond Road West, Toano (James City County), Virginia 23168. The subject property is located in the general agriculture A-1 zoning district which generally permits group homes with 8 or fewer residents by right. Evolution House LLC has applied for a special use permit which would allow the 5,000 square foot residence on Old Richmond Road to house up to 24 residents.

Evolution House LLC establishes and operates group homes offering a safe, stable and supportive residential environment for individuals diagnosed with substance use disorders who are recovering from their addiction. Residents are required to have completed an intensive inpatient therapy program (often referred to as “detox”) followed by an intensive period of at least 30 days of therapy and sobriety. After completing these important preliminary steps in recovery, many people in the James City County community who are recovering need a safe place to live in an environment with people who are also recovering, and who offer support and encouragement under a set of house rules which require continued sobriety as a condition of residence. No residents are admitted to Evolution House based on court-ordered detention or treatment programs.

Evolution House applicants are pre-screened for eligibility. No sex offenders or violent criminals are admitted into Evolution House programs, and failure to stay clean and sober results in immediate expulsion (witnessed urine testing is conducted three times per week as a condition of residency).

This low intensity residential service model does not include medical detoxification or acute psychiatric care. Instead, residents engage in structured daily programming, life skills development and therapy while attending offsite clinical activities all day and into the evening. The group home ensures individualized attention, safety and operational guidelines.

Evolution House has a resident handbook which establishes clear rules for occupants. A copy of the current handbook is attached in order to provide assurances that strict rules govern residents. Weekly resident meetings are held to discuss rules, policies for safe and enjoyable cohabitation at the house, and activities like visits to movie theaters, church attendance and the like. These resident meetings give Evolution House the ability to address concerns or complaints from neighbors, if any (such complaints have been rare at the applicant’s facilities). Visits from friends and family are permitted on Sundays, but must be arranged in advance. No pets are permitted by residents, although pets may accompany friends and family on Sunday visits. Residents are not permitted to use their own vehicles and passenger van transportation is provided by Evolution House for residents to therapy, group recreation and other activities.

History of Evolution House LLC

Evolution House LLC was founded by Jeffrey Carver and Ryan Whatley, both of whom have been through substance abuse disorder recovery programs and saw the great benefit and demand for the proposed intermediate or step-down care needed as people with life disorders transition back into society, family and jobs. Evolution House was the vision of Jeffrey and Ryan, who established their first location just before the COVID-19 pandemic forced closure of such facilities.

After pandemic restrictions were lifted, the demand for substance use disorder treatment sky rocketed because of the isolation, social limits and emotional impacts of COVID-19. Jeffrey and Ryan established the 2010 Old Richmond Road house location approximately three years ago. An investor who believed in the Evolution House mission purchased the Old Richmond Road property and leased it to Evolution House LLC.

Jeffrey and Ryan are highly skilled communicators, successfully recovered from their substance use, but they had no experience before founding Evolution House in business and establishment of treatment facilities. They were unaware that the James City County zoning ordinance limited a group home located in the A-1 Zoning to 8 or fewer residents without a special use permit. The James City County zoning administrator contacted Evolution House in late 2024 with notice that housing approximately 12-14 residents at 2010 Old Richmond Road was not in accordance with the zoning ordinance. The company immediately began work with the county, hosted a neighborhood meeting, engaged counsel and this application ensued.

Today Evolution House operates facilities in 5 locations in the Tidewater Area.

Impacts on the Community

The proposed use is designed to have minimal impact on the surrounding neighborhood. The group home will:

- **Ensure Safety:** All residents undergo a thorough intake process, including background checks and clinical assessments, to ensure they are appropriate for a low-intensity residential setting.
- **Maintain Property Standards:** The home will be maintained in accordance with all applicable zoning, building, and safety codes. Landscaping and property upkeep will meet or exceed neighborhood standards.
- **Limit Traffic and Parking Concerns:** The program provides passenger vans for all necessary transportation for residents to external clinical services, employment, and community support meetings, thereby minimizing additional vehicle traffic. Adequate on-site parking will be provided to accommodate staff.
- **Promote Stability and Order:** The facility will be staffed 24/7, with trained professionals ensuring a structured, supportive, and accountable living environment. Residents are subject to house rules, curfews, and drug-free requirements, with regular toxicology screenings in place as referenced above.

Site Description

The 2010 Old Richmond Road residence consists of approximately 5,000 square feet located immediately adjacent to Route 60 West. The site has frontage on Route 60, which is at that location point a busy 4 lane divided highway. To the west, across Old Richmond Road, lies property occupied by Empire Metal Services, a highly industrialized site housing a scrap metal business. On the east the property is abutted by a vacant lot which is owned by Brian Johnson whose residence and Williamsburg Heating and Air Conditioning business are located nearby. Topography and woodlands isolate Evolution House from the Johnson/Williamsburg Heating and Air Conditioning sites. Structures on the Johnson property are more than 400 feet from the Evolution House structure.

To the rear of the Evolution House property is a 55 acre tract containing one residence separated from the applicant's property by 1500 feet, a pond and woodlands.

Neighborhood Meetings

On February 20, 2025 before drafting its application, Evolution House mailed notices to nearby property owners and held a neighborhood meeting at the River Church just east of the site on Route 60. This meeting, attended only by immediate neighbor Brian Johnson, aired questions and concerns from the neighbor and led to concrete elements of this application and proposed special use permit conditions.

Proposed Special Use Permit Conditions

The applicant is aware that the County may impose conditions upon it as a part of the SUP approval process. Nonetheless, in an effort to be proactive and assure neighbors and the community that Evolution House is committed to mitigating any impacts which its operation may create, the attached proposed SUP conditions are tendered as acceptable to the applicant and appropriate restrictions on use of the 2010 Old Richmond Road Site.

Resident Testimonials

Several Evolution House residents who have completed their recovery have offered to speak publicly about the immersive importance of the applicant in their return to sobriety, their families and our community. In order to protect the privacy of the se brave supporters, their testimonials will be provided to County staff, Planning Commissioners and Supervisors as public hearings approach.

Conclusion

The requested SUP will allow for the responsible operation of a clinically managed low-intensity residential service group home that meets a vital community need while preserving neighborhood integrity. A shortage of similar facilities exists in James City County, and the applicant serves an important need in our community. The applicant is committed to upholding the highest standards of safety, compliance, and community engagement to ensure a positive and beneficial presence in the area.

EVOLUTION HOUSE

Richmond Rd. House Resident Handbook

Welcome Home.

We're **grateful** that you're here! We've been waiting for you :)

Please keep this manual, it will help you to understand the expectations of being a resident at Evolution House | Richmond Road House.

* After we go over it, we'll ask you to sign and keep this copy. If you have any questions about anything in this manual, please ask.

DIRECTORY

Address: 2010 Old Richmond Road West, Toano, VA 23168
House number: (757)794-3172

Peer Supervisor: Bryan R. - (703)477-9894

Peer Leaders/House Manager:

Kevin J - (757)759-0675 (Richmond House)

Elijah M - (804)724-3915 (Rochambeau House)

Peer/Care Coordinator: 104 Bypass Road
Kali B - (757)597-3114

Main Office Number: (757)705-3202

Clinical Director: Jami Daniels - (757)603-3903

EMERGENCY CONTACTS:

EMERGENCY 911

Police, James City County, (Non-Emergency) 757-220-2333

JCC Fire Station 757-220-0626

Poison Control..... 800-222-1222

Suicide Hotline 988

MISSION STATEMENT:

Creating a safe haven for people in recovery.

VISION STATEMENT:

*Elevating the course of humanity by creating a recovery culture that
inspires freedom from active addiction.*

OUR GUIDING PRINCIPLES:

Leading With Honor.

Honesty is the first step of recovery.

Only Love Matters.

Anything else is a cry for Love.

Pay it Forward.

We have the ability to make a positive impact on others.

STAFF COMMITMENT TO YOU:

All staff members are dedicated to providing an environment that is based on safety, support, and collaboration for all.

- We provide a place of growth and learning, where you can feel free to safely and respectfully express yourself.
- We strive to provide a physically and emotionally safe environment for everyone.
- We believe in treating each other with dignity and respect.
- We provide opportunities to learn new and helpful life skills.
- We want to create the most inclusive, recovery-oriented residential environment possible.

HOW DO WE DO THAT?

- The EVO House team believes in focusing on strengths, not weaknesses.
- We believe in the power of positive role-modeling.
- Our philosophy is rooted in compassion and LOVE; it is based on the belief that nothing that happened in your past can prevent you from being successful now.
- We believe that if you challenge yourself, if you remain focused, if you reach out for help and advice, and if you embrace change, you will discover your resiliency and your emotional strength.
- We will encourage you to go to recovery meetings, meet friends in recovery and call them, find a sponsor, consider joining a homegroup and getting a service position. This is what recovery looks like.

Evolution House Philosophy

Evolution House's goal is to create a recovery culture that inspires freedom from active addiction. We work very hard to maintain a **brotherhood** in the house of supportive and unwavering honesty with one another. This bond is forged by having first-hand knowledge of the horrors of addiction. This level of compassion and accountability is the cornerstone of Evolution House.

This is definitely **not just a sober place to live**. We require honest self-appraisal and a commitment to a recovery lifestyle. We encourage our residents to **live a life of service** and integrity. You will be asked to be involved in activities that will rebuild self-esteem and accountability, such as going to meetings, the maintenance and upkeep of your house, volunteering outside the residence, caregiving, creative ventures, social events, and physical activities. These things combined with a strong recovery foundation will lay the groundwork to a whole new life. Abstinence is required. This means absolutely no mind or mood-altering substances, including prescription medicine, over the counter medication, drugs, alcohol, CBD, kratom, spice, or anything you are using to make you feel different.

Our house meetings will give you the opportunity to freely share things that you might not feel comfortable sharing in a larger group and provide a place to discuss your recovery goals. We will ask you about your meeting attendance and encourage you to talk about relapse behaviors in a **non-judgmental and supportive environment**. Everyone at the house meetings will be in recovery and provide a wealth of knowledge and understanding. We will give you honest straightforward feedback that often will be difficult to hear unless you have an open mind. We will give you the same information that was given to us in early recovery. Evolution's deepest desire is for our residents to go on to lead lives that are productive and continually seek out opportunities to be **an inspiration to others to change the world** around them in a positive way.

RESIDENT COVENANT COMMITMENT:

I am hereby making a commitment to the following:

1. It is my desire to go all-in for my recovery, so that I may become a better person, son, brother, husband, father, friend, leader and contributor to society.
2. I will maintain abstinence from drugs and other mind/mood altering substances. I understand that honesty is the first step in recovery and I will put forth my best effort to be honest if I have used any substances, understanding that Evolution House is here to help and support me on every step of my path.
3. I understand that I will take direct, unfiltered feedback. I will do everything in my power to receive it in love and to learn from it. I will avoid defensiveness, realizing that when I defend, I lose the opportunity to learn. I commit to being open in examining myself – my personality, my past, my habits, my anger, and my responses to people. I want to learn. I want to change, to recover in every fiber of my being.
4. I will ask for help. I surrender my old thoughts, beliefs and ideas for an open mind and a new experience. Admitting that I need help and asking for it will become my greatest strength in recovery.
5. I commit to attending every group counseling session, community meeting, house activities, events and house meetings whenever possible, to be there on time, and to have my work done. I understand and agree that I will have to say “no” to other important things in order to put my recovery first to meet this commitment, and I am willing to do so. I understand that the schedule is posted so I can manage my other commitments around the dates and times of my treatment programming.
6. I commit to anonymity. What is shared by residents in groups and house meetings, stays in the group.
7. In order to protect the integrity of the house, if I see one of my brothers struggling, participating in dishonest or relapse behavior outside of group I will let a staff member know or submit an anonymous note in the feedback box. Everyone is here because we have asked for help, and it is my duty to look after my brothers in Evolution House.
8. I further agree that, at some point in my recovery, when my sponsor and higher power lets me know that I am ready, I will pay it forward and help others. As a person in recovery from substance use disorder, I am uniquely qualified to help others with this illness, and in recovery it becomes my superpower. And I know that I can only keep what I have, by giving away what was freely given to me.

House Rules

1. Follow staff directions at all times. No flirting or contacting staff about anything other than your treatment and recovery.
2. No use or possession of mind or mood altering substances or paraphernalia.
3. All prescription and OTC medications, supplements, and vitamins must be turned over to staff.
4. Urine screens and breathalyzer tests may be administered by staff at any time. Urine samples must be provided within 60 minutes.
5. No violence or threats of violence, (verbal or otherwise) this includes bullying, name calling, and to include racial or sexual slurs.
6. No weapons of any kind (including pocket knives).
7. Rooms and residents are subject to random search, with or without resident present. Doors should be left unlocked at all times. Residents are not allowed to change rooms.
8. Clients must adhere to all local, state and federal laws including no stealing or deliberate destruction of property.
9. Do not enter another resident's bedroom for any reason without that resident being present. The door must remain open.
10. Sexual activity or attempts of sexual activity are prohibited.
11. Approved guests are welcome Sundays in common areas only. No closed doors with guests present. Overnight guests are not allowed.
12. Day passes are allowed **after** the **first 3 weeks**. With a day pass, clients must be home by 10pm during the week and 11pm on Friday and Saturday. Overnight passes are allowed after transferring to IOP (Inpatient/Outpatient Program). Passes may not interfere with counseling groups, morning meditation, or house meetings. Passes must be submitted for request Monday - Friday ONLY, at least 3 days in advance. Residents must sign out and in on the day of their pass. **Reminder: passes are a privilege, not a right.** Residents will be drug tested upon return.
13. Clients may not be in the house without staff present. Clients must join the group where they are when arriving back from passes.
14. Must participate in all individual/therapeutic groups & scheduled appointments and complete assignments as directed.
15. Clients and guests must adhere to the dress code at all times.
16. Be truthful. Take responsibility for creating a safe environment. If you are aware of another client using drugs, or aware of conflicts, inform staff.
17. Please keep the noise down after 11pm so others may rest. No inappropriate/disruptive behavior at any time.
18. Clients are not permitted to lend, borrow, or transact any money, food stamps, items, or anything of value between other clients or staff.
19. No smoking/vaping inside the house, rooms and van - this is permitted in designated area(s) only.
20. We are all responsible for keeping the house clean and safe. Residents must make their bed daily, keep their rooms and common areas clean and tidy, and complete weekly chores.
21. Residents must attend a minimum of FIVE recovery-focused meetings per week and work with a sponsor or mentor regularly.
22. Evolution House managers have the authority to amend or change rules based on circumstances.

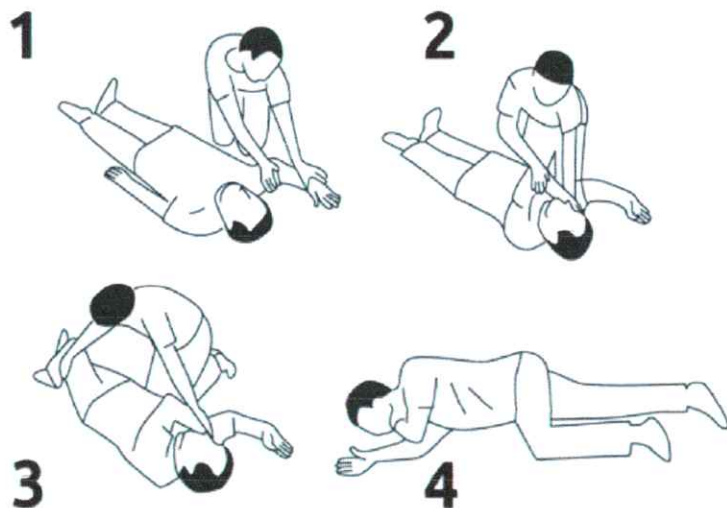
OVERDOSE PROCEDURE:

What do I do if I suspect an overdose?

1. Call 911

If you suspect an overdose and the person is unresponsive, call 911. Try getting their attention by doing a sternum rub. Give the emergency responders the address, 4622 Rochambeau Dr., and as much information as you can (e.g., unconscious, not breathing, drugs used if known, etc.).

If they remain unresponsive and you must leave them alone to call 911, it's important to put them in the recovery position — on their side with legs bent and head resting on the arm on the floor (see image below). This is to avoid aspiration if they vomit.



2. Administer Naloxone

Naloxone is only effective in the case of an opioid overdose. However, if you are unsure of the substance(s) involved, it's best to err on the side of caution and administer it. Naloxone is not known to cause any harm in the case of a non-opioid overdose.

PEEL



Peel back the package to remove the device. Hold the device with your thumb on the bottom of the red plunger and 2 fingers on the nozzle.

PLACE



Place and hold the tip of the nozzle in either nostril until your fingers touch the bottom of the patient's nose.

PRESS



Press the red plunger firmly to release the dose into the patient's nose.

Not a substitute for emergency medical care. When administering **NARCAN® Nasal Spray**, always be sure to call 911 right away, even if the person wakes up. Keep the patient under surveillance or close watch. If breathing does not return to normal or if breathing difficulty resumes, after 2-3 minutes, give an additional dose of NARCAN® Nasal Spray using a new device in the alternate nostril. Repeat doses may be necessary.

3. Conduct rescue breathing: if they have labored breathing or are not breathing at all. It is vital to conduct rescue breathing. Tilt the head back, pinch the nose closed and give one slow breath every 5 seconds until they resume breathing on their own or until the paramedics arrive. Watch to see that their chest rises and falls with each breath.
4. Comfort and support: once they are breathing on their own, place them in the recovery position until paramedics arrive. Comfort them as they may be confused, upset, and going through withdrawal (feeling sick from a lack of opioids if their body is dependent on them) when revived. Do not allow them to use drugs.

FIRE PROCEDURE

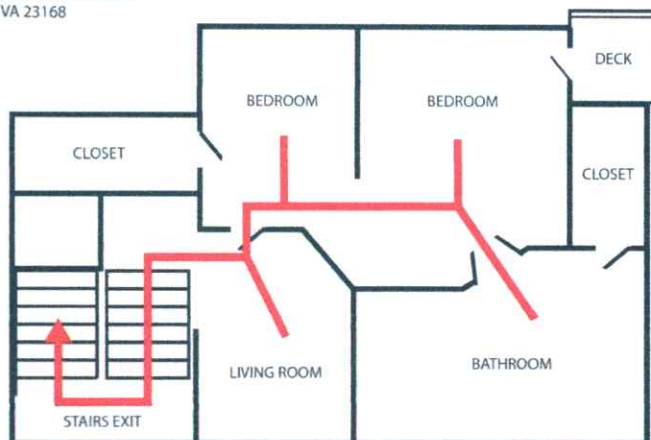
Preparedness: Familiarize yourself with the location of fire exits and fire extinguishers in your area. Keep access ways, hallways, exit doors, and roadways clear.

IN CASE OF FIRE / FIRE ALARM:

1. Close the door as you leave the room.
2. If possible, notify sleeping or unaware individuals.
3. Attempt to extinguish the fire only if you can do so SAFELY.
4. Evacuate the building via the nearest exit. If upstairs, you can escape through the window.
5. Proceed to the assembly area on street (**Old Richmond Road W**) away from the building to conduct a roll call.
6. Report the fire, call 911

UPSTAIRS ESCAPE PLAN

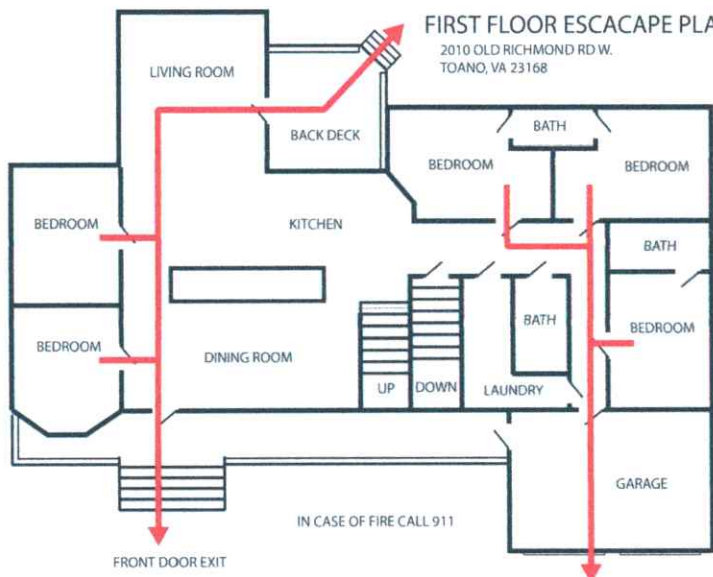
2010 OLD RICHMOND RD W.
TOANO, VA 23168



IN CASE OF FIRE CALL 911

FIRST FLOOR ESCAPE PLAN

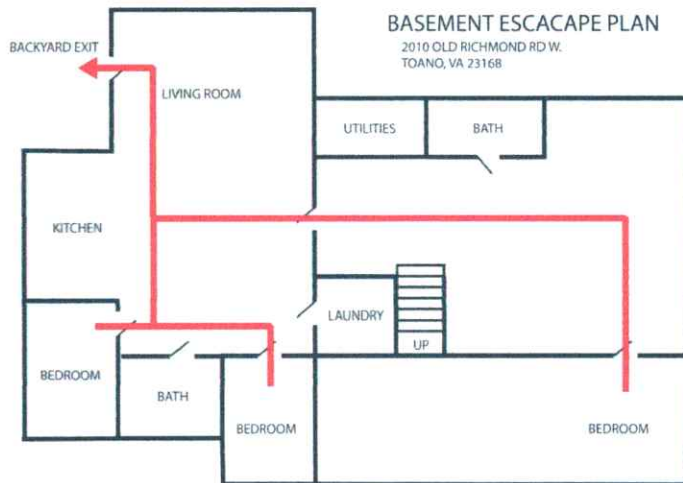
2010 OLD RICHMOND RD W.
TOANO, VA 23168



IN CASE OF FIRE CALL 911

BASEMENT ESCAPE PLAN

2010 OLD RICHMOND RD W.
TOANO, VA 23168



IN CASE OF FIRE CALL 911

ACTIVE SHOOTER PROCEDURE

1. **Evacuate.** If there is an accessible escape path, attempt to evacuate the premises. Be sure to:

- Have an escape route and plan in mind
- Help others escape, if possible
- Evacuate regardless of whether others agree to follow
- Leave your belongings behind
- Prevent individuals from entering an area where the active shooter may be
- Keep your hands visible
- Follow the instructions of any police officers
- Do not attempt to move wounded people
- Call 911 when you are safe

2. **Hideout if evacuation is not possible.** Find a place to hide where the active shooter is less likely to find you. Your hiding place should:

- Be out of the active shooter's view
- Provide protection if shots are fired in your direction (i.e., an office with a closed and locked door)
- Not trap you or restrict your options for movement
- To prevent an active shooter from entering your hiding place:
 - Lock the door
 - Blockade the door with heavy furniture

NATURAL DISASTER PROCEDURE

Tornadoes, Floods, Hurricanes, or Earthquake

Move to designated "safe area" or to corridors or interior rooms; STAY AWAY from all windows and large glass objects. (see Emergency Evacuation Map located in all rooms). Crouch down and cover your head and neck. AVOID being underneath heavier objects such as lights, wall hangings, and other items that may fall. STAY INDOORS, do not exit the building. If you can't reach a "safe area," stay away from windows, crouch down, and cover your head. Follow directions of the Peer Leader. Listen for messages on the Public Address system. In the case of a power outage, there are hand-held lights, emergency water, and emergency food in the basement.

OUR POLICIES

CLIENT WORKING FOR EVO POLICY

Clients are **not allowed to engage in labor of any kind at the Treatment Center.** (i.e. yard work, construction, etc.) If something needs to be done, please bring it to the attention of the Peer on duty. However, clients are responsible for routine chores and regular housekeeping. We all share the responsibility for keeping the house clean and safe.

SOCIAL MEDIA POLICY

Residents must be mindful of their actions on social media; your actions are a reflection of the Evolution House. You should always have the utmost respect for the confidentiality of others in the house when posting and engaging in all social media platforms. **You are not allowed to tag Evolution in any way on social media.**

GOOD NEIGHBOR POLICY

We must show utmost respect to the neighbors and their property. Wave to the neighbors and be friendly. No loud music or contributing to noise pollution. Smoking is only allowed in designated areas in the backyard. Be quiet. Be mindful of your surroundings and keep the volume of conversations down when outside. No yelling or offensive language. Park in Evolution House parking areas only. Do not block the neighbors' driveways. Pick up after yourself. Pick it up even if it isn't your litter. Drive slowly. The speed limit is 25 mph. Stop at all stop signs.

As a resident of Evolution House, please understand that there are restrictions on trespassing or entering onto adjoining properties. These rules are in place to respect the privacy and property rights of our neighbors. This means you are prohibited from fishing in neighboring private lakes or ponds, cutting across neighbors' yards or land when walking, or engaging in any other activities that involve entering private property without permission. We encourage everyone to stay within the boundaries of the group home's property and use designated paths or public areas for recreation and travel. If you have any questions about these boundaries or need clarification, please feel free to speak with a staff member.

FIRE PIT SAFETY / OUTDOOR GRILL POLICY

Clients are to never use the fire pit or outdoor grill without the presence of a peer. If you choose to join the activities involving the fire pit or outdoor grill, you do so at your own risk. You are never required to participate in anything involving the fire pit / outdoor grill. Never use gas, kerosene, lighter fluid or any flammable liquids to start the fire. Keep anything flammable away from the fire pit and outdoor grill area.

PERSONAL PROPERTY & FUNDS POLICY

All personal belongings/property are the responsibility of the individual owning the property. All belongings must be kept in the individual's room. We are not responsible for theft, damage, or loss of property by any means. Do not bring valuables or a significant amount of cash! Do not buy, trade or borrow anything from residents or staff. Any personal property left at the Evolution House will be stored for 7 days. After that point it will be donated. If discharge occurs after business hours or on the weekend, the individual must return within the next week (M-F from 9am-5pm) in order to receive their medication. After that point, the medication will be destroyed.

SEARCH POLICY

Evolution House staff at any point during a resident's stay can search a resident's personal property or person without notice and without the client present. These circumstances include, but are not limited to, a suspicion involving drugs, alcohol, electronics, banned items or weapons in a residents' possession, or any other scenario where other residents and/or the safety of the Treatment Center as a whole are in jeopardy. In the event a search is deemed necessary, Evolution staff and or Peer will conduct the search. This search policy is for the safety of the house and to uphold the atmosphere of recovery and code of ethics in Evolution House. Any prohibited or illegal items can be confiscated. Certain items will be returned upon discharge at the discretion of the staff.

DRUG TESTING POLICY

Drug testing is performed on a random and regular basis. Drug tests will be administered after any vacations, overnight stays, suspicious activity, or randomly. If you refuse to take a drug test, it will be taken as a positive test result. A urine sample must be submitted within 1 hour of the request to

be tested. We will do a presumptive drug test on the spot and then to ensure accuracy the sample will be run through a definitive drug screen. A positive drug screen will be taken on a case by case basis and could lead to an exit from the program. If asked to leave the house, a list of recovery-related resources will be provided.

DRESS CODE

Make sure that you are covered up at all times when you are not in your room. Do not wear clothing with drug or alcohol references of any kind while you are resident of the Evolution House Treatment Center.

PHONE POLICY

Your phone is a privilege; it may be taken away for disciplinary infractions at any time during your stay at Evolution House.

MEDICATION POLICY

All medications must be given to a Peer & kept locked in the med room, to include OTC meds and prescription medications. Keeping any type of meds or supplements in your room/car is a serious rule violation and will be dealt with accordingly.

It is your responsibility to ask the peer on duty for your medication during the times allotted.

You will not be given medication outside of these windows. If you miss a window, you must wait until the next one to get your medicine.

Medication Disbursement Windows

Morning: 6:00am to 8:00 am

Afternoon: 2:30pm to 4:30pm

Night: 8:30pm to 10:30pm

BANNED SUBSTANCE LIST

This list is just examples of some of the drugs that are not allowed but in no way represents a comprehensive list. **If you are using anything to get high or change the way you feel, it is not allowed.**

Alcohol	Over-the-Counter
Ayahuasca	Loperamide
Cannabis (Marijuana/Pot/Weed)	PCP (Angel Dust)
Central Nervous System Depressants (Benzos)	Prescription Opioids (Oxy/Peres)
Cocaine (Coke/Crack)	Prescription Stimulants (Speed)
GHB	Psilocybin (Magic Mushrooms/Shrooms)
Hallucinogens	Rohypnol® (Flunitrazepam/Roofies)
Heroin	Salvia
Inhalants	Steroids (Anabolic)
Ketamine	Synthetic Cannabinoids (K2/Spice /Delta 8)
Khat	Synthetic Cathinones (Bath Salts/Flakka)
Kratom	Research Chemicals
LSD (Acid)	THC delta 8
MDMA (Ecstasy/Molly)	Other legal highs
Mescaline (Peyote)	
Methamphetamine (Crystal/Meth)	
Dextromethorphan (DXM)	

ADVANCED DIRECTIVE

A mental health advance directive is a written document that describes what you want to happen if you become so incapacitated by mental illness that your judgment is impaired and/or you are unable to communicate effectively. It can inform others about what treatment you want or do not want, and it can identify a person to whom you have given the authority to make decisions on your behalf. The law requires mental health providers to respect your mental health advance directive, but they are not required to follow it in all cases. If instructions or preferences in your mental health advance directive are against hospital policy, are unavailable, or would violate state or federal law or immediately endanger you or others, providers are not obligated to comply with those provisions. Also, if you are involuntarily hospitalized under the Involuntary Treatment Act, or are incarcerated in jail, your mental health advance directive may not be fully honored. If you are interested in creating an advanced directive, Evo Treatment Center will be happy to help. Please ask the Peer on staff to coordinate time for human resources to help you fill one out.

NON-DISCRIMINATION POLICY

Evolution House does not and shall not discriminate on the basis of race, color, religion (creed), gender, gender expression, age, national origin (ancestry), disability, marital status, sexual orientation, or military status in any of its activities or operations. These activities include, but are not limited to, hiring and firing of staff, selection of volunteers and vendors, and provision of services. We are committed to providing an inclusive and welcoming environment for all members of our staff, guests, volunteers, subcontractors, vendors, and residents.

It is Your.... **Right**

- To Be Treated With Dignity And Respect
- To Be Told About Your Treatment
- To Have A Say In Your Treatment
- To Have Your Complaints Resolved
- To Speak To Others In Private
- To Say What You Prefer
- To Ask Questions And Be Told About Your Rights
- To Get Help With Your Rights

DISCIPLINARY ACTION PLAN

Our goal is that Evolution House is among the finest, cleanest, and most effective treatment centers in the State of Virginia— Specializing in providing the highest quality of care to help our residents recover from substance use disorder. Part of what makes us great is that we all work as a team, and have all agreed to uphold these standards of excellence.

As a resident you are the most important player in helping us achieve our collective goals. Upon entering Evolution House, you agreed to follow the rules of the program. This program is designed to stretch you outside of your comfort zone; to break old patterns and habits.

In an effort to help you grow, we will hold you accountable in the following way:

- ☐ 1st Verbal Discussion
- ☐ 1st Written Note - Clarify the behavioral standards
- ☐ 2nd Written Note - Phone is taken away
- ☐ 3rd Written Note - Potential discharge

Some issues can be escalated to 2nd or 3rd violations based on safety and severity of the circumstance. Certain actions & illegal conduct is not subject to progressive discipline and may result in immediate discharge. Theft, substance use, intoxication, fighting and other acts of violence are excluded from progressive discipline and may be grounds for immediate dismissal from the program.

Grievance Policy and Human Rights

Evo Recovery Treatment Center has a Human Rights Coordinator that can assist you with the complaint and grievance process. This person also monitors staff and all programs and services to ensure that no client or family is experiencing abuse, neglect, and/or exploitation or any type.

What is a Complaint?

A complaint is an informal way the state allows you to express your dissatisfaction with Evo Treatment Center and/or its affiliates. It is a good idea to try to resolve your complaint with the person directly involved or ask our Human Rights Advocate to assist you before you try other things. Explain your concern. Let the person know what would work better for you. Be clear about what your complaint is. Also, be clear about what an acceptable solution will be. Try to find some ways to reach an agreement that will satisfy both you and the other person.

What is a Grievance?

There are two types of formal complaints that you may make. One type is an appeal, which is a formal complaint about an action. An action is a denial, suspension, reduction, or termination of certain services. See below for a description of the appeal process. The second type is a grievance, which is a formal complaint about any other issue.

The purpose of this policy and procedure is to prevent and resolve conflict. Evo Treatment Center acknowledges that any client, who has a grievance or is dissatisfied with any matter concerning the programs, services or staff at Evo Treatment Center, will have the right to file a grievance. Evo Treatment Center will consider and attempt to resolve any grievance in a timely manner.

Any client or group of clients may lodge a grievance of direct concern to the client in terms of the grievance procedure. Management will consider all grievances in a fair and just manner. No harassment of any client who has filed a grievance will be tolerated. Evo Treatment Center will allow parties to call witnesses to testify. Evo Treatment Center will question witnesses if necessary. The investigation will not proceed if the aggrieved party is not present. Any client lodging a grievance may be accompanied and represented at any stage of the procedure by a colleague of his/her choice. The grievance procedure may be used by all clients of Evo Treatment Center.

Step 1: Lodge Complaint

A client who has a grievance must first notify his/her assigned counselor, who will attempt to resolve the issue within 24 hours of the issue being raised. The manager will inform Human Resources of the grievance.

If the client is not satisfied with his/her counselor's/case manager's decision, then the client will have the right to raise a formal grievance with the next level of Management within two work days of the supervisor's/manager's decision.

Step 2: Formal Grievance

If the client is not satisfied with the case manager's decision or if the grievance poses concerns for the client's case manager, then the client shall complete a formal Grievance Form and submit the form to the Management Team within two work days of the case manager's decision.

The Management Team will schedule a meeting within three business days after having received the formal Grievance Form. The time period may be extended upon agreement by the parties concerned.

The Management Team will review the information. The individual filing the formal grievance may be called to attend a meeting if deemed necessary by the Management Team. In the event that a meeting is deemed necessary, the meeting should be attended by the client, case manager, or the immediate supervisor, and will be chaired by the manager. In any meeting conducted by the Management Team, with or without the presence of the client, the manager will ensure that minutes are kept of the meeting, whether written or on a tape recording device; however, any decision made will be recorded on the Formal Grievance Form by the manager.

If no satisfactory resolution or decision is reached within two work days of the meeting, The Management Team will assist the client with the next step. This will be noted on the formal Grievance Form, and the client will be advised to take the issue to the Human Rights Advocate. This step should be done within two business days.

Step 3: Human Rights Advocate

This is the highest level within the Company's appointing authority. The Management Team (in step 2) will advise the Human Rights Advocate who will review all documents pertaining to the incident. The Human Rights Advocate will provide the client with the company's decision in writing within two business days. The decision made by the Human Rights Advocate will be final. The Human Rights Advocate will advise the client of their rights if the decision reached is not found to be satisfactory by the client. The Human Rights Advocate will supply further contact information for contacting the Local and State Human Rights Committee, if necessary.

Your Human Rights Advocates are:

Rebecca Waton RPRS 757-705-3202

Jay Sexton 757-345-1656

Notice of Privacy Practice We are required by law to keep your protected health information (PHI) private in many situations, to inform you of these practices and to follow the practices set forth. Disclosing and Using Your Information With Your Consent When you begin receiving care from Evolution House, we will ask you (or your legally authorized representative) to sign a consent form that will permit us to provide care for you. Please ask the peer on staff to coordinate time for human resources to help you fill one out.

Substance Abuse Intensive Outpatient Program (SA IOP): This ASAM Level 2.1 highly structured program utilizes Licensed Clinicians (LPC, LCSW), Certified Substance Abuse Counselors (CSAC), and Peer Recovery Specialists (RPRS) to provide clinical group individual, and family therapy between 19-hours (max) and 9-hours for

adults or 6-hours for “young adults” (adolescents age 18-21). SA IOP will supply a therapeutic environment including counseling and rehabilitative therapies, integrated psychiatric and medical treatment, Medication Assisted Treatment (MAT), Primary Medical Care (PCP), community-based case management, and recovery support services to meet the holistic needs of our clients. In addition to urine drug screening, Medication Management, & MAT, SA IOP staff will remain on-call 24hrs/7days per week to provide SA Crisis Intervention coverage outside of daily program hours.

Substance Abuse Case Management (SACM): Evolution House's SA IOP program utilizes CSAC-A's to provide SA Case Management services assisting our clients and their family members in accessing and coordinating needed services including specialist medical, psychiatric, and psychological treatments as well as social, educational, vocational, veterans employment, and recovery supports in the community essential to meeting their basic needs. Incorporating person-centered, individualized, culturally and linguistically appropriate approaches based on identified patient and family member's needs, CSAC-A Case Managers will maintain consistent communication and involvement to ensure the consistency and effectiveness of ASAM's integrative multidisciplinary treatment philosophy including: a) sharing of important clinical information between participating providers on behalf of individuals and families; b) accompanying / advocating for individuals when necessary to strengthen engagement of participant with all multidisciplinary service providers involved; and c) working together to keep individuals and their families involved and informed throughout community reintegration.

Outpatient Therapy (OP): Evolution House's unwavering commitment is to facilitate holistic recovery within community-based care through wrap-around service provision fueled by strategic leadership, creative ingenuity, and continuous quality improvement. Our flagship Outpatient practice is committed to integrating behavioral health into primary care.

Residential Services: ERS incorporates peer recovery specialists to provide 24-hr.

(ASAM L3.1) Clinically Managed Low-Intensity Residential Treatment for substance use and co-occurring disorders. Provided in a smaller traditional behavioral health home setting instead of a hospital or psychiatric facility, this transitional residential service includes 5-hrs./week of on-site clinical treatment in combination with peer recovery support providing a cost-effective alternative, which can be combined with SA IOP/OP services as needed.

Service Goals - §580. C.1.

Our goal is to forge a model program for efficient delivery of integrated substance abuse, psychiatric, and primary healthcare treatment services that raises local quality standards and promotes the following patient outcomes:

1. Increase personal insight, learning, and applying recovery skills.
2. Maintain extended abstinence, prevent relapse, and engage in active long-term recovery.
3. Provide healing for underlying emotional wounds, grief, and painful trauma from past experiences that perpetuates substance abuse.
4. Promote disease self-management through mastery of advanced mindfulness skills increasing frustration tolerance and independence.
5. Promote systemic healing in families through warm familial engagement in treatment to rebuild protective and positive natural supports.

Philosophy of Service

Evolution House takes pride in providing quality community-based services, substance abuse care, and therapy. Our team of licensed clinical social workers and professional counselors, licensed-eligible mental health professionals, certified substance abuse counselors, and other qualified mental health professionals are available for your needs. We believe that addiction is a chronic relapsing disease that requires individually tailored therapeutic treatment, relapse prevention, and recovery strategies that look different for each person to be successful.

Structured Program of Care

Evolution House's Structured Program of Care is defined as a comprehensive and planned daily, weekly, monthly routine, including appropriate supervision that meets the needs of the client and their family (if applicable) that includes, but is not limited to:

- ASAM Multidimensional assessment / diagnostic evaluation
- Comprehensive Needs Assessment
- Individualized Service Planning
- Group Counseling including:

- Addiction & Mental Illness Psychoeducation
- Mindfulness Skills Training
- Relapse Prevention Therapy / Interactive Feedback
- Individual Psychotherapy
- Integrated Psychiatric / Medical Care
- Medication Assisted Treatment (Vivitrol & Buprenorphine – referrals to OTP)
- Urine Drug Screening
- Interdisciplinary Treatment Team Meetings
- Skill Building
- Recovery Support Services
- Care coordination
- Discharge Planning
- Substance Abuse Case Management
- Client Advocacy

My signature below indicates that I have reviewed, clearly understand, and am providing informed consent for all necessary release / sharing of Protected Health Information between my Evolution House treatment team of interdisciplinary providers and staff members at their discretion across all services in the aforementioned description including:

- Evolution Recovery Services, LLC
- Dr. Bruce Mayer, MD

FREEDOM OF CHOICE STATEMENT

I, the Client, am making the decision/choice under the DMAS Freedom of Choice provision, which includes both my freedom to choose and/or reject services from any provider participating in the Medicaid program. Under this provision, I request services from 1 NPI#: 1063093748 on the date of signing.

I attest that I have not received any compensation in exchange for my request to participate in services with Evolution Recovery Services, LLC., and am choosing to do so without being solicited, coerced, bribed or threatened in any way to sign this document. I acknowledge that Evolution Recovery Services, LLC has made all reasonable attempts to educate me regarding my rights to choose a provider(s).

NOTIFICATION OF HUMAN RIGHTS

As an Individual receiving services with Evolution Recovery Services, LLC, you will be assured your legal rights and care consistent with basic human dignity insofar as it is within the reasonable capabilities and limitations of the Department of Evolution Recovery and is consistent with sound therapeutic treatment. As a Client/Patient of Evolution Recovery, you will:

1. Retain your legal rights as provided by state and federal law;
2. Receive prompt evaluation and treatment or training about which you are informed insofar as you are capable of understanding;
3. Be treated with dignity as a human being and be free from abuse or neglect;
4. Not be the subject of experimental or investigational research without your prior written and informed consent or that of his legally authorized representative;
5. Be afforded an opportunity to have access to consultation with a private physician at your own expense and, in the case of hazardous treatment or irreversible surgical procedures, have, upon request, an impartial review prior to implementation, except in case of emergency procedures required for the preservation of your health;

6. Be treated under the least restrictive conditions consistent with your condition and not be subjected to unnecessary physical restraint and isolation;
7. Be allowed to send and receive sealed letter mail;
8. Have access to your medical and clinical treatment, training, or habilitation records and be assured of their confidentiality but, notwithstanding other provisions of law, this right shall be limited to access consistent with your condition and sound therapeutic treatment;
9. Have the right to an impartial review of violations of the rights assured under this section and the right of access to legal counsel;
10. Be afforded appropriate opportunities, consistent with your capabilities and capacity, to participate in the development and implementation of your individualized services plan; and
11. Be afforded the opportunity to have a person of your choice notified of your general condition, location, and transfer to another facility.

It is your right...

- To be treated with dignity and respect
- To be told about your treatment
- To have a say in your treatment
- To speak to others in private
- To have your complaints resolved
- To say what you prefer
- To ask questions and be told about your rights
- To get help with your rights
- Address your concerns with your assigned counselor.
- Contact the program contact person for Human Rights listed below.

If after addressing your concern with your counselor and program contact person, you feel your concern has not been resolved to your satisfaction, you may then file a complaint with the Program Contact:

Program Director: Jay Sexton

Clinical Director: Jami Happy

By signing, below, you are acknowledging that you have read and understand your Human Rights as a Client/Patient of Evolution Recovery Services, LLC.

Human Rights Complaint Process

If you believe your human rights have been violated, you have the right to:

Make a complaint that Evolution House has violated any of the rights indicated, above.

Have a timely and fair review of any complaint in accordance to Evolution Recovery's human rights complaint resolution policies and procedures;

1. Make a complaint that Evolution House has violated any of the rights indicated, above.
2. Have someone file a complaint on your behalf;
3. Have a timely and fair review of any complaint in accordance to Evolution Recovery's human rights complaint resolution policies and procedures;
4. Use these and other complaint procedures;
5. Make a complaint under any other applicable law, including to the protection and advocacy agency.
6. Be contacted by the director or the director's designee regarding the complaint within 24 hours;
7. Have access to a human rights advocate for assistance with the complaint;
8. Be protected from retaliation and harm;
9. Have the complaint reviewed, investigated, and resolved as soon as possible;
10. Receive a report with the director's decision and action plan within 10 working days;
11. Be notified in writing of his right to and the process for appealing the director's decision and action plan to the LHRC.

Finally, if you do not feel your concern has been resolved after filing a formal complaint, you may contact the Human Rights Officer, Jay Sexton.

RELEASE OF LIABILITY WAIVER

I, the Client, on the behalf of myself as he is over age 18.

I hereby assume all risk of personal injury, sickness, death, damage and expense as a result of participation in any Evolution Recovery Services service, activity or event to include, but not limited to: home visits, school visits, community outings, case management, discharge from services without medical advice, vehicles during transportation, property of Evolution Recovery, behavior management system, bodily search, administration of medication, engaging with staff, volunteers, or agents of Evolution Recovery or other activities related to treatment services.

I do hereby release, forever discharge and agree to hold harmless: Evolution Recovery and its owners, directors, employees, contractors, students, interns, and volunteers from any and all liability, claims, or demands for personal injury, sickness, death, damage or expense of any nature which may be incurred by the undersigned and/or child while participating in any service, event or activity of Evolution Recovery. This includes, but is not limited to: home visits, school visits, community outings, case management, discharge from services without medical advice, vehicles during transportation, property of Evolution Recovery behavior management system, bodily search, administration of medication, engaging with staff, volunteers, or agents of Evolution Recovery or other activities related to treatment services.

I also further authorize Evolution Recovery Services to provide psychiatric, psychosocial, psychotherapeutic, and supportive services and care to myself or my child and to obtain medical care from any licensed physician or hospital should participant(s) become injured. I assume the responsibility of any emergency medical bills, if any.

Without limiting the scope of the release, waiver and hold harmless set forth above, and my assumption of risk, I understand that this document will prohibit me from bringing a lawsuit or otherwise claiming damages against Evolution Recovery or any of its affiliates. By signing this waiver, I agree to all of the contents contained therein:

- Mission, Vision and Philosophy of Evolution Recovery Services, LLC
- Introduction of Services Provided, Treatment Strategies and Service
- DSM-IV Mental Health Diagnosis Statement
- Client Bill of Rights and Responsibilities: Participation in treatment and discharge; Confidentiality Practices, and Authorizations (HIPAA)
- Freedom of Choice and Title VI of the Civil Rights Act of 1964 Statements
- Advanced Directive
- Grievance Policy: Human Rights Policies and Reporting Violations
- Notice of Privacy Practices: Protected Health Information
- General Policies and Procedures: Hours and days of operation, Emergency contact numbers, After-hour services,
- General Policies and Procedures: Behavior Management Policy
- General Policies and Procedures: Emergency Preparedness and Fire Safety
- General Policies and Procedures: Building Layout and Evacuation Plans
- Program Specific Policies and Procedures: Program Handbook/Parental Support
- Program Specific Policies and Procedures: Urine Drug Screening Policy/Procedures
- Staff Introduction and Contact Information

ACKNOWLEDGMENT

I, the undersigned, do agree that the contents of the client orientation as well as other programs and services have been thoroughly explained to me by Evolution Recovery Services, LLC.

Client Information

Client Bill of Rights and Responsibilities - §150. Compliance with applicable laws, regulations and policies.

Every client receiving services from Evolution Recovery Services, LLC has inherent rights and responsibilities. These Client Rights and Responsibilities are discussed during the assessment/admission process, distributed to

clients via this Program and Client Handbook and are posted in all our facilities. Additionally, our professionals receive annual training on various topics related to providing and protecting client's rights and responsibilities. Prior to the beginning of treatment services, you will read and are asked to sign the Client Orientation Checklist, which acknowledges your voluntary participation in Evolution House programs and services, your understanding of these client rights and responsibilities, and other important aspects of your health care.

Client Rights

Professional Standards

- The right to quality care delivered by professionals who have met all pertinent requirements.
- The right to quality healthcare that is professional and courteous, which does not discriminate because of age, race, disability, national origin, religious beliefs, gender, sexual orientation, political affiliations or veteran status. You have a right to healthcare that is free from harassment of any kind.
- The right to safe care that is delivered in a facility that complies with safety standards. You have a right to know what measures are taken to assure your safety such as emergency preparedness drills, fire drills and inspections.

Treatment Participation

- The right to participate in the development and review of your treatment plan, including known effects of receiving or not receiving such treatment and alternative treatment as may be available.
- The right to receive care that is medically necessary.
- The right to refuse treatment against medical advice to the extent permitted by law. If you refuse the recommended treatment and/or leave any program or service against advice, neither Evolution House, any employee of Evolution House, nor our related contractors will be held responsible for any harm to you or others as a result of this action.
- The right to choose another provider at any time.

Least Restrictive Setting

- The right to receive treatment in the least restrictive setting that responds to your treatment needs.
- The right to have freedom from seclusion and restraints used for the management of behavior unless clinically required.

Confidentiality - §130. Confidentiality of records; §870. Written records management policy.

- The right to confidential maintenance of information about yourself and treatment received. We may not tell a person outside this agency that you attend our programs or discuss any information identifying you as a client within our services without your written authorization, unless compelled by law (including court orders, medical emergency, insurance inquiry or requests for subsequent authorization of services, suspected abuse or neglect, to report a crime, or a threat to harm someone, etc.).
- The right to have your records kept in a locked file in a locked room and/or maintained electronically in accordance with HIPAA regulations.

Access to Information and Records

- The right to inspect your own record in the presence of your primary MHC or agency representative and, under most conditions, the right to have a copy of your own record at your expense.
- The right to access information in sufficient time to facilitate your decision-making.
- The right to ask your healthcare provider for current information in understandable terms regarding your diagnosis, treatment, and anticipated outcome.

Constitutional/Civil Rights

- The right to exercise constitutional, statutory, and civil rights, except those denied or limited by court action. No person shall, on the grounds of race, religion, ethnicity, color, national origin, ancestry, age, handicap, or sexual preference, be excluded from participation in, be denied the benefit of, or be otherwise subjected to discrimination under any program or activity of the Evolution House in the provision of its services.

Protection from Abuse, Neglect, or Exploitation

- The right to humane care and protection from harm. Staff members are prohibited from any use of psychological abuse, including humiliating, threatening, and exploiting actions. All instances of abuse, neglect or exploitation should be reported to Evolution House staff immediately.

Waivers

- The right to waive your rights. At no time will admission to services be conditional upon a person's waiver of their rights. However, you retain the option to waive any of your rights. Such a waiver must be given

voluntarily, knowingly, and in writing and can be withdrawn at any time.

Informed Consent

- The right to have informed consent, refusal, or expression of choice regarding: 1) the delivery of services; 2) release of confidential information; 3) any concurrent services; or 4) the composition of your treatment team.
- The right to have your guardian, next of kin, or legally authorized responsible person be granted the right to exercise, to the extent permitted by law, your rights if you have been declared incompetent in accordance with the law; are found by your health care provider to be medically incapable of understanding the proposed treatment or procedure; are unable to communicate your wishes regarding treatment; or are a minor.

Legal Counsel

- The right to contact or consult with legal counsel of your choice at your own expense.

Consumer Advocate: Questions, Concerns, Complaints, or Grievances (see page 8 for explanation of these terms)

- The right to have your questions answered, to make complaints about services you receive, violations of these rights, and to have those complaints heard and addressed promptly.
- If you have a grievance or complaint, Evolution House staff will contact you within 3 days to discuss the complaint and update you as to the status of the investigation.

Financial: Explanation of Treatment Fees and your Bill

- The right to information regarding fees for services and programs. This includes being notified of what services may be involved, additional charges, the nature of the charges and methods of payment.
- The right to information about your bill. (Medicaid does not allow providers to furnish a copy of the bill to the client.)
- The right to inquire about financial assistance in paying your bill.
- If a client meets the criteria for "failed services" (as set forth by DMAS and defined as the services not effectively treating or resolving the client's mental health and/or behavioral issues within a certain timeframe), they have the right to be referred to an appropriate or alternative level of service.

If you feel, at any time throughout your treatment, that your rights have been or may be violated, you may ask questions, file a complaint or discuss the matter with the Program Director, Chief Clinical Officer, CEO, or human rights program advocates listed in this handbook in the Grievance section. These individuals are program supervisors ethically committed to protecting your human rights and providing non-judgmental guidance / assistance in navigating the complaint resolution process. If you feel that you need additional, outside assistance concerning your rights, you may contact the Regional Advocate for Human Rights for Region 4: Sharae Henderson – 804-524-7479.

Client Responsibilities

- Provide accurate and complete information about your past illnesses, hospitalizations, medications, other matters relating to your health, and to answer any questions concerning these matters.
- Inform staff immediately if you are experiencing homicidal or suicidal ideations.
- Ask questions if you do not understand the explanation of your diagnosis, treatment, prognosis, or any instructions.
- Cooperate with health care staff by following instructions concerning medications, follow-up visits, education recommendations, other essential steps in your treatment plan, and to notify your health care provider if this plan cannot be followed or if problems develop.
- Inform your pharmacist when having prescriptions filled about prescription and over-the-counter medications you are currently taking.
- Inform Evolution House or any of its professionals of the existence of any advance directive (including health care proxy, power of attorney, DNR, living will) you may have created.
- Conduct yourself in an appropriate manner. Rule violations or behaviors that interfere with the treatment process may lead to a limitation or termination of service. In some cases, the police may be called. Visitors and staff shall not: 1) carry or be under the influence of intoxicating beverages or illegal substances; 2) steal, attempt to steal, or deface property of Evolution House; 3) assault or sexually harass anyone; 4) possess firearms or dangerous weapons; 5) threaten, intimidate, harass, coerce, or interfere with other people; 6) falsify information provided to Evolution House; or 7) smoke inside any Evolution House facilities. Services may also be limited or terminated if a client fails to keep their scheduled appointments.

Transportation

Medicaid will only reimburse for services provided as defined as clinically necessary in the client's ISP. To promote independent living skills and long-term community stabilization

After these time-limited services are no longer deemed clinically necessary, Evolution House provides coordination of transportation assistance which may include connection to agencies licensed to provide transportation assistance (e.g., care vans) to medical appointments and activities required for the client to access/utilize public transportation. Ability to access transportation services is determined by your MHC and clinical treatment team. We do not unfortunately provide clients with bus tickets or any other form of financial assistance. Evolution House is not a Non-Emergency Medical Transportation (NEMT) provider.

Freedom of Choice and Title VI of the Civil Rights Act of 1964 Statements

You may choose your mental health care provider in Virginia. You have the right to change mental health care providers at any time. You can also ask for a change for any reason. If you think you have a good reason, you can ask for additional changes. The change may or may not be granted depending on the circumstances.

Evolution complies with the Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. §§ 2000d through 2000d-4a), which requires that no person be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance on the grounds of race, color, or national origin; as well as the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which states that no otherwise qualified client with a disability shall, solely by reason of her or his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. The Act requires reasonable accommodations for certain persons with disabilities.

Evolution agrees to hold information regarding recipients confidential. A provider shall disclose information in his/her possession only when the information is used in conjunction with a claim for health benefits or the data necessary for the functioning of the state agency.

By signing the corresponding Freedom of Choice Statement below and after carefully reading and having Evolution House explain this document, you attest that neither you nor your dependents have been coerced, bribed, offered money or favors for requesting services and choose to participate in services offered by Evolution House Comprehensive Counseling Services, Inc., Evolution House Integrative Counseling, and/or Evolution House Residential Services, LLC.

HIPAA Notice Privacy Practices

THIS NOTICE DESCRIBES HOW MEDICAL INFORMATION ABOUT YOU MAY BE USED AND DISCLOSED AND HOW YOU CAN GET ACCESS YOUR INFORMATION.

If you have any questions about this notice, please contact Rebecca Watson at 540-290-0718.

WHO WILL FOLLOW THIS NOTICE?

- Any employee, staff and clinical personnel
- Any healthcare professional authorized to enter information into your medical chart

OUR PLEDGE REGARDING MEDICAL INFORMATION

We understand that your health information is personal, and we are committed to protecting it. We create a record of care and service you receive. We need this record to provide you with quality care and to comply with certain legal requirements. This notice applies to all the records of your care generated by Evolution House, whether made by organization's personnel or your personal doctor. Your personal doctor may have different policies or notices regarding the doctor's use and disclosure of your medical information created in the doctor's office or clinic.

- This notice will tell you about the ways in which we may use and disclose medical information about you. We also describe your rights and certain obligations we have regarding the use and disclosure of medical information.
 - Make sure the medical information that identifies you is kept private
 - Give you this notice of our legal duties and privacy practices respect to medical information about you
 - Follow the terms of the notice that is currently in effect

HOW WE MAY USE AND DISCLOSE MEDICAL INFORMATION ABOUT YOU

The following categories describe different ways that we use and disclose medical information. For each category used or disclosed, we will explain what we mean and try to give some examples. Not every use of disclosure in a category will be listed. However, all the ways we are permitted to use and disclose information will fall within one of the categories.

- **FOR TREATMENT:** We may use medical information about you to provide you with medical treatment or services. We may disclose medical information about you to doctors, nurses, clinician, direct care staff and

others who are involved in taking care of you. For example, a doctor treating you for a mental illness may need to know if you have diabetes since this may affect your ability to recover. We also may disclose medical information about you to people outside the organization who may be involved in your medical care after you leave the organization, such as therapists, physicians, family members and or others we use to provide services that are part of your care. Your protected health information will be maintained in the Electronic Medical Record, KIPU

- FOR PAYMENT: We may use and disclose medical information about you so that the treatment and services you receive may be billed to and payment collected from DBHDS or third party.

HIPAA PRIVACY NOTICE ACKNOWLEDGEMENT

Once Notice of Privacy Practices provides information about how we may use and disclose protected health information about you, your signature below indicates that you have received and had an opportunity to restrict the use and/or disclosure of your protected health information as allowed by law.

Evolution House Contract

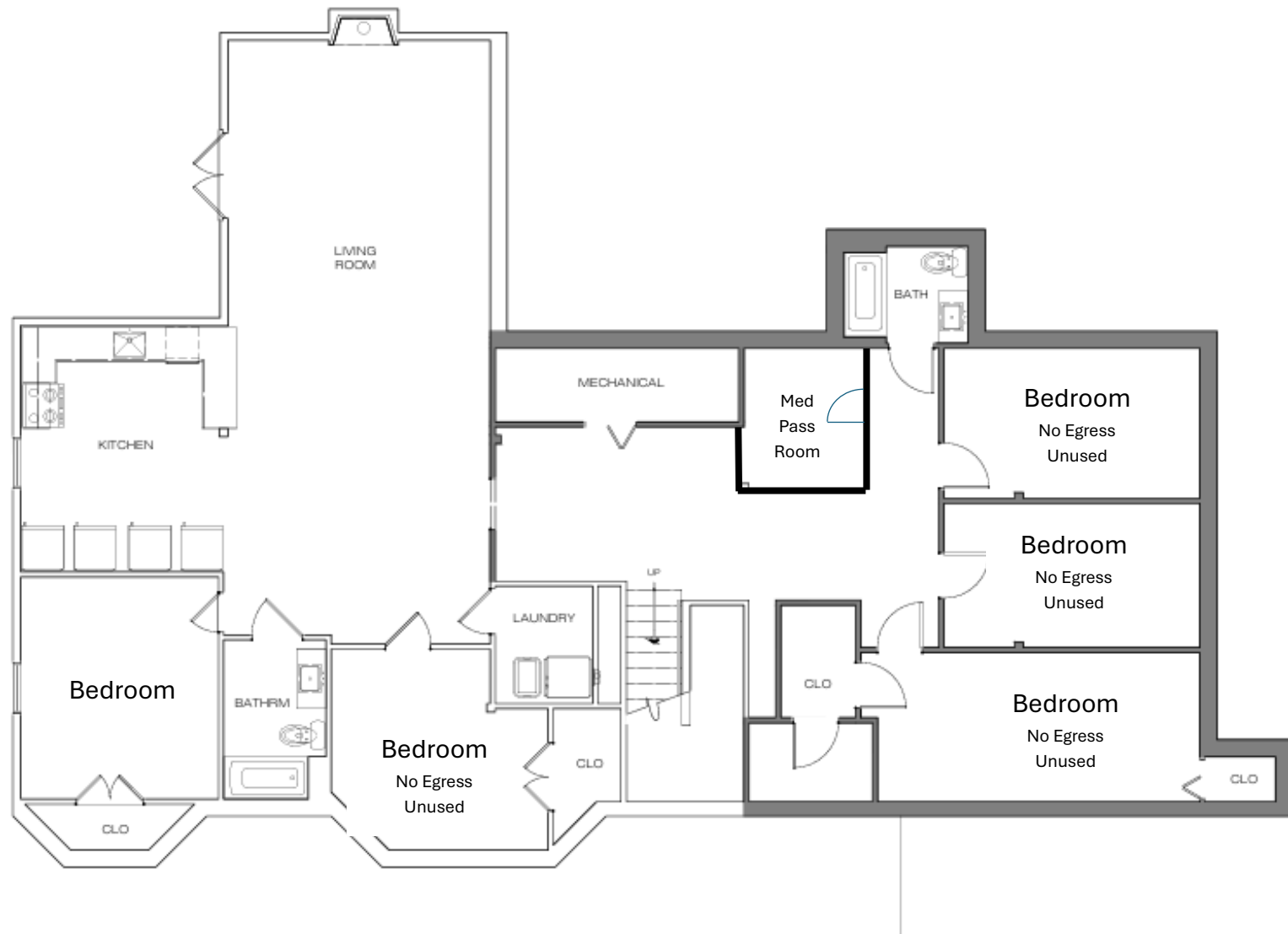
Evolution House rules have been explained to me so that I understand them. I have read and fully understand the contents of all these documents in the Resident Handbook

I agree to all terms, conditions, policies, and requirements. By signing, I agree to follow Evolution House rules at all times and understand failure to comply can result in discharge from the program.

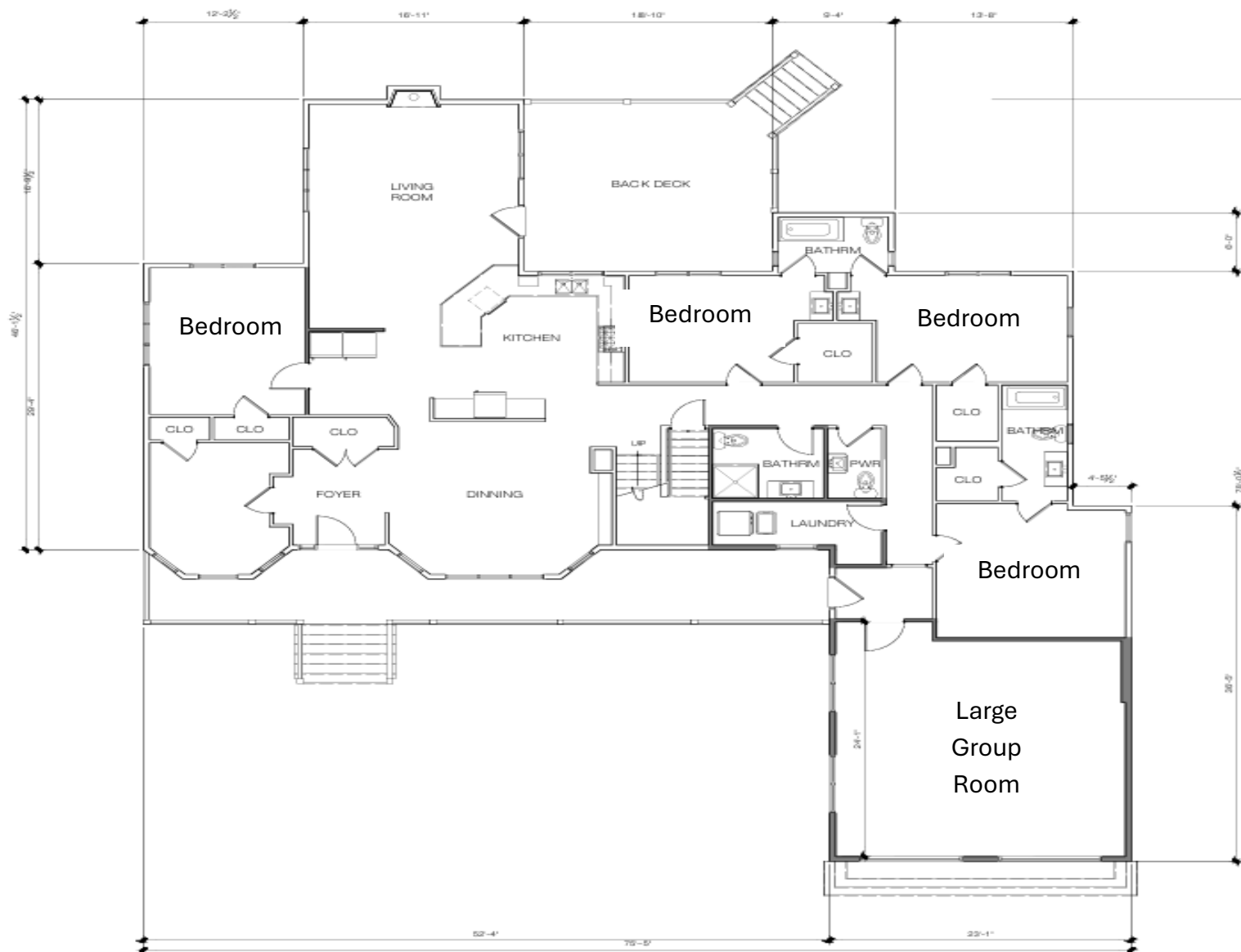
Name Printed: _____

Signature: _____ Date: _____¹

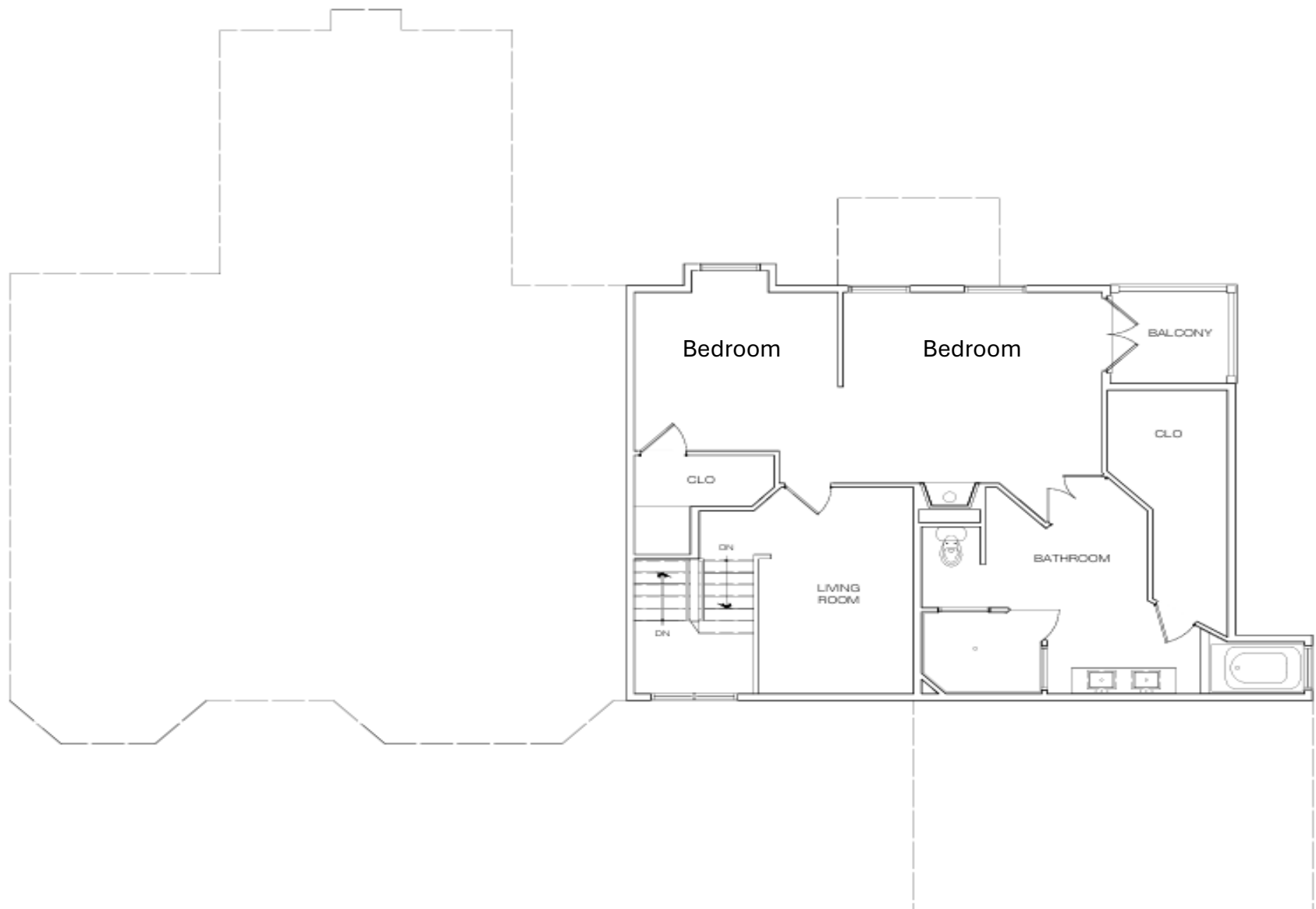
¹ Sign and give back this copy.



EXISTING BASEMENT PLAN



EXISTING FIRST FLOOR PLAN



EXISTING SECOND FLOOR PLAN

MINUTES
JAMES CITY COUNTY PLANNING COMMISSION
REGULAR MEETING
COUNTY GOVERNMENT CENTER BOARD ROOM
101 MOUNTS BAY ROAD, WILLIAMSBURG, VA 23185
May 7, 2025
6:00 PM

A. CALL TO ORDER

Mr. Haldeman called the meeting to order at 6 p.m.

B. ROLL CALL

Planning Commissioners Present:

Jack Haldeman, Chair
Kira Allmann, Vice Chair
Frank Polster
Stephen Rodgers
Jay Everson
Scott Maye
Crystal Haskins

Staff Present:

Bradley Rinehimer, Assistant County Administrator
Paul Holt, Director of Community Development
Susan Istenes, Director of Planning
Liz Parman, Deputy County Attorney
Morgan Risinger, Senior Planner
Allison Jackura, Senior Planner
Linda Titus, Community Development Assistant
Hannah Hunnicutt, Community Development Assistant

C. PUBLIC COMMENT

Mr. Haldeman opened Public Comment.

Chris Henderson, 101 Keystone, Williamsburg, VA, addressed the Commission.

Mr. Haldeman closed the Public Comment.

D. REPORTS OF THE COMMISSION

Mr. Rodgers stated that the Development Review Committee (DRC) did not meet in April.

Mr. Everson stated that the Policy Committee met on April 24, 2025, to discuss amendments to the Zoning Ordinance regarding sexually oriented businesses. The Policy Committee voted (5-0) to accept staff's recommendation to require a Special Use Permit (SUP) in areas zoned Limited Business, General Business, and Limited Business/Industrial.

E. CONSENT AGENDA

1. Minutes of the April 2, 2025, Regular Meeting

Mr. Everson made a motion to approve the Consent Agenda.

On a voice vote, the Commission voted to approve the motion. (7-0)

F. PUBLIC HEARING(S)

1. SUP-25-0002. 2010 Old Route 60 West Evolution House Group Home

Ms. Allison Jackura, Senior Planner, stated that Mr. Greg Davis had applied for an SUP at 2010 Old Route 60 West, to operate a group home with more than eight residents. Ms. Jackura stated that the property is zoned A-1, General Agricultural, and designated as Rural Lands according to the Comprehensive Plan. Ms. Jackura noted that the proposal is to occupy the single-family home currently on the property.

Ms. Jackura stated that according to the Federal Fair Housing Act, recovering from addiction is considered a disability and it is prohibited by law to discriminate in housing based upon a person's disability. Ms. Jackura explained that an SUP is required for a group home in A-1, General Agricultural, when there are more than eight individuals being housed.

Ms. Jackura stated that the applicant requested to house up to 24 residents with on-site staff. Ms. Jackura explained that this number of residents is dependent on the updated Certificate of Occupancy, updated Change of Use for the septic permit from the Department of Health, and state licensing from the Virginia Department of Behavioral Health and Developmental Services (DBHDS). Ms. Jackura noted that the applicant has already obtained a license to house 24 individuals from DBHDS.

Ms. Jackura stated that the applicant is proposing to always have staff on-site, and parking is proposed for the vans that shuttle individuals to various activities and occasional visitors. Ms. Jackura explained that the proposed condition from staff would only allow parking on the existing parking area in front of the house and next to the accessory structures to allow for fire access along the driveway.

Ms. Jackura explained that the Comprehensive Plan had housing goals to support diversity of housing and housing for those with disabilities. Ms. Jackura stated that this proposal did fulfill the housing objective needed for the County.

Ms. Jackura stated that with the proposed conditions and objectives of the Comprehensive Plan, staff recommended approval of this application for approval subject to the proposed conditions.

Mr. Haldeman disclosed that he had a conversation with the applicant's attorney prior to the meeting.

Mr. Haldeman opened the Public Hearing.

Mr. Greg Davis of Kaufman & Canoles P.C., 4801 Courthouse Street, Williamsburg, VA, addressed the Commission stating that he was representing Evolution House. Mr. Davis explained that Evolution House has six locations in the Tidewater area, each licensed by the DBHDS. Mr. Davis noted that the residents at Evolution House were there on a voluntary basis, not from court-ordered detention or treatment programs, and that they have a success rate that is 30% higher than the national average.

Mr. Davis noted that the neighboring properties to Evolution House were Empire Metal Services and the home of Mr. Brian Johnson and his business, Williamsburg Heating and Air Conditioning, Inc. Mr. Davis explained that Mr. Johnson's house measures approximately 400 feet from Evolution House and there is significantly rough terrain and wooded areas that separate the properties. Mr. Davis noted that there were approximately 55 acres between the properties to the rear of Evolution House.

Mr. Davis explained that residents of Evolution House were subject to house rules, curfews, trespassing, and drug testing requirements with a zero-tolerance policy. Mr. Davis stated that the facility is always staffed with trained professionals. Mr. Davis noted that there were limited traffic and parking concerns as the residents typically do not bring vehicles but were shuttled via van to various appointments and activities.

Mr. Davis stated that Evolution House had erected a privacy fence around the property prior to the application being submitted. Mr. Davis noted that No Trespassing signs would be placed along the fence per the SUP conditions.

Mr. Davis explained that the SUP conditions include not permitting sex offenders as residents, screening of applicants with felony convictions, and an annual report to the Police Chief and Zoning Administrator to report screened residents and occupancy.

Mr. Rodgers asked Mr. Davis how many bedrooms would be housing the proposed 24 residents.

Mr. Davis stated that there would be a two-resident maximum per bedroom.

Mr. Henry Strautman, 3809 E Steeplechase Way, Williamsburg, VA, addressed the Commission in support of the proposed project.

Mr. Leland Blanding, 2020 Old Richmond Road West, Toano, VA, addressed the Commission with concerns about the proposed project.

Mr. Chris Henderson, 101 Keystone, Williamsburg, VA, addressed the Commission in support of the proposed project.

Mr. Brian Johnson, 8896 Richmond Road, Toano, VA, addressed the Commission with concerns about the proposed project.

Mr. Haldeman closed the Public Hearing.

Mr. Polster asked Ms. Jackura if a condition could be added for the County to go on-site to verify the occupancy of the house.

Ms. Jackura stated that the current conditions include that a list of occupants must be sent to the Zoning Administrator annually.

Ms. Jackura asked Ms. Parman if such a condition would be possible.

Ms. Parman stated that it would be possible.

Mr. Polster asked Mr. Davis if the applicant would be opposed to adding the proposed condition.

Mr. Davis stated that he would not be opposed.

Discussion ensued.

Mr. Maye stated that he had concerns about the history of violations, but he understood the need for housing programs, such as Evolution House, in the County.

Mr. Haldeman stated that he planned to support this project.

Mr. Everson stated that he intended to support the project as well.

Mr. Haldeman asked for a motion to approve SUP-25-0002. 2010 Old Route 60 West Evolution House Group Home.

Mr. Polster made a motion to approve SUP-25-0002. 2010 Old Route 60 West Evolution House Group Home with the proposed conditions.

On a roll call vote, the Commission voted to recommend approval. (7-0)

2. SUP-25-0003. James City County Government Center

Ms. Morgan Risinger, Senior Planner, addressed the Commission, stating that Mr. Bradley Rinehimer, Assistant County Administrator, had applied on behalf of James City County to construct a government office building exceeding 30,000 square feet of floor area and a public library at 5231, 5255, and 5301 Longhill Road. Ms. Risinger noted that the properties are zoned PL, Public Lands, designated Federal, State, or County Lands on the Comprehensive Plan, located inside the Primary Service Area, and an area adjacent to the James City County Recreation Center.

Ms. Risinger explained that the County conducted a Space Needs Assessment in 2020 to evaluate office space needs for current and projected future staffing levels and further conducted a Facilities Master Plan and a Building Consolidation Study in 2022 which found that the costs of creating a consolidated government office facility would be comparable to the costs of expanding and renovating existing facilities. Ms. Risinger stated that the Board of Supervisors selected the site which had the advantage of being adjacent to the Recreation Center and located near the mean center of the County's population.

Ms. Risinger noted that a stakeholder group was formed, and public meetings were held in 2024 to receive feedback from the community. Ms. Risinger stated that the Board had also directed that the site should include a branch library to address facility needs

for the Williamsburg Regional Library. Ms. Risinger explained that aligning with those studies and the direction of the Board, the proposed master plan included a Government Center building consisting of approximately 178,000 square feet of office space in three stories with underground parking and a public library.

Ms. Risinger explained that a Traffic Impact Analysis (TIA) for the Government Center and library projected that 315 a.m. peak hour trips and 377 p.m. peak hour trips would be generated to the site. Ms. Risinger stated that the TIA recommended that the Longhill Road and DePue Drive intersection be reconstructed as a two-lane roundabout, the DePue Drive and Ashbury Lane intersection be reconstructed as a one-lane roundabout, and the construction of a right-turn lane and taper at the proposed site entrance that aligned with Grand Strand Drive. Ms. Risinger noted that proposed Condition No. 4 would require these improvements to be completed with the project. Ms. Risinger stated that with the improvements, all studied intersections would operate at Level of Service C or better, therefore passing the Adequate Transportation Facilities Test.

Ms. Risinger noted that approximately 551 parking spaces would be provided for the Government Center and library as well as 289 parking spaces for the Recreation Center. Ms. Risinger stated that staff found that this amount of parking and the ability to share the parking for all uses would be adequate for the facilities.

Ms. Risinger explained that landscape buffers would be provided along DePue Drive and Longhill Road meeting the Zoning Ordinance requirements for an average width of 50 feet and a minimum width of 25 feet. Ms. Risinger noted that proposed Condition No. 3 would ensure the facility meets the County's Sustainable Building Policy.

Ms. Risinger explained that in accordance with Section 15.2-2232 of the Code of Virginia, the Planning Commission must review this application to determine whether the location, character, and extent of the project were substantially consistent with the Comprehensive Plan.

Ms. Risinger stated that staff found this proposal to be compatible with surrounding development and consistent with the Comprehensive Plan and Zoning Ordinance and recommended that the Planning Commission recommend approval of this application to the Board of Supervisors, subject to the proposed conditions. Ms. Risinger then stated that staff also recommended that the Planning Commission find this application consistent with the Comprehensive Plan as required by Section 15.2-2232 of the Code of Virginia.

Mr. Everson disclosed that he had a conversation with the applicant before the meeting.

Mr. Haldeman opened the Public Hearing.

Mr. Bradley Rinehimer, Assistant County Administrator, 101 Mounts Bay Road, Williamsburg, VA, gave a brief presentation to the Commission regarding the progress of the proposed government center.

Mr. Polster asked Mr. Rinehimer how many acres of land would be disturbed.

Mr. Rinehimer stated that there would be more than 10 acres disturbed.

Mr. Polster asked if the Special Stormwater Criteria that would be applied to receive the requested five units had been decided.

Mr. Rinehimer stated that there had been discussion about the criteria with the Stormwater and Resource Protection Division, but no decision had been made.

Discussion continued.

Mr. Polster asked if the two roundabouts were included in the cost estimate of the project if the proposed Cardinal Ridge development on the Eastern State surplus land did not occur.

Mr. Rinehimer stated that the roundabouts were not included in the cost estimate.

Mr. Polster asked if there was a trigger level from the Virginia Department of Transportation (VDOT) that would require the roundabouts to be built.

Mr. Rinehimer confirmed that there was a trigger level that was met, requiring the roundabouts to be built.

Mr. Polster asked when the roundabouts would be built.

Mr. Rinehimer stated the roundabouts would be built before the completion of the Government Center.

Mr. Polster asked for clarification as to why there was not a warranted trigger date to build roundabouts for the government center.

Ms. Risinger explained that there was no need for additional study points down the line as this was for a single facility, and therefore the roundabouts must be built with the government center.

Discussion ensued.

Mr. Polster asked if putting solar panels on the roof of the government center had been considered.

Mr. Rinehimer stated that discussion about adding solar panels had occurred, but a decision had not been made.

Mr. Polster asked if a decision about electric car charging stations had been made.

Mr. Rinehimer stated that there was a plan for electric car charging stations, exterior to the proposed underground parking garage.

Discussion continued.

Mr. Everson asked if Mr. Rinehimer had read the letter from the City of Williamsburg regarding a four-way stop at Longhill Road and Governor Berkeley Road.

Mr. Rinehimer stated that he had read the letter, and a four-way stop was not recommended by the traffic study.

Mr. Everson noted that the proposed square footage had been reduced from 220,000 square feet to 178,000 square feet. Mr. Everson then asked if the originally proposed 220,000 square feet included the General Services building.

Mr. Rinehimer stated that the Dispatch Center was no longer included in the proposed square footage, and the remaining space had been consolidated based on the space needs study.

Discussion ensued.

Mr. Everson asked if Mr. Rinehimer could speak on the fiscal impact of the proposed project.

Mr. Rinehimer stated that the Board of Supervisors would discuss the fiscal impact.

Discussion continued.

Mr. Haldeman asked if the Traffic Impact Analysis (TIA) included any traffic from the Eastern State surplus land sale.

Mr. Rinehimer stated that the TIA included Colonial Behavioral Health, but not the Eastern State surplus land.

Discussion continued.

Ms. Kerstin Davis, 226 Longhill Road, Williamsburg, VA, addressed the Commission with concerns about the proposed project.

Mr. Chris Henderson, 101 Keystone, Williamsburg, VA, addressed the Commission with concerns about the proposed project.

Mr. Dennis Burkey, 208 Tutters Neck, Williamsburg, VA, addressed the Commission with concerns about the proposed project.

Sandra Neighbor, 208 Tutters Neck, Williamsburg, VA, addressed the Commission with concerns about the project.

Mr. Haldeman closed the Public Hearing.

Mr. Polster asked if a 25-mile an hour speed limit on Longhill Road could be considered.

Mr. Rinehimer stated that it would be VDOT's decision to lower the speed limit.

Mr. Everson asked if the proposed library would be jointly operational with the City of Williamsburg.

Mr. Rinehimer confirmed that was correct.

Discussion continued.

Mr. Everson stated he did not intend to support the project due to the fiscal impact it would have on the County and that it did not fit with the Comprehensive Plan.

Mr. Polster stated that he would support this project for the land use associated with the SUP, including the conditions, and that he found the land use consistent with the Comprehensive Plan.

Dr. Haskins stated that she would be supportive of the project.

Mr. Haldeman stated he was concerned about the impending development of the Eastern State surplus land. Mr. Haldeman explained that he found the project

consistent with the Comprehensive Plan but would prefer to wait until it was known how the Eastern State surplus land would be developed before moving forward with the government center.

Mr. Maye stated he shared the same concerns.

Mr. Haldeman asked for a motion to find SUP-25-0003. James City County Government Center substantially in accord with the Comprehensive Plan and applicable parts thereof.

Mr. Polster made a motion to find SUP-25-0003. James City County Government Center substantially in accord with the Comprehensive Plan and applicable parts thereof.

On a roll call vote, the Commission voted to find SUP-25-0003. James City County Government Center substantially in accord with the Comprehensive Plan. (5-2)

Mr. Polster made a motion to recommend approval of SUP-25-0003. James City County Government Center to the Board of Supervisors.

On a roll call vote, the Commission voted to recommend approval. (4-3)

G. PLANNING COMMISSION CONSIDERATIONS

There were no items for consideration.

H. PLANNING DIRECTOR'S REPORT

1. Planning Director's Report - May 2025

Ms. Istenes stated she had nothing in addition to the report provided in the Agenda Packet.

I. PLANNING COMMISSION DISCUSSION AND REQUESTS

Mr. Haldeman reminded Mr. Everson that he would be covering the May 13, 2025, Board of Supervisors meeting.

Mr. Haldeman told the Commission that the next Policy Committee meeting had been cancelled, but there would be a DRC meeting on May 21, 2025, at 4 p.m.

Mr. Everson asked if the next Policy Committee meeting would be held on June 12, 2025, at 3 p.m.

Mr. Haldeman confirmed that it was tentatively scheduled for that date.

Mr. Polster stated that he misspoke at the last meeting about the stormwater requirement for SUP applications.

Discussion ensued.

J. ADJOURNMENT

Mr. Haldeman asked for a motion to adjourn.

Mr. Everson made a motion to adjourn.

The meeting was adjourned at approximately 8:32 p.m.

Susan Istenes, Secretary

Jack Haldeman, Chair

**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

SUMMARY FACTS

Applicant:	Mr. Bradley Rinehimer, Assistant County Administrator
Landowner:	James City County
Proposal:	A Special Use Permit (SUP) to construct a governmental office building exceeding 30,000 square feet of floor area and a public library. A Height Limitation Waiver (HW) to construct a retaining wall exceeding six feet in height above finished grade.
Locations:	5231 Longhill Road 5255 Longhill Road 5301 Longhill Road
Tax Map/Parcel Nos.:	3820100002 3820100002A 3910100153
Project Acreage:	± 13.56 acres
Zoning:	PL, Public Lands
Comprehensive Plan:	Federal, State, or County Lands
Primary Service Area (PSA):	Inside
Staff Contact:	Morgan Risinger, Senior Planner

PUBLIC HEARING DATES

Planning Commission: May 7, 2025, 6:00 p.m.

Board of Supervisors: June 10, 2025, 5:00 p.m.

FACTORS FAVORABLE

1. Staff finds the proposal to be consistent with the Zoning Ordinance and adopted policies.
2. Staff finds the proposal generally consistent with the Comprehensive Plan.
3. Subject to the proposed conditions, staff finds the proposal will not negatively impact surrounding development.
4. Subject to the proposed conditions, the application passes the Adequate Transportation Facilities Test.
5. Subject to the proposed conditions, the application is consistent with the County's Sustainable Building Policy.
6. Staff finds that the proposed retaining wall meets the criteria for the issuance of a HW in accordance with Section 23-9.1(10)(b) of the County Code.
7. Impacts: See Impact Analysis on Pages 10-12.

FACTORS UNFAVORABLE

1. Impacts: See Impact Analysis on Pages 10-12.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

PLANNING COMMISSION RECOMMENDATION

At its May 7, 2024, meeting, the Planning Commission voted 4-3 to recommend approval of the SUP to the Board of Supervisors, subject to the proposed conditions.

The Planning Commission also voted 5-2 to find this application consistent with the Comprehensive Plan and applicable parts thereof, as required by Section 15.2-2232 of the Code of Virginia.

CHANGES MADE SINCE THE PLANNING COMMISSION MEETING

A HW application was submitted for the construction of a single retaining wall exceeding six feet in height above finished grade pursuant to Section 23-9.1(10)(b) of the County Code. (See discussion on Page Nos. 16-17.)

STAFF RECOMMENDATION

Staff finds that the proposal is compatible with surrounding zoning and development and is generally consistent with the Comprehensive Plan. Staff recommends that the Board of Supervisors approve this application, subject to the proposed conditions.

PROJECT DESCRIPTION

Mr. Bradley Rinehimer, Assistant County Administrator, has applied on behalf of James City County to construct a governmental office building exceeding 30,000 square feet of floor area and a public library at 5231, 5255, and 5301 Longhill Road. The proposed Government Center would include the consolidation of the offices for the Commissioner of the Revenue, Community Development, County Administration and the County Attorney's Office, Economic

Development, Fire Administration, Financial and Management Services, Human Resources, Information Resources Management, Parks & Recreation Administration, Social Services, and the Treasurer.

A Space Needs Assessment for County facilities was developed by Moseley Architects in 2020 and further updated in 2024 studying the amount of office space necessary to provide County services currently as well as into the future. The 2020 Census population count indicated that 78,254 residents lived in the County. The County's population has continued to grow and is projected to increase to over 100,000 residents by 2040. In order to continue to provide the same services currently offered by the County, the Space Needs Assessment projected that over 220,000 square feet of office space would be required for the departments listed above. Currently, these departments occupy approximately 120,000 square feet.

In 2022, a Facilities Master Plan was completed which indicated that the cost of constructing or renovating County offices would nearly double by 2040. A Building Consolidation Study was also conducted in 2022 which found that the cost of constructing a new, centralized Government Center was comparable to the costs associated with renovating and expanding existing County facilities to address the findings of the Space Needs Assessment. Additionally, the study found that the continuing operational costs of a consolidated facility were less than the operational costs of maintaining multiple facilities in different locations across the County. After receiving an unsolicited proposal from the Henderson/Gilbane Joint Venture in December 2022, and a subsequent advertised period to receive additional proposals, the Board of Supervisors selected the proposal submitted by the Henderson/Gilbane Joint Venture.

The Board of Supervisors discussed the project at multiple meetings, including determining that the location of the Government Center

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

should be at the 5231 and 5255 Longhill Road properties. This site is co-located with the James City County (JCC) Recreation Center allowing for parking areas to be shared, is a short distance from Route 199 providing efficient access to the Government Center from across the County, and is located near the mean center of the County's population distribution improving the access to County services for those living across the County.

Beginning in the County's Fiscal Year (FY) 2024 Adopted Budget, the Government Center was included in the Capital Improvement Program (CIP) providing funding for design work to commence. Throughout the design process, opportunities to leverage efficiencies between the departments and shared spaces were explored which resulted in a reduction of the proposed building size to approximately 178,000 square feet of office space and reduced construction and operational costs. The building will include three stories of offices as well as an underground parking area. This building size will accommodate the County's staffing needs for the foreseeable future.

Community engagement efforts have been conducted including organizing a stakeholder group which first met on May 15, 2024, and holding public input meetings on May 23, 2024, and October 1, 2024, to receive feedback from residents. Comments received from these meetings included a desire for providing multiple amenities and community spaces, the need to address traffic impacts, the importance of selecting a timeless and world-class architectural design, and the opportunities to incorporate sustainable design practices.

In 2025, the Board of Supervisors determined that the site should include a branch library to address facility needs for the Williamsburg Regional Library (WRL). CIP requests for a new library branch have been submitted by WRL each year since the County's FY2021 budget; however, a site had not been identified. By co-locating a new branch library with the Government Center and the JCC Recreation Center,

the County can optimize construction costs while providing another amenity in a location central to the County's residents.

Community Character

DePue Drive and Longhill Road are classified as Urban/Suburban Community Character Corridors (CCCs) in the Comprehensive Plan. As required by the Zoning Ordinance, the project will maintain landscape buffers along DePue Drive and Longhill Road with an average width of 50 feet and a minimum width of 25 feet adjacent to the proposed wet pond and parking area to the north of the site. A landscaping plan will be included in the site plan for the project to confirm the location and mixture of plant species required in accordance with the Zoning Ordinance.

Proposed Condition No. 5 restricts the heights of exterior pole-mounted light fixtures to 20 feet above finished grade to reduce their potential visibility from the adjacent properties and roadways.

As shown in Attachment No. 4, the architectural renderings developed for the Government Center not only provide for a quality aesthetic view from adjacent properties and roadways but also will result in a facility that serves as a County landmark. The design incorporates a mix of traditional and modern building materials to remain connected with the County's historic character and the County's Strategic Plan Goal of providing modern facilities. Final architectural renderings and elevations, along with any subsequent revisions, will be approved by the Board of Supervisors in consultation with the design team to ensure that the project includes a superior architectural design.

Sustainable Building Policy

The goal of the County's Sustainable Building Policy is for new facilities to be designed to meet requirements for the Leadership in Energy and Environmental Design (LEED) Silver Certification as

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

well as Energy Star performance targets. Proposed Condition No. 3 requires that the Director of General Services review the project for consistency with the Sustainable Building Policy prior to the issuance of a building permit for the project.

Stormwater Management

As shown on the conceptual drainage plan, stormwater management facilities will include underground stormwater chambers as well as a wet pond. The full engineering of these facilities will be reviewed by the Stormwater and Resource Protection Division during the site plan stage.

Public Utilities

As shown on the conceptual utility plan, existing public water and sewer mains located in the DePue Drive and Longhill Road rights-of-way are anticipated to be adequate for the project. Proposed utilities in the project area will be reviewed by the James City Service Authority (JCSA) during the site plan stage. Proposed Condition No. 6 will require Water Conservation Standards to be developed for the project.

Vehicular Parking

The proposed master plan includes approximately 551 parking spaces for the Government Center and library including surface and underground parking areas. The Zoning Ordinance requires approximately 712 parking spaces to be provided for the Government Center; however, the proposed parking spaces are based on actual parking needs observed at County facilities. The final amount of parking spaces will be reviewed by the Director of Planning during the site plan stage.

While the realignment of parking lot entrances for the JCC Recreation Center results in the loss of 20 parking spaces, it is anticipated that the ability for the parking spaces to be shared for both facilities will be sufficient for peak parking demands.

Public Transportation: Vehicular

The scale of this proposal requires the submittal of a Traffic Impact Analysis (TIA). The TIA examines the existing conditions of vehicular traffic, including Level of Service (LOS), with a focus on the roads and intersections serving and impacted by the proposed development. The study projects that the development would generate 315 A.M. peak hour trips, 377 P.M. peak hour trips, and approximately 3,921 daily trips to the property. The anticipated trips were calculated using actual data collected from existing County facilities.

Access to the Government Center is proposed to include the two existing intersections of Ashbury Lane on DePue Drive and Longhill Road with a third entrance proposed from Longhill Road, across from Grand Strand Drive. DePue Drive is a two-lane road which is classified as a Minor Arterial road. DePue Drive currently operates at LOS A-C and is projected to operate at LOS A-C in 2045 as stated in the Comprehensive Plan. This portion of Longhill Road is a two-lane road which is classified as a Major Collector road. This portion of Longhill Road currently operates at LOS A-C and is projected to operate at LOS E-F in 2045.

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

The TIA analyzed the following intersections:

- Longhill Road at Route 199 Southbound Ramps
- Longhill Road at Route 199 Northbound Ramps
- Longhill Road/DePue Drive at Longhill Road
- DePue Drive at Ashbury Lane
- DePue Drive/Ironbound Road at Ironbound Road/Galt Lane
- Longhill Road at Grand Strand Drive/Proposed Site Driveway
- Longhill Road at Ashbury Lane

The tables on Pages 5-8 show the LOS of the studied intersections based on various scenarios analyzed in the TIA. The listed “Build” conditions are based on the installation of improvements recommended in the TIA.

Longhill Road at Route 199 Southbound Ramps										
	Existing		2026 No-Build		2026 Build		2030 No-Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Overall	B	B	B	B	B	B	B	B	B	B
EBTH	B	B	B	B	B	B	B	B	B	B
EBR	A	A	A	A	A	A	A	A	A	A
WBL	C	C	C	C	C	C	C	C	C	C
WBTH	A	A	A	A	A	A	A	A	A	A
SBL	C	B	B	C	C	C	C	C	C	C
SBL-TH	C	B	B	C	C	C	C	C	C	C
SBR	B	B	B	C	B	C	B	C	C	C

Eastbound (EB) traffic along Longhill Road is traveling towards the proposed Government Center.

Westbound (WB) traffic along Longhill Road is traveling towards Olde Towne Road.

Southbound (SB) traffic is utilizing the on- and off-ramps from Route 199.

Longhill Road at Route 199 Northbound Ramps										
	Existing		2026 No-Build		2026 Build		2030 No-Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Overall	B	B	B	B	B	B	B	B	B	B
EBTH	B	B	B	B	B	B	B	B	B	C
EBR	A	A	A	A	A	A	A	A	A	A
WBL	C	C	C	C	C	C	C	C	C	C
WBTH	A	A	A	A	A	A	A	A	A	A
NBL	C	C	C	C	C	C	C	C	C	C
NBR	A	A	B	C	A	A	A	A	A	A

Eastbound (EB) traffic along Longhill Road is traveling towards the proposed Government Center.

Westbound (WB) traffic along Longhill Road is traveling towards Olde Towne Road.

Northbound (NB) traffic is utilizing the off-ramp from Route 199.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

Longhill Road/DePue Drive at Longhill Road										
	Existing		2026 No-Build		2026 Build		2030 No-Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Overall					A	A			A	A
EBL	A	B	A	B			A	B		
EBL-TH					A	A			A	A
EBTH	-	-	-	-	A	A	-	-	A	A
WBU-TH					A	A			A	A
WBTH-R	-	-	-	-	A	A	-	-	A	A
SBL	E	F	E	F			E	F		
SBR	B	D	B	D			B	E		
SBL-R					A	C			A	C

Eastbound (EB) traffic along Longhill Road is traveling towards the proposed Government Center.

Westbound (WB) traffic along DePue Drive is traveling towards Route 199.

Southbound (SB) traffic is traveling along Longhill Road towards Route 199.

DePue Drive at Ashbury Lane										
	Existing		2026 No-Build		2026 Build		2030 No-Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Overall					A	B			A	B
EBL	A	A	A	A			A	A		
EBTH-R	-	-	-	-			-	-		
EBL-TH-R					B	B			B	A
WBL	A	A	A	A			A	A		
WBTH	-	-	-	-			-	-		
WBR	-	-	-	-			-	-		
WBL-TH					A	B			A	A
NBL-TH-R	C	E	C	F	A	A	C	F	A	A
SBL-TH-R	C	D	C	D	A	C	C	E	A	C

Eastbound (EB) traffic along DePue Drive is traveling towards Ironbound Road.

Westbound (WB) traffic along DePue Drive is traveling towards Longhill Road and Route 199.

Northbound (NB) traffic along Ashbury Lane is traveling towards the proposed Government Center.

Southbound (SB) traffic along Ashbury Lane is exiting the Government Center and JCC Recreation Center.

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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DePue Drive/Ironbound Road at Ironbound Road/Galt Lane										
	Existing		2026 No-Build		2026 Build		2030 No-Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Overall	C	C	C	C	C	C	C	C	C	C
EBL-TH-R	D	D	D	D	D	D	D	D	D	D
WBL	C	D	C	D	C	D	C	D	C	D
WBTH	C	C	C	C	C	C	C	C	C	C
WBR	A	A	A	A	A	A	A	A	A	A
NBL	D	D	D	D	D	D	D	D	D	D
NBTH	C	D	B	D	C	D	C	D	C	D
NBR	A	A	A	A	A	A	A	A	A	A
SBL	C	D	D	D	D	D	C	D	C	D
SBTH-R	B	C	B	C	B	C	B	C	B	C

Eastbound (EB) traffic along Galt Lane is leaving Eastern State Hospital.

Westbound (WB) traffic along Ironbound Road is traveling towards Eastern State Hospital.

Northbound (NB) traffic along Ironbound Road is traveling towards DePue Drive.

Southbound (SB) traffic along DePue Drive is traveling towards Ironbound Road.

Longhill Road at Grand Strand Drive/Proposed Site Driveway										
	Existing		2026 No-Build		2026 Build		2030 No-Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
EBL	A	A	A	A	A	A	A	A	A	A
EBTH	-	-	-	-	-	-	-	-	-	-
EBR					-	-			-	-
WBT H	-	-	-	-			-	-		
WBL-TH					A	A			A	A
WBR	-	-	-	-	-	-	-	-	-	-
SBL-R	B	B	B	B			B	B		
NBL-TH-R					B	C			B	C
SB-L-TH-R					B	B			B	B

Eastbound (EB) traffic along Longhill Road is traveling towards Ashbury Lane.

Westbound (WB) traffic along Longhill Road is traveling towards Route 199.

Northbound (NB) traffic is exiting the proposed Government Center.

Southbound (SB) traffic is exiting the Rolling Meadows Apartments.

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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Longhill Road at Ashbury Lane										
	Existing		2026 No-Build		2026 Build		2030 No- Build		2030 Build	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
EBTH-R	-	-	-	-	-	-	-	-	-	-
WBL-TH	A	A	A	A	A	A	A	A	A	A
NBL-R	B	B	B	B	B	B	B	B	B	B

Eastbound (EB) traffic along Longhill Road is traveling towards Ironbound Road.

Westbound (WB) traffic along Longhill Road is traveling towards Grand Strand Drive.

Northbound (NB) traffic along Ashbury Lane is exiting the Government Center and JCC Recreation Center.

The County adopted the Adequate Transportation Facilities Test by resolution on August 14, 2018. This policy requires a proposed SUP or Rezoning to be tested during the application process to ensure that transportation facilities are adequate to mitigate traffic impacts.

A proposed Rezoning or SUP application will be tested for Adequate Transportation Facilities and will pass the test if:

- No off-site improvements are required by the TIA that is approved by both the Planning Director and the Virginia Department of Transportation (VDOT); or
- All off-site improvements recommended by a TIA that are approved by both the Planning Director and VDOT are guaranteed

in a form approved by the Planning Director and the County Attorney.

The TIA recommends the construction of a two-lane roundabout at the Longhill Road and DePue Drive intersection, the construction of an eastbound right-turn lane and taper on Longhill Road to the proposed site entrance aligning with Grand Strand Drive, and three potential options for the DePue Drive and Ashbury Lane intersection. The first two options include adjustments to turn movements and laneage for the existing four-way intersection while the third option would be the construction of a one-lane roundabout. Following discussion between the traffic engineer, VDOT, and the County's third-party traffic consultant, it was determined that the project would proceed with the construction of a one-lane roundabout at the intersection.

Proposed Condition No. 4 requires the installation of these improvements to take place before the issuance of a Certificate of Occupancy (CO) for the project or as determined by the funding and implementation plan adopted by the Board of Supervisors. As such, this proposal passes the Adequate Transportation Facilities Test.

Additionally, the project will include the vacation of the portion of Ashbury Lane located between DePue Drive and Longhill Road so that the road may be reconstructed as an internal drive aisle with entrances aligned between the parking areas for the Government Center and the JCC Recreation Center.

PLANNING AND ZONING HISTORY

- In the mid-1900s, a water tower was constructed on the property to serve Eastern State Hospital. The property was sold to JCSA in 1998, after which a subdivision plat created a separate utility lot for the water tower with the remainder of land sold to the County. The water tower was demolished in 2009.

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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- In 1985, the first site plan for the JCC Recreation Center was approved. Various additions and amendments were made over time, including approval of a site plan in 2001 for the skate park currently located within the project site.
- In 2007, the properties were rezoned to be included the PL, Public Lands, Zoning District upon its creation.

SURROUNDING ZONING AND DEVELOPMENT

- The following table lists information on the parcels adjacent to the property:

	ZONING DESIGNATION	EXISTING LAND USE	FUTURE LAND USE DESIGNATION
NORTH	R-2, General Residential; and R-5, Multifamily Residential	Single-family residential units, apartment units, and a church	Low Density Residential; and Moderate Density Residential
SOUTH	Public Lands	Eastern State Hospital	Federal, State, or County Lands
EAST (City of Williamsburg)	RS-2, Single-family Dwelling District; and PUD, Planned Unit Development District	Single-family residential units and a church	Low Density Single-Family Detached Residential
WEST	Public Lands	Eastern State Hospital	Federal, State, or County Lands

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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Impacts/Potentially Unfavorable Conditions	Status <i>(No Mitigation Required/Mitigated/Not Fully Mitigated)</i>	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
<u>Public Transportation: Vehicular</u>	<u>Mitigated</u>	- DePue Drive is a Minor Arterial roadway and the portion of Longhill Road adjacent to the site is a Major Collector roadway. - As shown in the TIA, an additional 315 A.M. peak hour trips and 377 P.M. peak hour trips are expected to be generated to the property. - Proposed Condition No. 4 requires the improvements identified in the TIA to be installed prior to the issuance of a CO or as determined by the funding and implementation plan adopted by the Board of Supervisors. The improvements include a two-lane roundabout at the DePue Drive and Longhill Road intersection, a one-way roundabout at the DePue Drive and Ashbury Lane intersection, and a right-turn lane and taper at the proposed site entrance aligning with Grand Strand Drive. - The application passes the Adequate Transportation Facilities Test in the Traffic Impact Analysis Submittal Requirements Policy.
<u>Public Transportation: Bicycle/Pedestrian</u>	<u>No Mitigation Required</u>	- Bicycle and pedestrian connections will be provided from building entrances and parking areas to the existing multiuse path along DePue Drive and Longhill Road and the Recreation Center. - A WATA bus stop is currently located on Ashbury Lane and will remain.
<u>Public Safety</u>	<u>No Mitigation Required</u>	- Fire Station 4 on Olde Towne Road serves this area of the County and is located approximately 1.5 miles from the property. - The Fire Department will review the site plan for the project to ensure needed fire protection and safety measures are provided. - The proposed retaining wall will include guards for fall protection as required in Section 23-9.1.
<u>Public Schools</u>	<u>No Mitigation Required</u>	- The proposal is not expected to generate impacts to public schools.
<u>Public Parks and Recreation</u>	<u>No Mitigation Required</u>	- The proposal will result in the removal of the JCC Recreation Center skate park and remove the project area from the land available for the JCC Recreation Center.

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
Staff Report for the June 10, 2025, Board of Supervisors Public Hearing**

Impacts/Potentially Unfavorable Conditions	Status <i>(No Mitigation Required/Mitigated/Not Fully Mitigated)</i>	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
<u>Public Libraries and Cultural Centers</u>	<u>No Mitigation Required</u>	- The proposal includes a branch library building to expand library services in the County. As such, the project addresses the WRL's facility request included in the County's CIP starting in FY2021.
<u>Groundwater and Drinking Water Resources</u>	<u>Mitigated</u>	- The property will be connected to the JCSA public water system and the Hampton Roads Sanitation District sanitary sewer system. - Proposed Condition No. 6 requires the development of Water Conservation Standards for the project.
<u>Watersheds, Streams, and Reservoirs</u> Project is located in the Powhatan Creek Watershed.	<u>No Mitigation Required</u>	- The project will be reviewed by the Stormwater and Resource Protection Division during the site plan stage to ensure full compliance with environmental regulations. - The project will be required to adhere to the County's updated Special Stormwater Criteria.
<u>Cultural/Historic</u>	<u>No Mitigation Required</u>	- A Phase I archaeological survey of the project identified one archaeological site which is the remains of the Eastern State Hospital water tower which was previously on the property and found that no further investigations are warranted. - A Natural Resource Inventory will be required during the site plan stage to identify any habitats for threatened and endangered species.
<u>Nearby and Surrounding Properties</u>	<u>Mitigated</u>	- Proposed Condition No. 5 restricts exterior pole-mounted light fixtures to a height of 20 feet from finished grade. - Landscape buffers will be provided along DePue Drive and Longhill Road with an average width of 50 feet and a minimum width of 25 feet. - The final architectural design for the project will be approved by the County's Board of Supervisors and design team to ensure that a quality design is provided. - The proposed retaining wall is located internal to the required landscape buffer along DePue Drive and will not cause impacts to surrounding properties.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

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Impacts/Potentially Unfavorable Conditions	Status <i>(No Mitigation Required/Mitigated/Not Fully Mitigated)</i>	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
<u>Community Character</u>	<u>Mitigated</u>	- Proposed Condition No. 5 restricts exterior pole-mounted light fixtures to a height of 20 feet from finished grade. - Landscape buffers will be provided along DePue Drive and Longhill Road with an average width of 50 feet and a minimum width of 25 feet. - The final architectural design for the project will be approved by the County's Board of Supervisors and design team to ensure that a quality design is provided. - The proposed retaining wall is located internal to the required landscape buffer along DePue Drive and will not cause impacts to community character.

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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NATURAL AND CULTURAL ASSETS

The site is identified as having natural and cultural assets on the Natural and Cultural Assets Plan maps (and/or other supplemental resources such as the USDA's Natural Resources Conservation Service Web Soil Survey) as follows (see table below):

ASSET	PRESENCE	IMPACT
Habitat Core	-None present on-site	-Not Applicable
Corridors	-None present on-site	-Not Applicable
Agricultural Assets	-Present on-site	-Approximately 10.7 acres or 83.7% of the 5231 and 5255 Longhill Road properties are designated as prime farmland and approximately 2.1 acres or 16.3% of the properties are designated as farmland of statewide importance. -Portions of the project area have been previously disturbed for improvements related to the existing JCC Recreation Center and further recreational amenities were previously planned for the project area.

COMPREHENSIVE PLAN

The project site is designated as Federal, State, or County Lands on the Comprehensive Plan Land Use Map. The following general guidance is stated for the Federal, State, or County Lands Designation:

“Publicly owned lands included in this category are Eastern State Hospital, military installations, County offices and facilities, and larger utility sites such as the Hampton Roads Sanitation District treatment plant. Development in these areas should follow applicable development standards listed in the charts.”

The proposed Government Center is consistent with the recommended uses for the Federal, State, or County Lands designation.

As stated in the designation, development standards which are applicable to the proposed project should be considered. Staff finds that the proposed development is most consistent with the Community Commercial designation and the following commercial development standards are pertinent for the development.

- Locate proposed commercial and industrial developments adjacent to compatible uses (public or other similar uses, etc.). Where a commercial or industrial development is proposed at a location near a sensitive area, the site should be designed so that transitional uses such as offices and/or buffers are located between conflicting uses. Emphasis should be placed on ensuring the provision of open space; protection of the environment, historical and archaeological resources; and adjoining land uses; sufficient capacities of public facilities and services; quality and effectiveness of pedestrian circulation systems and facilities; and ability to meet the public needs of the development.

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The proposed Government Center is located adjacent to the JCC Recreation Center which is a compatible use and provides connections with existing pedestrian facilities.

- Commercial uses, and particularly Neighborhood Commercial areas, will have a limited impact on adjacent residential areas, especially in terms of visible parking areas, lighting, signage, traffic, odor, noise, and hours of operation.

The proposed parking areas will be located behind required landscape buffers and parking lot screening required by the Zoning Ordinance. The anticipated hours of operation are typical of government facilities with a majority of activity occurring between 7 a.m. and 5 p.m. Public meetings or community events may occur after 5 p.m. The proposed conditions include mitigations for exterior lighting and ensuring the required traffic improvements are installed.

- Each Community Commercial area should be clearly separated from other Community Commercial areas to retain the small town and rural character of the County, provide a sense of place, and promote transportation mobility.

The proposed Government Center is not located adjacent to commercial development. Should commercial development occur in the future, the design of the project will ensure that it remains distinct.

- Permit the location of new uses only where public services, utilities, and facilities are adequate to support such uses. The need for public services (police, fire, education, recreation, etc.) and facilities generated by a development should be met or mitigated by that development.

The proposed Government Center does not generate a need for new public utilities or fire stations.

- While a variety of market forces influence commercial and industrial development proposals, the maintenance of an acceptable LOS of roads and other public services and the availability and capacity of public utilities should be primary considerations.

The TIA recommends traffic improvements to ensure that the intersections in the area of the Government Center will maintain acceptable LOS. The proposed conditions require these improvements to be installed prior to the issuance of a CO.

- Protect environmentally sensitive resources including high-ranking Natural Areas and significant natural heritage resources, watersheds, historic and archaeological resources, designated CCCs and CCAs, and other sensitive resources by locating conflicting uses away from such resources and utilizing design features, including building and site design, buffers, and screening to adequately protect the resource.

The proposed development protects the DePue Drive and Longhill Road CCCs by providing landscape buffers. The Stormwater and Resource Protection Division will review the site plan for the project to ensure that environmentally sensitive areas are protected.

- Industrial and commercial areas should be planned and located to avoid traffic through residential and agricultural areas except in special circumstances where residential and nonresidential areas are both part of an overall master plan and special measures are taken to ensure that the residential or agricultural uses are adequately protected.

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The project's adjacency to Route 199 will provide a direct means of accessing the site which does not pass through residential areas.

Goals, Strategies, and Actions

Staff reviewed the application to determine if the proposal aligns with the Comprehensive Plan's Goals, Strategies, and Actions (GSAs). The analysis is as follows.

Public Facilities

- GSA PF 1.1 - Encourage full utilization of all public facilities, including joint use by different County agencies, to support local community objectives and activities.

The proposed Government Center includes consolidation of County departments resulting in a facility providing a range of services and support for community activities.

- GSA PF 1.2 - Acquire land for, efficiently locate and design, and construct new public facilities in a manner that facilitates future expansion and promotes the maximum utility of resources to meet future capacity needs.

The proposed Government Center is designed to meet the County's future capacity needs identified in the Space Needs Assessment.

- GSA PF 1.3 - Design facilities and services for efficient and cost-effective operations over their expected lives.

Consolidation of County departments and facilities will reduce operational costs of the proposed Government Center.

- GSA PF 1.5.5 - Design and construct County facilities consistent with the Space Needs Assessment for County Administration, Williamsburg-James City County (WJCC) Courts, and WJCC School Administration for 5-year, 10-year, and 20-year (2040) population growth projections.

The proposed Government Center is designed to meet the County's future capacity needs identified in the Space Needs Assessment.

- GSA PF 1.12 - Locate new public facilities and the provision of public services near existing and planned population centers, within the existing Primary Service Area (PSA), as defined on the Comprehensive Plan Future Land Use Map so as to provide convenient service to the greatest number of County residents or service consumers.

The proposed Government Center will be located near the mean center of the County's residents.

- GSA PF 3.1 - Evaluate the accessibility, capacity and adequacy of new facilities to absorb new development and ensure that development recommendations take this information into account.

The proposed Government Center is designed to accommodate staffing needs based on the County's population projections for the future.

- GSA PF 4.2.1 - Construct new County facilities in accordance with the County's Sustainable Building Policy.

The proposed Government Center will be reviewed for consistency with the Sustainable Building Policy.

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- GSA PF 4.5 - Evaluate all proposed public facilities for potential impacts and provide buffering and mitigation equal to, or greater than (when practical), that required under County Ordinances.

The proposed Government Center has been reviewed to address potential impacts and ensure consistency with County Ordinances.

- GSA PF 4.6 - Incorporate architectural design features in buildings and structures erected by the County, which support quality design and appearance that enhances local community character.

The Board of Supervisors will approve the final architectural design to ensure a quality design is provided.

Community Character

- GSA CC 1.1 - Ensure that development along Community Character Corridors (CCCs) protects the natural views of the area; promotes the historic, rural, or unique character of the area; and establishes entrance corridors that enhance the experience of residents and visitors.

The proposed development will include required buffers along DePue Drive and Longhill Road, and an architectural design which incorporates the County's historical character and will be a landmark for this entrance corridor to the County.

FINDING OF CONSISTENCY

Section 15.2-2232 of the Code of Virginia states, in part, that unless a public building or public structure is shown on the adopted Comprehensive Plan or part thereof, the local Planning Commission

shall review the facility to determine whether the location, character, and extent of the facility is substantially in accord with the adopted Comprehensive Plan.

The Planning Commission approved a resolution to find this application consistent with the Comprehensive Plan and applicable parts thereof, as required by Section 15.2-2232 of the Code of Virginia.

HEIGHT LIMITATION WAIVER

In 2021, the Board of Supervisors adopted amendments to the County Code providing performance standards for certain retaining walls. As shown on the proposed master plan, a retaining wall is proposed at the southeastern edge of the proposed Government Center building along the drive aisle leading to the underground parking area. This retaining wall is anticipated to be approximately 10 feet in height above finished grade.

Pursuant to Section 23-9.1 of the County Code, the proposed retaining wall requires a Height Limitation Waiver to be issued by the Board of Supervisors in accordance with the following criteria from Section 23-9.1(10)(b).

- “Such structure will not obstruct light from adjacent property.”

The proposed retaining wall is located approximately 135 feet from the nearest property line and will be shielded by the required landscape buffer such that it will not obstruct light from adjacent properties.

- “Such structure will not impair the enjoyment of historic attractions and areas of significant historic interest.”

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SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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The proposed retaining wall is not located adjacent to historic attractions or areas of significant historic interest.

- “Such structure will not impair surrounding developments, adjacent property, or the rural or historic nature of the county.”

The proposed retaining wall is located approximately 135 feet from the nearest property line and will be shielded by the required landscape buffer such that it will not impair surrounding developments, properties, or the rural or historic nature of the County.

- “Such structure will not impair property values in the surrounding area.”

The proposed retaining wall is located approximately 135 feet from the nearest property line and will be shielded by the required landscape buffer such that it will not impair property values in the surrounding area.

- “The visual impact to adjoining properties and roadways is minimized.”

The proposed retaining wall is located approximately 135 feet from the nearest property line and will be shielded by the required landscape buffer.

- “Such structure is adequately designed and served from the standpoint of safety from the perspective of the county fire chief, the director of stormwater and resource protection, and the director of the building safety and permits division.”

The proposed retaining wall will be subject to all applicable regulations from Section 23-9.1 of the County Code and detailed designs will be reviewed through the building permit process.

- “The on-going costs of maintenance or repair of such structure would not unduly burden a property owner or homeowners association.”

The proposed retaining wall will be maintained by the County.

- “Such structure would not be contrary to the public health, safety or general welfare.”

The proposed retaining wall will include guards for fall protection as required by Section 23-9.1 of the County Code.

- “Such structure is necessary due to unusual character of the property, including dimensions or other environmental considerations.”

The topography of the property slopes down towards DePue Drive which must be maintained to allow for stormwater from the development to be directed to the proposed wet pond. The proposed retaining wall is necessary to allow for the required emergency fire access lane and stormwater management facility access lane along the south of the building as well as the entrance to the underground parking level, while limiting impacts to the existing vegetation in that portion of the landscape buffer.

STAFF RECOMMENDATION

Staff finds that the proposal is compatible with surrounding zoning and development and is generally consistent with the Comprehensive Plan. Staff recommends that the Board of Supervisors approve this application, subject to the proposed conditions.

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**SPECIAL USE PERMIT-25-0003/HEIGHT LIMITATION WAIVER-25-0001. James City County Government Center
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MR/md

SUP25-3HW25-1Gov

Attachments:

1. Resolution
2. Location Map
3. Master Plan
4. Architectural Renderings
5. Traffic Impact Analysis
6. Public Correspondence
7. Adopted Resolution for Consistency with Section 15.2-2232 of the Code of Virginia
8. Unapproved Minutes of the May 7, 2025, Planning Commission Meeting

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

RESOLUTION

CASE NO. SUP-25-0003/HW-25-0001. JAMES CITY COUNTY GOVERNMENT CENTER

WHEREAS, the Board of Supervisors of James City County, Virginia (the “Board”), has adopted by Ordinance specific land uses that shall be subjected to a Special Use Permit (“SUP”) process; and

WHEREAS, Mr. Bradley Rinehimer, Assistant County Administrator, has applied on behalf of James City County for an SUP to allow for the construction of a governmental office building exceeding 30,000 square feet of floor area and a public library on property located at 5231, 5255, and 5301 Longhill Road and further identified as James City County Real Estate Tax Map Parcel Nos. 3820100002, 3820100002A, and 3910100153, respectively (collectively, the “Properties”), as shown on a plan titled “James City County Government Center” prepared by Timmons Group and dated April 4, 2025 (the “Master Plan”); and

WHEREAS, the Planning Commission, following its public hearing on May 7, 2025, recommended approval of Case No. SUP-25-0003 by a vote of 4-3; and

WHEREAS, the Board of Supervisors of James City County, Virginia, has adopted by Ordinance specific land uses that shall be subjected to a Height Limitation Waiver (HW) process; and

WHEREAS, Mr. Bradley Rinehimer, Assistant County Administrator, has applied on behalf of James City County for an HW to allow for the construction of a single retaining wall exceeding six feet in height above finished grade on the Properties as shown on the Master Plan; and

WHEREAS, a public hearing was advertised, adjoining property owners notified, and a hearing conducted on Case No. SUP-25-0003 and Case No. HW-25-0001; and

WHEREAS, the Board of Supervisors of James City County, Virginia, finds this use to be consistent with good zoning practices and the Comprehensive Plan Land Use Map designation for the Properties.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, after consideration of the factors in Section 24-9 of the James City County Code (the “County Code”), does hereby approve the issuance of Case No. SUP-25-0003 as described herein with the following conditions:

1. Master Plan. This SUP shall be valid for the construction of a governmental office building exceeding 30,000 square feet of floor area and a public library (the “Project”) on property located at 5231, 5255, and 5301 Longhill Road and further identified as James City County Real Estate Tax Map Nos. 3820100002, 3820100002A, and 3910100153, respectively (collectively, the “Properties”). The Properties shall be developed substantially in accordance with the Master Plan titled “James City County Government Center” prepared by Timmons Group and dated April 4, 2025 (the “Master Plan”), with any deviations considered per Section 24-23(a)(2) of the James City County Code, as amended (“County Code”).

2. Boundary Line Extinguishment. Prior to the issuance of a building permit for the Project, a plat that extinguishes the boundary lines between the Properties shall be recorded in the Clerk's Office for the Williamsburg/James City County Circuit Court.
3. Sustainable Building Policy. Prior to the issuance of a building permit for the Project, the Director of General Services or designee shall review the Project for consistency with the County's Sustainable Building Policy.
4. Traffic Improvements. All recommended improvements and mitigation measures listed within the Traffic Impact Analysis titled "James City County Municipal Complex Traffic Impact Analysis" prepared by Timmons Group and sealed March 5, 2025 (the "TIA"), shall be installed prior to the issuance of any Certificate of Occupancy for the Project, provided however, the Director of Community Development shall have the authority to modify the completion date of the road improvements based on the funding and implementation plan as adopted by the Board of Supervisors. Improvements to the DePue Drive and Ashbury Lane intersection shall follow "Option 3 - Single-lane roundabout" as listed within the TIA.
5. Exterior Lighting. All new exterior pole mounted light fixtures for the Project shall not exceed 20 feet in height from finished grade. A lighting plan shall be approved by the Director of Planning or designee prior to final site plan approval.
6. Water Conservation. Water conservation standards shall be enforced for the Project through an agreement with the James City Service Authority (JCSA). The standards shall be approved by the JCSA General Manager prior to site plan approval for the Project as shown on the Master Plan and may include, but shall not be limited to, such water conservation measures as limitations on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought-tolerant plants where appropriate, and the use of water-conserving fixtures and appliances to promote water conservation and minimize the use of public water resources. Any changes shall be submitted to and approved by the JCSA.
7. Stormwater Management. All development plans for the Properties shall implement the County's Special Stormwater Criteria dated March 2025.
8. Commencement. If construction of the Project has not commenced within 36 months from the date of adoption of this SUP, the SUP shall become void. Construction shall be defined as obtaining building permits and approved footing inspections and/or foundation inspections for the Project.
9. Severance Clause. This SUP is not severable. Invalidity of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

BE IT FURTHER RESOLVED that the Board of Supervisors of James City County, Virginia, finds that the requirements of Section 23-9.1(10)(b) of the James City County Code have been satisfied, in order to grant a Height Limitation Waiver to allow for the construction of a single retaining wall exceeding six feet in height above finished grade as generally shown on the Master Plan, and does hereby approve Case No. HW-25-0001.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

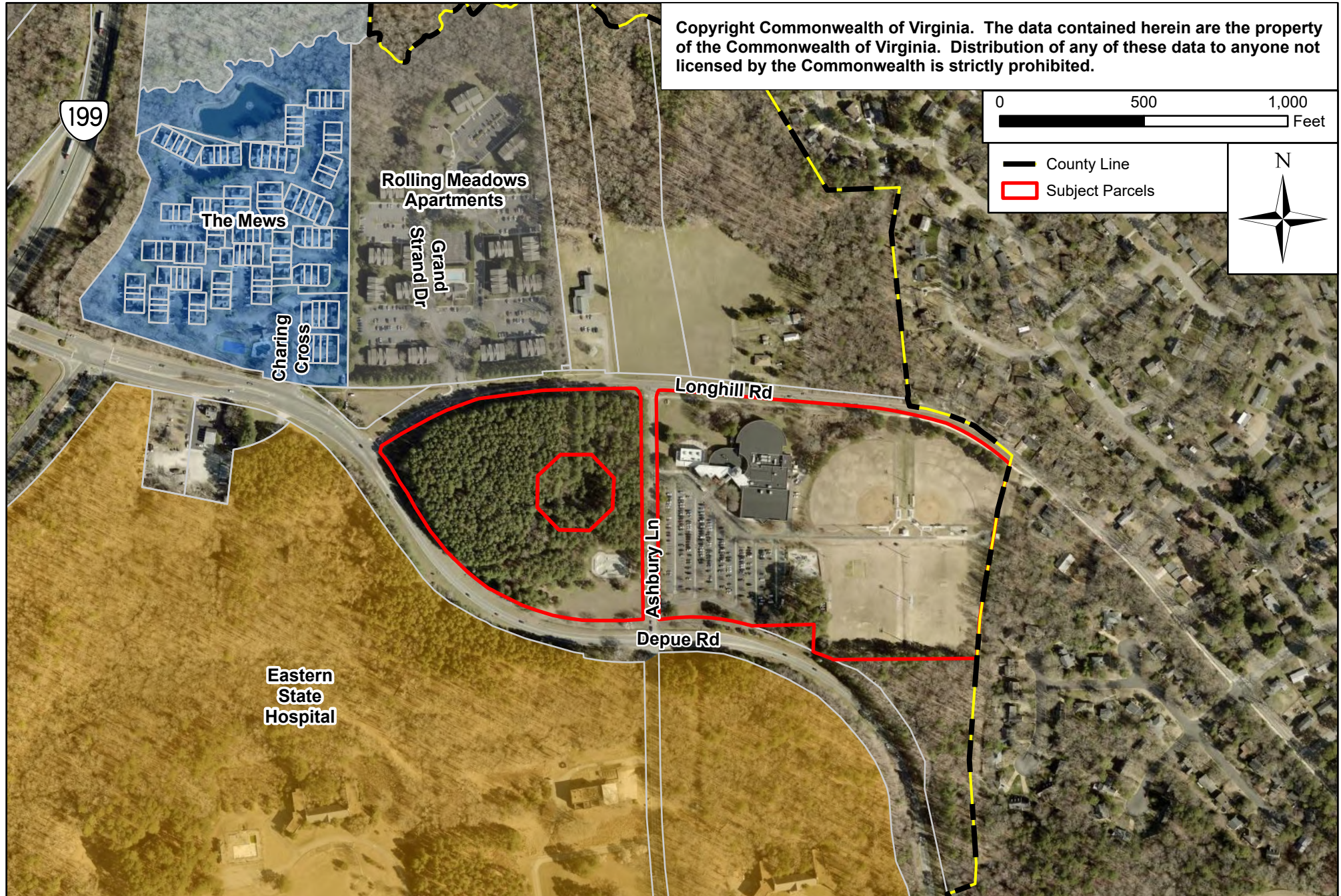
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<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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_____	_____	_____	_____

Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of
June, 2025.

SUP25-3HW25-1Gov-res

JCC SUP-25-0003/HW-25-0001

James City County Government Center



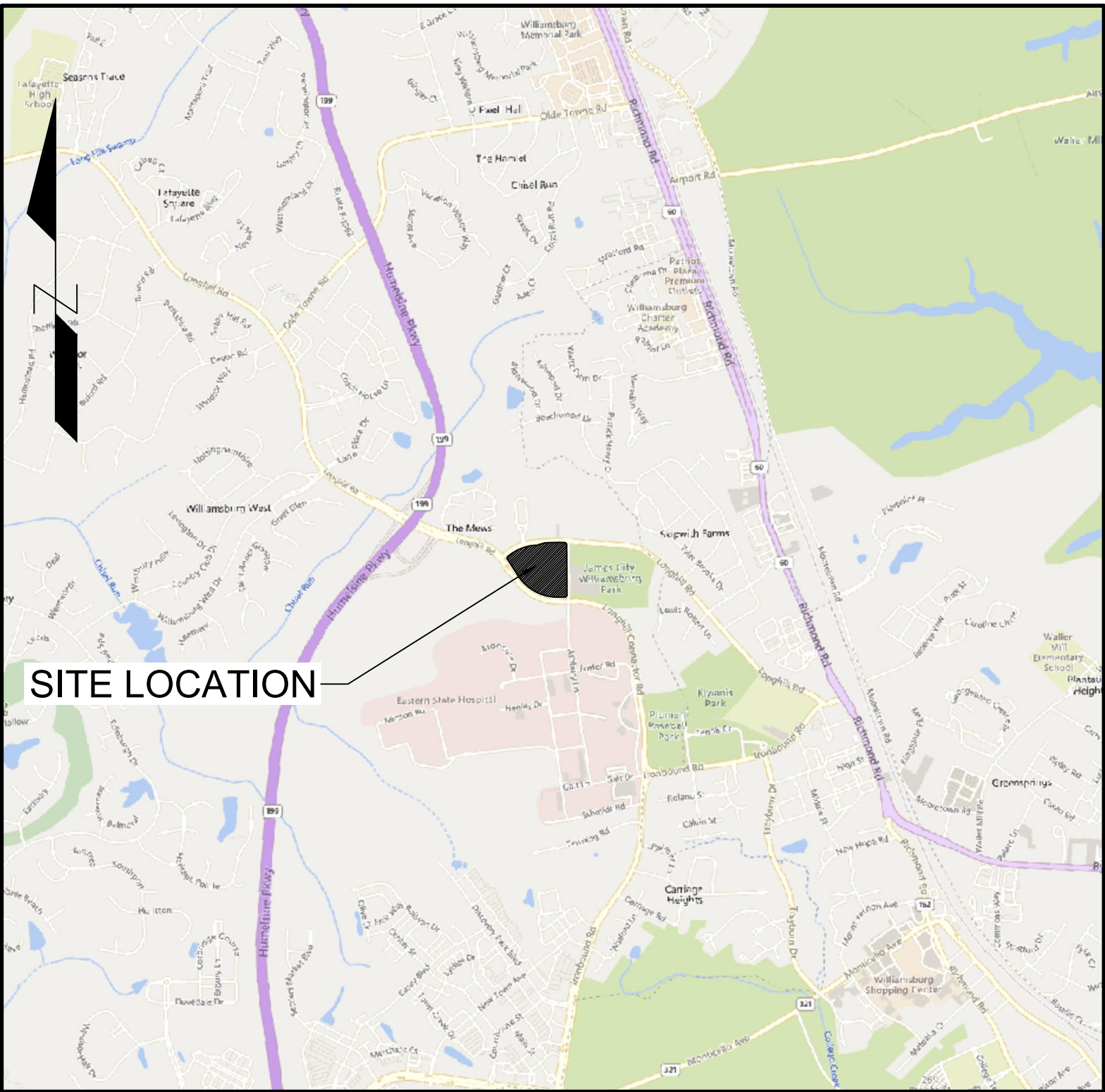
SCHEMATIC CIVIL SITE PLAN

FOR

JCC GOVERNMENT CENTER

5231 LONGHILL ROAD
WILLIAMSBURG, VIRGINIA, 23188

CASE NO. SP-
APRIL 4, 2025



VICINITY MAP
SCALE 1"=2,000'

CIVIL ENGINEER

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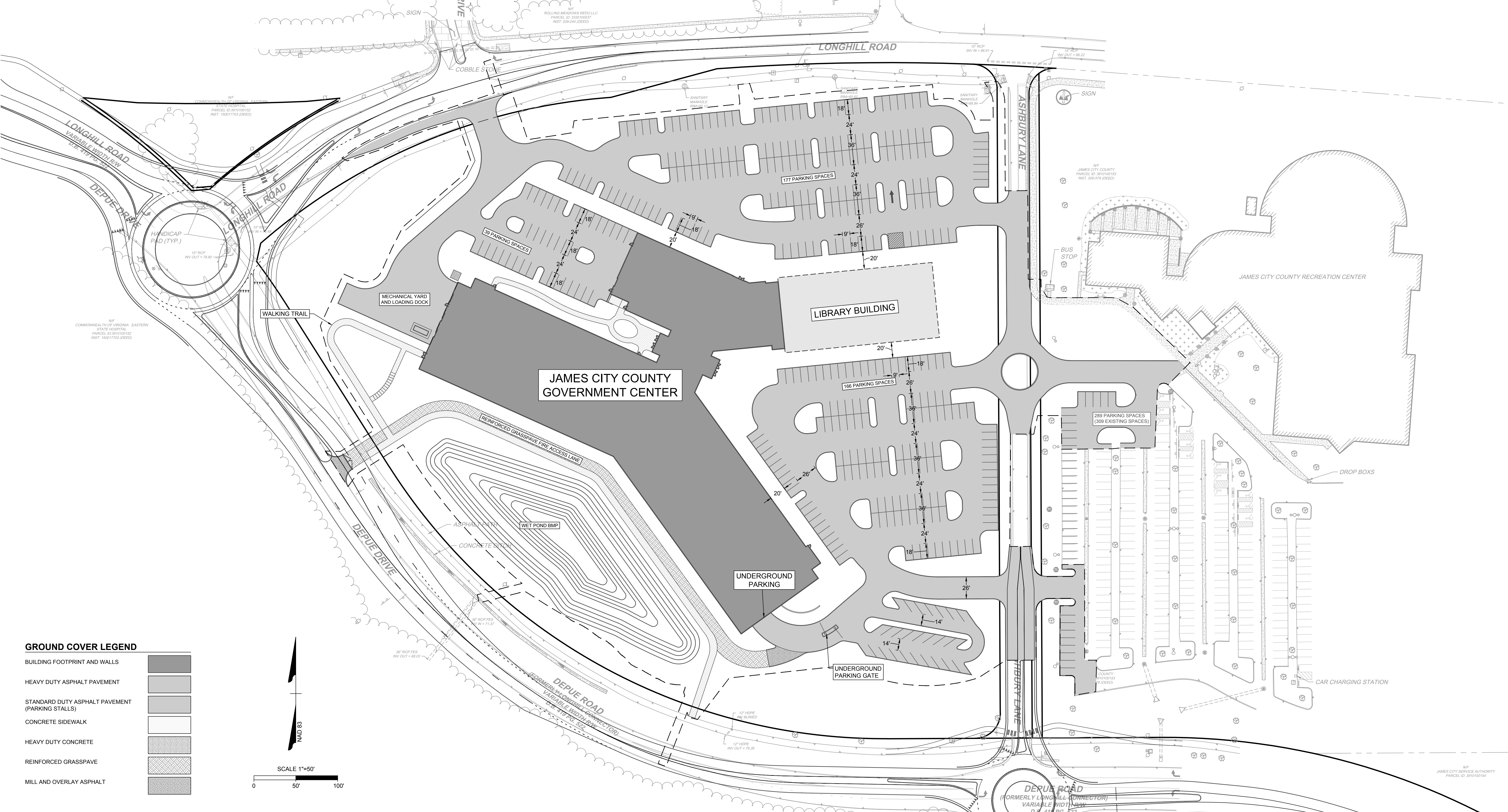
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JAMES CITY COUNTY GOVERNMENT CENTER

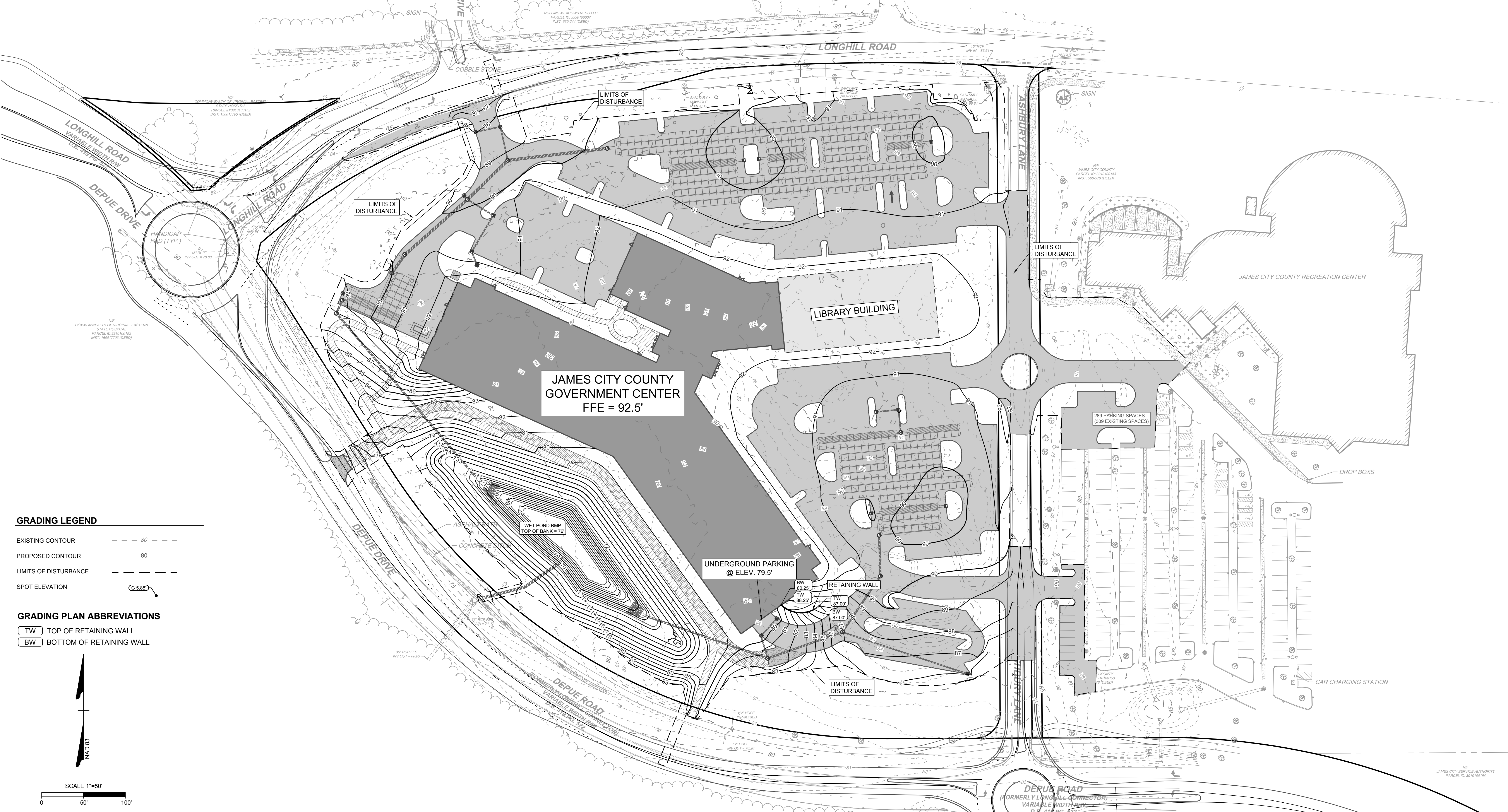
COVER SHEET





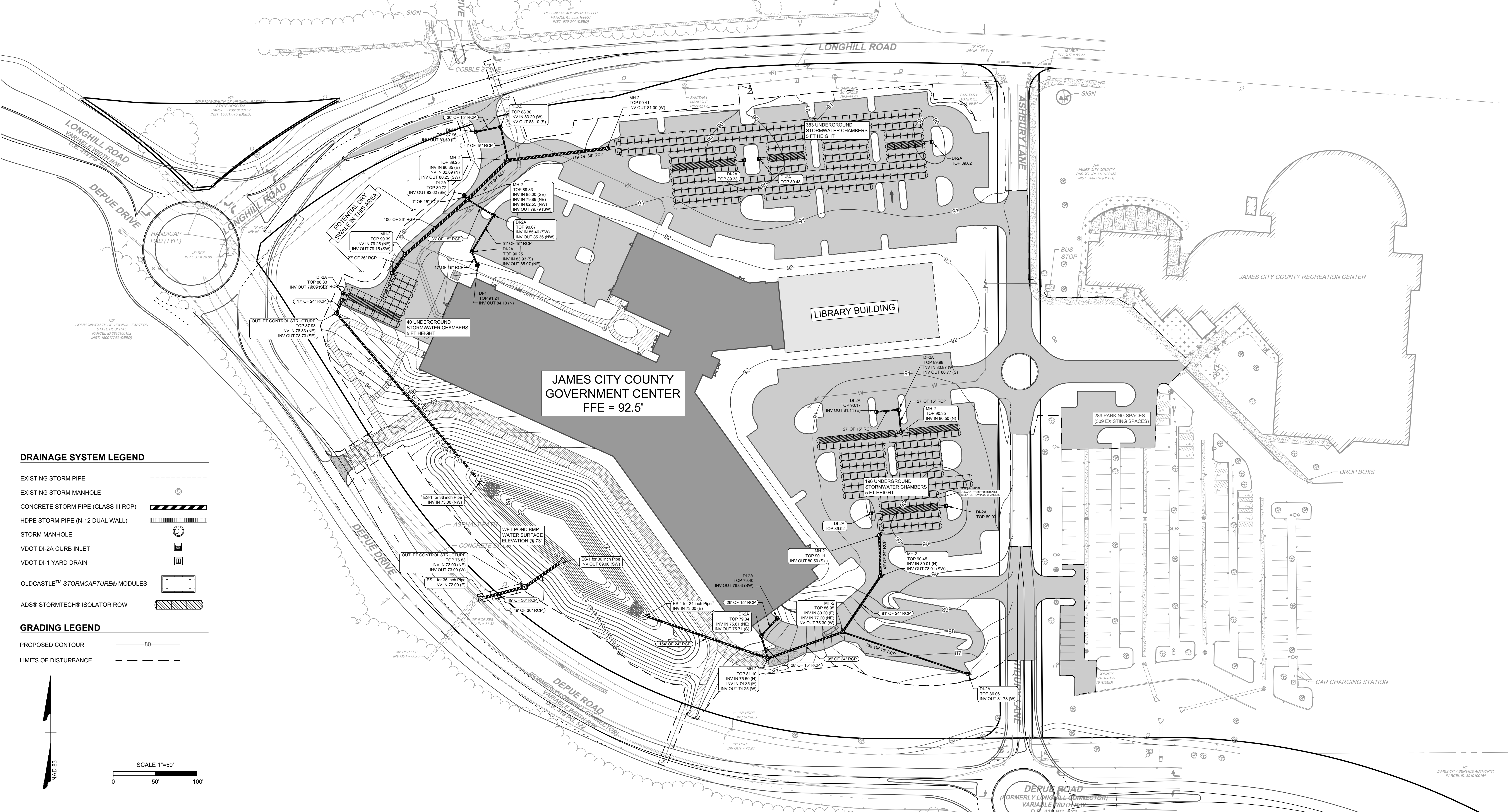
JAMES CITY COUNTY GOVERNMENT CENTER

SITE LAYOUT PLAN



JAMES CITY COUNTY GOVERNMENT CENTER

GRADING PLAN



JAMES CITY COUNTY GOVERNMENT CENTER

DRAINAGE PLAN

WATER SUPPLY LEGEND

WATER LINES	W	HORIZONTAL BENDS
TEES	⊥	FIRE HYDRANT ASSEMBLY (FHA)
REDUCERS	◁	DOMESTIC WATER WATER
GATE VALVES W/ VALVE BOX	⊗	DETECTOR CHECK

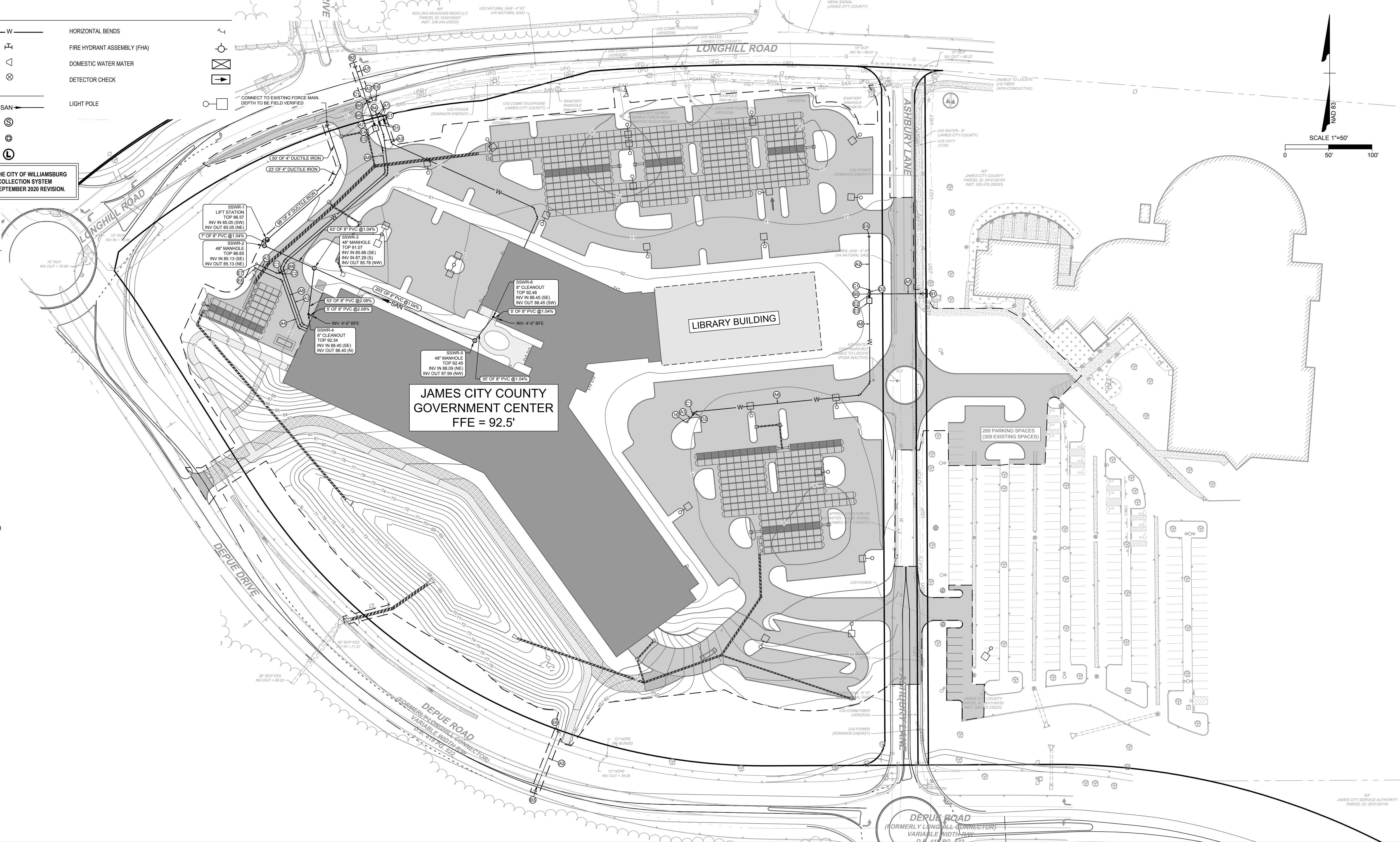
SANITARY SEWER LEGEND

GRAVITY SEWER PIPE	SAN	LIGHT POLE
SANITARY SEWER MANHOLE	⊙	
SANITARY SEWER CLEANOUT	⊕	
PRIVATE LIFT STATION	Ⓛ	

NOTE: ALL PUBLIC UTILITIES SHALL COMPLY WITH THE CITY OF WILLIAMSBURG WATER DISTRIBUTION SYSTEM & SANITARY SEWER COLLECTION SYSTEM CONSTRUCTION STANDARDS AND SPECIFICATION, SEPTEMBER 2020 REVISION.

WATER SYSTEM KEY

- ① 3" DIP (CL. 52) PUBLIC WATER LINE
- ② 6" DIP (CL. 52) PUBLIC WATER LINE
- ③ 6" SCH. 80 PVC PRIVATE WATER LINE
- ④ 6" SCH. 80 PVC PRIVATE DRY FIRE LINE
- ⑤ 8" DIP (CL. 52) PUBLIC WATER LINE
- ⑥ 8" SCH. 80 PVC PRIVATE WATER LINE
- ⑦ 10" DIP (CL. 52) PUBLIC WATER LINE
- ⑧ 10" DIP (CL. 52) PRIVATE WATER LINE
- ⑨ 8"x8" TAPPING SLEEVE & VALVE
- ⑩ 12"x10" TAPPING SLEEVE & VALVE
- ⑪ 16"x6" TAPPING SLEEVE & VALVE
- ⑫ 3" TEE
- ⑬ 8" TEE
- ⑭ 8"x6" TEE
- ⑮ 10"x3" TEE
- ⑯ 10"x6" TEE
- ⑰ 6" GATE VALVE
- ⑱ 8" GATE VALVE
- ⑲ 6"x3" REDUCER
- ⑳ 8"x6" REDUCER
- ㉑ 3" DOMESTIC WATER METER IN VAULT
- ㉒ 8" DETECTOR CHECK
- ㉓ 8" RPZ IN HEATED ENCLOSURE
- ㉔ 10" DETECTOR CHECK
- ㉕ 10" RPZ IN HEATED ENCLOSURE
- ㉖ PUBLIC FIRE HYDRANT ASSEMBLY (FHA)
- ㉗ PRIVATE FIRE HYDRANT ASSEMBLY (FHA)
- ㉘ FIRE DEPARTMENT CONNECTION (FDC)



JAMES CITY COUNTY GOVERNMENT CENTER

UTILITY PLAN



JAMES CITY COUNTY GOVERNMENT CENTER





A1

RENDERING - ENTRY

NOT TO SCALE



A1

RENDERING - FRONT ELEVATION

SCALE: 12" = 1'-0"



C1

RENDERING - PODIUM VIEW

NOT TO SCALE



Submitted to:
James City County, VA

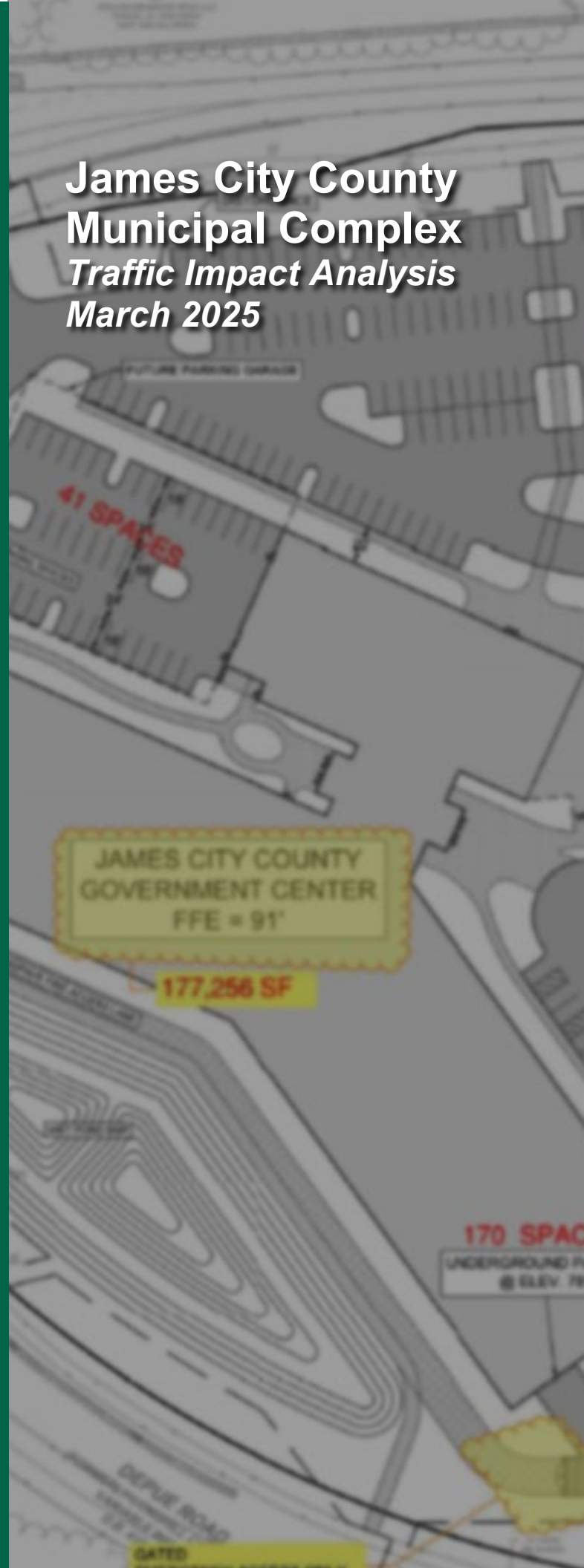
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**1001 Boulders Parkway
Suite 300
Richmond, VA 23225**

**James City County
Municipal Complex
Traffic Impact Analysis
March 2025**



James City County Municipal Complex Traffic Impact Analysis

James City County, Virginia

Prepared For:

Henderson Inc.

5806 Mooretown Road
Williamsburg, Virginia 23188



Prepared By:

Timmons Group

1001 Boulders Parkway
Suite 300
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Project Manager – Scott Dunn, AICP, PTP
Analyst – Natalie Rubbo, PE

March 2025



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1 EXECUTIVE SUMMARY

This report includes the results of the Traffic Impact Analysis (TIA) that was performed for the proposed James City County Municipal Complex located in the southeast quadrant of the Longhill Road and DePue Drive intersection in James City County, Virginia.

The original TIA was submitted in September 2024 and comments were provided by both VDOT and the County in December 2024/January 2025.

The original TIA was based on a site plan with one 240,000 SF government office building. This TIA has been updated to reflect a revised development plan that includes 177,256 SF of government office space and a future building expansion slated for 25,000 SF of library space (see Figure 1).

The revised site access plan includes the following notable changes:

- A driveway on Longhill Road, across from Grand Strand Drive, which serves the northern parking lot.
- A driveway on DePue Drive that will be gated and allow emergency access only.
- Reconfigured access along Ashbury Lane that incorporates one (1) secondary entrance to the northern main parking area and two (2) roundabouts that align with the northern and southern municipal center driveways and the James City County Recreation Center driveways to the east. *(Note: the intersections along Ashbury Lane are not included in this study as the facility is becoming a private road and under the purview of the James City County)*

The site was assumed to be fully complete by 2026. At the request of VDOT, a future design year of 2030 was analyzed for informational purposes only.

1.1 STUDY AREA

Based on the TIA scope meeting with the County and VDOT on June 6, the following scenarios were analyzed:

- 2024 Existing Traffic Conditions
- 2026 No-Build Traffic Conditions
- 2026 Build Traffic Conditions
- 2030 No-Build Traffic Conditions
- 2030 Build Traffic Conditions

The weekday AM peak hour (7:00 – 9:00 AM) and PM peak hour (4:00 – 6:00 PM) were analyzed at the following seven (7) intersections (see Figure 2):

1. Longhill Road at Route 199 Southbound Ramps
2. Longhill Road at Route 199 Northbound Ramps
3. Longhill Road/DePue Drive at Longhill Road
4. DePue Drive at Ashbury Lane
5. DePue Drive/Ironbound Road at Ironbound Road/Galt Lane
6. Longhill Road at Grand Strand Drive/Proposed Site Driveway
7. Longhill Road at Ashbury Lane

1.2 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis, the following improvements are recommended to mitigate the impact of the proposed municipal complex trips:

- Longhill Road and Route 199 Southbound Ramps
 - No improvements recommended
- Longhill Road and Route 199 Northbound Ramps
 - No improvements recommended
- Longhill Road/DePue Drive and Longhill Road
 - Reconstruct the intersection as a dual-lane roundabout.
- DePue Drive and Ashbury Lane
 - Three alternatives were analyzed to address future operational challenges at this intersection
 - Option 1 – Full Access with Southbound Right-Turn Lane
 - Provides limited improvement to delays and queues for the minor street approaches under build conditions.
 - Minor street approaches are expected to operate at LOS F, with delays up to 300 seconds during the PM peak hour.
 - Southbound queues extend into the southern roundabout on Ashbury Lane.
 - Option 2 – Directional Median (Left-in/Right-In/Right-out)
 - Minor street approaches are expected to operate with up to 35 seconds of delay during the PM peak hours.
 - Queues extend into the southern roundabout, potentially disrupting its operation.
 - Option 3 – Single-lane Roundabout
 - Projected to operate at LOS B or better.
 - Provides the shortest delays for minor street approaches while maintaining good flow on the major street.
 - Westbound queues on DePue Drive may increase slightly during the PM peak, but vehicles will continue moving due to the roundabout's continuous flow design.
- DePue Drive/Ironbound Road and Ironbound Road/Galt Lane
 - No improvements recommended
- Longhill Road and Grand Strand Drive/Site Driveway
 - Construct the site driveway with one ingress lane and one egress lane
 - Construct an eastbound right-turn lane on Longhill Road with 100 feet of storage and a 100-foot taper
- Longhill Road and Ashbury Lane
 - No improvements are warranted or recommended

2 INTRODUCTION

This report includes the results of the Traffic Impact Analysis (TIA) that was performed for the proposed James City County Municipal Complex located in the southeast quadrant of the Longhill Road and DePue Drive intersection in James City County, Virginia.

The original TIA was submitted in September 2024 and comments were provided by both VDOT and the County in December 2024/January 2025.

The original TIA was based on a site plan with one 240,000 SF government office building. This TIA has been updated to reflect a revised development plan that includes 177,256 SF of government office space and a future building expansion slated for 25,000 SF of library space (see Figure 1).

The revised site access plan includes the following notable changes:

- A driveway on Longhill Road, across from Grand Strand Drive, which serves the northern parking lot.
- A driveway on DePue Drive that will be gated and allow emergency access only.
- Reconfigured access along Ashbury Lane that incorporates one (1) entrance to the northern main parking area and two (2) roundabouts that align with the northern and southern municipal center driveways with the James City County Recreation Center driveways to the east. *(Note: the intersections along Ashbury Lane are not included in this study as the facility is becoming a private road and under the purview of the James City County)*

The site was assumed to be fully complete by 2026. At the request of VDOT, a future design year of 2030 was analyzed for informational purposes only.

3 TRAFFIC ANALYSIS SCOPE

A TIA scope meeting was held with the County and VDOT and copy of the scope form is included in Appendix A. The following study area was agreed upon at that meeting:

1. Longhill Road at Route 199 Northbound Ramps
2. Longhill Road at Route 199 Southbound Ramps
3. Longhill Road/DePue Drive at Longhill Road
4. DePue Drive at Ashbury Lane
5. DePue Drive/Ironbound Road at Ironbound Road/Galt Lane
6. Longhill Road at Grand Strand Drive/Proposed Site Driveway
7. Longhill Road at Ashbury Lane

Figure 1 shows the conceptual site plan and Figure 2 shows the site location and study area.

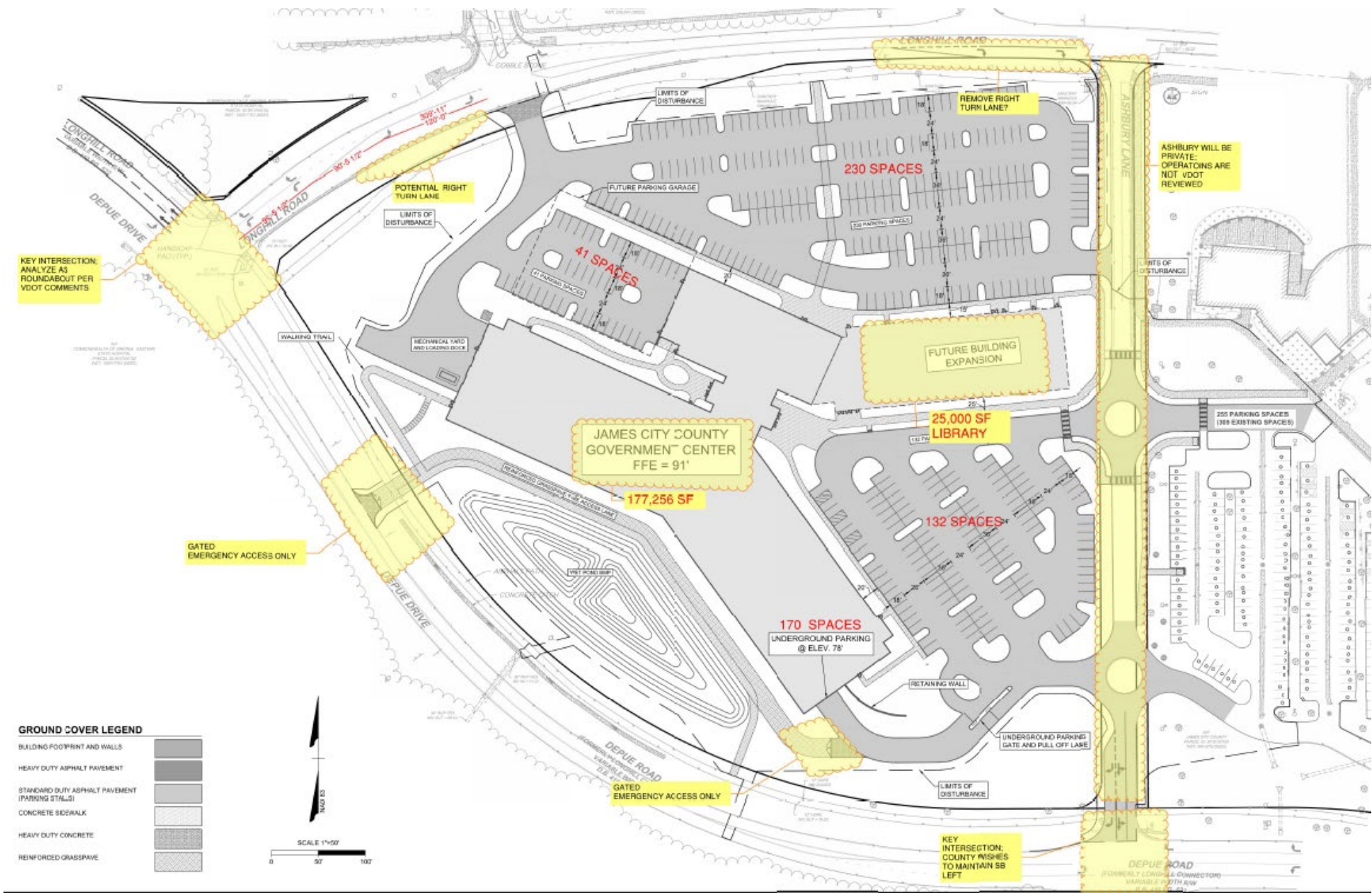


Figure 1: Conceptual Site Plan



Figure 2: Site Location and Study Area

4 EXISTING CONDITIONS

4.1 EXISTING ROADWAY NETWORK

Longhill Road is a four-lane divided Minor Arterial roadway north of DePue Drive with a posted speed limit of 45 mph and a two-lane undivided Major Collector east of DePue Drive with a posted speed limit of 35 mph. Longhill Road has an ADT of approximately 14,375 north of DePue Drive and 4,633 vehicles per day (vpd) east of DePue Drive, according to 2022 VDOT ADT traffic data.

DePue Drive (Route 615) is a two-lane undivided Minor Arterial with a posted speed limit of 45 mph. The 2022 traffic count data shows that the ADT on DePue Drive is approximately 9,650 vpd in the vicinity of the site.

Ashbury Lane is a two-lane undivided local road with an unposted speed limit; therefore, a speed limit of 25 mph was assumed for the purpose of this analysis. Based on existing 2022 count data, the ADT on this roadway is approximately 2,115 vpd. Based on recent conversations between James City County and VDOT, it has been decided that Ashbury lane will becoming a private/County-maintained facility.

Ironbound Road is a two-lane undivided Minor Arterial east of DePue Drive and a five-lane undivided roadway south of DePue Drive with a posted speed limit of 35 mph. Based on VDOT traffic data, the ADT on this roadway is approximately 11,698 vpd.

The existing lane use and intersection control at the study intersections are shown in Figure 3.

4.2 EXISTING TRAFFIC VOLUMES

Directional turning movement counts (TMCs) were collected on September 13, 2022 and June 11, 2024 at the study intersections during the morning (7:00 – 9:00 AM) and evening (4:00 – 6:00 PM) peak hours. The TMCs included heavy vehicles by movement and pedestrians. The 2022 traffic counts were increased by 1.0% for two years to estimate the 2024 traffic. Note that some movements were increased to balance traffic volumes between intersections.

The peak hours analyzed in this report align with the highest traffic volumes of the roadway network. The morning peak hour occurred from 7:45-8:45 AM and the evening peak hour occurred from 4:45-5:45 PM. The existing 2024 peak hour traffic volumes are shown in Figure 4.

Count data is included in Appendix B. Existing traffic signal timings were provided by VDOT and are included in Appendix C.

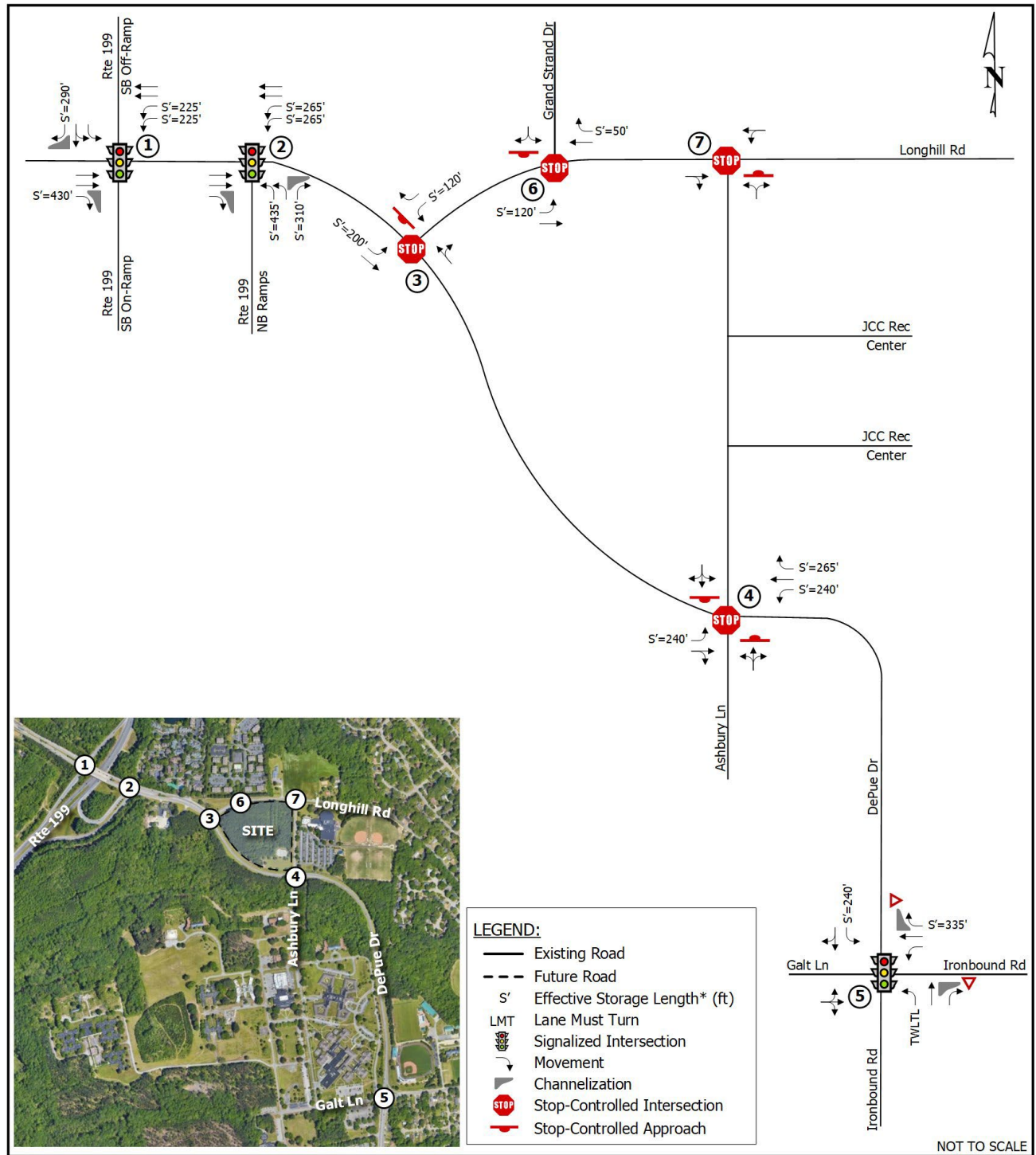


Figure 3: Existing Intersection Geometry

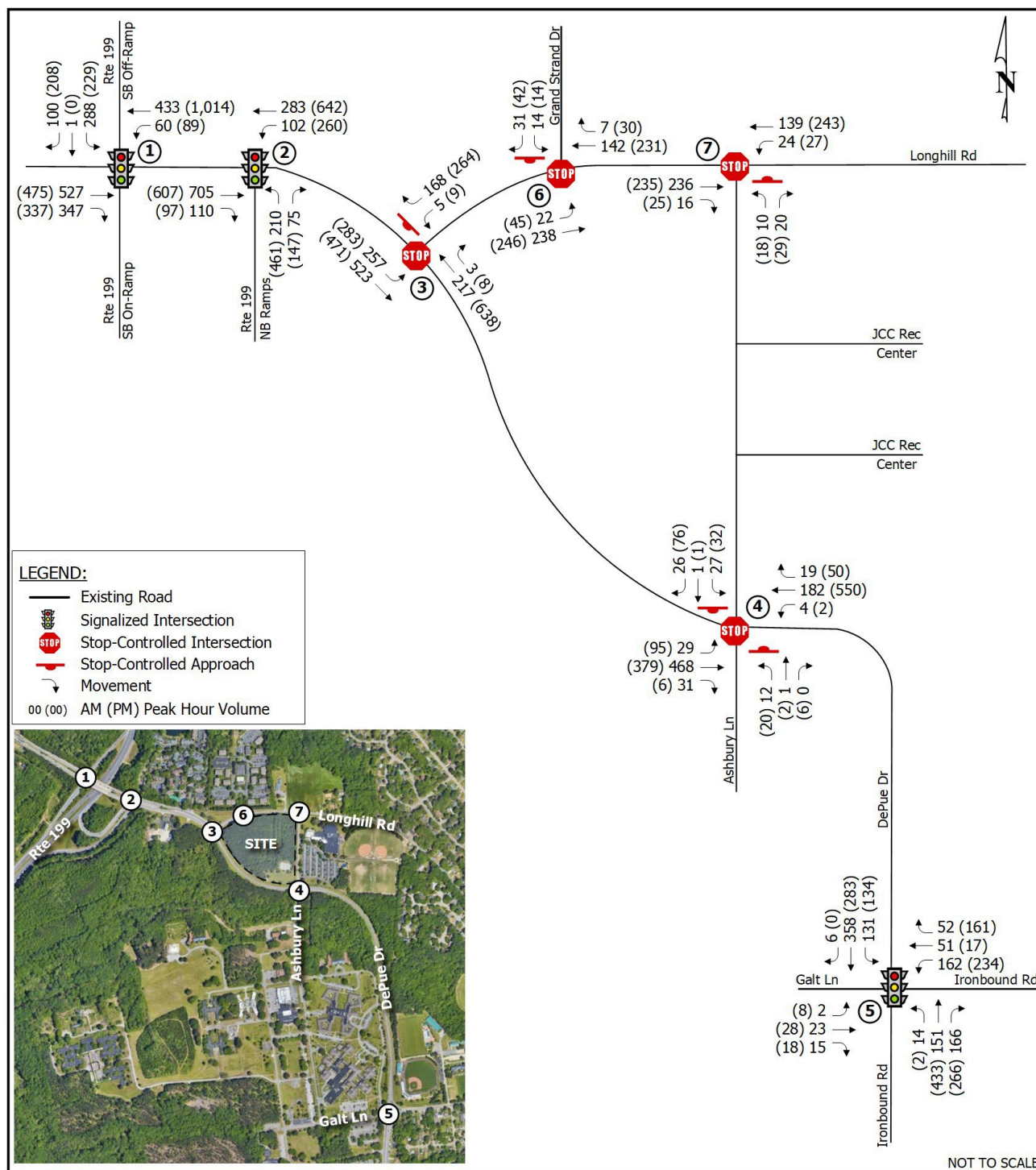


Figure 4: 2024 Existing Traffic Volumes

5 NO-BUILD CONDITIONS

5.1 FUTURE IMPROVEMENTS

There are two future improvements in the vicinity of the site that were included for reference at the request of the County.

5.1.1 City Widening of Ironbound Road

The City of Williamsburg is planning to widen Ironbound Road between Galt Lane and Richmond Road. The widening will not have any impact on vehicle delay or queueing at study intersection #5 – DePue Drive/Ironbound Road and Ironbound Road/Galt Lane.

5.1.2 Shared-Use Path on Longhill Road

James City County is planning to install an 8' shared-use path along Longhill Road between DePue Drive and Lane Place. The shared-use path will not have any impact on the capacity analysis.

5.2 APPROVED DEVELOPMENTS

Based on the scoping meeting, there was one approved development that was included in this analysis. The Colonial Behavioral Health site is located between Ironbound Road, Schmidt Road, and Galt Lane. The by-right development plan allows up to 30,000 SF of medical-office building and it was assumed to have access to Galt Lane. Table 1 shows the trip generation potential of the approved development based on the ITE *Trip Generation Manual* – 11th Edition.

Table 1: Colonial Behavioral Health Approved Development Trip Generation

LAND USE	ITE CODE	AMOUNT	UNITS	ADT	WEEKDAY					
					AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Proposed Use										
Medical-Dental Office (Stand-Alone)	720	30,000	SF (GFA)	1,181	65	17	82	36	83	119
Difference				1,181	65	17	82	36	83	119

SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 11th Edition (2021)

The approved development trip distribution is shown in Figure 5 and the trip assignment is shown in Figure 6.

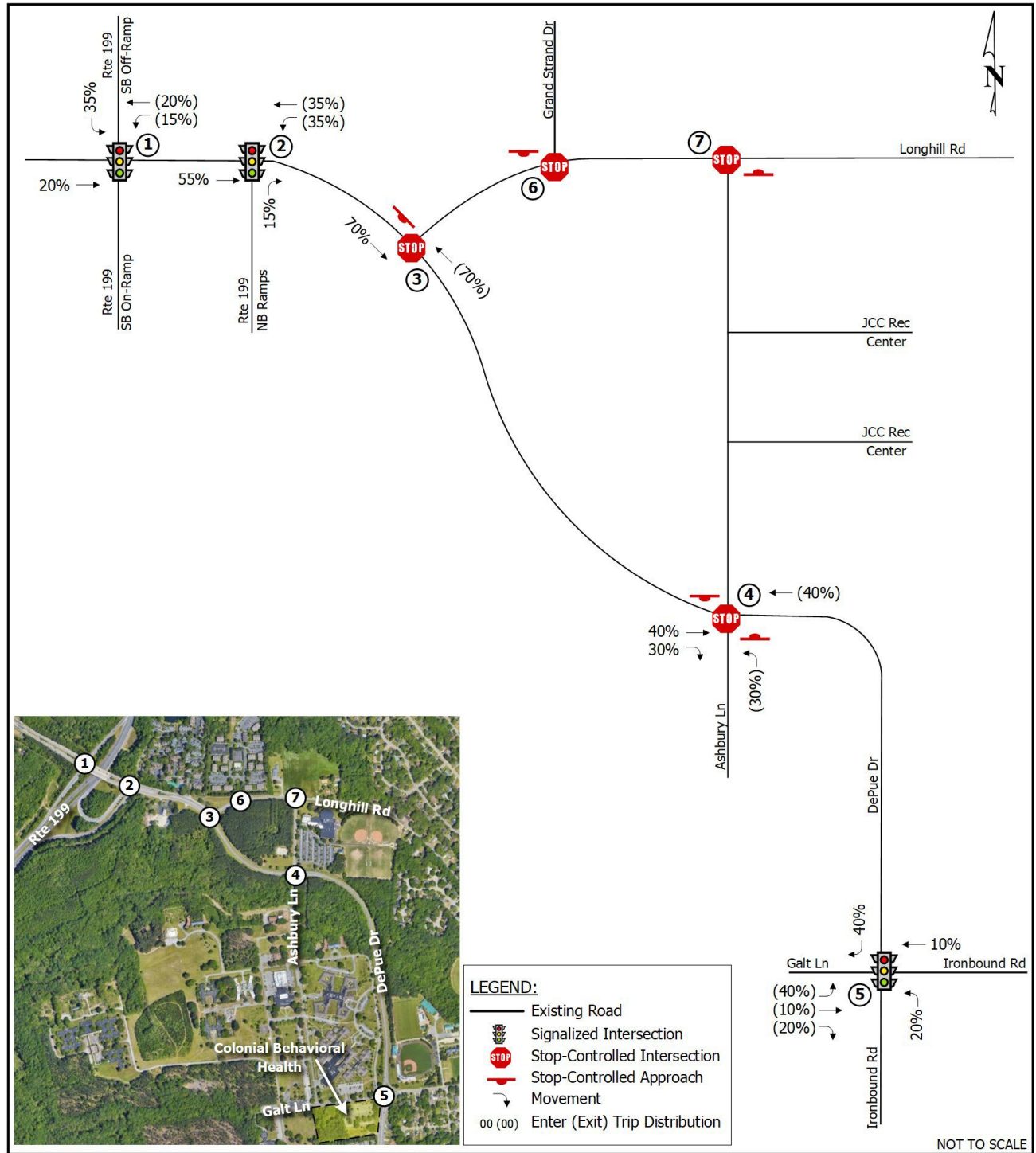
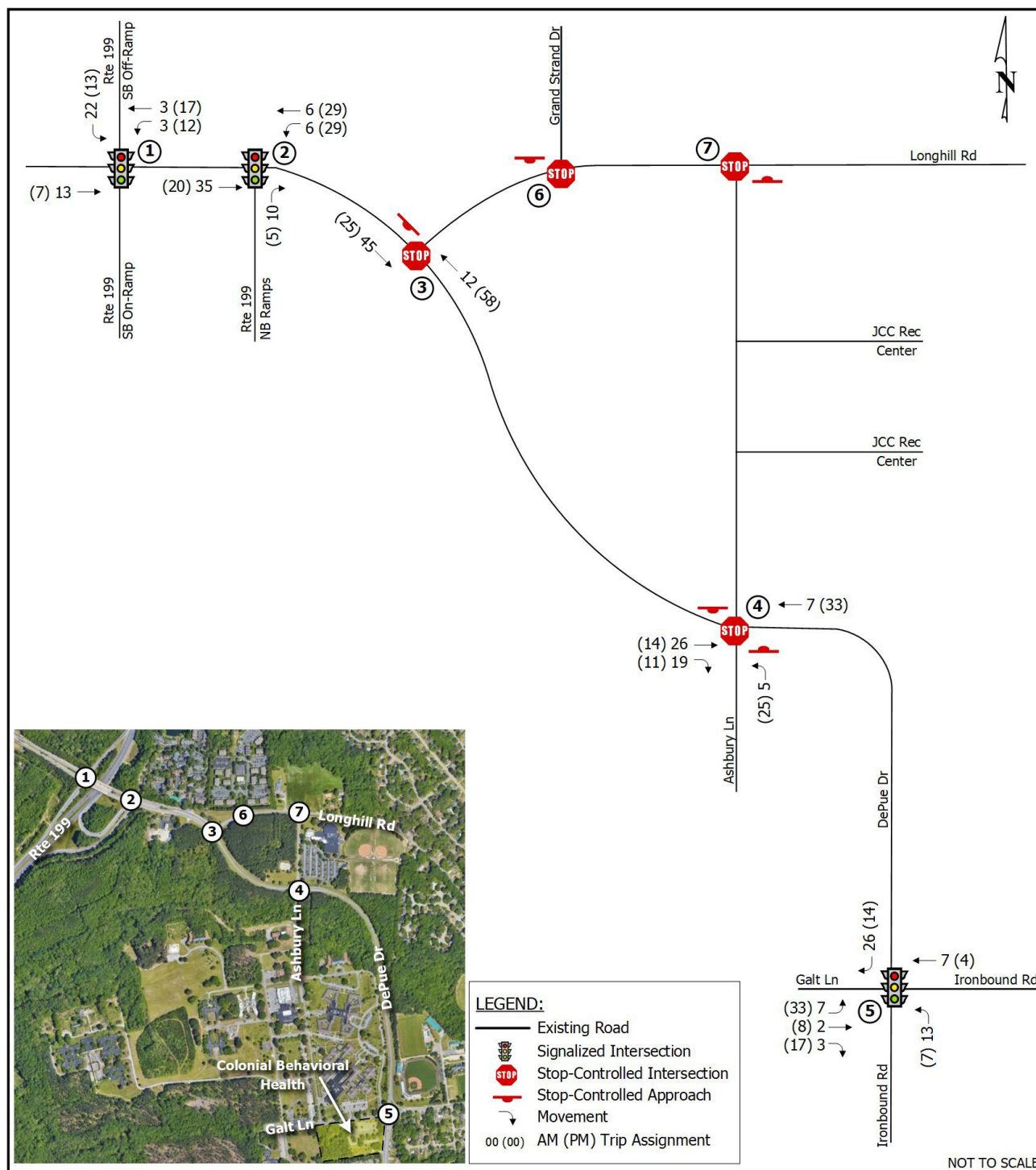


Figure 5: Approved Development Distribution



5.3 2026 NO-BUILD TRAFFIC VOLUMES

An annual growth rate of 1.0% was applied to the 2024 existing traffic volumes (Figure 4) for two years to estimate the increase in traffic volumes to the year 2026. The approved development trips (Figure 6) were added to estimate the No-Build 2026 traffic volumes which are shown in Figure 7.

5.4 2030 NO-BUILD TRAFFIC VOLUMES

A 1.0% annual growth rate was applied to the 2024 existing traffic volumes (Figure 4) for six years to estimate the increase in traffic volumes to the year 2030. Then the approved development trips (Figure 6) were added to estimate the No-Build 2030 traffic volumes which are shown in Figure 8.

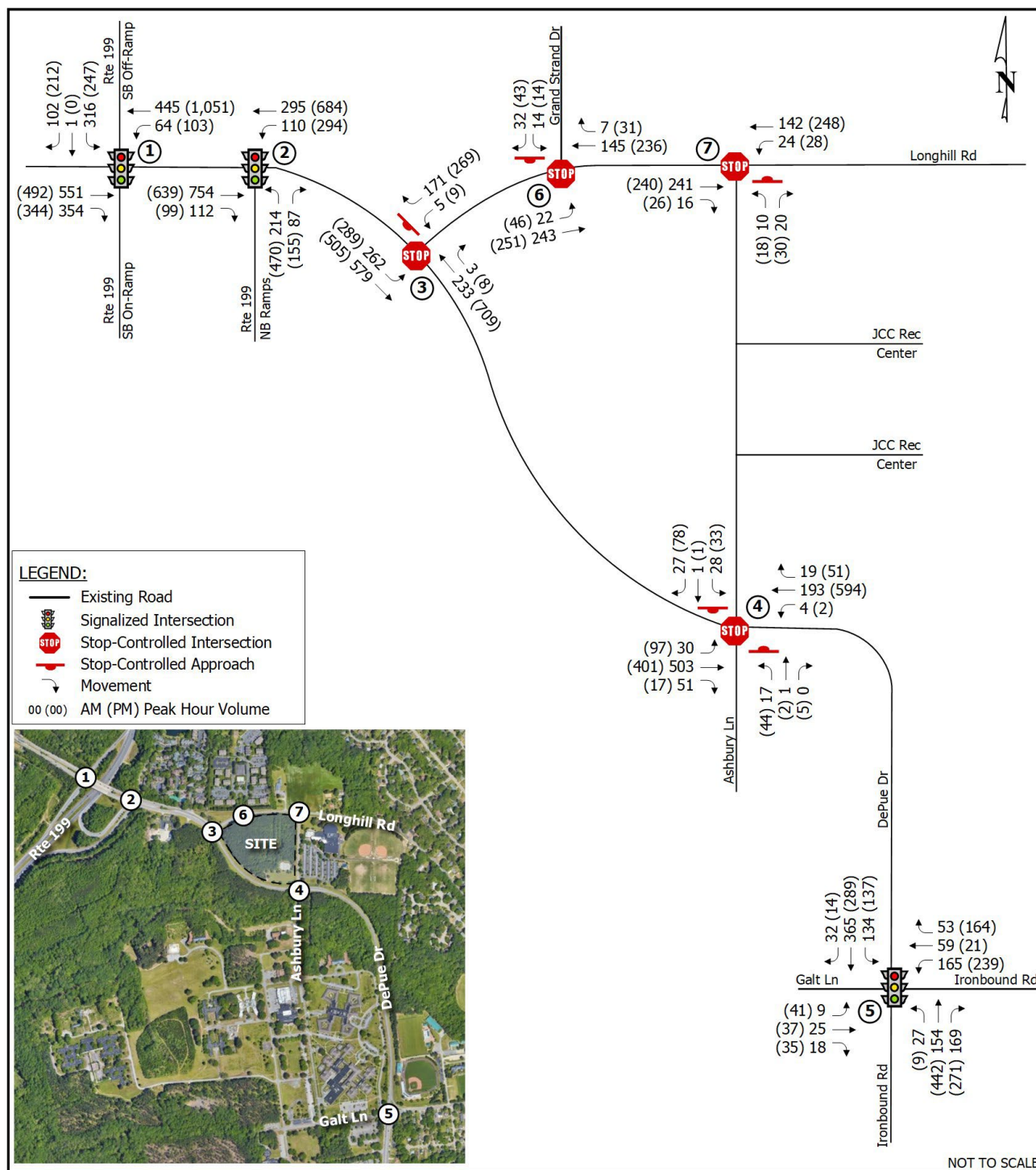


Figure 7: 2026 No-Build Traffic Volumes

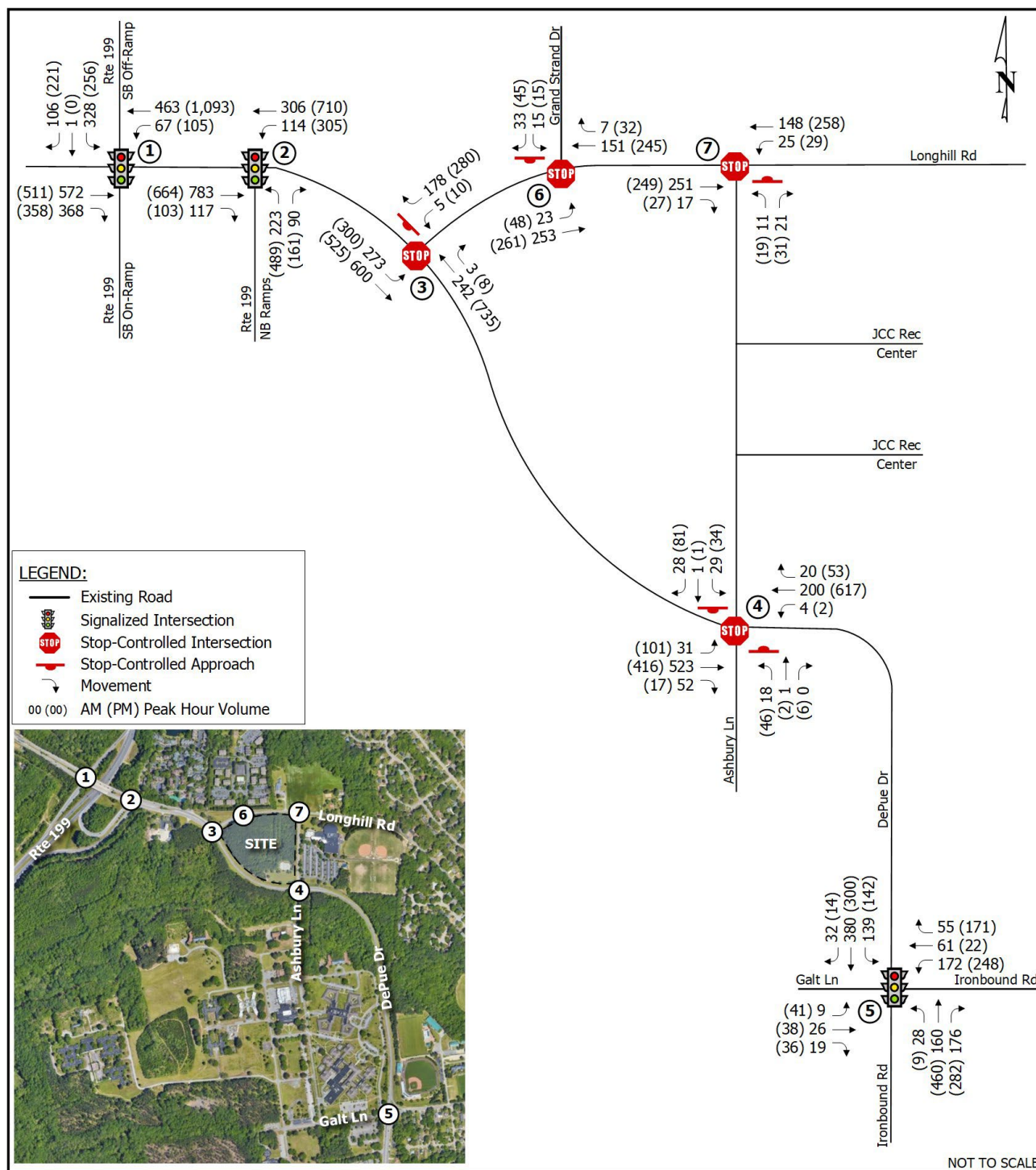


Figure 8: 2030 No-Build Volumes

6 BUILD CONDITIONS

6.1 SITE TRIP GENERATION

Table 2 shows the trip generation data collected at similar sites in James City County per the request of the reviewing agencies. The government office buildings square footages at the subject sites totaled 120,500 SF and the library square footage was 33,156 SF. Weekday peak hour trips were adjusted proportionally to account for the total proposed government office square footage of 177,256 SF and a library square footage of 25,000 SF, as shown in Table 3.

Table 2: Trip Generation – Data from Similar Sites

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ⁽¹⁾						
				ADT	AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Government Office Building	730	120,500	SF (GFA)	1,952	174	20	194	21	173	194
Library	590	33,156	SF (GFA)	1,408	28	12	40	55	69	124
Total Trips				3,360	202	32	234	76	242	318

Table 3: Trip Generation – Proposed Development

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ⁽¹⁾						
				ADT	AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Government Office Building	730	177,256	SF (GFA)	2,871	256	29	285	31	254	285
Library	590	25,000	SF (GFA)	1,050	21	9	30	41	51	92
Total Trips				3,921	277	38	315	72	305	377

(1) Trip generation rates based on traffic counts collected at three existing government office building sites and one library site in the County, at the request of the County & VDOT scaled to 177,256 SF and 25,000 SF, respectively

The proposed development is estimated to generate 315 morning peak hour trips (277 in and 38 out) and 377 PM peak hour trips (72 in and 305 out). Average daily weekday trips were estimated to be 3,921 vehicles per day. For the purposes of this analysis, the peak hour of the proposed development is assumed to align with the peak hour of existing traffic.

6.1 PROPOSED TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of site trips was based on existing travel patterns demonstrated by the 2024 existing peak hour traffic volumes and discussions with the County and VDOT. The following directional distributions were applied:

- 35% to/from the north on Route 199
- 25% to/from the south on Route 199
- 25% to/from the south on Ironbound Road
- 10% to/from the west on DePue Drive
- 5% to/from the east on Longhill Road

The trip distribution is shown Figure 9 and the site trip assignment is shown in Figure 10.

6.2 BUILD TRAFFIC VOLUMES

The build 2026 traffic volumes were estimated by adding the no-build 2026 traffic volumes (Figure 7) and the site trips (Figure 10), which are shown in Figure 11.

Section 8 includes multiple analysis scenarios that consider reconfiguring the intersection of DePue Drive and Ashbury Lane. The intersection configurations result in prohibiting northbound left, northbound through, southbound left, and southbound through turning movements. The individual redirected turning movements for this scenario for 2026 build conditions are shown in Figure 12. The 2026 build traffic volumes used for the reconfigured intersection scenario are shown in Figure 13.

The build 2030 traffic volumes were estimated by adding the no-build 2030 traffic volumes (Figure 8) and the site trips (Figure 10) , which are shown in Figure 14.

The individual redirected turning movements for the reconfigured intersection scenario for 2030 build conditions are shown in Figure 15. Figure 16 shows the 2030 build traffic volumes used for the reconfigured intersection scenario.

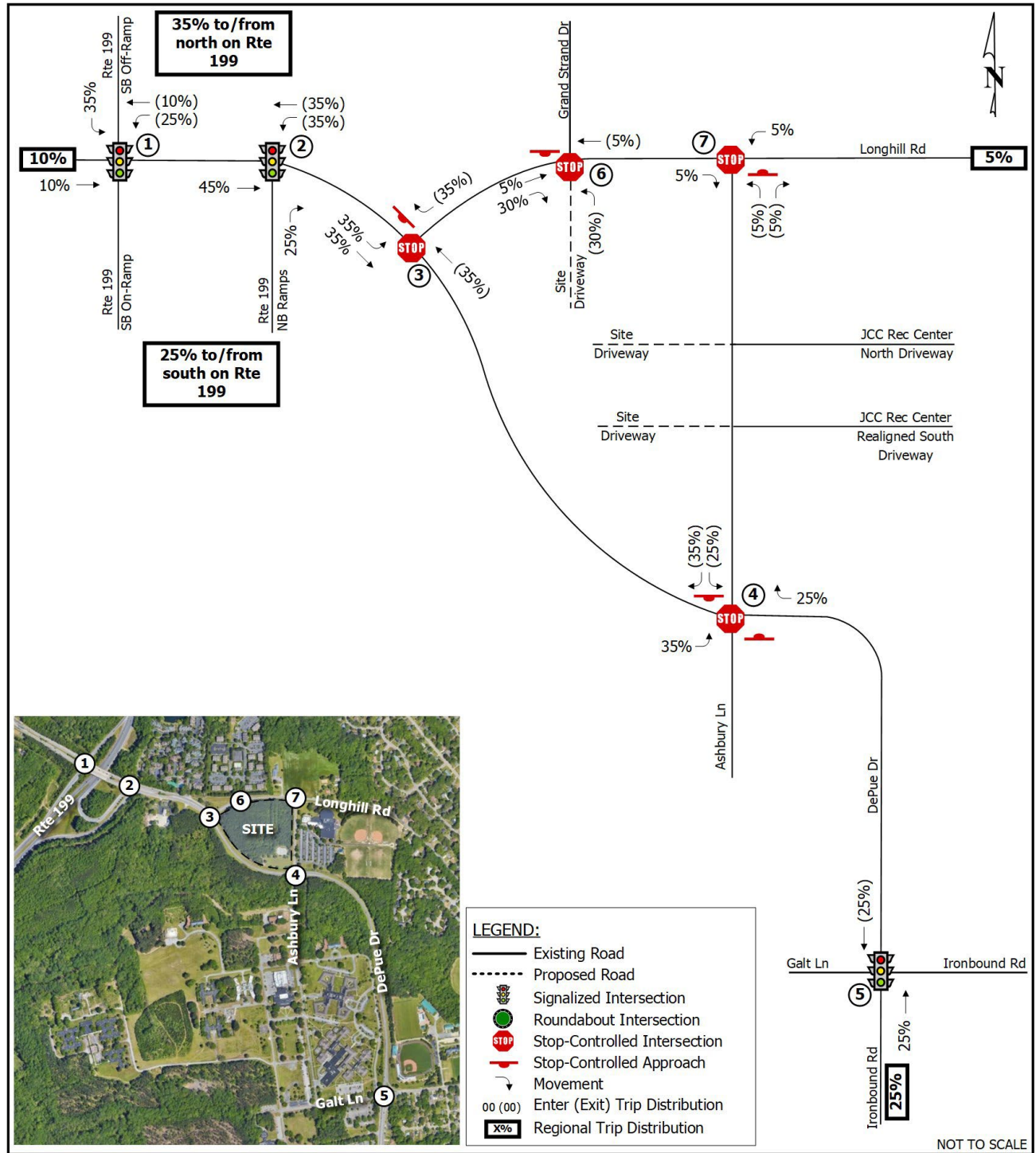


Figure 9: Site Trip Distribution

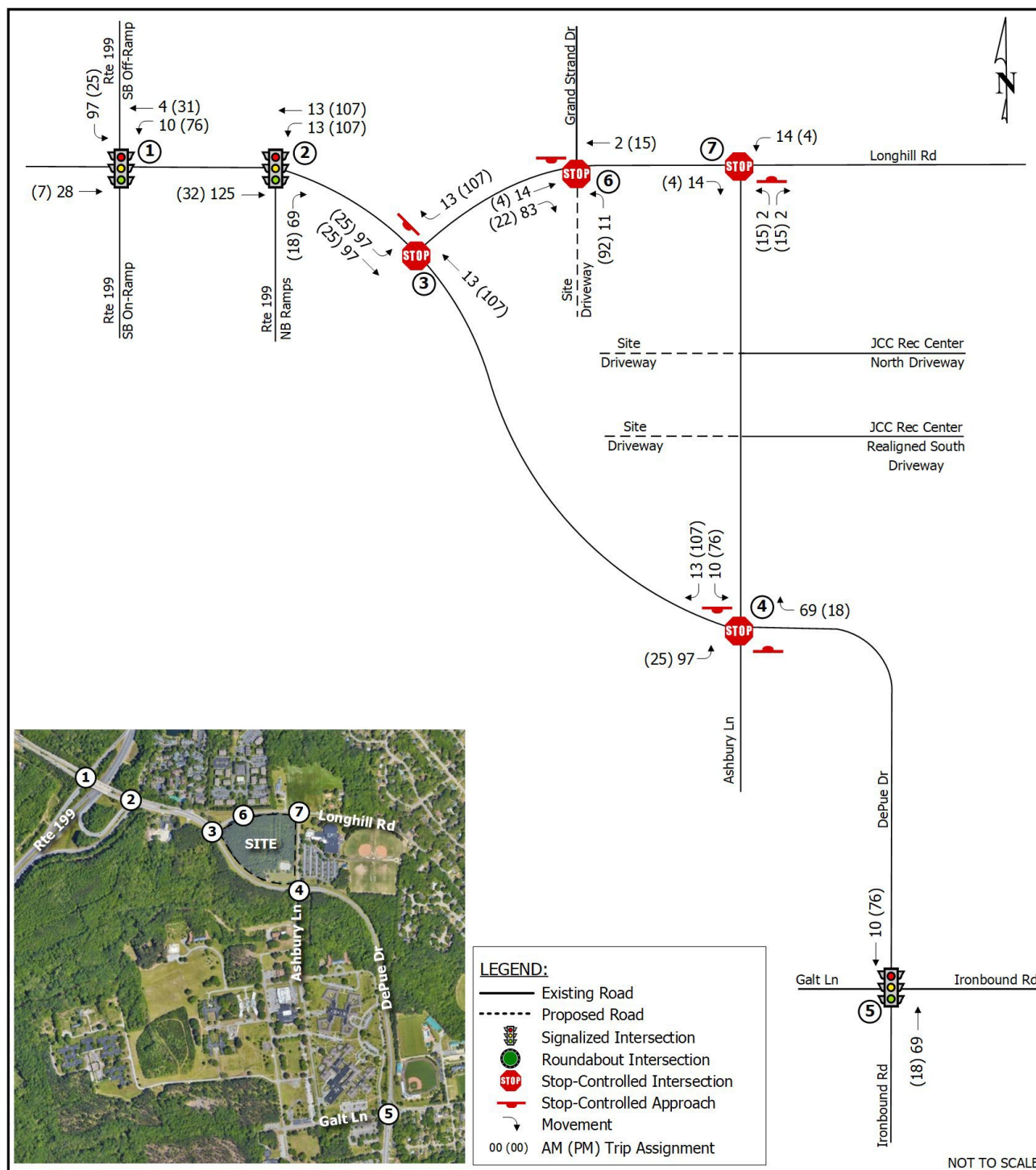
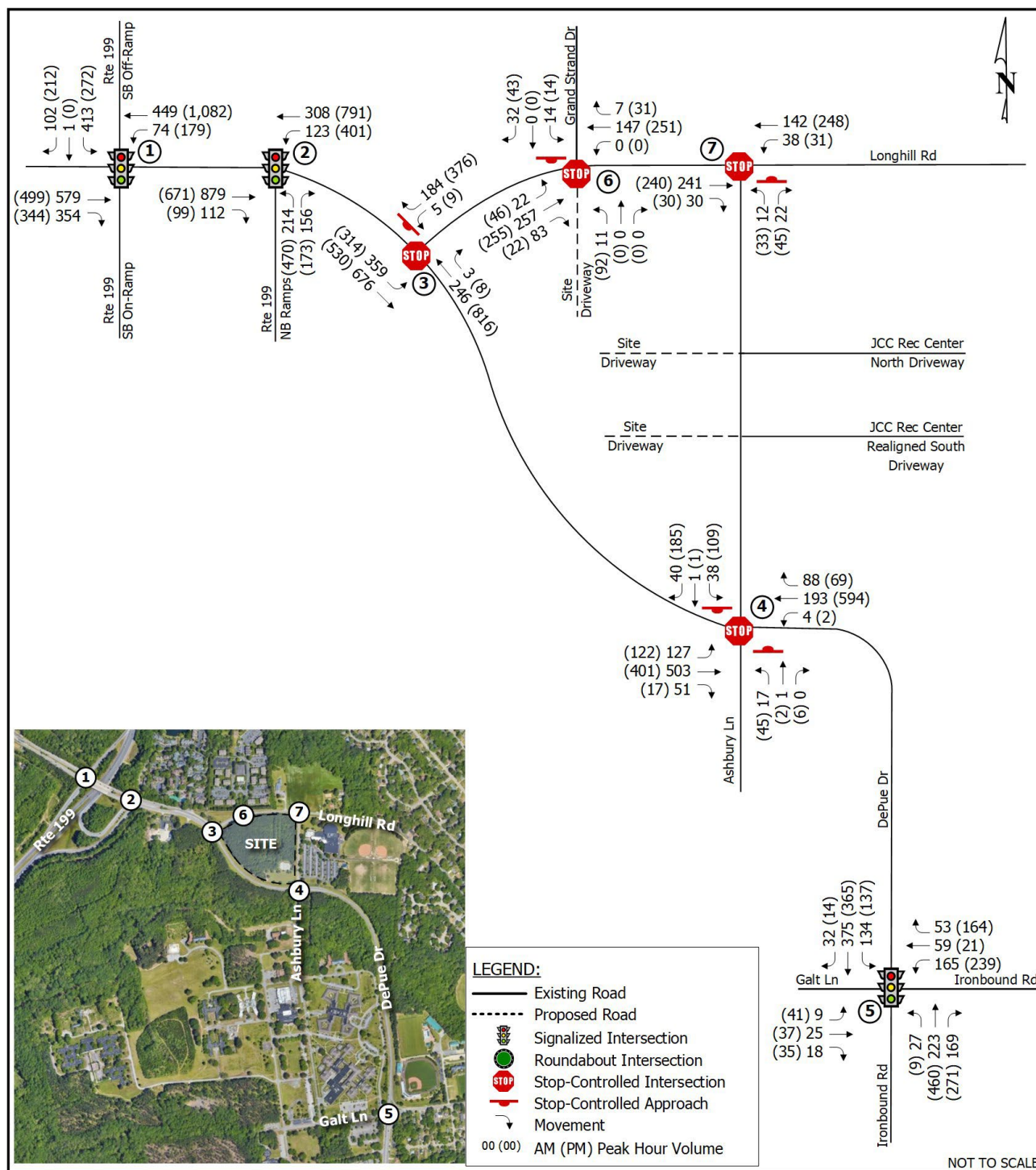
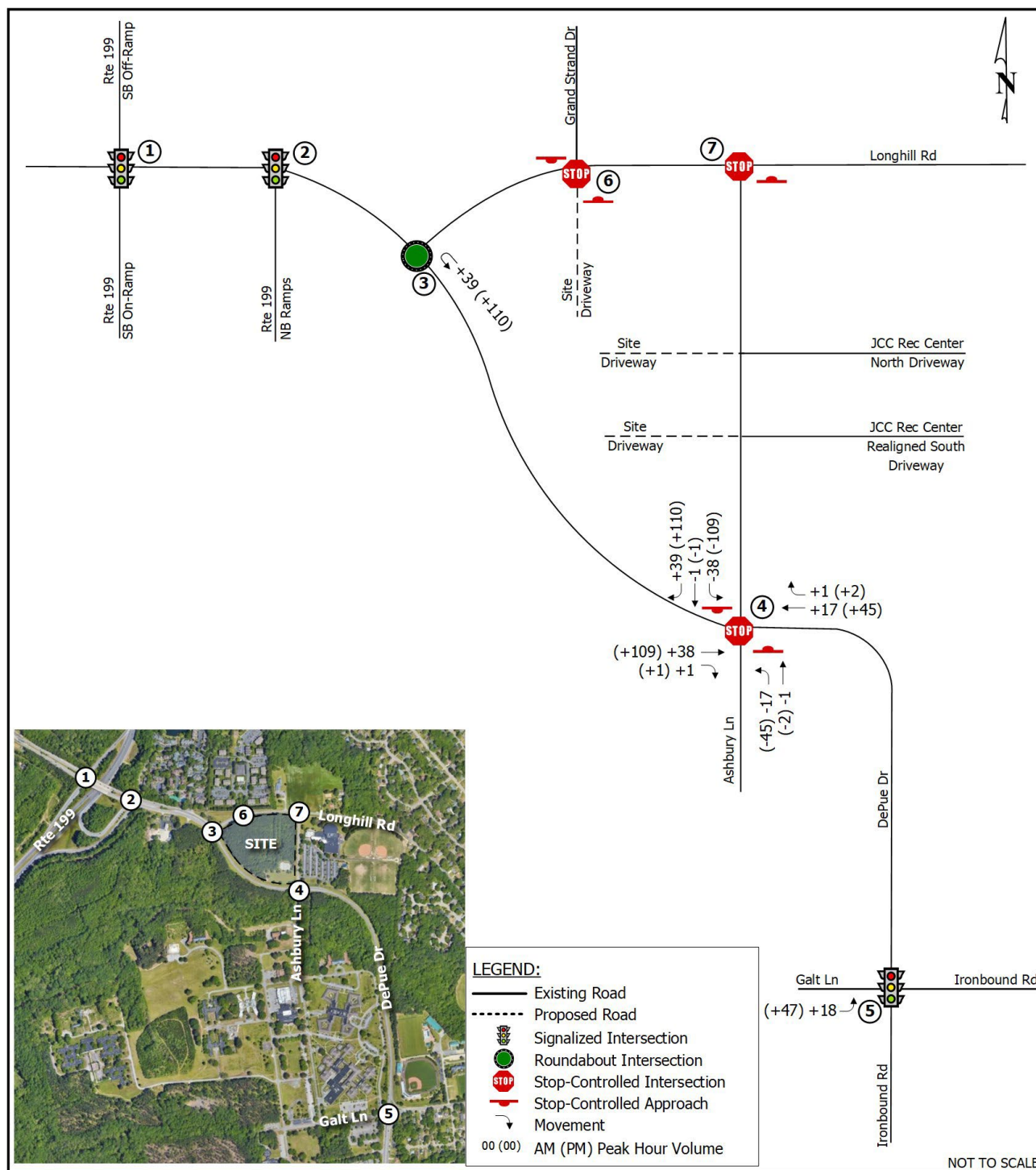
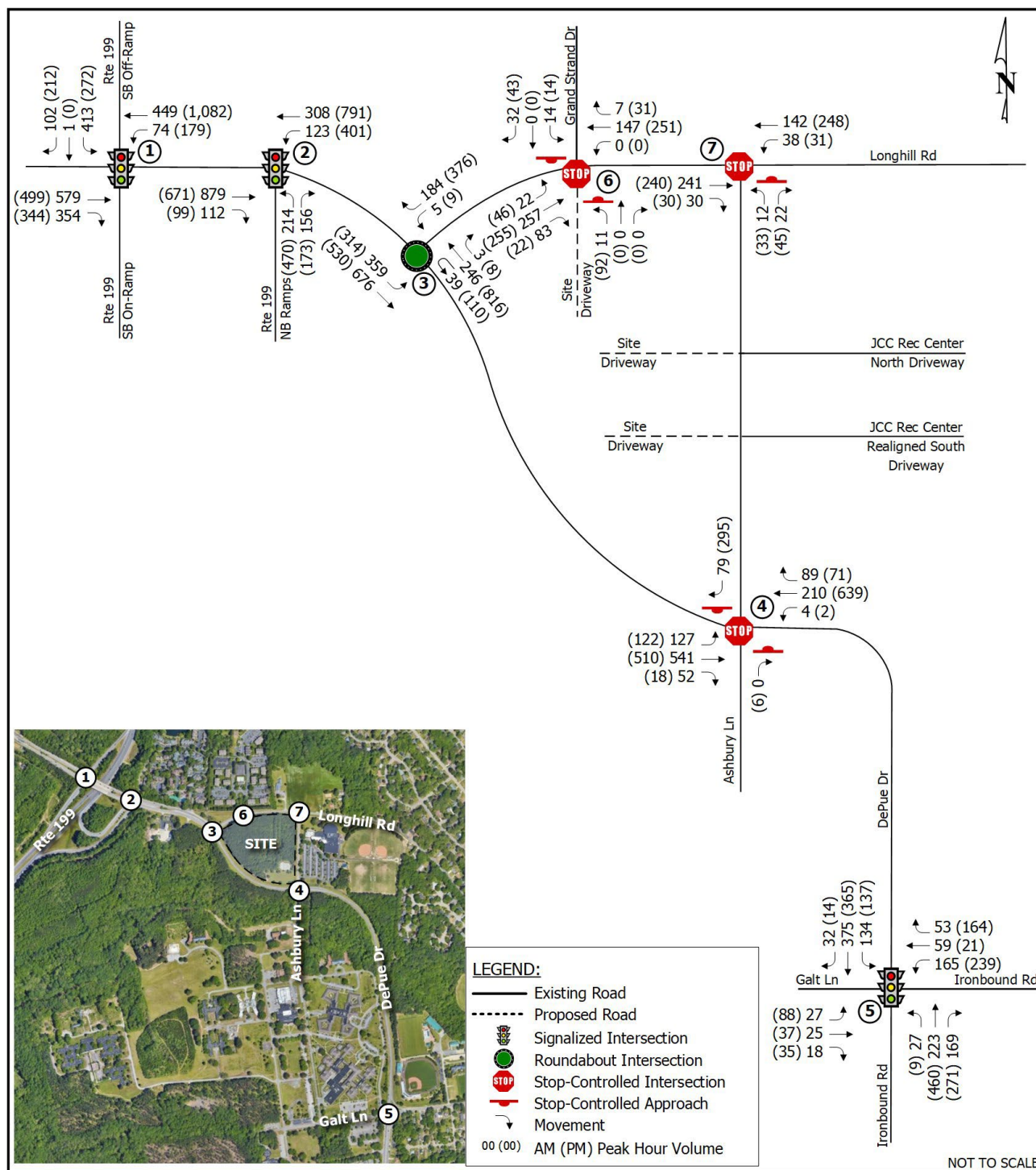
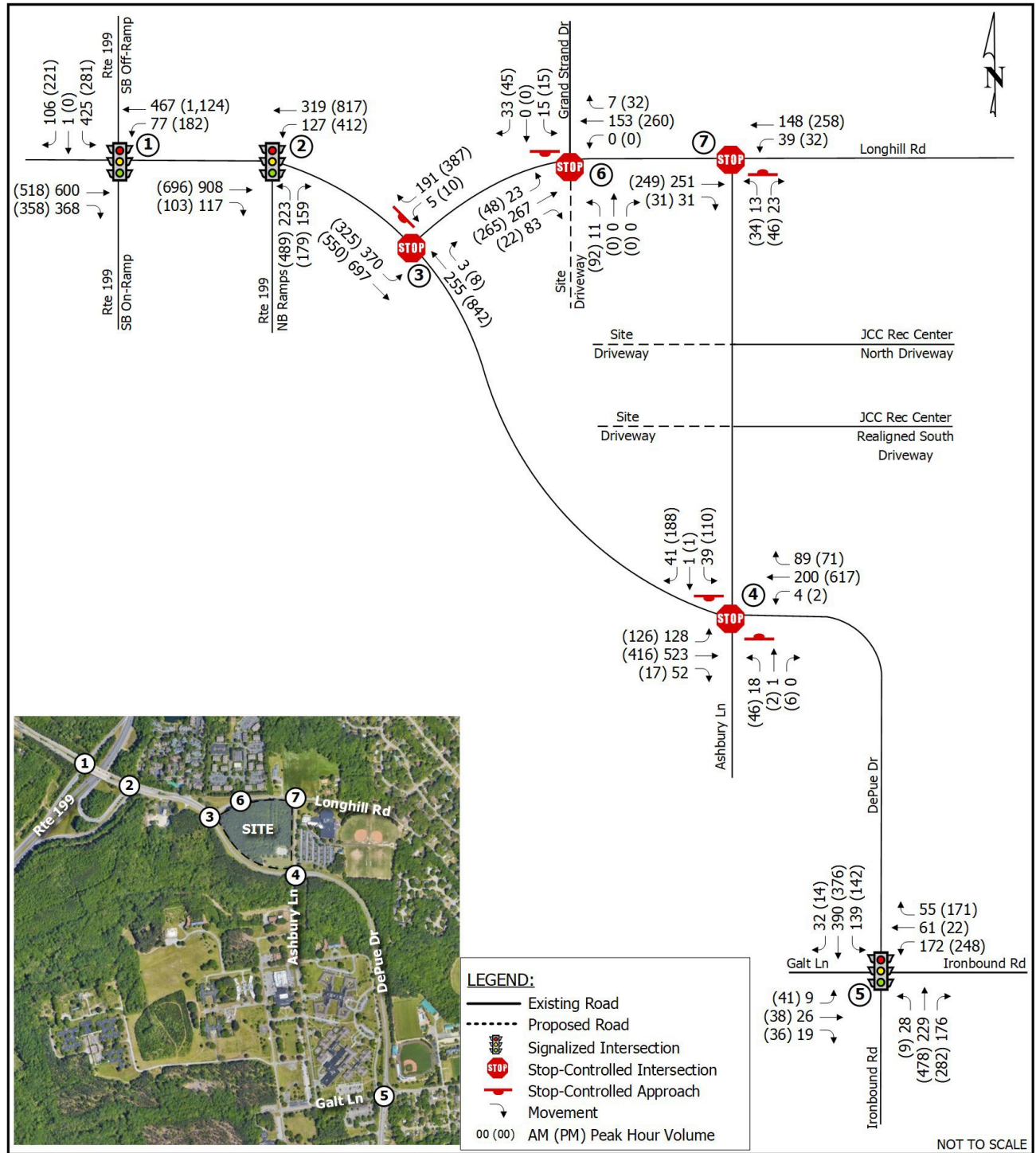


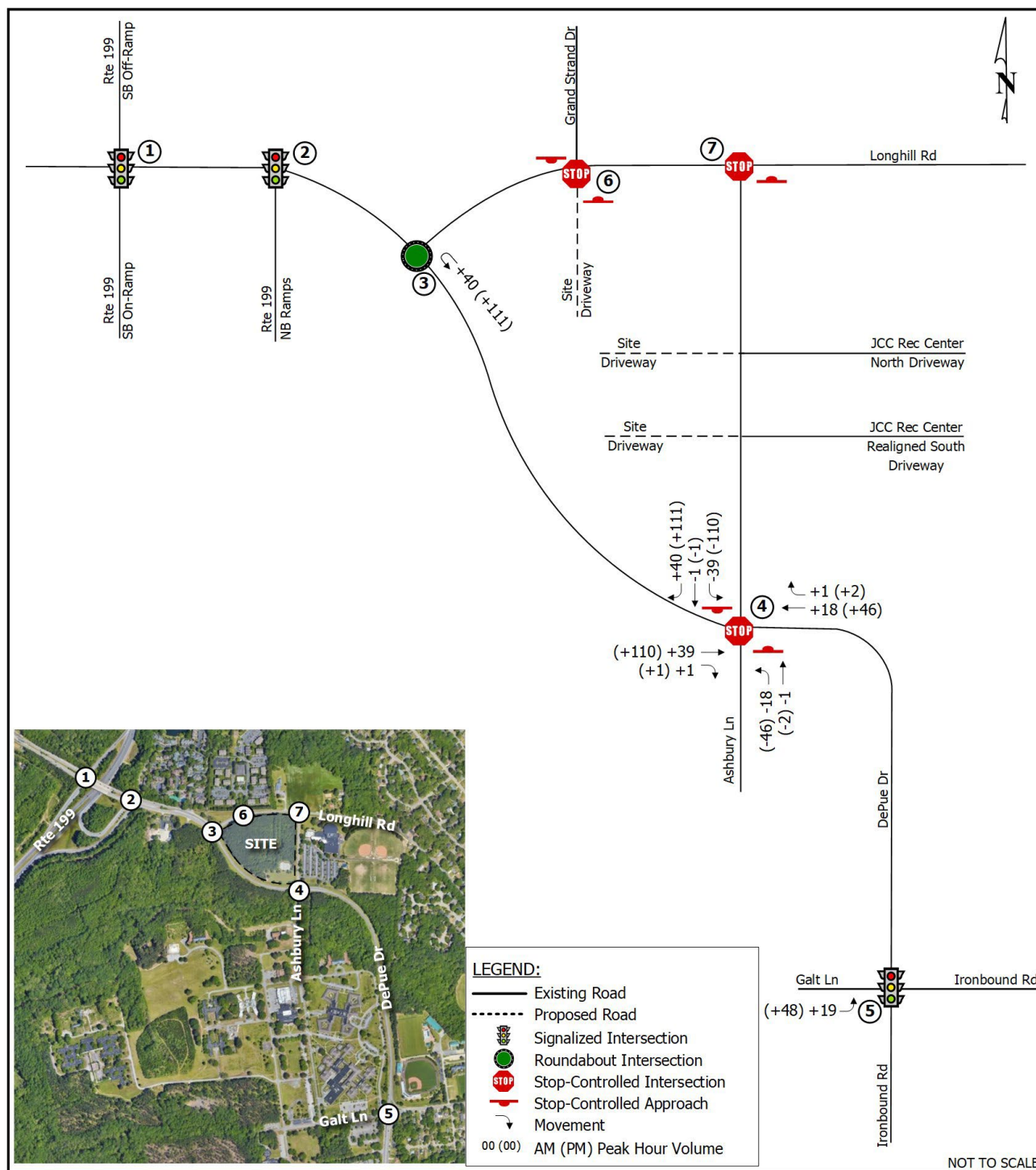
Figure 10: Site Trip Assignment

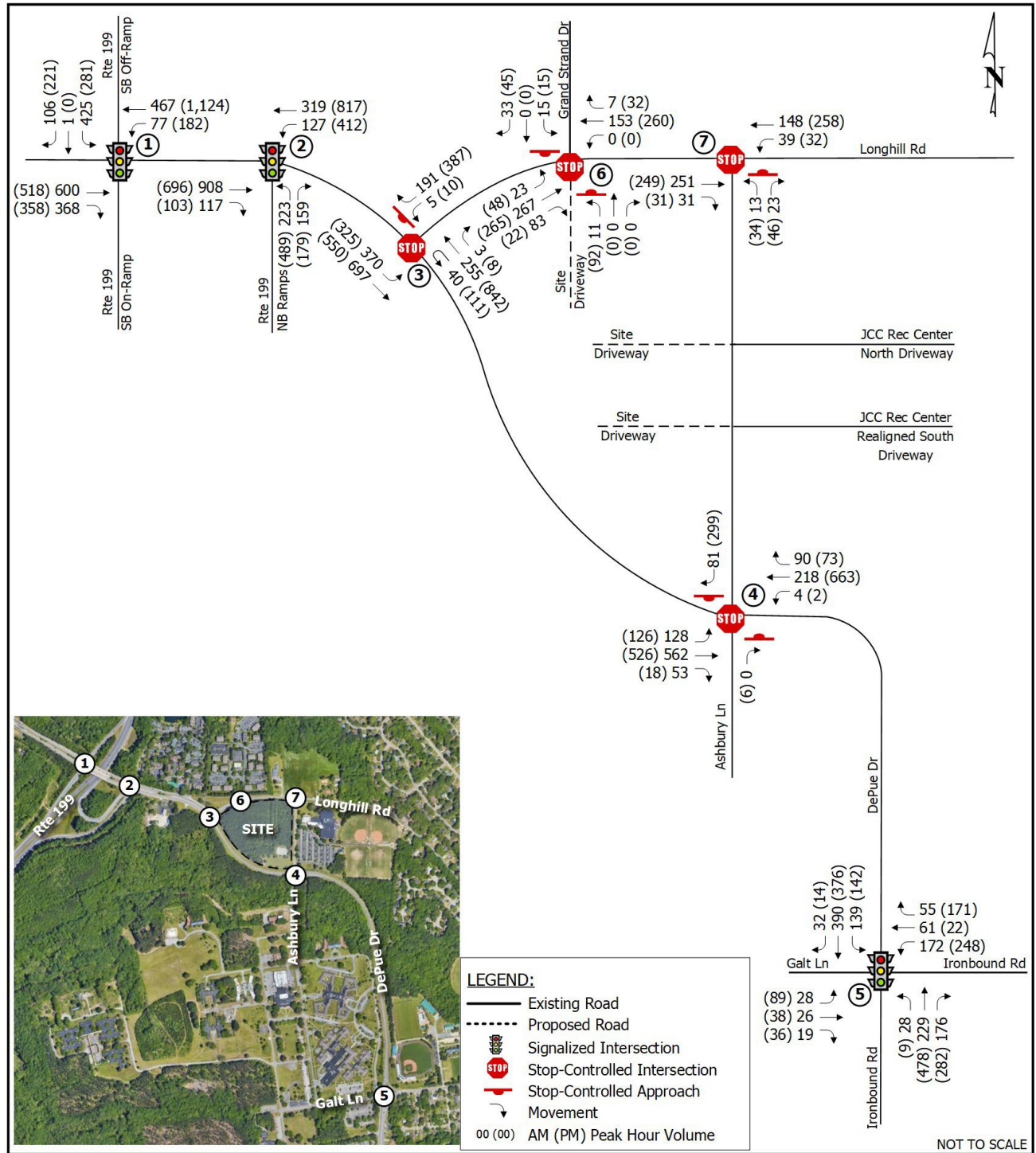












7 Turn Lane Warrant Analysis

Turn lane warrant analyses were completed under build 2026 conditions. The VDOT turn lane warrant nomographs are included in Appendix H.

The following summarizes the results of the analyses:

Longhill Road and Grand Strand Drive/Site Driveway

- An eastbound right-turn lane on Longhill Road is warrant in the AM peak hour only
- A westbound left-turn lane on Longhill Road is not warranted in the AM or PM peak hour

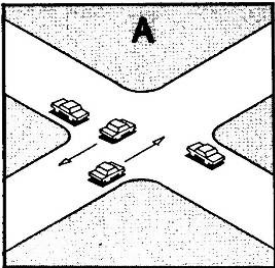
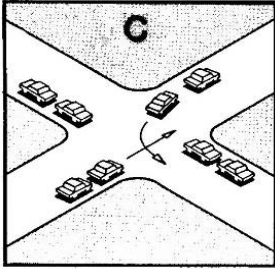
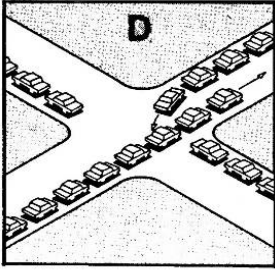
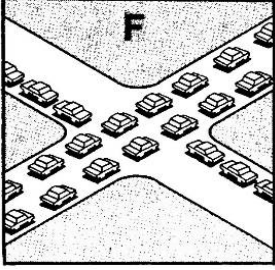
Longhill Road and Ashbury Lane

- An eastbound right-turn lane on Longhill Road is not warranted in either peak hour
- An eastbound left-turn lane on Longhill Road is not warranted in the AM or PM peak hour

8 Capacity Analysis

Capacity analysis allows traffic engineers to determine the impacts of traffic on the surrounding roadway network. The Highway Capacity Manual methodologies govern how the capacity analyses are conducted and how the results are interpreted. Levels of service (LOS) are determined for each part of the roadway network. The general standard for an overall intersection and for individual traffic movements is LOS D, representing acceptable results. Table 4 depicts how each of these levels of service are interpreted.

Table 4: Level of Service Definitions

Level of Service	Roadway Segments or Controlled Access Highways	Intersections	
A	Free flow, low traffic density.	No vehicle waits longer than one signal indication.	
B	Delay is not unreasonable, stable traffic flow.	On a rare occasion motorists wait through more than one signal indication.	
C	Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists.	Intermittently drivers wait through more than one signal indication, and occasionally backups may develop behind left turning vehicles, traffic flow still stable and acceptable.	
D	Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, thus preventing excessive backups.	Delays at intersections may become extensive with some, especially left-turning vehicles waiting two or more signal indications, but enough cycles with lower demand occur to permit periodic clearance, thus preventing excessive backups.	
E	Actual capacity of the roadway involves delay to all motorists due to congestion.	Very long queues may create lengthy delays, especially for left-turning vehicles.	
F	Forced flow with demand volumes greater than capacity resulting in complete congestion. Volumes drop to zero in extreme cases.	Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a storage area during part or all of an hour.	

SOURCE: "A Policy on Design of Design of Urban Highways and Arterial Streets" - AASHTO, 1973 based upon material published in "Highway Capacity Manual", National Academy of Sciences, 1965.

For both unsignalized and signalized intersections, level of service is defined in terms of delay, a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Table 5 summarizes the delay associated with each LOS category:

Table 5: Unsignalized and Signalized Intersection Level of Service Criteria

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

Source: Exhibit 16-2 and Exhibit 17-2 from TRB's "Highway Capacity Manual 2000"

Capacity analyses were performed to assess operational conditions for each analysis scenario. The study intersections, both signalized and unsignalized, were analyzed using SYNCHRO Version 11 based on HCM methodologies with the following assumptions:

- Level terrain.
- 12-foot lane widths.
- No parking activity or bus stops.
- The existing peak hour factor as determined by the traffic counts (by intersection). The higher of the existing peak hour factor or 0.92 was used at existing study intersections in all future year analysis scenarios.
- Heavy vehicle percentage determined by the traffic counts (by movement).

Queuing analyses were conducted using both the HCM methodology (as calculated by SYNCHRO) and SimTraffic simulations. The Synchro 95th percentile queue is the maximum back of queue for a particular lane within a lane group considering 95th percentile traffic volumes. The SimTraffic maximum queues are the average maximum queues after 10 runs of 60 minutes each.

Note that it is possible for the 95th percentile queue to be higher than the SimTraffic maximum queue due to the method in which each software calculates its respective value. The 95th percentile queue is based on an HCM formula and therefore is theoretical while the SimTraffic maximum queue varies based on simulation results.

Roundabouts were analyzed using SIDRA INTERSECTION version 9.0. Standard input parameters from VDOT's Traffic Operations and Safety Analysis Manual (TOSAM) were applied.

8.1 LONGHILL ROAD AND ROUTE 199 SOUTHBOUND RAMPS

The signalized intersection of Longhill Road and Route 199 Southbound Ramps (Intersection #1) was analyzed under all traffic conditions. Table 6 shows a summary of the capacity analysis results and Synchro and SimTraffic outputs are included in the Appendix.

Analysis indicates that the intersection currently operates at LOS B during both peak hours, with all movements operating at LOS C or better.

Under no-build 2026 conditions, the intersection is expected to continue to operate at LOS B during both peak hours, with all movements operating at LOS C or better.

Under all build 2026 conditions, the intersection is expected to continue to operate at LOS B during both peak hours, with all movements operating at LOS C or better. No improvements are warranted or recommended at this intersection at build-out of the proposed municipal complex.

Under no-build 2030 conditions, the intersection is expected to continue to operate at LOS B during both peak hours, with all movements operating at LOS C or better.

Under all build 2030 conditions, the intersection is expected to continue to operate at LOS B during both peak hours, with all movements operating at LOS C or better.

Table 6: Longhill Road and Route 199 Southbound Ramps Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Thru		14.0	B	152	183	14.0	B	131	177
	EB Right ³	430	0.4	A	0	2	0.3	A	0	0
	<i>EB Approach</i>		8.6	A	-	-	8.4	A	-	-
	WB Left ²	225	26.1	C	32	73	23.2	C	40	78
	WB Thru		6.4	A	77	124	7.5	A	195	206
	<i>WB Approach</i>		8.8	A	-	-	8.8	A	-	-
	SB Left		20.2	C	117	180	19.6	B	88	149
	SB Left/Thru		20.2	C	118	150	19.6	B	89	68
	SB Right	290	17.6	B	29	110	19.9	B	92	180
	<i>SB Approach</i>		19.5	B	-	-	19.7	B	-	-
	Overall		11.1	B	-	-	10.7	B	-	-
No-Build 2026 Conditions	EB Thru		13.9	B	153	179	14.4	B	140	185
	EB Right ³	430	0.3	A	0	0	0.3	A	0	0
	<i>EB Approach</i>		8.6	A	-	-	8.6	A	-	-
	WB Left ²	225	25.2	C	32	66	23.6	C	46	86
	WB Thru		6.3	A	75	109	7.7	A	208	210
	<i>WB Approach</i>		8.7	A	-	-	9.1	A	-	-
	SB Left		19.7	B	124	193	20.0	C	97	175
	SB Left/Thru		19.7	B	125	147	20.0	C	97	135
	SB Right	290	17.1	B	30	116	20.2	C	98	169
	<i>SB Approach</i>		19.1	B	-	-	20.1	C	-	-
	Overall		11.0	B	-	-	11.0	B	-	-
Build 2026 Conditions	EB Thru		16.0	B	172	198	16.7	B	150	201
	EB Right ³	430	0.3	A	0	2	0.3	A	0	0
	<i>EB Approach</i>		10.1	B	-	-	10.0	B	-	-
	WB Left ²	225	26.1	C	39	75	22.7	C	73	124
	WB Thru		6.9	A	83	124	7.8	A	220	232
	<i>WB Approach</i>		9.6	A	-	-	9.9	A	-	-
	SB Left		22.1	C	167	232	21.4	C	113	200
	SB Left/Thru		22.1	C	168	182	21.4	C	113	162
	SB Right	290	17.9	B	31	122	21.2	C	103	180
	<i>SB Approach</i>		21.3	C	-	-	21.3	C	-	-
	Overall		12.9	B	-	-	12.1	B	-	-
Build 2026 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Thru		16.0	B	172	179	16.7	B	150	174
	EB Right ³	430	0.3	A	0	16	0.3	A	0	10
	<i>EB Approach</i>		10.1	B	-	-	10.0	B	-	-
	WB Left ²	225	26.1	C	39	81	22.7	C	73	157
	WB Thru		6.9	A	83	129	7.8	A	220	216
	<i>WB Approach</i>		9.6	A	-	-	9.9	A	-	-
	SB Left		22.1	C	167	214	21.4	C	113	122
	SB Left/Thru		22.1	C	168	241	21.4	C	113	142
	SB Right	290	17.9	B	31	130	21.2	C	103	188
	<i>SB Approach</i>		21.3	C	-	-	21.3	C	-	-
	Overall		12.9	B	-	-	12.1	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 6: Longhill Road and Route 199 Southbound Ramps Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2026 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at #4 and Right-Turn Lane at #6	EB Thru		16.0	B	172	182	16.7	B	150	186
	EB Right ³	430	0.3	A	0	3	0.3	A	0	0
	<i>EB Approach</i>		10.1	B	-	-	10.0	B	-	-
	WB Left ²	225	26.1	C	39	77	22.7	C	73	132
	WB Thru		6.9	A	83	115	7.8	A	220	197
	<i>WB Approach</i>		9.6	A	-	-	9.9	A	-	-
	SB Left		22.1	C	167	181	21.4	C	113	118
	SB Left/Thru		22.1	C	168	232	21.4	C	113	126
	SB Right	290	17.9	B	31	125	21.2	C	103	182
	<i>SB Approach</i>		21.3	C	-	-	21.3	C	-	-
	Overall		12.9	B	-	-	12.1	B	-	-
Build 2026 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Thru		16.0	B	172	185	16.7	B	150	171
	EB Right ³	430	0.3	A	0	7	0.3	A	0	5
	<i>EB Approach</i>		10.1	B	-	-	10.0	B	-	-
	WB Left ²	225	26.1	C	39	78	22.7	C	73	140
	WB Thru		6.9	A	83	133	7.8	A	220	210
	<i>WB Approach</i>		9.6	A	-	-	9.9	A	-	-
	SB Left		22.1	C	167	168	21.4	C	113	144
	SB Left/Thru		22.1	C	168	188	21.4	C	113	181
	SB Right	290	17.9	B	31	110	21.2	C	103	197
	<i>SB Approach</i>		21.3	C	-	-	21.3	C	-	-
	Overall		12.9	B	-	-	12.1	B	-	-
No-Build 2030 Conditions	EB Thru		14.3	B	166	201	14.5	B	147	189
	EB Right ³	430	0.4	A	0	0	0.4	A	0	0
	<i>EB Approach</i>		8.9	A	-	-	8.7	A	-	-
	WB Left	225	26.1	C	36	75	24.4	C	47	91
	WB Thru		6.6	A	84	120	8.0	A	227	229
	<i>WB Approach</i>		9.0	A	-	-	9.5	A	-	-
	SB Left		19.8	B	131	215	20.6	C	103	178
	SB Left/Thru		19.8	B	133	164	20.6	C	103	143
	SB Right	290	17.3	B	33	119	20.9	C	105	198
	<i>SB Approach</i>		19.2	B	-	-	20.8	C	-	-
	Overall		11.3	B	-	-	11.3	B	-	-
Build 2030 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Thru		16.2	B	179	199	16.9	B	159	177
	EB Right ³	430	0.4	A	0	5	0.4	A	0	4
	<i>EB Approach</i>		10.2	B	-	-	10.1	B	-	-
	WB Left ²	225	26.5	C	40	91	23.2	C	76	194
	WB Thru		6.9	A	86	111	8.1	A	239	256
	<i>WB Approach</i>		9.7	A	-	-	10.2	B	-	-
	SB Left		22.8	C	174	193	21.7	C	117	155
	SB Left/Thru		22.9	C	174	228	21.7	C	118	208
	SB Right	290	18.2	B	33	136	21.7	C	111	210
	<i>SB Approach</i>		21.9	C	-	-	21.7	C	-	-
	Overall		13.1	B	-	-	12.3	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 6: Longhill Road and Route 199 Southbound Ramps Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2030 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at #4 and Right-Turn Lane at #6	EB Thru		16.2	B	179	186	16.9	B	159	180
	EB Right ³	430	0.4	A	0	5	0.4	A	0	2
	<i>EB Approach</i>		10.2	B	-	-	10.1	B	-	-
	WB Left ²	225	26.5	C	40	81	23.2	C	76	150
	WB Thru		6.9	A	86	129	8.1	A	239	224
	<i>WB Approach</i>		9.7	A	-	-	10.2	B	-	-
	SB Left		22.8	C	174	199	21.7	C	117	153
	SB Left/Thru		22.9	C	174	233	21.7	C	118	196
	SB Right	290	18.2	B	33	126	21.7	C	111	193
	<i>SB Approach</i>		21.9	C	-	-	21.7	C	-	-
	Overall		13.1	B	-	-	12.3	B	-	-
Build 2030 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Thru		16.2	B	179	185	16.9	B	159	176
	EB Right ³		0.4	A	0	4	0.4	A	0	5
	<i>EB Approach</i>		10.2	B	-	-	10.1	B	-	-
	WB Left ²		26.5	C	40	75	23.2	C	76	146
	WB Thru		6.9	A	86	137	8.1	A	239	219
	<i>WB Approach</i>		9.7	A	-	-	10.2	B	-	-
	SB Left		22.8	C	174	192	21.7	C	117	163
	SB Left/Thru		22.9	C	174	240	21.7	C	118	188
	SB Right		18.2	B	33	151	21.7	C	111	199
	<i>SB Approach</i>		21.9	C	-	-	21.7	C	-	-
	Overall		13.1	B	-	-	12.3	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

8.2 LONGHILL ROAD AND ROUTE 199 NORTHBOUND RAMPS

The signalized intersection of Longhill Road and Route 199 Northbound Ramps (Intersection #2) was analyzed under all traffic conditions. Table 7 shows a summary of the capacity analysis results and Synchro and SimTraffic outputs are included in the Appendix.

Analysis indicates that the intersection currently operates at LOS B during the AM and PM peak hours, with all movements operating at LOS C or better.

Under no-build 2026 conditions, the intersection is expected to continue to operate at LOS B during the AM and PM peak hours with all movements operating at LOS C or better.

Under all build 2026 conditions, the intersection is expected to operate at LOS B during the AM and PM peak hours with all movements operating at LOS C or better. No improvements are warranted or recommended at this intersection at build-out of the proposed municipal complex.

Under no-build 2030 conditions, the intersection is expected to continue to operate at LOS B during the AM and PM peak hours with all movements operating at LOS C or better.

Under all build 2030 conditions, the intersection is expected to continue to operate at LOS B during the AM and PM peak hours, with all movements operating at LOS C or better.

Table 7: Longhill Road and Route 199 Northbound Ramps Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCS 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Thru		14.3	B	180	266	18.2	B	165	247
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		12.4	B	-	-	15.7	B	-	-
	WB Left ²	265	25.5	C	46	82	24.5	C	92	129
	WB Thru		4.7	A	38	69	6.5	A	88	107
	<i>WB Approach</i>		10.2	B	-	-	11.7	B	-	-
	NB Left	435	22.2	C	79	158	26.1	C	#176	280
	NB Right	310	0.1	A	0	44	0.1	A	0	74
	<i>NB Approach</i>		16.4	B	-	-	19.8	B	-	-
	Overall		12.6	B	-	-	15.2	B	-	-
No-Build 2026 Conditions	EB Thru		13.9	B	191	283	19.0	B	174	269
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		12.1	B	-	-	16.4	B	-	-
	WB Left ²	265	24.6	C	48	83	25.1	C	105	141
	WB Thru		4.6	A	38	79	6.6	A	95	117
	<i>WB Approach</i>		10.0	B	-	-	12.2	B	-	-
	NB Left	435	21.6	C	80	173	27.0	C	#186	275
	NB Right	310	0.1	A	0	49	0.2	A	0	87
	<i>NB Approach</i>		15.3	B	-	-	20.3	C	-	-
	Overall		12.2	B	-	-	15.7	B	-	-
Build 2026 Conditions	EB Thru		14.6	B	234	338	19.6	B	184	408
	EB Right ³	400	0.1	A	0	0	0.1	A	0	50
	<i>EB Approach</i>		13.0	B	-	-	17.1	B	-	-
	WB Left ²	265	26.2	C	55	84	28.2	C	145	182
	WB Thru		4.4	A	40	80	6.7	A	113	128
	<i>WB Approach</i>		10.6	B	-	-	13.9	B	-	-
	NB Left	435	23.2	C	83	158	30.1	C	#194	321
	NB Right	310	0.2	A	0	83	0.2	A	0	179
	<i>NB Approach</i>		13.5	B	-	-	22.0	C	-	-
	Overall		12.5	B	-	-	16.9	B	-	-
Build 2026 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Thru		14.6	B	234	212	19.6	B	184	214
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		13.0	B	-	-	17.1	B	-	-
	WB Left ²	265	26.2	C	55	84	28.2	C	145	172
	WB Thru		4.4	A	40	82	6.7	A	113	133
	<i>WB Approach</i>		10.6	B	-	-	13.9	B	-	-
	NB Left	435	23.2	C	83	161	30.1	C	#194	277
	NB Right	310	0.2	A	0	90	0.2	A	0	155
	<i>NB Approach</i>		13.5	B	-	-	22.0	C	-	-
	Overall		12.5	B	-	-	16.9	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 7: Longhill Road and Route 199 Northbound Ramps Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2026 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at Intersection #4 and Right-Turn Lane at #6	EB Thru		14.6	B	234	226	19.6	B	184	252
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		13.0	B	-	-	17.1	B	-	-
	WB Left ²	265	26.2	C	55	90	28.2	C	145	168
	WB Thru		4.4	A	40	79	6.7	A	113	120
	<i>WB Approach</i>		10.6	B	-	-	13.9	B	-	-
	NB Left	435	23.2	C	83	158	30.1	C	#194	264
	NB Right	310	0.2	A	0	96	0.2	A	0	97
	<i>NB Approach</i>		13.5	B	-	-	22.0	C	-	-
	Overall		12.5	B	-	-	16.9	B	-	-
Build 2026 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Thru		14.6	B	234	375	19.6	B	184	181
	EB Right ³	400	0.1	A	0	78	0.1	A	0	0
	<i>EB Approach</i>		13.0	B	-	-	17.1	B	-	-
	WB Left ²	265	26.2	C	55	89	28.2	C	145	163
	WB Thru		4.4	A	40	77	6.7	A	113	132
	<i>WB Approach</i>		10.6	B	-	-	13.9	B	-	-
	NB Left	435	23.2	C	83	167	30.1	C	#194	238
	NB Right	310	0.2	A	0	94	0.2	A	0	178
	<i>NB Approach</i>		13.5	B	-	-	22.0	C	-	-
	Overall		12.5	B	-	-	16.9	B	-	-
No-Build 2030 Conditions	EB Thru		14.1	B	203	310	19.1	B	182	276
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		12.3	B	-	-	16.6	B	-	-
	WB Left	265	25.2	C	51	84	26.0	C	111	145
	WB Thru		4.6	A	41	82	6.7	A	98	111
	<i>WB Approach</i>		10.2	B	-	-	12.5	B	-	-
	NB Left	435	22.1	C	84	182	29.1	C	#205	369
	NB Right	310	0.1	A	0	61	0.2	A	0	240
	<i>NB Approach</i>		15.7	B	-	-	22.0	C	-	-
	Overall		12.4	B	-	-	16.3	B	-	-
Build 2030 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Thru		14.9	B	247	218	20.0	C	191	188
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		13.2	B	-	-	17.5	B	-	-
	WB Left ²	265	26.8	C	56	88	29.2	C	151	161
	WB Thru		4.5	A	42	80	6.8	A	117	142
	<i>WB Approach</i>		10.8	B	-	-	14.3	B	-	-
	NB Left	435	23.6	C	86	166	31.9	C	#209	280
	NB Right	310	0.2	A	0	99	0.2	A	0	134
	<i>NB Approach</i>		13.8	B	-	-	23.4	C	-	-
	Overall		12.8	B	-	-	17.5	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 7: Longhill Road and Route 199 Northbound Ramps Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2030 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at Intersection #4 and Right-Turn Lanes at #6	EB Thru		14.9	B	247	222	20.0	C	191	194
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		13.2	B	-	-	17.5	B	-	-
	WB Left ²	265	26.8	C	56	86	29.2	C	151	167
	WB Thru		4.5	A	42	84	6.8	A	117	122
	<i>WB Approach</i>		10.8	B	-	-	14.3	B	-	-
	NB Left	435	23.6	C	86	173	31.9	C	#209	279
	NB Right	310	0.2	A	0	98	0.2	A	0	132
	<i>NB Approach</i>		13.8	B	-	-	23.4	C	-	-
	Overall		12.8	B	-	-	17.5	B	-	-
Build 2030 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Thru		14.9	B	247	240	20.0	C	191	189
	EB Right ³	400	0.1	A	0	0	0.1	A	0	0
	<i>EB Approach</i>		13.2	B	-	-	17.5	B	-	-
	WB Left ²	265	26.8	C	56	104	29.2	C	151	172
	WB Thru		4.5	A	42	77	6.8	A	117	134
	<i>WB Approach</i>		10.8	B	-	-	14.3	B	-	-
	NB Left	435	23.6	C	86	161	31.9	C	#209	288
	NB Right	310	0.2	A	0	95	0.2	A	0	149
	<i>NB Approach</i>		13.8	B	-	-	23.4	C	-	-
	Overall		12.8	B	-	-	17.5	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

8.3 LONGHILL ROAD/DEPUE DRIVE AND LONGHILL ROAD

The unsignalized intersection of Longhill Road/DePue Drive and Longhill Road (Intersection #3) was analyzed under all traffic conditions. Table 8 shows a summary of the capacity analysis results and Synchro, SimTraffic and SIDRA outputs are included in the Appendix.

Analysis indicates that the minor street left-turn movement currently operates with moderate delays (between 25 and 50 seconds) during the AM peak hour and long delays (greater than 50 seconds) during the PM peak hour, with queue lengths of four vehicles or less. Under no-build 2026 conditions, the minor street left-turn movement is expected to continue to operate with moderate delays (between 25 and 50 seconds) during the AM peak hour and long delays (greater than 50 seconds) during the PM peak hour with queue lengths of three vehicles or less.

Under build 2026 conditions, the minor street left-turn movement is expected to operate with long delays (greater than 50 seconds) during the AM and PM peak hours, with no improvements. Therefore, the following improvement is recommended:

- Reconstruct the intersection as a two-lane roundabout

If reconstructed as a two-lane roundabout, the intersection would operate at LOS A during both peak hours, with all movements operating at LOS C or better and queue lengths of three vehicles or less.

Note that an alternative analysis scenario involved restricting the minor street through and left-turn movements at the intersection of DePue Drive and Ashbury Lane. This would divert traffic to this roundabout. Even with the additional traffic, the roundabout is expected to operate at LOS A during the AM peak hour and LOS B during the PM peak hour. An additional analysis scenario also involved a one-lane roundabout at the intersection of DePue Drive and Ashbury Lane; this alternative does not impact any previously reported results for this roundabout.

Under no-build 2030 conditions, without the roundabout, the minor street left-turn movement is expected to operate with moderate delays (between 25 and 50 seconds) during the AM peak hour and long delays (greater than 50 seconds) during the PM peak hour, with queue lengths of four vehicles or less.

Under build 2030 conditions, results at this intersection are the same regardless of if a roundabout is installed at the downstream intersection of DePue Drive and Ashbury Lane. The roundabout is expected to operate at LOS A during the AM and PM peak hours, with all movements operating at LOS C or better (with or without the downstream roundabout at Ashbury Lane) under build 2030 conditions. Under build 2030 conditions, with additional U-turning traffic due to the restriction of left and through movements at Ashbury Lane downstream, the roundabout is expected to operate at LOS A during the AM peak hour and LOS B during the PM peak hour, with all movements operating at LOS D or better.

Table 8: Longhill Road/DePue Drive and Longhill Road Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Left	200	8.7	A	25	100	11	B	38	171
	EB Thru		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		2.9	A	-	-	4.1	A	-	-
	WB Thru/Right		-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left	120	45.1	E	5	33	83.9	F	15	93
	SB Right		11.5	B	28	99	26.5	D	110	215
	<i>SB Approach</i>		12.5	B	-	-	28.4	D	-	-
No-Build 2026 Conditions	EB Left	200	8.5	A	20	89	11.7	B	43	186
	EB Thru		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		2.7	A	-	-	4.3	A	-	-
	WB Thru/Right		-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left	120	38.5	E	3	31	108.5	F	18	66
	SB Right		11.1	B	23	89	34	D	140	218
	<i>SB Approach</i>		11.9	B	-	-	36.4	E	-	-
Build 2026 Conditions	EB Left	200	9	A	33	111	13.4	B	58	200
	EB Thru		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		3.1	A	-	-	5	A	-	-
	WB Thru/Right		-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left	120	66.4	F	8	34	182	F	25	120
	SB Right		11.4	B	28	88	139.1	F	415	350
	<i>SB Approach</i>		12.9	B	-	-	140.1	F	-	-
Build 2026 Conditions With Roundabout and Right-Turn Lanes at #4 and #6	EB Left/Thru		6.8	A	74	-	5.9	A	61	-
	EB Thru		6.8	A	73	-	5.9	A	61	-
	<i>EB Approach</i>		6.8	A	-	-	5.9	A	-	-
	WB Thru		4.5	A	16	-	7.3	A	61	-
	WB Thru/Right	200	4.0	A	16	-	6.6	A	63	-
	<i>WB Approach</i>		4.2	A	-	-	6.9	A	-	-
	SB Left/Right		6.5	A	28	-	21.5	C	158	-
	<i>SB Approach</i>		6.5	A	-	-	21.5	C	-	-
	Overall		6.3	A	-	-	6.8	A	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 8: Longhill Road/DePue Drive and Longhill Road Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2026 Conditions With Roundabout and Restricted Lefts/Thrus at #4 and Right-Turn Lane at #6	EB Left/Thru		7.2	A	77	-	6.9	A	61	-
	EB Thru		7.2	A	76	-	6.8	A	61	-
	EB Approach		7.2	A	-	-	6.8	A	-	-
	WB U-Turn/Thru		4.8	A	20	-	8.3	A	78	-
	WB Thru/Right	200	4.2	A	20	-	7.5	A	81	-
	WB Approach		4.5	A	-	-	7.9	A	-	-
	SB Left/Right		6.8	A	29	-	27.5	D	189	-
	SB Approach		6.8	A	-	-	27.5	D	-	-
	Overall		6.6	A	-	-	11.0	B	-	-
Build 2026 Conditions With Roundabout and Roundabout at #4 and Right-Turn Lane at #6	EB Left/Thru		6.8	A	74	-	5.9	A	61	-
	EB Thru		6.8	A	73	-	5.9	A	61	-
	EB Approach		6.8	A	-	-	5.9	A	-	-
	WB U-Turn/Thru		4.5	A	16	-	7.3	A	61	-
	WB Thru/Right	200	4.0	A	16	-	6.6	A	63	-
	WB Approach		4.2	A	-	-	6.9	A	-	-
	SB Left/Right		6.5	A	28	-	21.5	C	158	-
	SB Approach		6.5	A	-	-	21.5	C	-	-
	Overall		6.3	A	-	-	6.8	A	-	-
No-Build 2030 Conditions	EB Left	200	8.6	A	23	99	12.2	B	48	192
	EB Thru		-	-	-	-	-	-	-	-
	EB Approach		2.7	A	-	-	4.4	A	-	-
	WB Thru/Right		-	-	-	-	-	-	-	-
	WB Approach		-	-	-	-	-	-	-	-
	SB Left	120	41.9	E	5	33	133.6	F	23	106
	SB Right		11.3	B	25	91	40.5	E	165	262
	SB Approach		12.1	B	-	-	43.7	E	-	-
Build 2030 Conditions With Roundabout and Right-Turn Lanes at #4 and #6	EB Left/Thru		7.0	A	78	-	6.1	A	65	-
	EB Thru		7.0	A	78	-	6.1	A	65	-
	EB Approach		7.0	A	-	-	6.1	A	-	-
	WB U-Turn/Thru		4.6	A	17	-	7.6	A	64	-
	WB Thru/Right	200	4.1	A	17	-	6.8	A	66	-
	WB Approach		4.3	A	-	-	7.1	A	-	-
	SB Left/Right		6.7	A	29	-	24.3	C	179	-
	SB Approach		6.7	A	-	-	24.3	C	-	-
	Overall		6.5	A	-	-	9.9	A	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 8: Longhill Road/DePue Drive and Longhill Road Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2030 Conditions With Roundabout and Restricted Lefts/Thrus at #4 and Right-Turn Lanes at #6	EB Left/Thru		7.4	A	81	-	7.1	A	65	-
	EB Thru		7.4	A	81	-	7.1	A	65	-
	<i>EB Approach</i>		7.4	A	-	-	7.1	A	-	-
	WB U-Turn/Thru		4.9	A	21	-	8.7	A	83	-
	WB Thru/Right	200	4.3	A	21	-	7.8	A	86	-
	<i>WB Approach</i>		4.6	A	-	-	8.2	A	-	-
	SB Left/Right		7.0	A	30	-	31.7	D	218	-
	<i>SB Approach</i>		7.0	A	-	-	31.7	D	-	-
	Overall		6.8	A	-	-	11.9	B	-	-
Build 2030 Conditions With Roundabout and Roundabout at #4 and Right-Turn Lane at #6	EB Left/Thru		7.0	A	78	-	6.1	A	65	-
	EB Thru		7.0	A	78	-	6.1	A	65	-
	<i>EB Approach</i>		7.0	A	-	-	6.1	A	-	-
	WB U-Turn/Thru		4.6	A	17	-	7.6	A	64	-
	WB Thru/Right	200	4.1	A	17	-	6.8	A	66	-
	<i>WB Approach</i>		4.3	A	-	-	7.1	A	-	-
	SB Left/Right		6.7	A	29	-	24.3	C	179	-
	<i>SB Approach</i>		6.7	A	-	-	24.3	C	-	-
	Overall		6.5	A	-	-	9.9	A	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

8.4 DEPUE DRIVE AND ASHBURY LANE

The unsignalized intersection of DePue Drive and Ashbury Lane (Intersection #4) was analyzed under all traffic conditions. Table 9 shows a summary of the capacity analysis results and Synchro, SimTraffic, and SIDRA outputs are included in the Appendix.

The minor street left-turn movement at the intersection of DePue Drive and Ashbury Lane currently operates with short delays (less than 25 seconds) during the AM peak hour and moderate delays (between 25 and 50 seconds) during the PM peak hour, with queue lengths of four vehicles or less. Under no-build 2026 conditions, the minor street left-turn movements are expected to operate with short delays (less than 25 seconds) during the AM peak hour and long delays (greater than 50 seconds) during the PM peak hour, with queue lengths of four vehicles or less.

Under build 2026 conditions, with no improvements, the minor street left-turn movements are expected to continue to operate with moderate delays (between 25 and 50 seconds) during the AM peak hour, and long delays during the PM peak hours, with long queues on the southbound approach. In the PM peak hour, both minor street approaches are expected to operate at LOS F.

Three potential improvements were analyzed for this intersection:

- Full access unsignalized intersection with a southbound right turn lane installed.
- Directional median that will allow left in/right in/right out operations for the north- and southbound approaches.
- A single lane roundabout.

Under build 2026 conditions, with a southbound right-turn lane installed, the minor street approaches are expected to continue to operate with LOS F during the PM peak hour. In the PM peak hour, the 158-foot southbound queue is anticipated to reach the southern roundabout.

If left and through movements on Ashbury Lane were restricted, the minor street approaches are expected to operate with short delays (less than 25 seconds) during the AM peak hour and with moderate delays (between 25 and 50 seconds) during the PM peak hours under build 2026 conditions. Southbound queue lengths on Ashbury Lane are expected to be up to eight vehicles, or approximately 196 feet, in the PM peak hour. This may result in operational failure at the southern roundabout on Ashbury Lane during the PM peak hour due to excessive queuing and limited downstream capacity.

Under build 2026 conditions, if reconstructed as a one-lane roundabout, the intersection is expected to operate at LOS A during the AM and PM peak hours, with all movements operating at LOS C or better. This scenario would result in the shortest delays for the minor street approaches while also maintaining short delays for the major street approaches. During the PM peak hour, the westbound major street approach may experience some queueing, but vehicles will remain in motion, as roundabouts facilitate continuous traffic flow.

Under no-build 2030 conditions, the minor street left-turn movements are expected to operate with short delays (less than 25 seconds) during the AM peak hour and long delays during the PM peak hour, with queue lengths of four vehicles or less.

Under build 2030 conditions, with a southbound right-turn lane installed, the minor street approaches are expected to operate with LOS F during the PM peak hour. In the PM peak hour, the 213 foot southbound queue will likely impact the southern site roundabout.

Under build 2030 conditions, with restricted left and through movements on Ashbury Lane, the minor street approach is expected to operate with short delays (less than 25 seconds) during the AM peak hour and with moderate delays (between 25 and 50 seconds) during the PM peak hour. Moderate queueing is expected to be present on the southbound approach in the PM peak hour – up to 12 vehicles, or 284 feet. This is likely to impact operations at the southern site roundabout as southbound vehicles may queue into the roundabout and prevent other drivers from entering.

Under build 2030 conditions, a one-lane roundabout is expected to operate at LOS A during the AM peak hour and LOS B during the PM peak hour with all movements operating at LOS C or better.

Table 9: DePue Drive and Ashbury Lane Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Left	240	7.7	A	3	29	9.5	A	10	64
	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.4	A	-	-	1.9	A	-	-
	WB Left	240	8.6	A	0	24	8.2	A	0	18
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0.2	A	-	-	0	A	-	-
	NB Left/Thru/Right		19.9	C	5	34	46.7	E	25	59
	<i>NB Approach</i>		19.9	C	-	-	46.7	E	-	-
	SB Left/Thru/Right		15.5	C	13	58	31.4	D	63	100
	<i>SB Approach</i>		15.5	C	-	-	31.4	D	-	-
No-Build 2026 Conditions	EB Left	240	7.7	A	3	31	9.5	A	10	62
	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.4	A	-	-	1.8	A	-	-
	WB Left	240	8.7	A	0	21	8.3	A	0	21
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0.2	A	-	-	0	A	-	-
	NB Left/Thru/Right		20.6	C	8	46	78.6	F	65	75
	<i>NB Approach</i>		20.6	C	-	-	78.6	F	-	-
	SB Left/Thru/Right		15.5	C	13	58	31.8	D	60	92
	<i>SB Approach</i>		15.5	C	-	-	31.8	D	-	-
Build 2026 Conditions	EB Left	240	8.2	A	10	52	9.8	A	13	120
	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		1.5	A	-	-	2.2	A	-	-
	WB Left	240	8.7	A	0	24	8.3	A	0	9
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0.1	A	-	-	0	A	-	-
	NB Left/Thru/Right		31.8	D	10	44	232.1	F	115	93
	<i>NB Approach</i>		31.8	D	-	-	232.1	F	-	-
	SB Left/Thru/Right		21.6	C	28	64	298.2	F	495	339
	<i>SB Approach</i>		21.6	C	-	-	298.2	F	-	-
Build 2026 Conditions With SB Right-Turn Lane <i>With Roundabout at #3 and Right-Turn Lane at #6</i>	EB Left	240	8.2	A	10	60	9.8	A	13	69
	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		1.5	A	-	-	2.2	A	-	-
	WB Left	240	8.7	A	0	23	8.3	A	0	15
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0.1	A	-	-	0	A	-	-
	NB Left/Thru/Right		31.8	D	10	49	232.1	F	115	82
	<i>NB Approach</i>		31.8	D	-	-	232.1	F	-	-
	SB Left/Thru		30.5	D	23	54	189.4	F	185	158
	SB Right	200	9.6	A	5	59	18	C	53	155
	<i>SB Approach</i>		19.9	C	-	-	81.9	F	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 9: DePue Drive and Ashbury Lane Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2026 Conditions With Restricted Lefts/Thrus With Roundabout at #3 and Right-Turn Lane at #6	EB Left	240	8.2	A	10	62	10	B	15	71
	EB Thru/Right		-	-	-	-	-	-	-	-
	EB Approach		1.5	A	-	-	1.9	A	-	-
	WB Left	240	8.8	A	0	20	8.6	A	0	9
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	WB Approach		0.1	A	-	-	0	A	-	-
	NB Right		0	A	0	0	11.9	B	0	33
	NB Approach		0	A	-	-	11.9	B	-	-
	SB Right	200	10	B	10	68	31.1	D	140	196
	SB Approach		10	B	-	-	31.1	D	-	-
Build 2026 Conditions With Roundabout With Roundabout at #3 and Right-Turn Lane at #6	EB Left/Thru/Right		11.1	B	172	-	10.4	B	135	-
	EB Approach		11.1	B	-	-	10.4	B	-	-
	WB Left/Through		6.5	A	47	-	14.6	B	242	-
	WB Approach		6.5	A	-	-	14.6	B	-	-
	NB Left/Thru/Right		6.3	A	5	-	6.9	A	14	-
	NB Approach		6.3	A	-	-	6.9	A	-	-
	SB Left/Thru/Right		4.5	A	12	-	15.2	C	122	-
	SB Approach	200	4.5	A	-	-	15.2	C	-	-
	Overall		9.3	A	-	-	13.0	B	-	-
No-Build 2030 Conditions	EB Left	240	7.8	A	3	32	9.6	A	10	68
	EB Thru/Right		-	-	-	-	-	-	-	-
	EB Approach		0.4	A	-	-	1.8	A	-	-
	WB Left	240	8.8	A	0	22	8.3	A	0	15
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	WB Approach		0.2	A	-	-	0	A	-	-
	NB Left/Thru/Right		21.6	C	8	51	98.3	F	78	82
	NB Approach		21.6	C	-	-	98.3	F	-	-
	SB Left/Thru/Right		16.1	C	15	64	36	E	70	94
	SB Approach		16.1	C	-	-	36	E	-	-
Build 2030 Conditions With SB Right-Turn Lane With Roundabout at #3 and Right-Turn Lane at #6	EB Left	240	8.2	A	10	60	9.9	A	15	107
	EB Thru/Right		-	-	-	-	-	-	-	-
	EB Approach		1.5	A	-	-	2.2	A	-	-
	WB Left	240	8.8	A	0	21	8.3	A	0	9
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	WB Approach		0.1	A	-	-	0	A	-	-
	NB Left/Thru/Right		33.7	D	13	43	\$ 303.7	F	130	108
	NB Approach		33.7	D	-	-	\$ 303.7	F	-	-
	SB Left/Thru		32.7	D	25	60	240.1	F	205	213
	SB Right	200	9.7	A	5	46	18.9	C	55	166
	SB Approach		21.1	C	-	-	101	F	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 9: DePue Drive and Ashbury Lane Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2030 Conditions With Restricted Lefts/Thrus With Roundabout at #3 and Right-Turn Lane at #6	EB Left	240	8.3	A	10	58	10.2	B	15	97
	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		1.4	A	-	-	1.9	A	-	-
	WB Left	240	8.9	A	0	25	8.7	A	0	3
	WB Through		-	-	-	-	-	-	-	-
	WB Right	265	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0.1	A	-	-	0	A	-	-
	NB Right		0	A	0	15	12.1	B	0	33
	<i>NB Approach</i>		0	A	-	-	12.1	B	-	-
	SB Right		10.1	B	10	60	34.8	D	155	284
	<i>SB Approach</i>		10.1	B	-	-	34.8	D	-	-
Build 2030 Conditions With Roundabout With Roundabout at #3 and Right-Turn Lane at #6	EB Left/Thru/Right		11.7	B	186	-	10.8	A	144	-
	<i>EB Approach</i>		11.7	B	-	-	10.8	A	-	-
	WB Left/Thru/Right		6.6	A	49	-	15.9	A	309	-
	<i>WB Approach</i>		6.6	A	-	-	15.9	A	-	-
	NB Left/Thru/Right		6.5	A	5	-	7.2	A	14	-
	<i>NB Approach</i>		6.5	A	-	-	7.2	A	-	-
	SB Left/Thru/Right		4.6	A	12	-	16.8	C	137	-
	<i>SB Approach</i>	200	4.6	A	-	-	16.8	C	-	-
Overall			9.7	A	-	-	14.0	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

8.5 DEPUE DRIVE/IRONBOUND ROAD AND IRONBOUND ROAD/GALT LANE

The signalized intersection of DePue Drive/Ironbound Road and Ironbound Road/Galt Lane (Intersection #5) was analyzed under all traffic conditions. Table 10 shows a summary of the capacity analysis results and Synchro and SimTraffic outputs are included in the Appendix.

Analysis indicates that the intersection currently operates at LOS C during the AM and PM peak hours, with all movements operating at LOS D or better. Under no-build 2026 conditions, the intersection is expected to continue to operate at LOS C during the AM and PM peak hours, with all movements operating at LOS D or better.

Under all build 2026 conditions, the intersection is expected to continue to operate at LOS C during the AM and PM peak hours with all movements operating at LOS D or better. Note that restricting the minor street through and left-turn movements at the intersection of DePue Drive and Ashbury Lane will divert some traffic through this intersection. No improvements are warranted or recommended at this intersection at build-out of the proposed municipal complex, even with the additional redirected traffic.

Under no-build 2030 conditions, the intersection is expected to continue to operate at LOS C during the AM and PM peak hours, with all movements operating at LOS D or better.

Under all build 2030 conditions, the intersection is expected to continue to operate at LOS C during the AM and PM peak hours, with all movements operating at LOS D or better.

Table 10: DePue Drive/Ironbound Road and Ironbound Road/Galt Lane Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Left/Thru/Right		36.3	D	43	81	37.0	D	58	84
	<i>EB Approach</i>		<i>36.3</i>	<i>D</i>	-	-	<i>37.0</i>	<i>D</i>	-	-
	WB Left		33.8	C	151	162	40.4	D	#239	232
	WB Thru		26.9	C	56	82	28.6	C	28	52
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		<i>25.9</i>	<i>C</i>	-	-	<i>24.2</i>	<i>C</i>	-	-
	NB Left	400	39.6	D	28	46	37.7	D	8	14
	NB Thru		21.2	C	131	102	35.5	D	#405	306
	NB Right		0.2	A	0	0	0.2	A	0	15
	<i>NB Approach</i>		<i>11.5</i>	<i>B</i>	-	-	<i>22.1</i>	<i>C</i>	-	-
	SB Left	240	33.4	C	133	146	39.1	D	142	184
	SB Thru/Right		18.0	B	289	202	21.1	C	202	215
	<i>SB Approach</i>		<i>22.1</i>	<i>C</i>	-	-	<i>26.9</i>	<i>C</i>	-	-
	Overall		20.4	C	-	-	24.4	C	-	-
No-Build 2026 Conditions	EB Left/Thru/Right		35.4	D	56	82	38.7	D	114	148
	<i>EB Approach</i>		<i>35.4</i>	<i>D</i>	-	-	<i>38.7</i>	<i>D</i>	-	-
	WB Left		28.9	C	157	161	44.3	D	#269	233
	WB Thru		25.2	C	65	78	30.3	C	34	48
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		<i>22.6</i>	<i>C</i>	-	-	<i>26.5</i>	<i>C</i>	-	-
	NB Left	400	40.4	D	43	66	39.7	D	21	110
	NB Thru		19.8	B	135	120	39.9	D	#454	369
	NB Right		0.2	A	0	0	0.2	A	0	86
	<i>NB Approach</i>		<i>11.9</i>	<i>B</i>	-	-	<i>25.0</i>	<i>C</i>	-	-
	SB Left	240	38.6	D	140	178	42.4	D	153	187
	SB Thru/Right		19.3	B	328	231	23.4	C	239	222
	<i>SB Approach</i>		<i>24.2</i>	<i>C</i>	-	-	<i>29.3</i>	<i>C</i>	-	-
	Overall		20.7	C	-	-	27.4	C	-	-
Build 2026 Conditions	EB Left/Thru/Right		35.6	D	56	91	39.2	D	114	144
	<i>EB Approach</i>		<i>35.6</i>	<i>D</i>	-	-	<i>39.2</i>	<i>D</i>	-	-
	WB Left		29.2	C	157	188	45.4	D	#269	240
	WB Thru		25.4	C	65	76	30.7	C	34	64
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		<i>22.8</i>	<i>C</i>	-	-	<i>27.1</i>	<i>C</i>	-	-
	NB Left	400	40.6	D	43	50	40.1	D	21	164
	NB Thru		21.0	C	192	153	41.0	D	#482	374
	NB Right		0.2	A	0	0	0.2	A	0	174
	<i>NB Approach</i>		<i>13.8</i>	<i>B</i>	-	-	<i>26.1</i>	<i>C</i>	-	-
	SB Left	240	38.9	D	140	153	43.0	D	153	221
	SB Thru/Right		19.4	B	#340	238	25.2	C	308	300
	<i>SB Approach</i>		<i>24.3</i>	<i>C</i>	-	-	<i>29.9</i>	<i>C</i>	-	-
	Overall		21.0	C	-	-	28.3	C	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

Table 10: DePue Drive/Ironbound Road and Ironbound Road/Galt Lane Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2026 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Left/Thru/Right		35.6	D	56	93	39.2	D	114	145
	<i>EB Approach</i>		35.6	D	-	-	39.2	D	-	-
	WB Left		29.2	C	157	171	45.4	D	#269	251
	WB Thru		25.4	C	65	84	30.7	C	34	55
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		22.8	C	-	-	27.1	C	-	-
	NB Left	400	40.6	D	43	66	40.1	D	21	79
	NB Thru		21.0	C	192	152	41.0	D	#482	350
	NB Right		0.2	A	0	0	0.2	A	0	36
	<i>NB Approach</i>		13.8	B	-	-	26.1	C	-	-
	SB Left	240	38.9	D	140	182	43.0	D	153	199
	SB Thru/Right		19.4	B	#340	257	25.2	C	308	257
	<i>SB Approach</i>		24.3	C	-	-	29.9	C	-	-
	Overall		21.0	C	-	-	28.3	C	-	-
Build 2026 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at #4 and Right-Turn Lane at #6	EB Left/Thru/Right		34.3	C	76	93	42.2	D	162	170
	<i>EB Approach</i>		34.3	C	-	-	42.2	D	-	-
	WB Left		30.8	C	162	165	48.7	D	#282	274
	WB Thru		26.6	C	67	80	32.1	C	34	65
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		24.0	C	-	-	29.1	C	-	-
	NB Left	400	41.7	D	43	64	41.5	D	22	66
	NB Thru		22.4	C	196	188	44.7	D	#507	362
	NB Right		0.2	A	0	0	0.2	A	0	38
	<i>NB Approach</i>		14.6	B	-	-	28.4	C	-	-
	SB Left	240	42.7	D	143	193	45.4	D	158	191
	SB Thru/Right		21.4	C	#354	247	26.9	C	322	273
	<i>SB Approach</i>		26.7	C	-	-	31.8	C	-	-
	Overall		22.7	C	-	-	30.7	C	-	-
Build 2026 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Left/Thru/Right		35.6	D	56	91	39.2	D	114	138
	<i>EB Approach</i>		35.6	D	-	-	39.2	D	-	-
	WB Left		29.2	C	157	169	45.4	D	#269	234
	WB Thru		25.4	C	65	81	30.7	C	34	52
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		22.8	C	-	-	27.1	C	-	-
	NB Left	400	40.6	D	43	63	40.1	D	21	101
	NB Thru		21.0	C	192	154	41.0	D	#482	370
	NB Right		0.2	A	0	0	0.2	A	0	38
	<i>NB Approach</i>		13.8	B	-	-	26.1	C	-	-
	SB Left	240	38.9	D	140	143	43.0	D	153	210
	SB Thru/Right		19.4	B	#340	209	25.2	C	308	271
	<i>SB Approach</i>		24.3	C	-	-	29.9	C	-	-
	Overall		21.0	C	-	-	28.3	C	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.² Dual left turn lanes; average storage is provided.³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

Table 10: DePue Drive/Ironbound Road and Ironbound Road/Galt Lane Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
No-Build 2030 Conditions	EB Left/Thru/Right		37.1	D	57	85	39.6	D	116	134
	<i>EB Approach</i>		37.1	D	-	-	39.6	D	-	-
	WB Left		32.7	C	164	173	46.9	D	#284	261
	WB Thru		27.3	C	67	90	30.8	C	35	60
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		25.3	C	-	-	28.0	C	-	-
	NB Left	400	43.0	D	43	59	40.4	D	21	86
	NB Thru		21.1	C	140	116	41.7	D	#484	354
	NB Right		0.2	A	0	0	0.3	A	0	68
	<i>NB Approach</i>		12.7	B	-	-	26.1	C	-	-
	SB Left	240	33.0	C	145	172	44.0	D	158	206
	SB Thru/Right		18.7	B	#351	230	23.5	C	250	256
	<i>SB Approach</i>		22.3	C	-	-	29.9	C	-	-
	Overall		20.8	C	-	-	28.4	C	-	-
Build 2030 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Left/Thru/Right		37.5	D	58	75	39.9	D	116	137
	<i>EB Approach</i>		37.5	D	-	-	39.9	D	-	-
	WB Left		33.2	C	167	160	47.8	D	#284	254
	WB Thru		27.6	C	68	85	31.1	C	35	61
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		25.7	C	-	-	28.5	C	-	-
	NB Left	400	43.3	D	44	55	40.7	D	21	69
	NB Thru		22.3	C	197	173	43.7	D	#511	374
	NB Right		0.2	A	0	0	0.3	A	0	78
	<i>NB Approach</i>		14.7	B	-	-	27.7	C	-	-
	SB Left	240	33.6	C	147	180	44.5	D	158	208
	SB Thru/Right		18.7	B	#356	267	25.5	C	320	281
	<i>SB Approach</i>		22.3	C	-	-	30.5	C	-	-
	Overall		21.2	C	-	-	29.5	C	-	-
Build 2030 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at Intersection #4 and Right-Turn Lanes at #6	EB Left/Thru/Right		36.3	D	79	100	43.2	D	166	190
	<i>EB Approach</i>		36.3	D	-	-	43.2	D	-	-
	WB Left		35.0	D	170	175	52.1	D	#297	298
	WB Thru		28.7	C	69	90	32.6	C	36	62
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		27.0	C	-	-	31.0	C	-	-
	NB Left	400	44.3	D	44	57	42.3	D	22	137
	NB Thru		23.7	C	202	158	48.7	D	#537	368
	NB Right		0.2	A	0	0	0.3	A	0	103
	<i>NB Approach</i>		15.5	B	-	-	30.8	C	-	-
	SB Left	240	35.5	D	149	199	46.9	D	#166	236
	SB Thru/Right		20.4	C	#394	246	27.2	C	334	306
	<i>SB Approach</i>		24.2	C	-	-	32.5	C	-	-
	Overall		22.6	C	-	-	32.4	C	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.² Dual left turn lanes; average storage is provided.³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

Table 10: DePue Drive/Ironbound Road and Ironbound Road/Galt Lane Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2030 Conditions With Roundabouts at #3, #4 and Right-Turn Lane at #6	EB Left/Thru/Right		37.5	D	58	94	39.9	D	116	144
	<i>EB Approach</i>		37.5	D	-	-	39.9	D	-	-
	WB Left		33.2	C	167	164	47.8	D	#284	288
	WB Thru		27.6	C	68	92	31.1	C	35	46
	WB Right	335	0.0	A	0	0	0.1	A	0	0
	<i>WB Approach</i>		25.7	C	-	-	28.5	C	-	-
	NB Left	400	43.3	D	44	67	40.7	D	21	35
	NB Thru		22.3	C	197	147	43.7	D	#511	368
	NB Right		0.2	A	0	0	0.3	A	0	43
	<i>NB Approach</i>		14.7	B	-	-	27.7	C	-	-
	SB Left	240	33.6	C	147	164	44.5	D	158	202
	SB Thru/Right		18.7	B	#356	246	25.5	C	320	285
	<i>SB Approach</i>		22.3	C	-	-	30.5	C	-	-
	Overall		21.2	C	-	-	29.5	C	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

8.6 LONGHILL ROAD AND GRAND STRAND DRIVE/SITE DRIVEWAY

The unsignalized intersection of Longhill Road and Grand Strand Drive/Site Driveway (Intersection #6) was analyzed under all traffic conditions. Table 11 shows a summary of the capacity analysis results and Synchro and SimTraffic outputs are included in the Appendix.

The minor street left-turn movement at the intersection of Longhill Road and Grand Strand Drive currently operates with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of three vehicles or less. Under no-build 2026 conditions, the minor street left-turn movement is expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of three vehicles or less.

Under all build 2026 conditions, with the construction of the site driveway, the minor street left-turn movements are expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of four vehicles or less. Based on the turn lane warrant analysis conducted in Section 7, the following improvement is recommended (in addition to the construction of the site driveway):

- Construct an eastbound right-turn lane on Longhill Road with 100 feet of storage and a 100-foot taper

Under no-build 2030 conditions, the minor street left-turn movement is expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of three vehicles or less.

Under all build 2030 conditions, with improvements in place, the minor street left-turn movements are expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of four vehicles or less.

Table 11: Longhill Road and Grand Strand Drive/Site Driveway Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Left	120	7.9	A	3	46	8	A	3	40
	EB Thru		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.7	A	-	-	1.2	A	-	-
	WB Thru		-	-	-	-	-	-	-	-
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left/Right		10.9	B	8	52	11.3	B	8	62
	<i>SB Approach</i>		10.9	B	-	-	11.3	B	-	-
No-Build 2026 Conditions	EB Left	120	7.8	A	3	45	8	A	3	43
	EB Thru		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.6	A	-	-	1.2	A	-	-
	WB Thru		-	-	-	-	-	-	-	-
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left/Right		10.2	B	5	53	11.2	B	8	61
	<i>SB Approach</i>		10.2	B	-	-	11.2	B	-	-
Build 2026 Conditions	EB Left	120	7.8	A	3	43	8	A	33	43
	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.5	A	-	-	1.1	1.1	-	-
	WB Left/Thru		-	-	-	-	-	-	-	-
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left/Thru/Right		13.8	B	3	35	21.3	C	33	294
	<i>SB Approach</i>		13.8	B	-	-	21.3	C	-	-
Build 2026 Conditions With EB Right-Turn Lane <i>With Roundabout at #3 and Right-Turn Lane at #4</i>	NB Left/Thru/Right		10.7	B	5	48	11.7	B	8	379
	<i>NB Approach</i>		10.7	B	-	-	11.7	B	-	-
	EB Left	120	7.8	A	3	42	8	A	3	40
	EB Thru		-	-	-	-	-	-	-	-
	EB Right	150	-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		0	A	0	0	0	A	0	1
	WB Right	50	-	-	-	-	-	-	-	-
Build 2026 Conditions With EB Right-Turn Lane <i>With Roundabout at #3 and Restricted Lefts/Thrus at #4</i>	<i>WB Approach</i>		0	A	-	-	0	A	-	-
	NB Left/Thru/Right		13.2	B	3	30	20.9	C	33	73
	<i>NB Approach</i>		13.2	B	-	-	20.9	C	-	-
	SB Left/Thru/Right		10.7	B	5	54	11.7	B	8	65
	<i>SB Approach</i>		10.7	B	-	-	11.7	B	-	-
	EB Left	120	7.8	A	3	38	8	A	3	33
	EB Thru		-	-	-	-	-	-	-	-
	EB Right	150	-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.5	A	-	-	1.1	A	-	-
	WB Left/Thru		0	A	0	0	0	A	0	0
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0	A	-	-	0	A	-	-
	SB Left/Thru/Right		13.2	B	3	33	20.9	C	33	94
	<i>SB Approach</i>		13.2	B	-	-	20.9	C	-	-
	NB Left/Thru/Right		10.7	B	5	54	11.7	B	8	59
	<i>NB Approach</i>		10.7	B	-	-	11.7	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 11: Longhill Road and Grand Strand Drive/Site Driveway Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2026 Conditions With EB Right-Turn Lane With Roundabouts at #3, #4	EB Left	120	7.8	A	3	46	8	A	3	42
	EB Thru		-	-	-	-	-	-	-	-
	EB Right	150	-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.5	A	-	-	1.1	A	-	-
	WB Left/Thru		0	A	0	0	0	A	0	0
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0	A	-	-	0	A	-	-
	SB Left/Thru/Right		13.2	B	3	32	20.9	C	33	83
	<i>SB Approach</i>		13.2	B	-	-	20.9	C	-	-
	NB Left/Thru/Right		10.7	B	5	52	11.7	B	8	58
	<i>NB Approach</i>		10.7	B	-	-	11.7	B	-	-
No-Build 2030 Conditions	EB Left	120	7.8	A	3	45	8	A	3	53
	EB Thru		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.6	A	-	-	1.2	A	-	-
	WB Thru		-	-	-	-	-	-	-	-
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		-	-	-	-	-	-	-	-
	SB Left/Right		10.4	B	5	52	11.4	B	8	58
	<i>SB Approach</i>		10.4	B	-	-	11.4	B	-	-
Build 2030 Conditions With EB Right-Turn Lane With Roundabout at #3 and Right-Turn Lane at #4	EB Left	120	7.8	A	3	40	8.1	A	3	46
	EB Thru		-	-	-	-	-	-	-	-
	EB Right	150	-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.5	A	-	-	1.2	A	-	-
	WB Left/Thru		0	A	0	0	0	A	0	0
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0	A	-	-	0	A	-	-
	NB Left/Thru/Right		13.5	B	3	28	21.9	C	33	79
	<i>NB Approach</i>		13.5	B	-	-	21.9	C	-	-
Build 2030 Conditions With EB Right-Turn Lane With Roundabout at #3 and Restricted Lefts/Thrus at #4	EB Left	120	7.8	A	3	44	8.1	A	3	43
	EB Thru		-	-	-	-	-	-	-	-
	EB Right	150	-	-	-	-	-	-	-	-
	<i>EB Approach</i>		0.5	A	-	-	1.2	A	-	-
	WB Left/Thru		0	A	0	0	0	A	0	1
	WB Right	50	-	-	-	-	-	-	-	-
	<i>WB Approach</i>		0	A	-	-	0	A	-	-
	NB Left/Thru/Right		13.5	B	3	33	21.9	C	33	97
	<i>NB Approach</i>		13.5	B	-	-	21.9	C	-	-
	SB Left/Thru/Right		10.9	B	8	50	12	B	10	60
	<i>SB Approach</i>		10.9	B	-	-	12	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.² Dual left turn lanes; average storage is provided.³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 11: Longhill Road and Grand Strand Drive/Site Driveway Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Build 2030 Conditions With EB Right-Turn Lane With Roundabouts at #3, #4	EB Left	120	7.8	A	3	40	8.1	A	3	45
	EB Thru		-	-	-	-	-	-	-	-
	EB Right	150	-	-	-	-	-	-	-	-
	<i>EB Approach</i>		<i>0.5</i>	<i>A</i>	-	-	<i>1.2</i>	<i>A</i>	-	-
	WB Left/Thru	50	0	A	0	3	0	A	0	4
	WB Right		-	-	-	-	-	-	-	-
	<i>WB Approach</i>		<i>0</i>	<i>A</i>	-	-	<i>0</i>	<i>A</i>	-	-
	NB Left/Thru/Right		13.5	B	3	30	21.9	C	33	75
	<i>NB Approach</i>		<i>13.5</i>	<i>B</i>	-	-	<i>21.9</i>	<i>C</i>	-	-
	SB Left/Thru/Right		10.9	B	8	61	12	B	10	71
	<i>SB Approach</i>		<i>10.9</i>	<i>B</i>	-	-	<i>12</i>	<i>B</i>	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

8.7 LONGHILL ROAD AND ASHBURY LANE

The unsignalized intersection of Longhill Road and Ashbury Lane (Intersection #7) was analyzed under all traffic conditions. Table 12 shows a summary of the capacity analysis results and Synchro and SimTraffic outputs are included in the Appendix.

The minor street left-turn movement at the intersection of Longhill Road and Ashbury Lane currently operates with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of three vehicles or less. Under no-build 2026 conditions, the minor street left-turn movement is expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of three vehicles or less.

Under all build 2026 conditions, the minor street left-turn movement is expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of four vehicles or less.

Under all build 2030 conditions, with improvement in place, the minor street left-turn movement is expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours, with queue lengths of four vehicles or less.

Table 12: Longhill Road and Ashbury Lane Analysis Results

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
Existing 2024 Conditions	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		8.1	A	3	34	7.9	A	3	64
	<i>WB Approach</i>		1.2	A	-	-	0.8	A	-	-
	NB Left/Right		11.6	B	5	54	11.8	B	8	56
	<i>NB Approach</i>		11.6	B	-	-	11.8	B	-	-
No-Build 2026 Conditions	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		7.9	A	3	45	7.9	A	3	62
	<i>WB Approach</i>		1.1	A	-	-	0.8	A	-	-
	NB Left/Right		10.7	B	5	56	11.6	B	8	58
	<i>NB Approach</i>		10.7	B	-	-	11.6	B	-	-
Build 2026 Conditions	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		7.9	A	3	58	7.9	A	3	68
	<i>WB Approach</i>		1.7	A	-	-	0.9	A	-	-
	NB Left/Right		11	B	5	59	12.3	B	13	78
	<i>NB Approach</i>		11	B	-	-	12.3	B	-	-
Build 2026 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Thru/Right		10.7	B	-	-	11.7	B	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		-	-	-	-	-	-	-	-
	<i>WB Approach</i>		7.9	A	3	62	7.9	A	3	55
	NB Left/Right		1.7	A	-	-	0.9	A	-	-
	<i>NB Approach</i>		11	B	5	50	12.3	B	13	70
Build 2026 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at Intersection #4 and Right-Turn Lane at #6	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		7.9	A	3	51	7.9	A	3	62
	<i>WB Approach</i>		1.7	A	-	-	0.9	A	-	-
	NB Left/Right		11	B	5	56	12.3	B	13	82
	<i>NB Approach</i>		11	B	-	-	12.3	B	-	-
Build 2026 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		7.9	A	3	49	7.9	A	3	48
	<i>WB Approach</i>		1.7	A	-	-	0.9	A	-	-
	NB Left/Right		11	B	5	54	12.3	B	13	66
	<i>NB Approach</i>		11	B	-	-	12.3	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

~ - Volume exceeds capacity

Table 12: Longhill Road and Ashbury Lane Analysis Results Continued

Scenario	Movement and Approach	Turn Lane Storage (ft)	AM PEAK HOUR				PM PEAK HOUR			
			Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)	Delay ¹ (sec/veh)	LOS ¹	HCM 95th Percentile Queue Length (ft)	Simulated Maximum Queue Length (ft)
No-Build 2030 Conditions	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		7.9	A	3	53	7.9	A	3	55
	<i>WB Approach</i>		1.1	A	-	-	0.8	A	-	-
	NB Left/Right		10.8	B	5	58	11.8	B	8	54
	<i>NB Approach</i>		10.8	B	-	-	11.8	B	-	-
Build 2030 Conditions With Roundabout at #3 and Right-Turn Lanes at #4 and #6	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		8	A	3	49	7.9	A	3	48
	<i>WB Approach</i>		1.7	A	-	-	0.9	A	-	-
	NB Left/Right		11.1	B	5	40	12.6	B	13	68
	<i>NB Approach</i>		11.1	B	-	-	12.6	B	-	-
Build 2030 Conditions With Roundabout at #3 and Restricted Lefts/Thrus at Intersection #4 and Right-Turn Lanes at #6	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		8	A	3	50	7.9	A	3	50
	<i>WB Approach</i>		1.7	A	-	-	0.9	A	-	-
	NB Left/Right		11.1	B	5	51	12.6	B	13	72
	<i>NB Approach</i>		11.1	B	-	-	12.6	B	-	-
Build 2030 Conditions With Roundabout at #3, #4 and Right-Turn Lane at #6	EB Thru/Right		-	-	-	-	-	-	-	-
	<i>EB Approach</i>		-	-	-	-	-	-	-	-
	WB Left/Thru		8	A	3	53	7.9	A	3	57
	<i>WB Approach</i>		1.7	A	-	-	0.9	A	-	-
	NB Left/Right		11.1	B	5	56	12.6	B	13	77
	<i>NB Approach</i>		11.1	B	-	-	12.6	B	-	-

¹ Overall intersection LOS and delay reported for signalized intersections and roundabouts only.

² Dual left turn lanes; average storage is provided.

³ Channelized right turn not controlled by the signal.

† SYNCHRO does not provide level of service or delay for unsignalized movements with no conflicting volumes.

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

m - Volume for 95th percentile queue is metered by upstream signal.

\$ - Delay exceeds 300s

9 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis, the following improvements are recommended to mitigate the impact of the proposed municipal complex trips:

- Longhill Road and Route 199 Northbound Ramps
 - No improvements recommended
- Longhill Road and Route 199 Southbound Ramps
 - No improvements recommended
- Longhill Road/DePue Drive and Longhill Road
 - Reconstruct the intersection as a two-lane roundabout.
- DePue Drive and Ashbury Lane
 - Three alternatives were analyzed to address future operational challenges at this intersection
 - Option 1 – Full Access with Southbound Right-Turn Lane
 - Provides only minor improvements to delays and queues for the minor street approaches.
 - Minor street approaches are expected to operate at LOS F, with delays up to 300 seconds during the PM peak hour.
 - Southbound queues may occasionally extend to the southern roundabout.
 - Multiple access points along Ashbury Lane could allow drivers to avoid congestion in this area.
 - Option 2 – Directional Median (Left-in/Right-In/Right-out)
 - Minor street approaches are expected to operate with up to 35 seconds of delay during the PM peak hours.
 - There is a risk of queues extending into the southern roundabout, potentially disrupting its operation.
 - Option 3 – Single-lane Roundabout
 - Projected to operate at LOS B or better.
 - Provides the shortest delays for minor street approaches while maintaining good flow on the major street.
 - Westbound queues on DePue Drive may increase slightly during the PM peak, but vehicles will continue moving due to the roundabout's continuous flow design.
- DePue Drive/Ironbound Road and Ironbound Road/Galt Lane
 - No improvements recommended
- Longhill Road and Grand Strand Drive/Site Driveway
 - Construct the site driveway with one ingress lane and one egress lane
 - Construct an eastbound right-turn lane on Longhill Road with 100 feet of storage and a 100-foot taper
- Longhill Road and Ashbury Lane
 - No improvements are warranted or recommended

Figure 17 shows the recommended lane configuration at the study intersections.

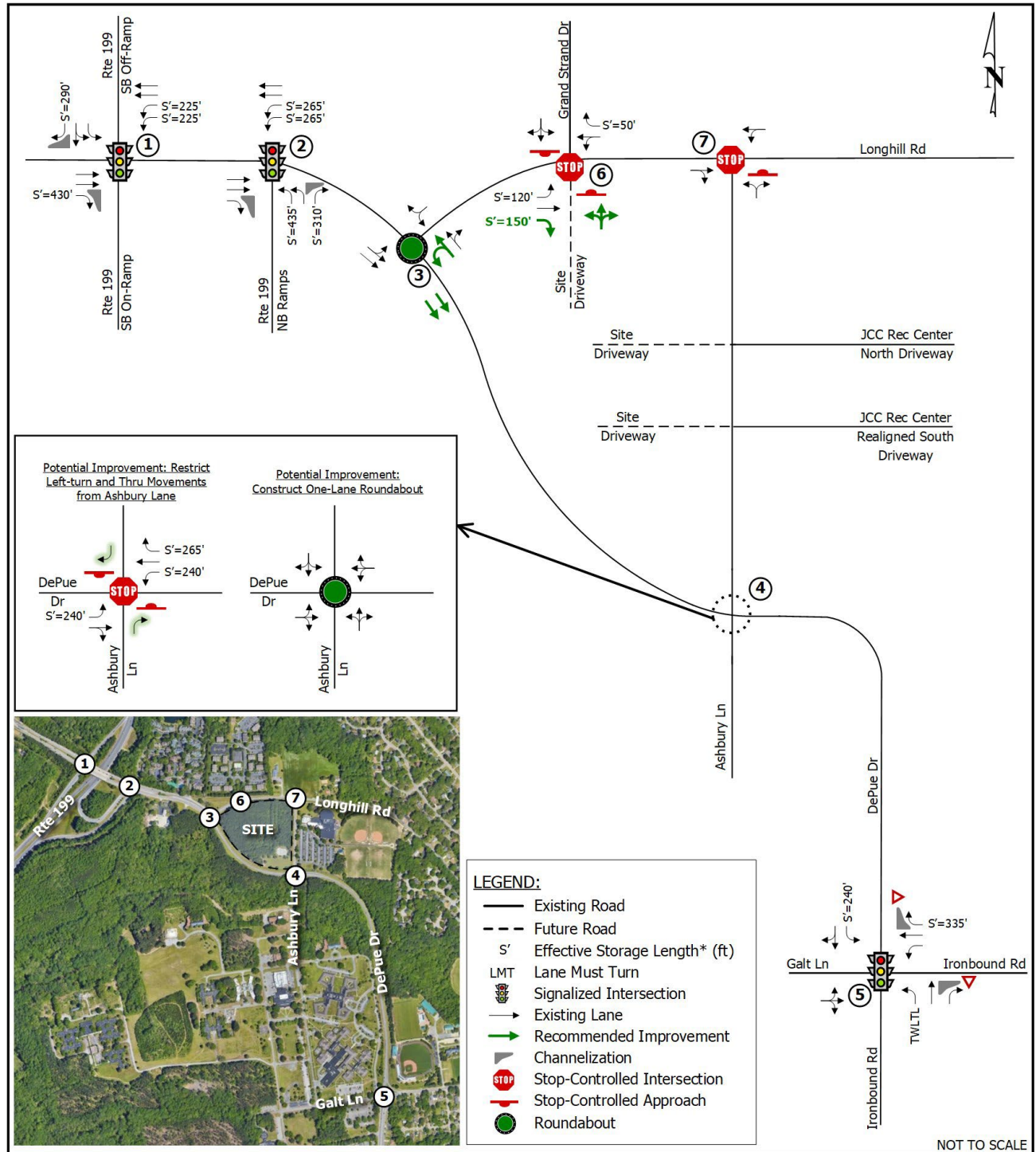


Figure 17: Proposed Intersection Geometry

APPENDIX A

TIA Scoping Document

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information

Consultant Name:	Scott Dunn/Natalie Rubbo
Tele:	804.200.6955/804.200.6558
E-mail:	Scott.dunn@timmons.com/natalie.rubbo@timmons.com
Owner/Developer Name:	
Tele:	
E-mail:	

Project Information

Project Name:	James City County Municipal Complex	Locality/County:	James City County
Project Location: (Attach regional and site specific location map)	The site is located in the east corner of the DePue Drive and Longhill Road intersection. Refer to Figure 1		
Submission Type:	Comp Plan ☐	Rezoning ☐	Site Plan ☒ Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The site is approximately 12.12 acres and currently zoned Public Lands (PL). The applicant is seeking to construct a County Administration Building with 240,000 SF of government office space (180,000 SF municipal uses and 60,000 SF of school administrative uses). The existing zoning allows 30,000 SF of office to be constructed by-right however this application is based on 240,000 SF to be conservative. The proposed access plan includes two (2) driveways on Longhill Road. Refer to Figure 1		
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☐ Other ☒
See Table 1	Residential Uses(s) Number of Units: _____ ITE LU Code(s): _____ Commercial Use(s) ITE LU Code(s): <u>730</u> _____ _____ Square Ft or Other Variable: _____	Other Use(s) ITE LU Code(s): _____ _____ Independent Variable(s): _____ _____ _____	_____ _____ _____ _____ _____ _____

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM

Information on the Project Traffic Impact Analysis Base Assumptions

Total Peak Hour Trip Projection:	Less than 100 ☐	100 – 499 ☒	500 – 999 ☐	1,000 or more ☐
Traffic Impact Analysis Assumptions				
Study Period	Existing Year: 2024	Build-out Year: 2026		Design Year: 2030
Study Area Boundaries (Attach map)	North: Refer to Figure 2		South:	
	East:		West:	
External Factors That Could Affect Project (Planned road improvements, other nearby development)	Improvements: 1. City widening of Ironbound Road 2. County Longhill Road Shared Use Path Other Developments to include: Refer to Figure 4 1. Colonial Behavioral Health Site - assumed 30,000 S.F. Medical-Dental Office (allowed by-right)			
Consistency With Comprehensive Plan (Land use, transportation plan)	The Comprehensive Plan calls for a Future Land use of Community Character Conservation, Open Space or Recreation (Parks); a use permit is required for the level of site development; improvements required to maintain LOS C will be identified.			
Available Traffic Data (Historical, forecasts)	VDOT AADT Data, traffic counts from the Cardinal Ridge project will be used to analyze the existing study intersections.			
Trip Distribution (Attach sketch)	Road Name: Refer to Figures 2 & 3		Road Name:	
	Road Name:		Road Name:	
Annual Vehicle Trip Growth Rate	1.0% to match Cardinal Ridge project	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT	
		Peak Hour of the Generator		
Study Intersection and/or Road Segments (Attach additional sheets as necessary)	1. Route 199 SB Ramps at Longhill Road		6. Longhill Road at Grand Strand Drive	
	2. Route 199 NB Ramps at Longhill Road		7. Longhill Road at Ashbury Lane	
	3. DePue Drive at Longhill Road		8. Ashbury Road at North Existing Driveway/Proposed Site Driveway	
	4. DePue Drive at Ashbury Road		9. Ashbury Road at South Existing Driveway/Proposed Site Driveway	
	5. Longhill Connector Road/Ironbound Road at Galt Drive/Ironbound Road		10.	
Trip Adjustment Factors	Internal allowance: ☐ Yes ☒ No Reduction: % trips		Pass-by Allowance: ☐ Yes ☒ No Reduction: % trips	

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM

Information on the Project Traffic Impact Analysis Base Assumptions

Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☒ aaSIDRA ☐ CORSIM ☒ Other SimTraffic
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Existing 1. Route 199 Interchange with Longhill Road at SB Ramps 2. Route 199 Interchange with Longhill Road at NB Ramps 3. Longhill Connector Road/Ironbound Road at Galt Drive/Ironbound Road
Improvement(s) Assumed or to be Considered	Improvements: 1. City widening of Ironbound Road 2. County Longhill Road Shared Use Path
Background Traffic Studies Considered	Other Developments to include: Refer to Figure 4 1. Colonial Behavioral Health Site - assumed 30,000 S.F. Medical-Dental Office (allowed by-right)
Plan Submission	☐ Master Development Plan (MDP) ☒ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be Addressed	☒ Queueing analysis ☒ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☒ Intersection(s) ☐ TDM Measures ☐ Other

NOTES on ASSUMPTIONS:

1. Trip assignment used for the study will be based on traffic counts collected at similar sites in the County. The trip generations shown in Table 1 demonstrates the project will not fall under VDOT Chapter 527 regulations.
2. At the request of the County, the Colonial Behavioral Health approved development includes 30,000 SF of standalone medical-office building. This is the amount of development allowed under the existing zoning. The distribution shown in Figure 5 will be used.

SIGNED: _____ DATE: _____

Applicant or Consultant

PRINT NAME: _____

Applicant or Consultant

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions

Table 1: Proposed Site Trip Generation

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY ¹						
				ADT	AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Government Office Building2	730	240,000	SF (GFA)	3,888	347	40	387	42	345	387
Total Trips				3,888	347	40	387	42	345	387

SOURCE: Traffic Count Data at Similar Sites

¹ Trip generation rates based on traffic counts collected at three existing government office building sites in the County, at the request of the County & VI

Table 2: Background Development Trip Generation

LAND USE	ITE CODE	AMOUNT	UNITS	WEEKDAY						
				ADT	AM PEAK HOUR			PM PEAK HOUR		
					IN	OUT	TOTAL	IN	OUT	TOTAL
Medical-Dental Office (Stand-Alone)	720	30,000	SF (GFA)	1,181	65	17	82	36	83	119
Total Trips				1,181	65	17	82	36	83	119

SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 11th Edition (2021)

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM
Information on the Project
Traffic Impact Analysis Base Assumptions



Figure 1: Preliminary Site Layout

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions



Figure 2: Site Location Map and Regional Trip Distribution

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions

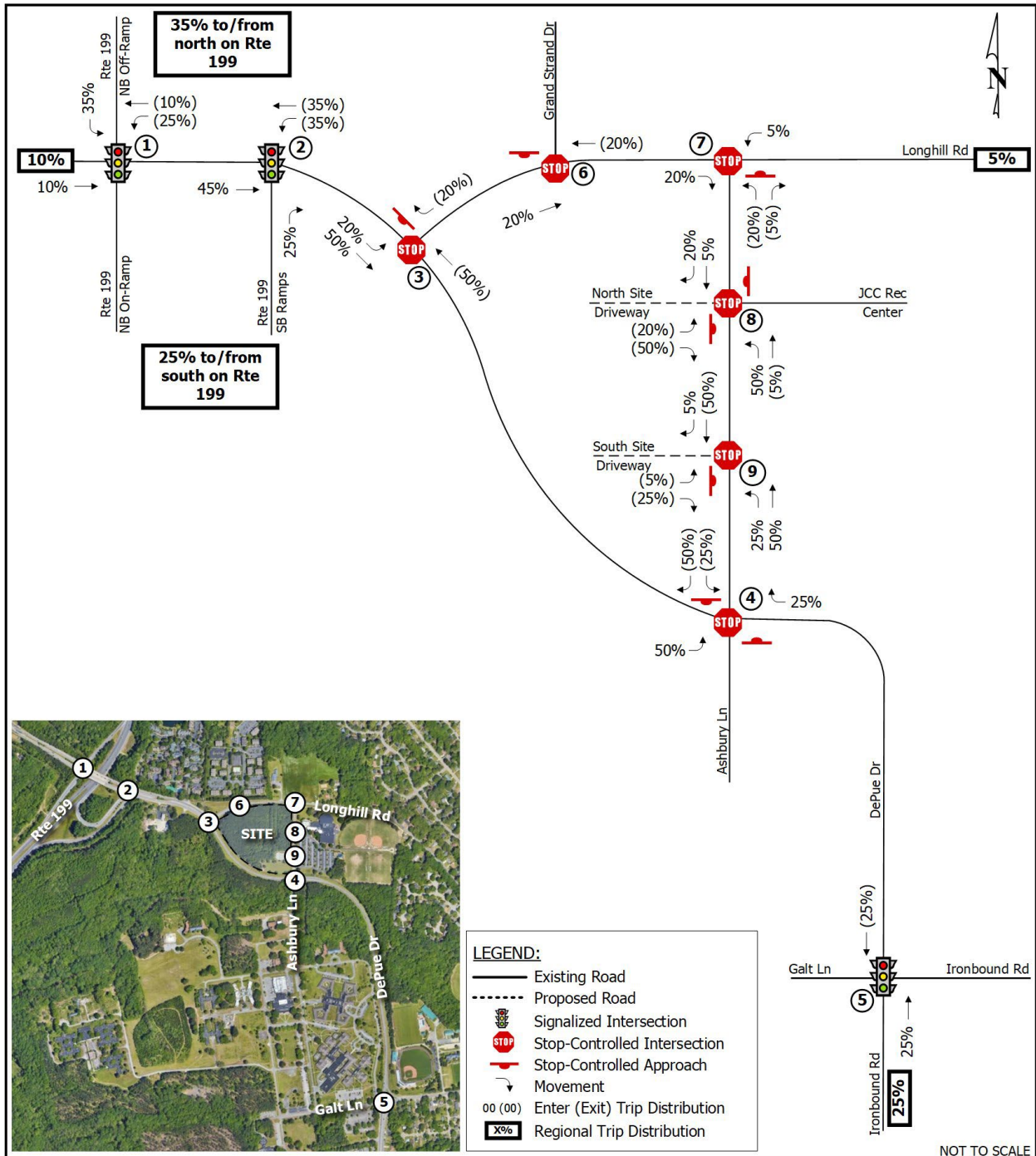


Figure 3: Site Trip Distribution

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions



Figure 4: External Factors/Adjacent Projects (Colonial Behavioral Health Site with 30,000 SF Land Use 720)

It is important for the applicant to provide sufficient information to County and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

PRE-SCOPE OF WORK MEETING FORM

Information on the Project

Traffic Impact Analysis Base Assumptions

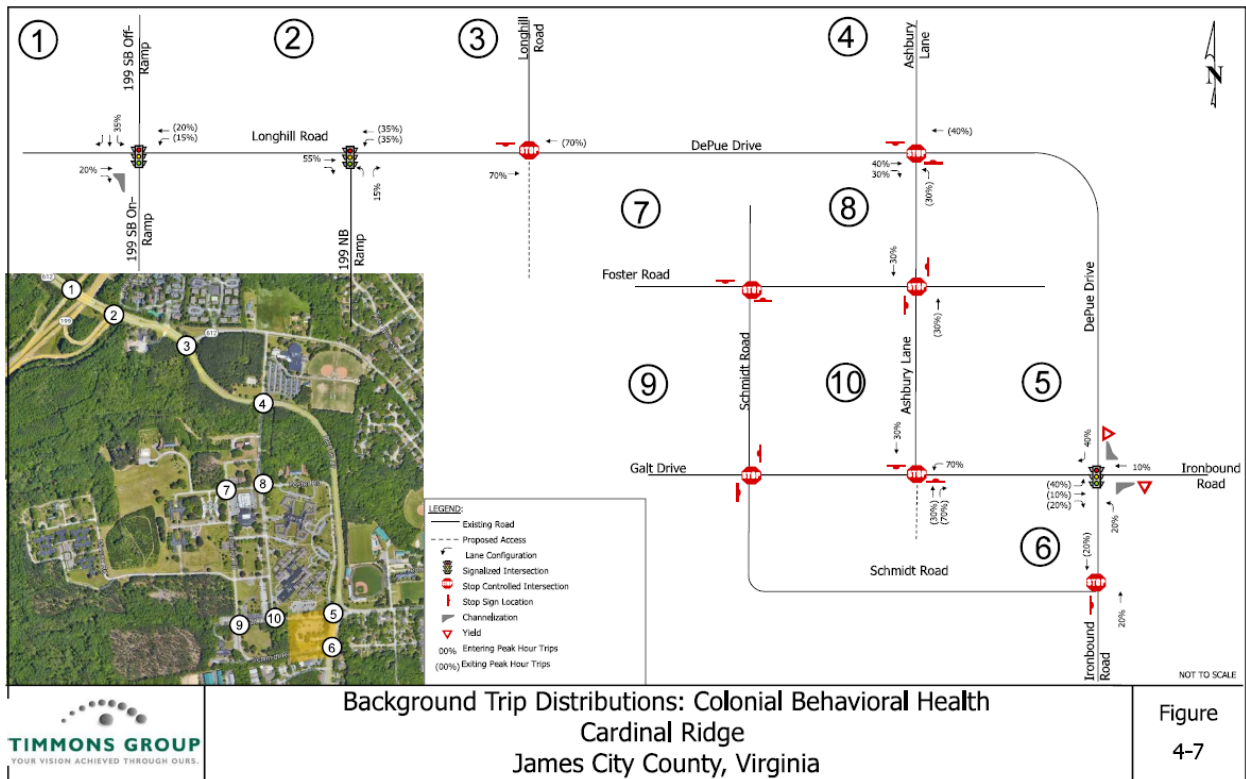


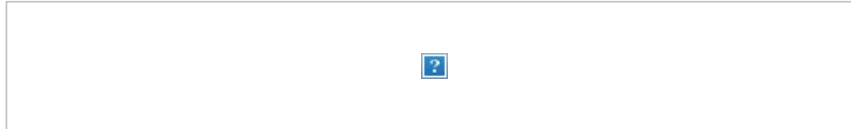
Figure 5: Colonial Behavioral Health Distribution

From: [Scott Dunn](#)
To: [Nathan Milaszewski](#); [Paul Holt \(Paul.Holt@jamescitycountyva.gov\)](mailto:Paul.Holt@jamescitycountyva.gov)
Subject: JCC Admin Building - TIA Revision Assumptions for 2-6-25 Meeting
Date: Monday, February 10, 2025 12:59:00 PM
Attachments: [Site Layout 021025.pdf](#)
[JCC Admin - Revised Distrib 021025.pdf](#)
[Library Counts 020625.pdf](#)
[image005.png](#)
[image006.png](#)

Nathan/Paul –

Thanks for your time last week. I wanted to follow up on the items we discussed and make sure we are in agreement moving forward with the study revisions.

- Site Plan – as you noted in your comments (and discussed) the site plan has been updated since the original work was completed. the TIA revision will be based on the most recent site plan (attached).
- Land Uses – the original study anticipated a 240,000 SF county administration building. This included administration space plus square footage for school board offices. The new layout includes the following uses:
 - Administration Building – 177, 256 SF
 - Public Library – 25,000 SF (confirmed with Paul Holt following 2/6/25 call)
- Trip Generation – trip generation for the site will be revised based on the proposed uses and traffic data collected at sites with James City County. With respect to the trip generation:
 - Administration Building – trip generation rates based off data collected at three (3) existing county buildings and used in original study.
 - Library – 48-hour tube counts were collected at the existing JCC/Williamsburg Library on Croaker Road (see attached). This data was compiled and is compared in the table below to available ITE Trip Generation data.



Based on the data above, the JCC library generates approximately 50% of the ITE estimated daily and PM peak traffic and slightly more than the ITE AM peak traffic. The entering/exiting splits are comparable.

- The trip generation estimates to be used in the revised study are summarized below. The rates/estimates are all based on data collected at JCC sites:



- Trip Distribution – Trip distribution will be revised per the attached figure. The entering percentages are shown; these will be reversed for exiting traffic. Per Paul Holt, the County is committed to preserving SB left from Ashbury onto DePue. Analysis will be run investigating operations assuming that as a permitted movement, acknowledging the potential for “on-site” queues along Ashbury that may extent to the upstream roundabout and beyond.
- Ashbury Lane – per JCC’s conversations with VDOT, Ashbury Lane will be vacated and become a private facility/driveway. Analysis of the roundabouts/intersections along Ashbury Lane do not need to be reviewed by VDOT. Only the Ashbury/Longhill and Ashbury/Depue intersection are under VDOT’s per view.
- DePue/Longhill intersection – this intersection will be analyzed as a roundabout, consistent with VDOT comments. Per Nathan’s email, the proposed site entrance adjacent to this intersection will require an access management exception (AM-E) due to the spacing.
- DePue/Ashbury intersection – will consider multiple configurations; mainline operations are of concern to

VDOT, exiting traffic/queues will fall under JCC per view with facility becoming private (see Trip Distribution).

Please let me know if I missed or misrepresented any items noted above or if you have questions.

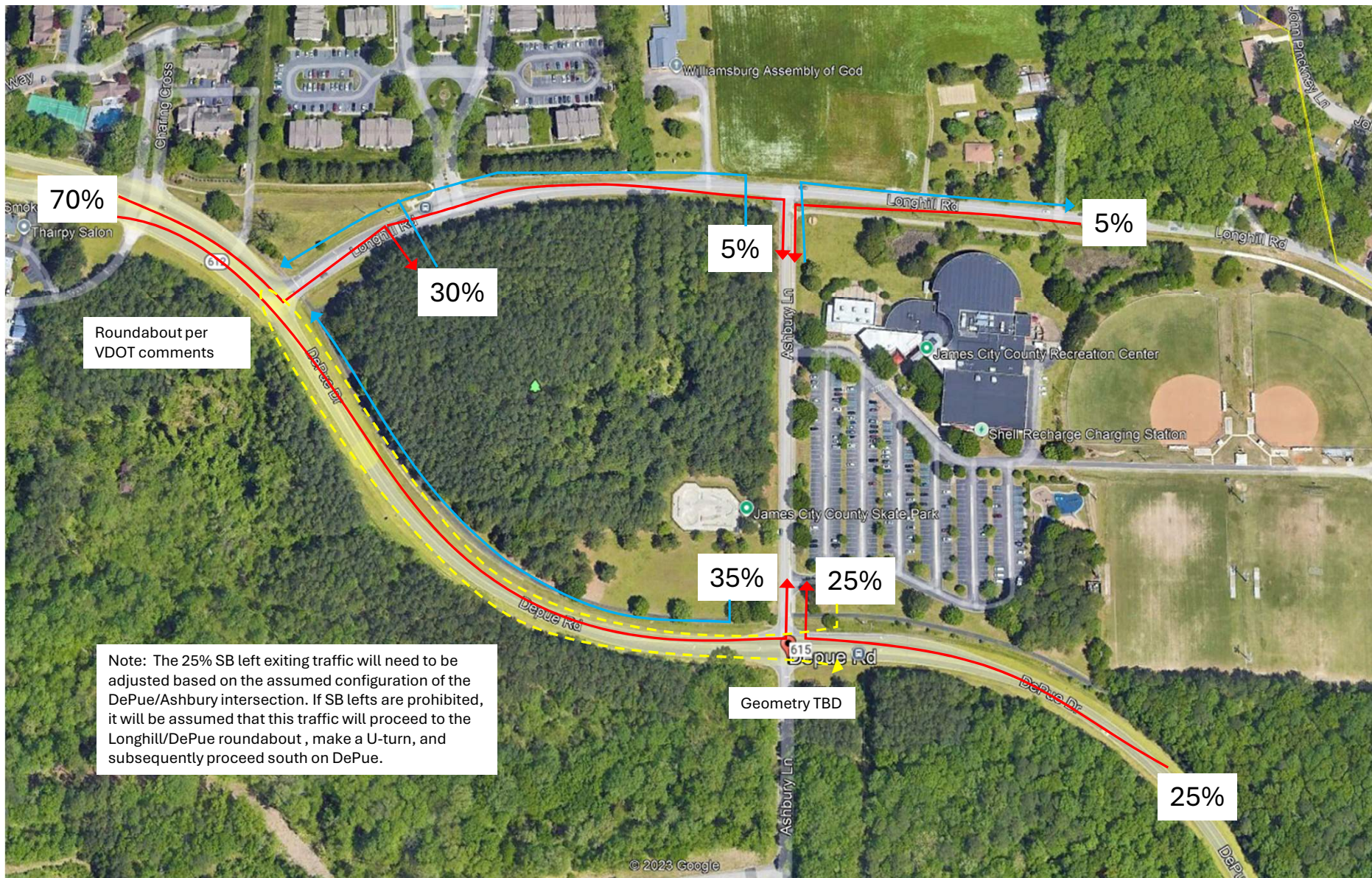
Thank you both for your time and assistance.

Scott

Scott Dunn, AICP, PTP
Senior Project Manager

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Your Vision Achieved Through Ours

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APPENDIX B

Traffic Count Data



TRAFFIC DATA COLLECTION

File Name : Human Services North Tube
 Site Code :
 Start Date : 6/11/2024
 Page No : 1

Groups Printed- Vehicles

Start Time	In Westbound		Out Eastbound		Int. Total
	Thru	App. Total	Thru	App. Total	
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	1	1	0	0	1
07:00 AM	6	6	1	1	7
08:00 AM	3	3	3	3	6
09:00 AM	3	3	1	1	4
10:00 AM	2	2	0	0	2
11:00 AM	2	2	5	5	7
12:00 PM	3	3	4	4	7
01:00 PM	4	4	2	2	6
02:00 PM	4	4	2	2	6
03:00 PM	3	3	3	3	6
04:00 PM	2	2	2	2	4
05:00 PM	1	1	6	6	7
06:00 PM	0	0	3	3	3
07:00 PM	0	0	0	0	0
08:00 PM	1	1	2	2	3
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
Grand Total	35	35	34	34	69
Apprch %	100		100		
Total %	50.7	50.7	49.3	49.3	



TRAFFIC DATA COLLECTION

File Name : Human Services South Tube
 Site Code :
 Start Date : 6/11/2024
 Page No : 1

Groups Printed- Vehicles

Start Time	In		Out		Int. Total
	Westbound		Eastbound		
	Thru	App. Total	Thru	App. Total	
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	10	10	2	2	12
07:00 AM	45	45	5	5	50
08:00 AM	42	42	15	15	57
09:00 AM	36	36	20	20	56
10:00 AM	29	29	32	32	61
11:00 AM	20	20	35	35	55
12:00 PM	26	26	36	36	62
01:00 PM	43	43	20	20	63
02:00 PM	19	19	25	25	44
03:00 PM	28	28	26	26	54
04:00 PM	10	10	35	35	45
05:00 PM	6	6	50	50	56
06:00 PM	3	3	9	9	12
07:00 PM	2	2	5	5	7
08:00 PM	1	1	1	1	2
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
Grand Total	320	320	316	316	636
Apprch %	100		100		
Total %	50.3	50.3	49.7	49.7	

Daily Vehicle Volume Report

Study Date: Tuesday, 06/11/2024

Unit ID: Mounts Bay Rd

Location: Mounts Bay Rd

	Eastbound Volume	Westbound Volume	Total Volume
00:00 - 00:59	0	0	0
01:00 - 01:59	0	0	0
02:00 - 02:59	0	0	0
03:00 - 03:59	2	2	4
04:00 - 04:59	0	1	1
05:00 - 05:59	1	4	5
06:00 - 06:59	4	20	24
07:00 - 07:59	10	78	88
08:00 - 08:59	22	34	56
09:00 - 09:59	18	33	51
10:00 - 10:59	23	26	49
11:00 - 11:59	44	22	66
12:00 - 12:59	30	26	56
13:00 - 13:59	36	46	82
14:00 - 14:59	16	19	35
15:00 - 15:59	32	21	53
16:00 - 16:59	37	37	74
17:00 - 17:59	73	5	78
18:00 - 18:59	15	6	21
19:00 - 19:59	10	5	15
20:00 - 20:59	10	1	11
21:00 - 21:59	2	1	3
22:00 - 22:59	1	0	1
23:00 - 23:59	0	0	0
Totals	386	387	773
AM Peak Time	11:00 - 11:59	07:09 - 08:08	07:12 - 08:11
AM Peak Volume	44	84	96
PM Peak Time	16:36 - 17:35	12:53 - 13:52	16:12 - 17:11
PM Peak Volume	76	48	97



TRAFFIC DATA COLLECTION

File Name : School Board Office Tube
 Site Code :
 Start Date : 6/11/2024
 Page No : 1

Groups Printed- Vehicles

Start Time	Out		In		Int. Total
	Southbound		Northbound		
	Thru	App. Total	Thru	App. Total	
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	5	5	5
06:00 AM	1	1	10	10	11
07:00 AM	4	4	45	45	49
08:00 AM	12	12	37	37	49
09:00 AM	13	13	23	23	36
10:00 AM	15	15	13	13	28
11:00 AM	25	25	22	22	47
12:00 PM	21	21	21	21	42
01:00 PM	21	21	17	17	38
02:00 PM	16	16	9	9	25
03:00 PM	25	25	8	8	33
04:00 PM	44	44	9	9	53
05:00 PM	20	20	12	12	32
06:00 PM	13	13	3	3	16
07:00 PM	5	5	1	1	6
08:00 PM	1	1	2	2	3
09:00 PM	1	1	0	0	1
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
Grand Total	237	237	237	237	474
Apprch %	100		100		
Total %	50	50	50	50	

	Tuesday (2/4)			Wednesday (2/5)					
	Northbound	Southbound	Total	Northbound	Southbound	Total			
00:00 - 00:59	0	3	3	0	0	0			
01:00 - 01:59	0	0	0	0	0	0			
02:00 - 02:59	0	0	0	0	0	0			
03:00 - 03:59	0	0	0	0	0	0			
04:00 - 04:59	0	0	0	3	2	5			
05:00 - 05:59	2	0	2	4	4	8			
06:00 - 06:59	4	4	8	2	4	6			
07:00 - 07:59	21	14	35	24	11	35	Averages		
08:00 - 08:59	38	18	56	29	5	34	23	13	
09:00 - 09:59	71	40	111	69	33	102	34	12	
10:00 - 10:59	101	71	172	59	50	109	28	12	40
11:00 - 11:59	73	72	145	58	66	124	0.70	0.30	
12:00 - 12:59	81	66	147	59	47	106	Distributions		
13:00 - 13:59	64	56	120	63	59	122			
14:00 - 14:59	60	74	134	57	49	106			
15:00 - 15:59	76	72	148	101	70	171	Averages		
16:00 - 16:59	53	78	131	73	67	140	63	73	
17:00 - 17:59	47	47	94	45	85	130	46	66	
18:00 - 18:59	43	46	89	44	37	81	55	69	124
19:00 - 19:59	10	41	51	7	28	35	0.44	0.56	
20:00 - 20:59	3	17	20	4	22	26	Distributions		
21:00 - 21:59	1	1	2	1	0	1			
22:00 - 22:59	0	1	1	1	3	4			
23:00 - 23:59	0	0	0	1	1	2			
	748	721	1469	704	643	1347	1408	Average	

ITE Rates			
ADT	72.05		
AM	1.00	71% enter	29% exit
PM	8.16	48% enter	52% exit

JCC/Williamsburg Library Rates			
	33.52		
ADT	42.00		
AM	1.19	0.70 enter	0.30 exit
PM	3.69	0.44 enter	0.56 exit

Data Source	ADT Rate	AM Peak			PM peak		
		Rate	Enter %	Exit %	Rate	Enter %	Exit %
ITE	72.05	1.00	71	29	8.16	48	82
JCC Library	42.00	1.19	70	30	3.69	44	56

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 NB Ramps

Site Code :

Start Date : 9/13/2022

Page No : 1

Groups Printed- Passenger Veh - Trucks

	Longhill Rd From East				Rte 199 NB Ramps From South				Longhill Rd From West				
Start Time	Left	Thru	U-Turn	App. Total	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Int. Total
07:00 AM	24	46	0	70	55	7	0	62	135	17	0	152	284
07:15 AM	18	33	0	51	25	10	0	35	147	27	0	174	260
07:30 AM	22	47	0	69	28	13	0	41	142	34	0	176	286
07:45 AM	26	71	0	97	46	24	0	70	218	38	0	256	423
Total	90	197	0	287	154	54	0	208	642	116	0	758	1253
08:00 AM	31	58	0	89	47	14	0	61	138	25	0	163	313
08:15 AM	22	59	0	81	56	12	0	68	145	21	0	166	315
08:30 AM	21	87	0	108	57	17	0	74	124	24	0	148	330
08:45 AM	18	59	0	77	74	10	0	84	144	24	1	169	330
Total	92	263	0	355	234	53	0	287	551	94	1	646	1288
04:00 PM	69	126	0	195	74	12	0	86	119	18	0	137	418
04:15 PM	57	107	0	164	94	25	0	119	122	21	0	143	426
04:30 PM	51	144	0	195	76	42	0	118	113	20	0	133	446
04:45 PM	75	142	0	217	120	37	0	157	113	27	0	140	514
Total	252	519	0	771	364	116	0	480	467	86	0	553	1804
05:00 PM	66	157	0	223	109	34	0	143	140	25	1	166	532
05:15 PM	59	161	0	220	116	37	0	153	172	26	0	198	571
05:30 PM	55	169	0	224	107	24	0	131	120	17	0	137	492
05:45 PM	33	100	0	133	74	20	0	94	103	19	0	122	349
Total	213	587	0	800	406	115	0	521	535	87	1	623	1944
Grand Total	647	1566	0	2213	1158	338	0	1496	2195	383	2	2580	6289
Apprch %	29.2	70.8	0		77.4	22.6	0		85.1	14.8	0.1		
Total %	10.3	24.9	0	35.2	18.4	5.4	0	23.8	34.9	6.1	0	41	
Passenger Veh	639	1534	0	2173	1136	333	0	1469	2156	375	2	2533	6175
% Passenger Veh	98.8	98	0	98.2	98.1	98.5	0	98.2	98.2	97.9	100	98.2	98.2
Trucks	8	32	0	40	22	5	0	27	39	8	0	47	114
% Trucks	1.2	2	0	1.8	1.9	1.5	0	1.8	1.8	2.1	0	1.8	1.8

Data Collection Group

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File Name : Longhill and Rte 199 NB Ramps

Site Code :

Start Date : 9/13/2022

Page No : 2

	Longhill Rd From East				Rte 199 NB Ramps From South				Longhill Rd From West				
Start Time	Left	Thru	U-Turn	App. Total	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	26	71	0	97	46	24	0	70	218	38	0	256	423
08:00 AM	31	58	0	89	47	14	0	61	138	25	0	163	313
08:15 AM	22	59	0	81	56	12	0	68	145	21	0	166	315
08:30 AM	21	87	0	108	57			74	124	24	0	148	330
Total Volume	100	275	0	375	206	67	0	273	625	108	0	733	1381
% App. Total	26.7	73.3	0		75.5	24.5	0		85.3	14.7	0		
PHF	.806	.790	.000	.868	.904	.698	.000	.922	.717	.711	.000	.716	.816
Passenger Veh	100	264	0	364	198	65	0	263	614	108	0	722	1349
% Passenger Veh	100	96.0	0	97.1	96.1	97.0	0	96.3	98.2	100	0	98.5	97.7
Trucks	0	11	0	11	8	2	0	10	11	0	0	11	32
% Trucks	0	4.0	0	2.9	3.9	3.0	0	3.7	1.8	0	0	1.5	2.3

Data Collection Group

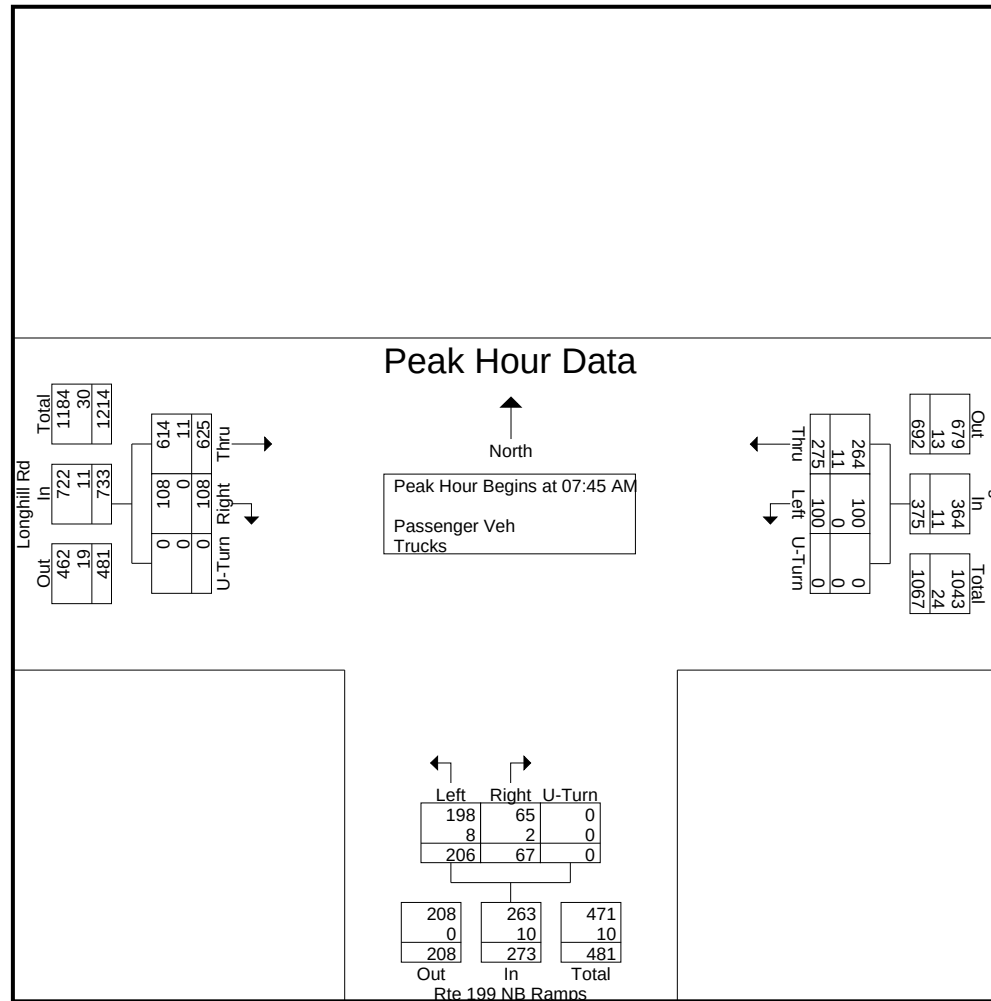
LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 NB Ramps

Site Code :

Start Date : 9/13/2022

Page No : 3



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 NB Ramps

Site Code :

Start Date : 9/13/2022

Page No : 4

	Longhill Rd From East				Rte 199 NB Ramps From South				Longhill Rd From West				
Start Time	Left	Thru	U-Turn	App. Total	Left	Right	U-Turn	App. Total	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	75	142	0	217	120	37	0	157	113	27	0	140	514
05:00 PM	66	157	0	223	109	34	0	143	140	25	1	166	532
05:15 PM	59	161	0	220	116	37	0	153	172	26	0	198	571
05:30 PM	55	169	0	224	107	24	0	131	120	17	0	137	492
Total Volume	255	629	0	884	452	132	0	584	545	95	1	641	2109
% App. Total	28.8	71.2	0		77.4	22.6	0		85	14.8	0.2		
PHF	.850	.930	.000	.987	.942	.892	.000	.930	.792	.880	.250	.809	.923
Passenger Veh	254	619	0	873	446	131	0	577	533	90	1	624	2074
% Passenger Veh	99.6	98.4	0	98.8	98.7	99.2	0	98.8	97.8	94.7	100	97.3	98.3
Trucks	1	10	0	11	6	1	0	7	12	5	0	17	35
% Trucks	0.4	1.6	0	1.2	1.3	0.8	0	1.2	2.2	5.3	0	2.7	1.7

Data Collection Group

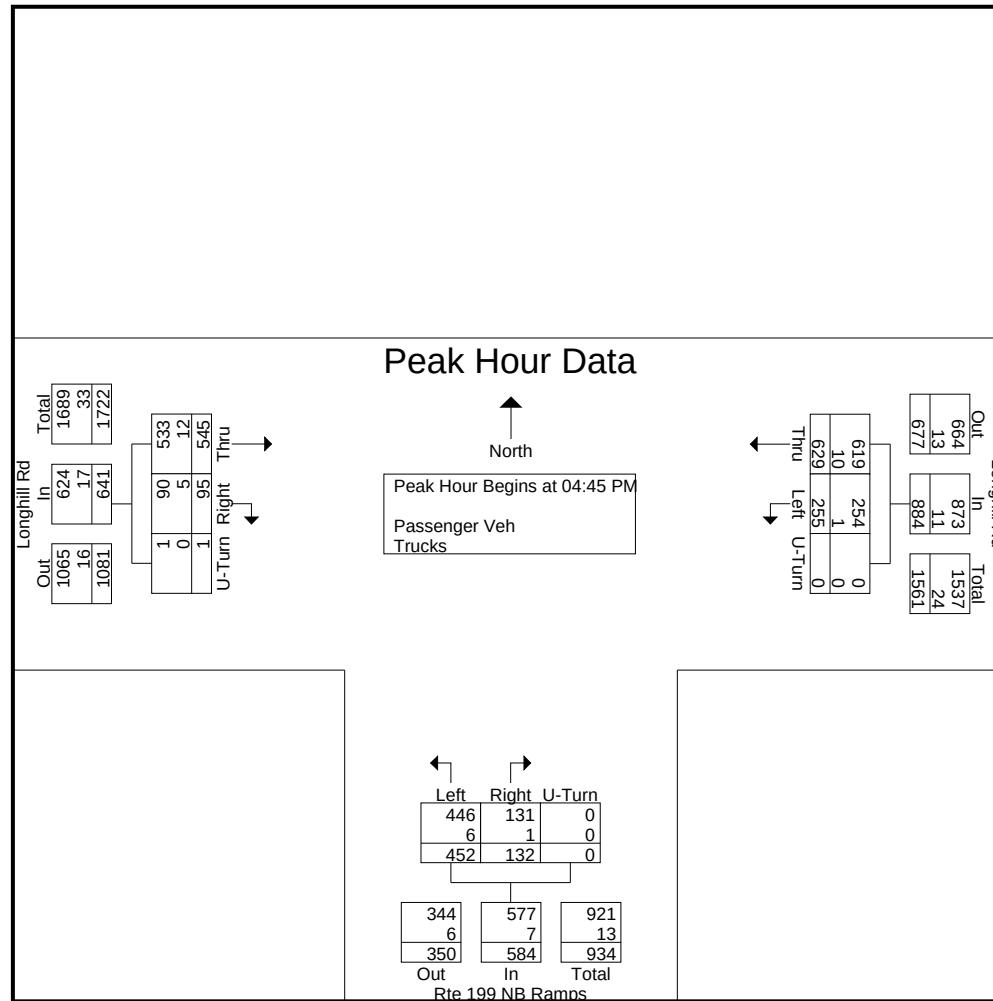
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File Name : Longhill and Rte 199 NB Ramps

Site Code :

Start Date : 9/13/2022

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Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 NB

Site Code :

Start Date : 9/13/2022

Page No : 1

Groups Printed- Bikes													
Start Time	Longhill Rd From East				Rte 199 NB Ramps From South				Longhill Rd From West				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
07:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	1	0	0	1	0	0	0	0	2
04:00 PM	0	1	0	1	0	0	0	0	1	0	0	1	2
Total	0	1	0	1	0	0	0	0	1	0	0	1	2
05:45 PM	0	2	0	2	0	0	0	0	1	0	0	1	3
Total	0	2	0	2	0	0	0	0	1	0	0	1	3
Grand Total	0	5	0	5	1	0	0	1	2	0	0	2	8
Apprch %	0	100	0		100	0	0		100	0	0		
Total %	0	62.5	0	62.5	12.5	0	0	12.5	25	0	0	25	

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 NB

Site Code :

Start Date : 9/13/2022

Page No : 2

	Longhill Rd From East				Rte 199 NB Ramps From South				Longhill Rd From West				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
Total Volume	0	1	0	1	1	0	0	1	0	0	0	0	2
% App. Total	0	100	0		100	0	0		0	0	0		
PHF	.000	.250	.000	.250	.250	.000	.000	.250	.000	.000	.000	.000	.500

Data Collection Group

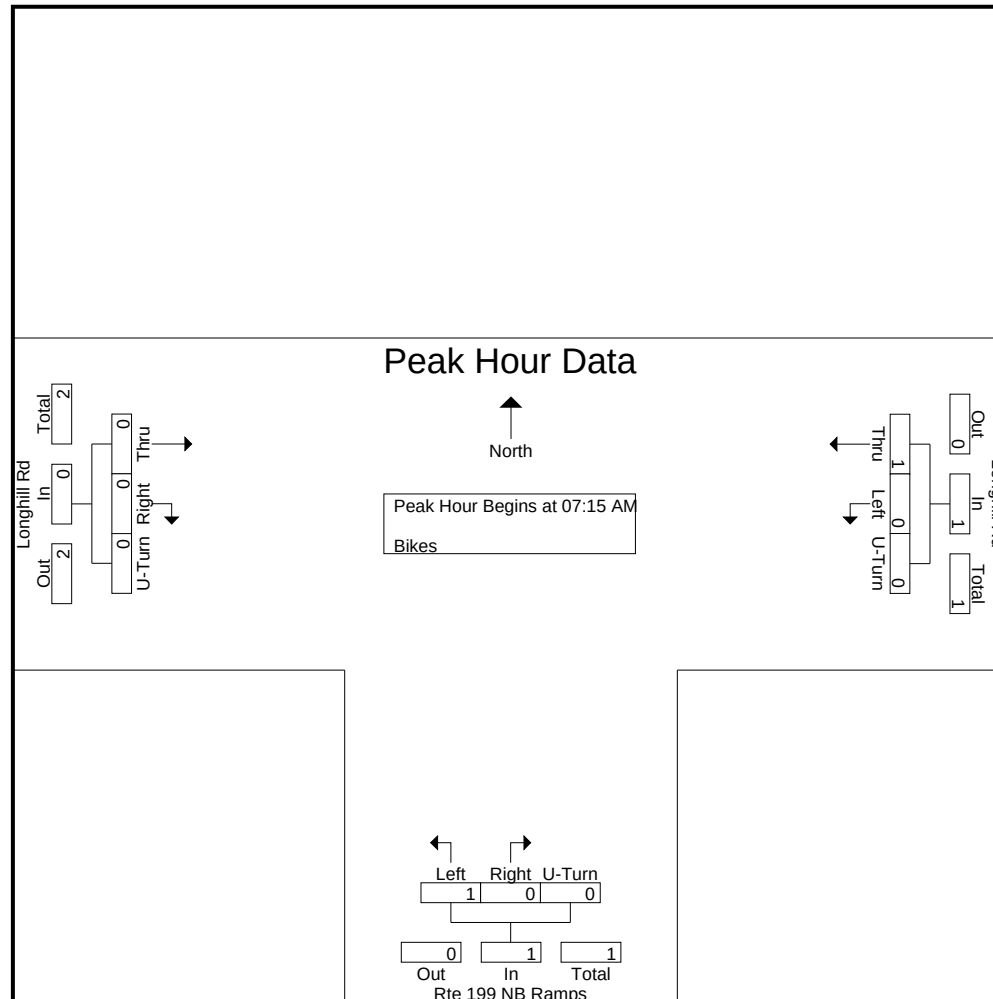
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File Name : Longhill and Rte 199 NB

Site Code :

Start Date : 9/13/2022

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Data Collection Group

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File Name : Longhill and Rte 199 NB

Site Code :

Start Date : 9/13/2022

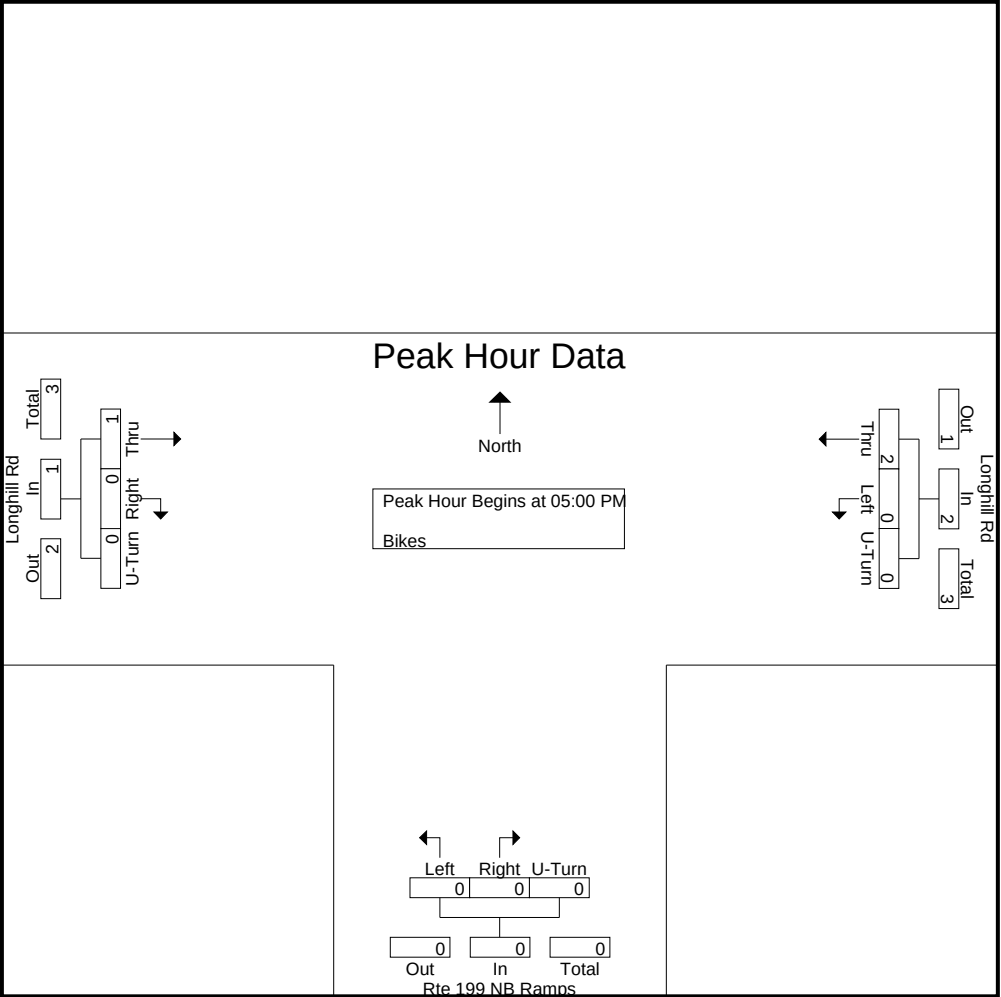
Page No : 4

	Longhill Rd From East				Rte 199 NB Ramps From South				Longhill Rd From West				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	2	0	2	0	0	0	0	1	0	0	1	3
Total Volume	0	2	0	2	0	0	0	0	1	0	0	1	3
% App. Total	0	100	0		0	0	0		100	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.250	.000	.000	.250	.250

Data Collection Group

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File Name : Longhill and Rte 199 NB
Site Code :
Start Date : 9/13/2022
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Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 SB Ramps

Site Code : 00004037

Start Date : 9/13/2022

Page No : 1

Groups Printed- Passenger Veh - Trucks

	Rte 199 SB Off Ramp From North					Longhill Rd From East					From South					Longhill Rd From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
07:00 AM	45	0	20	0	65	9	94	0	0	103	0	0	0	0	0	0	113	90	0	203	371
07:15 AM	72	0	16	0	88	11	47	0	0	58	0	0	0	0	0	0	112	103	0	215	361
07:30 AM	55	0	17	0	72	11	64	0	0	75	0	0	0	0	0	0	120	96	0	216	363
07:45 AM	82	1	29	0	112	20	95	0	1	116	0	0	0	0	0	0	163	101	0	264	492
Total	254	1	82	0	337	51	300	0	1	352	0	0	0	0	0	0	508	390	0	898	1587
08:00 AM	66	0	18	0	84	14	91	0	0	105	0	0	0	0	0	0	92	81	0	173	362
08:15 AM	60	0	31	0	91	11	102	0	0	113	0	0	0	0	0	0	104	72	0	176	380
08:30 AM	47	0	20	0	67	14	132	0	1	147	0	0	0	0	0	0	99	86	0	185	399
08:45 AM	64	0	32	0	96	12	119	0	0	131	0	0	0	0	0	0	109	99	0	208	435
Total	237	0	101	0	338	51	444	0	1	496	0	0	0	0	0	0	404	338	0	742	1576
*** BREAK ***																					
04:00 PM	46	0	39	0	85	24	174	0	3	201	0	0	0	0	0	0	95	84	0	179	465
04:15 PM	45	0	42	0	87	15	186	0	1	202	0	0	0	0	0	0	91	88	0	179	468
04:30 PM	49	0	54	0	103	29	191	0	0	220	0	0	0	0	0	0	87	80	0	167	490
04:45 PM	57	0	48	0	105	20	237	0	1	258	0	0	0	0	0	0	86	71	0	157	520
Total	197	0	183	0	380	88	788	0	5	881	0	0	0	0	0	0	359	323	0	682	1943
05:00 PM	52	0	54	0	106	18	247	0	0	265	0	0	0	0	0	0	120	80	0	200	571
05:15 PM	62	0	51	0	113	23	256	0	0	279	0	0	0	0	0	0	128	94	0	222	614
05:30 PM	39	0	51	0	90	25	244	0	1	270	0	0	0	0	0	0	101	85	0	186	546
05:45 PM	23	1	44	0	68	21	155	0	0	176	0	0	0	0	0	0	97	68	0	165	409
Total	176	1	200	0	377	87	902	0	1	990	0	0	0	0	0	0	446	327	0	773	2140
Grand Total	864	2	566	0	1432	277	2434	0	8	2719	0	0	0	0	0	0	1717	1378	0	3095	7246
Apprch %	60.3	0.1	39.5	0		10.2	89.5	0	0.3		0	0	0	0	0	0	55.5	44.5	0		
Total %	11.9	0	7.8	0	19.8	3.8	33.6	0	0.1	37.5	0	0	0	0	0	0	23.7	19	0	42.7	
Passenger Veh	850	2	548	0	1400	270	2383	0	8	2661	0	0	0	0	0	0	1684	1350	0	3034	7095
% Passenger Veh	98.4	100	96.8	0	97.8	97.5	97.9	0	100	97.9	0	0	0	0	0	0	98.1	98	0	98	97.9
Trucks	14	0	18	0	32	7	51	0	0	58	0	0	0	0	0	0	33	28	0	61	151
% Trucks	1.6	0	3.2	0	2.2	2.5	2.1	0	0	2.1	0	0	0	0	0	0	1.9	2	0	2	2.1

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 SB Ramps

Site Code : 00004037

Start Date : 9/13/2022

Page No : 2

	Rte 199 SB Off Ramp From North					Longhill Rd From East					From South					Longhill Rd From West					
Start Time	Left	Thru	Right	Ut S	App. Total	Left	Thru	Right	Ut S	App. Total	Left	Thru	Right	Ut S	App. Total	Left	Thru	Right	Ut S	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	82	1			112	20	95	0	1								163	101		264	492
08:00 AM	66	0	18	0	84	14	91	0	0	105	0	0	0	0	0	0	92	81	0	173	362
08:15 AM	60	0	31																		
08:30 AM	47	0	20	0	67	14	132	0	1	147	0	0	0	0	0	0	99	86	0	185	399
Total Volume	255	1	98	0	354	59	420	0	2	481	0	0	0	0	0	0	458	340	0	798	1633
% App. Total	72	0.3	27.7	0		12.3	87.3	0	0.4		0	0	0	0		0	57.4	42.6	0		
PHF	.777	.250	.790	.000	.790	.738	.795	.000	.500	.818	.000	.000	.000	.000	.000	.000	.702	.842	.000	.756	.830
Passenger Veh	248	1	92	0	341	55	403	0	2	460	0	0	0	0	0	0	453	326	0	779	1580
% Passenger Veh	97.3	100	93.9	0	96.3	93.2	96.0	0	100	95.6	0	0	0	0	0	0	98.9	95.9	0	97.6	96.8
Trucks	7	0	6	0	13	4	17	0	0	21	0	0	0	0	0	0	5	14	0	19	53
% Trucks	2.7	0	6.1	0	3.7	6.8	4.0	0	0	4.4	0	0	0	0	0	0	1.1	4.1	0	2.4	3.2

Data Collection Group

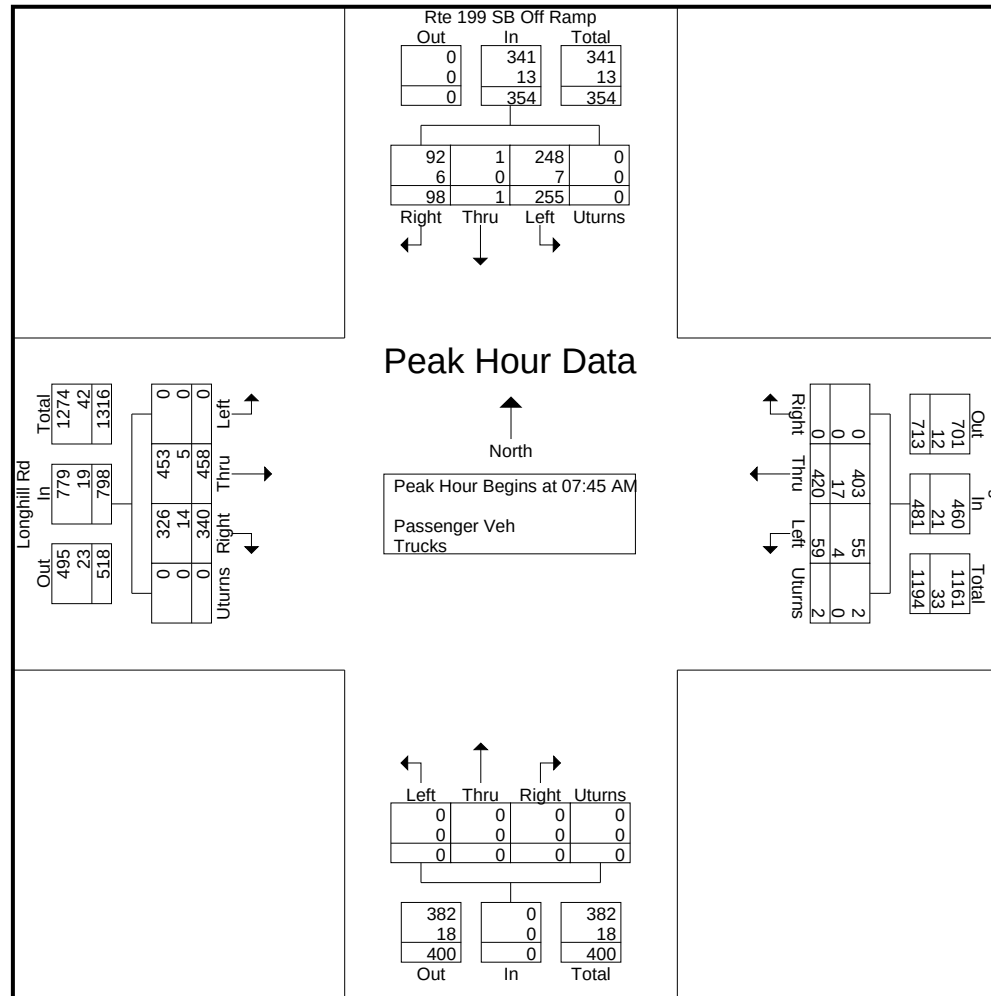
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File Name : Longhill and Rte 199 SB Ramps

Site Code : 00004037

Start Date : 9/13/2022

Page No : 3



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 SB Ramps

Site Code : 00004037

Start Date : 9/13/2022

Page No : 4

	Rte 199 SB Off Ramp From North					Longhill Rd From East					From South					Longhill Rd From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	57	0	48	0	105	20	237	0	1												
05:00 PM	52	0	54	0	106	18	247	0	0	265	0	0	0	0	0	0	120	80	0	200	571
05:15 PM	62	0	51	0	113	23	256	0	0	279	0	0	0	0	0	0	128	94	0	222	614
05:30 PM	39	0	51	0	90	25	244	0	1	270	0	0	0	0	0	0	101	85	0	186	546
Total Volume	210	0	204	0	414	86	984	0	2	1072	0	0	0	0	0	0	435	330	0	765	2251
% App. Total	50.7	0	49.3	0		8	91.8	0	0.2		0	0	0	0		0	56.9	43.1	0		
PHF	.847	.000	.944	.000	.916	.860	.961	.000	.500	.961	.000	.000	.000	.000	.000	.000	.850	.878	.000	.861	.917
Passenger Veh	206	0	199	0	405	84	968	0	2	1054	0	0	0	0	0	0	422	330	0	752	2211
% Passenger Veh	98.1	0	97.5	0	97.8	97.7	98.4	0	100	98.3	0	0	0	0	0	0	97.0	100	0	98.3	98.2
Trucks	4	0	5	0	9	2	16	0	0	18	0	0	0	0	0	0	13	0	0	13	40
% Trucks	1.9	0	2.5	0	2.2	2.3	1.6	0	0	1.7	0	0	0	0	0	0	3.0	0	0	1.7	1.8

Data Collection Group

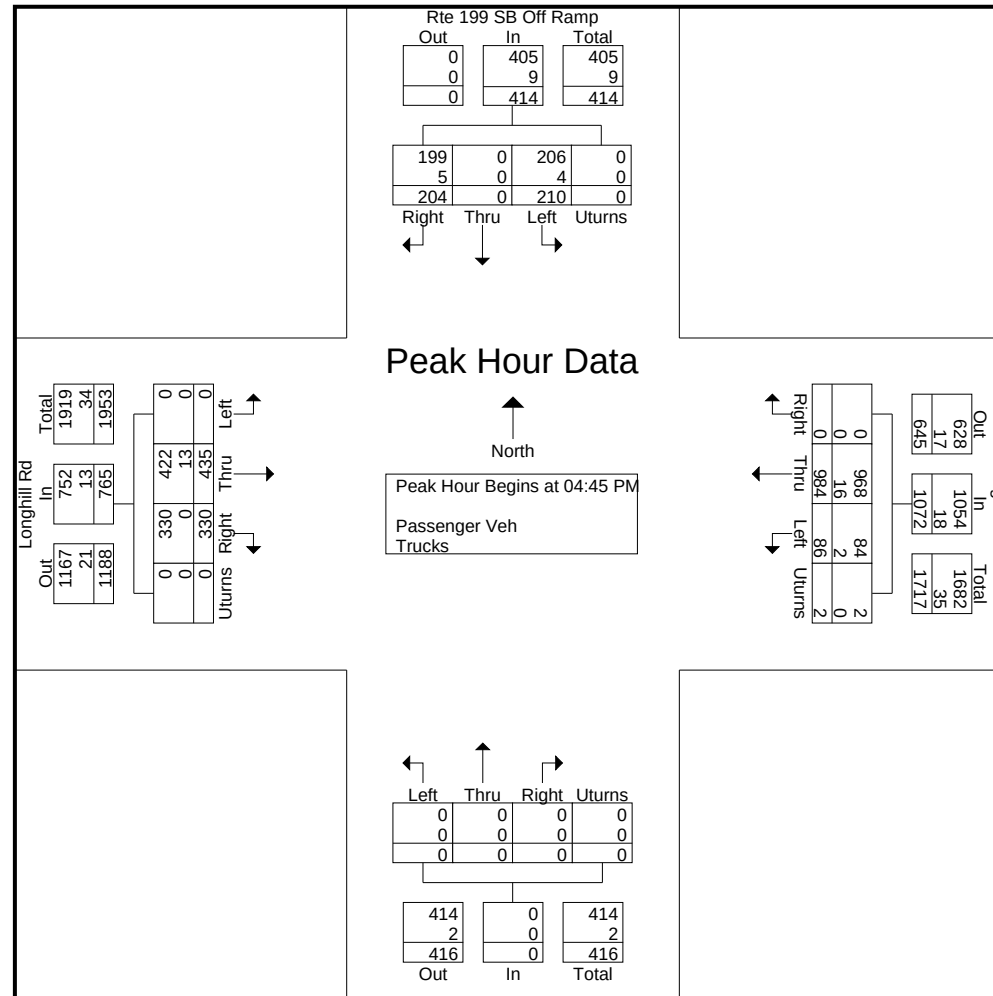
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File Name : Longhill and Rte 199 SB Ramps

Site Code : 00004037

Start Date : 9/13/2022

Page No : 5



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Longhill and Rte 199 SB Ramps

Site Code : 00004037

Start Date : 9/13/2022

Page No : 1

Groups Printed- Bikes

	Rte 199 SB Off Ramp From North					Longhill Rd From East					From South					Longhill Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
*** BREAK ***																					
08:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
*** BREAK ***																					
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
*** BREAK ***																					
04:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
04:45 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	0	3	3	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	8
*** BREAK ***																					
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Grand Total	0	0	0	4	4	0	6	0	0	6	0	0	0	0	0	0	5	0	0	5	15
Apprch %	0	0	0	100		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	26.7	26.7	0	40	0	0	40	0	0	0	0	0	0	33.3	0	0	33.3	

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 1

Groups Printed- Passenger Veh - Trucks

Start Time	Longhill From North					Longhill From East					Depue From South					From West					Int. Total
	Left	Thru	Right	Utuns	App. Total	Left	Thru	Right	Utuns	App. Total	Left	Thru	Right	Utuns	App. Total	Left	Thru	Right	Utuns	App. Total	
07:00 AM	37	113	0	0	150	1	0	28	0	29	0	36	0	0	36	0	0	0	0	0	215
07:15 AM	43	125	0	0	168	0	0	19	0	19	0	34	1	0	35	0	0	0	0	0	222
07:30 AM	46	106	0	0	152	3	0	30	0	33	0	39	2	0	41	0	0	0	0	0	226
07:45 AM	78	161	0	0	239	1	0	37	0	38	0	53	0	0	53	0	0	0	0	0	330
Total	204	505	0	0	709	5	0	114	0	119	0	162	3	0	165	0	0	0	0	0	993
08:00 AM	32	112	0	0	144	0	0	32	0	32	0	48	0	0	48	0	0	0	0	0	224
08:15 AM	32	127	0	0	159	0	0	36	0	36	0	49	1	0	50	0	0	0	0	0	245
08:30 AM	34	102	0	0	136	4	0	35	0	39	0	59	1	0	60	0	0	0	0	0	235
08:45 AM	43	113	0	0	156	0	0	31	0	31	0	54	4	0	58	0	0	0	0	0	245
Total	141	454	0	0	595	4	0	134	0	138	0	210	6	0	216	0	0	0	0	0	949
09:00 AM	41	111	0	0	152	0	0	30	0	30	0	53	1	0	54	0	0	0	0	0	236
09:15 AM	39	105	0	0	144	1	0	37	0	38	0	58	0	0	58	0	0	0	0	0	240
09:30 AM	38	87	0	0	125	1	0	31	0	32	0	62	2	0	64	0	0	0	0	0	221
09:45 AM	48	120	0	0	168	3	0	37	0	40	0	55	2	0	57	0	0	0	0	0	265
Total	166	423	0	0	589	5	0	135	0	140	0	228	5	0	233	0	0	0	0	0	962
10:00 AM	28	97	0	0	125	2	0	25	0	27	0	66	1	0	67	0	0	0	0	0	219
10:15 AM	37	80	0	0	117	1	0	33	0	34	0	56	3	0	59	0	0	0	0	0	210
10:30 AM	28	89	0	0	117	1	0	30	0	31	0	66	1	0	67	0	0	0	0	0	215
10:45 AM	41	85	0	0	126	2	0	34	0	36	0	65	0	0	65	0	0	0	0	0	227
Total	134	351	0	0	485	6	0	122	0	128	0	253	5	0	258	0	0	0	0	0	871
11:00 AM	35	81	0	0	116	0	0	32	0	32	0	74	2	0	76	0	0	0	0	0	224
11:15 AM	43	77	0	0	120	1	0	50	0	51	0	69	1	0	70	0	0	0	0	0	241
11:30 AM	51	83	0	0	134	2	0	31	0	33	0	71	3	0	74	0	0	0	0	0	241
11:45 AM	41	79	0	0	120	1	0	38	0	39	0	81	1	0	82	0	0	0	0	0	241
Total	170	320	0	0	490	4	0	151	0	155	0	295	7	0	302	0	0	0	0	0	947
12:00 PM	50	92	0	0	142	1	0	49	0	50	0	92	1	0	93	0	0	0	0	0	285
12:15 PM	44	82	0	0	126	3	0	31	0	34	0	81	1	0	82	0	0	0	0	0	242
12:30 PM	43	96	0	0	139	2	0	33	0	35	0	67	3	0	70	0	0	0	0	0	244
12:45 PM	32	115	0	0	147	2	0	43	0	45	0	64	1	0	65	0	0	0	0	0	257
Total	169	385	0	0	554	8	0	156	0	164	0	304	6	0	310	0	0	0	0	0	1028
01:00 PM	39	99	0	0	138	0	0	43	0	43	0	74	3	0	77	0	0	0	0	0	258
01:15 PM	36	88	0	0	124	2	0	38	0	40	0	65	1	0	66	0	0	0	0	0	230

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 2

Groups Printed- Passenger Veh - Trucks

	Longhill From North					Longhill From East					Depue From South					From West					
Start Time	Left	Thru	Right	Utuns	App. Total	Left	Thru	Right	Utuns	App. Total	Left	Thru	Right	Utuns	App. Total	Left	Thru	Right	Utuns	App. Total	Int. Total
01:30 PM	28	81	0	0	109	3	0	36	0	39	0	75	2	0	77	0	0	0	0	0	225
01:45 PM	38	88	0	0	126	2	0	36	0	38	0	72	1	0	73	0	0	0	0	0	237
Total	141	356	0	0	497	7	0	153	0	160	0	286	7	0	293	0	0	0	0	0	950
02:00 PM	38	88	0	0	126	4	0	46	0	50	0	82	1	0	83	0	0	0	0	0	259
02:15 PM	42	81	0	0	123	3	0	42	0	45	0	64	0	0	64	0	0	0	0	0	232
02:30 PM	54	100	0	0	154	5	0	40	0	45	0	93	3	0	96	0	0	0	0	0	295
02:45 PM	43	121	0	0	164	2	0	44	0	46	0	107	1	0	108	0	0	0	0	0	318
Total	177	390	0	0	567	14	0	172	0	186	0	346	5	0	351	0	0	0	0	0	1104
03:00 PM	41	84	0	0	125	2	0	58	0	60	0	116	0	0	116	0	0	0	0	0	301
03:15 PM	35	84	0	0	119	2	0	42	0	44	0	115	1	0	116	0	0	0	0	0	279
03:30 PM	30	75	0	0	105	1	0	48	0	49	0	132	2	0	134	0	0	0	0	0	288
03:45 PM	48	74	0	0	122	0	0	48	0	48	0	124	1	0	125	0	0	0	0	0	295
Total	154	317	0	0	471	5	0	196	0	201	0	487	4	0	491	0	0	0	0	0	1163
04:00 PM	43	93	0	0	136	1	0	54	0	55	0	148	1	0	149	0	0	0	0	0	340
04:15 PM	44	91	0	0	135	4	0	44	0	48	0	117	1	0	118	0	0	0	0	0	301
04:30 PM	50	99	0	0	149	3	0	54	0	57	0	142	2	0	144	0	0	0	0	0	350
04:45 PM	52	118	0	0	170	2	0	63	0	65	0	150	1	0	151	0	0	0	0	0	386
Total	189	401	0	0	590	10	0	215	0	225	0	557	5	0	562	0	0	0	0	0	1377
05:00 PM	61	105	0	0	166	2	0	75	0	77	0	149	2	0	151	0	0	0	0	0	394
05:15 PM	60	141	0	0	201	0	0	64	0	64	0	155	2	0	157	0	0	0	0	0	422
05:30 PM	52	98	0	0	150	5	0	57	0	62	0	146	2	0	148	0	0	0	0	0	360
05:45 PM	51	70	0	0	121	2	0	48	0	50	0	90	0	0	90	0	0	0	0	0	261
Total	224	414	0	0	638	9	0	244	0	253	0	540	6	0	546	0	0	0	0	0	1437
Grand Total	1869	4316	0	0	6185	77	0	1792	0	1869	0	3668	59	0	3727	0	0	0	0	0	11781
Apprch %	30.2	69.8	0	0		4.1	0	95.9	0		0	98.4	1.6	0		0	0	0	0		
Total %	15.9	36.6	0	0	52.5	0.7	0	15.2	0	15.9	0	31.1	0.5	0	31.6	0	0	0	0	0	
Passenger Veh	1802	4247	0	0	6049	74	0	1704	0	1778	0	3615	56	0	3671	0	0	0	0	0	11498
% Passenger Veh	96.4	98.4	0	0	97.8	96.1	0	95.1	0	95.1	0	98.6	94.9	0	98.5	0	0	0	0	0	97.6
Trucks	67	69	0	0	136	3	0	88	0	91	0	53	3	0	56	0	0	0	0	0	283
% Trucks	3.6	1.6	0	0	2.2	3.9	0	4.9	0	4.9	0	1.4	5.1	0	1.5	0	0	0	0	0	2.4

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

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	Longhill From North					Longhill From East					Depue From South					From West					
Start Time	Left	Thru	Right	Uturn S	App. Total	Left	Thru	Right	Uturns	App. Total	Left	Thru	Right	Uturns	App. Total	Left	Thru	Right	Uturns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	78	161	0	0	239	1	0	37	0	38	0	53	0	0	53	0	0	0	0	0	330
08:00 AM	32	112	0	0	144	0	0	32	0	32	0	48	0	0	48	0	0	0	0	0	224
08:15 AM	32	127	0	0	159	0	0	36	0	36	0	49	1	0	50	0	0	0	0	0	245
08:30 AM	34	102	0	0	136	4	0	35	0	39	0	59	1	0	60	0	0	0	0	0	235
Total Volume	176	502	0	0	678	5	0	140	0	145	0	209	2	0	211	0	0	0	0	0	1034
% App. Total	26	74	0	0		3.4	0	96.6	0		0	99.1	0.9	0		0	0	0	0		
PHF	.564	.780	.000	.000	.709	.313	.000	.946	.000	.929	.000	.886	.500	.000	.879	.000	.000	.000	.000	.000	.783
Passenger Veh	172	495	0	0	667	5	0	133	0	138	0	205	2	0	207	0	0	0	0	0	1012
% Passenger Veh	97.7	98.6	0	0	98.4	100	0	95.0	0	95.2	0	98.1	100	0	98.1	0	0	0	0	0	97.9
Trucks	4	7	0	0	11	0	0	7	0	7	0	4	0	0	4	0	0	0	0	0	22
% Trucks	2.3	1.4	0	0	1.6	0	0	5.0	0	4.8	0	1.9	0	0	1.9	0	0	0	0	0	2.1

Data Collection Group

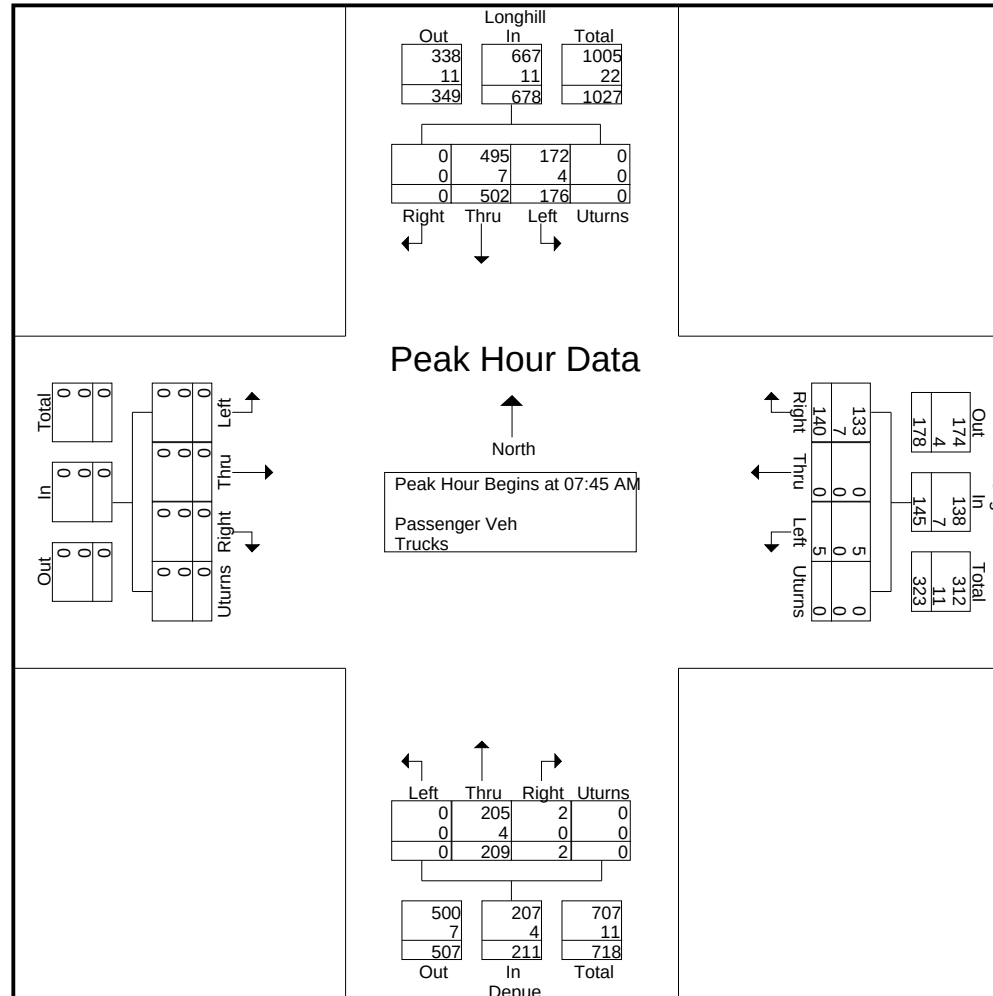
LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 4



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 5

	Longhill From North					Longhill From East					Depue From South					From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	50	92	0	0	142	1	0	49	0	50	0	92	1	0	93	0	0	0	0	0	285
12:15 PM	44	82	0	0	126	3	0	31	0	34	0	81	1	0	82	0	0	0	0	0	242
12:30 PM	43	96	0	0	139	2	0	33	0	35	0	67	3	0	70	0	0	0	0	0	244
12:45 PM	32	115	0	0	147	2	0	43	0	45	0	64	1	0	65	0	0	0	0	0	257
Total Volume	169	385	0	0	554	8	0	156	0	164	0	304	6	0	310	0	0	0	0	0	1028
% App. Total	30.5	69.5	0	0		4.9	0	95.1	0		0	98.1	1.9	0		0	0	0	0		
PHF	.845	.837	.000	.000	.942	.667	.000	.796	.000	.820	.000	.826	.500	.000	.833	.000	.000	.000	.000	.000	.902
Passenger Veh	164	376	0	0	540	8	0	153	0	161	0	296	6	0	302	0	0	0	0	0	1003
% Passenger Veh	97.0	97.7	0	0	97.5	100	0	98.1	0	98.2	0	97.4	100	0	97.4	0	0	0	0	0	97.6
Trucks	5	9	0	0	14	0	0	3	0	3	0	8	0	0	8	0	0	0	0	0	25
% Trucks	3.0	2.3	0	0	2.5	0	0	1.9	0	1.8	0	2.6	0	0	2.6	0	0	0	0	0	2.4

Data Collection Group

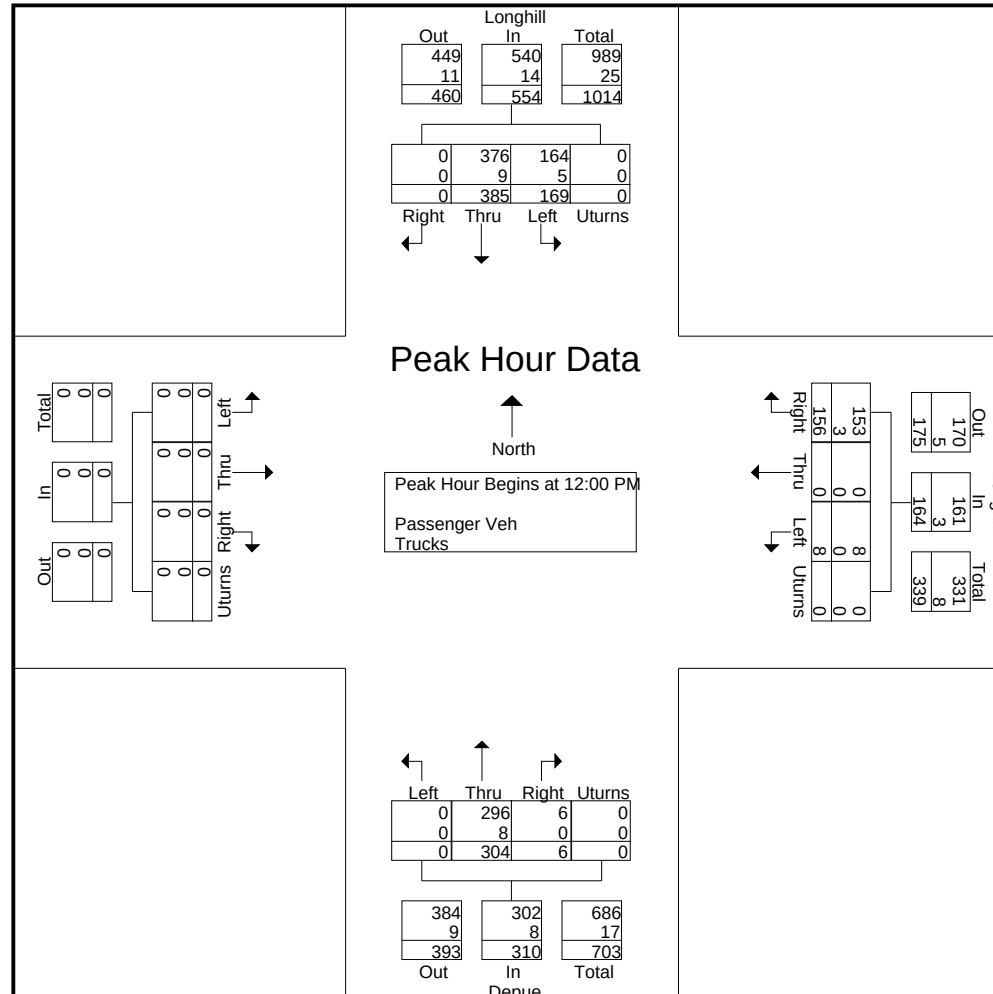
LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 6



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 7

	Longhill From North					Longhill From East					Depue From South					From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	52	118	0	0	170	2	0	63	0	65	0	150	1	0	151	0	0	0	0	0	386
05:00 PM	61	105	0	0	166	2	0	75	0	77	0	149	2	0	151	0	0	0	0	0	394
05:15 PM	60	141	0	0	201	0	0	64	0	64	0	155	2	0	157	0	0	0	0	0	422
05:30 PM	52	98	0	0	150	5	0	57	0	62	0	146	2	0	148	0	0	0	0	0	360
Total Volume	225	462	0	0	687	9	0	259	0	268	0	600	7	0	607	0	0	0	0	0	1562
% App. Total	32.8	67.2	0	0		3.4	0	96.6	0		0	98.8	1.2	0		0	0	0	0		
PHF	.922	.819	.000	.000	.854	.450	.000	.863	.000	.870	.000	.968	.875	.000	.967	.000	.000	.000	.000	.000	.925
Passenger Veh	220	453	0	0	673	8	0	251	0	259	0	599	7	0	606	0	0	0	0	0	1538
% Passenger Veh	97.8	98.1	0	0	98.0	88.9	0	96.9	0	96.6	0	99.8	100	0	99.8	0	0	0	0	0	98.5
Trucks	5	9	0	0	14	1	0	8	0	9	0	1	0	0	1	0	0	0	0	0	24
% Trucks	2.2	1.9	0	0	2.0	11.1	0	3.1	0	3.4	0	0.2	0	0	0.2	0	0	0	0	0	1.5

Data Collection Group

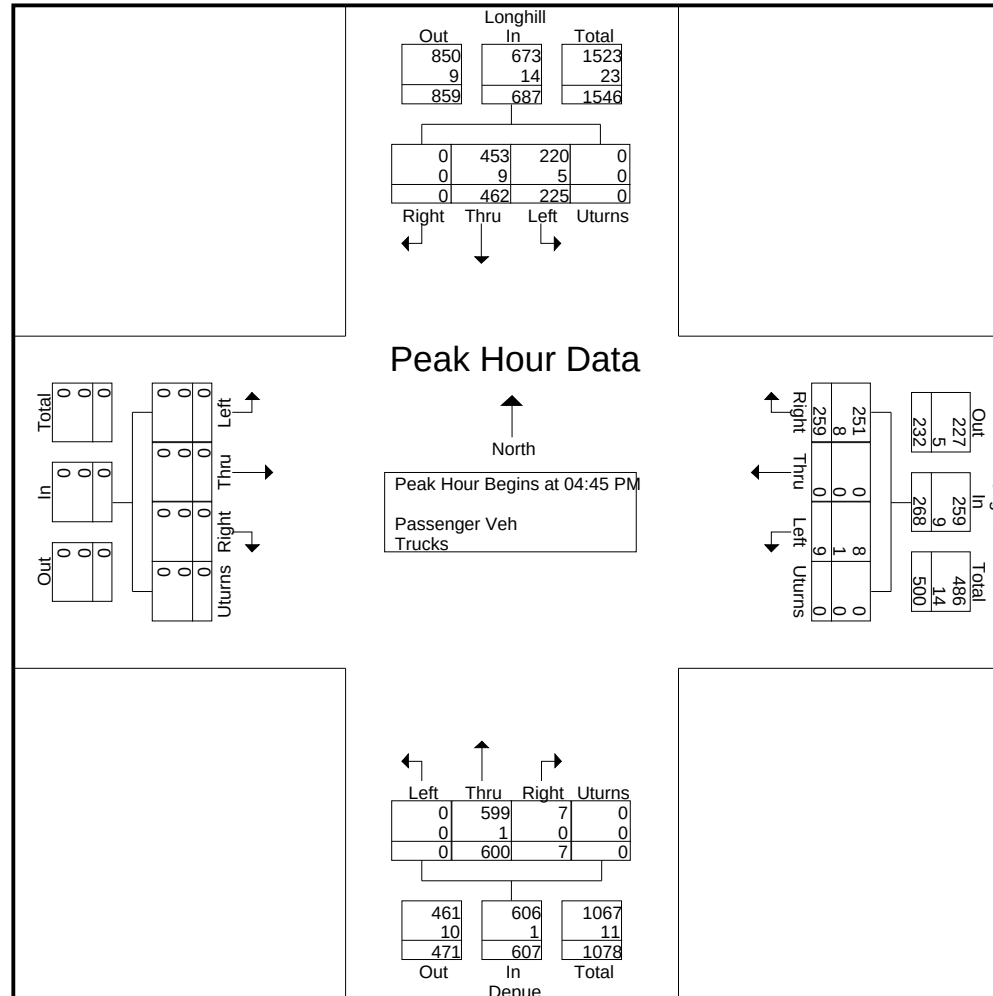
LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 8



LSmith@DataCollectionGroup.net

File Name : Depue and Longhill
Site Code : 00009393
Start Date : 9/13/2022
Page No : 1

[illegible]

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Longhill

Site Code : 00009393

Start Date : 9/13/2022

Page No : 2

Groups Printed- Bikes

	Longhill From North					Longhill From East					Depue From South					From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	3
02:15 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
02:45 PM	1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Total	3	0	0	0	3	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	7
*** BREAK ***																					
03:30 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
03:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	1	0	0	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
*** BREAK ***																					
04:30 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	2	2	0	2	0	0	2	0	0	0	0	0	6
*** BREAK ***																					
05:45 PM	0	1	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	3
Total	0	1	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	3
Grand Total	6	3	0	0	9	0	0	4	14	18	0	6	1	0	7	0	0	0	0	0	34
Apprch %	66.7	33.3	0	0		0	0	22.2	77.8		0	85.7	14.3	0		0	0	0	0		
Total %	17.6	8.8	0	0	26.5	0	0	11.8	41.2	52.9	0	17.6	2.9	0	20.6	0	0	0	0	0	

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

Page No : 1

Groups Printed- Passenger Veh - Trucks

	Ashbury From North					Depue From East					Ashbury From South					Depue From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
07:00 AM	1	1	3	0	5	1	30	6	1	38	5	0	1	0	6	9	83	15	0	107	156
07:15 AM	4	6	3	0	13	0	26	2	0	28	2	3	1	0	6	11	96	21	0	128	175
07:30 AM	5	2	5	0	12	0	35	4	0	39	3	3	2	0	8	3	100	12	0	115	174
07:45 AM	5	0	7	0	12	1	40	6	0	47	5	1	0	0	6	10	139	10	0	159	224
Total	15	9	18	0	42	2	131	18	1	152	15	7	4	0	26	33	418	58	0	509	729
08:00 AM	5	1	7	0	13	1	42	4	0	47	4	0	0	0	4	7	102	9	0	118	182
08:15 AM	8	0	4	0	12	1	42	8	0	51	2	0	0	0	2	3	110	6	0	119	184
08:30 AM	8	0	7	0	15	1	54	1	0	56	1	0	0	0	1	8	100	5	0	113	185
08:45 AM	3	0	8	0	11	0	44	7	0	51	2	0	0	0	2	15	99	1	0	115	179
Total	24	1	26	0	51	3	182	20	0	205	9	0	0	0	9	33	411	21	0	465	730
09:00 AM	4	0	9	0	13	0	48	8	1	57	1	0	0	0	1	7	104	1	0	112	183
09:15 AM	5	0	8	0	13	1	45	5	0	51	2	1	0	0	3	9	97	3	0	109	176
09:30 AM	2	0	4	0	6	0	57	6	0	63	3	1	1	0	5	6	77	3	0	86	160
09:45 AM	10	0	11	0	21	0	45	6	0	51	2	1	0	0	3	12	106	5	0	123	198
Total	21	0	32	0	53	1	195	25	1	222	8	3	1	0	12	34	384	12	0	430	717
10:00 AM	6	0	13	0	19	1	48	8	0	57	2	0	0	0	2	12	88	3	0	103	181
10:15 AM	6	0	6	0	12	0	55	7	0	62	0	3	3	0	6	5	77	1	0	83	163
10:30 AM	8	2	6	0	16	0	58	5	0	63	3	1	1	0	5	7	94	0	0	101	185
10:45 AM	6	1	5	0	12	0	55	6	0	61	4	0	0	0	4	8	80	1	0	89	166
Total	26	3	30	0	59	1	216	26	0	243	9	4	4	0	17	32	339	5	0	376	695
11:00 AM	2	0	14	0	16	0	59	4	0	63	2	1	0	0	3	6	73	1	0	80	162
11:15 AM	8	0	16	0	24	1	58	9	0	68	3	0	0	0	3	3	70	3	0	76	171
11:30 AM	6	0	11	0	17	0	56	5	0	61	7	3	3	0	13	5	75	4	0	84	175
11:45 AM	7	0	9	0	16	0	72	6	0	78	4	4	2	0	10	3	81	0	0	84	188
Total	23	0	50	0	73	1	245	24	0	270	16	8	5	0	29	17	299	8	0	324	696
12:00 PM	11	1	10	0	22	1	77	7	0	85	6	1	2	0	9	7	81	6	0	94	210
12:15 PM	5	0	11	0	16	1	67	7	0	75	3	4	4	0	11	7	77	7	0	91	193
12:30 PM	7	0	4	0	11	2	65	5	0	72	4	3	0	0	7	4	88	5	0	97	187
12:45 PM	3	3	8	0	14	0	54	8	0	62	2	1	2	0	5	8	104	6	0	118	199
Total	26	4	33	0	63	4	263	27	0	294	15	9	8	0	32	26	350	24	0	400	789
01:00 PM	7	0	12	0	19	0	62	5	0	67	4	3	1	0	8	4	94	5	0	103	197
01:15 PM	6	1	3	0	10	1	64	3	0	68	3	0	1	0	4	6	83	2	0	91	173

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

Page No : 2

Groups Printed- Passenger Veh - Trucks

	Ashbury From North					Depue From East					Ashbury From South					Depue From West					
Start Time	Left	Thru	Right	Utturns	App. Total	Left	Thru	Right	Utturns	App. Total	Left	Thru	Right	Utturns	App. Total	Left	Thru	Right	Utturns	App. Total	Int. Total
01:30 PM	6	0	4	0	10	0	73	2	0	75	2	1	1	0	4	10	76	2	0	88	177
01:45 PM	8	3	4	0	15	0	67	5	0	72	3	1	0	0	4	4	87	3	0	94	185
Total	27	4	23	0	54	1	266	15	0	282	12	5	3	0	20	24	340	12	0	376	732
02:00 PM	2	3	4	0	9	0	81	4	0	85	0	0	1	0	1	1	90	1	0	92	187
02:15 PM	5	0	4	0	9	1	59	7	0	67	2	2	0	0	4	3	83	2	0	88	168
02:30 PM	5	3	3	0	11	0	90	5	0	95	0	2	1	0	3	13	92	3	0	108	217
02:45 PM	4	0	7	0	11	0	97	9	1	107	4	2	0	0	6	14	107	1	0	122	246
Total	16	6	18	0	40	1	327	25	1	354	6	6	2	0	14	31	372	7	0	410	818
03:00 PM	8	0	18	0	26	0	99	11	0	110	2	1	2	0	5	9	81	2	0	92	233
03:15 PM	13	1	3	0	17	0	114	3	0	117	1	0	1	0	2	7	82	1	0	90	226
03:30 PM	5	0	11	0	16	0	109	12	0	121	9	6	1	0	16	11	62	3	0	76	229
03:45 PM	3	0	9	0	12	0	113	7	0	120	7	2	1	0	10	7	61	3	0	71	213
Total	29	1	41	0	71	0	435	33	0	468	19	9	5	0	33	34	286	9	0	329	901
04:00 PM	7	0	10	0	17	0	108	16	0	124	28	6	1	0	35	10	76	1	0	87	263
04:15 PM	9	1	9	0	19	0	111	7	0	118	5	1	0	0	6	15	87	2	0	104	247
04:30 PM	6	1	15	0	22	0	122	7	0	129	9	1	1	0	11	16	92	1	0	109	271
04:45 PM	5	0	12	0	17	0	124	7	2	133	9	0	1	0	10	10	102	1	0	113	273
Total	27	2	46	0	75	0	465	37	2	504	51	8	3	0	62	51	357	5	0	413	1054
05:00 PM	5	1	6	0	12	0	136	11	0	147	5	1	2	0	8	16	90	2	0	108	275
05:15 PM	5	0	26	0	31	0	134	18	0	152	4	1	1	0	6	36	107	3	0	146	335
05:30 PM	13	0	28	0	41	0	121	13	0	134	1	0	1	0	2	31	69	0	0	100	277
05:45 PM	9	1	21	0	31	0	65	7	0	72	3	1	1	0	5	16	58	0	0	74	182
Total	32	2	81	0	115	0	456	49	0	505	13	3	5	0	21	99	324	5	0	428	1069
Grand Total	266	32	398	0	696	14	3181	299	5	3499	173	62	40	0	275	414	3880	166	0	4460	8930
Apprch %	38.2	4.6	57.2	0		0.4	90.9	8.5	0.1		62.9	22.5	14.5	0		9.3	87	3.7	0		
Total %	3	0.4	4.5	0	7.8	0.2	35.6	3.3	0.1	39.2	1.9	0.7	0.4	0	3.1	4.6	43.4	1.9	0	49.9	
Passenger Veh	264	32	391	0	687	14	3133	284	5	3436	169	62	40	0	271	412	3809	162	0	4383	8777
% Passenger Veh	99.2	100	98.2	0	98.7	100	98.5	95	100	98.2	97.7	100	100	0	98.5	99.5	98.2	97.6	0	98.3	98.3
Trucks	2	0	7	0	9	0	48	15	0	63	4	0	0	0	4	2	71	4	0	77	153
% Trucks	0.8	0	1.8	0	1.3	0	1.5	5	0	1.8	2.3	0	0	0	1.5	0.5	1.8	2.4	0	1.7	1.7

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

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	Ashbury From North					Depue From East					Ashbury From South					Depue From West					
Start Time	Left	Thru	Right	Ut urn S	App. Total	Left	Thru	Right	Ut urns	App. Total	Left	Thru	Right	Ut urns	App. Total	Left	Thru	Right	Ut urns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	5	0	7	0	12	1	40	6	0	47	5	1	0	0	6	10	139	10	0	159	224
08:00 AM	5	1	7	0	13	1	42	4	0	47	4	0	0	0	4	7	102	9	0	118	182
08:15 AM	8	0	4	0	12	1	42	8	0	51	2	0	0	0	2	3	110	6	0	119	184
08:30 AM	8	0	7	0	15	1	54	1	0	56	1	0	0	0	1	8	100	5	0	113	185
Total Volume	26	1	25	0	52	4	178	19	0	201	12	1	0	0	13	28	451	30	0	509	775
% App. Total	50	1.9	48.1	0		2	88.6	9.5	0		92.3	7.7	0	0		5.5	88.6	5.9	0		
PHF	.813	.250	.893	.000	.867	1.00	.824	.594	.000	.897	.600	.250	.000	.000	.542	.700	.811	.750	.000	.800	.865
Passenger Veh	26	1	24	0	51	4	175	18	0	197	12	1	0	0	13	28	445	29	0	502	763
% Passenger Veh	100	100	96.0	0	98.1	100	98.3	94.7	0	98.0	100	100	0	0	100	100	98.7	96.7	0	98.6	98.5
Trucks	0	0	1	0	1	0	3	1	0	4	0	0	0	0	0	0	6	1	0	7	12
% Trucks	0	0	4.0	0	1.9	0	1.7	5.3	0	2.0	0	0	0	0	0	0	1.3	3.3	0	1.4	1.5

Data Collection Group

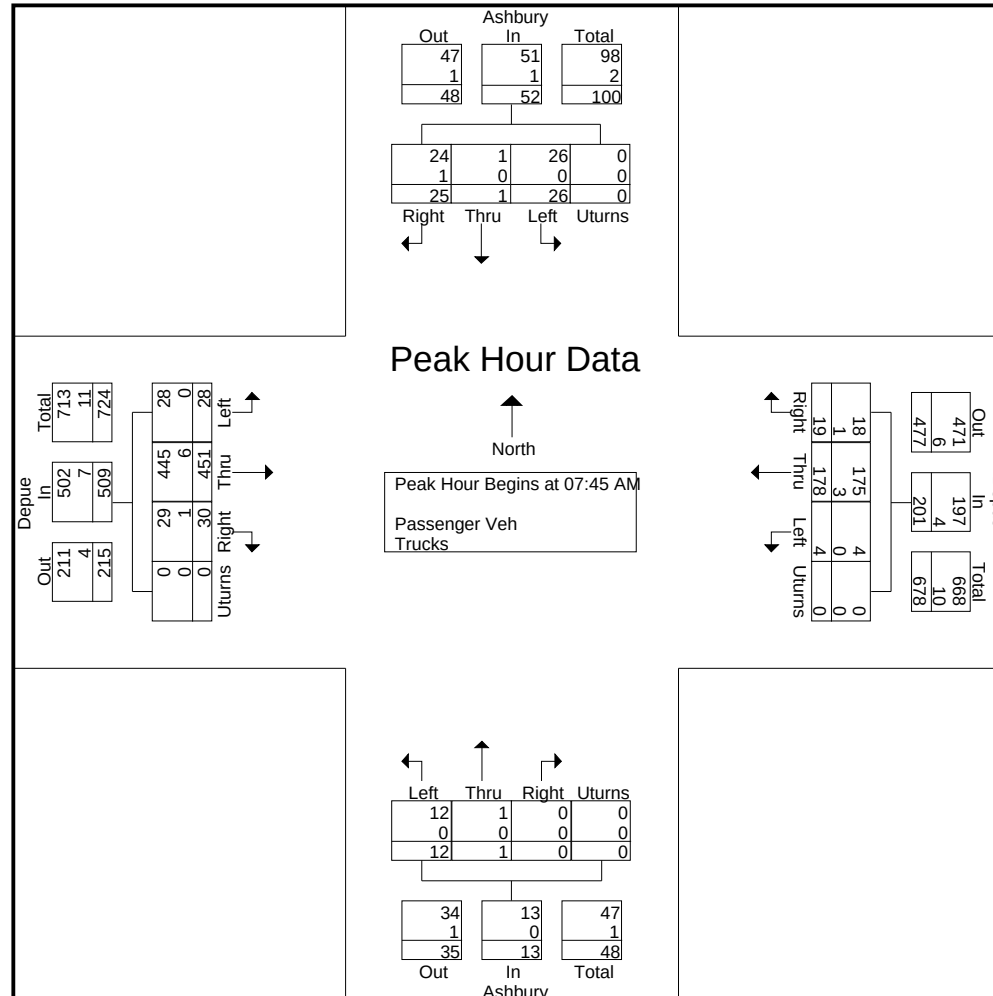
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File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

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Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

Page No : 5

	Ashbury From North					Depue From East					Ashbury From South					Depue From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	11	1	10	0	22	1	77	7	0	85	6	1	2	0	9	7	81	6	0	94	210
12:15 PM	5	0	11	0	16	1	67	7	0	75	3	4	4	0	11	7	77	7	0	91	193
12:30 PM	7	0	4	0	11	2	65	5	0	72	4	3	0	0	7	4	88	5	0	97	187
12:45 PM	3	3	8	0	14	0	54	8	0	62	2	1	2	0	5	8	104	6	0	118	199
Total Volume	26	4	33	0	63	4	263	27	0	294	15	9	8	0	32	26	350	24	0	400	789
% App. Total	41.3	6.3	52.4	0		1.4	89.5	9.2	0		46.9	28.1	25	0		6.5	87.5	6	0		
PHF	.591	.333	.750	.000	.716	.500	.854	.844	.000	.865	.625	.563	.500	.000	.727	.813	.841	.857	.000	.847	.939
Passenger Veh	26	4	32	0	62	4	257	26	0	287	14	9	8	0	31	24	345	22	0	391	771
% Passenger Veh	100	100	97.0	0	98.4	100	97.7	96.3	0	97.6	93.3	100	100	0	96.9	92.3	98.6	91.7	0	97.8	97.7
Trucks	0	0	1	0	1	0	6	1	0	7	1	0	0	0	1	2	5	2	0	9	18
% Trucks	0	0	3.0	0	1.6	0	2.3	3.7	0	2.4	6.7	0	0	0	3.1	7.7	1.4	8.3	0	2.3	2.3

Data Collection Group

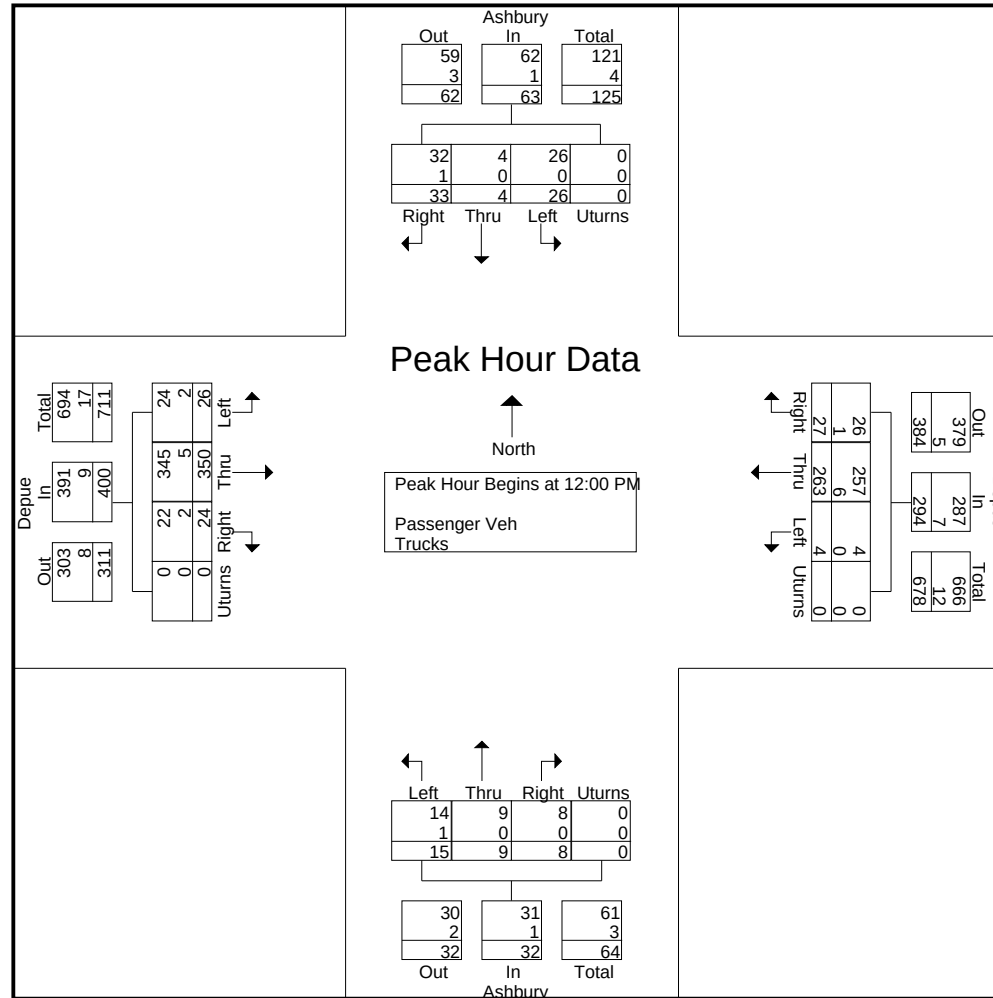
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File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

Page No : 6



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

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	Ashbury From North					Depue From East					Ashbury From South					Depue From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	5	0	12	0	17	0	124	7	2	133	9	0	1	0	10	10	102	1	0	113	273
05:00 PM	5	1	6	0	12	0	136	11	0	147	5	1	2	0	8	16	90	2	0	108	275
05:15 PM	5	0	26	0	31	0	134	18	0	152	4	1	1	0	6	36	107	3	0	146	335
05:30 PM	13	0	28	0	41	0	121	13	0	134	1	0	1	0	2	31	69	0	0	100	277
Total Volume	28	1	72	0	101	0	515	49	2	566	19	2	5	0	26	93	368	6	0	467	1160
% App. Total	27.7	1	71.3	0		0	91	8.7	0.4		73.1	7.7	19.2	0		19.9	78.8	1.3	0		
PHF	.538	.250	.643	.000	.616	.000	.947	.681	.250	.931	.528	.500	.625	.000	.650	.646	.860	.500	.000	.800	.866
Passenger Veh	28	1	72	0	101	0	513	48	2	563	19	2	5	0	26	93	357	6	0	456	1146
% Passenger Veh	100	100	100	0	100	0	99.6	98.0	100	99.5	100	100	100	0	100	100	97.0	100	0	97.6	98.8
Trucks	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	11	0	0	11	14
% Trucks	0	0	0	0	0	0	0.4	2.0	0	0.5	0	0	0	0	0	0	3.0	0	0	2.4	1.2

Data Collection Group

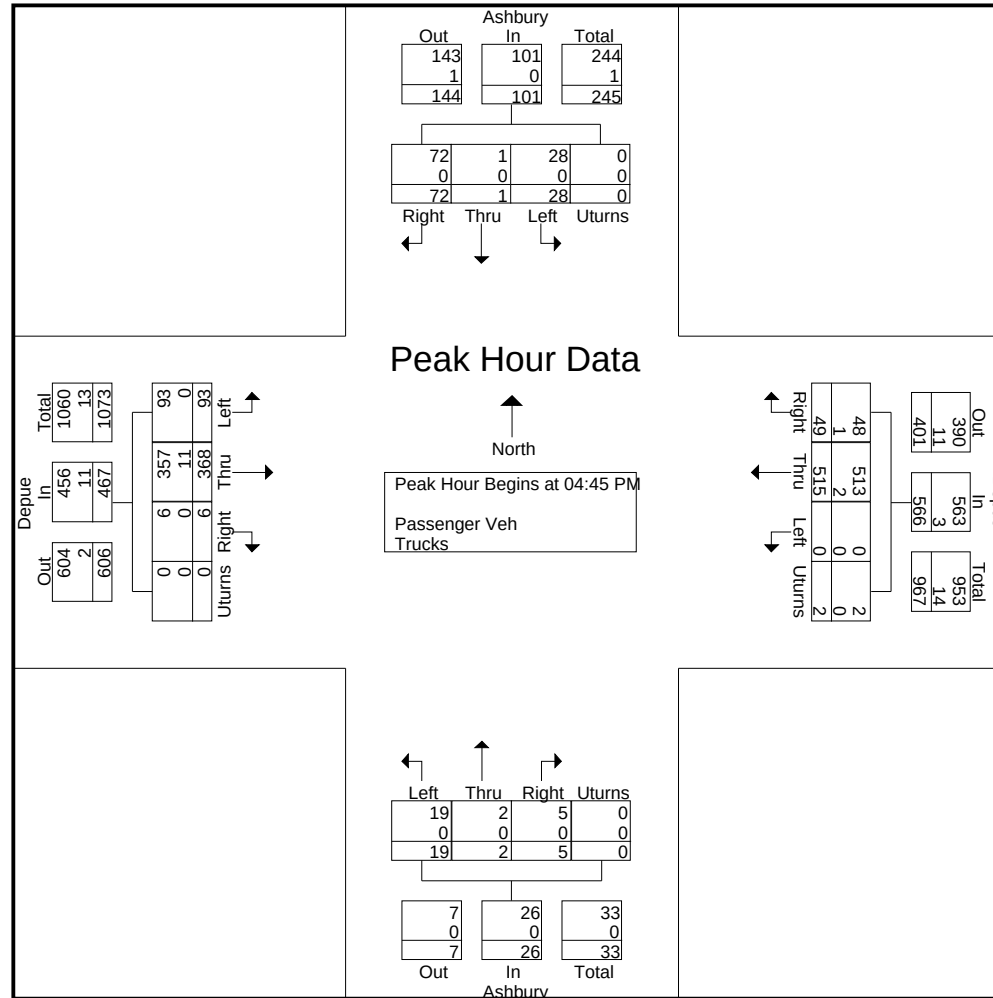
LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

Page No : 8



LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury
Site Code : 00009324
Start Date : 9/13/2022
Page No : 1

[illegible]

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Ashbury

Site Code : 00009324

Start Date : 9/13/2022

Page No : 2

Groups Printed- Bikes

	Ashbury From North					Depue From East					Ashbury From South					Depue From West						
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total	
*** BREAK ***																						
Total	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:30 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																						
Total	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
03:00 PM	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																						
03:30 PM	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
03:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	3	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5
04:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
04:15 PM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
04:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	8
05:00 PM	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:15 PM	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	3
*** BREAK ***																						
05:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	6	6	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	7
Grand Total	0	1	0	53	54	0	1	0	2	3	0	1	0	0	1	0	1	0	0	1		59
Apprch %	0	1.9	0	98.1		0	33.3	0	66.7		0	100	0	0		0	100	0	0			
Total %	0	1.7	0	89.8	91.5	0	1.7	0	3.4	5.1	0	1.7	0	0	1.7	0	1.7	0	0	1.7		

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Galt

Site Code : 00001885

Start Date : 9/13/2022

Page No : 1

Groups Printed- Passenger Veh - Trucks

	Depue Dr From North					Ironbound Rd From East					Ironbound Rd From South					Galt Ln From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
07:00 AM	21	53	3	0	77	23	35	8	0	66	6	26	20	0	52	1	2	2	0	5	200
07:15 AM	31	74	3	0	108	31	47	9	0	87	7	20	25	0	52	0	2	2	0	4	251
07:30 AM	29	72	2	0	103	27	20	4	0	51	8	28	37	0	73	3	21	2	0	26	253
07:45 AM	33	100	3	0	136	60	23	14	0	97	6	26	49	0	81	1	16	6	0	23	337
Total	114	299	11	0	424	141	125	35	0	301	27	100	131	0	258	5	41	12	0	58	1041
08:00 AM	24	90	1	0	115	41	13	14	0	68	5	31	41	0	77	0	0	3	0	3	263
08:15 AM	32	90	2	0	124	33	9	8	0	50	2	44	39	0	85	0	3	3	0	6	265
08:30 AM	39	71	0	0	110	25	5	15	0	45	1	42	34	0	77	1	4	3	0	8	240
08:45 AM	28	72	0	0	100	52	4	9	0	65	1	42	41	0	84	0	1	1	0	2	251
Total	123	323	3	0	449	151	31	46	0	228	9	159	155	0	323	1	8	10	0	19	1019
*** BREAK ***																					
04:00 PM	24	61	0	0	85	49	3	26	0	78	0	100	70	0	170	6	61	8	0	75	408
04:15 PM	24	74	0	0	98	71	1	32	0	104	2	74	72	0	148	2	11	6	0	19	369
04:30 PM	27	60	0	0	87	58	2	35	0	95	1	94	77	0	172	1	13	4	0	18	372
04:45 PM	29	84	0	0	113	68	5	33	0	106	1	97	65	0	163	2	5	2	0	9	391
Total	104	279	0	0	383	246	11	126	0	383	4	365	284	0	653	11	90	20	0	121	1540
05:00 PM	28	72	0	0	100	50	1	27	0	78	1	126	68	0	195	4	9	9	0	22	395
05:15 PM	39	62	0	0	101	54	5	53	0	112	0	88	65	0	153	1	9	4	0	14	380
05:30 PM	35	59	0	0	94	57	6	36	0	99	0	86	63	0	149	1	4	3	0	8	350
05:45 PM	21	44	0	0	65	52	4	25	0	81	0	47	67	0	114	1	2	2	0	5	265
Total	123	237	0	0	360	213	16	141	0	370	1	347	263	0	611	7	24	18	0	49	1390
Grand Total	464	1138	14	0	1616	751	183	348	0	1282	41	971	833	0	1845	24	163	60	0	247	4990
Apprch %	28.7	70.4	0.9	0		58.6	14.3	27.1	0		2.2	52.6	45.1	0		9.7	66	24.3	0		
Total %	9.3	22.8	0.3	0	32.4	15.1	3.7	7	0	25.7	0.8	19.5	16.7	0	37	0.5	3.3	1.2	0	4.9	
Passenger Veh	458	1119	14	0	1591	736	183	344	0	1263	40	961	810	0	1811	24	163	60	0	247	4912
% Passenger Veh	98.7	98.3	100	0	98.5	98	100	98.9	0	98.5	97.6	99	97.2	0	98.2	100	100	100	0	100	98.4
Trucks	6	19	0	0	25	15	0	4	0	19	1	10	23	0	34	0	0	0	0	0	78
% Trucks	1.3	1.7	0	0	1.5	2	0	1.1	0	1.5	2.4	1	2.8	0	1.8	0	0	0	0	0	1.6

Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Galt

Site Code : 00001885

Start Date : 9/13/2022

Page No : 2

	Depue Dr From North					Ironbound Rd From East					Ironbound Rd From South					Galt Ln From West					
Start Time	Left	Thru	Right	Uturn S	App. Total	Left	Thru	Right	Uturns	App. Total	Left	Thru	Right	Uturns	App. Total	Left	Thru	Right	Uturns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	29	72	2	0	103	27	20	4	0	51	8	28	37	0	73	3	21	2	0	26	253
07:45 AM	33	100	3	0	136	60	23	14	0	97	6	26	49	0	81	1	16	6	0	23	337
08:00 AM	24	90	1	0	115	41	13	14	0	68	5	31	41	0	77	0	0	3	0	3	263
08:15 AM	32	90	2	0	124	33	9	8	0	50	2	44	39	0	85	0	3	3	0	6	265
Total Volume	118	352	8	0	478	161	65	40	0	266	21	129	166	0	316	4	40	14	0	58	1118
% App. Total	24.7	73.6	1.7	0		60.5	24.4	15	0		6.6	40.8	52.5	0		6.9	69	24.1	0		
PHF	.894	.880	.667	.000	.879	.671	.707	.714	.000	.686	.656	.733	.847	.000	.929	.333	.476	.583	.000	.558	.829
Passenger Veh	116	347	8	0	471	158	65	37	0	260	20	127	155	0	302	4	40	14	0	58	1091
% Passenger Veh	98.3	98.6	100	0	98.5	98.1	100	92.5	0	97.7	95.2	98.4	93.4	0	95.6	100	100	100	0	100	97.6
Trucks	2	5	0	0	7	3	0	3	0	6	1	2	11	0	14	0	0	0	0	0	27
% Trucks	1.7	1.4	0	0	1.5	1.9	0	7.5	0	2.3	4.8	1.6	6.6	0	4.4	0	0	0	0	0	2.4

Data Collection Group

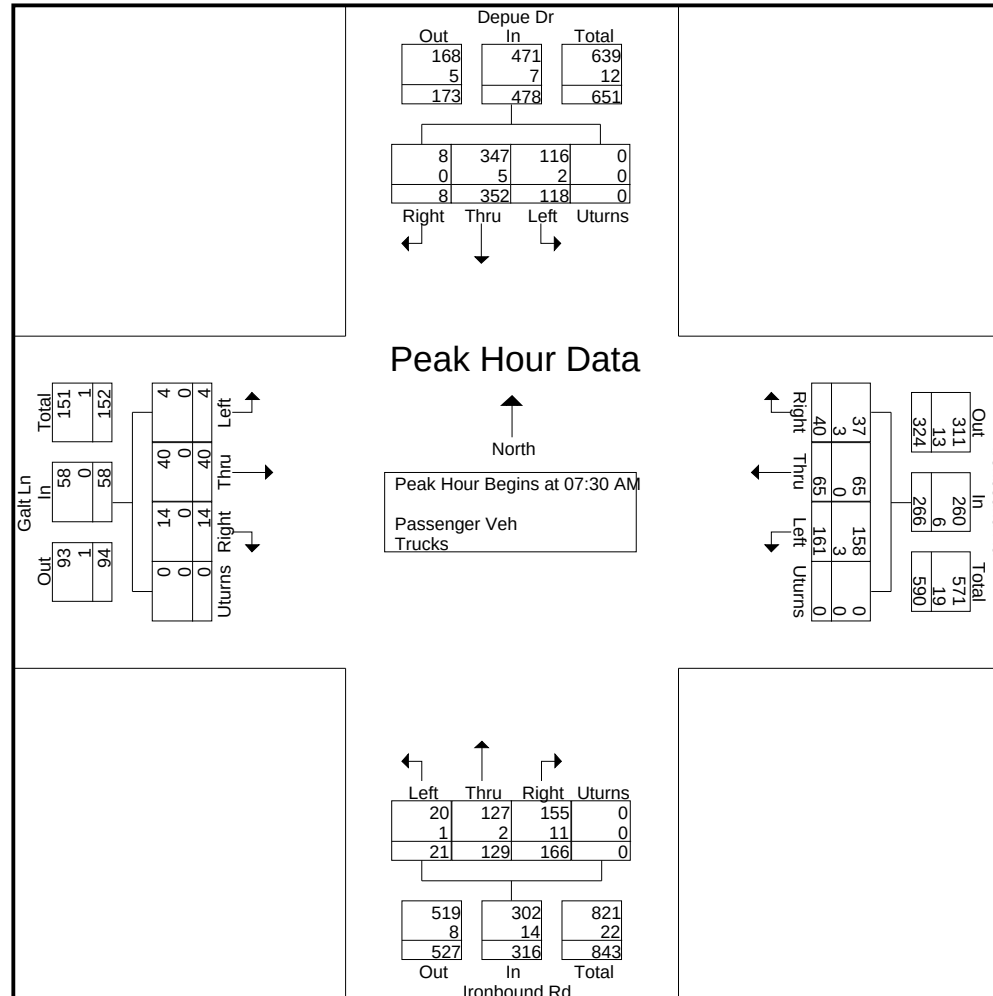
LSmith@DataCollectionGroup.net

File Name : Depue and Galt

Site Code : 00001885

Start Date : 9/13/2022

Page No : 3



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Galt

Site Code : 00001885

Start Date : 9/13/2022

Page No : 4

	Depue Dr From North					Ironbound Rd From East					Ironbound Rd From South					Galt Ln From West					
Start Time	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Left	Thru	Right	UtURNS	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	24	61	0	0	85	49	3	26	0	78	0	100	70	0	170	6	61	8	0	75	408
04:15 PM	24	74	0	0	98	71	1	32	0	104	2	74	72	0	148	2	11	6	0	19	369
04:30 PM	27	60	0	0	87	58	2	35	0	95	1	94	77	0	172	1	13	4	0	18	372
04:45 PM	29	84	0	0	113	68	5	33	0	106	1	97	65	0	163	2	5	2	0	9	391
Total Volume	104	279	0	0	383	246	11	126	0	383	4	365	284	0	653	11	90	20	0	121	1540
% App. Total	27.2	72.8	0	0		64.2	2.9	32.9	0		0.6	55.9	43.5	0		9.1	74.4	16.5	0		
PHF	.897	.830	.000	.000	.847	.866	.550	.900	.000	.903	.500	.913	.922	.000	.949	.458	.369	.625	.000	.403	.944
Passenger Veh	102	275	0	0	377	242	11	125	0	378	4	364	279	0	647	11	90	20	0	121	1523
% Passenger Veh	98.1	98.6	0	0	98.4	98.4	100	99.2	0	98.7	100	99.7	98.2	0	99.1	100	100	100	0	100	98.9
Trucks	2	4	0	0	6	4	0	1	0	5	0	1	5	0	6	0	0	0	0	0	17
% Trucks	1.9	1.4	0	0	1.6	1.6	0	0.8	0	1.3	0	0.3	1.8	0	0.9	0	0	0	0	0	1.1

Data Collection Group

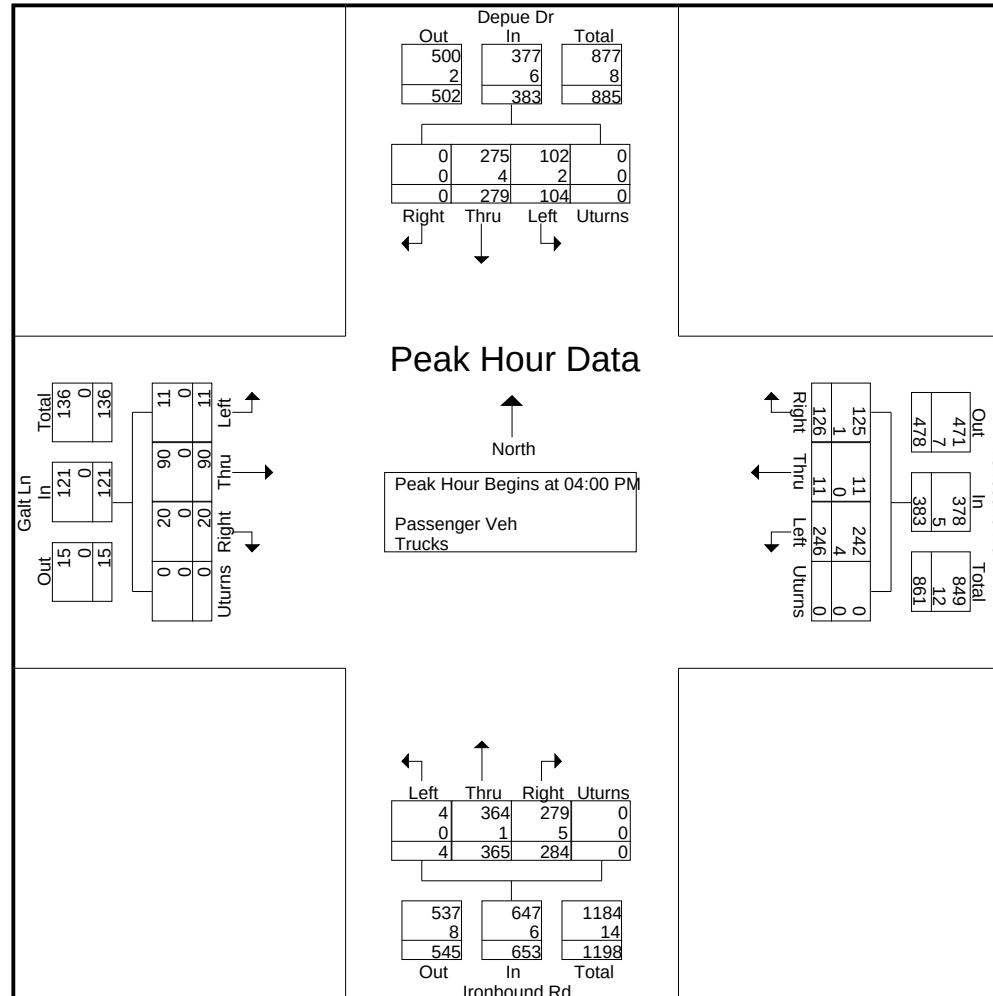
LSmith@DataCollectionGroup.net

File Name : Depue and Galt

Site Code : 00001885

Start Date : 9/13/2022

Page No : 5



Data Collection Group

LSmith@DataCollectionGroup.net

File Name : Depue and Galt

Site Code : 00001885

Start Date : 9/13/2022

Page No : 1

Groups Printed- Bikes

	Depue Dr From North					Ironbound Rd From East					Ironbound Rd From South					Galt Ln From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
Total	0	0	0	3	3	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	5
08:00 AM	0	0	0	0	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
08:45 AM	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	0	2	2	6	0	0	1	7	0	0	0	0	0	0	0	0	0	0	9
*** BREAK ***																					
04:00 PM	0	1	0	1	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	2	1	0	0	0	1	0	1	1	0	2	0	0	0	1	1	6
*** BREAK ***																					
05:30 PM	0	0	0	1	1	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	2
Total	0	0	0	1	1	1	0	0	0	1	0	0	2	1	3	0	0	0	0	0	5
Grand Total	0	1	0	7	8	8	0	0	3	11	0	1	3	1	5	0	0	0	1	1	25
Apprch %	0	12.5	0	87.5		72.7	0	0	27.3		0	20	60	20		0	0	0	100		
Total %	0	4	0	28	32	32	0	0	12	44	0	4	12	4	20	0	0	0	4	4	



TRAFFIC DATA COLLECTION

File Name : JamesCity(Ashbury and James City Rec)

Site Code :

Start Date : 6/11/2024

Page No : 1

Groups Printed- Cars + - Trucks

	Ashbury Lane Southbound				Rec Center Driveway Westbound				Ashbury Lane Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	9	4	0	13	1	7	2	10	3	3	0	6	29
07:15 AM	7	1	0	8	1	3	1	5	1	0	0	1	14
07:30 AM	7	3	0	10	2	3	2	7	2	1	0	3	20
07:45 AM	12	3	0	15	2	9	2	13	3	1	0	4	32
Total	35	11	0	46	6	22	7	35	9	5	0	14	95
08:00 AM	10	0	0	10	3	2	4	9	3	0	0	3	22
08:15 AM	5	0	0	5	0	5	4	9	1	0	0	1	15
08:30 AM	8	2	0	10	3	2	2	7	4	3	0	7	24
08:45 AM	11	1	0	12	1	8	2	11	2	4	0	6	29
Total	34	3	0	37	7	17	12	36	10	7	0	17	90
Grand Total	69	14	0	83	13	39	19	71	19	12	0	31	185
Apprch %	83.1	16.9	0		18.3	54.9	26.8		61.3	38.7	0		
Total %	37.3	7.6	0	44.9	7	21.1	10.3	38.4	10.3	6.5	0	16.8	
Cars +	68	14	0	82	12	39	17	68	17	12	0	29	179
% Cars +	98.6	100	0	98.8	92.3	100	89.5	95.8	89.5	100	0	93.5	96.8
Trucks	1	0	0	1	1	0	2	3	2	0	0	2	6
% Trucks	1.4	0	0	1.2	7.7	0	10.5	4.2	10.5	0	0	6.5	3.2



TRAFFIC DATA COLLECTION

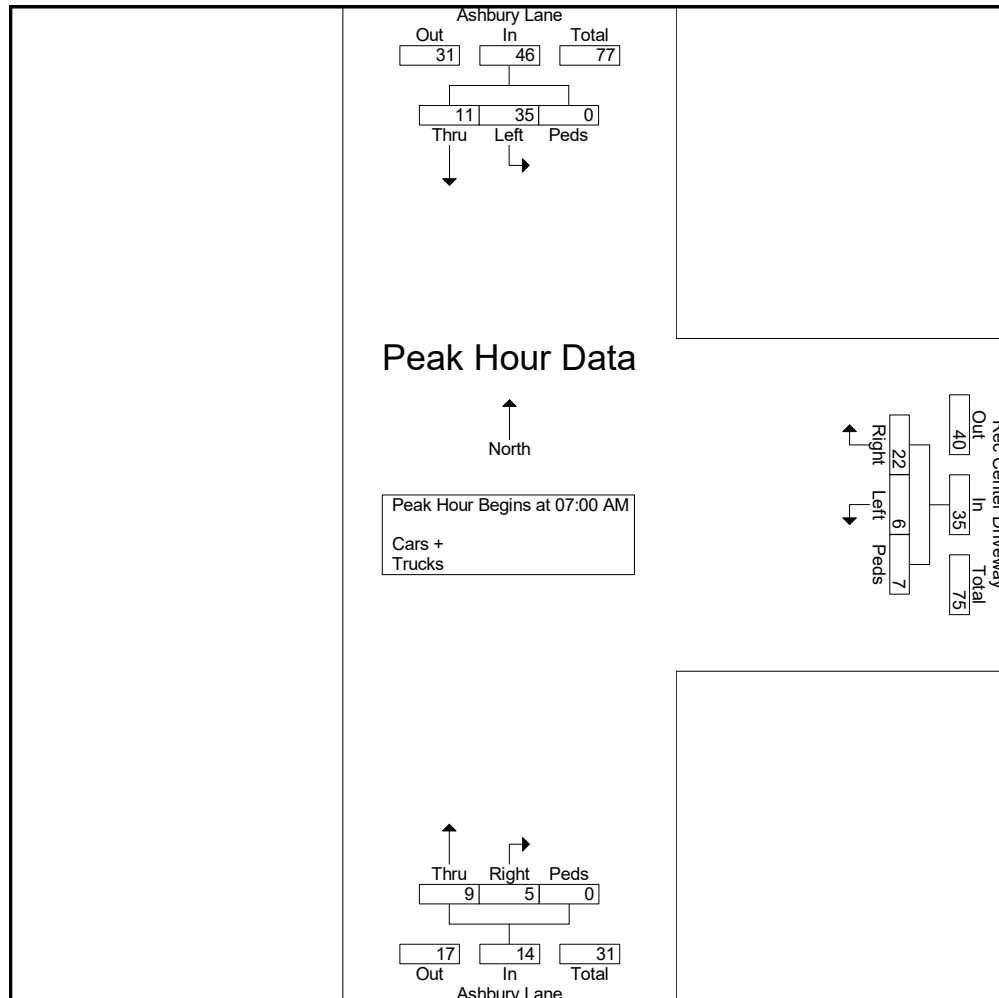
File Name : JamesCity(Ashbury and James City Rec)

Site Code :

Start Date : 6/11/2024

Page No : 2

	Ashbury Lane Southbound				Rec Center Driveway Westbound				Ashbury Lane Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	9	4	0	13	1	7	2	10	3	3	0	6	29
07:15 AM	7	1	0	8	1	3	1	5	1	0	0	1	14
07:30 AM	7	3	0	10	2	3	2	7	2	1	0	3	20
07:45 AM	12	3	0	15	2	9	2	13	3	1	0	4	32
Total Volume	35	11	0	46	6	22	7	35	9	5	0	14	95
% App. Total	76.1	23.9	0		17.1	62.9	20		64.3	35.7	0		
PHF	.729	.688	.000	.767	.750	.611	.875	.673	.750	.417	.000	.583	.742





TRAFFIC DATA COLLECTION

File Name : JamesCity(Ashbury and James City Rec)

Site Code :

Start Date : 6/11/2024

Page No : 1

Groups Printed- Cars + - Trucks

	Ashbury Lane Southbound				Rec Center Driveway Westbound				Ashbury Lane Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	7	1	0	8	4	6	0	10	11	2	0	13	31
04:15 PM	10	5	0	15	0	8	2	10	4	0	0	4	29
04:30 PM	5	2	0	7	2	3	0	5	3	2	0	5	17
04:45 PM	11	0	0	11	3	4	0	7	3	2	0	5	23
Total	33	8	0	41	9	21	2	32	21	6	0	27	100
05:00 PM	8	0	0	8	4	5	2	11	8	3	0	11	30
05:15 PM	15	2	0	17	4	4	4	12	8	2	0	10	39
05:30 PM	13	2	0	15	2	12	1	15	3	2	0	5	35
05:45 PM	21	3	0	24	3	5	2	10	10	1	0	11	45
Total	57	7	0	64	13	26	9	48	29	8	0	37	149
Grand Total	90	15	0	105	22	47	11	80	50	14	0	64	249
Apprch %	85.7	14.3	0		27.5	58.8	13.8		78.1	21.9	0		
Total %	36.1	6	0	42.2	8.8	18.9	4.4	32.1	20.1	5.6	0	25.7	
Cars +	90	14	0	104	22	47	7	76	49	14	0	63	243
% Cars +	100	93.3	0	99	100	100	63.6	95	98	100	0	98.4	97.6
Trucks	0	1	0	1	0	0	4	4	1	0	0	1	6
% Trucks	0	6.7	0	1	0	0	36.4	5	2	0	0	1.6	2.4



TRAFFIC DATA COLLECTION

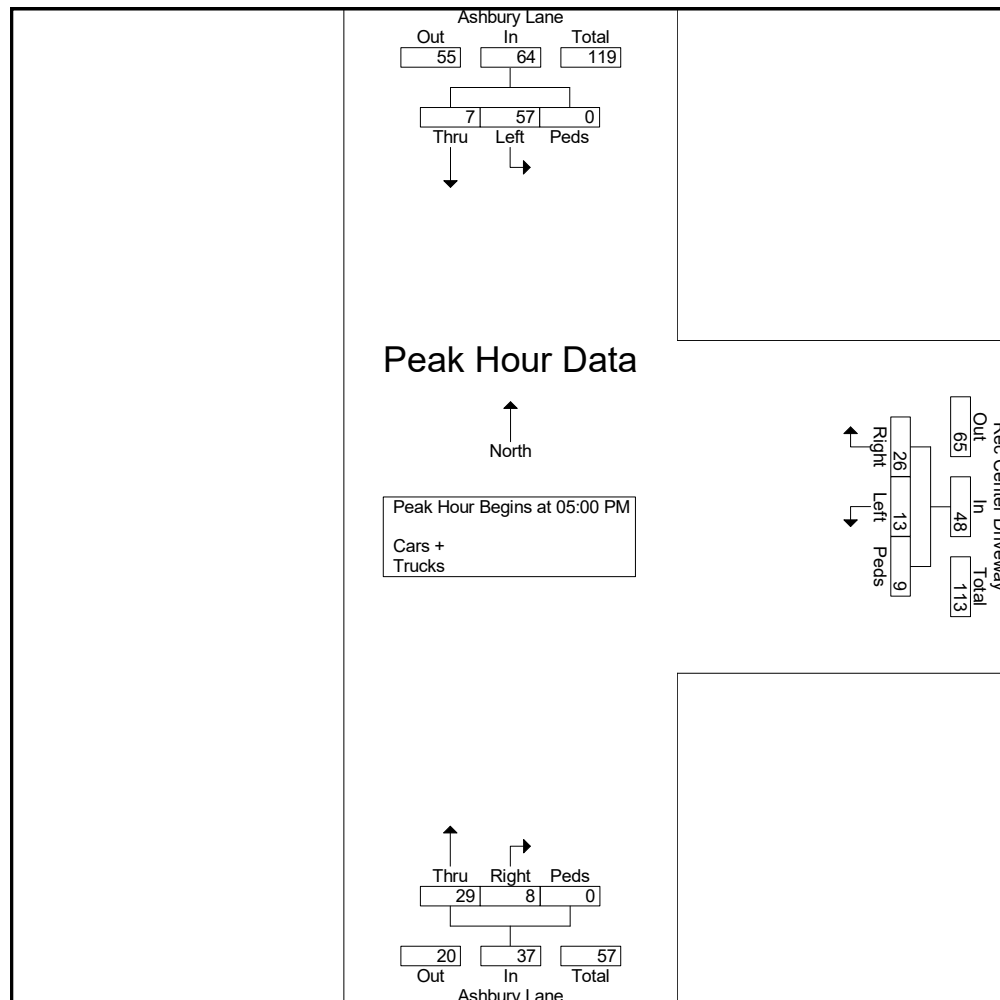
File Name : JamesCity(Ashbury and James City Rec)

Site Code :

Start Date : 6/11/2024

Page No : 2

	Ashbury Lane Southbound				Rec Center Driveway Westbound				Ashbury Lane Northbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	8	0	0	8	4	5	2	11	8	3	0	11	30
05:15 PM	15	2	0	17	4	4	4	12	8	2	0	10	39
05:30 PM	13	2	0	15	2	12	1	15	3	2	0	5	35
05:45 PM	21	3	0	24	3	5	2	10	10	1	0	11	45
Total Volume	57	7	0	64	13	26	9	48	29	8	0	37	149
% App. Total	89.1	10.9	0		27.1	54.2	18.8		78.4	21.6	0		
PHF	.679	.583	.000	.667	.813	.542	.563	.800	.725	.667	.000	.841	.828





TRAFFIC DATA COLLECTION

File Name : JamesCity(Longhill and Ashbury)
 Site Code :
 Start Date : 6/11/2024
 Page No : 1

Groups Printed- Cars + - Trucks

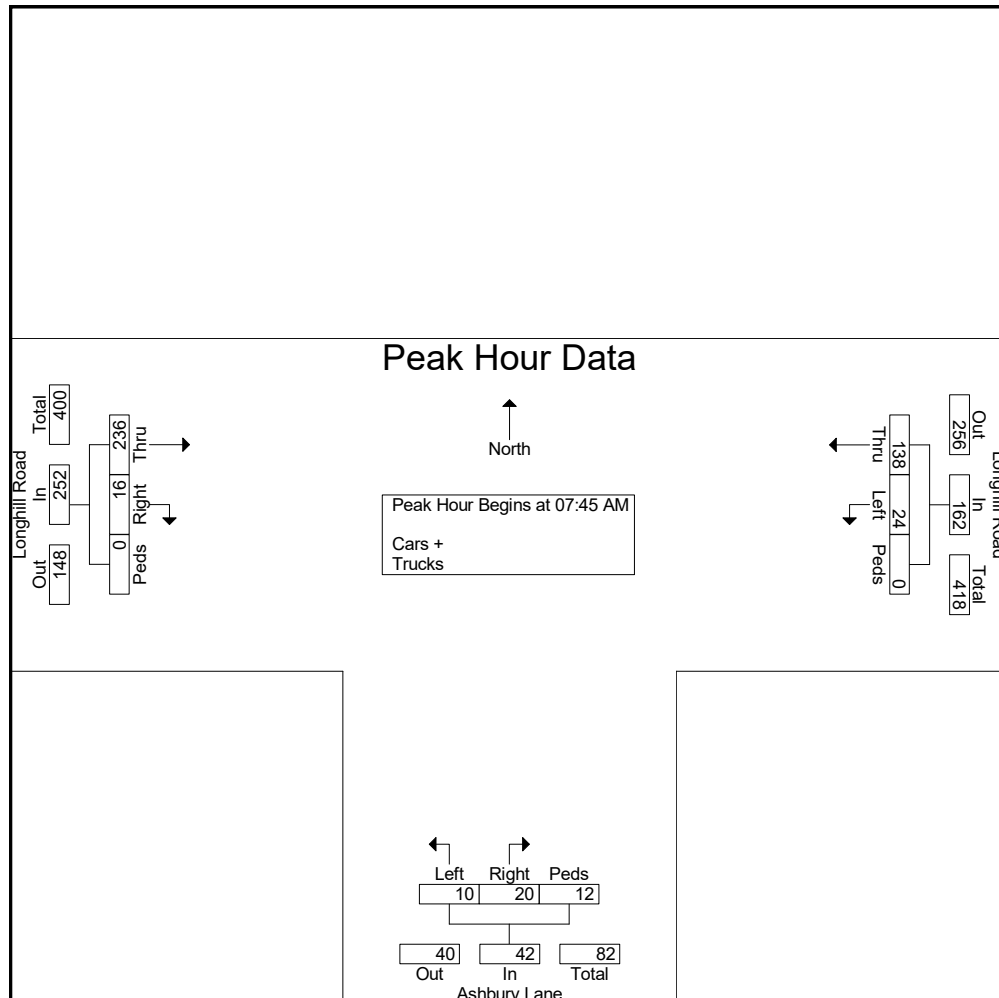
	Longhill Road Westbound				Ashbury Lane Northbound				Longhill Road Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	6	21	0	27	6	4	3	13	20	7	0	27	67
07:15 AM	2	16	0	18	3	1	2	6	29	6	0	35	59
07:30 AM	7	22	0	29	3	1	3	7	38	3	0	41	77
07:45 AM	9	35	0	44	6	7	2	15	93	6	0	99	158
Total	24	94	0	118	18	13	10	41	180	22	0	202	361
08:00 AM	4	31	0	35	2	3	6	11	40	6	0	46	92
08:15 AM	5	41	0	46	2	4	2	8	55	0	0	55	109
08:30 AM	6	31	0	37	0	6	2	8	48	4	0	52	97
08:45 AM	3	28	0	31	5	4	1	10	51	9	0	60	101
Total	18	131	0	149	9	17	11	37	194	19	0	213	399
Grand Total	42	225	0	267	27	30	21	78	374	41	0	415	760
Apprch %	15.7	84.3	0		34.6	38.5	26.9		90.1	9.9	0		
Total %	5.5	29.6	0	35.1	3.6	3.9	2.8	10.3	49.2	5.4	0	54.6	
Cars +	41	214	0	255	25	30	18	73	361	41	0	402	730
% Cars +	97.6	95.1	0	95.5	92.6	100	85.7	93.6	96.5	100	0	96.9	96.1
Trucks	1	11	0	12	2	0	3	5	13	0	0	13	30
% Trucks	2.4	4.9	0	4.5	7.4	0	14.3	6.4	3.5	0	0	3.1	3.9



TRAFFIC DATA COLLECTION

File Name : JamesCity(Longhill and Ashbury)
 Site Code :
 Start Date : 6/11/2024
 Page No : 2

	Longhill Road Westbound				Ashbury Lane Northbound				Longhill Road Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	9	35	0	44	6	7	2	15	93	6	0	99	158
08:00 AM	4	31	0	35	2	3	6	11	40	6	0	46	92
08:15 AM	5	41	0	46	2	4	2	8	55	0	0	55	109
08:30 AM	6	31	0	37	0	6	2	8	48	4	0	52	97
Total Volume	24	138	0	162	10	20	12	42	236	16	0	252	456
% App. Total	14.8	85.2	0		23.8	47.6	28.6		93.7	6.3	0		
PHF	.667	.841	.000	.880	.417	.714	.500	.700	.634	.667	.000	.636	.722





TRAFFIC DATA COLLECTION

File Name : JamesCity(Longhill and Ashbury)
 Site Code :
 Start Date : 6/11/2024
 Page No : 1

Groups Printed- Cars + - Trucks

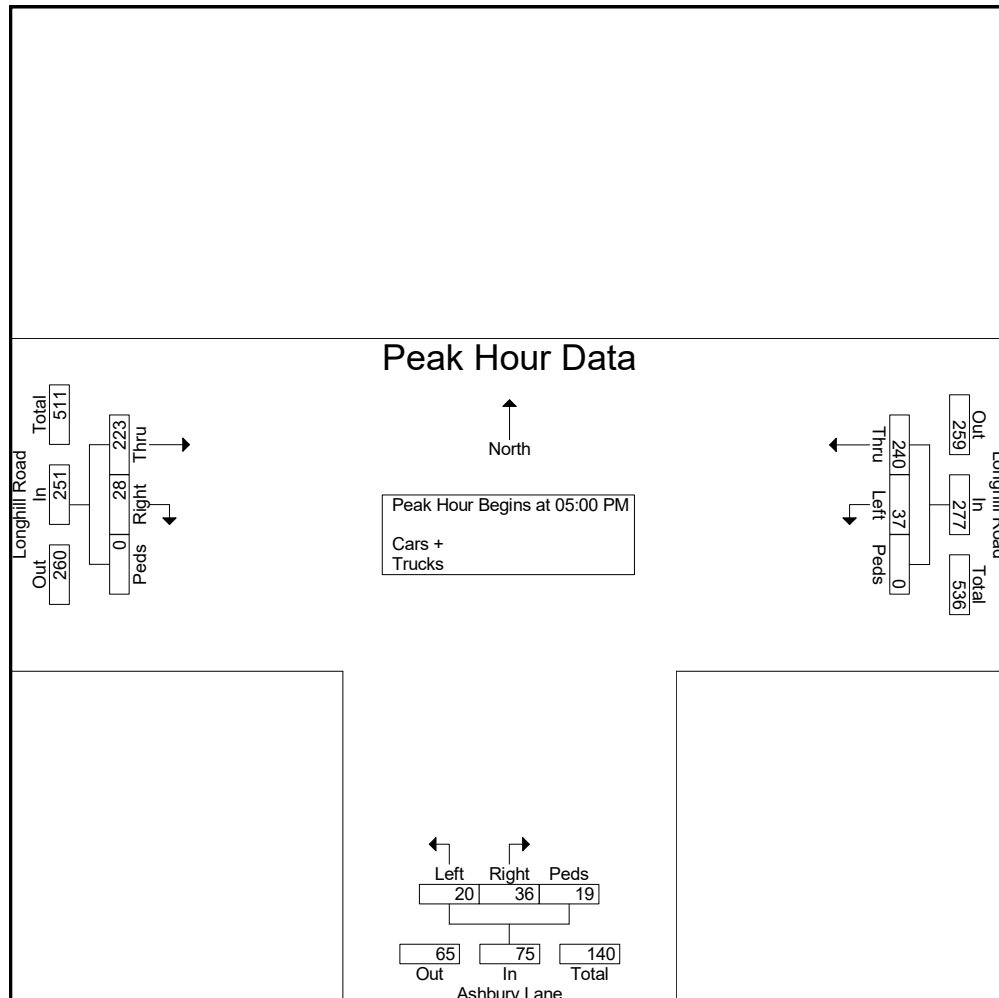
	Longhill Road Westbound				Ashbury Lane Northbound				Longhill Road Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	2	39	0	41	3	16	4	23	38	5	0	43	107
04:15 PM	11	69	0	80	4	9	2	15	47	4	0	51	146
04:30 PM	3	58	0	61	2	4	3	9	62	4	0	66	136
04:45 PM	4	47	0	51	1	5	2	8	59	7	0	66	125
Total	20	213	0	233	10	34	11	55	206	20	0	226	514
05:00 PM	6	44	0	50	5	9	4	18	68	2	0	70	138
05:15 PM	9	68	0	77	4	8	7	19	64	8	0	72	168
05:30 PM	8	68	0	76	8	7	5	20	44	8	0	52	148
05:45 PM	14	60	0	74	3	12	3	18	47	10	0	57	149
Total	37	240	0	277	20	36	19	75	223	28	0	251	603
Grand Total	57	453	0	510	30	70	30	130	429	48	0	477	1117
Apprch %	11.2	88.8	0		23.1	53.8	23.1		89.9	10.1	0		
Total %	5.1	40.6	0	45.7	2.7	6.3	2.7	11.6	38.4	4.3	0	42.7	
Cars +	56	450	0	506	28	70	20	118	421	48	0	469	1093
% Cars +	98.2	99.3	0	99.2	93.3	100	66.7	90.8	98.1	100	0	98.3	97.9
Trucks	1	3	0	4	2	0	10	12	8	0	0	8	24
% Trucks	1.8	0.7	0	0.8	6.7	0	33.3	9.2	1.9	0	0	1.7	2.1



TRAFFIC DATA COLLECTION

File Name : JamesCity(Longhill and Ashbury)
 Site Code :
 Start Date : 6/11/2024
 Page No : 2

	Longhill Road Westbound				Ashbury Lane Northbound				Longhill Road Eastbound				
Start Time	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	6	44	0	50	5	9	4	18	68	2	0	70	138
05:15 PM	9	68	0	77	4	8	7	19	64	8	0	72	168
05:30 PM	8	68	0	76	8	7	5	20	44	8	0	52	148
05:45 PM	14	60	0	74	3	12	3	18	47	10	0	57	149
Total Volume	37	240	0	277	20	36	19	75	223	28	0	251	603
% App. Total	13.4	86.6	0		26.7	48	25.3		88.8	11.2	0		
PHF	.661	.882	.000	.899	.625	.750	.679	.938	.820	.700	.000	.872	.897





TRAFFIC DATA COLLECTION

File Name : JamesCity(Longhill and Grand Strand)

Site Code :

Start Date : 6/11/2024

Page No : 1

Groups Printed- Cars + - Trucks

	Grand Strand Drive Southbound					Longhill Road Westbound					Longhill Road Eastbound					
Start Time	UTrn	Left	Right	Peds	App. Total	UTrn	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	0	2	8	1	11	0	21	4	0	25	0	4	24	0	28	64
07:15 AM	0	1	10	0	11	0	20	1	0	21	1	3	36	0	40	72
07:30 AM	0	5	8	0	13	0	23	1	0	24	0	4	36	0	40	77
07:45 AM	0	5	11	0	16	0	37	3	0	40	0	4	93	0	97	153
Total	0	13	37	1	51	0	101	9	0	110	1	15	189	0	205	366
08:00 AM	0	3	2	1	6	0	34	0	0	34	0	7	44	0	51	91
08:15 AM	0	5	13	1	19	0	40	3	0	43	0	5	50	0	55	117
08:30 AM	0	1	5	2	8	0	31	1	0	32	0	6	51	0	57	97
08:45 AM	0	7	11	0	18	0	30	3	0	33	0	5	53	0	58	109
Total	0	16	31	4	51	0	135	7	0	142	0	23	198	0	221	414
Grand Total	0	29	68	5	102	0	236	16	0	252	1	38	387	0	426	780
Apprch %	0	28.4	66.7	4.9		0	93.7	6.3	0		0.2	8.9	90.8	0		
Total %	0	3.7	8.7	0.6	13.1	0	30.3	2.1	0	32.3	0.1	4.9	49.6	0	54.6	
Cars +	0	29	63	5	97	0	224	15	0	239	1	31	371	0	403	739
% Cars +	0	100	92.6	100	95.1	0	94.9	93.8	0	94.8	100	81.6	95.9	0	94.6	94.7
Trucks	0	0	5	0	5	0	12	1	0	13	0	7	16	0	23	41
% Trucks	0	0	7.4	0	4.9	0	5.1	6.2	0	5.2	0	18.4	4.1	0	5.4	5.3



TRAFFIC DATA COLLECTION

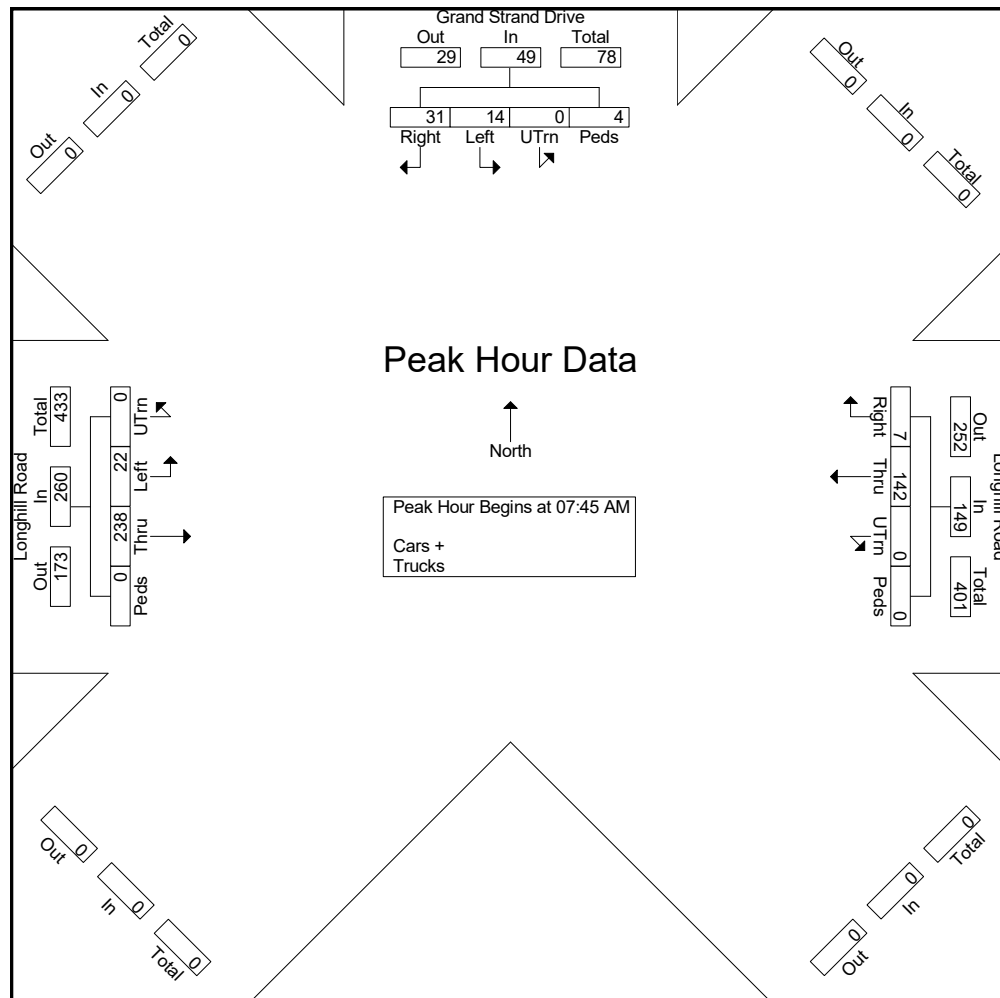
File Name : JamesCity(Longhill and Grand Strand)

Site Code :

Start Date : 6/11/2024

Page No : 2

	Grand Strand Drive Southbound					Longhill Road Westbound					Longhill Road Eastbound					
Start Time	UTrn	Left	Right	Peds	App. Total	UTrn	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	0	5	11	0	16	0	37	3	0	40	0	4	93	0	97	153
08:00 AM	0	3	2	1	6	0	34	0	0	34	0	7	44	0	51	91
08:15 AM	0	5	13	1	19	0	40	3	0	43	0	5	50	0	55	117
08:30 AM	0	1	5	2	8	0	31	1	0	32	0	6	51	0	57	97
Total Volume	0	14	31	4	49	0	142	7	0	149	0	22	238	0	260	458
% App. Total	0	28.6	63.3	8.2		0	95.3	4.7	0		0	8.5	91.5	0		
PHF	.000	.700	.596	.500	.645	.000	.888	.583	.000	.866	.000	.786	.640	.000	.670	.748





TRAFFIC DATA COLLECTION

File Name : JamesCity(Longhill and Grand Strand)

Site Code :

Start Date : 6/11/2024

Page No : 1

Groups Printed- Cars + - Trucks

	Grand Strand Drive Southbound					Longhill Road Westbound					Longhill Road Eastbound					
Start Time	UTrn	Left	Right	Peds	App. Total	UTrn	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Peds	App. Total	Int. Total
04:00 PM	0	6	8	0	14	0	34	8	0	42	0	12	35	0	47	103
04:15 PM	0	5	7	1	13	0	62	7	0	69	0	15	46	0	61	143
04:30 PM	0	8	10	1	19	0	53	5	0	58	0	10	58	0	68	145
04:45 PM	0	3	7	1	11	0	46	6	0	52	0	15	64	0	79	142
Total	0	22	32	3	57	0	195	26	0	221	0	52	203	0	255	533
05:00 PM	0	4	10	0	14	0	42	8	1	51	0	10	64	0	74	139
05:15 PM	0	4	14	0	18	0	61	10	0	71	0	12	69	0	81	170
05:30 PM	0	2	11	1	14	0	70	6	0	76	0	8	49	0	57	147
05:45 PM	0	2	11	1	14	0	55	3	0	58	0	9	55	0	64	136
Total	0	12	46	2	60	0	228	27	1	256	0	39	237	0	276	592
Grand Total	0	34	78	5	117	0	423	53	1	477	0	91	440	0	531	1125
Apprch %	0	29.1	66.7	4.3		0	88.7	11.1	0.2		0	17.1	82.9	0		
Total %	0	3	6.9	0.4	10.4	0	37.6	4.7	0.1	42.4	0	8.1	39.1	0	47.2	
Cars +	0	33	73	3	109	0	418	53	1	472	0	86	434	0	520	1101
% Cars +	0	97.1	93.6	60	93.2	0	98.8	100	100	99	0	94.5	98.6	0	97.9	97.9
Trucks	0	1	5	2	8	0	5	0	0	5	0	5	6	0	11	24
% Trucks	0	2.9	6.4	40	6.8	0	1.2	0	0	1	0	5.5	1.4	0	2.1	2.1



TRAFFIC DATA COLLECTION

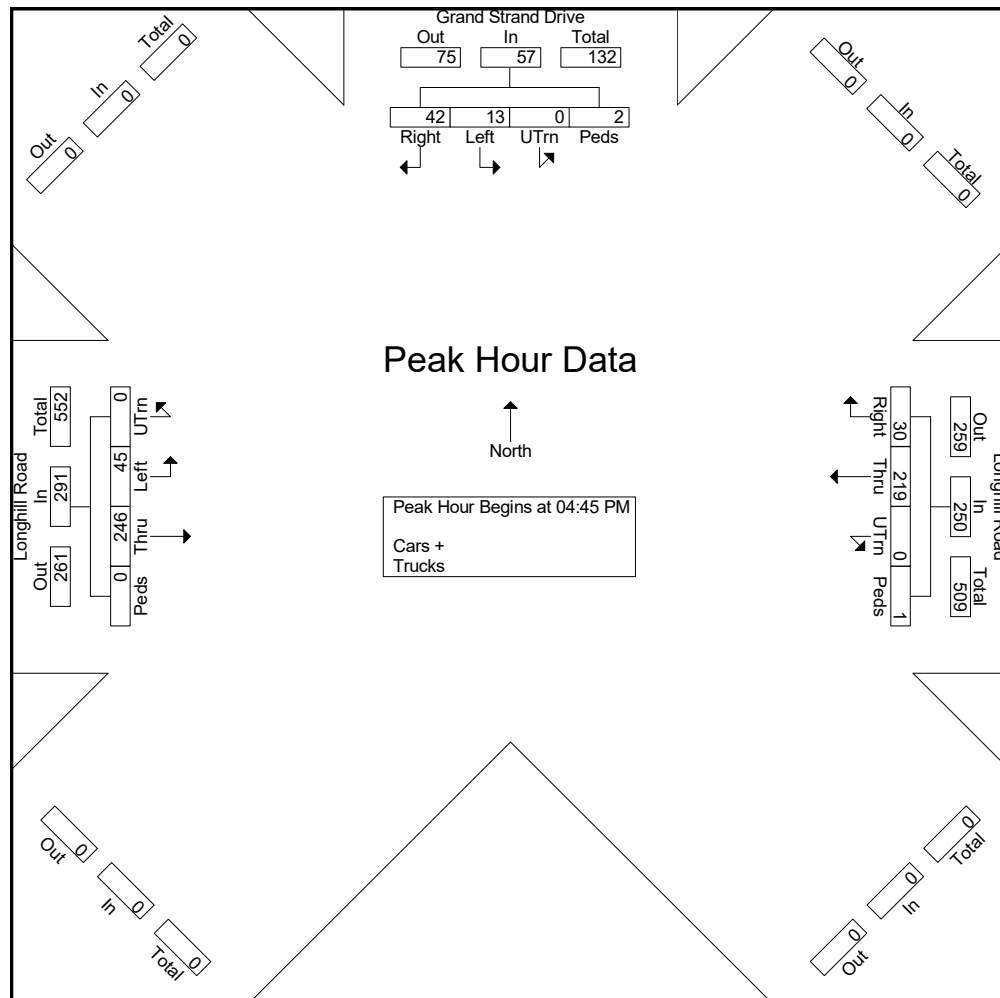
File Name : JamesCity(Longhill and Grand Strand)

Site Code :

Start Date : 6/11/2024

Page No : 2

	Grand Strand Drive Southbound					Longhill Road Westbound					Longhill Road Eastbound					
Start Time	UTrn	Left	Right	Peds	App. Total	UTrn	Thru	Right	Peds	App. Total	UTrn	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:45 PM																
04:45 PM	0	3	7	1	11	0	46	6	0	52	0	15	64	0	79	142
05:00 PM	0	4	10	0	14	0	42	8	1	51	0	10	64	0	74	139
05:15 PM	0	4	14	0	18	0	61	10	0	71	0	12	69	0	81	170
05:30 PM	0	2	11	1	14	0	70	6	0	76	0	8	49	0	57	147
Total Volume	0	13	42	2	57	0	219	30	1	250	0	45	246	0	291	598
% App. Total	0	22.8	73.7	3.5		0	87.6	12	0.4		0	15.5	84.5	0		
PHF	.000	.813	.750	.500	.792	.000	.782	.750	.250	.822	.000	.750	.891	.000	.898	.879



APPENDIX C

Signal Timing Plans

199 EB Ramp & 612

Phase Timing

1/3/2023 8:43:45 AM

[illegible]

199 EB Ramp & 612

Phase Options

1/3/2023 8:43:45 AM

[illegible]

199 EB Ramp & 612

Phase Startup Options

1/3/2023 8:43:45 AM

Startup Flash

Mode

Startup All Red

Yellow

Phases	1-8								9-16							
Startup Phases	2				6											
Startup Yellow	2				6											
Startup Red																
Startup No Walk																
Startup Next																
Startup Yel Fls																
Startup FYA																
No Veh Call																
No Ped Call																

Phase Startup Timing

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit

Red Revert

Ped Protect

AdvFls in Flash

199 EB Ramp & 612

Ring Sequence / Conflicting Phases

1/3/2023 8:43:45 AM

Ringgroup 1

[illegible]

Ringgroup 2

Custom Sequences

[illegible]

Conflicting Phases

1-8

9-16

[illegible]

199 EB Ramp & 612

MCE Options

1/3/2023 8:43:45 AM

Phases

1-8

9-16

MCE Ped Protect		2		4		6		8								
MCE Veh Call	1	2	3	4	5	6	7	8								
MCE Ped Call		2		4		6		8								
MCE Veh Omit																
MCE Ped Omit																
MCE Veh Sync																
MCE Ped Sync																
MCE Halt Don't Walk																

LRV Phases

1-8

MCE LRV Term Early								
--------------------	--	--	--	--	--	--	--	--

199 EB Ramp & 612

FYA/FRA

1/3/2023 8:43:45 AM

FYA	1	2	3	4	5	6	7	8
Prot Phs	0	0	0	0	0	0	0	0
Opp Thru	0	0	0	0	0	0	0	0
Start Phs	0	0	0	0	0	0	0	0
Opp Ped	0	0	0	0	0	0	0	0
Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skip Prot Red	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Head Mode	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1

Ped Hawk 1

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 2

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 3

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 4

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

199 EB Ramp & 612

Overlap Startup Options

1/3/2023 8:43:45 AM

Overlaps

1-8

9-16

Startup Overlap Green												
Startup Overlap Yellow												

Overlap Startup Timing

[illegible]

Overlap Unit Options

Overlaps

1-8

9-16

Overlap Ped Recalls												
MCE Olap Ped Protect												
MCE Olap Ped Calls												
MCE Olap Ped Expand												
No Min Yellow												
No Min Red Rev												
Flash Yellow												
No Conflict												
Pre Signal												
Perm Red												
Perm FYA												
Perm FRA												

199 EB Ramp & 612

Coordination Options

1/3/2023 8:43:45 AM

Sync Time

RTC Set Time

Transition Mode

Ped Adjust

Trans Short %

Trans Long %

Offset Reference

Short Cycles

Dual Entry

Overlap F/O

Master Sync Mode

Master Sync Length

Adapt Thresh

Adapt Step

External Plan Max

Hardwire No Match

Hardwire Sync Fail

Override Omit/Recall

Phases 1-8

9-16

No Trans Recall

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Trans Ped Recall

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Trans Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

199 EB Ramp & 612

Hardwire Plans

1/3/2023 8:43:45 AM

Hardwire	Plan Select	Pattern	Offset	Mode
Plan 1	☐	☐	☐	00Hardwire
Plan 2	☐	☐	☐	00Hardwire
Plan 3	☐	☐	☐	00Hardwire
Plan 4	☐	☐	☐	00Hardwire
Plan 5	☐	☐	☐	00Hardwire
Plan 6	☐	☐	☐	00Hardwire
Plan 7	☐	☐	☐	00Hardwire
Plan 8	☐	☐	☐	00Hardwire
Plan 9	☐	☐	☐	00Hardwire
Plan 10	☐	☐	☐	00Hardwire
Plan 11	☐	☐	☐	00Hardwire
Plan 12	☐	☐	☐	00Hardwire
Plan 13	☐	☐	☐	00Hardwire
Plan 14	☐	☐	☐	00Hardwire
Plan 15	☐	☐	☐	00Hardwire
Plan 16	☐	☐	☐	00Hardwire
Plan 17	☐	☐	☐	00Hardwire
Plan 18	☐	☐	☐	00Hardwire
Plan 19	☐	☐	☐	00Hardwire
Plan 20	☐	☐	☐	00Hardwire
Plan 21	☐	☐	☐	00Hardwire
Plan 22	☐	☐	☐	00Hardwire
Plan 23	☐	☐	☐	00Hardwire
Plan 24	☐	☐	☐	00Hardwire
Plan 25	☐	☐	☐	00Hardwire
Plan 26	☐	☐	☐	00Hardwire
Plan 27	☐	☐	☐	00Hardwire
Plan 28	☐	☐	☐	00Hardwire
Plan 29	☐	☐	☐	00Hardwire
Plan 30	☐	☐	☐	00Hardwire
Plan 31	☐	☐	☐	00Hardwire
Plan 32	☐	☐	☐	00Hardwire

199 EB Ramp & 612

Soft Interconnect

1/3/2023 8:43:45 AM

Mode	Slave
------	-------

Remote Int Number 0

Yield Delay

Yield Duration 0

Permissive	0
------------	---

Local Hold Limit	0
------------------	---

Phases

1-8

9-16

Local Control Phases

Local Hold Phases

Local Perm Phases

Local Call Phases

Remote Perm Phases

Remote Hold Phases

199 EB Ramp & 612

Preempt Inputs

1/3/2023 8:43:45 AM

Preempt Input	1	2	3	4	5	6	7	8	9	10
Delay	0	0	0	0	0	0	0	0	0	0
Checkout Limit	0	0	0	0	0	0	0	0	0	0
Locked	No	No	No	No	No	No	No	No	No	No
Interlock	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Input Number	0	0	0	0	0	0	0	0	0	0
Input Priority	All	All	All	All	All	All	All	All	All	All
Delay Mode	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp

Preempt Priority

Preempt	1	2	3	4	5	6	7	8	9	10
Priority	0	0	0	0	0	0	0	0	0	0

Remote Preemption

Remote Preempt	RM 1	RM 2	RM 3	RM 4	RM 5	RM 6	RM 7	RM 8
Int Number	0	0	0	0	0	0	0	0
PE Number	0	0	0	0	0	0	0	0
Mode	Dis	Dis	Dis	Dis	Dis	Dis	Dis	Dis
Slack	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0
Alt TT 1	0	0	0	0	0	0	0	0
Alt TT 2	0	0	0	0	0	0	0	0
Alt TT 3	0	0	0	0	0	0	0	0
Alt TT 4	0	0	0	0	0	0	0	0
Alt TT 5	0	0	0	0	0	0	0	0
Alt TT 6	0	0	0	0	0	0	0	0
Alt TT 7	0	0	0	0	0	0	0	0

199 EB Ramp & 612

Preempt 1 (Configuration)

1/3/2023 8:43:45 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

Enable Phases	1-8	9-16	LRV Disable	1-8	Max	256																																		
Preempt Inputs	<table><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	1								<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									LRV Dwell Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									LRV Omit	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Delay	0
1																																								
			LRV No Yel	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																																				

Preempt 1 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0																
Omit Olap Grn Clr	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>											Start Ped Clr	0
Phs EWlk to Grn	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Exit Red	0.0		
TClr 1 Olap Ped	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Min Dwell	0	Min Duration	0
TClr 2 Veh Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Dwell Extend	0		
TClr 2 Ped Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Max Dwell	0	Max Call	180
TClr 2 Olap	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Reserve Inh Same	0		
TClr 2 Olap Ped	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Reserve Inh All	0		
Init Dwell Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									Delay	0		
Dwell Veh Phases	<table><tr><td>1</td><td></td><td></td><td></td><td>6</td><td></td><td></td><td></td></tr></table>	1				6				<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
1				6																		
Dwell Ped Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell Olap	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell Olap Ped	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Exit Veh Phases	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
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Exit Olap	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Exit Olap Ped	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Zero Phase Walk	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Zero Phase Ped Clr	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Zero Phase Green	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td></td><td></td></tr></table>	1	2	3	4	5	6			<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
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Zero Olap Ped Clr	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Zero Olap Green	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Phase Red	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Phase Red Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Phase Yel Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Olap Red Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Olap Yel Flash	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Ped Dark	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												
Dwell-Olap Ped Dark	<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>									<table><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>												

199 EB Ramp & 612

Preempt 2 (Configuration)

1/3/2023 8:43:45 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	2		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 2 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	180
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	2		Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA			
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

199 EB Ramp & 612

Preempt 3 (Configuration)

1/3/2023 8:43:45 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	3		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 3 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	180
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases						
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA		

199 EB Ramp & 612

Preempt 4 (Configuration)

1/3/2023 8:43:45 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	4		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 4 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	180
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	4					
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA		

199 EB Ramp & 612

Preempt 6 (Configuration)

1/3/2023 8:43:45 AM

Enabled	Yes	Dwell Mode	Flash	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	6		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 6 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	1	6	Phases/Overlaps	1-8	9-16	
Dwell Ped Phases			TClr 1 FR Olap			
Dwell Olap			TClr 2 FR Olap			
Dwell Olap Ped			Dwell FR Olap			
Exit Veh Phases			TClr 1 FYA			
Exit Ped Phases			TClr 2 FYA			
Exit Olap			Dwell FYA	5		
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

199 EB Ramp & 612

TOD Pattern Events

1/3/2023 8:43:45 AM

	Time	DOW	Holidays	Mode	Pattern	Offset
Event 1	00:00			Free	0	0
Event 2	00:00			Sched	0	0
Event 3	00:00			Free	0	0
Event 4	00:00			Sched	0	0
Event 5	00:00			Free	0	0
Event 6	00:00			Sched	0	0
Event 7	00:00			Sched	0	0
Event 8	00:00			Sched	0	0
Event 9	00:00			Sched	0	0
Event 10	00:00			Sched	0	0
Event 11	00:00			Sched	0	0
Event 12	00:00			Sched	0	0
Event 13	00:00			Sched	0	0
Event 14	00:00			Sched	0	0
Event 15	00:00			Sched	0	0
Event 16	00:00			Sched	0	0
Event 17	00:00			Sched	0	0
Event 18	00:00			Sched	0	0
Event 19	00:00			Sched	0	0
Event 20	00:00			Sched	0	0
Event 21	00:00			Sched	0	0
Event 22	00:00			Sched	0	0
Event 23	00:00			Sched	0	0
Event 24	00:00			Sched	0	0
Event 25	00:00			Sched	0	0
Event 26	00:00			Sched	0	0
Event 27	00:00			Sched	0	0
Event 28	00:00			Sched	0	0
Event 29	00:00			Sched	0	0
Event 30	00:00			Sched	0	0
Event 31	00:00			Sched	0	0
Event 32	00:00			Sched	0	0

199 EB Ramp & 612

Holidays

1/3/2023 8:43:45 AM

	Active Holidays	Month	Day	DOW	WOM
Date 1		0	0		0
Date 2		0	0		0
Date 3		0	0		0
Date 4		0	0		0
Date 5		0	0		0
Date 6		0	0		0
Date 7		0	0		0
Date 8		0	0		0
Date 9		0	0		0
Date 10		0	0		0
Date 11		0	0		0
Date 12		0	0		0
Date 13		0	0		0
Date 14		0	0		0
Date 15		0	0		0
Date 16		0	0		0
Date 17		0	0		0
Date 18		0	0		0
Date 19		0	0		0
Date 20		0	0		0
Date 21		0	0		0
Date 22		0	0		0
Date 23		0	0		0
Date 24		0	0		0
Date 25		0	0		0
Date 26		0	0		0
Date 27		0	0		0
Date 28		0	0		0
Date 29		0	0		0
Date 30		0	0		0
Date 31		0	0		0
Date 32		0	0		0

199 EB Ramp & 612

Vehicle Detector 3

1/3/2023 8:43:45 AM

Delay Extend Carryover Queue Limit

Mode Added System

Fail Mode Max Pres No Act Erratic Fail Time

Delay 2

Phases

1-8

9-16

Call Phases

		3					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Extend Phases

		3					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Vehicle Detector 4

Delay Extend Carryover Queue Limit

Mode Added System

Fail Mode Max Pres No Act Erratic Fail Time

Delay 2

Phases

1-8

9-16

Call Phases

		4					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Extend Phases

		4					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

199 EB Ramp & 612

Vehicle Detector 7

1/3/2023 8:43:45 AM

Delay Extend Carryover Queue Limit

Mode Added System

Fail Mode Max Pres No Act Erratic Fail Time

Delay 2

Phases

1-8

9-16

Call Phases

						7	
--	--	--	--	--	--	---	--

--	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Extend Phases

						7	
--	--	--	--	--	--	---	--

--	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Vehicle Detector 8

Delay Extend Carryover Queue Limit

Mode Added System

Fail Mode Max Pres No Act Erratic Fail Time

Delay 2

Phases

1-8

9-16

Call Phases

							8
--	--	--	--	--	--	--	---

--	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Extend Phases

							8
--	--	--	--	--	--	--	---

--	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

199 EB Ramp & 612

Pedestrian Detector 2

1/3/2023 8:43:45 AM

No Act

Max Pres

Erratic

Fail Mode

Phases/Overlaps

1-8

9-16

Call Ped Phases

Call Ped Olaps

Call Phases

Locked Call Phases

Ped Entry Phases

Olap Ped Entry Phases

Ped Cascade Phases

Call Walk2

Pedestrian Detector 4

No Act

Max Pres

Erratic

Fail Mode

Phases/Overlaps

1-8

9-16

Call Ped Phases

Call Ped Olaps

Call Phases

Locked Call Phases

Ped Entry Phases

Olap Ped Entry Phases

Ped Cascade Phases

Call Walk2

Pedestrian Detector 6

No Act

Max Pres

Erratic

Fail Mode

Phases/Overlaps

1-8

9-16

Call Ped Phases

Call Ped Olaps

Call Phases

Locked Call Phases

Ped Entry Phases

Olap Ped Entry Phases

Ped Cascade Phases

Call Walk2

Pedestrian Detector 8

No Act

Max Pres

Erratic

Fail Mode

Phases/Overlaps

1-8

9-16

Call Ped Phases

Call Ped Olaps

Call Phases

Locked Call Phases

Ped Entry Phases

Olap Ped Entry Phases

Ped Cascade Phases

Call Walk2

199 EB Ramp & 612

Transit/LRV Startup/Options

1/3/2023 8:43:45 AM

No Startup Call

LRV 1-8

--	--	--	--	--	--	--	--

Warn Flash Rate

1 Hz

Rsrv Inh Mode

Seconds

199 EB Ramp & 612

Control / Config

1/3/2023 8:43:45 AM

Pattern Mode

Manual Pattern Manual Offset

Stop Time Input

Aux Switch

DLS Mode Time Zone

GPS Thresh

Password Timeout

Maint Phs Recalls

Maint Ped Recalls

Serial 1 Port Configuration

Broadcast Plan/Sync

Broadcast Time

Serial Rebroadcast

Response

Serial 2 Port Configuration

Broadcast Plan/Sync

Broadcast Time

Ethernet Port Configuration

Broadcast Plan/Sync

Broadcast Time

Serial Rebroadcast

Peer Configuration

Peer 1

Peer 2

Peer 3

Peer 4

Peer 5

Peer 6

Peer 7

Peer 8

199 WB off ramp at 612

Phase Timing

1/3/2023 8:48:03 AM

[illegible]

199 WB off ramp at 612

Phase Options

1/3/2023 8:48:03 AM

[illegible]

199 WB off ramp at 612

Phase Startup Options

1/3/2023 8:48:03 AM

Startup Flash	0	Mode	Yel->Red
Startup All Red	0	Yellow	0.0

Phases	1-8								9-16							
Startup Phases	2				6											
Startup Yellow	2				6											
Startup Red																
Startup No Walk																
Startup Next																
Startup Yel Fls																
Startup FYA																
No Veh Call																
No Ped Call																

Phase Startup Timing

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit

Red Revert	4.0	Ped Protect	No	AdvFls in Flash	No
------------	----------------------------------	-------------	---------------------------------	-----------------	---------------------------------

199 WB off ramp at 612

Ring Sequence / Conflicting Phases

1/3/2023 8:48:03 AM

Ringgroup 1

[illegible]

Ringgroup 2

Custom Sequences

[illegible]

Conflicting Phases

1-8

9-16

[illegible]

199 WB off ramp at 612

MCE Options

1/3/2023 8:48:03 AM

Phases	1-8					9-16							
MCE Ped Protect		2	4	6	8								
MCE Veh Call		2	4	6	8								
MCE Ped Call		2	4	6	8								
MCE Veh Omit													
MCE Ped Omit													
MCE Veh Sync		2	4	6	8								
MCE Ped Sync		2	4	6	8								
MCE Halt Don't Walk													

LRV Phases	1-8							
MCE LRV Term Early								

199 WB off ramp at 612

FYA/FRA

1/3/2023 8:48:03 AM

FYA	1	2	3	4	5	6	7	8
Prot Phs	0	0	0	0	0	0	0	0
Opp Thru	0	0	0	0	0	0	0	0
Start Phs	0	0	0	0	0	0	0	0
Opp Ped	0	0	0	0	0	0	0	0
Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skip Prot Red	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Head Mode	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1

Ped Hawk 1

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 2

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 3

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 4

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

199 WB off ramp at 612

Overlap Startup Options

1/3/2023 8:48:03 AM

Overlaps

1-8

9-16

Startup Overlap Green

Startup Overlap Yellow

Overlap Startup Timing

[illegible]

Overlap Unit Options

Overlaps

1-8

9-16

[illegible]

199 WB off ramp at 612

Coordination Options

1/3/2023 8:48:03 AM

Sync Time 00:00

RTC Set Time 00:00

Transition Mode	Best 2
-----------------	--------

Ped Adjust	None
------------	------

Trans Short %	20
---------------	----

Trans Long % 35

Offset Reference	Crd Grp End
------------------	-------------

Short Cycles

0

Dual Entry	Normal
------------	--------

Overlap F/O	Disabled
-------------	----------

Master Sync Mode	RTC
------------------	-----

Master Sync Length	0
--------------------	---

Adapt Thresh	0
--------------	---

Adapt Step	0
------------	---

External Plan Max	0
-------------------	---

Hardwire No Match	Sched
-------------------	-------

Hardwire Sync Fail	0
--------------------	---

Override Omit/Recall	No
----------------------	----

Phases 1-8

9-16

No Trans Recall							

--	--	--	--	--	--	--	--

Trans Ped Recall							
------------------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Trans Phases							
--------------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

199 WB off ramp at 612

Hardwire Plans

1/3/2023 8:48:03 AM

Hardwire	Plan Select							Pattern	Offset	Mode
Plan 1								0	0	Hardwire
Plan 2								0	0	Hardwire
Plan 3								0	0	Hardwire
Plan 4								0	0	Hardwire
Plan 5								0	0	Hardwire
Plan 6								0	0	Hardwire
Plan 7								0	0	Hardwire
Plan 8								0	0	Hardwire
Plan 9								0	0	Hardwire
Plan 10								0	0	Hardwire
Plan 11								0	0	Hardwire
Plan 12								0	0	Hardwire
Plan 13								0	0	Hardwire
Plan 14								0	0	Hardwire
Plan 15								0	0	Hardwire
Plan 16								0	0	Hardwire
Plan 17								0	0	Hardwire
Plan 18								0	0	Hardwire
Plan 19								0	0	Hardwire
Plan 20								0	0	Hardwire
Plan 21								0	0	Hardwire
Plan 22								0	0	Hardwire
Plan 23								0	0	Hardwire
Plan 24								0	0	Hardwire
Plan 25								0	0	Hardwire
Plan 26								0	0	Hardwire
Plan 27								0	0	Hardwire
Plan 28								0	0	Hardwire
Plan 29								0	0	Hardwire
Plan 30								0	0	Hardwire
Plan 31								0	0	Hardwire
Plan 32								0	0	Hardwire

199 WB off ramp at 612

Soft Interconnect

1/3/2023 8:48:03 AM

Mode	Slave
------	-------

Remote Int Number 0

Yield Delay Yield Duration

Permissive	0
------------	---

Local Hold Limit

Phases

1-8

9-16

Local Control Phases

Local Hold Phases

Local Perm Phases

Local Call Phases

Remote Perm Phases

Remote Hold Phases

199 WB off ramp at 612

Preempt Inputs

1/3/2023 8:48:03 AM

Preempt Input	1	2	3	4	5	6	7	8	9	10
Delay	0	0	0	0	0	0	0	0	0	0
Checkout Limit	0	0	0	0	0	0	0	0	0	0
Locked	No	No	No	No	No	No	No	No	No	No
Interlock	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Input Number	0	0	0	0	0	0	0	0	0	0
Input Priority	All	All	All	All	All	All	All	All	All	All
Delay Mode	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp

Preempt Priority

Preempt	1	2	3	4	5	6	7	8	9	10
Priority	0	0	0	0	0	0	0	0	0	0

Remote Preemption

Remote Preempt	RM 1	RM 2	RM 3	RM 4	RM 5	RM 6	RM 7	RM 8
Int Number	0	0	0	0	0	0	0	0
PE Number	0	0	0	0	0	0	0	0
Mode	Dis	Dis	Dis	Dis	Dis	Dis	Dis	Dis
Slack	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0
Alt TT 1	0	0	0	0	0	0	0	0
Alt TT 2	0	0	0	0	0	0	0	0
Alt TT 3	0	0	0	0	0	0	0	0
Alt TT 4	0	0	0	0	0	0	0	0
Alt TT 5	0	0	0	0	0	0	0	0
Alt TT 6	0	0	0	0	0	0	0	0
Alt TT 7	0	0	0	0	0	0	0	0

199 WB off ramp at 612

Preempt 1 (Configuration)

1/3/2023 8:48:03 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	1		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 1 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	1	6				
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green	1	2				
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA		

199 WB off ramp at 612

Preempt 2 (Configuration)

1/3/2023 8:48:03 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	2		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 2 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	2					
Dwell Ped Phases			Phases/Overlaps	1-8	9-16	
Dwell Olap			TClr 1 FR Olap			
Dwell Olap Ped			TClr 2 FR Olap			
Exit Veh Phases			Dwell FR Olap			
Exit Ped Phases			TClr 1 FYA			
Exit Olap			TClr 2 FYA			
Exit Olap Ped			Dwell FYA			
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

199 WB off ramp at 612

Preempt 4 (Configuration)

1/3/2023 8:48:03 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	4		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 4 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	4					
Dwell Ped Phases			Phases/Overlaps	1-8	9-16	
Dwell Olap			TClr 1 FR Olap			
Dwell Olap Ped			TClr 2 FR Olap			
Exit Veh Phases			Dwell FR Olap			
Exit Ped Phases			TClr 1 FYA			
Exit Olap			TClr 2 FYA			
Exit Olap Ped			Dwell FYA			
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

199 WB off ramp at 612

Preempt 5 (Configuration)

1/3/2023 8:48:03 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs			LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 5 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	0
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases						
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk						
Zero Phase Ped Clr						
Zero Phase Green						
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA		

199 WB off ramp at 612

TOD Pattern Events

1/3/2023 8:48:03 AM

	Time	DOW							Holidays							Mode	Pattern	Offset
Event 1	00:00															Sched	0	0
Event 2	00:00															Sched	0	0
Event 3	00:00															Sched	0	0
Event 4	00:00															Sched	0	0
Event 5	00:00															Sched	0	0
Event 6	00:00															Sched	0	0
Event 7	00:00															Sched	0	0
Event 8	00:00															Sched	0	0
Event 9	00:00															Sched	0	0
Event 10	00:00															Sched	0	0
Event 11	00:00															Sched	0	0
Event 12	00:00															Sched	0	0
Event 13	00:00															Sched	0	0
Event 14	00:00															Sched	0	0
Event 15	00:00															Sched	0	0
Event 16	00:00															Sched	0	0
Event 17	00:00															Sched	0	0
Event 18	00:00															Sched	0	0
Event 19	00:00															Sched	0	0
Event 20	00:00															Sched	0	0
Event 21	00:00															Sched	0	0
Event 22	00:00															Sched	0	0
Event 23	00:00															Sched	0	0
Event 24	00:00															Sched	0	0
Event 25	00:00															Sched	0	0
Event 26	00:00															Sched	0	0
Event 27	00:00															Sched	0	0
Event 28	00:00															Sched	0	0
Event 29	00:00															Sched	0	0
Event 30	00:00															Sched	0	0
Event 31	00:00															Sched	0	0
Event 32	00:00															Sched	0	0

199 WB off ramp at 612

Holidays

1/3/2023 8:48:03 AM

	Active Holidays	Month	Day	DOW	WOM
Date 1		0	0		0
Date 2		0	0		0
Date 3		0	0		0
Date 4		0	0		0
Date 5		0	0		0
Date 6		0	0		0
Date 7		0	0		0
Date 8		0	0		0
Date 9		0	0		0
Date 10		0	0		0
Date 11		0	0		0
Date 12		0	0		0
Date 13		0	0		0
Date 14		0	0		0
Date 15		0	0		0
Date 16		0	0		0
Date 17		0	0		0
Date 18		0	0		0
Date 19		0	0		0
Date 20		0	0		0
Date 21		0	0		0
Date 22		0	0		0
Date 23		0	0		0
Date 24		0	0		0
Date 25		0	0		0
Date 26		0	0		0
Date 27		0	0		0
Date 28		0	0		0
Date 29		0	0		0
Date 30		0	0		0
Date 31		0	0		0
Date 32		0	0		0

199 WB off ramp at 612

Vehicle Detector 1

1/3/2023 8:48:03 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2

Phases

1-8

9-16

Call Phases

1							
---	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

1							
---	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

Vehicle Detector 2

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

	2						
--	---	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

Extend Phases

	2						
--	---	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

199 WB off ramp at 612

Vehicle Detector 4

1/3/2023 8:48:03 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2

Phases

1-8

9-16

Call Phases

4

Yellow Lock Phases

Red Lock Phases

Extend Phases

4

XSwitch Phases

Bike Call Phases

Vehicle Detector 6

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Enabled
------	---------	-------	----------	--------	---------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases

1-8

9-16

Call Phases

6

Yellow Lock Phases

Red Lock Phases

Extend Phases

6

XSwitch Phases

Bike Call Phases

199 WB off ramp at 612

Transit/LRV Startup/Options

1/3/2023 8:48:03 AM

No Startup Call

LRV 1-8

--	--	--	--	--	--	--	--

Warn Flash Rate

1 Hz

Rsrv Inh Mode

Seconds

199 WB off ramp at 612

Control / Config

1/3/2023 8:48:03 AM

Pattern Mode	Free																		
Manual Pattern	0	Manual Offset	0																
Stop Time Input	Enabled																		
Aux Switch	None	5																	
DLS Mode	D4	Time Zone	Est (UTC-5)																
GPS Thresh	0																		
Password Timeout	5																		
Maint Phs Recalls	1-8 <table><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>										9-16 <table><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
Maint Ped Recalls	<table><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>																		

Serial 1 Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
Serial Rebroadcast	Disabled	Response	None

Serial 2 Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
---------------------	---------------------------------------	----------------	------------------------------------

Ethernet Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
Serial Rebroadcast	Disabled		

Peer Configuration

Peer 1	0
Peer 2	0
Peer 3	0
Peer 4	0
Peer 5	0
Peer 6	0
Peer 7	0
Peer 8	0

615 & Eastern State Hospital

Phase Timing

1/3/2023 9:11:16 AM

[illegible]

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Phase Options

1/3/2023 9:11:16 AM

[illegible]

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Phase Startup Options

1/3/2023 9:11:16 AM

Startup Flash	0	Mode	Yel->Red
Startup All Red	0	Yellow	0.0

Phases	1-8								9-16							
Startup Phases	2				6											
Startup Yellow	2				6											
Startup Red																
Startup No Walk																
Startup Next																
Startup Yel Fls																
Startup FYA																
No Veh Call	1	2	3	4	5	6	7	8								
No Ped Call	2		4		6		8									

Phase Startup Timing

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit

Red Revert	0.0	Ped Protect	No	AdvFls in Flash	No
------------	----------------------------------	-------------	---------------------------------	-----------------	---------------------------------

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Ring Sequence / Conflicting Phases

1/3/2023 9:11:16 AM

Ringgroup 1

[illegible]

Ringgroup 2

Custom Sequences

[illegible]

Conflicting Phases

1-8

9-16

[illegible]

615 & Eastern State Hospital

MCE Options

1/3/2023 9:11:16 AM

Phases	1-8	9-16
MCE Ped Protect		
MCE Veh Call		
MCE Ped Call		
MCE Veh Omit		
MCE Ped Omit		
MCE Veh Sync		
MCE Ped Sync		
MCE Halt Don't Walk		

LRV Phases 1-8

MCE LRV Term Early

--	--	--	--	--	--	--

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FYA/FRA

1/3/2023 9:11:16 AM

FYA	1	2	3	4	5	6	7	8
Prot Phs	0	0	0	0	0	0	0	0
Opp Thru	0	0	0	0	0	0	0	0
Start Phs	0	0	0	0	0	0	0	0
Opp Ped	0	0	0	0	0	0	0	0
Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skip Prot Red	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Head Mode	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1

Ped Hawk 1

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 2

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 3

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

Ped Hawk 4

Veh Phase

Ped Phase

Flash Yel Dark Signal

Flash Delay Flash Carryover

Green Mode

615 & Eastern State Hospital

Overlap Startup Options

1/3/2023 9:11:16 AM

Overlaps

1-8

9-16

Startup Overlap Green

Startup Overlap Yellow

Overlap Startup Timing

Overlap

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

Start Walk

[illegible]

Start Min Green

[illegible]

Overlap Unit Options

Overlaps

1-8

9-16

Overlap Ped Recalls												
MCE Olap Ped Protect												
MCE Olap Ped Calls												
MCE Olap Ped Expand												
No Min Yellow												
No Min Red Rev												
Flash Yellow												
No Conflict												
Pre Signal												
Perm Red												
Perm FYA												
Perm FRA												

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Coordination Options

1/3/2023 9:11:16 AM

Sync Time 00:00

RTC Set Time 00:00

Transition Mode	Best
-----------------	------

Ped Adjust	None
------------	------

Trans Short % Trans Long %

Offset Reference	Lag FO
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
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80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99

Short Cycles

0

Dual Entry	Normal
------------	--------

Overlap F/O	Disabled
-------------	----------

Master Sync Mode	RTC
------------------	-----

Master Sync Length	0
--------------------	---

Adapt Thresh	0
--------------	---

Adapt Step	0
------------	---

External Plan Max	0
-------------------	---

Hardwire No Match	Sched

Hardwire Sync Fail	0
--------------------	---

Override Omit/Recall	No
----------------------	----

Phases 1-8

9-16

No Trans Recall							

--	--	--	--	--	--	--	--

Trans Ped Recall							
------------------	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Trans Phases							
--------------	--	--	--	--	--	--	--

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Hardwire Plans

1/3/2023 9:11:16 AM

Hardwire	Plan Select	Pattern	Offset	Mode
Plan 1	☐	0	0	Hardwire
Plan 2	☐	0	0	Hardwire
Plan 3	☐	0	0	Hardwire
Plan 4	☐	0	0	Hardwire
Plan 5	☐	0	0	Hardwire
Plan 6	☐	0	0	Hardwire
Plan 7	☐	0	0	Hardwire
Plan 8	☐	0	0	Hardwire
Plan 9	☐	0	0	Hardwire
Plan 10	☐	0	0	Hardwire
Plan 11	☐	0	0	Hardwire
Plan 12	☐	0	0	Hardwire
Plan 13	☐	0	0	Hardwire
Plan 14	☐	0	0	Hardwire
Plan 15	☐	0	0	Hardwire
Plan 16	☐	0	0	Hardwire
Plan 17	☐	0	0	Hardwire
Plan 18	☐	0	0	Hardwire
Plan 19	☐	0	0	Hardwire
Plan 20	☐	0	0	Hardwire
Plan 21	☐	0	0	Hardwire
Plan 22	☐	0	0	Hardwire
Plan 23	☐	0	0	Hardwire
Plan 24	☐	0	0	Hardwire
Plan 25	☐	0	0	Hardwire
Plan 26	☐	0	0	Hardwire
Plan 27	☐	0	0	Hardwire
Plan 28	☐	0	0	Hardwire
Plan 29	☐	0	0	Hardwire
Plan 30	☐	0	0	Hardwire
Plan 31	☐	0	0	Hardwire
Plan 32	☐	0	0	Hardwire

615 & Eastern State Hospital

Soft Interconnect

1/3/2023 9:11:16 AM

Mode Slave

Remote Int Number

Yield Delay	0
-------------	---

Yield Duration	0
----------------	---

Permissive	0
------------	---

Local Hold Limit	0
------------------	---

Phases

1-8

9-16

Local Control Phases

Local Hold Phases

Local Perm Phases

Local Call Phases

Remote Perm Phases

Remote Hold Phases

615 & Eastern State Hospital

Preempt Inputs

1/3/2023 9:11:16 AM

Preempt Input	1	2	3	4	5	6	7	8	9	10
Delay	0	0	0	0	0	0	0	0	0	0
Checkout Limit	0	0	0	0	0	0	0	0	0	0
Locked	No	No	No	No	No	No	No	No	No	No
Interlock	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Input Number	0	0	0	0	0	0	0	0	0	0
Input Priority	All	All	All	All	All	All	All	All	All	All
Delay Mode	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp

Preempt Priority

Preempt	1	2	3	4	5	6	7	8	9	10
Priority	0	0	0	0	0	0	0	0	0	0

Remote Preemption

Remote Preempt	RM 1	RM 2	RM 3	RM 4	RM 5	RM 6	RM 7	RM 8
Int Number	0	0	0	0	0	0	0	0
PE Number	0	0	0	0	0	0	0	0
Mode	Dis	Dis	Dis	Dis	Dis	Dis	Dis	Dis
Slack	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0
Alt TT 1	0	0	0	0	0	0	0	0
Alt TT 2	0	0	0	0	0	0	0	0
Alt TT 3	0	0	0	0	0	0	0	0
Alt TT 4	0	0	0	0	0	0	0	0
Alt TT 5	0	0	0	0	0	0	0	0
Alt TT 6	0	0	0	0	0	0	0	0
Alt TT 7	0	0	0	0	0	0	0	0

615 & Eastern State Hospital

Preempt 1 (Configuration)

1/3/2023 9:11:16 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8								9-16									1-8															
Enable Phases																									LRV Disable							Max	0
Preempt Inputs	1																								LRV Dwell Flash								
																									LRV Omit							Delay	0
																									LRV No Yel								

Preempt 1 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8								9-16							
Omit Olap Grn Clr																
Phs EWlk to Grn																
TClr 1 Veh Phases																
TClr 1 Ped Phases																
TClr 1 Olap																
TClr 1 Olap Ped																
TClr 2 Veh Phases																
TClr 2 Ped Phases																
TClr 2 Olap																
TClr 2 Olap Ped																
Init Dwell Phases																
Dwell Veh Phases	1					6										
Dwell Ped Phases																
Dwell Olap																
Dwell Olap Ped																
Exit Veh Phases																
Exit Ped Phases																
Exit Olap																
Exit Olap Ped																
Zero Phase Walk					5											
Zero Phase Ped Clr																
Zero Phase Green	1	2	3	4	5	6	7	8								
Zero Olap Walk																
Zero Olap Ped Clr																
Zero Olap Green																
Dwell-Phase Red																
Dwell-Phase Red Flash																
Dwell-Phase Yel Flash																
Dwell-Olap Red Flash																
Dwell-Olap Yel Flash																
Dwell-Ped Dark																
Dwell-Olap Ped Dark																

Start Green

0

Start Walk

0

Start Ped Clr

0

Track Clear 1

0

Track Clear 2

0

TC1 Extend

0

TC1 Max

0

Exit Ped Clr

0

Exit Yellow

0.0

Exit Red

0.0

Min Dwell

0

Min Duration

0

Dwell Extend

0

Max Dwell

0

Max Call

180

Reserve Inh Same

0

Reserve Inh All

0

Delay

0

Phases/Overlaps

TClr 1 FR Olap

TClr 2 FR Olap

Dwell FR Olap

TClr 1 FYA

TClr 2 FYA

Dwell FYA

1-8

9-16

615 & Eastern State Hospital

Preempt 2 (Configuration)

1/3/2023 9:11:16 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	2		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 2 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	180
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	2	5				
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk	6					
Zero Phase Ped Clr						
Zero Phase Green	1	2				
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

615 & Eastern State Hospital

Preempt 3 (Configuration)

1/3/2023 9:11:16 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	3		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 3 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	180
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	3					
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk	6					
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6 7 8					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA		

615 & Eastern State Hospital

Preempt 4 (Configuration)

1/3/2023 9:11:16 AM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16		1-8	
Enable Phases			LRV Disable		Max 0
Preempt Inputs	4		LRV Dwell Flash		
			LRV Omit		Delay 0
			LRV No Yel		

Preempt 4 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16	Start Green	0	Start Walk	0
Omit Olap Grn Clr					Start Ped Clr	0
Phs EWlk to Grn			Track Clear 1	0	Track Clear 2	0
TClr 1 Veh Phases			TC1 Extend	0	TC1 Max	0
TClr 1 Ped Phases			Exit Ped Clr	0	Exit Yellow	0.0
TClr 1 Olap			Exit Red	0.0		
TClr 1 Olap Ped			Min Dwell	0	Min Duration	0
TClr 2 Veh Phases			Dwell Extend	0		
TClr 2 Ped Phases			Max Dwell	0	Max Call	180
TClr 2 Olap			Reserve Inh Same	0		
TClr 2 Olap Ped			Reserve Inh All	0		
Init Dwell Phases			Delay	0		
Dwell Veh Phases	4					
Dwell Ped Phases						
Dwell Olap						
Dwell Olap Ped						
Exit Veh Phases						
Exit Ped Phases						
Exit Olap						
Exit Olap Ped						
Zero Phase Walk	6					
Zero Phase Ped Clr						
Zero Phase Green	1 2 3 4 5 6 7 8					
Zero Olap Walk						
Zero Olap Ped Clr						
Zero Olap Green						
Dwell-Phase Red						
Dwell-Phase Red Flash						
Dwell-Phase Yel Flash						
Dwell-Olap Red Flash						
Dwell-Olap Yel Flash						
Dwell-Ped Dark						
Dwell-Olap Ped Dark						

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA		

615 & Eastern State Hospital

TOD Pattern Events

1/3/2023 9:11:16 AM

	Time	DOW					Holidays					Mode	Pattern	Offset
Event 1	00:00											Sched	0	0
Event 2	00:00											Sched	0	0
Event 3	00:00											Sched	0	0
Event 4	00:00											Sched	0	0
Event 5	00:00											Sched	0	0
Event 6	00:00											Sched	0	0
Event 7	00:00											Sched	0	0
Event 8	00:00											Sched	0	0
Event 9	00:00											Sched	0	0
Event 10	00:00											Sched	0	0
Event 11	00:00											Sched	0	0
Event 12	00:00											Sched	0	0
Event 13	00:00											Sched	0	0
Event 14	00:00											Sched	0	0
Event 15	00:00											Sched	0	0
Event 16	00:00											Sched	0	0
Event 17	00:00											Sched	0	0
Event 18	00:00											Sched	0	0
Event 19	00:00											Sched	0	0
Event 20	00:00											Sched	0	0
Event 21	00:00											Sched	0	0
Event 22	00:00											Sched	0	0
Event 23	00:00											Sched	0	0
Event 24	00:00											Sched	0	0
Event 25	00:00											Sched	0	0
Event 26	00:00											Sched	0	0
Event 27	00:00											Sched	0	0
Event 28	00:00											Sched	0	0
Event 29	00:00											Sched	0	0
Event 30	00:00											Sched	0	0
Event 31	00:00											Sched	0	0
Event 32	00:00											Sched	0	0

615 & Eastern State Hospital

Holidays

1/3/2023 9:11:16 AM

	Active Holidays	Month	Day	DOW	WOM
Date 1		0	0		0
Date 2		0	0		0
Date 3		0	0		0
Date 4		0	0		0
Date 5		0	0		0
Date 6		0	0		0
Date 7		0	0		0
Date 8		0	0		0
Date 9		0	0		0
Date 10		0	0		0
Date 11		0	0		0
Date 12		0	0		0
Date 13		0	0		0
Date 14		0	0		0
Date 15		0	0		0
Date 16		0	0		0
Date 17		0	0		0
Date 18		0	0		0
Date 19		0	0		0
Date 20		0	0		0
Date 21		0	0		0
Date 22		0	0		0
Date 23		0	0		0
Date 24		0	0		0
Date 25		0	0		0
Date 26		0	0		0
Date 27		0	0		0
Date 28		0	0		0
Date 29		0	0		0
Date 30		0	0		0
Date 31		0	0		0
Date 32		0	0		0

615 & Eastern State Hospital

Vehicle Detector 1

1/3/2023 9:11:16 AM

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Disabled
------	---------	-------	----------	--------	----------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases	1-8	9-16
--------	-----	------

[illegible]

Vehicle Detector 2

Delay Extend Carryover Queue Limit

Mode	No Disc	Added	Disabled	System	Disabled
------	---------	-------	----------	--------	----------

Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0
-----------	------	----------	---	--------	---	---------	---	-----------	---

Delay 2	0.0
---------	-----

Phases	1-8	9-16
--------	-----	------

[illegible]

615 & Eastern State Hospital

Vehicle Detector 3

1/3/2023 9:11:16 AM

Delay Extend Carryover Queue Limit

Mode Added System

Fail Mode Max Pres No Act Erratic Fail Time

Delay 2

Phases

1-8

9-16

Call Phases

		3					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Extend Phases

		3					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Vehicle Detector 4

Delay Extend Carryover Queue Limit

Mode Added System

Fail Mode Max Pres No Act Erratic Fail Time

Delay 2

Phases

1-8

9-16

Call Phases

		4					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

Yellow Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Red Lock Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Extend Phases

		4					
--	--	---	--	--	--	--	--

--	--	--	--	--	--	--	--

XSwitch Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Bike Call Phases

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

615 & Eastern State Hospital

Pedestrian Detector 4

1/3/2023 9:11:16 AM

No Act	0
--------	---

Max Pres

Erratic	0
---------	---

Fail Mode	None
-----------	------

Phases/Overlaps

1-8

9-16

Call Ped Phases

4

Call Ped Olaps

Call Phases

Locked Call Phases

Ped Entry Phases

Olap Ped Entry Phases

Ped Cascade Phases

Call Walk2

615 & Eastern State Hospital

Transit/LRV Startup/Options

1/3/2023 9:11:16 AM

No Startup Call

LRV 1-8

--	--	--	--	--	--	--	--

Warn Flash Rate

1 Hz

Rsrv Inh Mode

Seconds

615 & Eastern State Hospital

Control / Config

1/3/2023 9:11:16 AM

Pattern Mode	Free																		
Manual Pattern	0	Manual Offset	0																
Stop Time Input	Enabled																		
Aux Switch	None	0																	
DLS Mode	Auto	Time Zone	Est (UTC-5)																
		GPS Thresh	0																
Password Timeout	5																		
Maint Phs Recalls	1-8 <table><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>										9-16 <table><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
Maint Ped Recalls	<table><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>																		

Serial 1 Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
Serial Rebroadcast	Disabled	Response	None

Serial 2 Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
---------------------	---------------------------------------	----------------	------------------------------------

Ethernet Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
Serial Rebroadcast	Disabled		

Peer Configuration

Peer 1	0
Peer 2	0
Peer 3	0
Peer 4	0
Peer 5	0
Peer 6	0
Peer 7	0
Peer 8	0

APPENDIX D

2024 Existing Conditions

Synchro & SimTraffic Output

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Existing 2024 Conditions
Timing Plan: AM Peak Hour

	→	↘	←	↖	↙	↑	↗	↘	↓
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	48	198	62	63	18	184	202	160	444
v/c Ratio	0.22	0.59	0.17	0.04	0.11	0.37	0.13	0.55	0.51
Control Delay	27.3	36.2	28.2	0.1	37.7	26.9	0.2	38.1	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	36.2	28.2	0.1	37.7	26.9	0.2	38.1	21.2
Queue Length 50th (ft)	12	81	23	0	8	72	0	66	132
Queue Length 95th (ft)	43	151	56	0	28	131	0	133	289
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	536	510	553	1553	361	828	1553	379	867
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.39	0.11	0.04	0.05	0.22	0.13	0.42	0.51
Intersection Summary									

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Existing 2024 Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	23	15	162	51	52	15	151	166	131	358	6
Future Volume (vph)	2	23	15	162	51	52	15	151	166	131	358	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1800		1752	1900	1553	1687	1863	1553	1770	1877	
Flt Permitted		1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1800		1752	1900	1553	1687	1863	1553	1770	1877	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	2	28	18	198	62	63	18	184	202	160	437	7
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	31	0	198	62	63	18	184	202	160	443	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.1		13.2	13.2	75.6	2.4	22.8	75.6	11.5	31.9	
Effective Green, g (s)		4.1		13.2	13.2	75.6	2.4	22.8	75.6	11.5	31.9	
Actuated g/C Ratio		0.05		0.17	0.17	1.00	0.03	0.30	1.00	0.15	0.42	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		97		305	331	1553	53	561	1553	269	792	
v/s Ratio Prot		0.02		c0.11	0.03		0.01	0.10		c0.09	c0.24	
v/s Ratio Perm						0.04			c0.13			
v/c Ratio		0.32		0.65	0.19	0.04	0.34	0.33	0.13	0.59	0.56	
Uniform Delay, d1		34.4		29.0	26.6	0.0	35.8	20.5	0.0	29.9	16.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9		4.7	0.3	0.0	3.8	0.7	0.2	3.5	1.5	
Delay (s)		36.3		33.8	26.9	0.0	39.6	21.2	0.2	33.4	18.0	
Level of Service		D		C	C	A	D	C	A	C	B	
Approach Delay (s)		36.3			25.9			11.5			22.1	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			20.4		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			75.6		Sum of lost time (s)					24.0		
Intersection Capacity Utilization			54.0%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

Existing 2024 Conditions
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	183	149	2	73	60	110	124	180	150	110
Average Queue (ft)	92	51	0	26	10	38	45	98	31	42
95th Queue (ft)	158	109	0	55	38	81	99	158	95	88
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	266	222	68	82	69	61	128	158	44
Average Queue (ft)	145	75	19	44	30	18	33	82	6
95th Queue (ft)	230	174	51	75	62	51	94	134	25
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	B24	WB	SB	SB
Directions Served	L	T	T		TR	L	R
Maximum Queue (ft)	100	12	38	22	5	33	99
Average Queue (ft)	33	0	2	0	0	4	46
95th Queue (ft)	73	12	24	9	4	21	79
Link Distance (ft)		284	601	601	1220		342
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200					120	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Existing 2024 Conditions
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	EB	WB	NB	SB
Directions Served	L	TR	L	LTR	LTR
Maximum Queue (ft)	29	2	24	34	58
Average Queue (ft)	4	0	2	11	22
95th Queue (ft)	19	0	14	35	45
Link Distance (ft)		1220		537	324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240		240		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	81	162	82	46	102	146	202
Average Queue (ft)	27	75	28	8	41	64	85
95th Queue (ft)	63	130	65	28	84	117	165
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	SB
Directions Served	L	R	LR
Maximum Queue (ft)	46	34	52
Average Queue (ft)	5	4	21
95th Queue (ft)	28	20	45
Link Distance (ft)			530
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	120	50	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Existing 2024 Conditions
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	34	54
Average Queue (ft)	4	20
95th Queue (ft)	21	48
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	32
Average Queue (ft)	1
95th Queue (ft)	16
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Existing 2024 Conditions
Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	516	366	97	1102	124	125	226
v/c Ratio	0.41	0.23	0.21	0.55	0.36	0.36	0.54
Control Delay	16.2	0.3	25.0	9.0	23.1	23.1	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	0.3	25.0	9.0	23.1	23.1	15.2
Queue Length 50th (ft)	66	0	14	95	35	35	28
Queue Length 95th (ft)	131	0	40	195	88	89	92
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2316	1615	867	3322	719	719	747
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.23	0.11	0.33	0.17	0.17	0.30
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Existing 2024 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	475	337	89	1014	0	0	0	0	229	0	208
Future Volume (vph)	0	475	337	89	1014	0	0	0	0	229	0	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	516	366	97	1102	0	0	0	0	249	0	226
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	516	366	97	1102	0	0	0	0	124	125	127
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		19.2	54.8	5.6	31.8					11.0	11.0	11.0
Effective Green, g (s)		19.2	54.8	5.6	31.8					11.0	11.0	11.0
Actuated g/C Ratio		0.35	1.00	0.10	0.58					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1228	1615	350	2053					337	337	317
v/s Ratio Prot		0.15		0.03	c0.31					0.07	0.07	c0.08
v/s Ratio Perm			0.23									
v/c Ratio		0.42	0.23	0.28	0.54					0.37	0.37	0.40
Uniform Delay, d1		13.6	0.0	22.7	7.0					18.9	18.9	19.0
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.3	0.4	0.5					0.7	0.7	0.8
Delay (s)		14.0	0.3	23.2	7.5					19.6	19.6	19.9
Level of Service		B	A	C	A					B	B	B
Approach Delay (s)		8.4			8.8			0.0			19.7	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			10.7		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			54.8		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			50.9%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Existing 2024 Conditions
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	660	105	283	698	501	160
v/c Ratio	0.56	0.07	0.49	0.33	0.71	0.11
Control Delay	19.7	0.1	28.0	6.8	31.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.7	0.1	28.0	6.8	31.0	0.1
Queue Length 50th (ft)	108	0	52	63	92	0
Queue Length 95th (ft)	165	0	92	88	#176	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1976	1538	761	3045	748	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.07	0.37	0.23	0.67	0.11

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Existing 2024 Conditions
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	607	97	260	642	461	147
Future Volume (vph)	607	97	260	642	461	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	660	105	283	698	501	160
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	660	105	283	698	501	160
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	20.7	62.8	10.3	37.5	13.8	62.8
Effective Green, g (s)	20.7	62.8	10.3	37.5	13.8	62.8
Actuated g/C Ratio	0.33	1.00	0.16	0.60	0.22	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1189	1538	574	2113	704	1479
v/s Ratio Prot	c0.18		c0.08	0.20	c0.16	
v/s Ratio Perm		0.07				0.11
v/c Ratio	0.56	0.07	0.49	0.33	0.71	0.11
Uniform Delay, d1	17.3	0.0	23.9	6.3	22.7	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.1	0.7	0.2	3.4	0.1
Delay (s)	18.2	0.1	24.5	6.5	26.1	0.1
Level of Service	B	A	C	A	C	A
Approach Delay (s)	15.7			11.7	19.8	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			15.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.59			
Actuated Cycle Length (s)			62.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			52.3%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

Existing 2024 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 6.5

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations      

Traffic Vol, veh/h 283 471 638 8 9 264

Future Vol, veh/h 283 471 638 8 9 264

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 200 - - - 120 0

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 93 93 93 93 93 93

Heavy Vehicles, % 2 2 0 0 11 3

Mvmt Flow 304 506 686 9 10 284

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 695 0 - 0 1805 691

Stage 1 - - - - 691 -

Stage 2 - - - - 1114 -

Critical Hdwy 4.12 - - - 6.51 6.23

Critical Hdwy Stg 1 - - - - 5.51 -

Critical Hdwy Stg 2 - - - - 5.51 -

Follow-up Hdwy 2.218 - - - 3.599 3.327

Pot Cap-1 Maneuver 901 - - - 83 443

Stage 1 - - - - 481 -

Stage 2 - - - - 301 -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 901 - - - 55 443

Mov Cap-2 Maneuver - - - - 55 -

Stage 1 - - - - 319 -

Stage 2 - - - - 301 -

Approach EB WB SB

HCM Control Delay, s 4.1 0 28.4

HCM LOS D

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 901 - - - 55 443

HCM Lane V/C Ratio 0.338 - - - 0.176 0.641

HCM Control Delay (s) 11 - - - 83.9 26.5

HCM Lane LOS B - - - F D

HCM 95th %tile Q(veh) 1.5 - - - 0.6 4.4

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Existing 2024 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	95	379	6	2	550	50	20	2	6	32	1	76
Future Vol, veh/h	95	379	6	2	550	50	20	2	6	32	1	76
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	92	92	87	87	92	92	92	87	92	87
Heavy Vehicles, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	109	436	7	2	632	57	22	2	7	37	1	87

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	689	0	0	443	0	0	1367	1351	440	1298	1297	632
Stage 1	-	-	-	-	-	-	658	658	-	636	636	-
Stage 2	-	-	-	-	-	-	709	693	-	662	661	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	915	-	-	1117	-	-	124	150	617	140	162	484
Stage 1	-	-	-	-	-	-	453	461	-	469	472	-
Stage 2	-	-	-	-	-	-	425	445	-	454	460	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	915	-	-	1117	-	-	92	132	617	124	142	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	92	132	-	124	142	-
Stage 1	-	-	-	-	-	-	399	406	-	413	471	-
Stage 2	-	-	-	-	-	-	347	444	-	394	405	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	46.7	31.4
HCM LOS			E	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	116	915	-	-	1117	-	-	258
HCM Lane V/C Ratio	0.262	0.119	-	-	0.002	-	-	0.485
HCM Control Delay (s)	46.7	9.5	-	-	8.2	-	-	31.4
HCM Lane LOS	E	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1	0.4	-	-	0	-	-	2.5

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Existing 2024 Conditions
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	244	18	168	2	451	277	140	295
v/c Ratio	0.30	0.73	0.05	0.10	0.02	0.79	0.17	0.60	0.43
Control Delay	33.4	47.9	31.2	0.1	42.5	40.2	0.2	48.1	22.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	47.9	31.2	0.1	42.5	40.2	0.2	48.1	22.9
Queue Length 50th (ft)	20	131	8	0	1	232	0	77	120
Queue Length 95th (ft)	58	#239	28	0	8	#405	0	142	202
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	415	393	422	1615	296	639	1583	290	730
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.62	0.04	0.10	0.01	0.71	0.17	0.48	0.40

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Existing 2024 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	28	18	234	17	161	2	433	266	134	283	0
Future Volume (vph)	8	28	18	234	17	161	2	433	266	134	283	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1800		1770	1900	1615	1805	1881	1583	1770	1863	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1800		1770	1900	1615	1805	1881	1583	1770	1863	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	8	29	19	244	18	168	2	451	277	140	295	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	39	0	244	18	168	2	451	277	140	295	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		8.0		16.4	16.4	86.2	5.7	26.3	86.2	11.5	32.1	
Effective Green, g (s)		8.0		16.4	16.4	86.2	5.7	26.3	86.2	11.5	32.1	
Actuated g/C Ratio		0.09		0.19	0.19	1.00	0.07	0.31	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		167		336	361	1615	119	573	1583	236	693	
v/s Ratio Prot		0.02		c0.14	0.01		0.00	c0.24		c0.08	c0.16	
v/s Ratio Perm						0.10			c0.17			
v/c Ratio		0.23		0.73	0.05	0.10	0.02	0.79	0.17	0.59	0.43	
Uniform Delay, d1		36.3		32.8	28.5	0.0	37.6	27.4	0.0	35.1	20.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.7		7.6	0.1	0.1	0.1	8.1	0.2	4.0	0.9	
Delay (s)		37.0		40.4	28.6	0.1	37.7	35.5	0.2	39.1	21.1	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		37.0			24.2			22.1			26.9	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			24.4		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			86.2		Sum of lost time (s)					24.0		
Intersection Capacity Utilization			64.8%		ICU Level of Service					C		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Existing 2024 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	45	246	231	30	14	42
Future Vol, veh/h	45	246	231	30	14	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	50	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	6	1	1	0	3	6
Mvmt Flow	51	280	263	34	16	48

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	297	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.16	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.254	-	-
Pot Cap-1 Maneuver	1242	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1242	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1242	-	-	-	633
HCM Lane V/C Ratio	0.041	-	-	-	0.101
HCM Control Delay (s)	8	-	-	-	11.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Existing 2024 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	235	25	27	243	18	29
Future Vol, veh/h	235	25	27	243	18	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	270	29	31	279	21	33

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	299	0	626	285
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	341	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1262	-	440	759
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	709	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1262	-	427	759
Mov Cap-2 Maneuver	-	-	-	-	427	-
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	NB
----------	----	----	----

HCM Control Delay, s	0	0.8	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	585	-	-	1262	-
HCM Lane V/C Ratio	0.092	-	-	0.025	-
HCM Control Delay (s)	11.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Existing 2024 Conditions
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	177	142	78	54	187	206	149	68	180
Average Queue (ft)	88	53	35	14	87	95	77	19	89
95th Queue (ft)	144	106	64	44	165	175	125	54	153
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	247	186	112	129	94	107	239	280	74
Average Queue (ft)	145	80	56	80	50	55	123	167	10
95th Queue (ft)	221	166	98	116	87	97	205	243	49
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)								0	0
Queuing Penalty (veh)								0	0

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	WB	SB	SB
Directions Served	L	T	T	TR	L	R
Maximum Queue (ft)	171	97	152	27	93	215
Average Queue (ft)	79	5	7	1	12	88
95th Queue (ft)	140	56	89	12	54	168
Link Distance (ft)		284	601	1220		342
Upstream Blk Time (%)		0				0
Queuing Penalty (veh)		0				0
Storage Bay Dist (ft)	200				120	
Storage Blk Time (%)	0	0			0	5
Queuing Penalty (veh)	0	0			0	1

Existing 2024 Conditions
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	64	18	4	59	100
Average Queue (ft)	25	1	0	22	37
95th Queue (ft)	55	9	3	52	75
Link Distance (ft)				537	324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	84	232	52	14	306	15	184	215
Average Queue (ft)	36	128	14	1	174	1	82	105
95th Queue (ft)	74	209	41	7	284	21	149	179
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)					0			
Queuing Penalty (veh)					0			
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)					0		0	0
Queuing Penalty (veh)					0		0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	SB
Directions Served	L	T	LR
Maximum Queue (ft)	40	7	62
Average Queue (ft)	9	0	24
95th Queue (ft)	34	6	46
Link Distance (ft)		607	530
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	120		
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Existing 2024 Conditions
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	64	56
Average Queue (ft)	7	25
95th Queue (ft)	33	49
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	20
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 2

APPENDIX E

2026 No-Build Conditions

Synchro & SimTraffic Output

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2026 Conditions

Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	599	385	70	484	171	173	111
v/c Ratio	0.45	0.24	0.16	0.27	0.45	0.45	0.25
Control Delay	15.5	0.3	26.3	7.2	24.3	24.3	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	0.3	26.3	7.2	24.3	24.3	5.6
Queue Length 50th (ft)	81	0	10	35	52	53	0
Queue Length 95th (ft)	153	0	32	75	124	125	30
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2446	1615	881	3176	759	761	762
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.24	0.08	0.15	0.23	0.23	0.15
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2026 Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗	↗↘	↕↕					↘	↗	↗
Traffic Volume (vph)	0	551	354	64	445	0	0	0	0	316	1	102
Future Volume (vph)	0	551	354	64	445	0	0	0	0	316	1	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	599	385	70	484	0	0	0	0	343	1	111
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	87
Lane Group Flow (vph)	0	599	385	70	484	0	0	0	0	171	173	24
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		20.2	55.1	3.8	31.0					12.1	12.1	12.1
Effective Green, g (s)		20.2	55.1	3.8	31.0					12.1	12.1	12.1
Actuated g/C Ratio		0.37	1.00	0.07	0.56					0.22	0.22	0.22
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1272	1615	225	1952					365	366	334
v/s Ratio Prot		c0.17		0.02	0.14					0.10	c0.10	0.02
v/s Ratio Perm			c0.24									
v/c Ratio		0.47	0.24	0.31	0.25					0.47	0.47	0.07
Uniform Delay, d1		13.4	0.0	24.4	6.1					18.7	18.7	17.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.6	0.3	0.8	0.1					1.0	1.0	0.1
Delay (s)		13.9	0.3	25.2	6.3					19.7	19.7	17.1
Level of Service		B	A	C	A					B	B	B
Approach Delay (s)		8.6			8.7			0.0			19.1	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.0		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			55.1		Sum of lost time (s)				19.0			
Intersection Capacity Utilization			44.0%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2026 Conditions
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	820	122	120	321	233	95
v/c Ratio	0.56	0.08	0.25	0.15	0.42	0.07
Control Delay	15.4	0.1	27.0	4.8	25.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	0.1	27.0	4.8	25.8	0.1
Queue Length 50th (ft)	113	0	20	19	39	0
Queue Length 95th (ft)	191	0	48	38	80	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2268	1615	895	3125	855	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.08	0.13	0.10	0.27	0.07
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2026 Conditions
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	754	112	110	295	214	87
Future Volume (vph)	754	112	110	295	214	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	820	122	120	321	233	95
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	820	122	120	321	233	95
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	23.5	57.5	5.8	35.8	10.2	57.5
Effective Green, g (s)	23.5	57.5	5.8	35.8	10.2	57.5
Actuated g/C Ratio	0.41	1.00	0.10	0.62	0.18	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1446	1615	353	2161	552	1450
v/s Ratio Prot	c0.23		c0.03	0.09	c0.07	
v/s Ratio Perm		0.08				0.07
v/c Ratio	0.57	0.08	0.34	0.15	0.42	0.07
Uniform Delay, d1	13.1	0.0	24.1	4.5	21.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.6	0.1	0.5	0.1
Delay (s)	13.9	0.1	24.6	4.6	21.6	0.1
Level of Service	B	A	C	A	C	A
Approach Delay (s)	12.1			10.0	15.3	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			57.5		Sum of lost time (s)	18.0
Intersection Capacity Utilization			46.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

No-Build 2026 Conditions
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3.5

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations    WBR SBL  SBR 

Traffic Vol, veh/h 262 579 233 3 5 171

Future Vol, veh/h 262 579 233 3 5 171

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 200 - - - 120 0

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 1 0 0 0 5

Mvmt Flow 285 629 253 3 5 186

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 256 0 - 0 1454 255

Stage 1 - - - - 255 -

Stage 2 - - - - 1199 -

Critical Hdwy 4.12 - - - 6.4 6.25

Critical Hdwy Stg 1 - - - - 5.4 -

Critical Hdwy Stg 2 - - - - 5.4 -

Follow-up Hdwy 2.218 - - - 3.5 3.345

Pot Cap-1 Maneuver 1309 - - - 145 776

Stage 1 - - - - 792 -

Stage 2 - - - - 288 -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 1309 - - - 113 776

Mov Cap-2 Maneuver - - - - 113 -

Stage 1 - - - - 619 -

Stage 2 - - - - 288 -

Approach EB WB SB

HCM Control Delay, s 2.7 0 11.9

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 1309 - - - 113 776

HCM Lane V/C Ratio 0.218 - - - 0.048 0.24

HCM Control Delay (s) 8.5 - - - 38.5 11.1

HCM Lane LOS A - - - E B

HCM 95th %tile Q(veh) 0.8 - - - 0.1 0.9

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

No-Build 2026 Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	503	51	4	193	19	17	1	0	28	1	27
Future Vol, veh/h	30	503	51	4	193	19	17	1	0	28	1	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	33	547	55	4	210	21	18	1	0	30	1	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	231	0	0	602	0	0	885	880	575	859	886	210
Stage 1	-	-	-	-	-	-	641	641	-	218	218	-
Stage 2	-	-	-	-	-	-	244	239	-	641	668	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1349	-	-	975	-	-	266	286	518	279	284	825
Stage 1	-	-	-	-	-	-	463	469	-	789	723	-
Stage 2	-	-	-	-	-	-	760	708	-	466	456	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1349	-	-	975	-	-	250	278	518	272	276	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	250	278	-	272	276	-
Stage 1	-	-	-	-	-	-	452	458	-	770	720	-
Stage 2	-	-	-	-	-	-	729	705	-	454	445	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.2			20.6			15.5		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	251	1349	-	-	975	-	-	402
HCM Lane V/C Ratio	0.078	0.024	-	-	0.004	-	-	0.151
HCM Control Delay (s)	20.6	7.7	-	-	8.7	-	-	15.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.5

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2026 Conditions

Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	57	179	64	58	29	167	184	146	432
v/c Ratio	0.23	0.51	0.17	0.04	0.16	0.31	0.12	0.48	0.54
Control Delay	27.6	34.4	28.7	0.0	37.2	26.1	0.2	36.8	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.6	34.4	28.7	0.0	37.2	26.1	0.2	36.8	22.1
Queue Length 50th (ft)	15	72	24	0	12	64	0	59	126
Queue Length 95th (ft)	56	157	65	0	43	135	0	140	328
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	590	563	610	1553	399	913	1553	419	945
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.32	0.10	0.04	0.07	0.18	0.12	0.35	0.46
Intersection Summary									

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2026 Conditions

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	25	18	165	59	53	27	154	169	134	365	32
Future Volume (vph)	9	25	18	165	59	53	27	154	169	134	365	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	27	20	179	64	58	29	167	184	146	397	35
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	38	0	179	64	58	29	167	184	146	430	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.1		13.4	13.4	72.6	2.6	22.2	72.6	8.9	28.5	
Effective Green, g (s)		4.1		13.4	13.4	72.6	2.6	22.2	72.6	8.9	28.5	
Actuated g/C Ratio		0.06		0.18	0.18	1.00	0.04	0.31	1.00	0.12	0.39	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		101		323	350	1553	60	569	1553	216	730	
v/s Ratio Prot		c0.02		c0.10	0.03		0.02	0.09		c0.08	c0.23	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.55	0.18	0.04	0.48	0.29	0.12	0.68	0.59	
Uniform Delay, d1		33.0		26.9	25.0	0.0	34.3	19.2	0.0	30.5	17.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		2.1	0.3	0.0	6.0	0.6	0.2	8.1	1.9	
Delay (s)		35.4		28.9	25.2	0.0	40.4	19.8	0.2	38.6	19.3	
Level of Service		D		C	C	A	D	B	A	D	B	
Approach Delay (s)		35.4			22.6			11.9			24.2	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			20.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			72.6			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			56.1%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

No-Build 2026 Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	243	145	7	14	32
Future Vol, veh/h	22	243	145	7	14	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	50	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	18	4	5	6	0	7
Mvmt Flow	24	264	158	8	15	35

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	166	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.28	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.362	-	-
Pot Cap-1 Maneuver	1321	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1321	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1321	-	-	-	739
HCM Lane V/C Ratio	0.018	-	-	-	0.068
HCM Control Delay (s)	7.8	-	-	-	10.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

No-Build 2026 Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	241	16	24	142	10	20
Future Vol, veh/h	241	16	24	142	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	262	17	26	154	11	22

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	279
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1284
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1284
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	668	-	-	1284	-
HCM Lane V/C Ratio	0.049	-	-	0.02	-
HCM Control Delay (s)	10.7	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

No-Build 2026 Conditions
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	179	156	66	60	101	109	193	147	116
Average Queue (ft)	98	57	28	11	39	46	109	46	45
95th Queue (ft)	157	120	55	41	80	97	175	119	91
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	283	225	58	83	79	63	131	173	49
Average Queue (ft)	158	91	19	47	30	18	40	89	8
95th Queue (ft)	247	193	48	76	66	50	106	143	32
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	B24	SB	SB
Directions Served	L	T	T		L	R
Maximum Queue (ft)	89	34	35	6	31	89
Average Queue (ft)	37	1	1	0	5	44
95th Queue (ft)	75	20	17	7	24	72
Link Distance (ft)		284	601	601		342
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200				120	
Storage Blk Time (%)						0
Queuing Penalty (veh)						0

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	NB	SB
Directions Served	L	L	LTR	LTR
Maximum Queue (ft)	31	21	46	58
Average Queue (ft)	4	1	15	24
95th Queue (ft)	21	10	42	47
Link Distance (ft)			537	324
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	240	240		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	82	161	78	66	120	178	231
Average Queue (ft)	36	82	33	18	42	70	107
95th Queue (ft)	69	136	69	49	90	131	191
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	WB	SB
Directions Served	L	T	R	LR
Maximum Queue (ft)	45	2	27	53
Average Queue (ft)	4	0	3	21
95th Queue (ft)	23	2	15	42
Link Distance (ft)		607		530
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120		50	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	45	56
Average Queue (ft)	6	23
95th Queue (ft)	28	51
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	49
Average Queue (ft)	2
95th Queue (ft)	28
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2026 Conditions

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	535	374	112	1142	134	134	230
v/c Ratio	0.43	0.23	0.24	0.57	0.39	0.39	0.54
Control Delay	16.5	0.3	25.6	9.2	23.9	23.9	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	0.3	25.6	9.2	23.9	23.9	15.7
Queue Length 50th (ft)	71	0	17	103	40	40	29
Queue Length 95th (ft)	140	0	46	208	97	97	98
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2279	1615	853	3296	707	707	737
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.23	0.13	0.35	0.19	0.19	0.31
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2026 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	492	344	103	1051	0	0	0	0	247	0	212
Future Volume (vph)	0	492	344	103	1051	0	0	0	0	247	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	535	374	112	1142	0	0	0	0	268	0	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	535	374	112	1142	0	0	0	0	134	134	131
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		19.6	55.8	5.9	32.5					11.3	11.3	11.3
Effective Green, g (s)		19.6	55.8	5.9	32.5					11.3	11.3	11.3
Actuated g/C Ratio		0.35	1.00	0.11	0.58					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1231	1615	362	2061					340	340	320
v/s Ratio Prot		0.15		0.03	c0.32					0.08	0.08	c0.08
v/s Ratio Perm			0.23									
v/c Ratio		0.43	0.23	0.31	0.55					0.39	0.39	0.41
Uniform Delay, d1		13.9	0.0	23.1	7.2					19.3	19.3	19.3
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.3	0.5	0.6					0.8	0.8	0.9
Delay (s)		14.4	0.3	23.6	7.7					20.0	20.0	20.2
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		8.6			9.1			0.0			20.1	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			11.0		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			55.8		Sum of lost time (s)				19.0			
Intersection Capacity Utilization			52.2%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2026 Conditions
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	695	108	320	743	511	168
v/c Ratio	0.59	0.07	0.54	0.35	0.73	0.11
Control Delay	20.4	0.1	28.7	6.9	32.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	0.1	28.7	6.9	32.1	0.2
Queue Length 50th (ft)	118	0	60	68	97	0
Queue Length 95th (ft)	174	0	105	95	#186	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1941	1538	747	3004	735	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.07	0.43	0.25	0.70	0.11

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2026 Conditions
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	639	99	294	684	470	155
Future Volume (vph)	639	99	294	684	470	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	695	108	320	743	511	168
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	695	108	320	743	511	168
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	21.0	63.9	10.9	38.4	14.0	63.9
Effective Green, g (s)	21.0	63.9	10.9	38.4	14.0	63.9
Actuated g/C Ratio	0.33	1.00	0.17	0.60	0.22	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1186	1538	597	2126	702	1479
v/s Ratio Prot	c0.19		c0.09	0.21	c0.16	
v/s Ratio Perm		0.07				0.11
v/c Ratio	0.59	0.07	0.54	0.35	0.73	0.11
Uniform Delay, d1	17.8	0.0	24.2	6.4	23.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.9	0.2	3.8	0.2
Delay (s)	19.0	0.1	25.1	6.6	27.0	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	16.4			12.2	20.3	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			15.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			63.9		Sum of lost time (s)	18.0
Intersection Capacity Utilization			54.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

No-Build 2026 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 7.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	289	505	709	8	9	269
Future Vol, veh/h	289	505	709	8	9	269
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	120	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	0	0	11	3
Mvmt Flow	311	543	762	9	10	289

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	771	0	0 1932 767
Stage 1	-	-	- 767 -
Stage 2	-	-	- 1165 -
Critical Hdwy	4.12	-	- 6.51 6.23
Critical Hdwy Stg 1	-	-	- 5.51 -
Critical Hdwy Stg 2	-	-	- 5.51 -
Follow-up Hdwy	2.218	-	- 3.599 3.327
Pot Cap-1 Maneuver	844	-	- 69 401
Stage 1	-	-	- 443 -
Stage 2	-	-	- 285 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	844	-	- 44 401
Mov Cap-2 Maneuver	-	-	- 44 -
Stage 1	-	-	- 280 -
Stage 2	-	-	- 285 -

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	36.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	844	-	-	-	44	401
HCM Lane V/C Ratio	0.368	-	-	-	0.22	0.721
HCM Control Delay (s)	11.7	-	-	-	108.5	34
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	1.7	-	-	-	0.7	5.6

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

No-Build 2026 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	401	17	2	594	51	45	2	6	33	1	78
Future Vol, veh/h	97	401	17	2	594	51	45	2	6	33	1	78
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	105	436	18	2	646	55	49	2	7	36	1	85

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	701	0	0	454	0	0	1376	1360	445	1310	1314	646
Stage 1	-	-	-	-	-	-	655	655	-	650	650	-
Stage 2	-	-	-	-	-	-	721	705	-	660	664	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	905	-	-	1107	-	-	122	148	613	137	158	475
Stage 1	-	-	-	-	-	-	455	463	-	461	465	-
Stage 2	-	-	-	-	-	-	419	439	-	455	458	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	905	-	-	1107	-	-	91	131	613	122	139	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	131	-	122	139	-
Stage 1	-	-	-	-	-	-	402	409	-	408	464	-
Stage 2	-	-	-	-	-	-	343	438	-	396	405	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	78.6	31.8
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	102	905	-	-	1107	-	-	253
HCM Lane V/C Ratio	0.565	0.117	-	-	0.002	-	-	0.481
HCM Control Delay (s)	78.6	9.5	-	-	8.3	-	-	31.8
HCM Lane LOS	F	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	2.6	0.4	-	-	0	-	-	2.4

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2026 Conditions
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	118	249	22	171	9	460	282	143	316
v/c Ratio	0.52	0.76	0.06	0.11	0.07	0.82	0.18	0.62	0.48
Control Delay	41.7	52.7	33.5	0.1	45.1	45.0	0.2	52.1	25.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.7	52.7	33.5	0.1	45.1	45.0	0.2	52.1	25.9
Queue Length 50th (ft)	58	142	11	0	5	256	0	83	141
Queue Length 95th (ft)	114	#269	34	0	21	#454	0	153	239
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	396	378	405	1615	284	612	1583	278	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.66	0.05	0.11	0.03	0.75	0.18	0.51	0.45

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2026 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	37	35	239	21	164	9	442	271	137	289	14
Future Volume (vph)	41	37	35	239	21	164	9	442	271	137	289	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1789		1770	1900	1615	1805	1881	1583	1770	1851	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1789		1770	1900	1615	1805	1881	1583	1770	1851	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	39	36	249	22	171	9	460	282	143	301	15
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	102	0	249	22	171	9	460	282	143	315	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.8		16.8	16.8	90.2	6.1	26.9	90.2	11.7	32.5	
Effective Green, g (s)		10.8		16.8	16.8	90.2	6.1	26.9	90.2	11.7	32.5	
Actuated g/C Ratio		0.12		0.19	0.19	1.00	0.07	0.30	1.00	0.13	0.36	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		214		329	353	1615	122	560	1583	229	666	
v/s Ratio Prot		c0.06		c0.14	0.01		0.00	c0.24		c0.08	c0.17	
v/s Ratio Perm						0.11			0.18			
v/c Ratio		0.48		0.76	0.06	0.11	0.07	0.82	0.18	0.62	0.47	
Uniform Delay, d1		37.1		34.8	30.2	0.0	39.4	29.4	0.0	37.2	22.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.7		9.6	0.1	0.1	0.3	10.5	0.2	5.2	1.1	
Delay (s)		38.7		44.3	30.3	0.1	39.7	39.9	0.2	42.4	23.4	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		38.7			26.5			25.0			29.3	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			27.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			90.2			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			65.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

No-Build 2026 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	251	236	31	14	43
Future Vol, veh/h	46	251	236	31	14	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	50	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	1	1	0	3	6
Mvmt Flow	50	273	257	34	15	47

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	291	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.16	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.254	-	-
Pot Cap-1 Maneuver	1248	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1248	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1248	-	-	-	644
HCM Lane V/C Ratio	0.04	-	-	-	0.096
HCM Control Delay (s)	8	-	-	-	11.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

No-Build 2026 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	26	28	248	18	30
Future Vol, veh/h	240	26	28	248	18	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	261	28	30	270	20	33

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	289
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1273
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1273
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	601	-	-	1273	-
HCM Lane V/C Ratio	0.087	-	-	0.024	-
HCM Control Delay (s)	11.6	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

No-Build 2026 Conditions
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	185	147	86	82	187	210	175	135	169
Average Queue (ft)	99	57	40	20	93	102	89	26	86
95th Queue (ft)	162	118	75	59	167	182	146	85	145
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	269	207	131	141	102	117	233	275	87
Average Queue (ft)	159	85	63	89	49	57	126	168	11
95th Queue (ft)	240	179	110	132	88	101	206	246	50
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)								0	
Queuing Penalty (veh)								0	

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	B24	WB	SB	SB
Directions Served	L	T	T		TR	L	R
Maximum Queue (ft)	186	259	197	69	25	66	218
Average Queue (ft)	87	24	15	2	2	10	95
95th Queue (ft)	161	156	135	63	12	43	177
Link Distance (ft)		284	601	601	1220		342
Upstream Blk Time (%)		1	0	0			0
Queuing Penalty (veh)		10	0	0			0
Storage Bay Dist (ft)	200					120	
Storage Blk Time (%)	1	1				0	8
Queuing Penalty (veh)	5	4				0	1

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	62	21	6	75	92
Average Queue (ft)	27	1	0	33	39
95th Queue (ft)	56	8	4	63	72
Link Distance (ft)				537	324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	148	233	48	110	369	86	187	222
Average Queue (ft)	67	135	16	9	196	8	84	116
95th Queue (ft)	124	213	44	65	332	87	153	197
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				0	1	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	1		0	0
Queuing Penalty (veh)				1	0		0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	SB
Directions Served	L	T	LR
Maximum Queue (ft)	43	7	61
Average Queue (ft)	10	0	26
95th Queue (ft)	35	7	50
Link Distance (ft)		607	530
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	120		
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	62	58
Average Queue (ft)	8	28
95th Queue (ft)	37	52
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Bend

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	2	2
Average Queue (ft)	0	0
95th Queue (ft)	2	2
Link Distance (ft)	404	404
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	42
Average Queue (ft)	2
95th Queue (ft)	25
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 22

APPENDIX F

2026 Build Conditions

Sidra, Synchro & SimTraffic Output

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	629	385	80	488	224	226	111
v/c Ratio	0.50	0.24	0.20	0.26	0.56	0.56	0.24
Control Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Length 50th (ft)	97	0	14	42	76	77	0
Queue Length 95th (ft)	172	0	39	83	167	168	31
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2151	1615	775	3019	667	669	685
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.24	0.10	0.16	0.34	0.34	0.16
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↗↗	↑↑					↗	↗	↗
Traffic Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Future Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	629	385	80	488	0	0	0	0	449	1	111
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	629	385	80	488	0	0	0	0	224	226	26
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Effective Green, g (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Actuated g/C Ratio		0.36	1.00	0.09	0.56					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1235	1615	298	1953					396	398	363
v/s Ratio Prot		c0.18		0.02	0.14					0.13	c0.14	0.02
v/s Ratio Perm			c0.24									
v/c Ratio		0.51	0.24	0.27	0.25					0.57	0.57	0.07
Uniform Delay, d1		15.3	0.0	25.6	6.7					20.2	20.3	17.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.5	0.1					1.9	1.9	0.1
Delay (s)		16.0	0.3	26.1	6.9					22.1	22.1	17.9
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.1			9.6			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.9		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.4		Sum of lost time (s)				19.0			
Intersection Capacity Utilization			47.5%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	955	122	134	335	233	170
v/c Ratio	0.62	0.08	0.28	0.16	0.43	0.12
Control Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Length 50th (ft)	143	0	24	21	41	0
Queue Length 95th (ft)	234	0	55	40	83	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2169	1615	852	2977	814	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.16	0.11	0.29	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	879	112	123	308	214	156
Future Volume (vph)	879	112	123	308	214	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	955	122	134	335	233	170
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	955	122	134	335	233	170
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	26.2	60.8	6.2	38.9	10.4	60.8
Effective Green, g (s)	26.2	60.8	6.2	38.9	10.4	60.8
Actuated g/C Ratio	0.43	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1525	1615	357	2220	532	1450
v/s Ratio Prot	c0.27		c0.04	0.10	c0.07	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.63	0.08	0.38	0.15	0.44	0.12
Uniform Delay, d1	13.5	0.0	25.5	4.4	22.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.6	0.1	26.2	4.4	23.2	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.0			10.6	13.5	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			60.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

Build 2026 Conditions
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3.8

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations      

Traffic Vol, veh/h 359 676 246 3 5 184

Future Vol, veh/h 359 676 246 3 5 184

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length 200 - - - 120 0

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 1 0 0 0 5

Mvmt Flow 390 735 267 3 5 200

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 270 0 - 0 1784 269

Stage 1 - - - - 269 -

Stage 2 - - - - 1515 -

Critical Hdwy 4.12 - - - 6.4 6.25

Critical Hdwy Stg 1 - - - - 5.4 -

Critical Hdwy Stg 2 - - - - 5.4 -

Follow-up Hdwy 2.218 - - - 3.5 3.345

Pot Cap-1 Maneuver 1293 - - - 91 762

Stage 1 - - - - 781 -

Stage 2 - - - - 203 -

Platoon blocked, % - - - - -

Mov Cap-1 Maneuver 1293 - - - 64 762

Mov Cap-2 Maneuver - - - - 64 -

Stage 1 - - - - 545 -

Stage 2 - - - - 203 -

Approach EB WB SB

HCM Control Delay, s 3.1 0 12.9

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1 SBLn2

Capacity (veh/h) 1293 - - - 64 762

HCM Lane V/C Ratio 0.302 - - - 0.085 0.262

HCM Control Delay (s) 9 - - - 66.4 11.4

HCM Lane LOS A - - - F B

HCM 95th %tile Q(veh) 1.3 - - - 0.3 1.1

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2026 Conditions
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations												
Traffic Vol, veh/h	127	503	51	4	193	88	17	1	0	38	1	40
Future Vol, veh/h	127	503	51	4	193	88	17	1	0	38	1	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	138	547	55	4	210	96	18	1	0	41	1	43

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	306	0	0	602	0	0	1139	1165	575	1069	1096	210
Stage 1	-	-	-	-	-	-	851	851	-	218	218	-
Stage 2	-	-	-	-	-	-	288	314	-	851	878	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1266	-	-	975	-	-	178	194	518	201	213	825
Stage 1	-	-	-	-	-	-	355	376	-	789	723	-
Stage 2	-	-	-	-	-	-	720	656	-	358	366	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1266	-	-	975	-	-	153	172	518	183	189	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	172	-	183	189	-
Stage 1	-	-	-	-	-	-	316	335	-	703	720	-
Stage 2	-	-	-	-	-	-	678	653	-	318	326	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.1	31.8	21.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	154	1266	-	-	975	-	-	302
HCM Lane V/C Ratio	0.127	0.109	-	-	0.004	-	-	0.284
HCM Control Delay (s)	31.8	8.2	-	-	8.7	-	-	21.6
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.4	-	-	0	-	-	1.1

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions

Timing Plan: AM Peak Hour

	→	↖	←	↗	↘	↑	↖	↗	↓
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	57	179	64	58	29	242	184	146	443
v/c Ratio	0.23	0.51	0.17	0.04	0.16	0.44	0.12	0.48	0.55
Control Delay	27.7	34.7	29.0	0.0	37.4	27.5	0.2	37.1	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	34.7	29.0	0.0	37.4	27.5	0.2	37.1	22.4
Queue Length 50th (ft)	16	75	25	0	12	97	0	61	130
Queue Length 95th (ft)	56	157	65	0	43	192	0	140	#340
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	587	560	607	1553	397	909	1553	416	950
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.32	0.11	0.04	0.07	0.27	0.12	0.35	0.47

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	25	18	165	59	53	27	223	169	134	375	32
Future Volume (vph)	9	25	18	165	59	53	27	223	169	134	375	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	27	20	179	64	58	29	242	184	146	408	35
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	38	0	179	64	58	29	242	184	146	441	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.1		13.4	13.4	73.0	2.6	22.6	73.0	8.9	28.9	
Effective Green, g (s)		4.1		13.4	13.4	73.0	2.6	22.6	73.0	8.9	28.9	
Actuated g/C Ratio		0.06		0.18	0.18	1.00	0.04	0.31	1.00	0.12	0.40	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		100		321	348	1553	60	576	1553	215	736	
v/s Ratio Prot		c0.02		c0.10	0.03		0.02	0.13		c0.08	c0.24	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.56	0.18	0.04	0.48	0.42	0.12	0.68	0.60	
Uniform Delay, d1		33.2		27.1	25.2	0.0	34.5	20.0	0.0	30.7	17.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		2.1	0.3	0.0	6.0	1.0	0.2	8.2	2.0	
Delay (s)		35.6		29.2	25.4	0.0	40.6	21.0	0.2	38.9	19.4	
Level of Service		D		C	C	A	D	C	A	D	B	
Approach Delay (s)		35.6			22.8			13.8			24.3	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			73.0			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			56.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions
Timing Plan: AM Peak Hour

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	22	257	83	0	147	7	11	0	0	14	0	32
Future Vol, veh/h	22	257	83	0	147	7	11	0	0	14	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	24	279	90	0	160	8	12	0	0	15	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	369	0	0	554	540	324	532	577	160
Stage 1	-	-	-	-	-	-	372	372	-	160	160	-
Stage 2	-	-	-	-	-	-	182	168	-	372	417	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1318	-	-	1190	-	-	443	449	717	461	427	872
Stage 1	-	-	-	-	-	-	648	619	-	847	766	-
Stage 2	-	-	-	-	-	-	820	759	-	653	591	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1318	-	-	1190	-	-	420	441	717	455	419	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	420	441	-	455	419	-
Stage 1	-	-	-	-	-	-	636	608	-	832	766	-
Stage 2	-	-	-	-	-	-	787	759	-	641	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.8	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	420	1318	-	-	1190	-	-	682
HCM Lane V/C Ratio	0.028	0.018	-	-	-	-	-	0.073
HCM Control Delay (s)	13.8	7.8	-	-	0	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	241	30	38	142	12	22
Future Vol, veh/h	241	30	38	142	12	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	262	33	41	154	13	24

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	295	0	515	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1266	-	511	765
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1266	-	493	765
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.7	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	640	-	-	1266	-
HCM Lane V/C Ratio	0.058	-	-	0.033	-
HCM Control Delay (s)	11	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Build 2026 Conditions
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	198	164	2	75	66	114	124	232	182	122
Average Queue (ft)	111	69	0	34	14	40	48	137	66	47
95th Queue (ft)	176	140	2	64	47	86	101	207	156	95
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	338	295	62	84	80	74	126	158	83
Average Queue (ft)	200	123	20	48	31	21	42	88	18
95th Queue (ft)	299	239	51	77	67	56	105	138	54
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	B24	WB	SB	SB
Directions Served	L	T	T		TR	L	R
Maximum Queue (ft)	111	43	267	138	7	34	88
Average Queue (ft)	48	1	17	5	0	5	45
95th Queue (ft)	93	23	146	91	4	23	73
Link Distance (ft)		284	601	601	1220		330
Upstream Blk Time (%)			0	0			
Queuing Penalty (veh)			0	0			
Storage Bay Dist (ft)	200					120	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	52	24	16	44	64
Average Queue (ft)	17	2	1	14	28
95th Queue (ft)	44	13	6	42	51
Link Distance (ft)				537	324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	91	188	76	50	153	153	238
Average Queue (ft)	36	80	33	17	62	67	109
95th Queue (ft)	74	143	68	42	120	120	198
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	NB	SB
Directions Served	L	R	LTR	LTR
Maximum Queue (ft)	43	4	35	48
Average Queue (ft)	3	0	10	19
95th Queue (ft)	23	4	33	41
Link Distance (ft)			269	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	50		
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	58	59
Average Queue (ft)	0	9	23
95th Queue (ft)	0	37	50
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	31
Average Queue (ft)	1
95th Queue (ft)	16
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 1

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	542	374	195	1176	148	148	230
v/c Ratio	0.49	0.23	0.37	0.56	0.44	0.44	0.55
Control Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Length 50th (ft)	77	0	30	112	46	46	31
Queue Length 95th (ft)	150	0	73	220	113	113	103
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2079	1615	778	3189	645	645	684
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.23	0.25	0.37	0.23	0.23	0.34
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  	 	  	  					 	 	  
Traffic Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Future Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	542	374	195	1176	0	0	0	0	296	0	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	542	374	195	1176	0	0	0	0	148	148	131
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Effective Green, g (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1124	1615	527	2101					338	338	318
v/s Ratio Prot		0.15		0.06	c0.33					c0.09	0.09	0.08
v/s Ratio Perm			0.23									
v/c Ratio		0.48	0.23	0.37	0.56					0.44	0.44	0.41
Uniform Delay, d1		16.0	0.0	22.3	7.2					20.5	20.5	20.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.4	0.6					0.9	0.9	0.9
Delay (s)		16.7	0.3	22.7	7.8					21.4	21.4	21.2
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.0			9.9			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.1		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			58.6		Sum of lost time (s)				19.0			
Intersection Capacity Utilization			53.0%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	729	108	436	860	511	188
v/c Ratio	0.60	0.07	0.68	0.39	0.76	0.13
Control Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Length 50th (ft)	133	0	89	83	107	0
Queue Length 95th (ft)	184	0	145	113	#194	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1846	1538	711	2875	699	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.07	0.61	0.30	0.73	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	671	99	401	791	470	173
Future Volume (vph)	671	99	401	791	470	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	108	436	860	511	188
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	729	108	436	860	511	188
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	22.6	67.0	12.4	41.5	14.0	67.0
Effective Green, g (s)	22.6	67.0	12.4	41.5	14.0	67.0
Actuated g/C Ratio	0.34	1.00	0.19	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1217	1538	648	2192	670	1479
v/s Ratio Prot	c0.20		c0.12	0.24	c0.16	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.60	0.07	0.67	0.39	0.76	0.13
Uniform Delay, d1	18.4	0.0	25.4	6.4	24.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	2.8	0.2	5.1	0.2
Delay (s)	19.6	0.1	28.2	6.7	30.1	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	17.1			13.9	22.0	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			67.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

Build 2026 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh	28.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	314	530	816	8	9	376
Future Vol, veh/h	314	530	816	8	9	376
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	120	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	0	0	11	3
Mvmt Flow	338	570	877	9	10	404

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	886	0	0 2128 882
Stage 1	-	-	- 882 -
Stage 2	-	-	- 1246 -
Critical Hdwy	4.12	-	- 6.51 6.23
Critical Hdwy Stg 1	-	-	- 5.51 -
Critical Hdwy Stg 2	-	-	- 5.51 -
Follow-up Hdwy	2.218	-	- 3.599 3.327
Pot Cap-1 Maneuver	764	-	- 52 ~ 344
Stage 1	-	-	- 390 -
Stage 2	-	-	- 260 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	764	-	- 29 ~ 344
Mov Cap-2 Maneuver	-	-	- 29 -
Stage 1	-	-	- 218 -
Stage 2	-	-	- 260 -

Approach	EB	WB	SB
HCM Control Delay, s	5	0	140.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	764	-	-	-	29	344
HCM Lane V/C Ratio	0.442	-	-	-	0.334	1.175
HCM Control Delay (s)	13.4	-	-	-	182	139.1
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	2.3	-	-	-	1	16.6

Notes

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

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2026 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 65.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	401	17	2	594	69	45	2	6	109	1	185
Future Vol, veh/h	122	401	17	2	594	69	45	2	6	109	1	185
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	133	436	18	2	646	75	49	2	7	118	1	201

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	721	0	0	454	0	0	1500	1436	445	1366	1370	646
Stage 1	-	-	-	-	-	-	711	711	-	650	650	-
Stage 2	-	-	-	-	-	-	789	725	-	716	720	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	890	-	-	1107	-	-	100	133	613	126	146	475
Stage 1	-	-	-	-	-	-	424	436	-	461	465	-
Stage 2	-	-	-	-	-	-	384	430	-	424	432	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	890	-	-	1107	-	-	51	113	613	~ 109	124	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	51	113	-	~ 109	124	-
Stage 1	-	-	-	-	-	-	361	371	-	392	464	-
Stage 2	-	-	-	-	-	-	221	429	-	355	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	232.1	298.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	890	-	-	1107	-	-	211
HCM Lane V/C Ratio	0.993	0.149	-	-	0.002	-	-	1.52
HCM Control Delay (s)	232.1	9.8	-	-	8.3	-	-	298.2
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	4.6	0.5	-	-	0	-	-	19.8

Notes

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	118	249	22	171	9	479	282	143	395
v/c Ratio	0.52	0.77	0.06	0.11	0.07	0.84	0.18	0.63	0.58
Control Delay	42.0	53.4	33.5	0.1	45.1	46.1	0.2	52.6	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	53.4	33.5	0.1	45.1	46.1	0.2	52.6	28.3
Queue Length 50th (ft)	58	142	11	0	5	271	0	83	186
Queue Length 95th (ft)	114	#269	34	0	21	#482	0	153	308
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	391	373	400	1615	280	605	1583	275	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.67	0.06	0.11	0.03	0.79	0.18	0.52	0.56

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	37	35	239	21	164	9	460	271	137	365	14
Future Volume (vph)	41	37	35	239	21	164	9	460	271	137	365	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1789		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1789		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	39	36	249	22	171	9	479	282	143	380	15
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	102	0	249	22	171	9	479	282	143	394	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.8		16.8	16.8	91.0	6.1	27.7	91.0	11.7	33.3	
Effective Green, g (s)		10.8		16.8	16.8	91.0	6.1	27.7	91.0	11.7	33.3	
Actuated g/C Ratio		0.12		0.18	0.18	1.00	0.07	0.30	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		212		326	350	1615	120	572	1583	227	678	
v/s Ratio Prot		c0.06		c0.14	0.01		0.00	c0.25		c0.08	c0.21	
v/s Ratio Perm						0.11			0.18			
v/c Ratio		0.48		0.76	0.06	0.11	0.07	0.84	0.18	0.63	0.58	
Uniform Delay, d1		37.5		35.2	30.6	0.0	39.8	29.5	0.0	37.6	23.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.7		10.2	0.1	0.1	0.3	11.4	0.2	5.4	2.0	
Delay (s)		39.2		45.4	30.7	0.1	40.1	41.0	0.2	43.0	25.2	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		39.2			27.1			26.1			29.9	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			28.3		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			91.0		Sum of lost time (s)					24.0		
Intersection Capacity Utilization			66.7%		ICU Level of Service					C		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Future Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	-	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	50	277	24	0	273	34	100	0	0	15	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	301	0	0	703	696	289	662	674	273
Stage 1	-	-	-	-	-	-	389	389	-	273	273	-
Stage 2	-	-	-	-	-	-	314	307	-	389	401	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1231	-	-	1260	-	-	352	365	750	374	376	756
Stage 1	-	-	-	-	-	-	635	608	-	731	684	-
Stage 2	-	-	-	-	-	-	697	661	-	633	601	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1231	-	-	1260	-	-	320	350	750	362	361	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	350	-	362	361	-
Stage 1	-	-	-	-	-	-	609	583	-	701	684	-
Stage 2	-	-	-	-	-	-	654	661	-	607	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	21.3	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	320	1231	-	-	1260	-	-	597
HCM Lane V/C Ratio	0.313	0.041	-	-	-	-	-	0.104
HCM Control Delay (s)	21.3	8	-	-	0	-	-	11.7
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	30	32	248	33	45
Future Vol, veh/h	240	30	32	248	33	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	261	33	35	270	36	49

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	294
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1268
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1268
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	576	-	-	1268	-
HCM Lane V/C Ratio	0.147	-	-	0.027	-
HCM Control Delay (s)	12.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Build 2026 Conditions
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	201	166	123	124	211	232	200	162	180
Average Queue (ft)	113	73	64	40	97	111	126	59	94
95th Queue (ft)	179	148	105	90	187	204	187	144	156
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	B14
Directions Served	T	T	R	L	L	T	T	L	L	R	T
Maximum Queue (ft)	408	375	50	166	182	128	111	269	320	179	1
Average Queue (ft)	223	152	3	91	114	59	61	142	185	32	0
95th Queue (ft)	366	315	61	141	158	103	98	235	282	123	1
Link Distance (ft)	542	542				601	601		404		227
Upstream Blk Time (%)	0	0							0		
Queuing Penalty (veh)	2	1							0		
Storage Bay Dist (ft)			500	265	265			435		310	
Storage Blk Time (%)		1	0	0	0	0			0	0	
Queuing Penalty (veh)		1	0	0	0	0			2	0	

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	B24	WB	SB	SB
Directions Served	L	T	T		TR	L	R
Maximum Queue (ft)	200	362	600	482	38	120	350
Average Queue (ft)	152	142	126	53	4	30	308
95th Queue (ft)	225	398	472	302	22	104	414
Link Distance (ft)		284	601	601	1220		330
Upstream Blk Time (%)		11	1	1			36
Queuing Penalty (veh)		112	3	3			151
Storage Bay Dist (ft)	200					120	
Storage Blk Time (%)	7	10				0	91
Queuing Penalty (veh)	43	41				0	8

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	120	9	21	93	339
Average Queue (ft)	51	0	3	38	291
95th Queue (ft)	92	6	15	75	433
Link Distance (ft)				537	324
Upstream Blk Time (%)					63
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	144	240	64	164	374	174	221	300
Average Queue (ft)	66	137	17	20	239	14	89	140
95th Queue (ft)	119	218	50	126	373	124	169	246
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				0	4	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	4		0	1
Queuing Penalty (veh)				2	0		0	1

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	WB	NB	SB
Directions Served	L	LT	R	LTR	LTR
Maximum Queue (ft)	43	347	50	294	379
Average Queue (ft)	10	81	14	178	134
95th Queue (ft)	34	273	49	353	357
Link Distance (ft)		600		269	529
Upstream Blk Time (%)		0		42	2
Queuing Penalty (veh)		1		0	0
Storage Bay Dist (ft)	120		50		
Storage Blk Time (%)		25	0		
Queuing Penalty (veh)		8	1		

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	68	78
Average Queue (ft)	0	11	37
95th Queue (ft)	2	42	65
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Bend

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	14	14
Average Queue (ft)	1	1
95th Queue (ft)	15	15
Link Distance (ft)	404	404
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB	SB
Directions Served	T	
Maximum Queue (ft)	172	36
Average Queue (ft)	10	1
95th Queue (ft)	71	33
Link Distance (ft)	386	386
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 383

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions Add RT

Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	629	385	80	488	224	226	111
v/c Ratio	0.50	0.24	0.20	0.26	0.56	0.56	0.24
Control Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Length 50th (ft)	97	0	14	42	76	77	0
Queue Length 95th (ft)	172	0	39	83	167	168	31
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2151	1615	775	3019	667	669	685
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.24	0.10	0.16	0.34	0.34	0.16
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Future Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	629	385	80	488	0	0	0	0	449	1	111
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	629	385	80	488	0	0	0	0	224	226	26
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Effective Green, g (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Actuated g/C Ratio		0.36	1.00	0.09	0.56					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1235	1615	298	1953					396	398	363
v/s Ratio Prot		c0.18		0.02	0.14					0.13	c0.14	0.02
v/s Ratio Perm			c0.24									
v/c Ratio		0.51	0.24	0.27	0.25					0.57	0.57	0.07
Uniform Delay, d1		15.3	0.0	25.6	6.7					20.2	20.3	17.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.5	0.1					1.9	1.9	0.1
Delay (s)		16.0	0.3	26.1	6.9					22.1	22.1	17.9
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.1			9.6			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.9		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.4		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			47.5%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	955	122	134	335	233	170
v/c Ratio	0.62	0.08	0.28	0.16	0.43	0.12
Control Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Length 50th (ft)	143	0	24	21	41	0
Queue Length 95th (ft)	234	0	55	40	83	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2169	1615	852	2977	814	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.16	0.11	0.29	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	879	112	123	308	214	156
Future Volume (vph)	879	112	123	308	214	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	955	122	134	335	233	170
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	955	122	134	335	233	170
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	26.2	60.8	6.2	38.9	10.4	60.8
Effective Green, g (s)	26.2	60.8	6.2	38.9	10.4	60.8
Actuated g/C Ratio	0.43	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1525	1615	357	2220	532	1450
v/s Ratio Prot	c0.27		c0.04	0.10	c0.07	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.63	0.08	0.38	0.15	0.44	0.12
Uniform Delay, d1	13.5	0.0	25.5	4.4	22.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.6	0.1	26.2	4.4	23.2	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.0			10.6	13.5	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			60.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Add RT AM**
(Site Folder: General)]

JCC Municipal Complex
Build 2026 - Add RT
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]						[Veh]	[Dist]				
	veh/h	%	veh/h	v/c	%	sec			ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	125	0.0	1044	0.120	100	4.5	LOS A	0.6	15.7	Full	1600	0.0	0.0
Lane 2 ^d	145	0.0	1211	0.120	100	4.0	LOS A	0.6	16.2	Short	200	0.0	NA
Approach	271	0.0		0.120		4.2	LOS A	0.6	16.2				
North: Longhill Rd (SB)													
Lane 1 ^d	205	4.9	880	0.233	100	6.5	LOS A	1.1	27.7	Full	1600	0.0	0.0
Approach	205	4.9		0.233		6.5	LOS A	1.1	27.7				
West: Longhill Rd (EB)													
Lane 1	561	1.7	1322	0.424	100	6.8	LOS A	2.9	73.7	Full	1600	0.0	0.0
Lane 2 ^d	564	1.0	1331	0.424	100	6.8	LOS A	2.9	73.4	Full	1600	0.0	0.0
Approach	1125	1.3		0.424		6.8	LOS A	2.9	73.7				
Intersection	1601	1.6		0.424		6.3	LOS A	2.9	73.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	125	-	125	0.0	1044	0.120	100	NA	NA	
Lane 2	142	3	145	0.0	1211	0.120	100	0.0	1	
Approach	267	3	271	0.0		0.120				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	5	200	205	4.9	880	0.233	100	NA	NA	
Approach	5	200	205	4.9		0.233				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	390	170	561	1.7	1322	0.424	100	NA	NA
Lane 2	-	564	564	1.0	1331	0.424	100	NA	NA
Approach	390	735	1125	1.3		0.424			
Total %HV Deg.Satn (v/c)									
Intersection	1601	1.6			0.424				

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

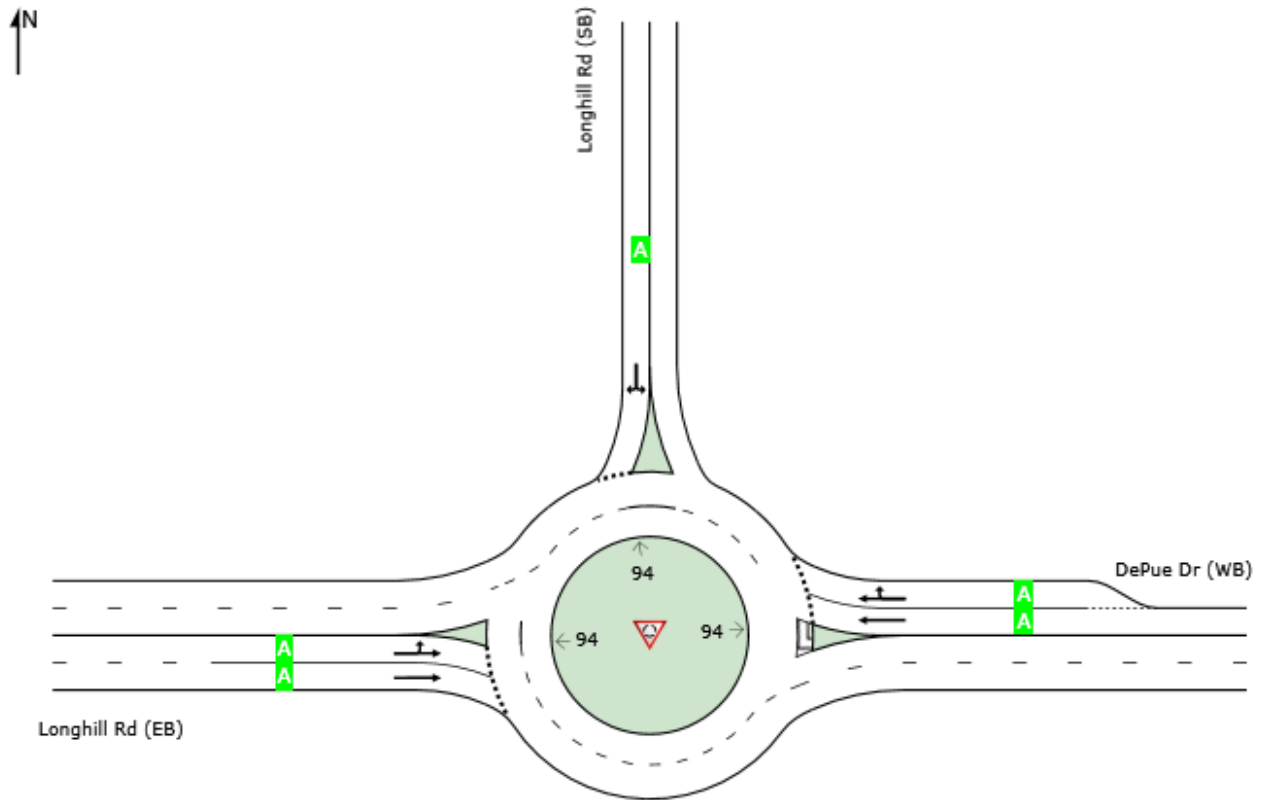
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Add RT AM**
(Site Folder: General)]

JCC Municipal Complex
Build 2026 - Add RT
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2026 Conditions Add RT

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	127	503	51	4	193	88	17	1	0	38	1	40
Future Vol, veh/h	127	503	51	4	193	88	17	1	0	38	1	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	200
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	138	547	55	4	210	96	18	1	0	41	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	306	0	0	602	0	0	1139	1165	575	1069	1096	210
Stage 1	-	-	-	-	-	-	851	851	-	218	218	-
Stage 2	-	-	-	-	-	-	288	314	-	851	878	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1266	-	-	975	-	-	178	194	518	201	213	825
Stage 1	-	-	-	-	-	-	355	376	-	789	723	-
Stage 2	-	-	-	-	-	-	720	656	-	358	366	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1266	-	-	975	-	-	153	172	518	183	189	825
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	172	-	183	189	-
Stage 1	-	-	-	-	-	-	316	335	-	703	720	-
Stage 2	-	-	-	-	-	-	678	653	-	318	326	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.1	31.8	19.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	154	1266	-	-	975	-	-	183	825
HCM Lane V/C Ratio	0.127	0.109	-	-	0.004	-	-	0.232	0.053
HCM Control Delay (s)	31.8	8.2	-	-	8.7	-	-	30.5	9.6
HCM Lane LOS	D	A	-	-	A	-	-	D	A
HCM 95th %tile Q(veh)	0.4	0.4	-	-	0	-	-	0.9	0.2

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions Add RT

Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	57	179	64	58	29	242	184	146	443
v/c Ratio	0.23	0.51	0.17	0.04	0.16	0.44	0.12	0.48	0.55
Control Delay	27.7	34.7	29.0	0.0	37.4	27.5	0.2	37.1	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	34.7	29.0	0.0	37.4	27.5	0.2	37.1	22.4
Queue Length 50th (ft)	16	75	25	0	12	97	0	61	130
Queue Length 95th (ft)	56	157	65	0	43	192	0	140	#340
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	587	560	607	1553	397	909	1553	416	950
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.32	0.11	0.04	0.07	0.27	0.12	0.35	0.47

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions Add RT
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	25	18	165	59	53	27	223	169	134	375	32
Future Volume (vph)	9	25	18	165	59	53	27	223	169	134	375	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	27	20	179	64	58	29	242	184	146	408	35
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	38	0	179	64	58	29	242	184	146	441	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.1		13.4	13.4	73.0	2.6	22.6	73.0	8.9	28.9	
Effective Green, g (s)		4.1		13.4	13.4	73.0	2.6	22.6	73.0	8.9	28.9	
Actuated g/C Ratio		0.06		0.18	0.18	1.00	0.04	0.31	1.00	0.12	0.40	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		100		321	348	1553	60	576	1553	215	736	
v/s Ratio Prot		c0.02		c0.10	0.03		0.02	0.13		c0.08	c0.24	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.56	0.18	0.04	0.48	0.42	0.12	0.68	0.60	
Uniform Delay, d1		33.2		27.1	25.2	0.0	34.5	20.0	0.0	30.7	17.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		2.1	0.3	0.0	6.0	1.0	0.2	8.2	2.0	
Delay (s)		35.6		29.2	25.4	0.0	40.6	21.0	0.2	38.9	19.4	
Level of Service		D		C	C	A	D	C	A	D	B	
Approach Delay (s)		35.6			22.8			13.8			24.3	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			73.0			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			56.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions Add RT
Timing Plan: AM Peak Hour

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	22	257	83	0	147	7	11	0	0	14	0	32
Future Vol, veh/h	22	257	83	0	147	7	11	0	0	14	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	24	279	90	0	160	8	12	0	0	15	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	369	0	0	509	495	279	532	577	160
Stage 1	-	-	-	-	-	-	327	327	-	160	160	-
Stage 2	-	-	-	-	-	-	182	168	-	372	417	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1318	-	-	1190	-	-	475	476	760	461	427	872
Stage 1	-	-	-	-	-	-	686	648	-	847	766	-
Stage 2	-	-	-	-	-	-	820	759	-	653	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1318	-	-	1190	-	-	450	467	760	455	419	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	467	-	455	419	-
Stage 1	-	-	-	-	-	-	674	636	-	832	766	-
Stage 2	-	-	-	-	-	-	787	759	-	641	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.2	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	1318	-	-	1190	-	-	682
HCM Lane V/C Ratio	0.027	0.018	-	-	-	-	-	0.073
HCM Control Delay (s)	13.2	7.8	-	-	0	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	241	30	38	142	12	22
Future Vol, veh/h	241	30	38	142	12	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	262	33	41	154	13	24

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	295	0	515	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1266	-	511	765
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1266	-	493	765
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.7	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	640	-	-	1266	-
HCM Lane V/C Ratio	0.058	-	-	0.033	-
HCM Control Delay (s)	11	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	179	174	16	81	70	121	129	214	241	130
Average Queue (ft)	99	75	1	33	17	44	52	68	129	45
95th Queue (ft)	160	143	14	66	52	95	106	163	209	96
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)									0	0
Queuing Penalty (veh)									0	0

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	212	205	54	84	82	67	124	161	90
Average Queue (ft)	126	115	20	49	30	22	39	84	26
95th Queue (ft)	193	180	50	78	65	53	99	136	68
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	B13	WB	WB	NB	SB	SB
Directions Served	L	T	L	R	LTR	LT	R
Maximum Queue (ft)	60	60	23	17	49	54	59
Average Queue (ft)	20	2	2	2	16	21	18
95th Queue (ft)	47	29	14	11	44	45	41
Link Distance (ft)		404			537	324	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	240		240	265			200
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	93	171	84	66	152	182	257
Average Queue (ft)	35	82	35	17	65	72	105
95th Queue (ft)	72	139	71	46	127	136	200
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	NB	SB
Directions Served	L	R	LTR	LTR
Maximum Queue (ft)	42	6	30	54
Average Queue (ft)	4	0	8	20
95th Queue (ft)	23	5	28	44
Link Distance (ft)			260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	50		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	62	50
Average Queue (ft)	0	9	22
95th Queue (ft)	2	39	48
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	542	374	195	1176	148	148	230
v/c Ratio	0.49	0.23	0.37	0.56	0.44	0.44	0.55
Control Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Length 50th (ft)	77	0	30	112	46	46	31
Queue Length 95th (ft)	150	0	73	220	113	113	103
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2079	1615	778	3189	645	645	684
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.23	0.25	0.37	0.23	0.23	0.34
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Future Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	542	374	195	1176	0	0	0	0	296	0	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	542	374	195	1176	0	0	0	0	148	148	131
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Effective Green, g (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1124	1615	527	2101					338	338	318
v/s Ratio Prot		0.15		0.06	c0.33					c0.09	0.09	0.08
v/s Ratio Perm			0.23									
v/c Ratio		0.48	0.23	0.37	0.56					0.44	0.44	0.41
Uniform Delay, d1		16.0	0.0	22.3	7.2					20.5	20.5	20.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.4	0.6					0.9	0.9	0.9
Delay (s)		16.7	0.3	22.7	7.8					21.4	21.4	21.2
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.0			9.9			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			58.6		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			53.0%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	729	108	436	860	511	188
v/c Ratio	0.60	0.07	0.68	0.39	0.76	0.13
Control Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Length 50th (ft)	133	0	89	83	107	0
Queue Length 95th (ft)	184	0	145	113	#194	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1846	1538	711	2875	699	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.07	0.61	0.30	0.73	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	671	99	401	791	470	173
Future Volume (vph)	671	99	401	791	470	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	108	436	860	511	188
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	729	108	436	860	511	188
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	22.6	67.0	12.4	41.5	14.0	67.0
Effective Green, g (s)	22.6	67.0	12.4	41.5	14.0	67.0
Actuated g/C Ratio	0.34	1.00	0.19	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1217	1538	648	2192	670	1479
v/s Ratio Prot	c0.20		c0.12	0.24	c0.16	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.60	0.07	0.67	0.39	0.76	0.13
Uniform Delay, d1	18.4	0.0	25.4	6.4	24.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	2.8	0.2	5.1	0.2
Delay (s)	19.6	0.1	28.2	6.7	30.1	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	17.1			13.9	22.0	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			67.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Add RT PM (Site Folder: General)]**

JCC Municipal Complex
Build 2026 - Add RT
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %						[Veh	Dist]				
	veh/h	%	veh/h	v/c	%	sec			ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	411	0.0	1081	0.381	100	7.3	LOS A	2.4	60.8	Full	1600	0.0	0.0
Lane 2 ^d	475	0.0	1247	0.381	100	6.6	LOS A	2.5	62.5	Short	200	0.0	NA
Approach	886	0.0		0.381		6.9	LOS A	2.5	62.5				
North: Longhill Rd (SB)													
Lane 1 ^d	414	3.2	603	0.686	100	21.5	LOS C	6.1	157.6	Full	1600	0.0	0.0
Approach	414	3.2		0.686		21.5	LOS C	6.1	157.6				
West: Longhill Rd (EB)													
Lane 1	454	2.0	1310	0.346	100	5.9	LOS A	2.4	61.0	Full	1600	0.0	0.0
Lane 2 ^d	454	2.0	1310	0.346	100	5.9	LOS A	2.4	61.0	Full	1600	0.0	0.0
Approach	908	2.0		0.346		5.9	LOS A	2.4	61.0				
Intersection	2208	1.4		0.686		9.2	LOS A	6.1	157.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E					Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	W	N			veh/h	v/c	%	%	%	No.
Lane 1	411	-	411	0.0	1081	0.381	100	NA	NA	
Lane 2	466	9	475	0.0	1247	0.381	100	0.0	1	
Approach	877	9	886	0.0		0.381				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N					Cap.	Satn	Util.	SL	Ov.	Lane
To Exit:	E	W			veh/h	v/c	%	%	%	No.
Lane 1	10	404	414	3.2	603	0.686	100	NA	NA	
Approach	10	404	414	3.2		0.686				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	338	116	454	2.0	1310	0.346	100	NA	NA
Lane 2	-	454	454	2.0	1310	0.346	100	NA	NA
Approach	338	570	908	2.0		0.346			
Total %HV Deg.Satn (v/c)									
Intersection	2208	1.4		0.686					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

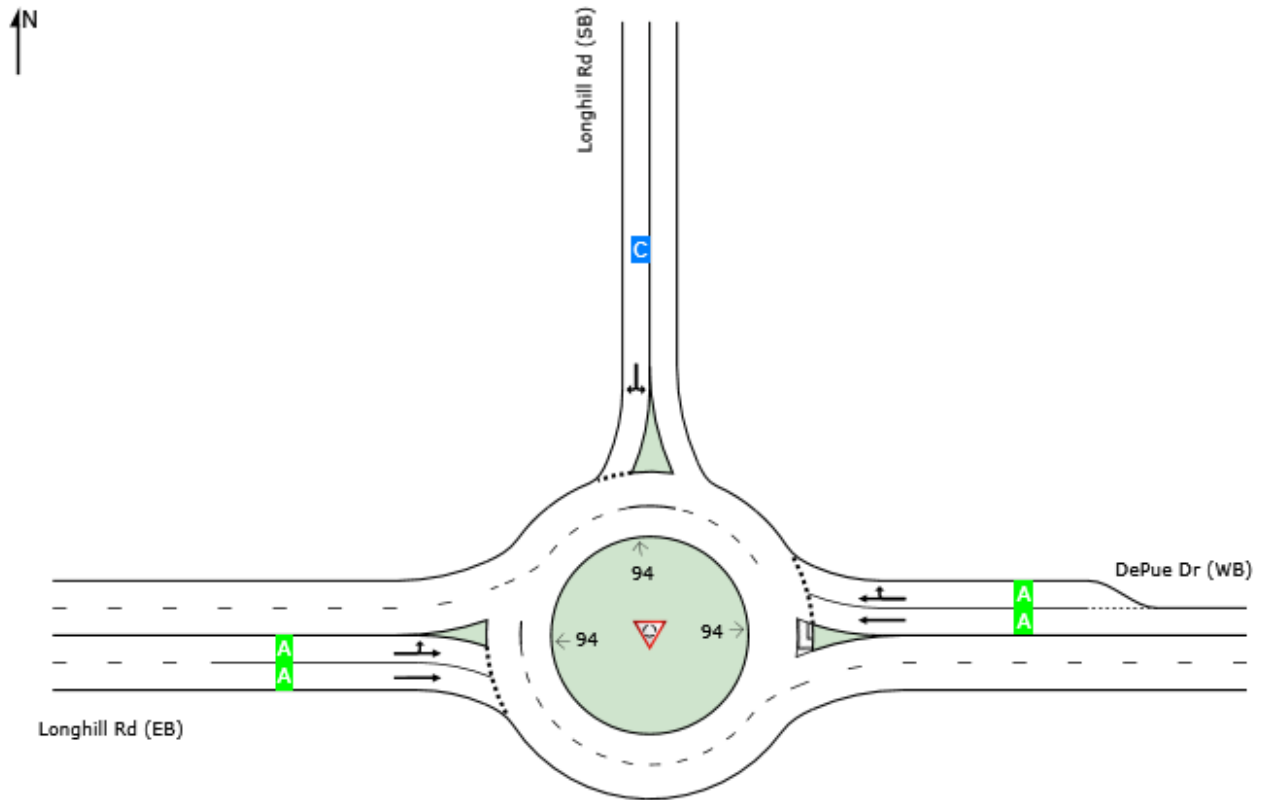
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Add RT PM**
(Site Folder: General)]

JCC Municipal Complex
Build 2026 - Add RT
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	C	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh	24.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	122	401	17	2	594	69	45	2	6	109	1	185
Future Vol, veh/h	122	401	17	2	594	69	45	2	6	109	1	185
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	200
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	133	436	18	2	646	75	49	2	7	118	1	201

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	721	0	0	454	0	0	1500	1436	445	1366	1370	646
Stage 1	-	-	-	-	-	-	711	711	-	650	650	-
Stage 2	-	-	-	-	-	-	789	725	-	716	720	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	890	-	-	1107	-	-	100	133	613	126	146	475
Stage 1	-	-	-	-	-	-	424	436	-	461	465	-
Stage 2	-	-	-	-	-	-	384	430	-	424	432	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	890	-	-	1107	-	-	51	113	613	~ 109	124	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	51	113	-	~ 109	124	-
Stage 1	-	-	-	-	-	-	361	371	-	392	464	-
Stage 2	-	-	-	-	-	-	221	429	-	355	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	232.1	81.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	58	890	-	-	1107	-	-	109	475
HCM Lane V/C Ratio	0.993	0.149	-	-	0.002	-	-	1.097	0.423
HCM Control Delay (s)	232.1	9.8	-	-	8.3	-	-	189.4	18
HCM Lane LOS	F	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	4.6	0.5	-	-	0	-	-	7.4	2.1

Notes

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

	→	↘	←	↖	↙	↑	↗	↘	↓
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	118	249	22	171	9	479	282	143	395
v/c Ratio	0.52	0.77	0.06	0.11	0.07	0.84	0.18	0.63	0.58
Control Delay	42.0	53.4	33.5	0.1	45.1	46.1	0.2	52.6	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	53.4	33.5	0.1	45.1	46.1	0.2	52.6	28.3
Queue Length 50th (ft)	58	142	11	0	5	271	0	83	186
Queue Length 95th (ft)	114	#269	34	0	21	#482	0	153	308
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	391	373	400	1615	280	605	1583	275	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.67	0.06	0.11	0.03	0.79	0.18	0.52	0.56

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	37	35	239	21	164	9	460	271	137	365	14
Future Volume (vph)	41	37	35	239	21	164	9	460	271	137	365	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1789		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1789		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	39	36	249	22	171	9	479	282	143	380	15
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	102	0	249	22	171	9	479	282	143	394	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.8		16.8	16.8	91.0	6.1	27.7	91.0	11.7	33.3	
Effective Green, g (s)		10.8		16.8	16.8	91.0	6.1	27.7	91.0	11.7	33.3	
Actuated g/C Ratio		0.12		0.18	0.18	1.00	0.07	0.30	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		212		326	350	1615	120	572	1583	227	678	
v/s Ratio Prot		c0.06		c0.14	0.01		0.00	c0.25		c0.08	c0.21	
v/s Ratio Perm						0.11			0.18			
v/c Ratio		0.48		0.76	0.06	0.11	0.07	0.84	0.18	0.63	0.58	
Uniform Delay, d1		37.5		35.2	30.6	0.0	39.8	29.5	0.0	37.6	23.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.7		10.2	0.1	0.1	0.3	11.4	0.2	5.4	2.0	
Delay (s)		39.2		45.4	30.7	0.1	40.1	41.0	0.2	43.0	25.2	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		39.2			27.1			26.1			29.9	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			28.3		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			91.0		Sum of lost time (s)					24.0		
Intersection Capacity Utilization			66.7%		ICU Level of Service					C		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations												
Traffic Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Future Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	50	277	24	0	273	34	100	0	0	15	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	301	0	0	691	684	277	662	674	273
Stage 1	-	-	-	-	-	-	377	377	-	273	273	-
Stage 2	-	-	-	-	-	-	314	307	-	389	401	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1231	-	-	1260	-	-	359	371	762	374	376	756
Stage 1	-	-	-	-	-	-	644	616	-	731	684	-
Stage 2	-	-	-	-	-	-	697	661	-	633	601	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1231	-	-	1260	-	-	326	356	762	362	361	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	356	-	362	361	-
Stage 1	-	-	-	-	-	-	618	591	-	701	684	-
Stage 2	-	-	-	-	-	-	654	661	-	607	576	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	1.1		0		20.9		11.7
HCM LOS					C		B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	1231	-	-	1260	-	-	597
HCM Lane V/C Ratio	0.307	0.041	-	-	-	-	-	0.104
HCM Control Delay (s)	20.9	8	-	-	0	-	-	11.7
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions Add RT
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	30	31	248	33	45
Future Vol, veh/h	240	30	31	248	33	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	261	33	34	270	36	49

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	294
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1268
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1268
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	577	-	-	1268	-
HCM Lane V/C Ratio	0.147	-	-	0.027	-
HCM Control Delay (s)	12.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	174	148	10	125	157	215	216	122	142	188
Average Queue (ft)	96	65	0	63	39	100	99	59	69	97
95th Queue (ft)	153	122	10	107	98	181	182	104	117	164
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	T	L	L	R
Maximum Queue (ft)	214	195	157	172	133	117	37	24	237	277	155
Average Queue (ft)	124	100	86	110	69	60	1	1	129	171	28
95th Queue (ft)	188	165	137	155	117	99	20	17	211	249	100
Link Distance (ft)	542	542			601	601	224	224		404	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			265	265					435		310
Storage Blk Time (%)										0	0
Queuing Penalty (veh)										0	0

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	R	LTR	LT	R
Maximum Queue (ft)	69	1	15	19	82	158	155
Average Queue (ft)	29	0	1	1	34	63	52
95th Queue (ft)	58	1	7	10	66	125	104
Link Distance (ft)		683			537	324	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	240		240	265			200
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	145	251	55	79	350	36	199	257
Average Queue (ft)	66	135	14	8	203	2	90	135
95th Queue (ft)	123	218	43	66	324	48	163	221
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				0	1	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	1		0	0
Queuing Penalty (veh)				0	0		0	1

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	LT	R	LTR	LTR
Maximum Queue (ft)	40	2	1	3	73	65
Average Queue (ft)	10	0	0	0	36	25
95th Queue (ft)	33	2	1	3	62	50
Link Distance (ft)		265	600		260	529
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	120			50		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	55	70
Average Queue (ft)	10	33
95th Queue (ft)	40	59
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 2

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI

Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	629	385	80	488	224	226	111
v/c Ratio	0.50	0.24	0.20	0.26	0.56	0.56	0.24
Control Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Length 50th (ft)	97	0	14	42	76	77	0
Queue Length 95th (ft)	172	0	39	83	167	168	31
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2151	1615	775	3019	667	669	685
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.24	0.10	0.16	0.34	0.34	0.16
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↗↗	↑↑					↗	↗	↗
Traffic Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Future Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	629	385	80	488	0	0	0	0	449	1	111
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	629	385	80	488	0	0	0	0	224	226	26
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Effective Green, g (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Actuated g/C Ratio		0.36	1.00	0.09	0.56					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1235	1615	298	1953					396	398	363
v/s Ratio Prot		c0.18		0.02	0.14					0.13	c0.14	0.02
v/s Ratio Perm			c0.24									
v/c Ratio		0.51	0.24	0.27	0.25					0.57	0.57	0.07
Uniform Delay, d1		15.3	0.0	25.6	6.7					20.2	20.3	17.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.5	0.1					1.9	1.9	0.1
Delay (s)		16.0	0.3	26.1	6.9					22.1	22.1	17.9
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.1			9.6			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.9			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.4			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			47.5%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	955	122	134	335	233	170
v/c Ratio	0.62	0.08	0.28	0.16	0.43	0.12
Control Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Length 50th (ft)	143	0	24	21	41	0
Queue Length 95th (ft)	234	0	55	40	83	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2169	1615	852	2977	814	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.16	0.11	0.29	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	879	112	123	308	214	156
Future Volume (vph)	879	112	123	308	214	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	955	122	134	335	233	170
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	955	122	134	335	233	170
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	26.2	60.8	6.2	38.9	10.4	60.8
Effective Green, g (s)	26.2	60.8	6.2	38.9	10.4	60.8
Actuated g/C Ratio	0.43	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1525	1615	357	2220	532	1450
v/s Ratio Prot	c0.27		c0.04	0.10	c0.07	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.63	0.08	0.38	0.15	0.44	0.12
Uniform Delay, d1	13.5	0.0	25.5	4.4	22.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.6	0.1	26.2	4.4	23.2	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.0			10.6	13.5	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			60.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - RIROLI AM (Site Folder: General)]**

JCC Municipal Complex
Build 2026 - RIROLI
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %						[Veh	Dist]				
	veh/h	%	veh/h	v/c	%	sec			ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	145	0.0	1031	0.141	100	4.8	LOS A	0.8	19.5	Full	1600	0.0	0.0
Lane 2 ^d	168	0.0	1196	0.141	100	4.2	LOS A	0.8	20.1	Short	200	0.0	NA
Approach	313	0.0		0.141		4.5	LOS A	0.8	20.1				
North: Longhill Rd (SB)													
Lane 1 ^d	205	4.9	853	0.241	100	6.8	LOS A	1.1	28.6	Full	1600	0.0	0.0
Approach	205	4.9		0.241		6.8	LOS A	1.1	28.6				
West: Longhill Rd (EB)													
Lane 1	560	1.7	1275	0.439	100	7.2	LOS A	3.0	76.5	Full	1600	0.0	0.0
Lane 2 ^d	565	1.0	1285	0.439	100	7.2	LOS A	3.0	76.1	Full	1600	0.0	0.0
Approach	1125	1.3		0.439		7.2	LOS A	3.0	76.5				
Intersection	1643	1.5		0.439		6.6	LOS A	3.0	76.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)											
East: DePue Dr (WB)											
Mov.	U	T1	R2	Total	%HV						
From E						Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	E	W	N			veh/h	satn	Util.	SL	Ov.	Lane
							v/c	%	%		No.
Lane 1	42	103	-	145	0.0	1031	0.141	100	NA	NA	
Lane 2	-	165	3	168	0.0	1196	0.141	100	0.0	1	
Approach	42	267	3	313	0.0		0.141				
North: Longhill Rd (SB)											
Mov.	L2	R2	Total	%HV							
From N						Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	E	W				veh/h	satn	Util.	SL	Ov.	Lane
							v/c	%	%		No.
Lane 1	5	200	205	4.9		853	0.241	100	NA	NA	
Approach	5	200	205	4.9			0.241				
West: Longhill Rd (EB)											
Mov.	L2	T1	Total	%HV			Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	390	170	560	1.7	1275	0.439	100	NA	NA
Lane 2	-	565	565	1.0	1285	0.439	100	NA	NA
Approach	390	735	1125	1.3		0.439			
Total %HV Deg.Satn (v/c)									
Intersection	1643	1.5		0.439					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

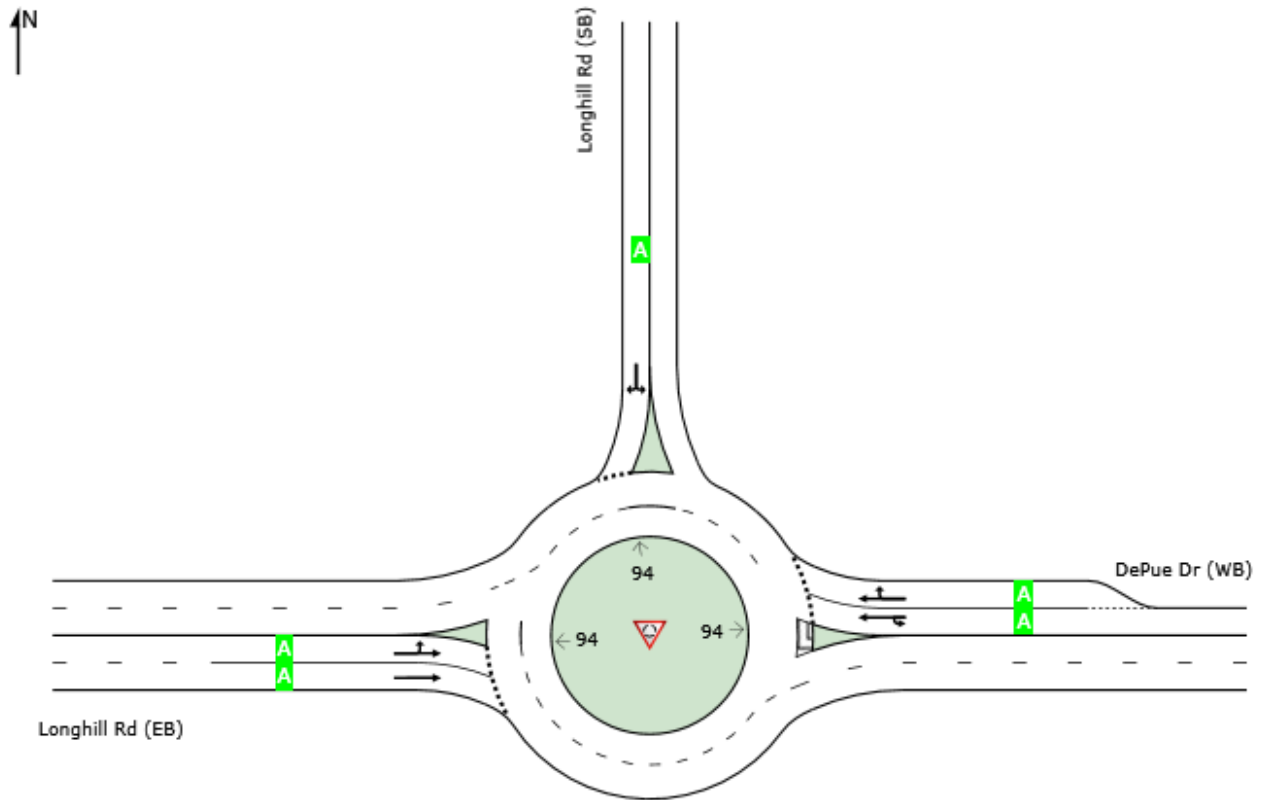
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - RIROLI AM**
(Site Folder: General)]

JCC Municipal Complex
Build 2026 - RIROLI
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations												
Traffic Vol, veh/h	127	541	52	4	210	89	0	0	0	0	0	79
Future Vol, veh/h	127	541	52	4	210	89	0	0	0	0	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	138	588	57	4	228	97	0	0	0	0	0	86

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	325	0	0	645	0	0	1221	1226	617	1129	1157	228
Stage 1	-	-	-	-	-	-	893	893	-	236	236	-
Stage 2	-	-	-	-	-	-	328	333	-	893	921	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1246	-	-	940	-	-	157	179	490	183	196	806
Stage 1	-	-	-	-	-	-	336	360	-	772	710	-
Stage 2	-	-	-	-	-	-	685	644	-	339	349	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1246	-	-	940	-	-	128	158	490	167	173	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	128	158	-	167	173	-
Stage 1	-	-	-	-	-	-	299	320	-	686	707	-
Stage 2	-	-	-	-	-	-	609	641	-	301	310	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	1.5		0.1		0		10
HCM LOS					A		B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1246	-	-	940	-	-	806
HCM Lane V/C Ratio	-	0.111	-	-	0.005	-	-	0.107
HCM Control Delay (s)	0	8.2	-	-	8.8	-	-	10
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	0.4

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	76	179	64	58	29	242	184	146	443
v/c Ratio	0.31	0.54	0.18	0.04	0.16	0.46	0.12	0.51	0.59
Control Delay	32.6	37.3	30.4	0.0	38.7	29.5	0.2	39.7	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	37.3	30.4	0.0	38.7	29.5	0.2	39.7	24.6
Queue Length 50th (ft)	27	77	25	0	13	100	0	63	135
Queue Length 95th (ft)	76	162	67	0	43	196	0	143	#354
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	554	530	575	1553	376	860	1553	394	902
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.34	0.11	0.04	0.08	0.28	0.12	0.37	0.49

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	25	18	165	59	53	27	223	169	134	375	32
Future Volume (vph)	27	25	18	165	59	53	27	223	169	134	375	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1798		1752	1900	1553	1687	1863	1553	1770	1860	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1798		1752	1900	1553	1687	1863	1553	1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	27	20	179	64	58	29	242	184	146	408	35
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	62	0	179	64	58	29	242	184	146	441	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		6.5		13.5	13.5	75.4	2.7	22.6	75.4	8.8	28.7	
Effective Green, g (s)		6.5		13.5	13.5	75.4	2.7	22.6	75.4	8.8	28.7	
Actuated g/C Ratio		0.09		0.18	0.18	1.00	0.04	0.30	1.00	0.12	0.38	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		155		313	340	1553	60	558	1553	206	707	
v/s Ratio Prot		c0.03		c0.10	0.03		0.02	0.13		c0.08	c0.24	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.40		0.57	0.19	0.04	0.48	0.43	0.12	0.71	0.62	
Uniform Delay, d1		32.6		28.3	26.3	0.0	35.7	21.2	0.0	32.1	19.0	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.7		2.5	0.3	0.0	6.0	1.1	0.2	10.6	2.4	
Delay (s)		34.3		30.8	26.6	0.0	41.7	22.4	0.2	42.7	21.4	
Level of Service		C		C	C	A	D	C	A	D	C	
Approach Delay (s)		34.3			24.0			14.6			26.7	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			75.4			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			56.7%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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Lane Configurations												
Traffic Vol, veh/h	22	257	83	0	147	7	11	0	0	14	0	32
Future Vol, veh/h	22	257	83	0	147	7	11	0	0	14	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	24	279	90	0	160	8	12	0	0	15	0	35

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	168	0	0	369	0	0	509	495	279	532	577	160
Stage 1	-	-	-	-	-	-	327	327	-	160	160	-
Stage 2	-	-	-	-	-	-	182	168	-	372	417	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1318	-	-	1190	-	-	475	476	760	461	427	872
Stage 1	-	-	-	-	-	-	686	648	-	847	766	-
Stage 2	-	-	-	-	-	-	820	759	-	653	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1318	-	-	1190	-	-	450	467	760	455	419	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	467	-	455	419	-
Stage 1	-	-	-	-	-	-	674	636	-	832	766	-
Stage 2	-	-	-	-	-	-	787	759	-	641	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.2	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	1318	-	-	1190	-	-	682
HCM Lane V/C Ratio	0.027	0.018	-	-	-	-	-	0.073
HCM Control Delay (s)	13.2	7.8	-	-	0	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	241	30	38	142	12	22
Future Vol, veh/h	241	30	38	142	12	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	262	33	41	154	13	24

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	295	0	515	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1266	-	511	765
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1266	-	493	765
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.7	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	640	-	-	1266	-
HCM Lane V/C Ratio	0.058	-	-	0.033	-
HCM Control Delay (s)	11	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	182	164	3	77	51	106	115	181	232	125
Average Queue (ft)	100	75	0	30	10	41	51	73	131	48
95th Queue (ft)	161	134	3	63	37	87	98	164	203	98
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	T	L	L	R
Maximum Queue (ft)	226	219	66	90	79	67	8	8	120	158	96
Average Queue (ft)	126	114	20	50	32	23	0	0	40	84	30
95th Queue (ft)	189	180	54	78	68	56	8	8	101	135	72
Link Distance (ft)	542	542			601	601	224	224		404	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			265	265					435		310
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	B13	B13	WB	WB	SB
Directions Served	L	T		L	R	LTR
Maximum Queue (ft)	62	78	6	20	24	68
Average Queue (ft)	23	5	0	1	2	29
95th Queue (ft)	52	33	5	11	11	54
Link Distance (ft)		366	366			324
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	240			240	265	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	93	165	80	64	188	193	247
Average Queue (ft)	43	83	32	17	73	73	108
95th Queue (ft)	78	145	69	48	146	141	197
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	EB	WB	NB	SB
Directions Served	L	R	R	LTR	LTR
Maximum Queue (ft)	38	8	3	33	54
Average Queue (ft)	3	0	0	9	22
95th Queue (ft)	19	8	3	31	44
Link Distance (ft)				260	529
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	120	150	50		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	51	56
Average Queue (ft)	0	9	23
95th Queue (ft)	2	34	51
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	542	374	195	1176	148	148	230
v/c Ratio	0.49	0.23	0.37	0.56	0.44	0.44	0.55
Control Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Length 50th (ft)	77	0	30	112	46	46	31
Queue Length 95th (ft)	150	0	73	220	113	113	103
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2079	1615	778	3189	645	645	684
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.23	0.25	0.37	0.23	0.23	0.34
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  	 	  	  					 	 	  
Traffic Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Future Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	542	374	195	1176	0	0	0	0	296	0	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	542	374	195	1176	0	0	0	0	148	148	131
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Effective Green, g (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1124	1615	527	2101					338	338	318
v/s Ratio Prot		0.15		0.06	c0.33					c0.09	0.09	0.08
v/s Ratio Perm			0.23									
v/c Ratio		0.48	0.23	0.37	0.56					0.44	0.44	0.41
Uniform Delay, d1		16.0	0.0	22.3	7.2					20.5	20.5	20.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.4	0.6					0.9	0.9	0.9
Delay (s)		16.7	0.3	22.7	7.8					21.4	21.4	21.2
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.0			9.9			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.1		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			58.6		Sum of lost time (s)				19.0			
Intersection Capacity Utilization			53.0%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	729	108	436	860	511	188
v/c Ratio	0.60	0.07	0.68	0.39	0.76	0.13
Control Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Length 50th (ft)	133	0	89	83	107	0
Queue Length 95th (ft)	184	0	145	113	#194	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1846	1538	711	2875	699	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.07	0.61	0.30	0.73	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	671	99	401	791	470	173
Future Volume (vph)	671	99	401	791	470	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	108	436	860	511	188
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	729	108	436	860	511	188
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	22.6	67.0	12.4	41.5	14.0	67.0
Effective Green, g (s)	22.6	67.0	12.4	41.5	14.0	67.0
Actuated g/C Ratio	0.34	1.00	0.19	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1217	1538	648	2192	670	1479
v/s Ratio Prot	c0.20		c0.12	0.24	c0.16	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.60	0.07	0.67	0.39	0.76	0.13
Uniform Delay, d1	18.4	0.0	25.4	6.4	24.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	2.8	0.2	5.1	0.2
Delay (s)	19.6	0.1	28.2	6.7	30.1	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	17.1			13.9	22.0	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			67.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - RIROLI PM (Site Folder: General)]**

JCC Municipal Complex
Build 2026 - RIROLI
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	466	0.0	1055	0.442	100	8.3	LOS A	3.1	78.3	Full	1600	0.0	0.0
Lane 2 ^d	538	0.0	1218	0.442	100	7.5	LOS A	3.2	81.2	Short	200	0.0	NA
Approach	1004	0.0		0.442		7.9	LOS A	3.2	81.2				
North: Longhill Rd (SB)													
Lane 1 ^d	414	3.1	551	0.752	100	27.5	LOS D	7.4	188.7	Full	1600	0.0	0.0
Approach	414	3.1		0.752		27.5	LOS D	7.4	188.7				
West: Longhill Rd (EB)													
Lane 1	453	2.0	1182	0.384	100	6.9	LOS A	2.4	61.4	Full	1600	0.0	0.0
Lane 2 ^d	454	2.0	1183	0.384	100	6.8	LOS A	2.4	61.4	Full	1600	0.0	0.0
Approach	908	2.0		0.384		6.8	LOS A	2.4	61.4				
Intersection	2326	1.3		0.752		11.0	LOS B	7.4	188.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)											
East: DePue Dr (WB)											
Mov.	U	T1	R2	Total	%HV						
From E						Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	E	W	N			veh/h	satn	Util.	SL	Ov.	Lane
							v/c	%	%		No.
Lane 1	118	348	-	466	0.0	1055	0.442	100	NA	NA	
Lane 2	-	530	9	538	0.0	1218	0.442	100	0.0	1	
Approach	118	877	9	1004	0.0		0.442				
North: Longhill Rd (SB)											
Mov.	L2	R2	Total	%HV							
From N						Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	E	W				veh/h	satn	Util.	SL	Ov.	Lane
							v/c	%	%		No.
Lane 1	10	404	414	3.1		551	0.752	100	NA	NA	
Approach	10	404	414	3.1			0.752				
West: Longhill Rd (EB)											
Mov.	L2	T1	Total	%HV			Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	338	116	453	2.0	1182	0.384	100	NA	NA
Lane 2	-	454	454	2.0	1183	0.384	100	NA	NA
Approach	338	570	908	2.0		0.384			
Total %HV Deg.Satn (v/c)									
Intersection	2326	1.3		0.752					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

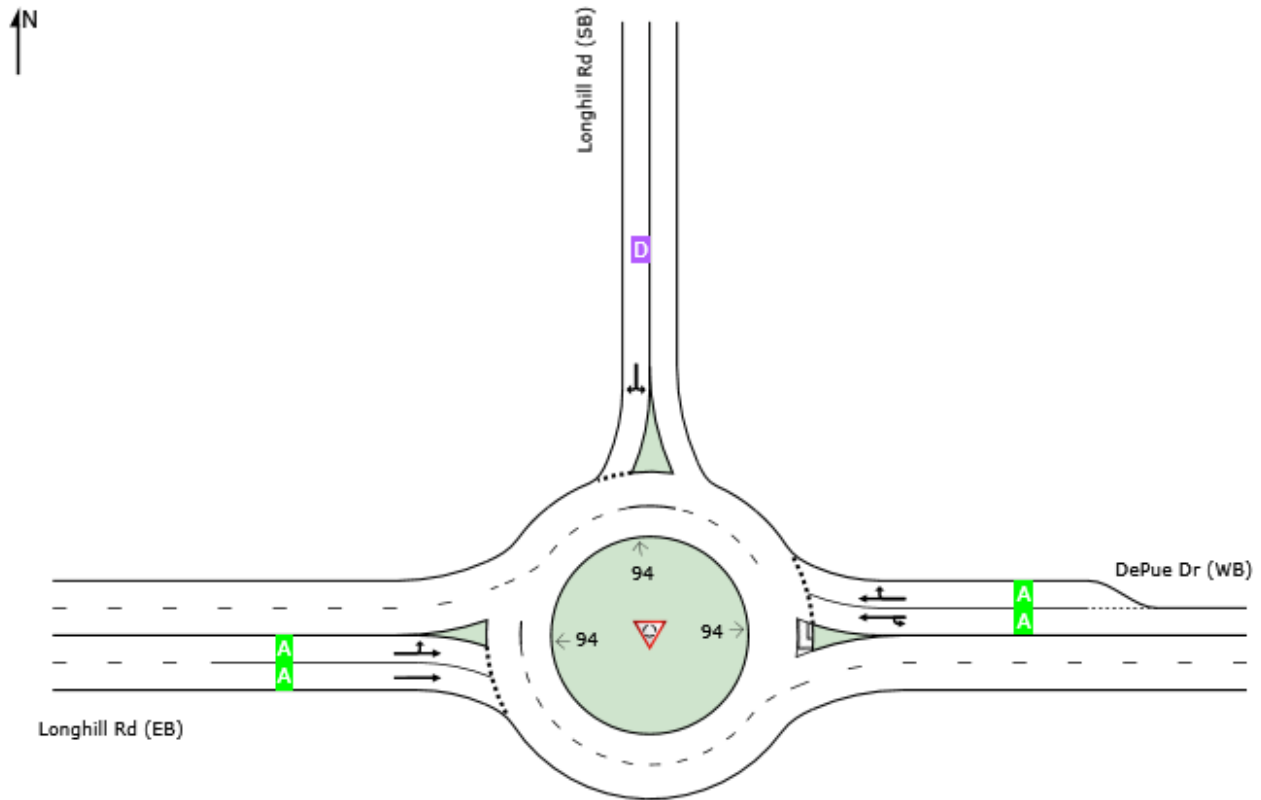
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - RIROLI PM**
(Site Folder: General)]

JCC Municipal Complex
Build 2026 - RIROLI
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	D	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations												
Traffic Vol, veh/h	122	510	18	2	639	71	0	0	6	0	0	295
Future Vol, veh/h	122	510	18	2	639	71	0	0	6	0	0	295
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	133	554	20	2	695	77	0	0	7	0	0	321

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	772	0	0	574	0	0	1728	1606	564	1533	1539	695
Stage 1	-	-	-	-	-	-	830	830	-	699	699	-
Stage 2	-	-	-	-	-	-	898	776	-	834	840	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	852	-	-	999	-	-	70	105	525	96	116	446
Stage 1	-	-	-	-	-	-	364	385	-	434	442	-
Stage 2	-	-	-	-	-	-	334	407	-	365	381	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	852	-	-	999	-	-	17	88	525	83	98	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	17	88	-	83	98	-
Stage 1	-	-	-	-	-	-	307	325	-	366	441	-
Stage 2	-	-	-	-	-	-	94	406	-	304	322	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	1.9		0		11.9		31.1
HCM LOS					B		D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	525	852	-	-	999	-	-	446
HCM Lane V/C Ratio	0.012	0.156	-	-	0.002	-	-	0.719
HCM Control Delay (s)	11.9	10	-	-	8.6	-	-	31.1
HCM Lane LOS	B	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.6	-	-	0	-	-	5.6

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	167	249	22	171	9	479	282	143	395
v/c Ratio	0.63	0.79	0.06	0.11	0.08	0.86	0.18	0.64	0.60
Control Delay	47.5	57.1	35.2	0.1	46.9	50.4	0.2	55.2	30.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	57.1	35.2	0.1	46.9	50.4	0.2	55.2	30.4
Queue Length 50th (ft)	94	149	11	0	5	286	0	86	197
Queue Length 95th (ft)	162	#282	34	0	22	#507	0	158	322
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	377	362	388	1615	272	587	1583	267	680
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.69	0.06	0.11	0.03	0.82	0.18	0.54	0.58

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	37	35	239	21	164	9	460	271	137	365	14
Future Volume (vph)	88	37	35	239	21	164	9	460	271	137	365	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1795		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.97		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1795		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	92	39	36	249	22	171	9	479	282	143	380	15
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	157	0	249	22	171	9	479	282	143	394	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		13.4		16.9	16.9	94.0	6.2	27.9	94.0	11.8	33.5	
Effective Green, g (s)		13.4		16.9	16.9	94.0	6.2	27.9	94.0	11.8	33.5	
Actuated g/C Ratio		0.14		0.18	0.18	1.00	0.07	0.30	1.00	0.13	0.36	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		255		318	341	1615	119	558	1583	222	660	
v/s Ratio Prot		c0.09		c0.14	0.01		0.00	c0.25		c0.08	c0.21	
v/s Ratio Perm						0.11			0.18			
v/c Ratio		0.61		0.78	0.06	0.11	0.08	0.86	0.18	0.64	0.60	
Uniform Delay, d1		37.9		36.8	32.0	0.0	41.2	31.2	0.0	39.1	24.7	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.3		11.9	0.1	0.1	0.3	13.5	0.2	6.3	2.2	
Delay (s)		42.2		48.7	32.1	0.1	41.5	44.7	0.2	45.4	26.9	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		42.2			29.1			28.4			31.8	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			30.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			94.0			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			66.7%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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Lane Configurations												
Traffic Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Future Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	50	277	24	0	273	34	100	0	0	15	0	47

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	307	0	0	301	0	0	691	684	277	662	674	273
Stage 1	-	-	-	-	-	-	377	377	-	273	273	-
Stage 2	-	-	-	-	-	-	314	307	-	389	401	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1231	-	-	1260	-	-	359	371	762	374	376	756
Stage 1	-	-	-	-	-	-	644	616	-	731	684	-
Stage 2	-	-	-	-	-	-	697	661	-	633	601	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1231	-	-	1260	-	-	326	356	762	362	361	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	356	-	362	361	-
Stage 1	-	-	-	-	-	-	618	591	-	701	684	-
Stage 2	-	-	-	-	-	-	654	661	-	607	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	20.9	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	1231	-	-	1260	-	-	597
HCM Lane V/C Ratio	0.307	0.041	-	-	-	-	-	0.104
HCM Control Delay (s)	20.9	8	-	-	0	-	-	11.7
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions RIROLI
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	30	31	248	33	45
Future Vol, veh/h	240	30	31	248	33	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	261	33	34	270	36	49

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	294
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1268
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1268
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	577	-	-	1268	-
HCM Lane V/C Ratio	0.147	-	-	0.027	-
HCM Control Delay (s)	12.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	186	163	132	132	195	197	118	126	182
Average Queue (ft)	97	70	60	35	97	95	58	65	92
95th Queue (ft)	155	130	104	88	179	180	100	111	157
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	B24	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	T	L	L	R
Maximum Queue (ft)	252	235	50	154	168	120	107	30	225	264	97
Average Queue (ft)	138	118	7	83	108	62	59	2	127	170	24
95th Queue (ft)	285	268	105	134	152	108	94	24	201	242	72
Link Distance (ft)	542	542				601	601	224		404	
Upstream Blk Time (%)	0	0									
Queuing Penalty (veh)	1	1									
Storage Bay Dist (ft)			500	265	265				435		310
Storage Blk Time (%)		1	0							0	0
Queuing Penalty (veh)		1	0							0	0

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	71	9	14	33	196
Average Queue (ft)	31	0	1	5	84
95th Queue (ft)	58	6	9	25	168
Link Distance (ft)				537	324
Upstream Blk Time (%)					1
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	170	274	65	66	362	38	191	273
Average Queue (ft)	95	140	17	8	219	5	82	143
95th Queue (ft)	157	237	48	57	351	70	150	228
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				0	2	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	2		0	1
Queuing Penalty (veh)				1	0		0	1

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	EB	NB	SB
Directions Served	L	T	LTR	LTR
Maximum Queue (ft)	33	4	94	59
Average Queue (ft)	9	0	37	23
95th Queue (ft)	31	3	71	46
Link Distance (ft)		265	260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	62	82
Average Queue (ft)	9	36
95th Queue (ft)	36	63
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 5

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	629	385	80	488	224	226	111
v/c Ratio	0.50	0.24	0.20	0.26	0.56	0.56	0.24
Control Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	0.3	29.5	7.8	27.7	27.8	5.4
Queue Length 50th (ft)	97	0	14	42	76	77	0
Queue Length 95th (ft)	172	0	39	83	167	168	31
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2151	1615	775	3019	667	669	685
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.24	0.10	0.16	0.34	0.34	0.16
Intersection Summary							

James City County Municipal Complex

Build 2026 Conditions 2 Roundabouts

1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Future Volume (vph)	0	579	354	74	449	0	0	0	0	413	1	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	629	385	80	488	0	0	0	0	449	1	111
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	85
Lane Group Flow (vph)	0	629	385	80	488	0	0	0	0	224	226	26
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Effective Green, g (s)		21.5	60.4	5.5	34.0					14.4	14.4	14.4
Actuated g/C Ratio		0.36	1.00	0.09	0.56					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1235	1615	298	1953					396	398	363
v/s Ratio Prot		c0.18		0.02	0.14					0.13	c0.14	0.02
v/s Ratio Perm			c0.24									
v/c Ratio		0.51	0.24	0.27	0.25					0.57	0.57	0.07
Uniform Delay, d1		15.3	0.0	25.6	6.7					20.2	20.3	17.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.5	0.1					1.9	1.9	0.1
Delay (s)		16.0	0.3	26.1	6.9					22.1	22.1	17.9
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.1			9.6			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.9		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			60.4		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			47.5%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	955	122	134	335	233	170
v/c Ratio	0.62	0.08	0.28	0.16	0.43	0.12
Control Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	0.1	28.9	4.6	27.7	0.2
Queue Length 50th (ft)	143	0	24	21	41	0
Queue Length 95th (ft)	234	0	55	40	83	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2169	1615	852	2977	814	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.16	0.11	0.29	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	879	112	123	308	214	156
Future Volume (vph)	879	112	123	308	214	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	955	122	134	335	233	170
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	955	122	134	335	233	170
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	26.2	60.8	6.2	38.9	10.4	60.8
Effective Green, g (s)	26.2	60.8	6.2	38.9	10.4	60.8
Actuated g/C Ratio	0.43	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1525	1615	357	2220	532	1450
v/s Ratio Prot	c0.27		c0.04	0.10	c0.07	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.63	0.08	0.38	0.15	0.44	0.12
Uniform Delay, d1	13.5	0.0	25.5	4.4	22.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.6	0.1	26.2	4.4	23.2	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.0			10.6	13.5	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			60.8		Sum of lost time (s)	18.0
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Roundabouts AM (Site Folder: General)]**

JCC Municipal Complex!
Build 2026 -!!AM Peak
Hour
Site Category: (None)!
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %						[Veh	Dist]				
	veh/h	%	veh/h	v/c	%	sec			ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	125	0.0	1044	0.120	100	4.5	LOS A	0.6	15.7	Full	1600	0.0	0.0
Lane 2 ^d	145	0.0	1211	0.120	100	4.0	LOS A	0.6	16.2	Short	200	0.0	NA
Approach	271	0.0		0.120		4.2	LOS A	0.6	16.2				
North: Longhill Rd (SB)													
Lane 1 ^d	205	4.9	880	0.233	100	6.5	LOS A	1.1	27.7	Full	1600	0.0	0.0
Approach	205	4.9		0.233		6.5	LOS A	1.1	27.7				
West: Longhill Rd (EB)													
Lane 1	561	1.7	1322	0.424	100	6.8	LOS A	2.9	73.7	Full	1600	0.0	0.0
Lane 2 ^d	564	1.0	1331	0.424	100	6.8	LOS A	2.9	73.4	Full	1600	0.0	0.0
Approach	1125	1.3		0.424		6.8	LOS A	2.9	73.7				
Intersection	1601	1.6		0.424		6.3	LOS A	2.9	73.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E To Exit:	W	N			Cap.	Satn	Util.	SL	Ov.	Lane No.
					veh/h	v/c	%	%	%	
Lane 1	125	-	125	0.0	1044	0.120	100	NA	NA	
Lane 2	142	3	145	0.0	1211	0.120	100	0.0	1	
Approach	267	3	271	0.0		0.120				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N To Exit:	E	W			Cap.	Satn	Util.	SL	Ov.	Lane No.
					veh/h	v/c	%	%	%	
Lane 1	5	200	205	4.9	880	0.233	100	NA	NA	
Approach	5	200	205	4.9		0.233				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	390	170	561	1.7	1322	0.424	100	NA	NA
Lane 2	-	564	564	1.0	1331	0.424	100	NA	NA
Approach	390	735	1125	1.3		0.424			
Total %HV Deg.Satn (v/c)									
Intersection	1601	1.6			0.424				

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

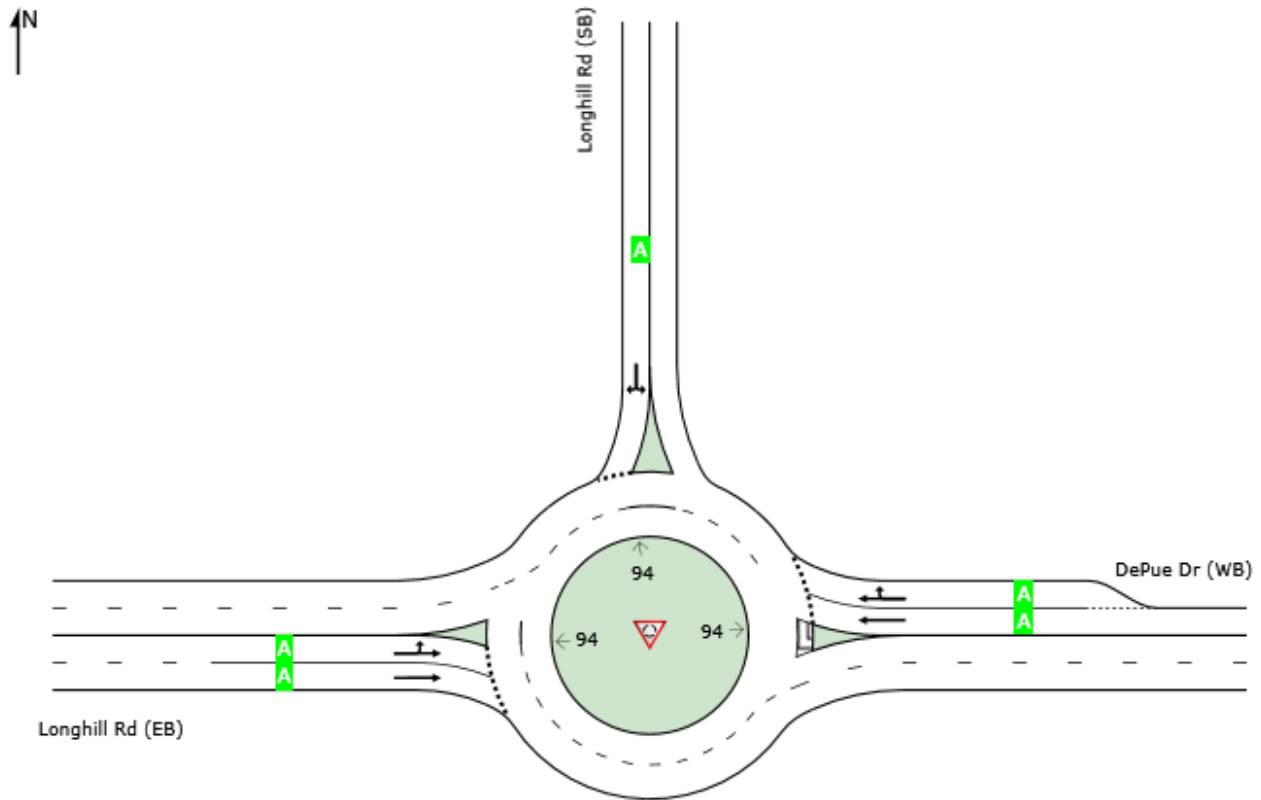
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Roundabouts (Site Folder: General)]**

JCC Municipal Complex!
Build 2026 -!
!AM Peak Hour
Site Category: (None)!
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

LANE SUMMARY

 Site: 4 [DePue & Ashbury - Build 2026 - AM (Site Folder: General)]

JCC Municipal Complex
Build 2026 - 2 Roundabouts Scenario
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS [Total HV] veh/h %		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh Dist] ft		Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Ashbury Ln (NB)													
Lane 1 ^d	21	2.0	615	0.034	100	6.3	LOS A	0.2	4.7	Full	1600	0.0	0.0
Approach	21	2.0		0.034		6.3	LOS A	0.2	4.7				
East: DePue Rd (WB)													
Lane 1 ^d	310	2.9	1033	0.300	100	6.5	LOS A	1.9	47.4	Full	1600	0.0	0.0
Approach	310	2.9		0.300		6.5	LOS A	1.9	47.4				
North: Ashbury Ln (SB)													
Lane 1 ^d	86	2.1	965	0.089	100	4.5	LOS A	0.5	11.7	Full	1600	0.0	0.0
Approach	86	2.1		0.089		4.5	LOS A	0.5	11.7				
West: DePue Rd (EB)													
Lane 1 ^d	740	0.9	1182	0.626	100	11.1	LOS B	6.8	172.2	Full	1600	0.0	0.0
Approach	740	0.9		0.626		11.1	LOS B	6.8	172.2				
Intersection	1157	1.5		0.626		9.3	LOS A	6.8	172.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
South: Ashbury Ln (NB)										
Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	1	1	21	2.0	615	0.034	100	NA	NA
Approach	18	1	1	21	2.0	0.034				
East: DePue Rd (WB)										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	4	210	96	310	2.9	1033	0.300	100	NA	NA
Approach	4	210	96	310	2.9	0.300				
North: Ashbury Ln (SB)										

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	41	1	43	86	2.1	965	0.089	100	NA	NA
Approach	41	1	43	86	2.1		0.089			
West: DePue Rd (EB)										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	138	547	55	740	0.9	1182	0.626	100	NA	NA
Approach	138	547	55	740	0.9		0.626			
Total %HV Deg.Satn (v/c)										
Intersection	1157	1.5		0.626						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ashbury Ln (NB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: DePue Rd (WB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Ashbury Ln (SB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: DePue Rd (EB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

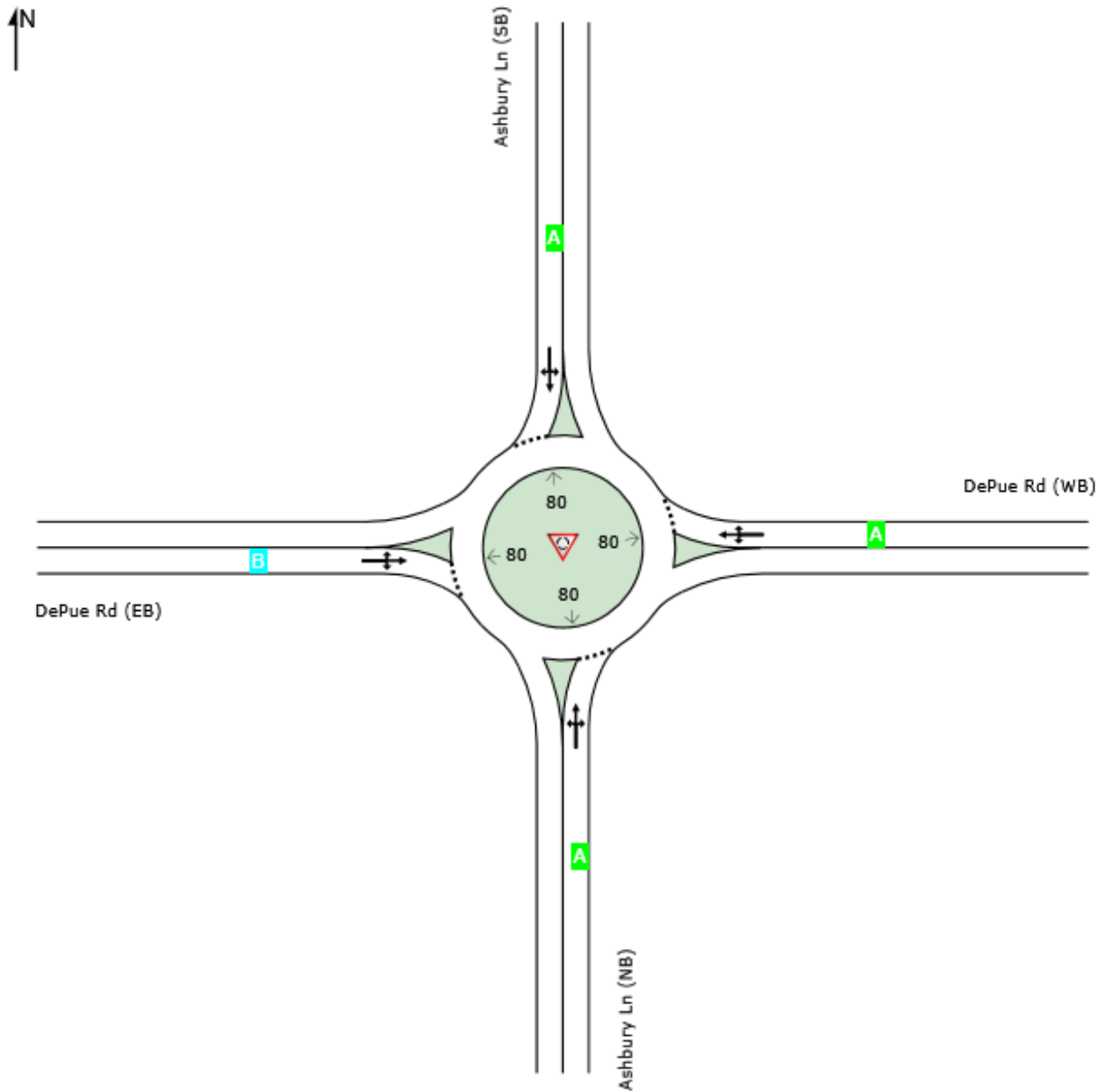
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [DePue & Ashbury - Build 2026 - AM (Site Folder: General)]**

JCC Municipal Complex
Build 2026 - 2 Roundabouts Scenario
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	57	179	64	58	29	242	184	146	443
v/c Ratio	0.23	0.51	0.17	0.04	0.16	0.44	0.12	0.48	0.55
Control Delay	27.7	34.7	29.0	0.0	37.4	27.5	0.2	37.1	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.7	34.7	29.0	0.0	37.4	27.5	0.2	37.1	22.4
Queue Length 50th (ft)	16	75	25	0	12	97	0	61	130
Queue Length 95th (ft)	56	157	65	0	43	192	0	140	#340
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	587	560	607	1553	397	909	1553	416	950
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.32	0.11	0.04	0.07	0.27	0.12	0.35	0.47

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	25	18	165	59	53	27	223	169	134	375	32
Future Volume (vph)	9	25	18	165	59	53	27	223	169	134	375	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1860	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	27	20	179	64	58	29	242	184	146	408	35
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	38	0	179	64	58	29	242	184	146	441	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.1		13.4	13.4	73.0	2.6	22.6	73.0	8.9	28.9	
Effective Green, g (s)		4.1		13.4	13.4	73.0	2.6	22.6	73.0	8.9	28.9	
Actuated g/C Ratio		0.06		0.18	0.18	1.00	0.04	0.31	1.00	0.12	0.40	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		100		321	348	1553	60	576	1553	215	736	
v/s Ratio Prot		c0.02		c0.10	0.03		0.02	0.13		c0.08	c0.24	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.56	0.18	0.04	0.48	0.42	0.12	0.68	0.60	
Uniform Delay, d1		33.2		27.1	25.2	0.0	34.5	20.0	0.0	30.7	17.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		2.1	0.3	0.0	6.0	1.0	0.2	8.2	2.0	
Delay (s)		35.6		29.2	25.4	0.0	40.6	21.0	0.2	38.9	19.4	
Level of Service		D		C	C	A	D	C	A	D	B	
Approach Delay (s)		35.6			22.8			13.8			24.3	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			73.0			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			56.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

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	22	257	83	0	147	7	11	0	0	14	0	32
Future Vol, veh/h	22	257	83	0	147	7	11	0	0	14	0	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	24	279	90	0	160	8	12	0	0	15	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	369	0	0	509	495	279	532	577	160
Stage 1	-	-	-	-	-	-	327	327	-	160	160	-
Stage 2	-	-	-	-	-	-	182	168	-	372	417	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1318	-	-	1190	-	-	475	476	760	461	427	872
Stage 1	-	-	-	-	-	-	686	648	-	847	766	-
Stage 2	-	-	-	-	-	-	820	759	-	653	591	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1318	-	-	1190	-	-	450	467	760	455	419	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	467	-	455	419	-
Stage 1	-	-	-	-	-	-	674	636	-	832	766	-
Stage 2	-	-	-	-	-	-	787	759	-	641	580	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.2	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	450	1318	-	-	1190	-	-	682
HCM Lane V/C Ratio	0.027	0.018	-	-	-	-	-	0.073
HCM Control Delay (s)	13.2	7.8	-	-	0	-	-	10.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	241	30	38	142	12	22
Future Vol, veh/h	241	30	38	142	12	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	262	33	41	154	13	24

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	295	0	515	279
Stage 1	-	-	-	-	279	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1266	-	511	765
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1266	-	493	765
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.7	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	640	-	-	1266	-
HCM Lane V/C Ratio	0.058	-	-	0.033	-
HCM Control Delay (s)	11	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Build 2026 Conditions 2 Roundabouts Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	185	170	7	78	63	115	133	168	188	110
Average Queue (ft)	100	72	0	30	13	42	51	83	97	45
95th Queue (ft)	162	139	6	62	45	91	104	143	162	90
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)										
Queuing Penalty (veh)										

Build 2026 Conditions 2 Roundabouts Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	R	L	L	T	T	L	L	R
Maximum Queue (ft)	375	345	78	70	89	77	63	130	167	94
Average Queue (ft)	177	155	8	23	50	28	22	41	87	31
95th Queue (ft)	349	335	110	58	82	64	53	105	144	73
Link Distance (ft)	542	542				601	601		404	
Upstream Blk Time (%)	1	1								
Queuing Penalty (veh)	4	4								
Storage Bay Dist (ft)			500	265	265			435		310
Storage Blk Time (%)		1	0							
Queuing Penalty (veh)		1	0							

Build 2026 Conditions 2 Roundabouts
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	77	73	33	44
Average Queue (ft)	16	20	4	10
95th Queue (ft)	55	56	23	36
Link Distance (ft)	609	3086	516	317
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	91	169	81	63	154	143	209
Average Queue (ft)	37	82	35	18	67	67	99
95th Queue (ft)	73	146	72	46	128	119	176
Link Distance (ft)	740	1078	1078		362		3086
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)							0
Queuing Penalty (veh)							0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	NB	SB
Directions Served	L	R	LTR	LTR
Maximum Queue (ft)	46	7	32	52
Average Queue (ft)	4	0	8	20
95th Queue (ft)	22	5	29	41
Link Distance (ft)			260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	50		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	49	54
Average Queue (ft)	8	18
95th Queue (ft)	34	41
Link Distance (ft)	867	301
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	15
Average Queue (ft)	1
95th Queue (ft)	11
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 490

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2026 Conditions 2 Roundabouts

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	542	374	195	1176	148	148	230
v/c Ratio	0.49	0.23	0.37	0.56	0.44	0.44	0.55
Control Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.8	0.3	26.7	9.1	26.1	26.1	16.4
Queue Length 50th (ft)	77	0	30	112	46	46	31
Queue Length 95th (ft)	150	0	73	220	113	113	103
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2079	1615	778	3189	645	645	684
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.23	0.25	0.37	0.23	0.23	0.34
Intersection Summary							

James City County Municipal Complex

Build 2026 Conditions 2 Roundabouts

1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Future Volume (vph)	0	499	344	179	1082	0	0	0	0	272	0	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	542	374	195	1176	0	0	0	0	296	0	230
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	542	374	195	1176	0	0	0	0	148	148	131
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Effective Green, g (s)		18.8	58.6	9.0	34.8					11.8	11.8	11.8
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1124	1615	527	2101					338	338	318
v/s Ratio Prot		0.15		0.06	0.33					0.09	0.09	0.08
v/s Ratio Perm			0.23									
v/c Ratio		0.48	0.23	0.37	0.56					0.44	0.44	0.41
Uniform Delay, d1		16.0	0.0	22.3	7.2					20.5	20.5	20.4
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.3	0.4	0.6					0.9	0.9	0.9
Delay (s)		16.7	0.3	22.7	7.8					21.4	21.4	21.2
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.0			9.9			0.0			21.3	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			58.6			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			53.0%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	729	108	436	860	511	188
v/c Ratio	0.60	0.07	0.68	0.39	0.76	0.13
Control Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.9	0.1	32.3	7.0	35.3	0.2
Queue Length 50th (ft)	133	0	89	83	107	0
Queue Length 95th (ft)	184	0	145	113	#194	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1846	1538	711	2875	699	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.07	0.61	0.30	0.73	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2026 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	671	99	401	791	470	173
Future Volume (vph)	671	99	401	791	470	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	729	108	436	860	511	188
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	729	108	436	860	511	188
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	22.6	67.0	12.4	41.5	14.0	67.0
Effective Green, g (s)	22.6	67.0	12.4	41.5	14.0	67.0
Actuated g/C Ratio	0.34	1.00	0.19	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1217	1538	648	2192	670	1479
v/s Ratio Prot	c0.20		c0.12	0.24	c0.16	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.60	0.07	0.67	0.39	0.76	0.13
Uniform Delay, d1	18.4	0.0	25.4	6.4	24.9	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	2.8	0.2	5.1	0.2
Delay (s)	19.6	0.1	28.2	6.7	30.1	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	17.1			13.9	22.0	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			16.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			67.0		Sum of lost time (s)	18.0
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Roundabouts PM (Site Folder: General)]**

JCC Municipal Complex!
Build 2026 -
!PM Peak Hour
Site Category: (None)!
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	411	0.0	1081	0.381	100	7.3	LOS A	2.4	60.8	Full	1600	0.0	0.0
Lane 2 ^d	475	0.0	1247	0.381	100	6.6	LOS A	2.5	62.5	Short	200	0.0	NA
Approach	886	0.0		0.381		6.9	LOS A	2.5	62.5				
North: Longhill Rd (SB)													
Lane 1 ^d	414	3.2	603	0.686	100	21.5	LOS C	6.1	157.6	Full	1600	0.0	0.0
Approach	414	3.2		0.686		21.5	LOS C	6.1	157.6				
West: Longhill Rd (EB)													
Lane 1	454	2.0	1310	0.346	100	5.9	LOS A	2.4	61.0	Full	1600	0.0	0.0
Lane 2 ^d	454	2.0	1310	0.346	100	5.9	LOS A	2.4	61.0	Full	1600	0.0	0.0
Approach	908	2.0		0.346		5.9	LOS A	2.4	61.0				
Intersection	2208	1.4		0.686		9.2	LOS A	6.1	157.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	411	-	411	0.0	1081	0.381	100	NA	NA	
Lane 2	466	9	475	0.0	1247	0.381	100	0.0	1	
Approach	877	9	886	0.0		0.381				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	10	404	414	3.2	603	0.686	100	NA	NA	
Approach	10	404	414	3.2		0.686				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	338	116	454	2.0	1310	0.346	100	NA	NA
Lane 2	-	454	454	2.0	1310	0.346	100	NA	NA
Approach	338	570	908	2.0		0.346			
Total %HV Deg.Satn (v/c)									
Intersection	2208	1.4		0.686					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

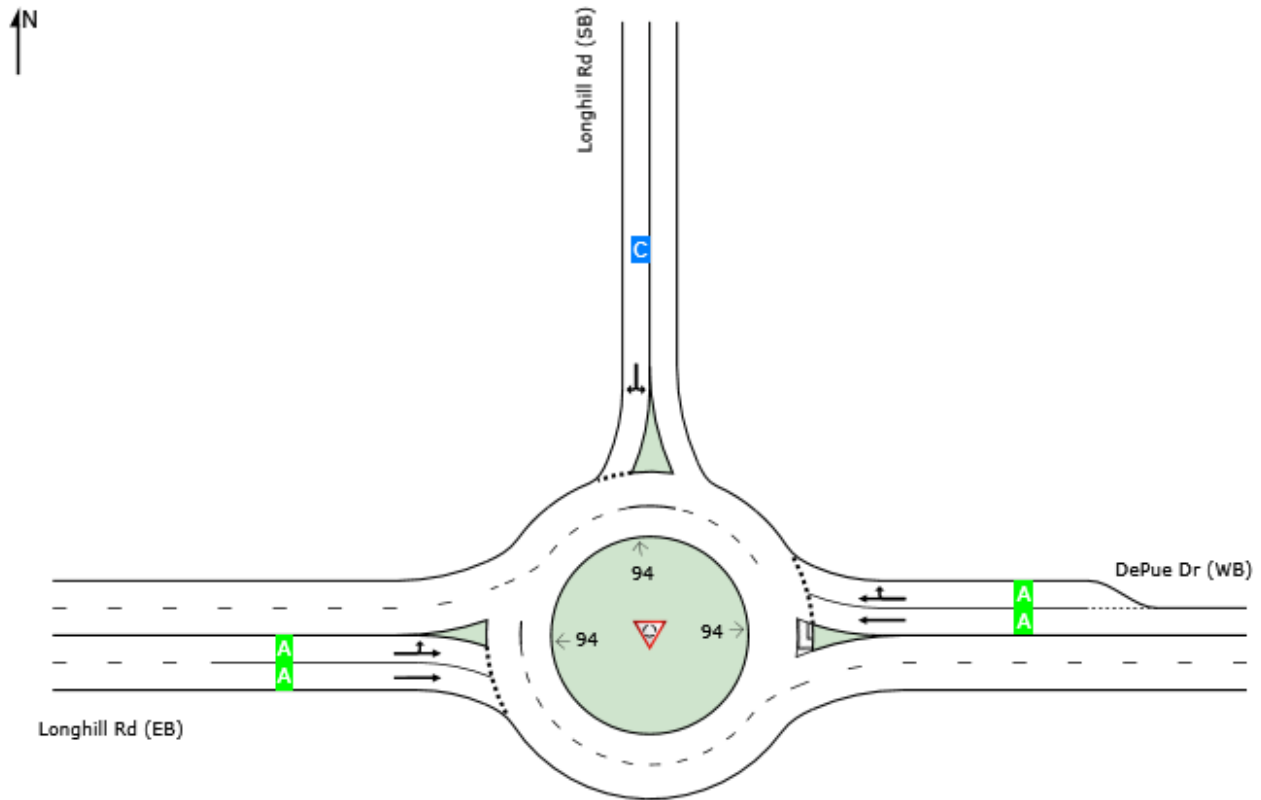
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2026 - Roundabouts (Site Folder: General)]**

JCC Municipal Complex!
Build 2026 -
!PM Peak Hour
Site Category: (None)!
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	C	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

LANE SUMMARY

 Site: 3 [DePue & Ashbury - Build 2026 - PM (Site Folder: General)]

JCC Municipal Complex
Build 2026 - 2 Roundabouts Scenario
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV] %						[Veh	Dist] ft				
South: Ashbury Ln (NB)													
Lane 1 ^d	58	2.0	617	0.093	100	6.9	LOS A	0.5	13.5	Full	1600	0.0	0.0
Approach	58	2.0		0.093		6.9	LOS A	0.5	13.5				
East: DePue Rd (WB)													
Lane 1 ^d	723	0.2	1035	0.698	100	14.6	LOS B	9.7	241.9	Full	1600	0.0	0.0
Approach	723	0.2		0.698		14.6	LOS B	9.7	241.9				
North: Ashbury Ln (SB)													
Lane 1 ^d	321	0.0	603	0.532	100	15.2	LOS C	4.9	122.0	Full	1600	0.0	0.0
Approach	321	0.0		0.532		15.2	LOS C	4.9	122.0				
West: DePue Rd (EB)													
Lane 1 ^d	587	2.3	1057	0.555	100	10.4	LOS B	5.3	134.5	Full	1600	0.0	0.0
Approach	587	2.3		0.555		10.4	LOS B	5.3	134.5				
Intersection	1688	1.0		0.698		13.0	LOS B	9.7	241.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
South: Ashbury Ln (NB)										
Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	49	2	7	58	2.0	617	0.093	100	NA	NA
Approach	49	2	7	58	2.0	0.093				
East: DePue Rd (WB)										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	646	75	723	0.2	1035	0.698	100	NA	NA
Approach	2	646	75	723	0.2	0.698				
North: Ashbury Ln (SB)										

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	118	1	201	321	0.0	603	0.532	100	NA	NA
Approach	118	1	201	321	0.0		0.532			
West: DePue Rd (EB)										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	133	436	18	587	2.3	1057	0.555	100	NA	NA
Approach	133	436	18	587	2.3		0.555			
Total %HV Deg. Satn (v/c)										
Intersection	1688	1.0		0.698						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ashbury Ln (NB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: DePue Rd (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
North Exit: Ashbury Ln (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: DePue Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									

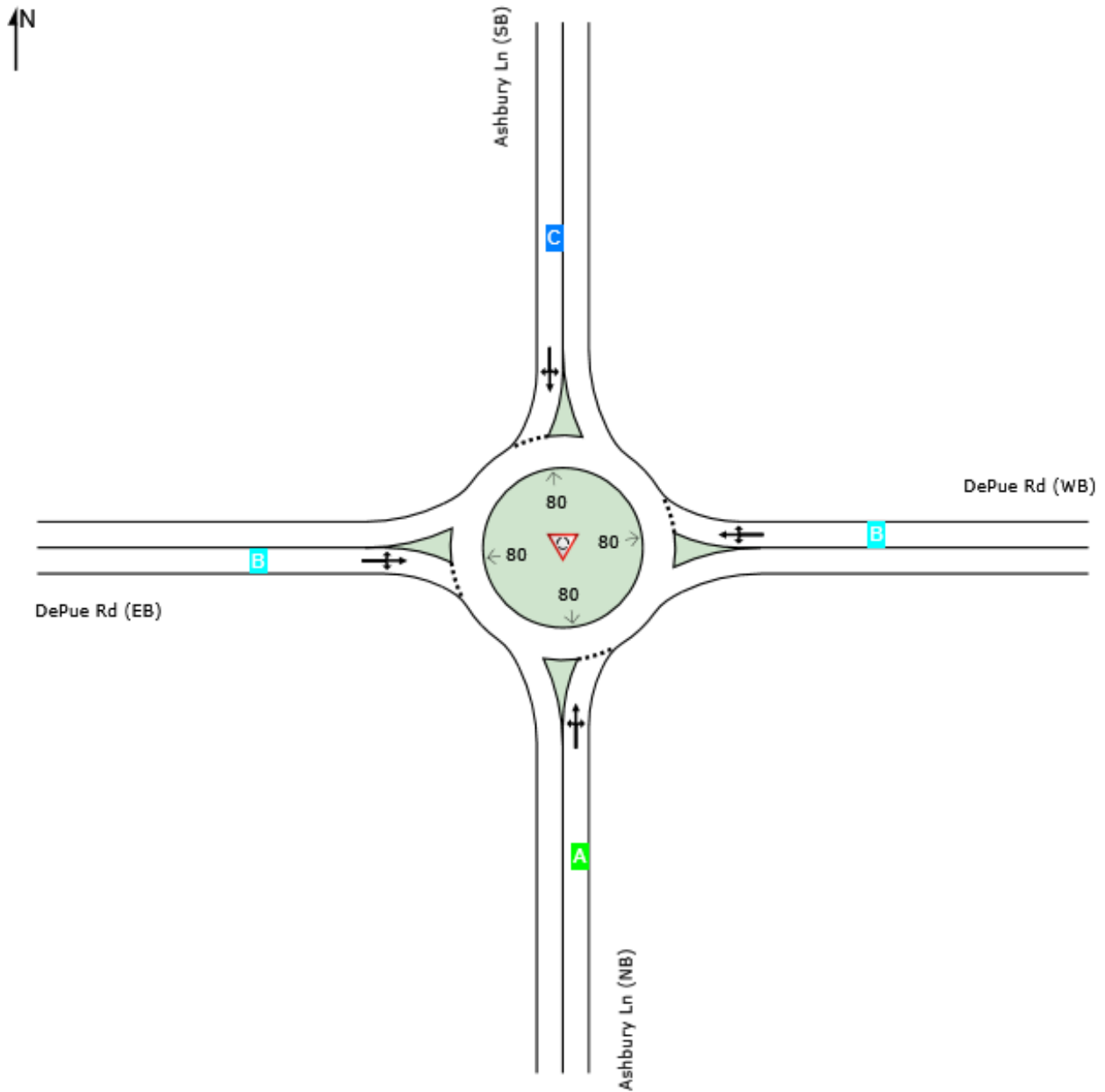
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [DePue & Ashbury - Build 2026 - PM (Site Folder: General)]**

JCC Municipal Complex
Build 2026 - 2 Roundabouts Scenario
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	B	C	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	118	249	22	171	9	479	282	143	395
v/c Ratio	0.52	0.77	0.06	0.11	0.07	0.84	0.18	0.63	0.58
Control Delay	42.0	53.4	33.5	0.1	45.1	46.1	0.2	52.6	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	53.4	33.5	0.1	45.1	46.1	0.2	52.6	28.3
Queue Length 50th (ft)	58	142	11	0	5	271	0	83	186
Queue Length 95th (ft)	114	#269	34	0	21	#482	0	153	308
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	391	373	400	1615	280	605	1583	275	700
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.67	0.06	0.11	0.03	0.79	0.18	0.52	0.56

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2026 Conditions 2 Roundabouts

Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	37	35	239	21	164	9	460	271	137	365	14
Future Volume (vph)	41	37	35	239	21	164	9	460	271	137	365	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1789		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1789		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	39	36	249	22	171	9	479	282	143	380	15
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	102	0	249	22	171	9	479	282	143	394	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.8		16.8	16.8	91.0	6.1	27.7	91.0	11.7	33.3	
Effective Green, g (s)		10.8		16.8	16.8	91.0	6.1	27.7	91.0	11.7	33.3	
Actuated g/C Ratio		0.12		0.18	0.18	1.00	0.07	0.30	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		212		326	350	1615	120	572	1583	227	678	
v/s Ratio Prot		c0.06		c0.14	0.01		0.00	c0.25		c0.08	c0.21	
v/s Ratio Perm						0.11			0.18			
v/c Ratio		0.48		0.76	0.06	0.11	0.07	0.84	0.18	0.63	0.58	
Uniform Delay, d1		37.5		35.2	30.6	0.0	39.8	29.5	0.0	37.6	23.2	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.7		10.2	0.1	0.1	0.3	11.4	0.2	5.4	2.0	
Delay (s)		39.2		45.4	30.7	0.1	40.1	41.0	0.2	43.0	25.2	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		39.2			27.1			26.1			29.9	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			28.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			91.0			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			66.7%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2026 Conditions 2 Roundabouts

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Future Vol, veh/h	46	255	22	0	251	31	92	0	0	14	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	50	277	24	0	273	34	100	0	0	15	0	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	307	0	0	301	0	0	691	684	277	662	674	273
Stage 1	-	-	-	-	-	-	377	377	-	273	273	-
Stage 2	-	-	-	-	-	-	314	307	-	389	401	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1231	-	-	1260	-	-	359	371	762	374	376	756
Stage 1	-	-	-	-	-	-	644	616	-	731	684	-
Stage 2	-	-	-	-	-	-	697	661	-	633	601	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1231	-	-	1260	-	-	326	356	762	362	361	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	326	356	-	362	361	-
Stage 1	-	-	-	-	-	-	618	591	-	701	684	-
Stage 2	-	-	-	-	-	-	654	661	-	607	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.1	0	20.9	11.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	326	1231	-	-	1260	-	-	597
HCM Lane V/C Ratio	0.307	0.041	-	-	-	-	-	0.104
HCM Control Delay (s)	20.9	8	-	-	0	-	-	11.7
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2026 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	30	31	248	33	45
Future Vol, veh/h	240	30	31	248	33	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	261	33	34	270	36	49

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	294
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1268
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1268
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	577	-	-	1268	-
HCM Lane V/C Ratio	0.147	-	-	0.027	-
HCM Control Delay (s)	12.3	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Build 2030 Conditions 2 Roundabouts
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	169	157	7	112	158	233	234	160	197	183
Average Queue (ft)	96	78	0	59	38	105	108	32	102	95
95th Queue (ft)	152	137	7	99	104	195	198	105	167	167
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	T	L	L	R
Maximum Queue (ft)	193	193	168	176	138	113	41	16	224	280	125
Average Queue (ft)	110	101	85	110	67	57	2	1	128	173	30
95th Queue (ft)	170	159	141	158	114	97	28	14	206	248	86
Link Distance (ft)	542	542			601	601	224	224		404	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			265	265					435		310
Storage Blk Time (%)										0	0
Queuing Penalty (veh)										0	0

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	159	264	56	154	371	154	234	304
Average Queue (ft)	66	138	19	17	217	12	95	150
95th Queue (ft)	128	225	49	107	367	113	177	249
Link Distance (ft)	740	1078	1078		362	362		3086
Upstream Blk Time (%)				0	4	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	4		0	1
Queuing Penalty (veh)				1	0		0	1

Build 2030 Conditions 2 Roundabouts
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	LT	R	LTR	LTR
Maximum Queue (ft)	47	2	5	5	93	69
Average Queue (ft)	11	0	0	0	37	25
95th Queue (ft)	35	2	5	5	69	50
Link Distance (ft)		265	600		260	529
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	120			50		
Storage Blk Time (%)				0		
Queuing Penalty (veh)				0		

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	61	79
Average Queue (ft)	0	9	35
95th Queue (ft)	2	36	63
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 3

APPENDIX G

2030 No-Build Conditions

Synchro & SimTraffic Output

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	622	400	73	503	178	180	115
v/c Ratio	0.47	0.25	0.17	0.28	0.45	0.46	0.25
Control Delay	16.0	0.4	27.5	7.6	24.5	24.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.0	0.4	27.5	7.6	24.5	24.6	5.9
Queue Length 50th (ft)	89	0	11	40	56	56	0
Queue Length 95th (ft)	166	0	36	84	131	133	33
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2394	1615	863	3113	743	745	748
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.25	0.08	0.16	0.24	0.24	0.15
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	572	368	67	463	0	0	0	0	328	1	106
Future Volume (vph)	0	572	368	67	463	0	0	0	0	328	1	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	622	400	73	503	0	0	0	0	357	1	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	89
Lane Group Flow (vph)	0	622	400	73	503	0	0	0	0	178	180	26
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		20.9	56.6	3.8	31.7					12.9	12.9	12.9
Effective Green, g (s)		20.9	56.6	3.8	31.7					12.9	12.9	12.9
Actuated g/C Ratio		0.37	1.00	0.07	0.56					0.23	0.23	0.23
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1281	1615	219	1944					379	380	347
v/s Ratio Prot		c0.18		0.02	0.14					0.11	c0.11	0.02
v/s Ratio Perm			c0.25									
v/c Ratio		0.49	0.25	0.33	0.26					0.47	0.47	0.08
Uniform Delay, d1		13.7	0.0	25.2	6.4					18.9	18.9	17.2
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.6	0.4	0.9	0.1					0.9	0.9	0.1
Delay (s)		14.3	0.4	26.1	6.6					19.8	19.8	17.3
Level of Service		B	A	C	A					B	B	B
Approach Delay (s)		8.9			9.0			0.0			19.2	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			56.6			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			44.9%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	851	127	124	333	242	98
v/c Ratio	0.57	0.08	0.26	0.16	0.43	0.07
Control Delay	15.6	0.1	27.8	4.8	26.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	0.1	27.8	4.8	26.4	0.1
Queue Length 50th (ft)	121	0	21	21	41	0
Queue Length 95th (ft)	203	0	51	41	84	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2232	1615	881	3068	841	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.08	0.14	0.11	0.29	0.07
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	783	117	114	306	223	90
Future Volume (vph)	783	117	114	306	223	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	851	127	124	333	242	98
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	851	127	124	333	242	98
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	24.3	58.6	5.9	36.7	10.4	58.6
Effective Green, g (s)	24.3	58.6	5.9	36.7	10.4	58.6
Actuated g/C Ratio	0.41	1.00	0.10	0.63	0.18	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1467	1615	352	2173	552	1450
v/s Ratio Prot	c0.24		c0.04	0.10	c0.08	
v/s Ratio Perm		0.08				0.07
v/c Ratio	0.58	0.08	0.35	0.15	0.44	0.07
Uniform Delay, d1	13.2	0.0	24.6	4.5	21.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.6	0.1	0.6	0.1
Delay (s)	14.1	0.1	25.2	4.6	22.1	0.1
Level of Service	B	A	C	A	C	A
Approach Delay (s)	12.3			10.2	15.7	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.51			
Actuated Cycle Length (s)			58.6		Sum of lost time (s)	18.0
Intersection Capacity Utilization			47.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

No-Build 2030 Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh	3.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	273	600	242	3	5	178
Future Vol, veh/h	273	600	242	3	5	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	120	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	0	0	0	5
Mvmt Flow	297	652	263	3	5	193

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	266	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1298	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1298	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1298	-	-	-	103	766
HCM Lane V/C Ratio	0.229	-	-	-	0.053	0.253
HCM Control Delay (s)	8.6	-	-	-	41.9	11.3
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.9	-	-	-	0.2	1

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

No-Build 2030 Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	523	52	4	200	20	18	1	0	29	1	28
Future Vol, veh/h	31	523	52	4	200	20	18	1	0	29	1	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	34	568	57	4	217	22	20	1	0	32	1	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	625	0	0	917	912	597	890	918	217
Stage 1	-	-	-	-	-	-	665	665	-	225	225	-
Stage 2	-	-	-	-	-	-	252	247	-	665	693	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1340	-	-	956	-	-	253	274	503	266	272	818
Stage 1	-	-	-	-	-	-	449	458	-	782	718	-
Stage 2	-	-	-	-	-	-	752	702	-	453	445	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1340	-	-	956	-	-	237	266	503	259	264	818
Mov Cap-2 Maneuver	-	-	-	-	-	-	237	266	-	259	264	-
Stage 1	-	-	-	-	-	-	438	447	-	762	715	-
Stage 2	-	-	-	-	-	-	720	699	-	440	434	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.2	21.6	16.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	238	1340	-	-	956	-	-	387
HCM Lane V/C Ratio	0.087	0.025	-	-	0.005	-	-	0.163
HCM Control Delay (s)	21.6	7.8	-	-	8.8	-	-	16.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.6

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2030 Conditions

Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	187	66	60	30	174	191	151	448
v/c Ratio	0.26	0.56	0.18	0.04	0.17	0.35	0.12	0.52	0.53
Control Delay	28.0	35.8	28.9	0.1	37.9	26.8	0.2	38.1	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	35.8	28.9	0.1	37.9	26.8	0.2	38.1	22.0
Queue Length 50th (ft)	16	76	25	0	13	69	0	62	134
Queue Length 95th (ft)	57	164	67	0	43	140	0	145	#351
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	533	505	548	1553	359	821	1553	376	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.37	0.12	0.04	0.08	0.21	0.12	0.40	0.52

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2030 Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	19	172	61	55	28	160	176	139	380	32
Future Volume (vph)	9	26	19	172	61	55	28	160	176	139	380	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1861	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1861	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	28	21	187	66	60	30	174	191	151	413	35
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	39	0	187	66	60	30	174	191	151	446	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.4		13.4	13.4	76.5	2.7	23.2	76.5	11.5	32.0	
Effective Green, g (s)		4.4		13.4	13.4	76.5	2.7	23.2	76.5	11.5	32.0	
Actuated g/C Ratio		0.06		0.18	0.18	1.00	0.04	0.30	1.00	0.15	0.42	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		103		306	332	1553	59	564	1553	266	778	
v/s Ratio Prot		c0.02		c0.11	0.03		0.02	0.09		c0.09	c0.24	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.61	0.20	0.04	0.51	0.31	0.12	0.57	0.57	
Uniform Delay, d1		34.7		29.1	27.0	0.0	36.2	20.5	0.0	30.2	17.0	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.3		3.6	0.3	0.0	6.7	0.7	0.2	2.8	1.6	
Delay (s)		37.1		32.7	27.3	0.0	43.0	21.1	0.2	33.0	18.7	
Level of Service		D		C	C	A	D	C	A	C	B	
Approach Delay (s)		37.1			25.3			12.7			22.3	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			20.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			76.5			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			57.3%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

No-Build 2030 Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	253	151	7	15	33
Future Vol, veh/h	23	253	151	7	15	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	50	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	18	4	5	6	0	7
Mvmt Flow	25	275	164	8	16	36

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	172	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.28	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.362	-	-
Pot Cap-1 Maneuver	1314	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1314	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1314	-	-	-	725
HCM Lane V/C Ratio	0.019	-	-	-	0.072
HCM Control Delay (s)	7.8	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

No-Build 2030 Conditions
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	251	17	25	148	11	21
Future Vol, veh/h	251	17	25	148	11	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	273	18	27	161	12	23

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	291	0	497	282
Stage 1	-	-	-	-	282	-
Stage 2	-	-	-	-	215	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1271	-	524	762
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1271	-	512	762
Mov Cap-2 Maneuver	-	-	-	-	512	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	790	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.1	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	652	-	-	1271	-
HCM Lane V/C Ratio	0.053	-	-	0.021	-
HCM Control Delay (s)	10.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

No-Build 2030 Conditions
Queuing and Blocking Report

James City County Municipal Complex
AM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	201	170	75	59	119	120	215	164	119
Average Queue (ft)	105	67	28	11	43	48	112	46	48
95th Queue (ft)	178	140	58	40	92	99	181	127	98
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	310	247	63	84	82	61	143	182	61
Average Queue (ft)	171	94	20	47	32	17	46	95	8
95th Queue (ft)	261	197	51	77	66	48	113	153	32
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	B24	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	99	106	4	33	91
Average Queue (ft)	40	5	0	5	46
95th Queue (ft)	80	71	3	23	75
Link Distance (ft)		601	1220		342
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)	200			120	
Storage Blk Time (%)					0
Queuing Penalty (veh)					0

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	32	22	2	51	64
Average Queue (ft)	6	2	0	14	24
95th Queue (ft)	24	13	2	42	48
Link Distance (ft)				537	324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	85	173	90	59	116	172	230
Average Queue (ft)	33	81	35	15	45	72	104
95th Queue (ft)	70	136	73	40	96	138	193
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	WB	SB
Directions Served	L	T	R	LR
Maximum Queue (ft)	45	2	22	52
Average Queue (ft)	4	0	3	21
95th Queue (ft)	24	2	16	43
Link Distance (ft)		607		530
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120		50	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	53	58
Average Queue (ft)	7	21
95th Queue (ft)	32	49
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	24
Average Queue (ft)	1
95th Queue (ft)	14
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2030 Conditions

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	555	389	115	1188	139	139	240
v/c Ratio	0.43	0.24	0.25	0.59	0.40	0.40	0.56
Control Delay	16.8	0.4	26.7	9.7	24.5	24.5	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	0.4	26.7	9.7	24.5	24.5	16.6
Queue Length 50th (ft)	75	0	18	110	43	43	34
Queue Length 95th (ft)	147	0	47	227	103	103	105
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2207	1615	826	3219	685	685	718
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.24	0.14	0.37	0.20	0.20	0.33
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (vph)	0	511	358	106	1093	0	0	0	0	256	0	221
Future Volume (vph)	0	511	358	106	1093	0	0	0	0	256	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	555	389	115	1188	0	0	0	0	278	0	240
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	555	389	115	1188	0	0	0	0	139	139	141
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		20.8	57.6	6.0	33.8					11.8	11.8	11.8
Effective Green, g (s)		20.8	57.6	6.0	33.8					11.8	11.8	11.8
Actuated g/C Ratio		0.36	1.00	0.10	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1265	1615	357	2076					344	344	324
v/s Ratio Prot		0.16		0.03	c0.34					0.08	0.08	c0.09
v/s Ratio Perm			0.24									
v/c Ratio		0.44	0.24	0.32	0.57					0.40	0.40	0.44
Uniform Delay, d1		14.0	0.0	23.9	7.4					19.9	19.9	20.0
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.5	0.4	0.5	0.6					0.8	0.8	0.9
Delay (s)		14.5	0.4	24.4	8.0					20.6	20.6	20.9
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		8.7			9.5			0.0			20.8	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			11.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			57.6			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			53.9%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	722	112	332	772	532	175
v/c Ratio	0.60	0.07	0.56	0.36	0.77	0.12
Control Delay	20.4	0.1	29.7	6.9	34.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.4	0.1	29.7	6.9	34.7	0.2
Queue Length 50th (ft)	125	0	65	72	107	0
Queue Length 95th (ft)	182	0	111	98	#205	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1892	1538	728	2946	716	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.07	0.46	0.26	0.74	0.12

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	664	103	305	710	489	161
Future Volume (vph)	664	103	305	710	489	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	722	112	332	772	532	175
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	722	112	332	772	532	175
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	22.1	65.5	11.2	39.8	14.2	65.5
Effective Green, g (s)	22.1	65.5	11.2	39.8	14.2	65.5
Actuated g/C Ratio	0.34	1.00	0.17	0.61	0.22	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1218	1538	598	2150	695	1479
v/s Ratio Prot	c0.20		c0.09	0.22	c0.17	
v/s Ratio Perm		0.07				0.12
v/c Ratio	0.59	0.07	0.56	0.36	0.77	0.12
Uniform Delay, d1	18.0	0.0	24.9	6.4	24.1	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	1.1	0.2	5.0	0.2
Delay (s)	19.1	0.1	26.0	6.7	29.1	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	16.6			12.5	22.0	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			16.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.64			
Actuated Cycle Length (s)			65.5		Sum of lost time (s)	18.0
Intersection Capacity Utilization			56.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

James City County Municipal Complex
3: Longhill Road & DePue Drive

No-Build 2030 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 8.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	300	525	735	8	10	280
Future Vol, veh/h	300	525	735	8	10	280
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	120	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	0	0	11	3
Mvmt Flow	323	565	790	9	11	301

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	799	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	824	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	824	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	43.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	824	-	-	-	38	386
HCM Lane V/C Ratio	0.391	-	-	-	0.283	0.78
HCM Control Delay (s)	12.2	-	-	-	133.6	40.5
HCM Lane LOS	B	-	-	-	F	E
HCM 95th %tile Q(veh)	1.9	-	-	-	0.9	6.6

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations												
Traffic Vol, veh/h	101	416	17	2	617	53	46	2	6	34	1	81
Future Vol, veh/h	101	416	17	2	617	53	46	2	6	34	1	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	110	452	18	2	671	58	50	2	7	37	1	88

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	729	0	0	470	0	0	1430	1414	461	1361	1365	671
Stage 1	-	-	-	-	-	-	681	681	-	675	675	-
Stage 2	-	-	-	-	-	-	749	733	-	686	690	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	884	-	-	1092	-	-	112	138	600	127	147	460
Stage 1	-	-	-	-	-	-	440	450	-	447	453	-
Stage 2	-	-	-	-	-	-	404	426	-	441	446	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	884	-	-	1092	-	-	81	121	600	112	128	460
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	121	-	112	128	-
Stage 1	-	-	-	-	-	-	385	394	-	392	452	-
Stage 2	-	-	-	-	-	-	325	425	-	380	391	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	98.3	36
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	91	884	-	-	1092	-	-	238
HCM Lane V/C Ratio	0.645	0.124	-	-	0.002	-	-	0.53
HCM Control Delay (s)	98.3	9.6	-	-	8.3	-	-	36
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	3.1	0.4	-	-	0	-	-	2.8

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	121	258	23	178	9	479	294	148	328
v/c Ratio	0.53	0.79	0.07	0.11	0.08	0.84	0.19	0.65	0.49
Control Delay	42.1	55.1	33.7	0.1	45.3	46.9	0.3	53.4	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.1	55.1	33.7	0.1	45.3	46.9	0.3	53.4	26.2
Queue Length 50th (ft)	60	149	12	0	5	273	0	86	148
Queue Length 95th (ft)	116	#284	35	0	21	#484	0	158	250
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	389	370	397	1615	278	601	1583	272	696
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.70	0.06	0.11	0.03	0.80	0.19	0.54	0.47

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	38	36	248	22	171	9	460	282	142	300	14
Future Volume (vph)	41	38	36	248	22	171	9	460	282	142	300	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1788		1770	1900	1615	1805	1881	1583	1770	1852	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1788		1770	1900	1615	1805	1881	1583	1770	1852	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	40	38	258	23	178	9	479	294	148	312	15
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	104	0	258	23	178	9	479	294	148	327	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.9		17.1	17.1	91.7	6.1	27.8	91.7	11.9	33.6	
Effective Green, g (s)		10.9		17.1	17.1	91.7	6.1	27.8	91.7	11.9	33.6	
Actuated g/C Ratio		0.12		0.19	0.19	1.00	0.07	0.30	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		212		330	354	1615	120	570	1583	229	678	
v/s Ratio Prot		c0.06		c0.15	0.01		0.00	c0.25		c0.08	c0.18	
v/s Ratio Perm						0.11			0.19			
v/c Ratio		0.49		0.78	0.06	0.11	0.07	0.84	0.19	0.65	0.48	
Uniform Delay, d1		37.8		35.5	30.7	0.0	40.2	29.9	0.0	37.9	22.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.8		11.4	0.1	0.1	0.3	11.8	0.3	6.1	1.1	
Delay (s)		39.6		46.9	30.8	0.1	40.4	41.7	0.3	44.0	23.5	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		39.6			28.0			26.1			29.9	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			28.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			91.7			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			67.5%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

No-Build 2030 Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	48	261	245	32	15	45
Future Vol, veh/h	48	261	245	32	15	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	120	-	-	50	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	1	1	0	3	6
Mvmt Flow	52	284	266	35	16	49

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	301	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.16	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.254	-	-
Pot Cap-1 Maneuver	1238	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1238	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1238	-	-	-	629
HCM Lane V/C Ratio	0.042	-	-	-	0.104
HCM Control Delay (s)	8	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

No-Build 2030 Conditions
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	249	27	29	258	19	31
Future Vol, veh/h	249	27	29	258	19	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	271	29	32	280	21	34

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	300
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1261
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1261
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1261	-
HCM Lane V/C Ratio	0.093	-	-	0.025	-
HCM Control Delay (s)	11.8	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

No-Build 2030 Conditions
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	L	L	T	T	L	LT	R
Maximum Queue (ft)	189	160	91	72	209	229	178	143	198
Average Queue (ft)	103	61	42	19	99	109	91	29	96
95th Queue (ft)	165	124	77	55	184	205	149	92	167
Link Distance (ft)	1233	1233			542	542		732	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			225	225			550		290
Storage Blk Time (%)					0				
Queuing Penalty (veh)					0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	B14
Directions Served	T	T	L	L	T	T	L	L	R	T
Maximum Queue (ft)	276	233	122	145	102	111	295	369	240	8
Average Queue (ft)	165	96	66	92	50	62	145	192	28	0
95th Queue (ft)	250	198	111	133	91	103	252	307	142	10
Link Distance (ft)	542	542			601	601		404		227
Upstream Blk Time (%)							0	0		
Queuing Penalty (veh)							0	0		
Storage Bay Dist (ft)			265	265			435		310	
Storage Blk Time (%)							0	1	0	
Queuing Penalty (veh)							0	4	0	

Intersection: 3: Longhill Road & DePue Drive

Movement	EB	EB	B24	WB	SB	SB
Directions Served	L	T	T	TR	L	R
Maximum Queue (ft)	192	232	45	34	106	262
Average Queue (ft)	94	20	3	2	16	112
95th Queue (ft)	167	126	22	15	61	216
Link Distance (ft)		284	601	1220		342
Upstream Blk Time (%)		0				0
Queuing Penalty (veh)		3				1
Storage Bay Dist (ft)	200				120	
Storage Blk Time (%)	0	1			0	14
Queuing Penalty (veh)	2	2			0	1

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	R	LTR	LTR
Maximum Queue (ft)	68	15	4	82	94
Average Queue (ft)	28	1	0	35	42
95th Queue (ft)	56	7	3	68	76
Link Distance (ft)				537	324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240	240	265		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	134	261	60	86	354	68	206	256
Average Queue (ft)	64	138	15	10	211	2	93	123
95th Queue (ft)	116	228	45	66	342	50	169	214
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				0	1	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	1		0	1
Queuing Penalty (veh)				0	0		0	1

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	WB	SB
Directions Served	L	T	R	LR
Maximum Queue (ft)	53	13	5	58
Average Queue (ft)	10	1	0	25
95th Queue (ft)	37	12	5	47
Link Distance (ft)		607		530
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120		50	
Storage Blk Time (%)		0	0	
Queuing Penalty (veh)		0	0	

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	55	54
Average Queue (ft)	7	26
95th Queue (ft)	33	51
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 28: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	35
Average Queue (ft)	1
95th Queue (ft)	21
Link Distance (ft)	386
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 16

APPENDIX H

2030 Build Conditions

Sidra, Synchro & SimTraffic Output

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions Add RT

Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	652	400	84	508	231	232	115
v/c Ratio	0.51	0.25	0.21	0.27	0.57	0.57	0.25
Control Delay	18.4	0.4	30.1	7.8	28.6	28.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	0.4	30.1	7.8	28.6	28.6	5.8
Queue Length 50th (ft)	102	0	14	45	81	81	0
Queue Length 95th (ft)	179	0	40	86	174	174	33
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2120	1615	764	2979	658	660	677
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.25	0.11	0.17	0.35	0.35	0.17
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	600	368	77	467	0	0	0	0	425	1	106
Future Volume (vph)	0	600	368	77	467	0	0	0	0	425	1	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	652	400	84	508	0	0	0	0	462	1	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	652	400	84	508	0	0	0	0	231	232	27
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		22.1	61.3	5.6	34.7					14.6	14.6	14.6
Effective Green, g (s)		22.1	61.3	5.6	34.7					14.6	14.6	14.6
Actuated g/C Ratio		0.36	1.00	0.09	0.57					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1251	1615	299	1964					396	397	362
v/s Ratio Prot		c0.19		0.03	0.15					0.14	c0.14	0.02
v/s Ratio Perm			c0.25									
v/c Ratio		0.52	0.25	0.28	0.26					0.58	0.58	0.08
Uniform Delay, d1		15.4	0.0	26.0	6.8					20.7	20.7	18.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.4	0.5	0.1					2.2	2.2	0.1
Delay (s)		16.2	0.4	26.5	6.9					22.8	22.9	18.2
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.2			9.7			0.0			21.9	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			13.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			61.3		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			48.4%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	987	127	138	347	242	173
v/c Ratio	0.63	0.08	0.29	0.16	0.44	0.12
Control Delay	16.4	0.1	29.5	4.7	28.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	0.1	29.5	4.7	28.2	0.2
Queue Length 50th (ft)	152	0	25	22	43	0
Queue Length 95th (ft)	247	0	56	42	86	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2132	1615	837	2929	800	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.08	0.16	0.12	0.30	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	908	117	127	319	223	159
Future Volume (vph)	908	117	127	319	223	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	987	127	138	347	242	173
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	987	127	138	347	242	173
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	27.0	61.9	6.2	39.7	10.7	61.9
Effective Green, g (s)	27.0	61.9	6.2	39.7	10.7	61.9
Actuated g/C Ratio	0.44	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1543	1615	350	2226	538	1450
v/s Ratio Prot	c0.28		c0.04	0.10	c0.08	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.64	0.08	0.39	0.16	0.45	0.12
Uniform Delay, d1	13.6	0.0	26.1	4.4	23.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.9	0.1	26.8	4.5	23.6	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.2			10.8	13.8	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			61.9		Sum of lost time (s)	18.0
Intersection Capacity Utilization			50.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Add RT AM
(Site Folder: General)]**

JCC Municipal Complex
Build 2030 - Add RT
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	130	0.0	1034	0.125	100	4.6	LOS A	0.7	16.6	Full	1600	0.0	0.0
Lane 2 ^d	151	0.0	1202	0.125	100	4.1	LOS A	0.7	17.0	Short	200	0.0	NA
Approach	280	0.0		0.125		4.3	LOS A	0.7	17.0				
North: Longhill Rd (SB)													
Lane 1 ^d	213	4.9	874	0.244	100	6.7	LOS A	1.1	29.2	Full	1600	0.0	0.0
Approach	213	4.9		0.244		6.7	LOS A	1.1	29.2				
West: Longhill Rd (EB)													
Lane 1	578	1.7	1322	0.437	100	7.0	LOS A	3.1	77.9	Full	1600	0.0	0.0
Lane 2 ^d	582	1.0	1331	0.437	100	7.0	LOS A	3.1	77.5	Full	1600	0.0	0.0
Approach	1160	1.3		0.437		7.0	LOS A	3.1	77.9				
Intersection	1653	1.6		0.437		6.5	LOS A	3.1	77.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	130	-	130	0.0	1034	0.125	100	NA	NA	
Lane 2	148	3	151	0.0	1202	0.125	100	0.0	1	
Approach	277	3	280	0.0		0.125				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	5	208	213	4.9	874	0.244	100	NA	NA	
Approach	5	208	213	4.9		0.244				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	402	176	578	1.7	1322	0.437	100	NA	NA
Lane 2	-	582	582	1.0	1331	0.437	100	NA	NA
Approach	402	758	1160	1.3		0.437			
Total %HV Deg.Satn (v/c)									
Intersection	1653	1.6		0.437					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

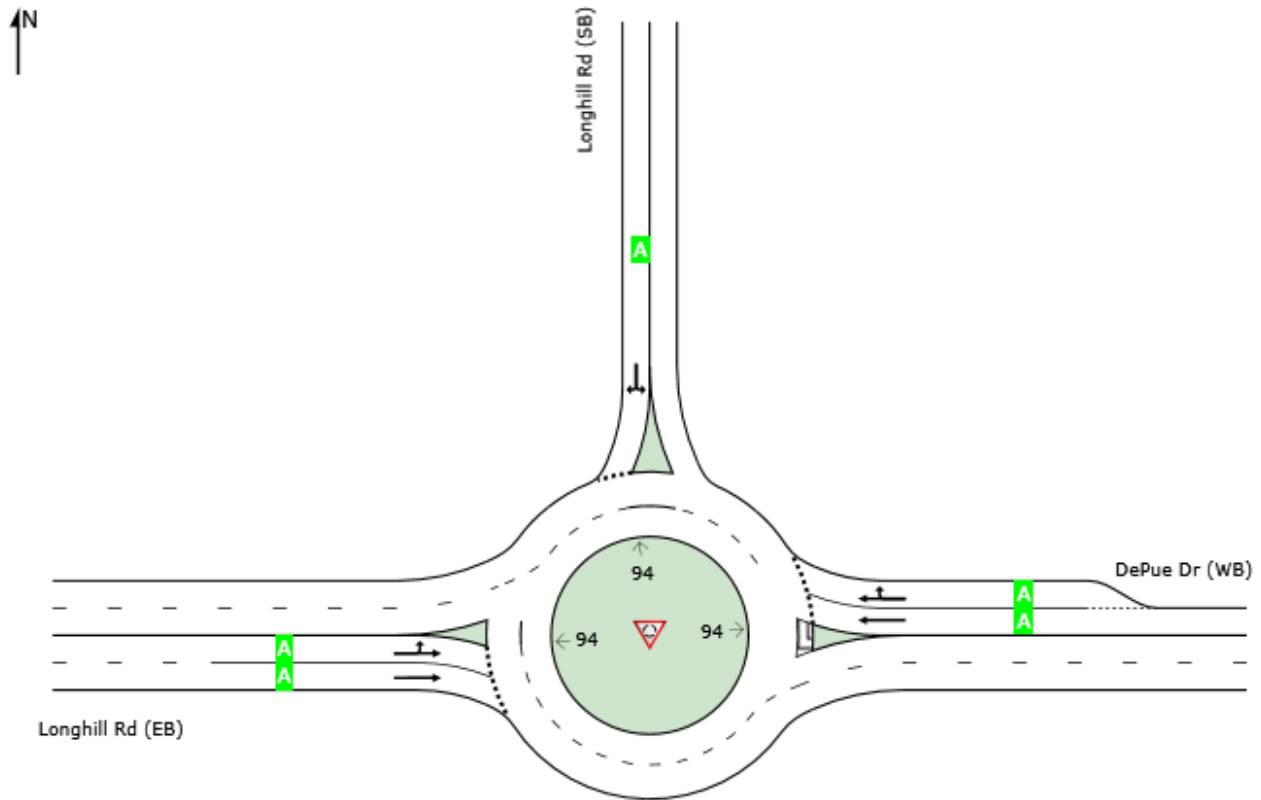
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Add RT AM**
(Site Folder: General)]

JCC Municipal Complex
Build 2030 - Add RT
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	128	523	52	4	200	89	18	1	0	39	1	41
Future Vol, veh/h	128	523	52	4	200	89	18	1	0	39	1	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	200
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	139	568	57	4	217	97	20	1	0	42	1	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	625	0	0	1172	1197	597	1100	1128	217
Stage 1	-	-	-	-	-	-	875	875	-	225	225	-
Stage 2	-	-	-	-	-	-	297	322	-	875	903	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1258	-	-	956	-	-	169	186	503	191	204	818
Stage 1	-	-	-	-	-	-	344	367	-	782	718	-
Stage 2	-	-	-	-	-	-	712	651	-	347	356	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1258	-	-	956	-	-	145	165	503	173	181	818
Mov Cap-2 Maneuver	-	-	-	-	-	-	145	165	-	173	181	-
Stage 1	-	-	-	-	-	-	306	327	-	696	715	-
Stage 2	-	-	-	-	-	-	669	648	-	308	317	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.1	33.7	21.1
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	146	1258	-	-	956	-	-	173	818
HCM Lane V/C Ratio	0.141	0.111	-	-	0.005	-	-	0.251	0.054
HCM Control Delay (s)	33.7	8.2	-	-	8.8	-	-	32.7	9.7
HCM Lane LOS	D	A	-	-	A	-	-	D	A
HCM 95th %tile Q(veh)	0.5	0.4	-	-	0	-	-	1	0.2

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	187	66	60	30	249	191	151	459
v/c Ratio	0.26	0.56	0.18	0.04	0.17	0.49	0.12	0.53	0.53
Control Delay	28.4	36.5	29.5	0.1	38.4	28.6	0.2	38.8	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	36.5	29.5	0.1	38.4	28.6	0.2	38.8	22.0
Queue Length 50th (ft)	17	80	26	0	13	102	0	65	138
Queue Length 95th (ft)	58	167	68	0	44	197	0	147	#356
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	528	501	543	1553	355	813	1553	373	866
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.37	0.12	0.04	0.08	0.31	0.12	0.40	0.53

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	19	172	61	55	28	229	176	139	390	32
Future Volume (vph)	9	26	19	172	61	55	28	229	176	139	390	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1861	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1861	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	28	21	187	66	60	30	249	191	151	424	35
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	39	0	187	66	60	30	249	191	151	457	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.4		13.4	13.4	77.2	2.7	23.9	77.2	11.5	32.7	
Effective Green, g (s)		4.4		13.4	13.4	77.2	2.7	23.9	77.2	11.5	32.7	
Actuated g/C Ratio		0.06		0.17	0.17	1.00	0.03	0.31	1.00	0.15	0.42	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		102		304	329	1553	59	576	1553	263	788	
v/s Ratio Prot		c0.02		c0.11	0.03		0.02	0.13		c0.09	c0.25	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.62	0.20	0.04	0.51	0.43	0.12	0.57	0.58	
Uniform Delay, d1		35.1		29.5	27.3	0.0	36.6	21.2	0.0	30.6	17.0	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		3.7	0.3	0.0	6.7	1.1	0.2	3.0	1.7	
Delay (s)		37.5		33.2	27.6	0.0	43.3	22.3	0.2	33.6	18.7	
Level of Service		D		C	C	A	D	C	A	C	B	
Approach Delay (s)		37.5			25.7			14.7			22.3	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			77.2			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			57.8%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

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	23	267	83	0	153	7	11	0	0	15	0	33
Future Vol, veh/h	23	267	83	0	153	7	11	0	0	15	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	25	290	90	0	166	8	12	0	0	16	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	380	0	0	528	514	290	551	596	166
Stage 1	-	-	-	-	-	-	340	340	-	166	166	-
Stage 2	-	-	-	-	-	-	188	174	-	385	430	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1311	-	-	1178	-	-	461	464	749	448	417	865
Stage 1	-	-	-	-	-	-	675	639	-	841	761	-
Stage 2	-	-	-	-	-	-	814	755	-	642	583	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1311	-	-	1178	-	-	436	455	749	441	409	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	455	-	441	409	-
Stage 1	-	-	-	-	-	-	662	627	-	825	761	-
Stage 2	-	-	-	-	-	-	780	755	-	630	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.5	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	1311	-	-	1178	-	-	665
HCM Lane V/C Ratio	0.027	0.019	-	-	-	-	-	0.078
HCM Control Delay (s)	13.5	7.8	-	-	0	-	-	10.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	251	31	39	148	13	23
Future Vol, veh/h	251	31	39	148	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	273	34	42	161	14	25

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	307
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1254
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1254
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	625	-	-	1254	-
HCM Lane V/C Ratio	0.063	-	-	0.034	-
HCM Control Delay (s)	11.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	199	169	5	91	76	111	111	193	228	136
Average Queue (ft)	107	81	0	35	15	41	50	75	136	47
95th Queue (ft)	174	144	0	71	51	89	100	164	209	102
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	L	L	R
Maximum Queue (ft)	218	207	61	88	80	67	7	133	166	99
Average Queue (ft)	130	117	20	48	32	22	0	42	88	30
95th Queue (ft)	199	185	52	78	70	56	7	105	142	76
Link Distance (ft)	542	542			601	601	224		404	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			265	265				435		310
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	B13	WB	WB	NB	SB	SB
Directions Served	L	T	L	R	LTR	LT	R
Maximum Queue (ft)	60	62	21	25	43	60	46
Average Queue (ft)	20	5	1	2	15	23	18
95th Queue (ft)	48	31	11	12	42	51	39
Link Distance (ft)		404			537	324	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	240		240	265		200	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	75	160	85	55	173	180	267
Average Queue (ft)	33	79	34	17	70	75	109
95th Queue (ft)	65	140	73	43	134	137	203
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	1

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	NB	SB
Directions Served	L	R	LTR	LTR
Maximum Queue (ft)	40	6	28	52
Average Queue (ft)	3	0	8	20
95th Queue (ft)	19	5	28	43
Link Distance (ft)			260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	50		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	49	40
Average Queue (ft)	10	22
95th Queue (ft)	36	47
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 1

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions Add RT

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	563	389	198	1222	152	153	240
v/c Ratio	0.50	0.24	0.38	0.58	0.45	0.45	0.57
Control Delay	19.1	0.4	27.4	9.5	26.5	26.6	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	0.4	27.4	9.5	26.5	26.6	17.4
Queue Length 50th (ft)	82	0	32	121	48	49	35
Queue Length 95th (ft)	159	0	76	239	117	118	111
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2050	1615	767	3145	635	635	676
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.24	0.26	0.39	0.24	0.24	0.36
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (vph)	0	518	358	182	1124	0	0	0	0	281	0	221
Future Volume (vph)	0	518	358	182	1124	0	0	0	0	281	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	563	389	198	1222	0	0	0	0	305	0	240
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	563	389	198	1222	0	0	0	0	152	153	141
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		19.4	59.7	9.1	35.5					12.2	12.2	12.2
Effective Green, g (s)		19.4	59.7	9.1	35.5					12.2	12.2	12.2
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1138	1615	523	2104					343	343	323
v/s Ratio Prot		0.16		0.06	c0.35					0.09	c0.09	0.09
v/s Ratio Perm			0.24									
v/c Ratio		0.49	0.24	0.38	0.58					0.44	0.45	0.44
Uniform Delay, d1		16.2	0.0	22.8	7.5					20.8	20.8	20.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.4	0.5	0.6					0.9	0.9	1.0
Delay (s)		16.9	0.4	23.2	8.1					21.7	21.7	21.7
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.1			10.2			0.0			21.7	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			59.7			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			54.8%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	757	112	448	888	532	195
v/c Ratio	0.61	0.07	0.70	0.40	0.79	0.13
Control Delay	21.1	0.1	33.4	7.1	37.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	0.1	33.4	7.1	37.4	0.2
Queue Length 50th (ft)	140	0	91	86	111	0
Queue Length 95th (ft)	191	0	151	117	#209	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1813	1538	698	2822	686	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.07	0.64	0.31	0.78	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	696	103	412	817	489	179
Future Volume (vph)	696	103	412	817	489	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	757	112	448	888	532	195
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	757	112	448	888	532	195
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	23.3	68.2	12.6	42.4	14.3	68.2
Effective Green, g (s)	23.3	68.2	12.6	42.4	14.3	68.2
Actuated g/C Ratio	0.34	1.00	0.18	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1233	1538	646	2200	672	1479
v/s Ratio Prot	c0.21		c0.13	0.25	c0.17	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.61	0.07	0.69	0.40	0.79	0.13
Uniform Delay, d1	18.7	0.0	26.0	6.5	25.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	3.2	0.3	6.3	0.2
Delay (s)	20.0	0.1	29.2	6.8	31.9	0.2
Level of Service	C	A	C	A	C	A
Approach Delay (s)	17.5			14.3	23.4	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			17.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			68.2		Sum of lost time (s)	18.0
Intersection Capacity Utilization			59.9%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Add RT PM (Site Folder: General)]**

JCC Municipal Complex
Build 2030 - Add RT
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	424	0.0	1068	0.397	100	7.6	LOS A	2.6	64.2	Full	1600	0.0	0.0
Lane 2 ^d	490	0.0	1236	0.397	100	6.8	LOS A	2.6	66.2	Short	200	0.0	NA
Approach	914	0.0		0.397		7.1	LOS A	2.6	66.2				
North: Longhill Rd (SB)													
Lane 1 ^d	427	3.2	588	0.726	100	24.3	LOS C	7.0	178.7	Full	1600	0.0	0.0
Approach	427	3.2		0.726		24.3	LOS C	7.0	178.7				
West: Longhill Rd (EB)													
Lane 1	470	2.0	1308	0.360	100	6.1	LOS A	2.6	64.9	Full	1600	0.0	0.0
Lane 2 ^d	470	2.0	1308	0.360	100	6.1	LOS A	2.6	64.9	Full	1600	0.0	0.0
Approach	941	2.0		0.360		6.1	LOS A	2.6	64.9				
Intersection	2282	1.4		0.726		9.9	LOS A	7.0	178.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	424	-	424	0.0	1068	0.397	100	NA	NA	
Lane 2	482	9	490	0.0	1236	0.397	100	0.0	1	
Approach	905	9	914	0.0		0.397				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	11	416	427	3.2	588	0.726	100	NA	NA	
Approach	11	416	427	3.2		0.726				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	349	121	470	2.0	1308	0.360	100	NA	NA
Lane 2	-	470	470	2.0	1308	0.360	100	NA	NA
Approach	349	591	941	2.0		0.360			
Total %HV Deg.Satn (v/c)									
Intersection	2282	1.4		0.726					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

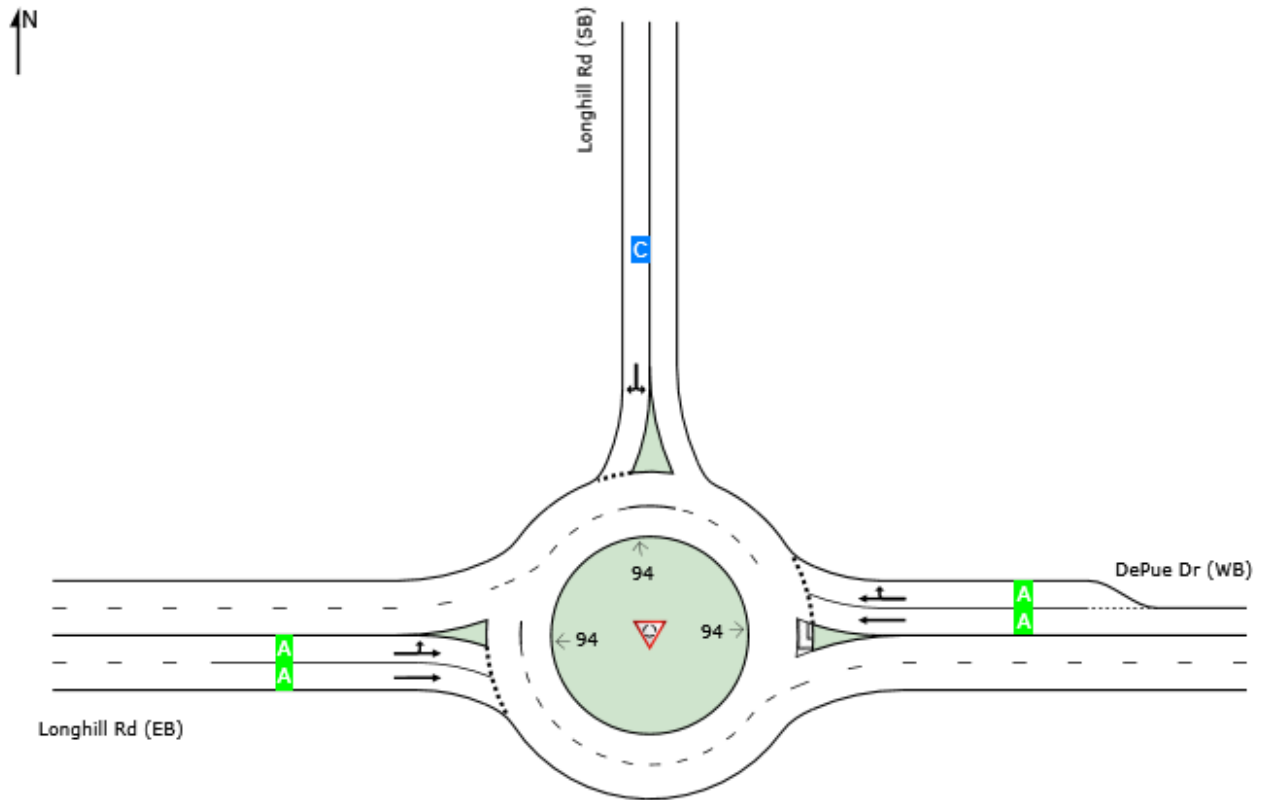
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Add RT PM**
(Site Folder: General)]

JCC Municipal Complex
Build 2030 - Add RT
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	C	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 29.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	126	416	17	2	617	71	46	2	6	110	1	188
Future Vol, veh/h	126	416	17	2	617	71	46	2	6	110	1	188
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	200
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	137	452	18	2	671	77	50	2	7	120	1	204

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	748	0	0	470	0	0	1551	1487	461	1415	1419	671
Stage 1	-	-	-	-	-	-	735	735	-	675	675	-
Stage 2	-	-	-	-	-	-	816	752	-	740	744	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	870	-	-	1092	-	-	92	124	600	~ 116	137	460
Stage 1	-	-	-	-	-	-	411	425	-	447	453	-
Stage 2	-	-	-	-	-	-	371	418	-	412	421	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	870	-	-	1092	-	-	~ 45	104	600	~ 99	115	460
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 45	104	-	~ 99	115	-
Stage 1	-	-	-	-	-	-	346	358	-	377	452	-
Stage 2	-	-	-	-	-	-	205	417	-	341	355	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.2	0	\$ 303.7	101
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	51	870	-	-	1092	-	-	99	460
HCM Lane V/C Ratio	1.151	0.157	-	-	0.002	-	-	1.219	0.444
HCM Control Delay (s)	\$ 303.7	9.9	-	-	8.3	-	-	240.1	18.9
HCM Lane LOS	F	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	5.2	0.6	-	-	0	-	-	8.2	2.2

Notes

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	121	258	23	178	9	498	294	148	407
v/c Ratio	0.53	0.79	0.07	0.11	0.08	0.86	0.19	0.65	0.59
Control Delay	42.3	55.5	33.7	0.1	45.3	48.7	0.3	53.8	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	55.5	33.7	0.1	45.3	48.7	0.3	53.8	28.7
Queue Length 50th (ft)	60	149	12	0	5	288	0	86	194
Queue Length 95th (ft)	116	#284	35	0	21	#511	0	158	320
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	385	366	393	1615	275	595	1583	270	691
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.70	0.06	0.11	0.03	0.84	0.19	0.55	0.59

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	38	36	248	22	171	9	478	282	142	376	14
Future Volume (vph)	41	38	36	248	22	171	9	478	282	142	376	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1788		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1788		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	40	38	258	23	178	9	498	294	148	392	15
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	104	0	258	23	178	9	498	294	148	406	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.9		17.1	17.1	92.3	6.1	28.4	92.3	11.9	34.2	
Effective Green, g (s)		10.9		17.1	17.1	92.3	6.1	28.4	92.3	11.9	34.2	
Actuated g/C Ratio		0.12		0.19	0.19	1.00	0.07	0.31	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		211		327	352	1615	119	578	1583	228	686	
v/s Ratio Prot		c0.06		c0.15	0.01		0.00	c0.26		c0.08	c0.22	
v/s Ratio Perm						0.11			0.19			
v/c Ratio		0.49		0.79	0.07	0.11	0.08	0.86	0.19	0.65	0.59	
Uniform Delay, d1		38.1		35.9	31.0	0.0	40.5	30.1	0.0	38.2	23.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.8		11.9	0.1	0.1	0.3	13.6	0.3	6.2	2.1	
Delay (s)		39.9		47.8	31.1	0.1	40.7	43.7	0.3	44.5	25.5	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		39.9			28.5			27.7			30.5	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			92.3			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			68.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	265	22	0	260	32	92	0	0	15	0	45
Future Vol, veh/h	48	265	22	0	260	32	92	0	0	15	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	52	288	24	0	283	35	100	0	0	16	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	312	0	0	717	710	288	687	699	283
Stage 1	-	-	-	-	-	-	392	392	-	283	283	-
Stage 2	-	-	-	-	-	-	325	318	-	404	416	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1220	-	-	1248	-	-	345	359	751	360	364	746
Stage 1	-	-	-	-	-	-	633	606	-	722	677	-
Stage 2	-	-	-	-	-	-	687	654	-	621	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1220	-	-	1248	-	-	312	344	751	348	348	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	344	-	348	348	-
Stage 1	-	-	-	-	-	-	606	580	-	691	677	-
Stage 2	-	-	-	-	-	-	642	654	-	595	567	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	21.9	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	312	1220	-	-	1248	-	-	580
HCM Lane V/C Ratio	0.321	0.043	-	-	-	-	-	0.112
HCM Control Delay (s)	21.9	8.1	-	-	0	-	-	12
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.4

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2030 Conditions Add RT
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	249	31	32	258	34	46
Future Vol, veh/h	249	31	32	258	34	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	271	34	35	280	37	50

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	305
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1256
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1256
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	1256	-
HCM Lane V/C Ratio	0.154	-	-	0.028	-
HCM Control Delay (s)	12.6	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	177	158	4	118	194	256	250	155	208	210
Average Queue (ft)	98	73	0	62	43	113	110	42	105	100
95th Queue (ft)	153	132	4	102	113	210	207	116	176	170
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)					0	0			0	0
Queuing Penalty (veh)					0	0			0	0

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	T	L	L	R
Maximum Queue (ft)	188	174	149	161	142	114	34	23	238	280	134
Average Queue (ft)	114	102	85	109	70	61	1	1	133	179	29
95th Queue (ft)	175	157	132	151	118	102	20	17	211	252	86
Link Distance (ft)	542	542			601	601	224	224		404	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			265	265					435		310
Storage Blk Time (%)										0	0
Queuing Penalty (veh)										0	0

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	EB	B13	WB	WB	NB	SB	SB
Directions Served	L	TR	T	L	R	LTR	LT	R
Maximum Queue (ft)	107	1	30	9	27	108	213	166
Average Queue (ft)	39	0	2	0	2	41	83	71
95th Queue (ft)	81	1	16	6	13	85	189	148
Link Distance (ft)		683	404			537	324	
Upstream Blk Time (%)							1	
Queuing Penalty (veh)							0	
Storage Bay Dist (ft)	240			240	265			200
Storage Blk Time (%)							3	0
Queuing Penalty (veh)							5	0

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	137	254	61	69	374	78	208	281
Average Queue (ft)	62	139	15	10	221	7	88	143
95th Queue (ft)	114	225	45	78	360	89	164	239
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				0	2	0		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				0	2		0	1
Queuing Penalty (veh)				1	0		0	1

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	NB	SB
Directions Served	L	LTR	LTR
Maximum Queue (ft)	46	79	62
Average Queue (ft)	9	36	24
95th Queue (ft)	33	65	47
Link Distance (ft)		260	529
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	120		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	48	68
Average Queue (ft)	0	9	33
95th Queue (ft)	2	35	57
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 9

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI

Timing Plan: AM Peak Hour

	→	↘	↙	←	↘	↓	↙
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	652	400	84	508	231	232	115
v/c Ratio	0.51	0.25	0.21	0.27	0.57	0.57	0.25
Control Delay	18.4	0.4	30.1	7.8	28.6	28.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	0.4	30.1	7.8	28.6	28.6	5.8
Queue Length 50th (ft)	102	0	14	45	81	81	0
Queue Length 95th (ft)	179	0	40	86	174	174	33
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2120	1615	764	2979	658	660	677
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.25	0.11	0.17	0.35	0.35	0.17
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	600	368	77	467	0	0	0	0	425	1	106
Future Volume (vph)	0	600	368	77	467	0	0	0	0	425	1	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	652	400	84	508	0	0	0	0	462	1	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	652	400	84	508	0	0	0	0	231	232	27
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		22.1	61.3	5.6	34.7					14.6	14.6	14.6
Effective Green, g (s)		22.1	61.3	5.6	34.7					14.6	14.6	14.6
Actuated g/C Ratio		0.36	1.00	0.09	0.57					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1251	1615	299	1964					396	397	362
v/s Ratio Prot		c0.19		0.03	0.15					0.14	c0.14	0.02
v/s Ratio Perm			c0.25									
v/c Ratio		0.52	0.25	0.28	0.26					0.58	0.58	0.08
Uniform Delay, d1		15.4	0.0	26.0	6.8					20.7	20.7	18.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.4	0.5	0.1					2.2	2.2	0.1
Delay (s)		16.2	0.4	26.5	6.9					22.8	22.9	18.2
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.2			9.7			0.0			21.9	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			13.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			61.3		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			48.4%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	987	127	138	347	242	173
v/c Ratio	0.63	0.08	0.29	0.16	0.44	0.12
Control Delay	16.4	0.1	29.5	4.7	28.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	0.1	29.5	4.7	28.2	0.2
Queue Length 50th (ft)	152	0	25	22	43	0
Queue Length 95th (ft)	247	0	56	42	86	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2132	1615	837	2929	800	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.08	0.16	0.12	0.30	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	908	117	127	319	223	159
Future Volume (vph)	908	117	127	319	223	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	987	127	138	347	242	173
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	987	127	138	347	242	173
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	27.0	61.9	6.2	39.7	10.7	61.9
Effective Green, g (s)	27.0	61.9	6.2	39.7	10.7	61.9
Actuated g/C Ratio	0.44	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1543	1615	350	2226	538	1450
v/s Ratio Prot	c0.28		c0.04	0.10	c0.08	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.64	0.08	0.39	0.16	0.45	0.12
Uniform Delay, d1	13.6	0.0	26.1	4.4	23.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.9	0.1	26.8	4.5	23.6	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.2			10.8	13.8	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			61.9		Sum of lost time (s)	18.0
Intersection Capacity Utilization			50.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - RIROLI AM (Site Folder: General)]**

JCC Municipal Complex
Build 2030 - RIROLI
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	150	0.0	1014	0.148	100	4.9	LOS A	0.8	20.5	Full	1600	0.0	0.0
Lane 2 ^d	174	0.0	1182	0.148	100	4.3	LOS A	0.9	21.3	Short	200	0.0	NA
Approach	324	0.0		0.148		4.6	LOS A	0.9	21.3				
North: Longhill Rd (SB)													
Lane 1 ^d	213	4.9	841	0.253	100	7.0	LOS A	1.2	30.2	Full	1600	0.0	0.0
Approach	213	4.9		0.253		7.0	LOS A	1.2	30.2				
West: Longhill Rd (EB)													
Lane 1	578	1.7	1273	0.454	100	7.4	LOS A	3.2	80.9	Full	1600	0.0	0.0
Lane 2 ^d	582	1.0	1282	0.454	100	7.4	LOS A	3.2	80.5	Full	1600	0.0	0.0
Approach	1160	1.3		0.454		7.4	LOS A	3.2	80.9				
Intersection	1697	1.5		0.454		6.8	LOS A	3.2	80.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)											
East: DePue Dr (WB)											
Mov.	U	T1	R2	Total	%HV						
From E						Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	E	W	N			veh/h	satn	Util.	SL	Ov.	Lane
							v/c	%	%		No.
Lane 1	43	106	-	150	0.0	1014	0.148	100	NA	NA	
Lane 2	-	171	3	174	0.0	1182	0.148	100	0.0	1	
Approach	43	277	3	324	0.0		0.148				
North: Longhill Rd (SB)											
Mov.	L2	R2	Total	%HV							
From N						Cap.	Deg.	Lane	Prob.	Ov.	
To Exit:	E	W				veh/h	satn	Util.	SL	Ov.	Lane
							v/c	%	%		No.
Lane 1	5	208	213	4.9		841	0.253	100	NA	NA	
Approach	5	208	213	4.9			0.253				
West: Longhill Rd (EB)											
Mov.	L2	T1	Total	%HV			Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	402	176	578	1.7	1273	0.454	100	NA	NA
Lane 2	-	582	582	1.0	1282	0.454	100	NA	NA
Approach	402	758	1160	1.3		0.454			
Total %HV Deg.Satn (v/c)									
Intersection	1697	1.5		0.454					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

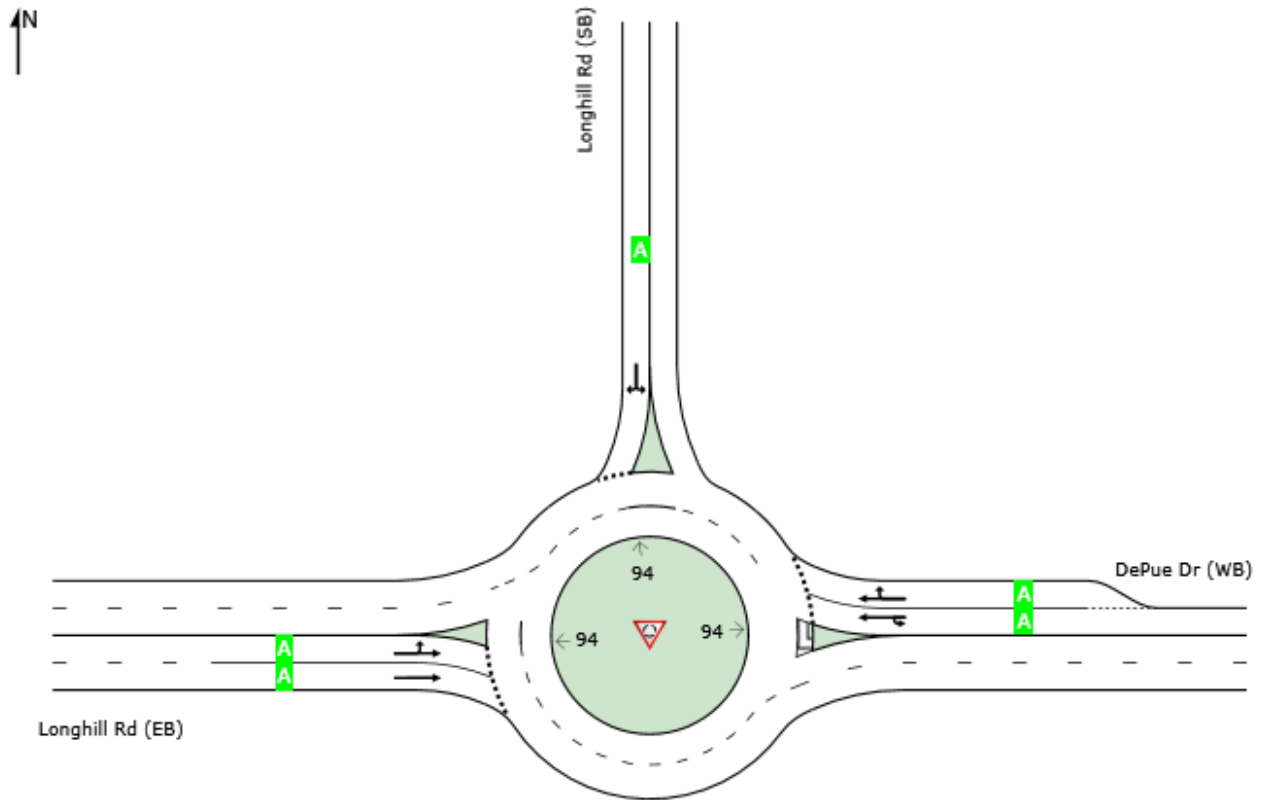
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - RIROLI AM**
(Site Folder: General)]

JCC Municipal Complex
Build 2030 - RIROLI
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2030 Conditions RIROLI

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	128	562	53	4	218	90	0	0	0	0	0	81
Future Vol, veh/h	128	562	53	4	218	90	0	0	0	0	0	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	1	2	2	2	5	2	2	2	0	2	4
Mvmt Flow	139	611	58	4	237	98	0	0	0	0	0	88

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	335	0	0	669	0	0	1256	1261	640	1163	1192	237
Stage 1	-	-	-	-	-	-	918	918	-	245	245	-
Stage 2	-	-	-	-	-	-	338	343	-	918	947	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.336
Pot Cap-1 Maneuver	1236	-	-	921	-	-	148	170	475	173	187	797
Stage 1	-	-	-	-	-	-	326	350	-	763	703	-
Stage 2	-	-	-	-	-	-	676	637	-	328	340	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1236	-	-	921	-	-	120	150	475	158	165	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	150	-	158	165	-
Stage 1	-	-	-	-	-	-	289	311	-	678	700	-
Stage 2	-	-	-	-	-	-	599	634	-	291	302	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.1	0	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1236	-	-	921	-	-	797
HCM Lane V/C Ratio	-	0.113	-	-	0.005	-	-	0.11
HCM Control Delay (s)	0	8.3	-	-	8.9	-	-	10.1
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	0.4

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	79	187	66	60	30	249	191	151	459
v/c Ratio	0.34	0.59	0.19	0.04	0.18	0.52	0.12	0.56	0.57
Control Delay	33.9	39.3	30.8	0.1	39.4	30.9	0.2	41.7	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.9	39.3	30.8	0.1	39.4	30.9	0.2	41.7	24.4
Queue Length 50th (ft)	29	82	27	0	13	105	0	66	144
Queue Length 95th (ft)	79	170	69	0	44	202	0	149	#394
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	495	472	512	1553	335	767	1553	351	816
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.40	0.13	0.04	0.09	0.32	0.12	0.43	0.56

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	26	19	172	61	55	28	229	176	139	390	32
Future Volume (vph)	28	26	19	172	61	55	28	229	176	139	390	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1798		1752	1900	1553	1687	1863	1553	1770	1861	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1798		1752	1900	1553	1687	1863	1553	1770	1861	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	28	21	187	66	60	30	249	191	151	424	35
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	65	0	187	66	60	30	249	191	151	457	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		6.8		13.4	13.4	79.3	2.8	23.7	79.3	11.4	32.3	
Effective Green, g (s)		6.8		13.4	13.4	79.3	2.8	23.7	79.3	11.4	32.3	
Actuated g/C Ratio		0.09		0.17	0.17	1.00	0.04	0.30	1.00	0.14	0.41	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		154		296	321	1553	59	556	1553	254	758	
v/s Ratio Prot		c0.04		c0.11	0.03		0.02	0.13		c0.09	c0.25	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.42		0.63	0.21	0.04	0.51	0.45	0.12	0.59	0.60	
Uniform Delay, d1		34.4		30.7	28.4	0.0	37.6	22.5	0.0	31.8	18.5	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9		4.4	0.3	0.0	6.7	1.2	0.2	3.7	2.0	
Delay (s)		36.3		35.0	28.7	0.0	44.3	23.7	0.2	35.5	20.4	
Level of Service		D		D	C	A	D	C	A	D	C	
Approach Delay (s)		36.3			27.0			15.5			24.2	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.6		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			79.3		Sum of lost time (s)					24.0		
Intersection Capacity Utilization			57.8%		ICU Level of Service					B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

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	23	267	83	0	153	7	11	0	0	15	0	33
Future Vol, veh/h	23	267	83	0	153	7	11	0	0	15	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	25	290	90	0	166	8	12	0	0	16	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	380	0	0	528	514	290	551	596	166
Stage 1	-	-	-	-	-	-	340	340	-	166	166	-
Stage 2	-	-	-	-	-	-	188	174	-	385	430	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1311	-	-	1178	-	-	461	464	749	448	417	865
Stage 1	-	-	-	-	-	-	675	639	-	841	761	-
Stage 2	-	-	-	-	-	-	814	755	-	642	583	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1311	-	-	1178	-	-	436	455	749	441	409	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	455	-	441	409	-
Stage 1	-	-	-	-	-	-	662	627	-	825	761	-
Stage 2	-	-	-	-	-	-	780	755	-	630	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.5	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	1311	-	-	1178	-	-	665
HCM Lane V/C Ratio	0.027	0.019	-	-	-	-	-	0.078
HCM Control Delay (s)	13.5	7.8	-	-	0	-	-	10.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	251	31	39	148	13	23
Future Vol, veh/h	251	31	39	148	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	273	34	42	161	14	25

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	307	0	535	290
Stage 1	-	-	-	-	290	-
Stage 2	-	-	-	-	245	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1254	-	498	754
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	784	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1254	-	480	754
Mov Cap-2 Maneuver	-	-	-	-	480	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	1.7	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	625	-	-	1254	-
HCM Lane V/C Ratio	0.063	-	-	0.034	-
HCM Control Delay (s)	11.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	186	166	5	81	59	120	129	199	233	126
Average Queue (ft)	105	76	0	32	14	46	56	73	133	49
95th Queue (ft)	167	139	5	64	47	97	109	169	207	100
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	222	221	69	86	84	60	133	173	98
Average Queue (ft)	131	119	24	51	32	22	45	92	32
95th Queue (ft)	197	187	58	80	70	51	116	149	77
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	B13	WB	WB	SB
Directions Served	L	T	L	R	LTR
Maximum Queue (ft)	58	60	25	15	60
Average Queue (ft)	23	4	2	1	27
95th Queue (ft)	51	31	13	8	50
Link Distance (ft)		366			324
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	240		240	265	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	100	175	90	57	158	199	246
Average Queue (ft)	48	87	36	15	68	75	119
95th Queue (ft)	84	151	76	43	131	142	206
Link Distance (ft)	740	1078	1078		362		3110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	EB	NB	SB
Directions Served	L	R	LTR	LTR
Maximum Queue (ft)	44	9	33	50
Average Queue (ft)	5	0	9	21
95th Queue (ft)	25	9	31	42
Link Distance (ft)			260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	150		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	50	51
Average Queue (ft)	9	22
95th Queue (ft)	34	48
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	563	389	198	1222	152	153	240
v/c Ratio	0.50	0.24	0.38	0.58	0.45	0.45	0.57
Control Delay	19.1	0.4	27.4	9.5	26.5	26.6	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	0.4	27.4	9.5	26.5	26.6	17.4
Queue Length 50th (ft)	82	0	32	121	48	49	35
Queue Length 95th (ft)	159	0	76	239	117	118	111
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2050	1615	767	3145	635	635	676
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.24	0.26	0.39	0.24	0.24	0.36
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (vph)	0	518	358	182	1124	0	0	0	0	281	0	221
Future Volume (vph)	0	518	358	182	1124	0	0	0	0	281	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	563	389	198	1222	0	0	0	0	305	0	240
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	563	389	198	1222	0	0	0	0	152	153	141
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		19.4	59.7	9.1	35.5					12.2	12.2	12.2
Effective Green, g (s)		19.4	59.7	9.1	35.5					12.2	12.2	12.2
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1138	1615	523	2104					343	343	323
v/s Ratio Prot		0.16		0.06	c0.35					0.09	c0.09	0.09
v/s Ratio Perm			0.24									
v/c Ratio		0.49	0.24	0.38	0.58					0.44	0.45	0.44
Uniform Delay, d1		16.2	0.0	22.8	7.5					20.8	20.8	20.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.4	0.5	0.6					0.9	0.9	1.0
Delay (s)		16.9	0.4	23.2	8.1					21.7	21.7	21.7
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.1			10.2			0.0			21.7	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			59.7			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			54.8%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	757	112	448	888	532	195
v/c Ratio	0.61	0.07	0.70	0.40	0.79	0.13
Control Delay	21.1	0.1	33.4	7.1	37.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	0.1	33.4	7.1	37.4	0.2
Queue Length 50th (ft)	140	0	91	86	111	0
Queue Length 95th (ft)	191	0	151	117	#209	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1813	1538	698	2822	686	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.07	0.64	0.31	0.78	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	696	103	412	817	489	179
Future Volume (vph)	696	103	412	817	489	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	757	112	448	888	532	195
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	757	112	448	888	532	195
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	23.3	68.2	12.6	42.4	14.3	68.2
Effective Green, g (s)	23.3	68.2	12.6	42.4	14.3	68.2
Actuated g/C Ratio	0.34	1.00	0.18	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1233	1538	646	2200	672	1479
v/s Ratio Prot	c0.21		c0.13	0.25	c0.17	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.61	0.07	0.69	0.40	0.79	0.13
Uniform Delay, d1	18.7	0.0	26.0	6.5	25.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	3.2	0.3	6.3	0.2
Delay (s)	20.0	0.1	29.2	6.8	31.9	0.2
Level of Service	C	A	C	A	C	A
Approach Delay (s)	17.5			14.3	23.4	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			17.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			68.2		Sum of lost time (s)	18.0
Intersection Capacity Utilization			59.9%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - RIROLI PM (Site Folder: General)]**

JCC Municipal Complex
Build 2030 - RIROLI
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	479	0.0	1043	0.459	100	8.7	LOS A	3.3	82.8	Full	1600	0.0	0.0
Lane 2 ^d	554	0.0	1207	0.459	100	7.8	LOS A	3.4	86.0	Short	200	0.0	NA
Approach	1033	0.0		0.459		8.2	LOS A	3.4	86.0				
North: Longhill Rd (SB)													
Lane 1 ^d	427	3.2	538	0.794	100	31.7	LOS D	8.5	218.3	Full	1600	0.0	0.0
Approach	427	3.2		0.794		31.7	LOS D	8.5	218.3				
West: Longhill Rd (EB)													
Lane 1	470	2.0	1179	0.399	100	7.1	LOS A	2.6	65.1	Full	1600	0.0	0.0
Lane 2 ^d	471	2.0	1181	0.399	100	7.1	LOS A	2.6	65.1	Full	1600	0.0	0.0
Approach	941	2.0		0.399		7.1	LOS A	2.6	65.1				
Intersection	2401	1.3		0.794		11.9	LOS B	8.5	218.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	U	T1	R2	Total	%HV					
From E						Cap.	Deg.	Lane	Prob.	Ov.
To Exit:	E	W	N			veh/h	satn	Util.	SL Ov.	Lane
							v/c	%	%	No.
Lane 1	119	360	-	479	0.0	1043	0.459	100	NA	NA
Lane 2	-	546	9	554	0.0	1207	0.459	100	0.0	1
Approach	119	905	9	1033	0.0		0.459			
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV						
From N						Cap.	Deg.	Lane	Prob.	Ov.
To Exit:	E	W				veh/h	satn	Util.	SL Ov.	Lane
							v/c	%	%	No.
Lane 1	11	416	427	3.2		538	0.794	100	NA	NA
Approach	11	416	427	3.2			0.794			
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV			Deg.	Lane	Prob.	Ov.

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	349	121	470	2.0	1179	0.399	100	NA	NA
Lane 2	-	471	471	2.0	1181	0.399	100	NA	NA
Approach	349	591	941	2.0		0.399			
Total %HV Deg.Satn (v/c)									
Intersection	2401	1.3		0.794					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

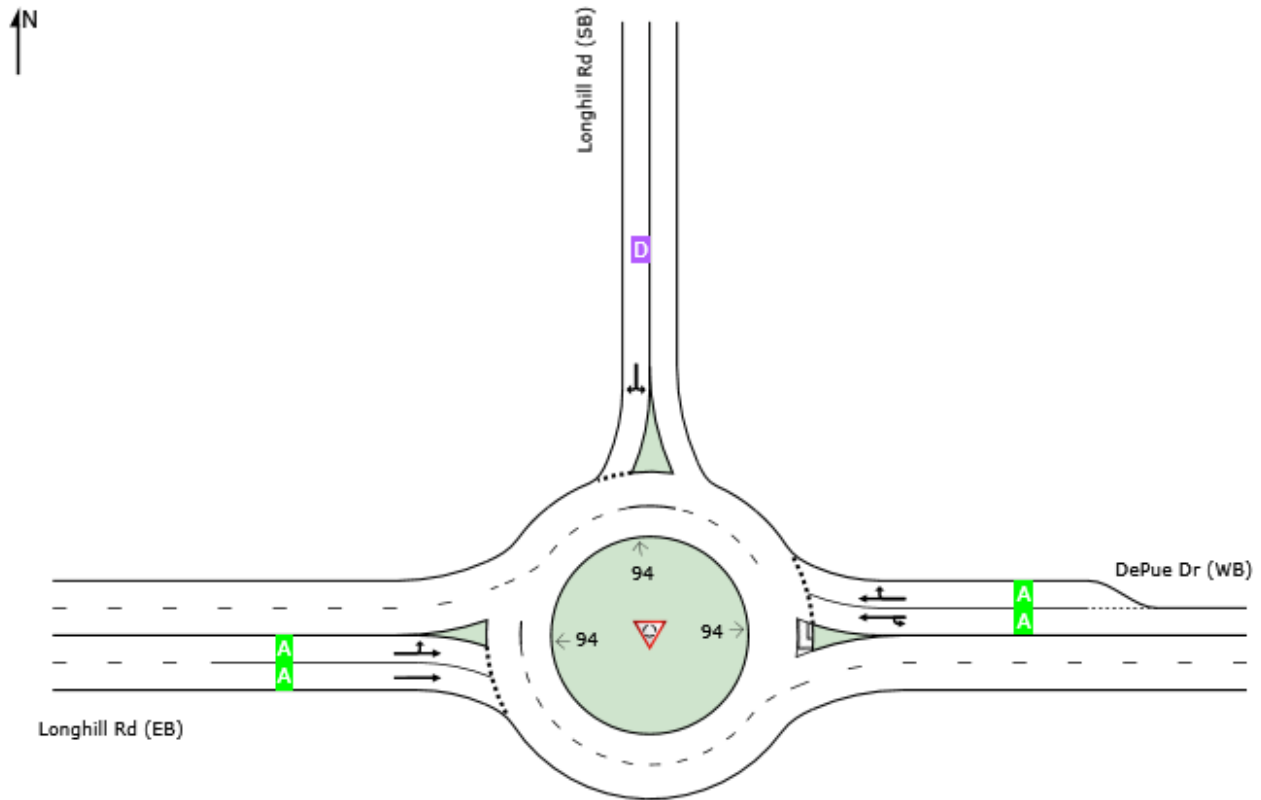
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - RIROLI PM**
(Site Folder: General)]

JCC Municipal Complex
Build 2030 - RIROLI
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	D	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
4: Ashbury Lane & DePue Drive

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	126	526	18	2	663	73	0	0	6	0	0	299
Future Vol, veh/h	126	526	18	2	663	73	0	0	6	0	0	299
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	240	-	-	240	-	265	-	-	-	-	-	-
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, %	0	3	2	2	0	2	2	2	2	0	2	0
Mvmt Flow	137	572	20	2	721	79	0	0	7	0	0	325

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	800	0	0	592	0	0	1783	1660	582	1585	1591	721
Stage 1	-	-	-	-	-	-	856	856	-	725	725	-
Stage 2	-	-	-	-	-	-	927	804	-	860	866	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	832	-	-	984	-	-	64	97	513	89	107	431
Stage 1	-	-	-	-	-	-	352	374	-	420	430	-
Stage 2	-	-	-	-	-	-	322	396	-	353	370	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	832	-	-	984	-	-	14	81	513	77	89	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	14	81	-	77	89	-
Stage 1	-	-	-	-	-	-	294	312	-	351	429	-
Stage 2	-	-	-	-	-	-	79	395	-	291	309	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	12.1	34.8
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	513	832	-	-	984	-	-	431
HCM Lane V/C Ratio	0.013	0.165	-	-	0.002	-	-	0.754
HCM Control Delay (s)	12.1	10.2	-	-	8.7	-	-	34.8
HCM Lane LOS	B	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0.6	-	-	0	-	-	6.2

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	171	258	23	178	9	498	294	148	407
v/c Ratio	0.64	0.81	0.07	0.11	0.08	0.89	0.19	0.66	0.61
Control Delay	48.4	59.5	35.4	0.1	47.0	53.7	0.3	56.6	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	59.5	35.4	0.1	47.0	53.7	0.3	56.6	30.8
Queue Length 50th (ft)	97	157	12	0	6	305	0	90	205
Queue Length 95th (ft)	166	#297	36	0	22	#537	0	#166	334
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	369	355	381	1615	267	576	1583	261	671
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.73	0.06	0.11	0.03	0.86	0.19	0.57	0.61

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	38	36	248	22	171	9	478	282	142	376	14
Future Volume (vph)	89	38	36	248	22	171	9	478	282	142	376	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.97		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.97		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	93	40	38	258	23	178	9	498	294	148	392	15
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	161	0	258	23	178	9	498	294	148	406	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		13.7		17.2	17.2	95.5	6.1	28.5	95.5	12.1	34.5	
Effective Green, g (s)		13.7		17.2	17.2	95.5	6.1	28.5	95.5	12.1	34.5	
Actuated g/C Ratio		0.14		0.18	0.18	1.00	0.06	0.30	1.00	0.13	0.36	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		257		318	342	1615	115	561	1583	224	669	
v/s Ratio Prot		c0.09		c0.15	0.01		0.00	c0.26		c0.08	c0.22	
v/s Ratio Perm						0.11			0.19			
v/c Ratio		0.63		0.81	0.07	0.11	0.08	0.89	0.19	0.66	0.61	
Uniform Delay, d1		38.5		37.6	32.5	0.0	42.1	32.0	0.0	39.7	24.9	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.7		14.5	0.1	0.1	0.3	16.7	0.3	7.1	2.3	
Delay (s)		43.2		52.1	32.6	0.1	42.3	48.7	0.3	46.9	27.2	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		43.2			31.0			30.8			32.5	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			32.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			95.5			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			68.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	265	22	0	260	32	92	0	0	15	0	45
Future Vol, veh/h	48	265	22	0	260	32	92	0	0	15	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	52	288	24	0	283	35	100	0	0	16	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	312	0	0	717	710	288	687	699	283
Stage 1	-	-	-	-	-	-	392	392	-	283	283	-
Stage 2	-	-	-	-	-	-	325	318	-	404	416	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1220	-	-	1248	-	-	345	359	751	360	364	746
Stage 1	-	-	-	-	-	-	633	606	-	722	677	-
Stage 2	-	-	-	-	-	-	687	654	-	621	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1220	-	-	1248	-	-	312	344	751	348	348	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	344	-	348	348	-
Stage 1	-	-	-	-	-	-	606	580	-	691	677	-
Stage 2	-	-	-	-	-	-	642	654	-	595	567	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	21.9	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	312	1220	-	-	1248	-	-	580
HCM Lane V/C Ratio	0.321	0.043	-	-	-	-	-	0.112
HCM Control Delay (s)	21.9	8.1	-	-	0	-	-	12
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.4

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2030 Conditions RIROLI
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	249	31	32	258	34	46
Future Vol, veh/h	249	31	32	258	34	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	271	34	35	280	37	50

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	305
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1256
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1256
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	1256	-
HCM Lane V/C Ratio	0.154	-	-	0.028	-
HCM Control Delay (s)	12.6	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	180	158	2	121	150	224	224	153	196	193
Average Queue (ft)	97	75	0	62	42	116	116	38	101	94
95th Queue (ft)	154	136	2	106	112	199	204	107	163	164
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)					0	0				
Queuing Penalty (veh)					0	0				

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	T	L	L	R
Maximum Queue (ft)	194	183	150	167	123	112	46	7	255	279	132
Average Queue (ft)	119	107	86	111	65	60	2	0	132	174	28
95th Queue (ft)	178	164	133	153	111	97	23	7	218	253	87
Link Distance (ft)	542	542			601	601	224	224		404	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			265	265					435		310
Storage Blk Time (%)										0	0
Queuing Penalty (veh)										0	0

Intersection: 4: Ashbury Lane & DePue Drive

Movement	EB	B13	WB	WB	NB	SB
Directions Served	L	T	L	R	LTR	LTR
Maximum Queue (ft)	97	54	3	22	33	284
Average Queue (ft)	42	3	0	2	6	118
95th Queue (ft)	75	26	3	13	27	238
Link Distance (ft)		366			537	324
Upstream Blk Time (%)						2
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	240		240	265		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	190	298	62	137	368	103	236	306
Average Queue (ft)	94	153	16	18	232	13	99	155
95th Queue (ft)	162	255	48	127	376	120	180	258
Link Distance (ft)	740	1078	1078		362	362		3110
Upstream Blk Time (%)				1	4	1		
Queuing Penalty (veh)				0	0	0		
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)				1	4		0	1
Queuing Penalty (veh)				3	0		0	2

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	NB	SB
Directions Served	L	LT	LTR	LTR
Maximum Queue (ft)	43	1	97	60
Average Queue (ft)	11	0	39	24
95th Queue (ft)	36	1	70	49
Link Distance (ft)		600	260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	50	72
Average Queue (ft)	7	34
95th Queue (ft)	32	59
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 6

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	652	400	84	508	231	232	115
v/c Ratio	0.51	0.25	0.21	0.27	0.57	0.57	0.25
Control Delay	18.4	0.4	30.1	7.8	28.6	28.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.4	0.4	30.1	7.8	28.6	28.6	5.8
Queue Length 50th (ft)	102	0	14	45	81	81	0
Queue Length 95th (ft)	179	0	40	86	174	174	33
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2120	1615	764	2979	658	660	677
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.25	0.11	0.17	0.35	0.35	0.17
Intersection Summary							

James City County Municipal Complex

Build 2030 Conditions 2 Roundabouts

1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	600	368	77	467	0	0	0	0	425	1	106
Future Volume (vph)	0	600	368	77	467	0	0	0	0	425	1	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3471	1615	3273	3471					1665	1670	1524
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3471	1615	3273	3471					1665	1670	1524
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	652	400	84	508	0	0	0	0	462	1	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	652	400	84	508	0	0	0	0	231	232	27
Heavy Vehicles (%)	1%	4%	0%	7%	4%	2%	2%	2%	2%	3%	0%	6%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		22.1	61.3	5.6	34.7					14.6	14.6	14.6
Effective Green, g (s)		22.1	61.3	5.6	34.7					14.6	14.6	14.6
Actuated g/C Ratio		0.36	1.00	0.09	0.57					0.24	0.24	0.24
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1251	1615	299	1964					396	397	362
v/s Ratio Prot		c0.19		0.03	0.15					0.14	c0.14	0.02
v/s Ratio Perm			c0.25									
v/c Ratio		0.52	0.25	0.28	0.26					0.58	0.58	0.08
Uniform Delay, d1		15.4	0.0	26.0	6.8					20.7	20.7	18.1
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.4	0.5	0.1					2.2	2.2	0.1
Delay (s)		16.2	0.4	26.5	6.9					22.8	22.9	18.2
Level of Service		B	A	C	A					C	C	B
Approach Delay (s)		10.2			9.7			0.0			21.9	
Approach LOS		B			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			13.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			61.3		Sum of lost time (s)					19.0		
Intersection Capacity Utilization			48.4%		ICU Level of Service					A		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	987	127	138	347	242	173
v/c Ratio	0.63	0.08	0.29	0.16	0.44	0.12
Control Delay	16.4	0.1	29.5	4.7	28.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	0.1	29.5	4.7	28.2	0.2
Queue Length 50th (ft)	152	0	25	22	43	0
Queue Length 95th (ft)	247	0	56	42	86	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	2132	1615	837	2929	800	1450
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.08	0.16	0.12	0.30	0.12
Intersection Summary						

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	908	117	127	319	223	159
Future Volume (vph)	908	117	127	319	223	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1615	3502	3471	3114	1450
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1615	3502	3471	3114	1450
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	987	127	138	347	242	173
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	987	127	138	347	242	173
Heavy Vehicles (%)	2%	0%	0%	4%	4%	3%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	27.0	61.9	6.2	39.7	10.7	61.9
Effective Green, g (s)	27.0	61.9	6.2	39.7	10.7	61.9
Actuated g/C Ratio	0.44	1.00	0.10	0.64	0.17	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1543	1615	350	2226	538	1450
v/s Ratio Prot	c0.28		c0.04	0.10	c0.08	
v/s Ratio Perm		0.08				0.12
v/c Ratio	0.64	0.08	0.39	0.16	0.45	0.12
Uniform Delay, d1	13.6	0.0	26.1	4.4	23.0	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1	0.7	0.1	0.6	0.2
Delay (s)	14.9	0.1	26.8	4.5	23.6	0.2
Level of Service	B	A	C	A	C	A
Approach Delay (s)	13.2			10.8	13.8	
Approach LOS	B			B	B	
Intersection Summary						
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			61.9		Sum of lost time (s)	18.0
Intersection Capacity Utilization			50.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Roundabout (Site Folder: General)]**

JCC Municipal Complex!
Build 2030 -!
!AM Peak Hour
Site Category: (None)!
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	130	0.0	1034	0.125	100	4.6	LOS A	0.7	16.6	Full	1600	0.0	0.0
Lane 2 ^d	151	0.0	1202	0.125	100	4.1	LOS A	0.7	17.0	Short	200	0.0	NA
Approach	280	0.0		0.125		4.3	LOS A	0.7	17.0				
North: Longhill Rd (SB)													
Lane 1 ^d	213	4.9	874	0.244	100	6.7	LOS A	1.1	29.2	Full	1600	0.0	0.0
Approach	213	4.9		0.244		6.7	LOS A	1.1	29.2				
West: Longhill Rd (EB)													
Lane 1	578	1.7	1322	0.437	100	7.0	LOS A	3.1	77.9	Full	1600	0.0	0.0
Lane 2 ^d	582	1.0	1331	0.437	100	7.0	LOS A	3.1	77.5	Full	1600	0.0	0.0
Approach	1160	1.3		0.437		7.0	LOS A	3.1	77.9				
Intersection	1653	1.6		0.437		6.5	LOS A	3.1	77.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	130	-	130	0.0	1034	0.125	100	NA	NA	
Lane 2	148	3	151	0.0	1202	0.125	100	0.0	1	
Approach	277	3	280	0.0		0.125				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	5	208	213	4.9	874	0.244	100	NA	NA	
Approach	5	208	213	4.9		0.244				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.	

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	402	176	578	1.7	1322	0.437	100	NA	NA
Lane 2	-	582	582	1.0	1331	0.437	100	NA	NA
Approach	402	758	1160	1.3		0.437			
Total %HV Deg.Satn (v/c)									
Intersection	1653	1.6		0.437					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

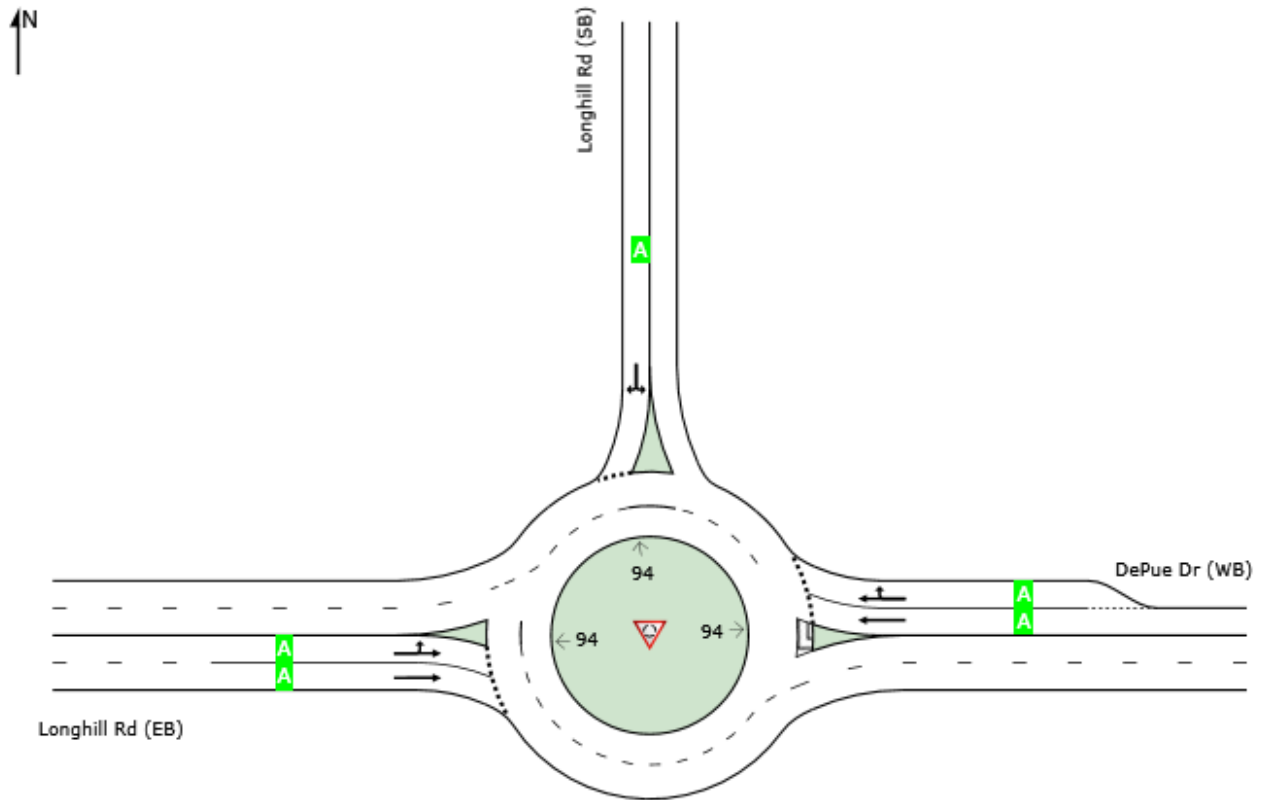
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Roundabout (Site Folder: General)]**

JCC Municipal Complex!
Build 2030 -!
!AM Peak Hour
Site Category: (None)!
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

 Site: 3 [DePue & Ashbury - Build 2030 - AM (Site Folder: General)]

Lane Use and Performance													
	DEMAND FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV] %						[Veh	Dist] ft				
South: Ashbury Ln (NB)													
Lane 1 ^d	22	2.0	597	0.036	100	6.5	LOS A	0.2	5.2	Full	1600	0.0	0.0
Approach	22	2.0		0.036		6.5	LOS A	0.2	5.2				
East: DePue Rd (WB)													
Lane 1 ^d	318	2.9	1030	0.309	100	6.6	LOS A	1.9	49.4	Full	1600	0.0	0.0
Approach	318	2.9		0.309		6.6	LOS A	1.9	49.4				
North: Ashbury Ln (SB)													
Lane 1 ^d	88	2.0	957	0.092	100	4.6	LOS A	0.5	12.2	Full	1600	0.0	0.0
Approach	88	2.0		0.092		4.6	LOS A	0.5	12.2				
West: DePue Rd (EB)													
Lane 1 ^d	764	0.9	1181	0.647	100	11.7	LOS B	7.4	186.2	Full	1600	0.0	0.0
Approach	764	0.9		0.647		11.7	LOS B	7.4	186.2				
Intersection	1192	1.5		0.647		9.7	LOS A	7.4	186.2				

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
South: Ashbury Ln (NB)										
Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	20	1	1	22	2.0	597	0.036	100	NA	NA
Approach	20	1	1	22	2.0	0.036				
East: DePue Rd (WB)										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	4	217	97	318	2.9	1030	0.309	100	NA	NA
Approach	4	217	97	318	2.9	0.309				
North: Ashbury Ln (SB)										

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	42	1	45	88	2.0	957	0.092	100	NA	NA
Approach	42	1	45	88	2.0		0.092			
West: DePue Rd (EB)										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	139	568	57	764	0.9	1181	0.647	100	NA	NA
Approach	139	568	57	764	0.9		0.647			
Total %HV Deg. Satn (v/c)										
Intersection	1192	1.5		0.647						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis												
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ashbury Ln (NB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: DePue Rd (WB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Ashbury Ln (SB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: DePue Rd (EB) Merge Type: Not Applied												
Full Length Lane	1	Merge Analysis not applied.										

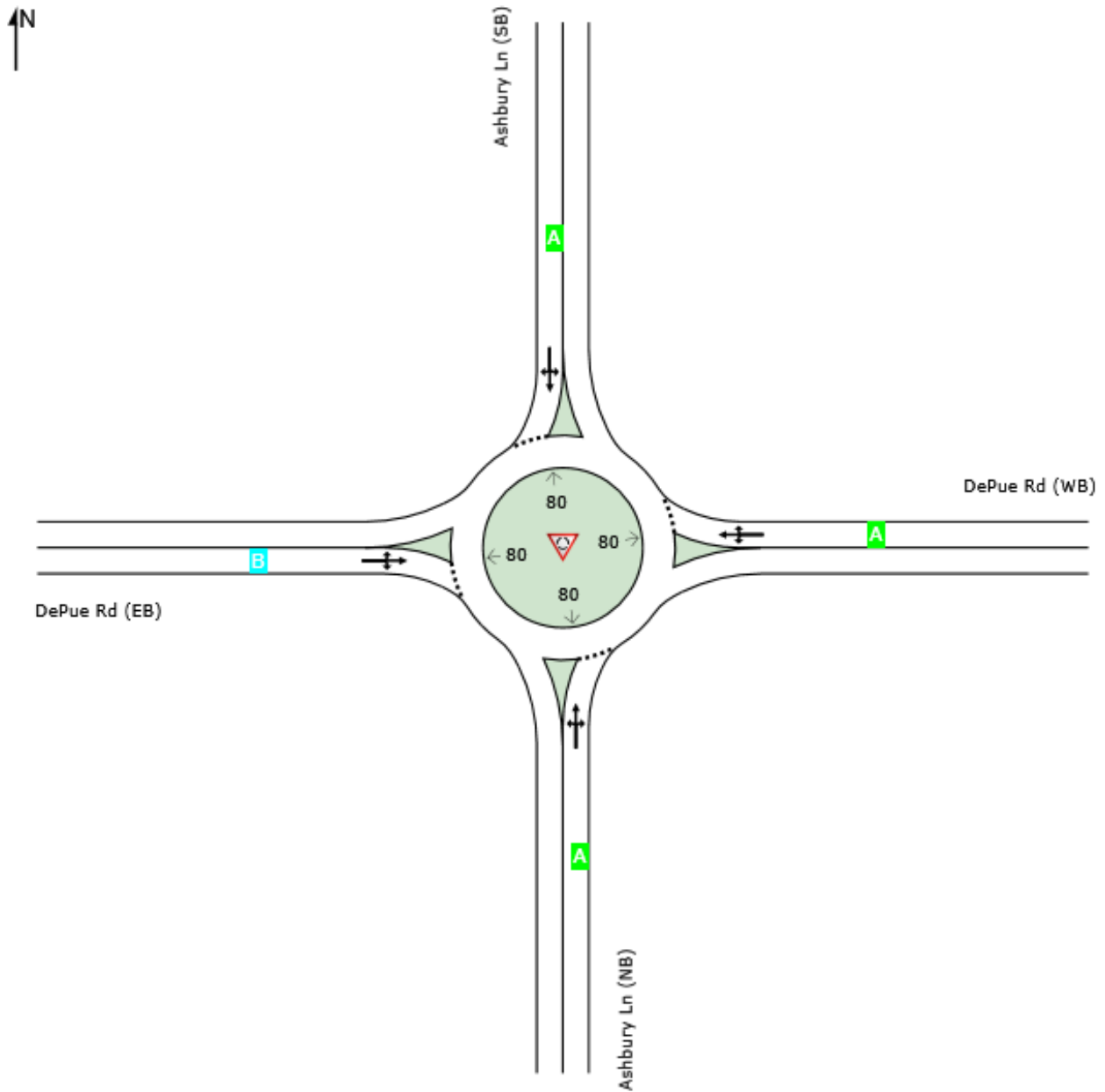
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [DePue & Ashbury - Build 2030 - AM (Site Folder: General)]**

JCC Municipal Complex
Build 2030 - 2 Roundabouts Scenario
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	187	66	60	30	249	191	151	459
v/c Ratio	0.26	0.56	0.18	0.04	0.17	0.49	0.12	0.53	0.53
Control Delay	28.4	36.5	29.5	0.1	38.4	28.6	0.2	38.8	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	36.5	29.5	0.1	38.4	28.6	0.2	38.8	22.0
Queue Length 50th (ft)	17	80	26	0	13	102	0	65	138
Queue Length 95th (ft)	58	167	68	0	44	197	0	147	#356
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	528	501	543	1553	355	813	1553	373	866
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.37	0.12	0.04	0.08	0.31	0.12	0.40	0.53

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions 2 Roundabouts

Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	26	19	172	61	55	28	229	176	139	390	32
Future Volume (vph)	9	26	19	172	61	55	28	229	176	139	390	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1794		1752	1900	1553	1687	1863	1553	1770	1861	
Flt Permitted		0.99		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1794		1752	1900	1553	1687	1863	1553	1770	1861	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	10	28	21	187	66	60	30	249	191	151	424	35
RTOR Reduction (vph)	0	20	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	39	0	187	66	60	30	249	191	151	457	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	4%	7%	2%	4%	2%	1%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		4.4		13.4	13.4	77.2	2.7	23.9	77.2	11.5	32.7	
Effective Green, g (s)		4.4		13.4	13.4	77.2	2.7	23.9	77.2	11.5	32.7	
Actuated g/C Ratio		0.06		0.17	0.17	1.00	0.03	0.31	1.00	0.15	0.42	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		102		304	329	1553	59	576	1553	263	788	
v/s Ratio Prot		c0.02		c0.11	0.03		0.02	0.13		c0.09	c0.25	
v/s Ratio Perm						0.04			0.12			
v/c Ratio		0.38		0.62	0.20	0.04	0.51	0.43	0.12	0.57	0.58	
Uniform Delay, d1		35.1		29.5	27.3	0.0	36.6	21.2	0.0	30.6	17.0	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.4		3.7	0.3	0.0	6.7	1.1	0.2	3.0	1.7	
Delay (s)		37.5		33.2	27.6	0.0	43.3	22.3	0.2	33.6	18.7	
Level of Service		D		C	C	A	D	C	A	C	B	
Approach Delay (s)		37.5			25.7			14.7			22.3	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			77.2			Sum of lost time (s)				24.0		
Intersection Capacity Utilization			57.8%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2030 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

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	23	267	83	0	153	7	11	0	0	15	0	33
Future Vol, veh/h	23	267	83	0	153	7	11	0	0	15	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	18	4	2	2	5	6	2	2	2	0	2	7
Mvmt Flow	25	290	90	0	166	8	12	0	0	16	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	174	0	0	380	0	0	528	514	290	551	596	166
Stage 1	-	-	-	-	-	-	340	340	-	166	166	-
Stage 2	-	-	-	-	-	-	188	174	-	385	430	-
Critical Hdwy	4.28	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.362	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.363
Pot Cap-1 Maneuver	1311	-	-	1178	-	-	461	464	749	448	417	865
Stage 1	-	-	-	-	-	-	675	639	-	841	761	-
Stage 2	-	-	-	-	-	-	814	755	-	642	583	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1311	-	-	1178	-	-	436	455	749	441	409	865
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	455	-	441	409	-
Stage 1	-	-	-	-	-	-	662	627	-	825	761	-
Stage 2	-	-	-	-	-	-	780	755	-	630	572	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.5	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	1311	-	-	1178	-	-	665
HCM Lane V/C Ratio	0.027	0.019	-	-	-	-	-	0.078
HCM Control Delay (s)	13.5	7.8	-	-	0	-	-	10.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2030 Conditions 2 Roundabouts
Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	251	31	39	148	13	23
Future Vol, veh/h	251	31	39	148	13	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	0	2	5	7	0
Mvmt Flow	273	34	42	161	14	25

Major/Minor	Major1	Major2	Minor1
-------------	--------	--------	--------

Conflicting Flow All	0	0	307	0	535	290
Stage 1	-	-	-	-	290	-
Stage 2	-	-	-	-	245	-
Critical Hdwy	-	-	4.12	-	6.47	6.2
Critical Hdwy Stg 1	-	-	-	-	5.47	-
Critical Hdwy Stg 2	-	-	-	-	5.47	-
Follow-up Hdwy	-	-	2.218	-	3.563	3.3
Pot Cap-1 Maneuver	-	-	1254	-	498	754
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	784	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1254	-	480	754
Mov Cap-2 Maneuver	-	-	-	-	480	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	755	-

Approach	EB	WB	NB
----------	----	----	----

HCM Control Delay, s	0	1.7	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	625	-	-	1254	-
HCM Lane V/C Ratio	0.063	-	-	0.034	-
HCM Control Delay (s)	11.1	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Build 2030 Conditions 2 Roundabouts
Queuing and Blocking Report

James City County Municipal Complex

AM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	185	171	4	75	59	124	137	192	240	151
Average Queue (ft)	103	81	0	32	14	47	55	73	141	55
95th Queue (ft)	166	146	3	62	44	99	112	172	213	113
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	L	L	T	T	L	L	R
Maximum Queue (ft)	240	234	82	104	77	63	128	161	95
Average Queue (ft)	128	117	23	53	30	22	40	90	33
95th Queue (ft)	200	190	61	87	66	53	103	142	77
Link Distance (ft)	542	542			601	601		404	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)			265	265			435		310
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	L	TR
Maximum Queue (ft)	94	164	92	67	147	164	246
Average Queue (ft)	37	81	36	19	66	74	111
95th Queue (ft)	71	139	73	50	126	130	197
Link Distance (ft)	740	1078	1078		362		3086
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)				400		240	
Storage Blk Time (%)						0	0
Queuing Penalty (veh)						0	0

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	NB	SB
Directions Served	L	R	LTR	LTR
Maximum Queue (ft)	40	3	30	61
Average Queue (ft)	4	0	9	21
95th Queue (ft)	22	3	31	46
Link Distance (ft)			260	529
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	120	50		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Ashbury Lane & Longhill Road

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	2	53	56
Average Queue (ft)	0	8	23
95th Queue (ft)	2	34	50
Link Distance (ft)	600	867	312
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions 2 Roundabouts

Timing Plan: PM Peak Hour

							
Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	563	389	198	1222	152	153	240
v/c Ratio	0.50	0.24	0.38	0.58	0.45	0.45	0.57
Control Delay	19.1	0.4	27.4	9.5	26.5	26.6	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.1	0.4	27.4	9.5	26.5	26.6	17.4
Queue Length 50th (ft)	82	0	32	121	48	49	35
Queue Length 95th (ft)	159	0	76	239	117	118	111
Internal Link Dist (ft)	1203			555		708	
Turn Bay Length (ft)		430	225		550		290
Base Capacity (vph)	2050	1615	767	3145	635	635	676
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.24	0.26	0.39	0.24	0.24	0.36
Intersection Summary							

James City County Municipal Complex
1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Build 2030 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑↑	↑↑					↑	↑	↑
Traffic Volume (vph)	0	518	358	182	1124	0	0	0	0	281	0	221
Future Volume (vph)	0	518	358	182	1124	0	0	0	0	281	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	6.0					6.0	6.0	6.0
Lane Util. Factor		0.95	1.00	0.97	0.95					0.95	0.95	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		3505	1615	3433	3539					1681	1681	1583
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		3505	1615	3433	3539					1681	1681	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	563	389	198	1222	0	0	0	0	305	0	240
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	99
Lane Group Flow (vph)	0	563	389	198	1222	0	0	0	0	152	153	141
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	2%	2%	2%	0%	2%
Turn Type		NA	Free	Prot	NA					Split	NA	Prot
Protected Phases		2		1	6					4	4	4
Permitted Phases			Free									
Actuated Green, G (s)		19.4	59.7	9.1	35.5					12.2	12.2	12.2
Effective Green, g (s)		19.4	59.7	9.1	35.5					12.2	12.2	12.2
Actuated g/C Ratio		0.32	1.00	0.15	0.59					0.20	0.20	0.20
Clearance Time (s)		6.0		7.0	6.0					6.0	6.0	6.0
Vehicle Extension (s)		5.0		3.0	5.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1138	1615	523	2104					343	343	323
v/s Ratio Prot		0.16		0.06	c0.35					0.09	c0.09	0.09
v/s Ratio Perm			0.24									
v/c Ratio		0.49	0.24	0.38	0.58					0.44	0.45	0.44
Uniform Delay, d1		16.2	0.0	22.8	7.5					20.8	20.8	20.8
Progression Factor		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Incremental Delay, d2		0.7	0.4	0.5	0.6					0.9	0.9	1.0
Delay (s)		16.9	0.4	23.2	8.1					21.7	21.7	21.7
Level of Service		B	A	C	A					C	C	C
Approach Delay (s)		10.1			10.2			0.0			21.7	
Approach LOS		B			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			12.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			59.7			Sum of lost time (s)				19.0		
Intersection Capacity Utilization			54.8%			ICU Level of Service				A		
Analysis Period (min)			15									
c Critical Lane Group												

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	757	112	448	888	532	195
v/c Ratio	0.61	0.07	0.70	0.40	0.79	0.13
Control Delay	21.1	0.1	33.4	7.1	37.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	0.1	33.4	7.1	37.4	0.2
Queue Length 50th (ft)	140	0	91	86	111	0
Queue Length 95th (ft)	191	0	151	117	#209	0
Internal Link Dist (ft)	555			579	424	
Turn Bay Length (ft)		500	265		435	310
Base Capacity (vph)	1813	1538	698	2822	686	1479
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.07	0.64	0.31	0.78	0.13

Intersection Summary

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

James City County Municipal Complex
2: 199 NB Off Ramp & Longhill Road

Build 2030 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↑
Traffic Volume (vph)	696	103	412	817	489	179
Future Volume (vph)	696	103	412	817	489	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			0%	15%	
Total Lost time (s)	6.0	4.0	6.5	6.0	5.5	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3610	1538	3502	3539	3207	1479
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3610	1538	3502	3539	3207	1479
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	757	112	448	888	532	195
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	757	112	448	888	532	195
Heavy Vehicles (%)	0%	5%	0%	2%	1%	1%
Turn Type	NA	Free	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		Free				Free
Actuated Green, G (s)	23.3	68.2	12.6	42.4	14.3	68.2
Effective Green, g (s)	23.3	68.2	12.6	42.4	14.3	68.2
Actuated g/C Ratio	0.34	1.00	0.18	0.62	0.21	1.00
Clearance Time (s)	6.0		6.5	6.0	5.5	
Vehicle Extension (s)	5.0		3.0	5.0	3.0	
Lane Grp Cap (vph)	1233	1538	646	2200	672	1479
v/s Ratio Prot	c0.21		c0.13	0.25	c0.17	
v/s Ratio Perm		0.07				0.13
v/c Ratio	0.61	0.07	0.69	0.40	0.79	0.13
Uniform Delay, d1	18.7	0.0	26.0	6.5	25.5	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	3.2	0.3	6.3	0.2
Delay (s)	20.0	0.1	29.2	6.8	31.9	0.2
Level of Service	C	A	C	A	C	A
Approach Delay (s)	17.5			14.3	23.4	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			17.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.68			
Actuated Cycle Length (s)			68.2		Sum of lost time (s)	18.0
Intersection Capacity Utilization			59.9%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

LANE SUMMARY

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Roundabouts (Site Folder: General)]**

JCC Municipal Complex!
Build 2030 -!
!PM Peak Hour
Site Category: (None)!
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	HV %	veh/h	v/c	%	sec		[Veh	Dist] ft		ft	%	%
East: DePue Dr (WB)													
Lane 1	424	0.0	1068	0.397	100	7.6	LOS A	2.6	64.2	Full	1600	0.0	0.0
Lane 2 ^d	490	0.0	1236	0.397	100	6.8	LOS A	2.6	66.2	Short	200	0.0	NA
Approach	914	0.0		0.397		7.1	LOS A	2.6	66.2				
North: Longhill Rd (SB)													
Lane 1 ^d	427	3.2	588	0.726	100	24.3	LOS C	7.0	178.7	Full	1600	0.0	0.0
Approach	427	3.2		0.726		24.3	LOS C	7.0	178.7				
West: Longhill Rd (EB)													
Lane 1	470	2.0	1308	0.360	100	6.1	LOS A	2.6	64.9	Full	1600	0.0	0.0
Lane 2 ^d	470	2.0	1308	0.360	100	6.1	LOS A	2.6	64.9	Full	1600	0.0	0.0
Approach	941	2.0		0.360		6.1	LOS A	2.6	64.9				
Intersection	2282	1.4		0.726		9.9	LOS A	7.0	178.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
East: DePue Dr (WB)										
Mov.	T1	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From E To Exit:	W	N			Cap. veh/h	v/c	%	%		
Lane 1	424	-	424	0.0	1068	0.397	100	NA	NA	
Lane 2	482	9	490	0.0	1236	0.397	100	0.0	1	
Approach	905	9	914	0.0		0.397				
North: Longhill Rd (SB)										
Mov.	L2	R2	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.
From N To Exit:	E	W			Cap. veh/h	v/c	%	%		
Lane 1	11	416	427	3.2	588	0.726	100	NA	NA	
Approach	11	416	427	3.2		0.726				
West: Longhill Rd (EB)										
Mov.	L2	T1	Total	%HV		Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane No.

From W To Exit:	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	349	121	470	2.0	1308	0.360	100	NA	NA
Lane 2	-	470	470	2.0	1308	0.360	100	NA	NA
Approach	349	591	941	2.0		0.360			
Total %HV Deg.Satn (v/c)									
Intersection	2282	1.4		0.726					

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: DePue Dr (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
North Exit: Longhill Rd (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: Longhill Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									

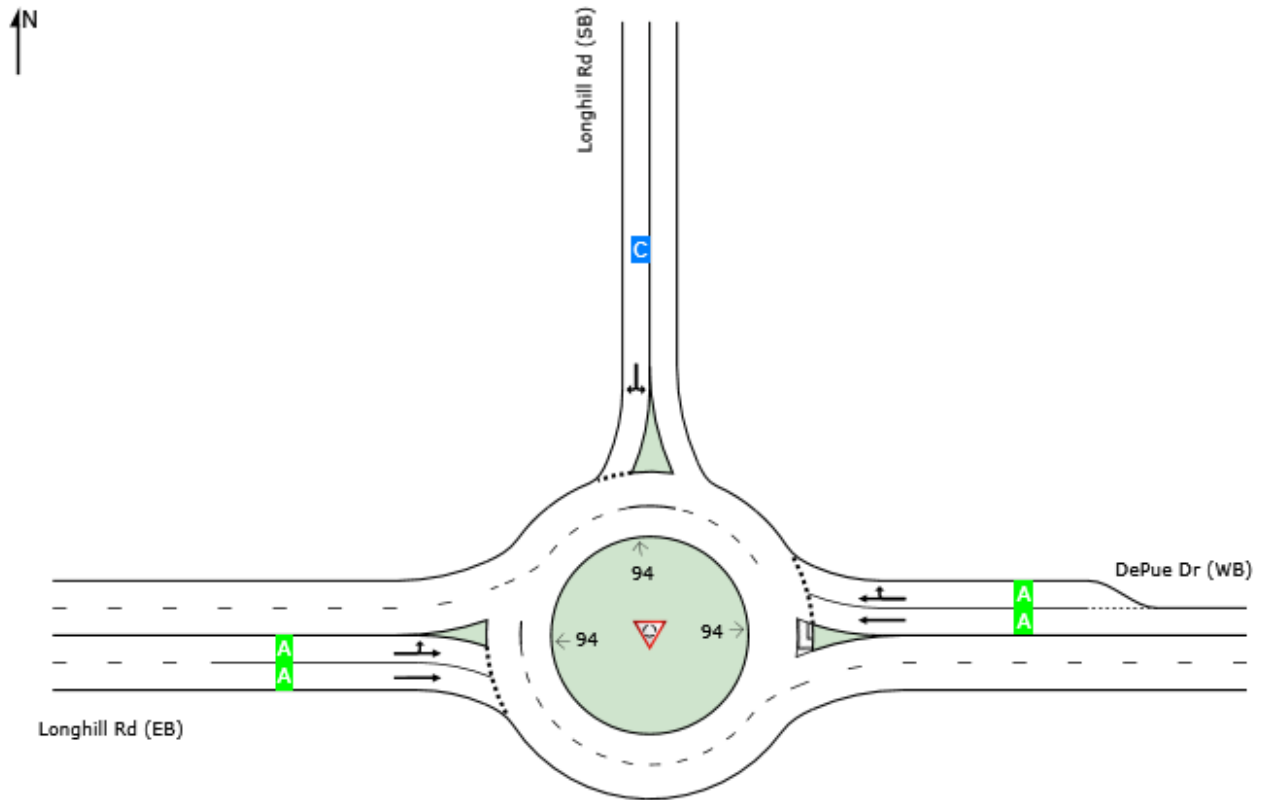
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [Longhill/DePue & Longhill - Build 2030 - Roundabouts (Site Folder: General)]**

JCC Municipal Complex!
Build 2030 -!
!PM Peak Hour
Site Category: (None)!
Roundabout

	Approaches			Intersection
	East	North	West	
LOS	A	C	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

LANE SUMMARY

 Site: 3 [DePue & Ashbury - Build 2030 - PM (Site Folder: General)]

JCC Municipal Complex
Build 2030 - 2 Roundabouts Scenario
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance													
	DEMAND FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV] %						[Veh	Dist] ft				
South: Ashbury Ln (NB)													
Lane 1 ^d	59	2.0	599	0.098	100	7.2	LOS A	0.6	14.4	Full	1600	0.0	0.0
Approach	59	2.0		0.098		7.2	LOS A	0.6	14.4				
East: DePue Rd (WB)													
Lane 1 ^d	750	0.2	1029	0.729	100	15.9	LOS C	12.3	309.2	Full	1600	0.0	0.0
Approach	750	0.2		0.729		15.9	LOS C	12.3	309.2				
North: Ashbury Ln (SB)													
Lane 1 ^d	325	0.0	578	0.563	100	16.8	LOS C	5.5	136.6	Full	1600	0.0	0.0
Approach	325	0.0		0.563		16.8	LOS C	5.5	136.6				
West: DePue Rd (EB)													
Lane 1 ^d	608	2.3	1055	0.576	100	10.8	LOS B	5.7	144.4	Full	1600	0.0	0.0
Approach	608	2.3		0.576		10.8	LOS B	5.7	144.4				
Intersection	1741	1.0		0.729		14.0	LOS B	12.3	309.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)										
South: Ashbury Ln (NB)										
Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	50	2	7	59	2.0	599	0.098	100	NA	NA
Approach	50	2	7	59	2.0	0.098				
East: DePue Rd (WB)										
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	671	77	750	0.2	1029	0.729	100	NA	NA
Approach	2	671	77	750	0.2	0.729				
North: Ashbury Ln (SB)										

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	120	1	204	325	0.0	578	0.563	100	NA	NA
Approach	120	1	204	325	0.0		0.563			
West: DePue Rd (EB)										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	137	452	18	608	2.3	1055	0.576	100	NA	NA
Approach	137	452	18	608	2.3		0.576			
Total %HV Deg. Satn (v/c)										
Intersection	1741	1.0		0.729						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis											
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ashbury Ln (NB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
East Exit: DePue Rd (WB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
North Exit: Ashbury Ln (SB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									
West Exit: DePue Rd (EB) Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									

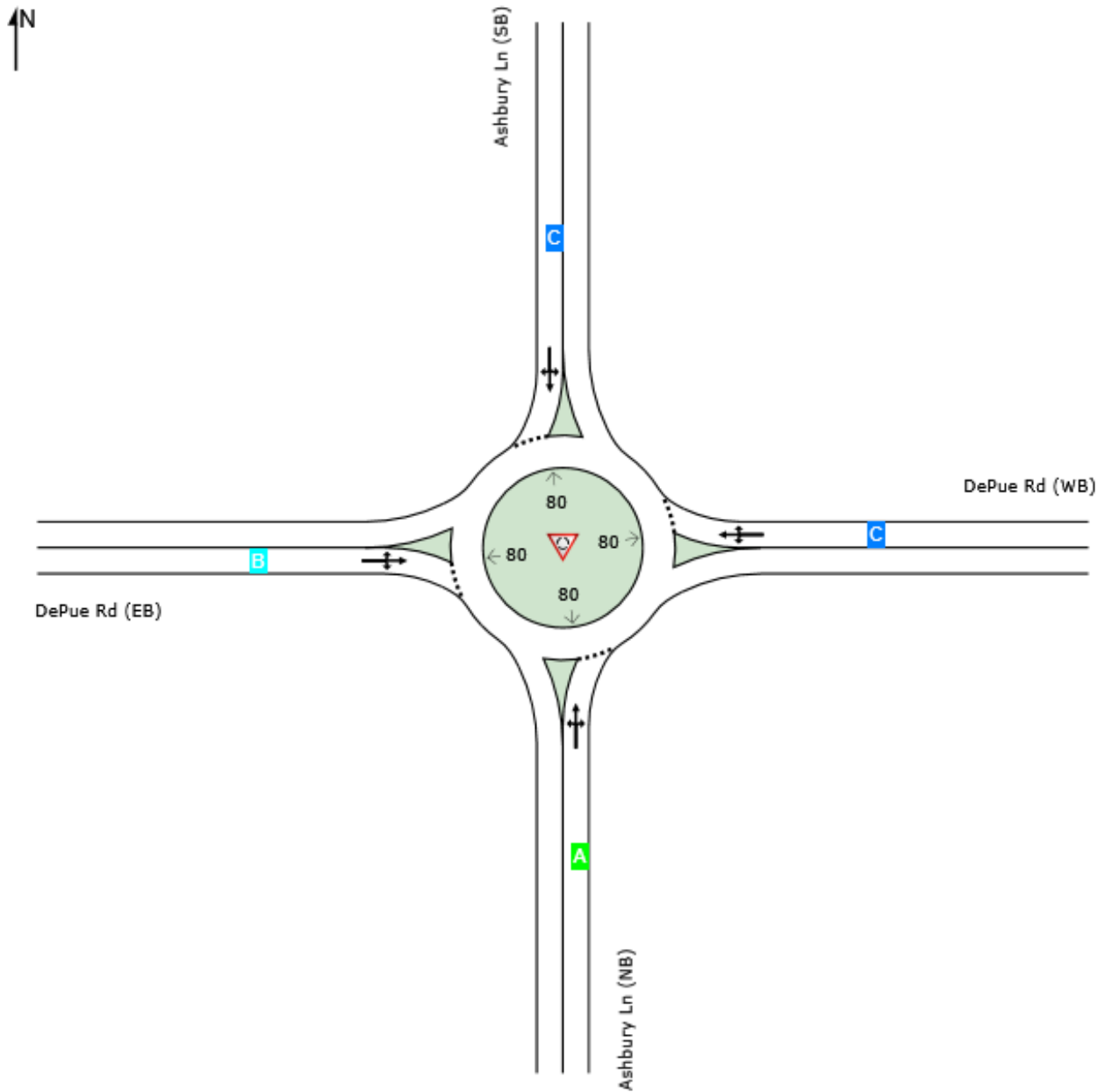
LANE LEVEL OF SERVICE

Lane Level of Service

 **Site: 3 [DePue & Ashbury - Build 2030 - PM (Site Folder: General)]**

JCC Municipal Complex
Build 2030 - 2 Roundabouts Scenario
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	C	C	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: Same as Sign Control.
 Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
 LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).
 Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
 Delay Model: HCM Delay Formula (Geometric Delay is not included).

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions 2 Roundabouts

Timing Plan: PM Peak Hour

									
Lane Group	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	121	258	23	178	9	498	294	148	407
v/c Ratio	0.53	0.79	0.07	0.11	0.08	0.86	0.19	0.65	0.59
Control Delay	42.3	55.5	33.7	0.1	45.3	48.7	0.3	53.8	28.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	55.5	33.7	0.1	45.3	48.7	0.3	53.8	28.7
Queue Length 50th (ft)	60	149	12	0	5	288	0	86	194
Queue Length 95th (ft)	116	#284	35	0	21	#511	0	158	320
Internal Link Dist (ft)	717		1034			329			3103
Turn Bay Length (ft)				335	400			240	
Base Capacity (vph)	385	366	393	1615	275	595	1583	270	691
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.70	0.06	0.11	0.03	0.84	0.19	0.55	0.59

Intersection Summary

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

James City County Municipal Complex
5: Ironbound Road & Galt Drive & DePue Drive

Build 2030 Conditions 2 Roundabouts

Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	38	36	248	22	171	9	478	282	142	376	14
Future Volume (vph)	41	38	36	248	22	171	9	478	282	142	376	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0		6.0	6.0	4.0	6.0	6.0	4.0	6.0	6.0	
Lane Util. Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.96		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1788		1770	1900	1615	1805	1881	1583	1770	1854	
Flt Permitted		0.98		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1788		1770	1900	1615	1805	1881	1583	1770	1854	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	43	40	38	258	23	178	9	498	294	148	392	15
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	104	0	258	23	178	9	498	294	148	406	0
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	1%	2%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Free	Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						Free			Free			
Actuated Green, G (s)		10.9		17.1	17.1	92.3	6.1	28.4	92.3	11.9	34.2	
Effective Green, g (s)		10.9		17.1	17.1	92.3	6.1	28.4	92.3	11.9	34.2	
Actuated g/C Ratio		0.12		0.19	0.19	1.00	0.07	0.31	1.00	0.13	0.37	
Clearance Time (s)		6.0		6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		211		327	352	1615	119	578	1583	228	686	
v/s Ratio Prot		c0.06		c0.15	0.01		0.00	c0.26		c0.08	c0.22	
v/s Ratio Perm						0.11			0.19			
v/c Ratio		0.49		0.79	0.07	0.11	0.08	0.86	0.19	0.65	0.59	
Uniform Delay, d1		38.1		35.9	31.0	0.0	40.5	30.1	0.0	38.2	23.4	
Progression Factor		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.8		11.9	0.1	0.1	0.3	13.6	0.3	6.2	2.1	
Delay (s)		39.9		47.8	31.1	0.1	40.7	43.7	0.3	44.5	25.5	
Level of Service		D		D	C	A	D	D	A	D	C	
Approach Delay (s)		39.9			28.5			27.7			30.5	
Approach LOS		D			C			C			C	
Intersection Summary												
HCM 2000 Control Delay			29.5			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			92.3			Sum of lost time (s)			24.0			
Intersection Capacity Utilization			68.4%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

James City County Municipal Complex
6: Longhill Road & Grand Strand Dr

Build 2030 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	265	22	0	260	32	92	0	0	15	0	45
Future Vol, veh/h	48	265	22	0	260	32	92	0	0	15	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	120	-	150	-	-	50	-	-	-	-	-	-
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, %	6	1	2	2	1	0	2	2	2	3	2	6
Mvmt Flow	52	288	24	0	283	35	100	0	0	16	0	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	312	0	0	717	710	288	687	699	283
Stage 1	-	-	-	-	-	-	392	392	-	283	283	-
Stage 2	-	-	-	-	-	-	325	318	-	404	416	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	7.13	6.52	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.13	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.527	4.018	3.354
Pot Cap-1 Maneuver	1220	-	-	1248	-	-	345	359	751	360	364	746
Stage 1	-	-	-	-	-	-	633	606	-	722	677	-
Stage 2	-	-	-	-	-	-	687	654	-	621	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1220	-	-	1248	-	-	312	344	751	348	348	746
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	344	-	348	348	-
Stage 1	-	-	-	-	-	-	606	580	-	691	677	-
Stage 2	-	-	-	-	-	-	642	654	-	595	567	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	21.9	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	312	1220	-	-	1248	-	-	580
HCM Lane V/C Ratio	0.321	0.043	-	-	-	-	-	0.112
HCM Control Delay (s)	21.9	8.1	-	-	0	-	-	12
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.4

James City County Municipal Complex
7: Ashbury Lane & Longhill Road

Build 2030 Conditions 2 Roundabouts
Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	249	31	32	258	34	46
Future Vol, veh/h	249	31	32	258	34	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	2	1	7	0
Mvmt Flow	271	34	35	280	37	50

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	305
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1256
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1256
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	1256	-
HCM Lane V/C Ratio	0.154	-	-	0.028	-
HCM Control Delay (s)	12.6	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Build 2030 Conditions 2 Roundabouts
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 1: 199 SB On Ramp/199 SB Off Ramp & Longhill Road

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	L	T	T	L	LT	R
Maximum Queue (ft)	176	164	5	115	146	212	219	163	188	199
Average Queue (ft)	97	75	0	64	39	98	97	35	104	97
95th Queue (ft)	155	137	5	106	92	180	184	111	167	166
Link Distance (ft)	1233	1233				542	542		732	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			430	225	225			550		290
Storage Blk Time (%)						0				0
Queuing Penalty (veh)						0				0

Intersection: 2: 199 NB Off Ramp & Longhill Road

Movement	EB	EB	WB	WB	WB	WB	B24	B24	NB	NB	NB
Directions Served	T	T	L	L	T	T	T	T	L	L	R
Maximum Queue (ft)	189	189	164	172	134	115	33	30	239	288	149
Average Queue (ft)	111	103	88	113	68	61	1	1	135	178	29
95th Queue (ft)	175	166	143	162	113	97	19	18	217	259	91
Link Distance (ft)	542	542			601	601	224	224		404	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)			265	265					435		310
Storage Blk Time (%)										0	0
Queuing Penalty (veh)										0	0

Intersection: 5: Ironbound Road & Galt Drive & DePue Drive

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	T	L	T	R	L	TR
Maximum Queue (ft)	144	288	46	35	368	43	202	285
Average Queue (ft)	65	150	14	6	220	3	90	144
95th Queue (ft)	121	245	42	24	342	48	168	246
Link Distance (ft)	742	1078	1078		660	660		3086
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)				400			240	
Storage Blk Time (%)					0		0	1
Queuing Penalty (veh)					0		0	1

Build 2030 Conditions 2 Roundabouts
Queuing and Blocking Report

James City County Municipal Complex
PM Peak Hour

Intersection: 6: Longhill Road & Grand Strand Dr

Movement	EB	WB	WB	NB	SB
Directions Served	L	LT	R	LTR	LTR
Maximum Queue (ft)	45	4	3	75	71
Average Queue (ft)	11	0	0	36	25
95th Queue (ft)	35	3	3	61	54
Link Distance (ft)		600		260	529
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	120		50		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 7: Ashbury Lane & Longhill Road

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	57	77
Average Queue (ft)	9	35
95th Queue (ft)	35	60
Link Distance (ft)	867	312
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 2

APPENDIX I

Turn Lane Warrants

General Project Information

Enter a value for all input cells

Project Name: Longhill Rd & Grand Strand Dr/Site DW - Build 2026 Conditions

County: James City County

Reviewer: AM Peak Hour

Date: 2/17/2025

Adjacent Roadway Data

Adjacent Road Name: Longhill Road

Number of Lanes: 2

Posted Speed: 25 mph *

Classification: Urban Collector

AADT: N/A VPD D: N/A k: N/A enter N/A if factors are unknown

*Use Design Speed if available

Trip Generation

Generated Trips: 3921 VPD

% Trucks in Entrance: 2 %

Right In: 83 VPH

Advancing Volume: 154 VPH

Left In: 0 VPH 0%

Opposing Volume: 362 VPH**

**Also used as Approaching Volume for Rt. Turns

Entrance Criteria

Entrance is a Standard Commercial Entrance

Entrance Type: Full Access Entrance

Maximum Spacing: 225 ft

SDL: 280 ft

SDR: 280 ft

Left Turn Lane Warrant: Advancing Volume $\geq$ 534 VPH

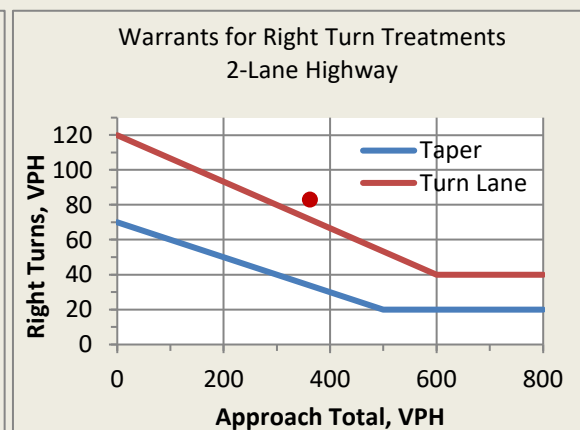
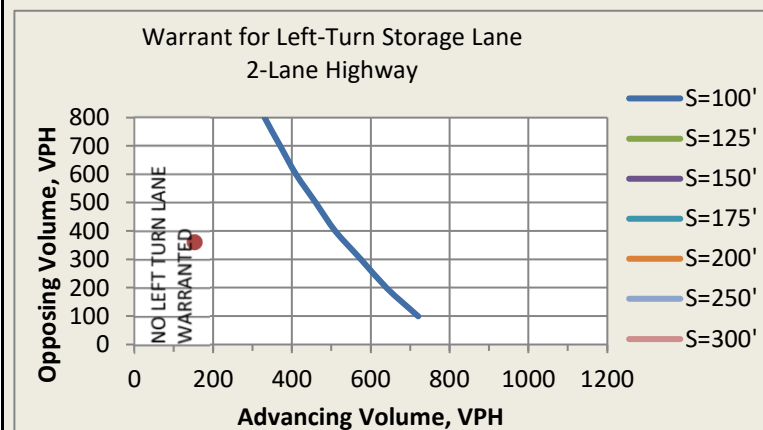
No Left Turn Lane

Right Turn Taper Warrant: Rt. Turn Volume $\geq$ 34 VPH

100' Right Turn Taper Required

Right Turn Lane Warrant: Rt. Turn Volume $\geq$ 72 VPH

Full Right Turn/Taper Required



- The minimum warranted left turn lane length shall be 100' for speeds $\leq$ 40 mph and 200' for speeds $\geq$ 45 mph
- Left turn lanes with high truck volume shall be increased as calculated and tabulated below:

Left Turn Storage Length Increase Required for Truck Ratio (in Feet)						
S = 100'	S = 125'	S = 150'	S = 175'	S = 200'	S = 250'	S = 300'
0	0	0	0	0	0	0

General Project Information

Enter a value for all input cells

Project Name: Longhill Rd & Grand Strand Dr/Site DW - Build 2026 Conditions

County: James City County

Reviewer: PM Peak Hour

Date: 2/17/2025

Adjacent Roadway Data

Adjacent Road Name: Longhill Road

Number of Lanes: 2

Posted Speed: 25 mph *

Classification: Urban Collector

AADT: N/A VPD D: N/A k: N/A enter N/A if factors are unknown

*Use Design Speed if available

Trip Generation

Generated Trips: 3921 VPD

% Trucks in Entrance: 2 %

Right In: 22 VPH

Advancing Volume: 282 VPH

Left In: 0 VPH 0%

Opposing Volume: 323 VPH**

**Also used as Approaching Volume for Rt. Turns

Entrance Criteria

Entrance is a Standard Commercial Entrance

Entrance Type: Full Access Entrance

Maximum Spacing: 225 ft

SDL: 280 ft

SDR: 280 ft

Left Turn Lane Warrant: Advancing Volume $\geq$ 560 VPH

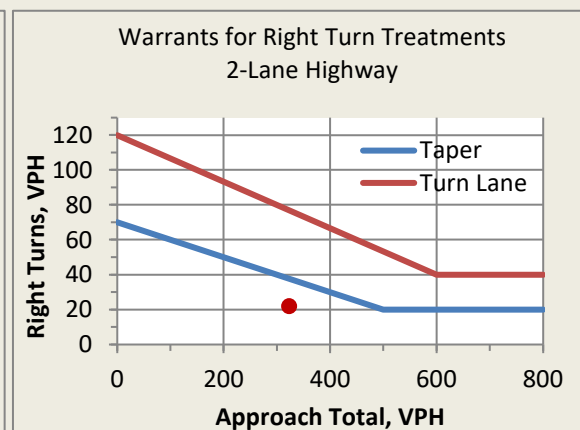
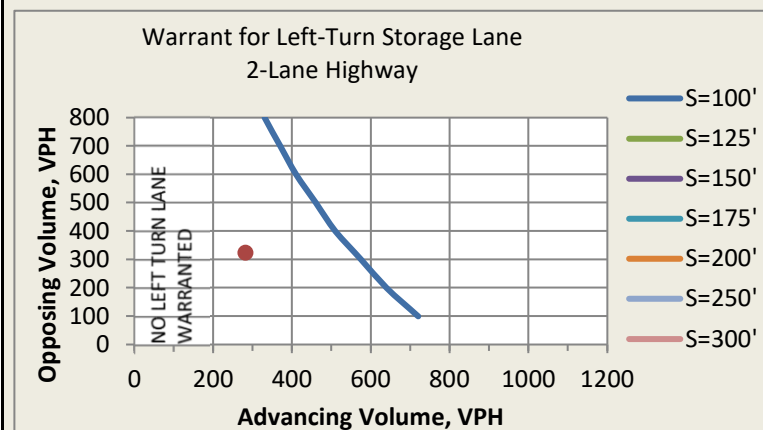
No Left Turn Lane

Right Turn Taper Warrant: Rt. Turn Volume $\geq$ 38 VPH

No Taper Required

Right Turn Lane Warrant: Rt. Turn Volume $\geq$ 77 VPH

No Right Turn Lane Required



- The minimum warranted left turn lane length shall be 100' for speeds $\leq$ 40 mph and 200' for speeds $\geq$ 45 mph
- Left turn lanes with high truck volume shall be increased as calculated and tabulated below:

Left Turn Storage Length Increase Required for Truck Ratio (in Feet)						
S = 100'	S = 125'	S = 150'	S = 175'	S = 200'	S = 250'	S = 300'
0	0	0	0	0	0	0

General Project Information

Enter a value for all input cells

Project Name: Longhill Road and Ashbury Lane - Build 2026 Conditions

County: James City County

Reviewer: AM Peak Hour

Date: 2/17/2025

Adjacent Roadway Data

Adjacent Road Name: Longhill Road

Number of Lanes: 2

Posted Speed: 25 mph *

Classification: Urban Collector

AADT: N/A VPD D: N/A k: N/A enter N/A if factors are unknown

*Use Design Speed if available

Trip Generation

Generated Trips: 3921 VPD

% Trucks in Entrance: 2 %

Right In: 30 VPH

Advancing Volume: 180 VPH

Left In: 38 VPH 21%

Opposing Volume: 271 VPH**

**Also used as Approaching Volume for Rt. Turns

Entrance Criteria

Entrance is a Standard Commercial Entrance

Entrance Type: Full Access Entrance

Maximum Spacing: 225 ft

SDL: 280 ft

SDR: 280 ft

Left Turn Lane Warrant: Advancing Volume $\geq$ 318 VPH

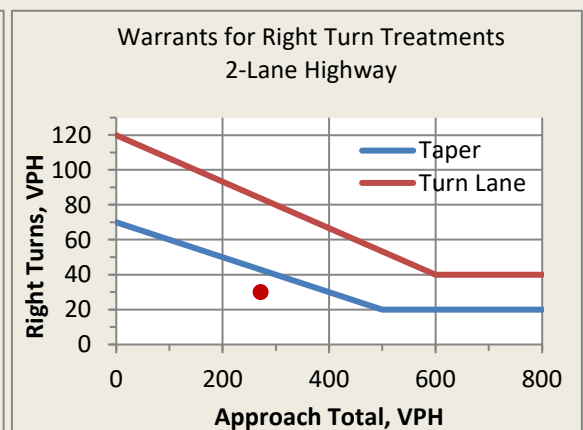
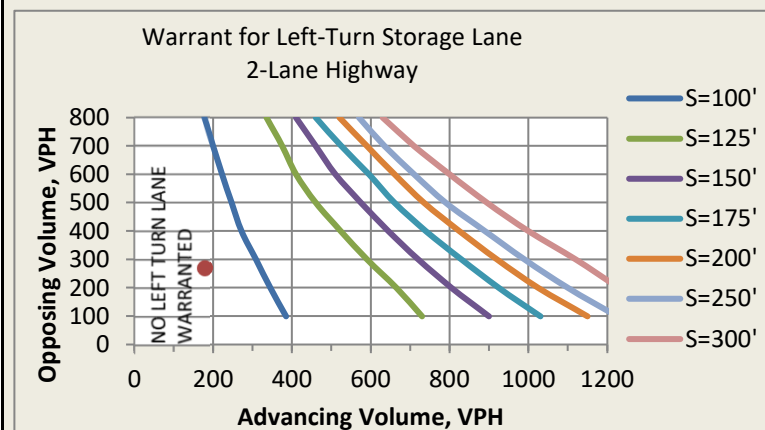
No Left Turn Lane

Right Turn Taper Warrant: Rt. Turn Volume $\geq$ 43 VPH

No Taper Required

Right Turn Lane Warrant: Rt. Turn Volume $\geq$ 84 VPH

No Right Turn Lane Required



1. The minimum warranted left turn lane length shall be 100' for speeds $\leq$ 40 mph and 200' for speeds $\geq$ 45 mph
2. Left turn lanes with high truck volume shall be increased as calculated and tabulated below:

Left Turn Storage Length Increase Required for Truck Ratio (in Feet)

S = 100'	S = 125'	S = 150'	S = 175'	S = 200'	S = 250'	S = 300'
0	0	0	0	0	0	0

General Project Information

Enter a value for all input cells

Project Name: Longhill Road and Ashbury Lane - Build 2026 Conditions

County: James City County

Reviewer: PM Peak Hour

Date: 2/17/2025

Adjacent Roadway Data

Adjacent Road Name: Longhill Road

Number of Lanes: 2

Posted Speed: 25 mph *

Classification: Urban Collector

AADT: N/A VPD D: N/A k: N/A enter N/A if factors are unknown

*Use Design Speed if available

Trip Generation

Generated Trips: 3921 VPD

% Trucks in Entrance: 2 %

Right In: 30 VPH

Advancing Volume: 279 VPH

Left In: 31 VPH 11%

Opposing Volume: 270 VPH**

**Also used as Approaching Volume for Rt. Turns

Entrance Criteria

Entrance is a Standard Commercial Entrance

Entrance Type: Full Access Entrance

Maximum Spacing: 225 ft

SDL: 280 ft

SDR: 280 ft

Left Turn Lane Warrant: Advancing Volume $\geq$ 425 VPH

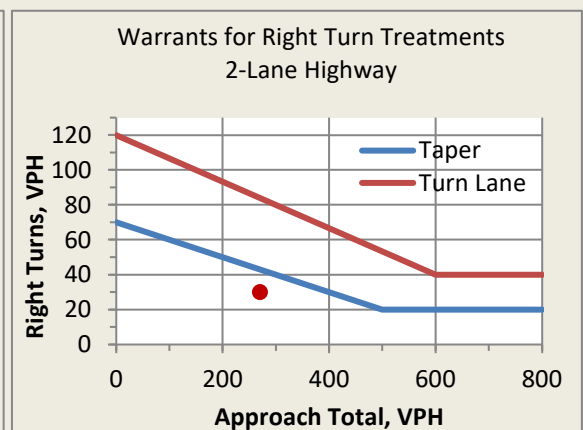
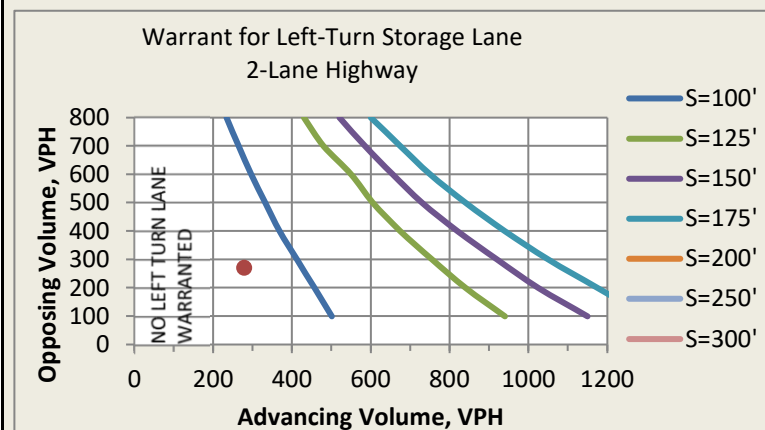
No Left Turn Lane

Right Turn Taper Warrant: Rt. Turn Volume $\geq$ 43 VPH

No Taper Required

Right Turn Lane Warrant: Rt. Turn Volume $\geq$ 84 VPH

No Right Turn Lane Required



1. The minimum warranted left turn lane length shall be 100' for speeds $\leq$ 40 mph and 200' for speeds $\geq$ 45 mph
2. Left turn lanes with high truck volume shall be increased as calculated and tabulated below:

Left Turn Storage Length Increase Required for Truck Ratio (in Feet)

S = 100'	S = 125'	S = 150'	S = 175'	S = 200'	S = 250'	S = 300'
0	0	0	0	0	0	0

Morgan Risinger

From: Tory Gussman <vgussman@gmail.com>
Sent: Thursday, April 24, 2025 10:39 AM
To: Morgan Risinger
Subject: [External]SUP-25-0003 - James City County Government Center

Thank you for the opportunity to comment. on the above SUP.

Current conditions for pedestrians and bicyclists on this section of Longhill Road are unsafe. With additional traffic generated by the new Government Center the situation will worsen.

I hope the Planning Commission's and Board will work with the City of Williamsburg to make improvements to Longhill Road between Ashbury Lane and Ironbound Road. Residences on the north side of Longhill Road in this stretch have no sidewalk. It is unsafe to cross the street on foot. Consequently, there is no pedestrian or bicycle access to shopping, the Recreation Center (despite it's proximity), Kiwanis park playground, James Blair middle school, or even neighbors in Skipwith Farms subdivision.

A sidewalk on the north side of Longhill Road between Ashbury Lane and Ironbound Road is warranted, combined with a safe crosswalk in that area. In addition to creating access for the houses on Longhill Road, Skipwith Farms residents could use the sidewalk to access the Recreation Center, Government Center, etc.

Further, it is often difficult for cars to get in and out of their driveways. (My husband was once rear-ended there as he stopped to turn into a driveway.) Even though the speed limit is already 25 mph, traffic calming measures like speed humps might help drivers pay more attention and slow down.

Finally, it appears that the skate park will be removed. Will it be relocated? The park is a feature not offered elsewhere in James City County - I encourage relocating it somewhere where youth can easily access it, and improving it. Skating doesn't require a large investment in equipment, doesn't have to be organized by adults, can be spontaneous, and gets kids outside away from screens.

Sincerely,
Victoria Gussman
7308 Church Lane, Toano, and 238 Longhill Rd, Williamsburg



CITY OF WILLIAMSBURG

Planning and Codes Compliance Department

May 5, 2025

James City County Planning Commission
101 Mounts Bay Road
Williamsburg, VA 23185

Dear Chairman Haldeman and members of the Planning Commission,

The City of Williamsburg acknowledges receipt of the adjacent property owner's letter from Susan Istenes, Director of Planning, dated April 18, 2025. After reviewing Special Use Permit application SUP-25-0003, pertaining to the proposed James City County Government Center at 5231 Longhill Road, the City offers the following comments for consideration:

Due to the highly permeable boundaries between the two jurisdictions, a major development, such as the proposed government complex and library may significantly affect traffic volumes along Longhill Road, Ironbound Road, and DePue Drive. The Skipwith Farms neighborhood, which already contends with cut-through traffic from Richmond Road, could be particularly vulnerable to increased congestion, as drivers may seek alternate routes through the subdivision. In light of these concerns, the City respectfully requests that James City County give further consideration to the potential impacts of the proposed facility at 5231, 5255, and 5301 Longhill Road, with specific attention to the following issues:

- The potential for increased traffic volumes and higher vehicle speeds along Longhill Road and the surrounding roadway network.
- The potential impact on pedestrian and cyclist safety throughout the area, particularly along Longhill Road, with special consideration for James Blair students, Kiwanis Park participants, and the William & Mary student population.
- The potential rise in cut-through traffic through the Skipwith Farms neighborhood, as vehicles travel between Richmond Road and Longhill Road via Governor Berkeley Road, Thomas Nelson Lane, and Robert Elliffe Street. In recent years, this has been a primary concern of Skipwith Farms residents. The City has been asked to evaluate a four-way stop at the intersection of Longhill Road and Governor Berkeley Drive to discourage speeding and cut-through traffic.
- The possible traffic impacts associated with the proposed library space, as well as any future modifications to the site layout that may not be fully accounted for in the current Traffic Impact Analysis (TIA).

The City requests that the County fully assess these impacts during the plan review and site development process, including any discrepancies between the land use assumptions outlined in the Traffic Impact Analysis and the final square footage approved in the site plan.

The City respectfully requests to be notified if and when the site plan for this project is submitted to the County.

Respectfully,

A handwritten signature in black ink, appearing to read 'Tevya Williams Griffin', with a stylized flourish at the end.

Tevya Williams Griffin, AICP
Director
Planning and Codes Compliance

C: Susan Istenes, Director of Planning
Paul Holt, Director of Community Development
Scott Stevens, County Administrator

RESOLUTION

VIRGINIA CODE SECTION 15.2-2232 ACTION ON

CASE NO. SUP-25-0003. JAMES CITY COUNTY GOVERNMENT CENTER

WHEREAS, in accordance with Section 15.2-2232 of the Code of Virginia, public buildings shall not be constructed, established, or authorized, unless and until the general location or approximate location, character, and extent thereof has been submitted to and approved by the Planning Commission as being substantially in accord with the Comprehensive Plan or part thereof; and

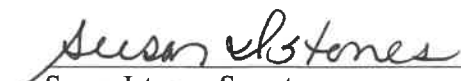
WHEREAS, Mr. Bradley Rinehimer, Assistant County Administrator, has applied on behalf of James City County for a Special Use Permit (SUP) to allow for the construction of a governmental office building exceeding 30,000 square feet of floor area and a public library on property located at 5231, 5255, and 5301 Longhill Road and further identified as James City County Real Estate Tax Map Parcel Nos. 3820100002, 3820100002A, and 3910100153, respectively (collectively, the "Properties"), as shown on a plan titled "James City County Government Center" prepared by Timmons Group, and dated April 4, 2025; and

WHEREAS, in accordance with Section 15.2-2204 of the Code of Virginia and Section 24-9 of the James City County Zoning Ordinance, a public hearing was advertised, adjacent property owners notified, and a hearing scheduled for Case No. SUP-25-0003.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission of James City County, Virginia, for the reasons expressed in the written minutes which shall be transmitted to the Board of Supervisors, finds that the general or approximate location, character, and extent of the public buildings applied for in Case No. SUP-25-0003 are substantially in accord with the Comprehensive Plan and applicable parts thereof.


Jack Haldeman
Chair, Planning Commission

ATTEST:


Susan Istenes, Secretary

Adopted by the Planning Commission of James City County, Virginia, this 7th day of May, 2025.

MINUTES
JAMES CITY COUNTY PLANNING COMMISSION
REGULAR MEETING
COUNTY GOVERNMENT CENTER BOARD ROOM
101 MOUNTS BAY ROAD, WILLIAMSBURG, VA 23185
May 7, 2025
6:00 PM

A. CALL TO ORDER

Mr. Haldeman called the meeting to order at 6 p.m.

B. ROLL CALL

Planning Commissioners Present:

Jack Haldeman, Chair
Kira Allmann, Vice Chair
Frank Polster
Stephen Rodgers
Jay Everson
Scott Maye
Crystal Haskins

Staff Present:

Bradley Rinehimer, Assistant County Administrator
Paul Holt, Director of Community Development
Susan Istenes, Director of Planning
Liz Parman, Deputy County Attorney
Morgan Risinger, Senior Planner
Allison Jackura, Senior Planner
Linda Titus, Community Development Assistant
Hannah Hunnicutt, Community Development Assistant

C. PUBLIC COMMENT

Mr. Haldeman opened Public Comment.

Chris Henderson, 101 Keystone, Williamsburg, VA, addressed the Commission.

Mr. Haldeman closed the Public Comment.

D. REPORTS OF THE COMMISSION

Mr. Rodgers stated that the Development Review Committee (DRC) did not meet in April.

Mr. Everson stated that the Policy Committee met on April 24, 2025, to discuss amendments to the Zoning Ordinance regarding sexually oriented businesses. The Policy Committee voted (5-0) to accept staff's recommendation to require a Special Use Permit (SUP) in areas zoned Limited Business, General Business, and Limited Business/Industrial.

E. CONSENT AGENDA

1. Minutes of the April 2, 2025, Regular Meeting

Mr. Everson made a motion to approve the Consent Agenda.

On a voice vote, the Commission voted to approve the motion. (7-0)

F. PUBLIC HEARING(S)

1. SUP-25-0002. 2010 Old Route 60 West Evolution House Group Home

Ms. Allison Jackura, Senior Planner, stated that Mr. Greg Davis had applied for an SUP at 2010 Old Route 60 West, to operate a group home with more than eight residents. Ms. Jackura stated that the property is zoned A-1, General Agricultural, and designated as Rural Lands according to the Comprehensive Plan. Ms. Jackura noted that the proposal is to occupy the single-family home currently on the property.

Ms. Jackura stated that according to the Federal Fair Housing Act, recovering from addiction is considered a disability and it is prohibited by law to discriminate in housing based upon a person's disability. Ms. Jackura explained that an SUP is required for a group home in A-1, General Agricultural, when there are more than eight individuals being housed.

Ms. Jackura stated that the applicant requested to house up to 24 residents with on-site staff. Ms. Jackura explained that this number of residents is dependent on the updated Certificate of Occupancy, updated Change of Use for the septic permit from the Department of Health, and state licensing from the Virginia Department of Behavioral Health and Developmental Services (DBHDS). Ms. Jackura noted that the applicant has already obtained a license to house 24 individuals from DBHDS.

Ms. Jackura stated that the applicant is proposing to always have staff on-site, and parking is proposed for the vans that shuttle individuals to various activities and occasional visitors. Ms. Jackura explained that the proposed condition from staff would only allow parking on the existing parking area in front of the house and next to the accessory structures to allow for fire access along the driveway.

Ms. Jackura explained that the Comprehensive Plan had housing goals to support diversity of housing and housing for those with disabilities. Ms. Jackura stated that this proposal did fulfill the housing objective needed for the County.

Ms. Jackura stated that with the proposed conditions and objectives of the Comprehensive Plan, staff recommended approval of this application for approval subject to the proposed conditions.

Mr. Haldeman disclosed that he had a conversation with the applicant's attorney prior to the meeting.

Mr. Haldeman opened the Public Hearing.

Mr. Greg Davis of Kaufman & Canoles P.C., 4801 Courthouse Street, Williamsburg, VA, addressed the Commission stating that he was representing Evolution House. Mr. Davis explained that Evolution House has six locations in the Tidewater area, each licensed by the DBHDS. Mr. Davis noted that the residents at Evolution House were there on a voluntary basis, not from court-ordered detention or treatment programs, and that they have a success rate that is 30% higher than the national average.

Mr. Davis noted that the neighboring properties to Evolution House were Empire Metal Services and the home of Mr. Brian Johnson and his business, Williamsburg Heating and Air Conditioning, Inc. Mr. Davis explained that Mr. Johnson's house measures approximately 400 feet from Evolution House and there is significantly rough terrain and wooded areas that separate the properties. Mr. Davis noted that there were approximately 55 acres between the properties to the rear of Evolution House.

Mr. Davis explained that residents of Evolution House were subject to house rules, curfews, trespassing, and drug testing requirements with a zero-tolerance policy. Mr. Davis stated that the facility is always staffed with trained professionals. Mr. Davis noted that there were limited traffic and parking concerns as the residents typically do not bring vehicles but were shuttled via van to various appointments and activities.

Mr. Davis stated that Evolution House had erected a privacy fence around the property prior to the application being submitted. Mr. Davis noted that No Trespassing signs would be placed along the fence per the SUP conditions.

Mr. Davis explained that the SUP conditions include not permitting sex offenders as residents, screening of applicants with felony convictions, and an annual report to the Police Chief and Zoning Administrator to report screened residents and occupancy.

Mr. Rodgers asked Mr. Davis how many bedrooms would be housing the proposed 24 residents.

Mr. Davis stated that there would be a two-resident maximum per bedroom.

Mr. Henry Strautman, 3809 E Steeplechase Way, Williamsburg, VA, addressed the Commission in support of the proposed project.

Mr. Leland Blanding, 2020 Old Richmond Road West, Toano, VA, addressed the Commission with concerns about the proposed project.

Mr. Chris Henderson, 101 Keystone, Williamsburg, VA, addressed the Commission in support of the proposed project.

Mr. Brian Johnson, 8896 Richmond Road, Toano, VA, addressed the Commission with concerns about the proposed project.

Mr. Haldeman closed the Public Hearing.

Mr. Polster asked Ms. Jackura if a condition could be added for the County to go on-site to verify the occupancy of the house.

Ms. Jackura stated that the current conditions include that a list of occupants must be sent to the Zoning Administrator annually.

Ms. Jackura asked Ms. Parman if such a condition would be possible.

Ms. Parman stated that it would be possible.

Mr. Polster asked Mr. Davis if the applicant would be opposed to adding the proposed condition.

Mr. Davis stated that he would not be opposed.

Discussion ensued.

Mr. Maye stated that he had concerns about the history of violations, but he understood the need for housing programs, such as Evolution House, in the County.

Mr. Haldeman stated that he planned to support this project.

Mr. Everson stated that he intended to support the project as well.

Mr. Haldeman asked for a motion to approve SUP-25-0002. 2010 Old Route 60 West Evolution House Group Home.

Mr. Polster made a motion to approve SUP-25-0002. 2010 Old Route 60 West Evolution House Group Home with the proposed conditions.

On a roll call vote, the Commission voted to recommend approval. (7-0)

2. SUP-25-0003. James City County Government Center

Ms. Morgan Risinger, Senior Planner, addressed the Commission, stating that Mr. Bradley Rinehimer, Assistant County Administrator, had applied on behalf of James City County to construct a government office building exceeding 30,000 square feet of floor area and a public library at 5231, 5255, and 5301 Longhill Road. Ms. Risinger noted that the properties are zoned PL, Public Lands, designated Federal, State, or County Lands on the Comprehensive Plan, located inside the Primary Service Area, and an area adjacent to the James City County Recreation Center.

Ms. Risinger explained that the County conducted a Space Needs Assessment in 2020 to evaluate office space needs for current and projected future staffing levels and further conducted a Facilities Master Plan and a Building Consolidation Study in 2022 which found that the costs of creating a consolidated government office facility would be comparable to the costs of expanding and renovating existing facilities. Ms. Risinger stated that the Board of Supervisors selected the site which had the advantage of being adjacent to the Recreation Center and located near the mean center of the County's population.

Ms. Risinger noted that a stakeholder group was formed, and public meetings were held in 2024 to receive feedback from the community. Ms. Risinger stated that the Board had also directed that the site should include a branch library to address facility needs

for the Williamsburg Regional Library. Ms. Risinger explained that aligning with those studies and the direction of the Board, the proposed master plan included a Government Center building consisting of approximately 178,000 square feet of office space in three stories with underground parking and a public library.

Ms. Risinger explained that a Traffic Impact Analysis (TIA) for the Government Center and library projected that 315 a.m. peak hour trips and 377 p.m. peak hour trips would be generated to the site. Ms. Risinger stated that the TIA recommended that the Longhill Road and DePue Drive intersection be reconstructed as a two-lane roundabout, the DePue Drive and Ashbury Lane intersection be reconstructed as a one-lane roundabout, and the construction of a right-turn lane and taper at the proposed site entrance that aligned with Grand Strand Drive. Ms. Risinger noted that proposed Condition No. 4 would require these improvements to be completed with the project. Ms. Risinger stated that with the improvements, all studied intersections would operate at Level of Service C or better, therefore passing the Adequate Transportation Facilities Test.

Ms. Risinger noted that approximately 551 parking spaces would be provided for the Government Center and library as well as 289 parking spaces for the Recreation Center. Ms. Risinger stated that staff found that this amount of parking and the ability to share the parking for all uses would be adequate for the facilities.

Ms. Risinger explained that landscape buffers would be provided along DePue Drive and Longhill Road meeting the Zoning Ordinance requirements for an average width of 50 feet and a minimum width of 25 feet. Ms. Risinger noted that proposed Condition No. 3 would ensure the facility meets the County's Sustainable Building Policy.

Ms. Risinger explained that in accordance with Section 15.2-2232 of the Code of Virginia, the Planning Commission must review this application to determine whether the location, character, and extent of the project were substantially consistent with the Comprehensive Plan.

Ms. Risinger stated that staff found this proposal to be compatible with surrounding development and consistent with the Comprehensive Plan and Zoning Ordinance and recommended that the Planning Commission recommend approval of this application to the Board of Supervisors, subject to the proposed conditions. Ms. Risinger then stated that staff also recommended that the Planning Commission find this application consistent with the Comprehensive Plan as required by Section 15.2-2232 of the Code of Virginia.

Mr. Everson disclosed that he had a conversation with the applicant before the meeting.

Mr. Haldeman opened the Public Hearing.

Mr. Bradley Rinehimer, Assistant County Administrator, 101 Mounts Bay Road, Williamsburg, VA, gave a brief presentation to the Commission regarding the progress of the proposed government center.

Mr. Polster asked Mr. Rinehimer how many acres of land would be disturbed.

Mr. Rinehimer stated that there would be more than 10 acres disturbed.

Mr. Polster asked if the Special Stormwater Criteria that would be applied to receive the requested five units had been decided.

Mr. Rinehimer stated that there had been discussion about the criteria with the Stormwater and Resource Protection Division, but no decision had been made.

Discussion continued.

Mr. Polster asked if the two roundabouts were included in the cost estimate of the project if the proposed Cardinal Ridge development on the Eastern State surplus land did not occur.

Mr. Rinehimer stated that the roundabouts were not included in the cost estimate.

Mr. Polster asked if there was a trigger level from the Virginia Department of Transportation (VDOT) that would require the roundabouts to be built.

Mr. Rinehimer confirmed that there was a trigger level that was met, requiring the roundabouts to be built.

Mr. Polster asked when the roundabouts would be built.

Mr. Rinehimer stated the roundabouts would be built before the completion of the Government Center.

Mr. Polster asked for clarification as to why there was not a warranted trigger date to build roundabouts for the government center.

Ms. Risinger explained that there was no need for additional study points down the line as this was for a single facility, and therefore the roundabouts must be built with the government center.

Discussion ensued.

Mr. Polster asked if putting solar panels on the roof of the government center had been considered.

Mr. Rinehimer stated that discussion about adding solar panels had occurred, but a decision had not been made.

Mr. Polster asked if a decision about electric car charging stations had been made.

Mr. Rinehimer stated that there was a plan for electric car charging stations, exterior to the proposed underground parking garage.

Discussion continued.

Mr. Everson asked if Mr. Rinehimer had read the letter from the City of Williamsburg regarding a four-way stop at Longhill Road and Governor Berkeley Road.

Mr. Rinehimer stated that he had read the letter, and a four-way stop was not recommended by the traffic study.

Mr. Everson noted that the proposed square footage had been reduced from 220,000 square feet to 178,000 square feet. Mr. Everson then asked if the originally proposed 220,000 square feet included the General Services building.

Mr. Rinehimer stated that the Dispatch Center was no longer included in the proposed square footage, and the remaining space had been consolidated based on the space needs study.

Discussion ensued.

Mr. Everson asked if Mr. Rinehimer could speak on the fiscal impact of the proposed project.

Mr. Rinehimer stated that the Board of Supervisors would discuss the fiscal impact.

Discussion continued.

Mr. Haldeman asked if the Traffic Impact Analysis (TIA) included any traffic from the Eastern State surplus land sale.

Mr. Rinehimer stated that the TIA included Colonial Behavioral Health, but not the Eastern State surplus land.

Discussion continued.

Ms. Kerstin Davis, 226 Longhill Road, Williamsburg, VA, addressed the Commission with concerns about the proposed project.

Mr. Chris Henderson, 101 Keystone, Williamsburg, VA, addressed the Commission with concerns about the proposed project.

Mr. Dennis Burkey, 208 Tutters Neck, Williamsburg, VA, addressed the Commission with concerns about the proposed project.

Sandra Neighbor, 208 Tutters Neck, Williamsburg, VA, addressed the Commission with concerns about the project.

Mr. Haldeman closed the Public Hearing.

Mr. Polster asked if a 25-mile an hour speed limit on Longhill Road could be considered.

Mr. Rinehimer stated that it would be VDOT's decision to lower the speed limit.

Mr. Everson asked if the proposed library would be jointly operational with the City of Williamsburg.

Mr. Rinehimer confirmed that was correct.

Discussion continued.

Mr. Everson stated he did not intend to support the project due to the fiscal impact it would have on the County and that it did not fit with the Comprehensive Plan.

Mr. Polster stated that he would support this project for the land use associated with the SUP, including the conditions, and that he found the land use consistent with the Comprehensive Plan.

Dr. Haskins stated that she would be supportive of the project.

Mr. Haldeman stated he was concerned about the impending development of the Eastern State surplus land. Mr. Haldeman explained that he found the project

consistent with the Comprehensive Plan but would prefer to wait until it was known how the Eastern State surplus land would be developed before moving forward with the government center.

Mr. Maye stated he shared the same concerns.

Mr. Haldeman asked for a motion to find SUP-25-0003. James City County Government Center substantially in accord with the Comprehensive Plan and applicable parts thereof.

Mr. Polster made a motion to find SUP-25-0003. James City County Government Center substantially in accord with the Comprehensive Plan and applicable parts thereof.

On a roll call vote, the Commission voted to find SUP-25-0003. James City County Government Center substantially in accord with the Comprehensive Plan. (5-2)

Mr. Polster made a motion to recommend approval of SUP-25-0003. James City County Government Center to the Board of Supervisors.

On a roll call vote, the Commission voted to recommend approval. (4-3)

G. PLANNING COMMISSION CONSIDERATIONS

There were no items for consideration.

H. PLANNING DIRECTOR'S REPORT

1. Planning Director's Report - May 2025

Ms. Istenes stated she had nothing in addition to the report provided in the Agenda Packet.

I. PLANNING COMMISSION DISCUSSION AND REQUESTS

Mr. Haldeman reminded Mr. Everson that he would be covering the May 13, 2025, Board of Supervisors meeting.

Mr. Haldeman told the Commission that the next Policy Committee meeting had been cancelled, but there would be a DRC meeting on May 21, 2025, at 4 p.m.

Mr. Everson asked if the next Policy Committee meeting would be held on June 12, 2025, at 3 p.m.

Mr. Haldeman confirmed that it was tentatively scheduled for that date.

Mr. Polster stated that he misspoke at the last meeting about the stormwater requirement for SUP applications.

Discussion ensued.

J. ADJOURNMENT

Mr. Haldeman asked for a motion to adjourn.

Mr. Everson made a motion to adjourn.

The meeting was adjourned at approximately 8:32 p.m.

Susan Istenes, Secretary

Jack Haldeman, Chair

MEMORANDUM

DATE: June 10, 2025

TO: The Board of Supervisors

FROM: Paul D. Holt, III, Director of Community Development

SUBJECT: The Virginia Department of Transportation - Transportation Alternatives Program - Fiscal Years 2027-2028

Every other year, the Virginia Department of Transportation (VDOT) invites localities to participate in the Transportation Alternatives Program (TAP), which helps localities construct community-based projects that expand nonmotorized transportation choices and enhancements. TAP is now a set-aside portion of the federally funded Surface Transportation Block Grant, which was enabled by the passage of the Fixing America's Surface Transportation (FAST) Act in December 2015. The FAST Act identifies four categories of eligibility for this competitive program:

- Transportation Alternatives - Comprised of 10 qualifying activities, including historic preservation and rehabilitation of historic transportation facilities;
- Safe Routes to School (SRTS);
- Boulevards in Former Interstate System Routes; and
- Recreational Trails

TAP provides federal transportation funds to reimburse up to 80% of costs for qualifying projects, requiring only a 20% match for project costs from local dollars. In recent years, the County has used funding procured through TAP grants for projects such as the Norge Depot, SRTS Infrastructure at James River Elementary School, Sidewalk Improvements in Toano, Norge Depot Caboose Restoration, Clara Byrd Baker Elementary School SRTS infrastructure, and Laurel Lane Elementary School SRTS Sidewalk Improvements.

This year, staff is recommending four projects for the Board's consideration:

1. Ironbound Road Sidewalk
2. Matoaka Elementary School SRTS Sidewalk
3. Pocahontas Trail Road Diet
4. Richmond Road Sidewalk Infill

The first project would provide a sidewalk along Ironbound Road (Route 615) from Route 5 to Saint Bede Catholic Church at 3686 Ironbound Road. This project provides a full 5-foot-wide sidewalk along Ironbound Road, to include pedestrian crossings, modifying the signal at Ironbound Road and Route 5, rapid rectangular flashing beacons, and stormwater improvements in various areas.

The Matoaka Elementary School SRTS Sidewalk project will connect the existing sidewalk at Matoaka Elementary School to two existing sidewalks along Centerville Road. The project proposes a 5-foot-wide sidewalk, pedestrian crossing, and ADA curb ramps.

The Pocahontas Trail Road Diet proposes a road diet from Route 199 to the City of Williamsburg. The road diet would redesign the travel lanes to reduce one vehicle travel lane in each direction and use that space to add a bike lane in each direction. The proposed bike lane route, which is consistent with the Regional Bikeways Map adopted by the Board of Supervisors will have a width of six feet and include a 5.5-foot buffer between the travel lane and the bike lane.

The Richmond Road Sidewalk Segment 1 project will provide a sidewalk along Richmond Road between Bush Springs Road and 7691 Richmond Road. This is the first segment to provide continuous sidewalks from Norge to Toano on one side of Richmond Road. In addition to the 5-foot sidewalk, there will be improved crosswalks, drainage, and culvert improvements. In addition, Toano Middle School is approximately .25 miles from the edge of the project limits and can provide a safe route for students to walk to school.

Staff recommends the Board of Supervisors adopt the attached resolutions expressing support for these projects to be submitted through the upcoming Transportation Alternative funding cycle. Should any one of the five projects receive funding through this cycle of Transportation Alternative funding process, staff will bring back a resolution to appropriate the funds to the Board of Supervisors.

PDH/ap

VDOTTAPFY27-28-mem

Attachments:

1. Resolution of Support - Ironbound Road Sidewalk
2. Resolution of Support - Matoaka Elementary SRTS Sidewalk
3. Resolution of Support - Pocahontas Trail Road Diet
4. Resolution of Support - Richmond Road Sidewalk Segment 1
5. Ironbound Road Sidewalk Location Map
6. Matoaka Elementary School SRTS Sidewalk Location Map
7. Pocahontas Trail Road Diet Location Map
8. Pocahontas Trail Conceptual Typical Section Options
9. Richmond Road Sidewalk Segment 1 Location Map

RESOLUTION

THE VIRGINIA DEPARTMENT OF TRANSPORTATION

TRANSPORTATION ALTERNATIVES PROGRAM - RESOLUTION OF SUPPORT

IRONBOUND ROAD SIDEWALK

WHEREAS, in accordance with the Commonwealth Transportation Board construction allocation procedures, it is necessary that a resolution be received from the sponsoring jurisdiction or agency requesting the Virginia Department of Transportation (VDOT) establish a Transportation Alternatives Set-Aside project to be administered by the locality.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia (the "Board"), requests the Commonwealth Transportation Board to establish a Transportation Alternatives Set-Aside project for Ironbound Road Sidewalk (the "Project").

BE IT FURTHER RESOLVED that the Board hereby commits to provide a minimum 20% matching contribution for each Project and any additional funds necessary to complete the Project, subject to appropriation.

BE IT FURTHER RESOLVED that James City County hereby agrees to enter into a Project Administration Agreement with VDOT and provide the necessary oversight to ensure the Project is developed in accordance with all state and federal requirements for design, right-of-way acquisition, and construction of a federally funded transportation project.

BE IT FURTHER RESOLVED that James City County will be responsible for maintenance and operating costs of any improvement/facility constructed with Transportation Alternatives Set-Aside funds unless other arrangements have been made with VDOT.

BE IT FURTHER RESOLVED that if the Board subsequently elects to cancel the Project, James City County hereby agrees to reimburse VDOT for the total amount of costs expended by VDOT through the date of notification of such cancellation. James City County also agrees to repay any funds previously reimbursed that are later deemed ineligible by the Federal Highway Administration.

BE IT FURTHER RESOLVED that the Board hereby authorizes the County Administrator to execute project agreements and any other documents necessary for VDOT-approved Transportation Alternatives Set-Aside Projects in James City County for Fiscal Years 2027 and 2028.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

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VOTES			
<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

TAPInbdSWFY27-28-res

RESOLUTION

THE VIRGINIA DEPARTMENT OF TRANSPORTATION

TRANSPORTATION ALTERNATIVES PROGRAM - RESOLUTION OF SUPPORT

MATOAKA ELEMENTARY SAFE ROUTES TO SCHOOL SIDEWALK

WHEREAS, in accordance with the Commonwealth Transportation Board construction allocation procedures, it is necessary that a resolution be received from the sponsoring jurisdiction or agency requesting the Virginia Department of Transportation (VDOT) establish a Transportation Alternatives Set-Aside project to be administered by the locality.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia (the "Board"), requests the Commonwealth Transportation Board to establish a Transportation Alternatives Set-Aside project for Matoaka Elementary Safe Routes to School Sidewalk (the "Project").

BE IT FURTHER RESOLVED that the Board hereby commits to provide a minimum 20% matching contribution for each Project and any additional funds necessary to complete the Project, subject to appropriation.

BE IT FURTHER RESOLVED that James City County hereby agrees to enter into a project administration agreement with VDOT and provide the necessary oversight to ensure the Project is developed in accordance with all state and federal requirements for design, right-of-way acquisition, and construction of a federally funded transportation project.

BE IT FURTHER RESOLVED that James City County will be responsible for maintenance and operating costs of any improvement/facility constructed with Transportation Alternatives Set-Aside funds unless other arrangements have been made with VDOT.

BE IT FURTHER RESOLVED that if the Board subsequently elects to cancel the Project, James City County hereby agrees to reimburse VDOT for the total amount of costs expended by VDOT through the date of notification of such cancellation. James City County also agrees to repay any funds previously reimbursed that are later deemed ineligible by the Federal Highway Administration.

BE IT FURTHER RESOLVED that the Board hereby authorizes the County Administrator to execute project agreements and any other documents necessary for VDOT approved Transportation Alternatives Set-Aside Projects in James City County for Fiscal Years 2027 and 2028.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

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VOTES			
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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

TAPMtokaSRTSFY27-28-res

RESOLUTION

THE VIRGINIA DEPARTMENT OF TRANSPORTATION

TRANSPORTATION ALTERNATIVES PROGRAM - RESOLUTION OF SUPPORT

POCAHONTAS TRAIL ROAD DIET

WHEREAS, in accordance with the Commonwealth Transportation Board construction allocation procedures, it is necessary that a resolution be received from the sponsoring jurisdiction or agency requesting the Virginia Department of Transportation (VDOT) establish a Transportation Alternatives Set-Aside project to be administered by the locality.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia (the "Board"), requests the Commonwealth Transportation Board to establish a Transportation Alternatives Set-Aside project for Pocahontas Trail Road Diet (the "Project").

BE IT FURTHER RESOLVED that the Board hereby commits to provide a minimum 20% matching contribution for each Project and any additional funds necessary to complete the Project, subject to appropriation.

BE IT FURTHER RESOLVED that James City County hereby agrees to enter into a project administration agreement with VDOT and provide the necessary oversight to ensure the Project is developed in accordance with all state and federal requirements for design, right-of-way acquisition, and construction of a federally funded transportation project.

BE IT FURTHER RESOLVED that James City County will be responsible for maintenance and operating costs of any improvement/facility constructed with Transportation Alternatives Set-Aside funds unless other arrangements have been made with VDOT.

BE IT FURTHER RESOLVED that if the Board subsequently elects to cancel the Project, James City County hereby agrees to reimburse VDOT for the total amount of costs expended by VDOT through the date of notification of such cancellation. James City County also agrees to repay any funds previously reimbursed that are later deemed ineligible by the Federal Highway Administration.

BE IT FURTHER RESOLVED that the Board hereby authorizes the County Administrator to execute project agreements and any other documents necessary for VDOT approved Transportation Alternatives Set-Aside Projects in James City County for Fiscal Years 2027 and 2028.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES			
<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

TAPPocTrlDietFY27-28-res

RESOLUTION

THE VIRGINIA DEPARTMENT OF TRANSPORTATION

TRANSPORTATION ALTERNATIVES PROGRAM - RESOLUTION OF SUPPORT

RICHMOND ROAD SIDEWALK SEGMENT 1

WHEREAS, in accordance with the Commonwealth Transportation Board construction allocation procedures, it is necessary that a resolution be received from the sponsoring jurisdiction or agency requesting the Virginia Department of Transportation (VDOT) establish a Transportation Alternatives Set-Aside project to be administered by the locality.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia (the "Board"), requests the Commonwealth Transportation Board to establish a Transportation Alternatives Set-Aside project Richmond Road Sidewalk Segment 1 (the "Project").

BE IT FURTHER RESOLVED that the Board hereby commits to provide a minimum 20% matching contribution for each Project and any additional funds necessary to complete the Project, subject to appropriation.

BE IT FURTHER RESOLVED that James City County hereby agrees to enter into a project administration agreement with VDOT and provide the necessary oversight to ensure the Project is developed in accordance with all state and federal requirements for design, right-of-way acquisition, and construction of a federally funded transportation project.

BE IT FURTHER RESOLVED that James City County will be responsible for maintenance and operating costs of any improvement/facility constructed with Transportation Alternatives Set-Aside funds unless other arrangements have been made with VDOT.

BE IT FURTHER RESOLVED that if the Board subsequently elects to cancel the Project, James City County hereby agrees to reimburse VDOT for the total amount of costs expended by VDOT through the date of notification of such cancellation. James City County also agrees to repay any funds previously reimbursed that are later deemed ineligible by the Federal Highway Administration.

BE IT FURTHER RESOLVED that the Board hereby authorizes the County Administrator to execute project agreements and any other documents necessary for VDOT approved Transportation Alternatives Set-Aside Projects in James City County for Fiscal Years 2027 and 2028.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

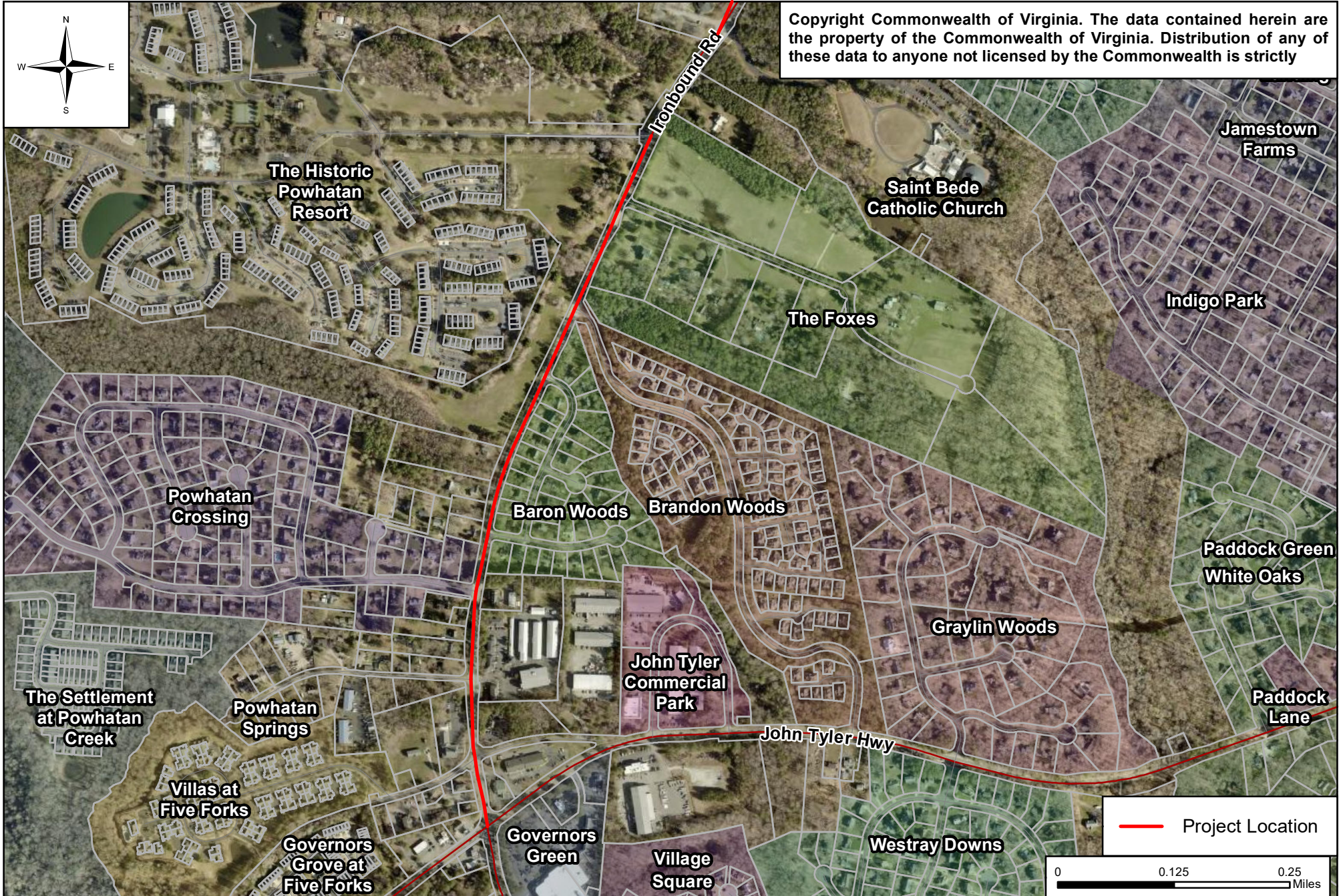
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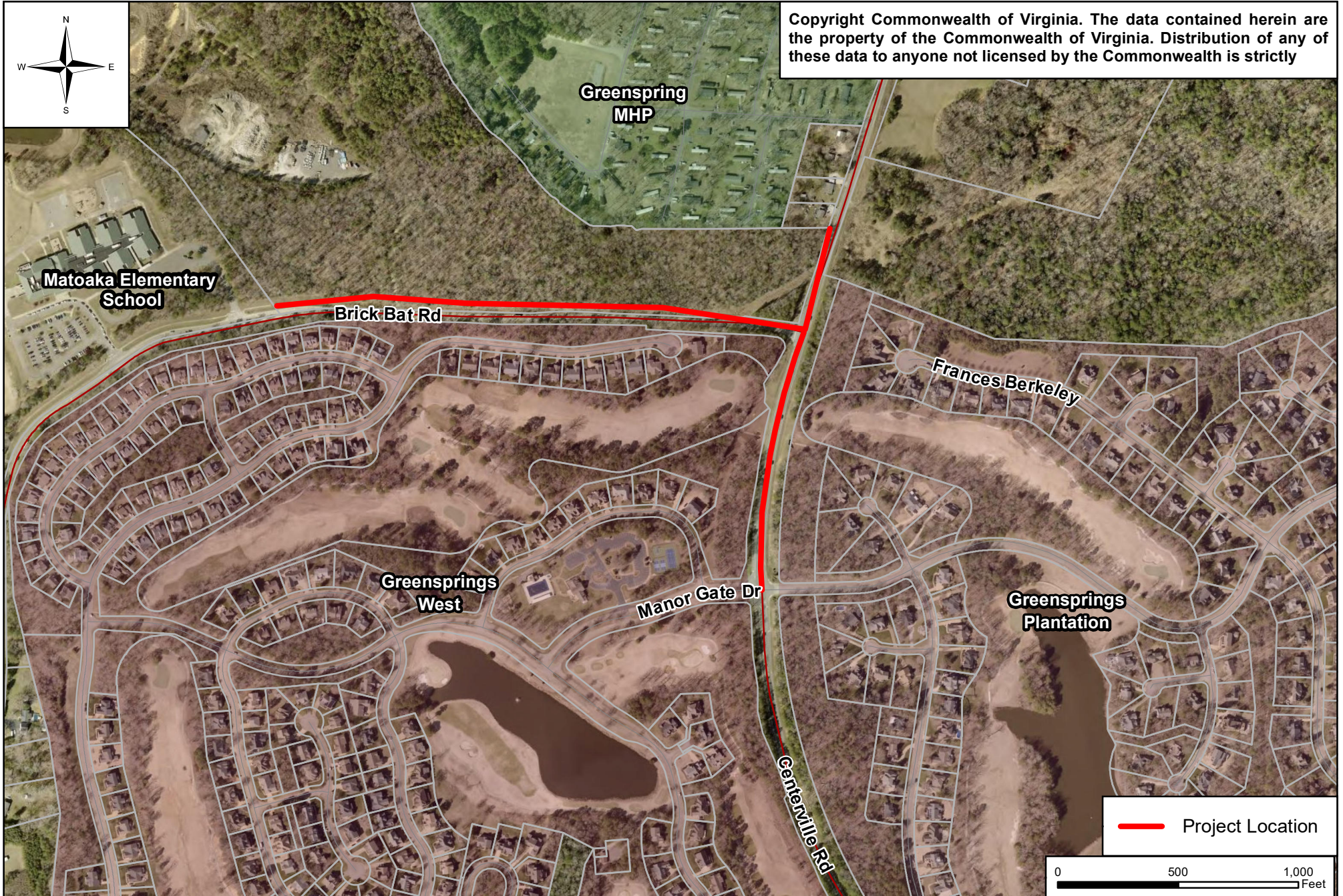
Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

TAPRchRdSWFY27-28-res

Ironbound Road Sidewalk



Matoaka Elementary School SRTS Sidewalk



Pocahontas Trail Road Diet

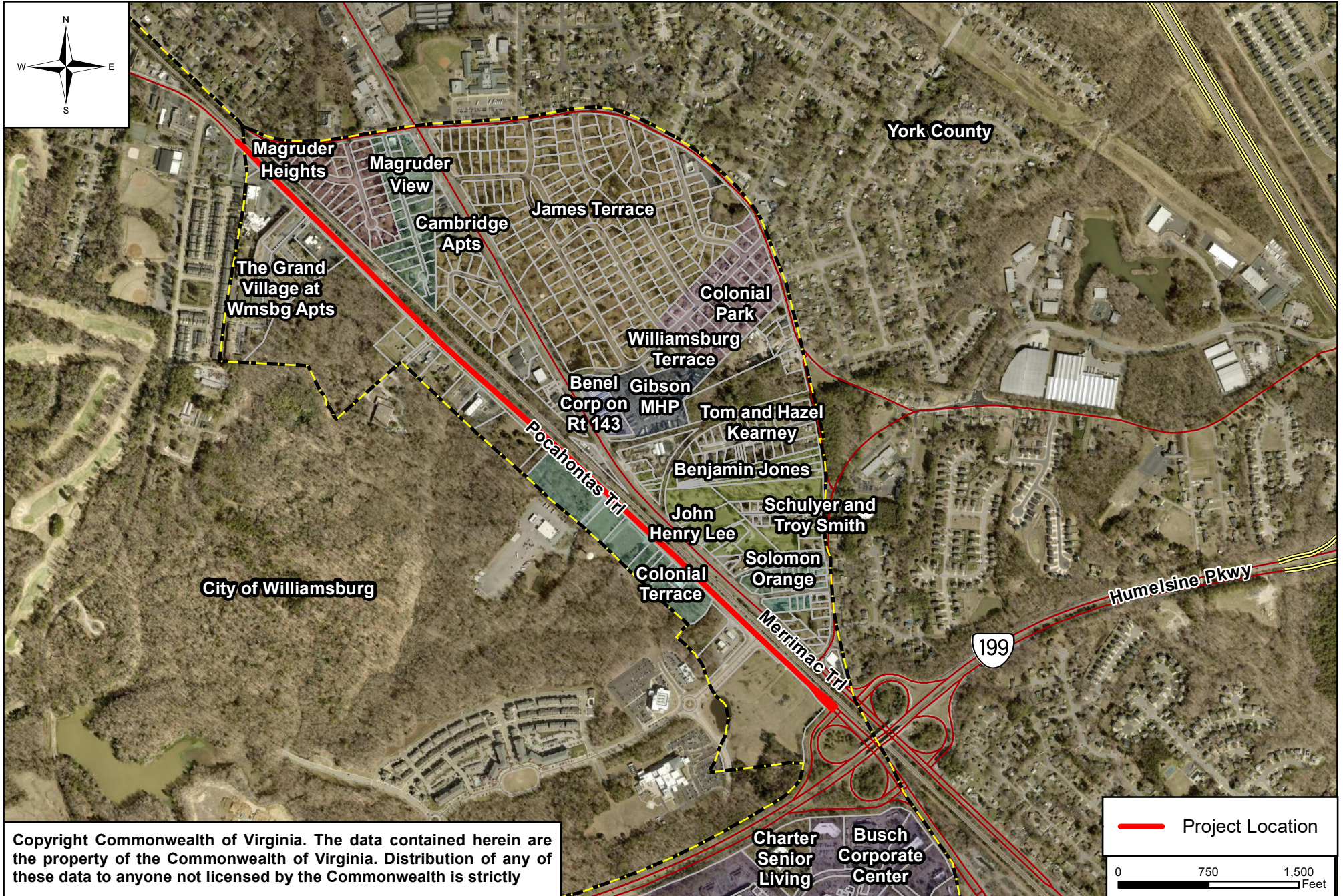


Figure 6: Concept Typical Section – Pocahontas Trail Option 1

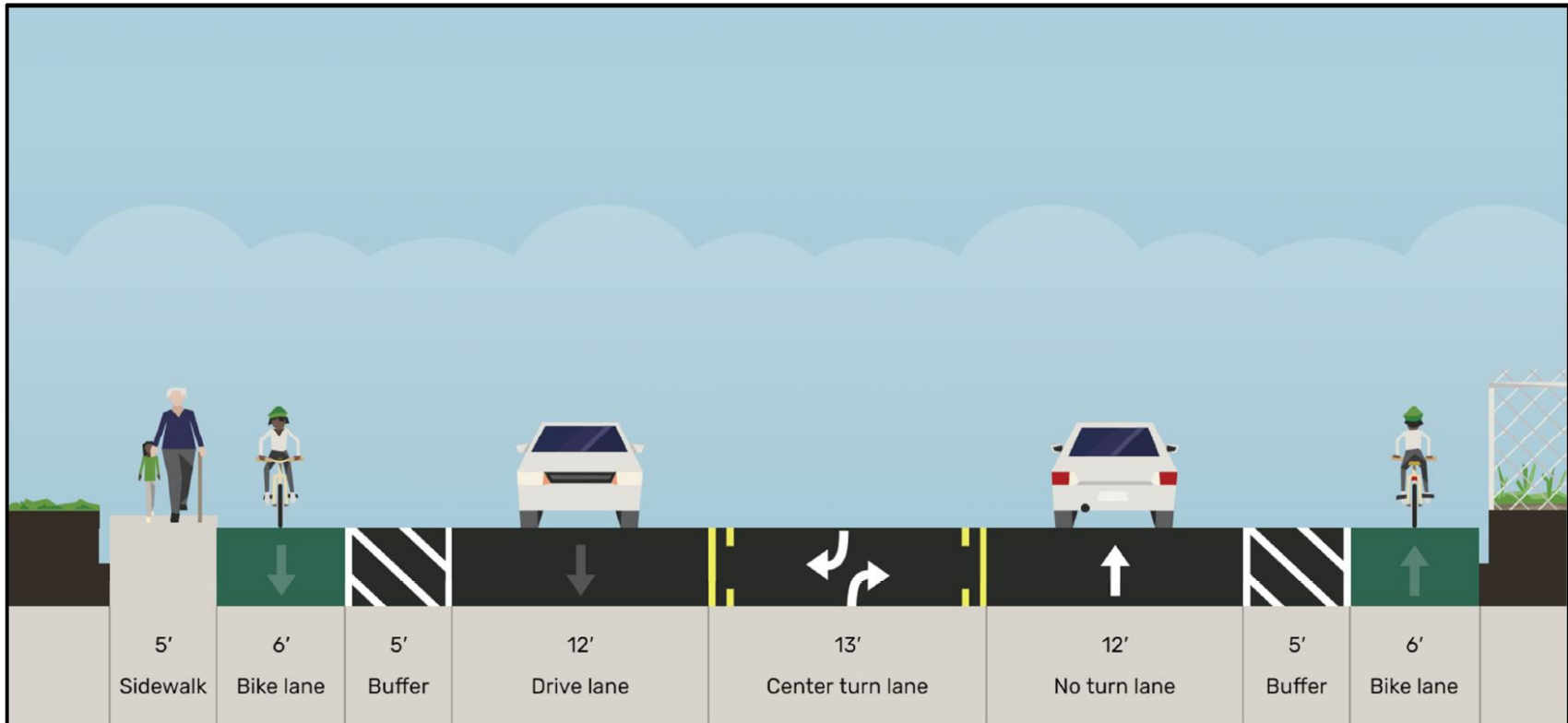
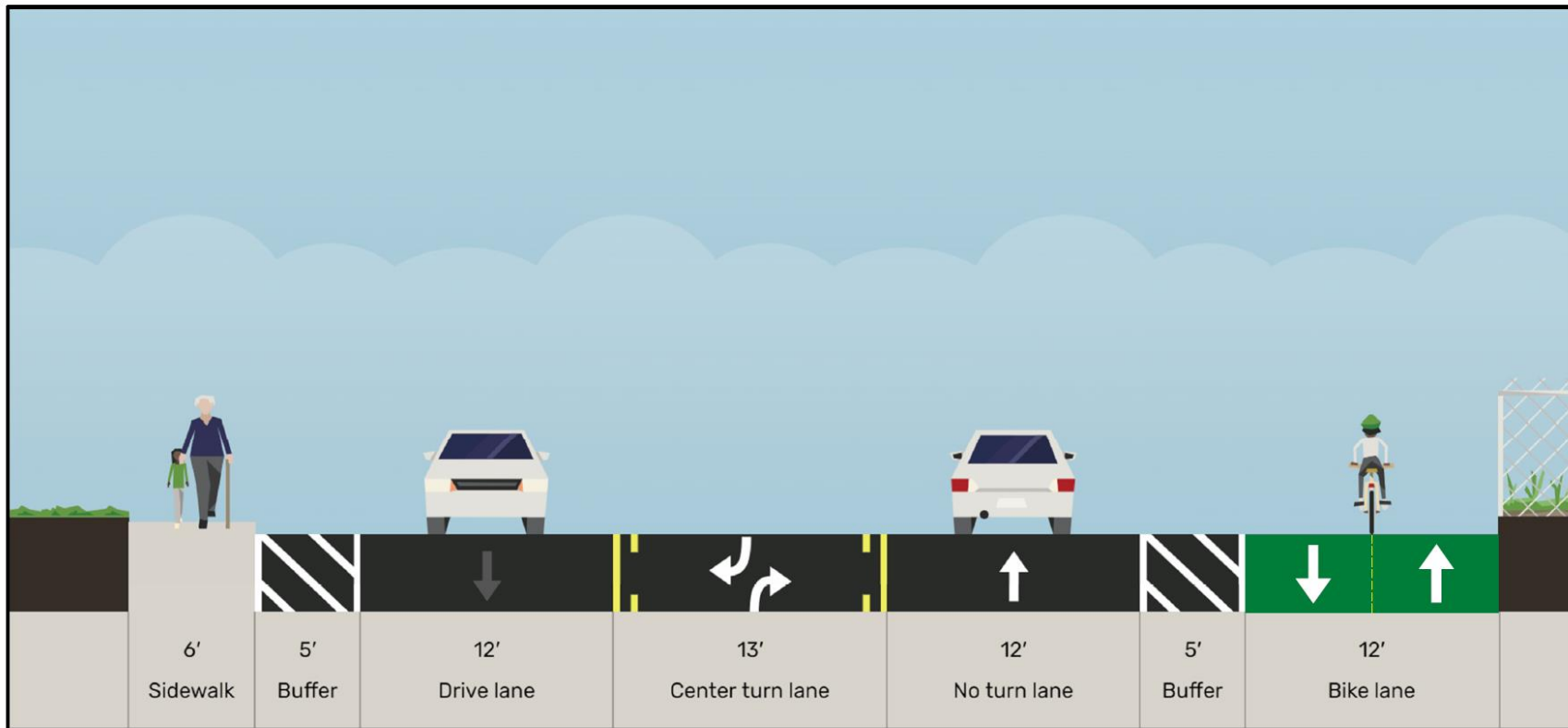
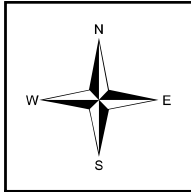


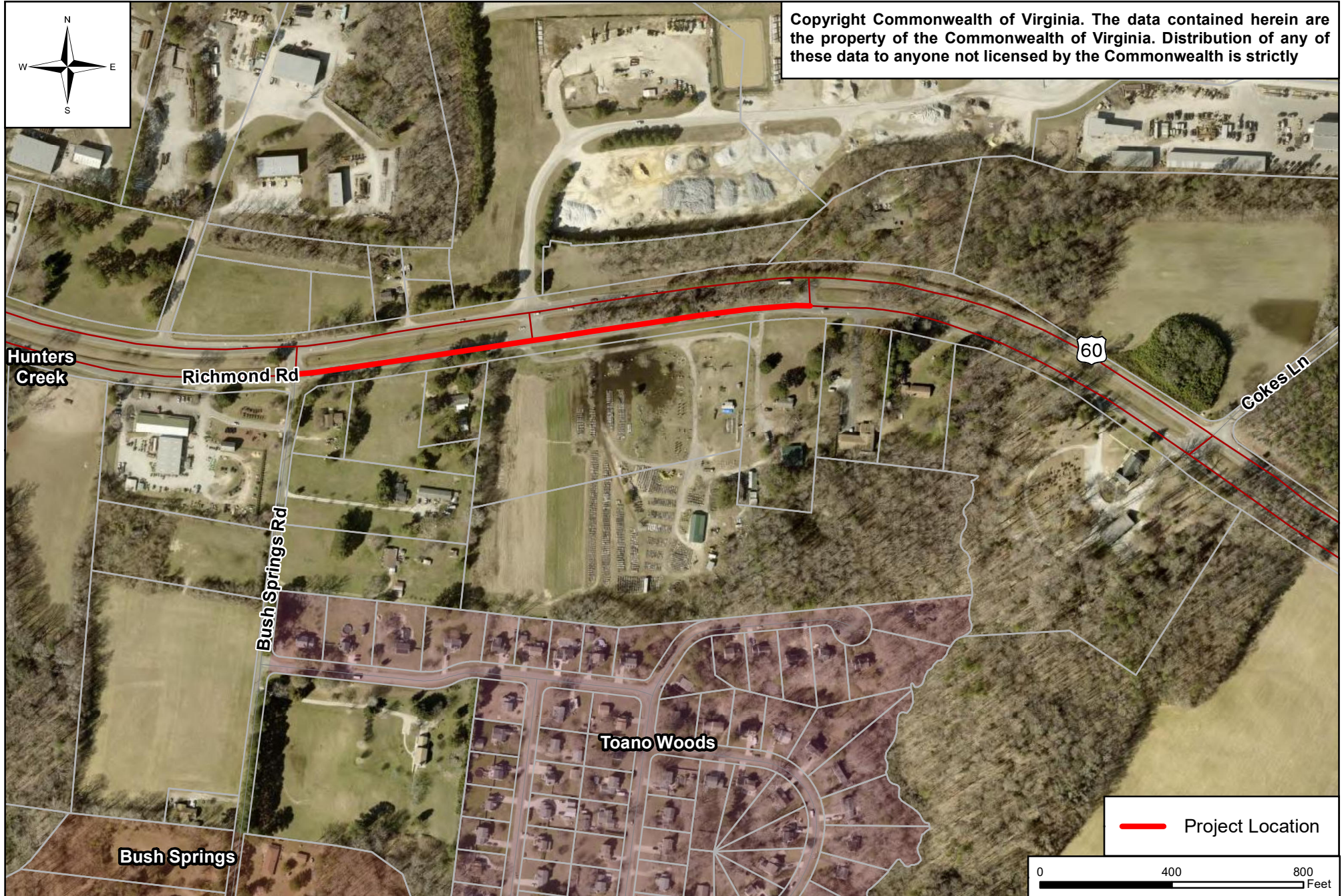
Figure 7: Concept Typical Section – Pocahontas Trail Option 2



Richmond Road Sidewalk Segment 1



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MEMORANDUM

DATE: June 10, 2025

TO: The Board of Supervisors

FROM: Will Albiston, Planner

SUBJECT: Vacation of Rights-of-Way Parallel and Perpendicular to Sycamore Landing Road

Ms. Kelann Bielick, 9936 Sycamore Landing Road, has requested that the Board of Supervisors vacate rights-of-way that are shown on a plat recorded in the Clerk's Office for the Circuit Court of the County of James City on July 12, 1928, in Plat Book 4, Page 18 (the "ROWs"). Specifically, the 30-foot right-of-way parallel to Sycamore Landing Road shown as "30 Ft. Roadway P.B. 4, PG. 18" and an 18-foot right-of-way perpendicular to Sycamore Landing Road shown as "Proposed 18 Ft. Roadway P.B. 4, PG. 18" (Attachment No. 3). The ROWs were never improved and have not been brought into the Virginia Department of Transportation's System of Secondary Roads. Two lots encompass the ROWs - 9936 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100003) and 10006 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100002). Both lots take access from Sycamore Landing Road.

Staff has contacted Mr. David O. Lambey (the adjacent property owner) at 10006 Sycamore Landing Road and confirmed his support for the vacation of the ROWs. Should the vacations be approved, Mr. Lambey will receive fee simple the entirety of the 30-foot ROW that lies within his property and Ms. Bielick will receive fee simple the entirety of the 30-foot ROW that lies within her property and she will also receive fee simple the entire 18 feet of ROW from Sycamore Landing Road to the York River because it all lies within her property.

Staff recommends the Board of Supervisors adopt the attached Ordinance to vacate the rights-of-way shown on the plat entitled "PLAT OF PROPERTY OF COUNTRY HOME DEMONSTRATION CLUB" dated June 1926 and recorded on July 16, 1928, in the Clerk's Office of the Circuit Court for the City of Williamsburg and County of James City in Plat Book 4, Page 18.

WA/md
VacROW-SycLndgRd-mem

Attachments:

1. Ordinance
2. Location Map
3. Exhibit A - Boundary Survey of 9936 Sycamore Landing Road Showing the Rights-of-Way to be Vacated
4. Citizen Correspondence - David O. Lambey

ORDINANCE NO. _____

AN ORDINANCE TO VACATE RIGHTS-OF-WAY SHOWN ON THAT CERTAIN PLAT ENTITLED "PLAT OF PROPERTY OF COUNTRY HOME DEMONSTRATION CLUB" DATED JUNE 1926 AND RECORDED ON JULY 16, 1928, IN THE CLERK'S OFFICE OF THE CIRCUIT COURT FOR THE CITY OF WILLIAMSBURG AND COUNTY OF JAMES CITY IN PLAT BOOK 4, PAGE 18.

WHEREAS, a 30-foot right-of-way parallel to Sycamore Landing Road shown as "30 Ft. Roadway" (the "30-Foot ROW") and an 18-foot right-of-way perpendicular to Sycamore Landing Road shown as "Proposed 18 Ft. Roadway" (the "18-Foot ROW") (together, the "ROWS") are shown on a plat entitled "PLAT OF PROPERTY OF COUNTRY HOME DEMONSTRATION CLUB" dated June 1926 and recorded on July 16, 1928, in the Clerk's Office of the Circuit Court for the City of Williamsburg and County of James City in Plat Book 4, Page 18.

WHEREAS, the 18-Foot ROW is encompassed entirely within 9936 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100003), running perpendicular from Sycamore Landing Road and terminating at the York River; and

WHEREAS, the 30-Foot ROW is encompassed entirely within 9936 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100003) and 10006 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100002); and

WHEREAS, it is not clear whether the County ever accepted the ROWs or whether the ROWs were ever used by the public as roadways; and

WHEREAS, the ROWs were never brought into the Virginia Department of Transportation's system of maintenance and were never improved; and

WHEREAS, the County of James City (the "County") has no surety to improve the ROWs and has no intention of improving the ROWs; and

WHEREAS, notice that the Board of Supervisors of the County of James City, Virginia, would consider this vacation has been given pursuant to Section 15.2-2272 of the *Code of Virginia*, 1950, as amended (the "Virginia Code"); and

WHEREAS, pursuant to Section 15.2-2272 of the Virginia Code, this Ordinance of Vacation shall be recorded in the Clerk's Office for the Circuit Court of the County of James City; and

WHEREAS, upon recordation of the Ordinance of Vacation fee simple title of the ROWs is vested in the owners of abutting lots; and

WHEREAS, pursuant to Section 15.2-2272 of the Virginia Code, the Board of Supervisors held a public hearing and considered the vacation of the ROWs and the Board of Supervisors was of the opinion that the vacation would not result in any inconvenience, would not cause any irreparable damage to any owner of a lot shown on the Plat, and is in the interest of public health, safety, and welfare.

NOW, THEREFORE, BE IT ORDAINED by the Board of Supervisors of James City County, Virginia, that:

1. The Board of Supervisors has considered the statements contained in the preceding “WHEREAS” clauses and hereby finds and adopts each as a part of its determination to vacate the rights-of-way.
2. The rights-of-way shown on the plat entitled “PLAT OF PROPERTY OF COUNTRY HOME DEMONSTRATION CLUB” dated June 1926 and recorded on July 16, 1928, in the Clerk’s Office of the Circuit Court for the City of Williamsburg and County of James City in Plat Book 4, Page 18 and specifically shown as “30 FT. ROADWAY P.B. 4, PG. 18” and “PROPOSED 18 FT. ROADWAY P.B. 4, PG. 18” on the attached Exhibit A titled “BOUNDARY SURVEY OF 9936 SYCAMORE LANDING ROAD FOR JOHN SIEWERS STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA” prepared by Landtech Resources, Inc. and dated 12/08/2020 are hereby VACATED.
3. That the County Attorney is directed to record this Ordinance among the records in the Clerk’s Office for the Circuit Court of the County of James City, with the following entities or their successors in interest listed as Grantees in the real estate records of the Clerk of the Circuit Court for the County of James City, Virginia:
 - a. JOHN C. SIEWERS, II, Trustee, 9936 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100003)
 - b. DAVID O LAMBEY & KIM C LAMBEY, Trustees, 10006 Sycamore Landing Road (James City County Real Estate Tax Map Parcel No. 0720100002)

This Ordinance shall be in full force and effect from the date of its adoption.

James O. Icenhour, Jr.
Chair, Board of Supervisors

ATTEST:

Teresa J. Saeed
Deputy Clerk to the Board

HIPPLE
NULL
LARSON
MCGLENNON
ICENHOUR

VOTES

<u>AYE</u>	<u>NAY</u>	<u>ABSTAIN</u>	<u>ABSENT</u>
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Adopted by the Board of Supervisors of James City County, Virginia, this 10th day of June, 2025.

VacROW-SycLndgRd-ord

Vacation of Rights-of-Way Parallel and Perpendicular to Sycamore Landing Road



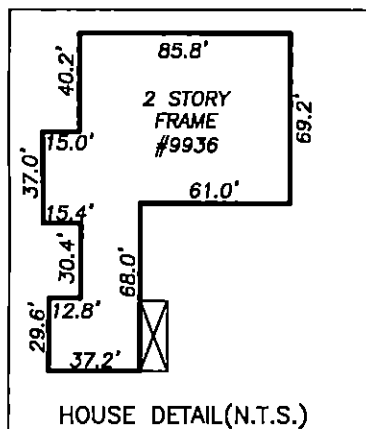
NOTES:

1. THIS PLAT WAS PRODUCED WITHOUT THE BENEFIT OF A TITLE REPORT AND REFLECTS ONLY THOSE ENCUMBRANCES, EASEMENTS AND SETBACKS AS SHOWN IN P.B. 60, PG. 21.
2. THIS FIRM IS NOT RESPONSIBLE FOR THE LOCATION OF ANY STRUCTURE, MANHOLE, VALVE, ETC., HIDDEN OR OBSTRUCTED AT THE TIME THE FIELD SURVEY WAS PERFORMED.
3. LOT LIES IN F.I.R.M. ZONE "X" & ZONE "VE" (AT 17 FT ELEV.) ACCORDING TO FLOOD INSURANCE RATE MAP #51095C0053D DATED DECEMBER 16, 2015.
4. WETLANDS, IF ANY, WERE NOT LOCATED FOR THIS SURVEY.
5. UNDERGROUND UTILITIES WERE NOT LOCATED.
6. THIS LAND BOUNDARY SURVEY IS BASED ON A CURRENT FIELD SURVEY COMPLETED DECEMBER 7, 2020.

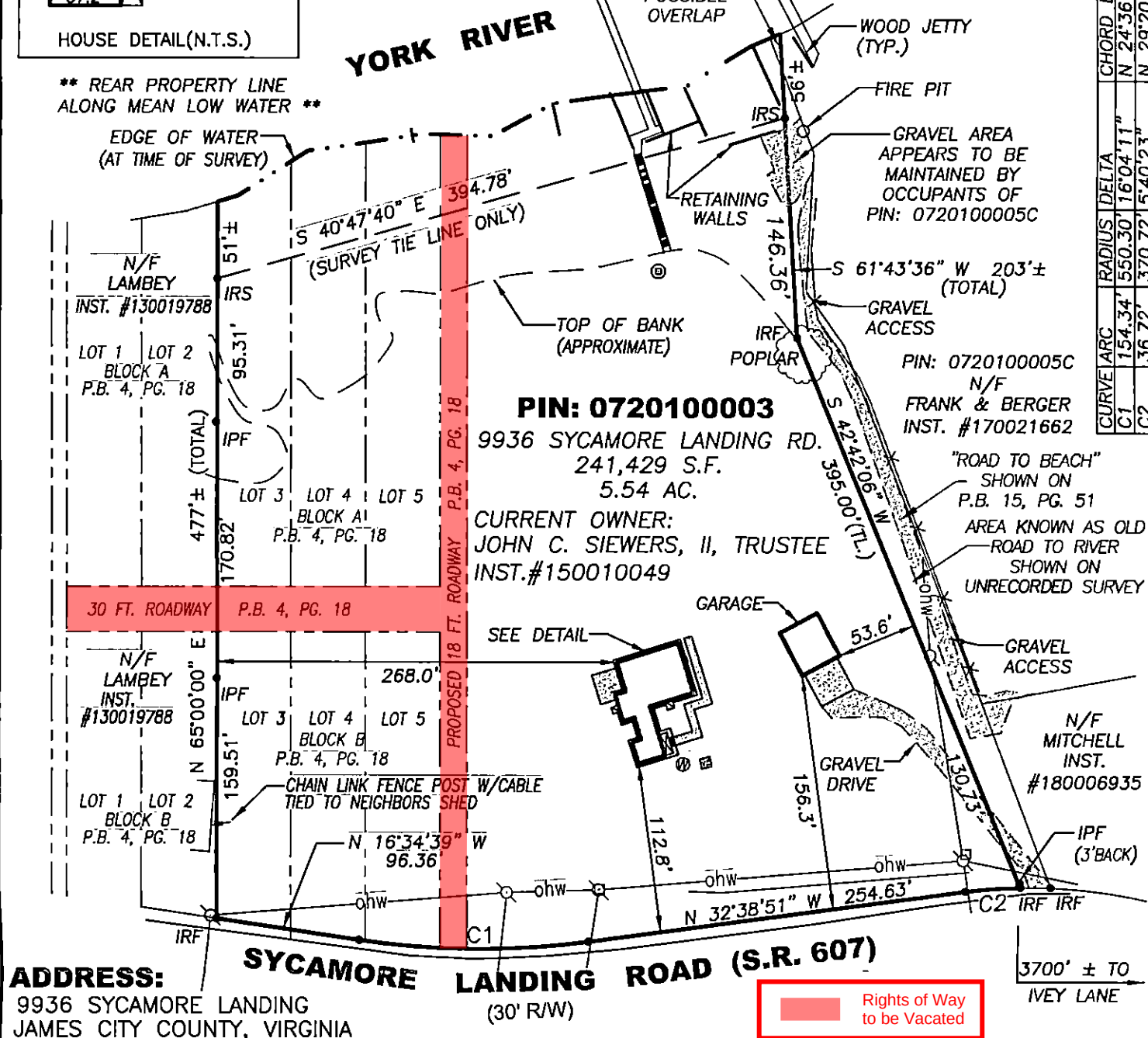
RECORD
MERIDIAN
PER UNRECORDED SURVEY

LEGEND

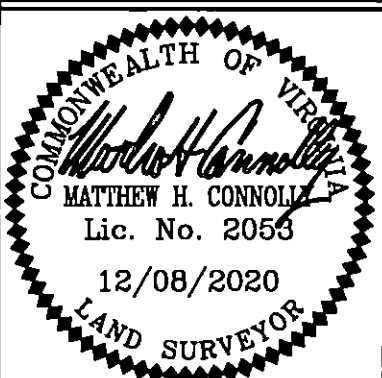
- X— FENCE
- CONCRETE
- ⊙ WELL
- ⊙ SEWER CLEAN OUT
- TELEPHONE PEDESTAL
- HVAC UNIT
- ⊙ UTILITY POLE
- ohw OVERHEAD UTILITY WIRE
- IRF= IRON ROD FOUND
- IRS= IRON ROD SET
- IPF= IRON PIPE FOUND
- APPROXIMATE LOT LINES PER P.B. 4, PG. 18



** REAR PROPERTY LINE
ALONG MEAN LOW WATER **



CURVE	ARC	RADIUS	DELTA	CHORD	BEARING	CHORD
C1	154.34'	550.30'	16°04'11"	N 24°36'44" W	153.84'	
C2	36.72'	370.72'	5°40'23"	N 29°20'17" W	36.69'	



REFERENCES:
P.B. 4 PG. 18
P.B. 60 PG. 21
UNRECORDED SURVEY BY
EDWARDS, KRETZ, LOHR &
ASSOC. DATED 11/29/99

DATE: 12/08/20
SCALE: 1"=100'
JOB# 20-425
CAD File
20-425.dwg

BOUNDARY SURVEY OF
9936 SYCAMORE LANDING ROAD
For:
JOHN SIEWERS
STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

LandTech Resources, Inc.
Engineering and Surveying Consultants
205 Bulifants Blvd., Suite E, Williamsburg, Virginia 23188
Telephone: 757-565-1677 Fax: 757-565-0782
Web: landtechresources.com

Will Albiston

Subject: FW: [External]Re: Confirming your support for the right of way vacation

From: david lambey <hidikins@cox.net>

Sent: Thursday, May 22, 2025 8:51 AM

To: Will Albiston <Will.Albiston@jamescitycountyva.gov>

Subject: [External]Re: Confirming your support for the right of way vacation

Mr. Albiston,

I have reviewed your attachment in reference to proposed right of way abandonment on adjacent Siewers property. I support such abandonment. If you need any further assistance please advise.

David Lambey

10006 Sycamore Landing Rd.

On Tue, May 20, 2025 at 1:53 PM, Will Albiston
<Will.Albiston@jamescitycountyva.gov> wrote:

Hello Mr. Lambey,

I hope this finds you well.

I'm reaching out to seek written confirmation of your support for the right of way vacation that we spoke about in our previous phone call. See the attached file for a visual representation of the action.

If you would reply to this email to confirm your support that would be much appreciated. Your email will then be included in the case files.

Please let me know if you have any questions. I can also be reached by phone at 757-259-4016.

Thank you,

Will Albiston

Planner



Planning Division

101 Mounts Bay Road, Building A

Williamsburg, VA 23185