PLANNING COMMISSION - PUBLIC HEARING/REGULAR MONTHLY MEETING

Tuesday, January 20, 2026 at 7:00 PM

Council Chambers – 15000 Washington St., STE 100 Haymarket, VA 20169

http://www.townofhaymarket.org/

AGENDA

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. OATH OF OFFICE

IV. PUBLIC HEARING

1. Notice of Public Hearing
2. Applicant Report
3. Staff Report
4. Citizen Comments
5. Close Public Hearing
6. Applicant Response to Citizen Comments

V. CITIZENS TIME

VI. MINUTE APPROVAL

1. Planning Commission - Regular Monthly Meeting: December 9, 2025

VII. AGENDA ITEMS

1. REZ #2025-001: Rezoning Application for 14600 Washington Street
2. Planning Commission Comments on Strategic Plan

VIII. OLD BUSINESS

IX. NEW BUSINESS

X. ARB UPDATES

XI. TOWN COUNCIL UPDATES

XII. ADJOURNMENT

Town of Haymarket Planning Commission Public Hearing Notice
Tuesday, January 20, 2026

Notice is hereby given that the Planning Commission of the Town of Haymarket will hold a Public Hearing on Tuesday, January 20, 2026 at 7:00 P.M. in the Haymarket Town Hall located at 15000 Washington Street, Suite 100, Haymarket, Virginia, to consider a rezoning application for 14600 Washington Street. The Rezoning Application, a proposed rezoning at 14600 Washington Street, Haymarket, VA from B-1 to R-2, is available on the Town´s website (www.townofhaymarket.org) and for review at Town Hall located at 15000 Washington Street, between the hours of 9:00 A.M. and 4:00 P.M. Monday – Friday, phone 703-753-2600. All meetings are open to the public. The Town of Haymarket does not discriminate on the basis of disability in admission or access to its programs and activities. The location of this public hearing is believed to be accessible to persons with disabilities. Any person with questions on the accessibility of the facility should contact the Town Clerk at the above address or by telephone at the above number.

If you wish to comment but cannot attend the public hearing, please send your comments to the Clerk of the Council, Kim Henry, by January 20, 2026 at 4:30pm, via email Khenry@townofhaymarket.org or via mail, 15000 Washington Street, Ste.100, Haymarket, VA 20169.

PLANNING COMMISSION - REGULAR MEETING

Tuesday, December 09, 2025 at 7:00 PM

Council Chambers – 15000 Washington St., STE 100 Haymarket, VA 20169

http://www.townofhaymarket.org/

DRAFT MINUTES

I. CALL TO ORDER

A Regular Meeting of the Planning Commission of the Town of Haymarket, VA was held this evening in the Council Chambers, commencing at 7 PM.

Chairman Jerome Gonzalez called the meeting to order.

PRESENT
Chairman Jerome Gonzalez
Vice Chairman Justin Baker
Commissioner Walt Young
Commissioner Jeff Kress

II. PLEDGE OF ALLEGIANCE

III. CITIZENS TIME

Gabriel, a Haymarket area resident, addressed the Planning Commission on the subject of the Lumina rezoning proposal and the Town's one mile review of the proposal. He stated that even though the decision is primarily that of Prince William County, the impact of the project lies heavily on the Town of Haymarket. He stated that he feels the Planning Commission should express their concerns of the project in their one mile review to the County on behalf of the citizens. He stated the primary concern is the traffic impact to Haymarket. He shared the traffic study and the impact on routes 15 and 55. He also addressed pedestrian safety. He recognized the projects altering from mid rise professional to heavily residential will have a negative impact on the Town but none of the benefits.

Ken Luersen, 6752 Jefferson Street, addressed the Planning Commission as a citizen not a councilmember. He first thanked the Planning Commission for their service to the Town. He shared that Land Planning decisions are hard and thanked the Commission for taking on the task. He stated that these decisions can be landmark decisions. Mr. Luersen provided some land use planning history and it's growth in Town. He also shared some history on zoning text amendments and ordinances that changed the potential over development of vacant land and the future of those parcels. He shared that through the years the Town revisited and softened some of the ordinances and now the Town is experiencing the impact, especially on the west side, of those decisions. He stated that the rezoning application before the Planning Commission will be a landmark profile change. He asked that the Planning Commission vet out every angle possible on this application. He asked that they take their time, don't feel intimidated, use the staff for insights and resources, and make a good educated decision.

IV. MINUTE APPROVAL

Vice Chairman Baker moved to approve the November 11, 2025 Planning Commission minutes as presented. Commissioner Kress seconded the motion. The motion carried unanimously.

Motion made by Vice Chairman Baker, Seconded by Commissioner Kress.
Voting Yea: Chairman Gonzalez, Vice Chairman Baker, Commissioner Young, Commissioner Kress

V. AGENDA ITEMS

1. REZ #2025-01: Rezoning for 14600 Washington Street: Set Public Hearing Date

   Chairman Gonzalez gave the floor to Town Manager/Zoning Administrator Emily Kyriazi to further explain the rezoning application before the Planning Commission. Mrs. Kyriazi shared some information regarding the application. She stated that the application has been fully accepted by the staff and has been referred to the Planning Commisison by the Town Council at their last meeting. She shared that the application is for 58 town homes to be placed on a portion of the property located at 14600 Washington Street, typically known as the QBE property. She shared that a small portion of the property zoned B-1 will remain in place. She shared that a portion of the building already on the site will remain in place. However a small portion of the back of the building will be removed. She shared that the full application can be found on the agenda portion of the Town's website. Lastly she shared that the purpose for this evening regarding the application is to set a public hearing date. She recommended that the public hearing date be set for January 20, 2026 at 7 PM. A discussion followed on noticing the public and timeline.

   Vice Chairman Baker moved to set the public hearing date for the Schoolhouse Commons REZ 2025-001 rezoning application for January 20, 2026 at 7 PM at Haymarket Town Hall. Commissioner Young seconded the motion. The motion carried.

   Motion made by Vice Chairman Baker, Seconded by Commissioner Young.
   Voting Yea: Chairman Gonzalez, Vice Chairman Baker, Commissioner Young, Commissioner Kress

2. Chick Fil-a Drive Through Expansion Site Plan

   Chairman Gonzalez asked Town Manager/Zoning Administrator Emily Kyriazi to lead the discussion on the Chick Fil-a drive through expansion site plan. Mrs. Kyriazi gave a brief history stating that the Town Council approved the Special Use permit application to expand the existing drive through by adding an additional lane in the Spring of 2025. She shared that staff has been working with the applicant on the site plans for the expansion. Mrs. Kyriazi introduced the representatives for the applicant and invited them to the podium to give the Planning Commission a detailed overview of the plans. Mrs. Kyriazi shared that staff is in the final stages of addressing minor comments.
   The representatives gave a presentation on their concept. The representative from Bohler Engineering shared that the drive through would bump out into the bank parcel parking lot adjacent to the Chick Fil-a parcel. She shared that there would be improvements to the banks drive through aisle and angle parking. A larger diagram of the proposal was provided for the Planning Commission with detailed descriptions of the submissions. There were questions regarding increase in cars going through the drive through and the choke point of going back down to one lane to exit the parcel. The representative proceeded with items requested by staff from the submissions.
   Town Manager Kyriazi shared that the staff is recommending conditional approval on

submission 3 since most of the comments at this time are minor that staff can address with the applicant. The applicant stated that they wanted to put a good faith effort to show that they are willing to work with staff, if this is conditionally approved. The representative stated that the restaurant will be closed during construction and will notify town staff the length of the closure once they get that information. There was a question if the back entrance of the site will remain open. The representative stated that the back entrance will remain open. There was a discussion and explanation of the new signage encouraging traffic onto Crossroads Blvd to the signal light at the entrance of Crossroads Village Center for a left hand turn onto Washington Street.

C**ommissioner Young moved that the Haymarket Planning Commission conditionally approve the Chick Fil-a site plan to expand the existing drive through lanes. This expansion will include an additional lane on site with modified parking and curbing on adjoining property as noted in the site plan. All comments from the town staff shall be addressed in full prior to the approval of the site plan and signature by the Town Zoning Administrator. Vice Chairman Baker seconded the motion.** A discussion continued on the most recent comments that was submitted after the agenda was posted. Chairman Gonzalez suggested that the Commission take time to review the last set of comments. A question was asked on the point of procedure of the motion. A suggestion was made to take a short recess for the Commission to review the last set of comments. At this time, Commissioner Young rescinded his motion. Town Manager Kyriazi suggested that the Commission continue with the next agenda item since there were people in the audience waiting for that subject prior to going into a recess. The Commission proceeded to the next agenda item.

After the Commission addressed the one mile review and the requested recess to review the comments from the December 5 submission.

Vice Chairman Baker moved that the Haymarket Planning Commission conditionally approve the Chick Fil-a site plan to expand the existing drive through lanes. The expansion will include an additional lane on site with modification parking and curbing on the adjoining property as noted in the site plan. All comments from the town staff shall be addressed in full prior to the approval of the site plan and signature by the Zoning Administrator. Commissioner Kress seconded the motion. The motion carried with 3 in favor and 1 opposed.

Motion made by Vice Chairman Baker, Seconded by Commissioner Kress.
Voting Yea: Vice Chairman Baker, Commissioner Young, Commissioner Kress
Voting Nay: Chairman Gonzalez

3. One Mile Review: Lumina Rezoning - REZ 2026-00020

Chairman Gonzalez asked Town Manager Emily Kyriazi to lead in the discussion of the One Mile Review - Prince William County rezoning proposal from Lumina. Mrs. Kyriazi gave a brief history stating that the Town receives courtesy notification from the County for commenting on parcels within one mile of the Town limits. She shared that comments on this particular rezoning application is due to the County by December 29th. She provided information regarding the application for the rezoning. She shared that there was a previous application on this parcel but the process did not go forward as the previous applicant pulled out. She stated that there are the same concerns with this application as the past application. Concerns regarding traffic impact, the density of the plan, and pedestrian safety. Mrs. Kyriazi distributed the proposed application with a plan of 247 residential units and the layout of the units on the property. She shared that the 4 acres located within the Town would be utilized as green space for the development and potential stormwater facility. She stated that the 4 acres in the Town is zoned conservation to keep the natural scapes. She shared that these were the major concerns that

she will be submitting to the County and asked for any feedback from the Planning Commission to submit by the deadline. The Commission also the over capacity and burdens on the schools plus the additional stress on the emergency services and lack of recreational facilities for the residents on the west side of the County. There was also a concern of the low lying area and shifting of the waterways if the land was to be built up.

VI. OLD BUSINESS

Town Manager Emily Kyriazi gave the Old Business updates. She shared that in the administration report that goes out monthly to the Town Council, the staff keeps a running list of all land use items. She gave updates on the funding of the Town Center site plan, interior build out of the Haymarket Ice Plex, Robinson Paradise flooding issues, Van Metre Robinson Village townhomes completed and going through bond releases, Crossroads Village Center and Taco Bell as-builts review and bond releases, Kiddie Academy finishing construction and final zoning inspections for occupancy permits from the County, Karter School site plan final review to come to Planning Commission in 2026, Haymarket Self Storage preliminary plans and waiting on first site plan submission, and Lifetime Smiles waiting on submissions of as-builts. She gave an update on the demolition of the 3 homes on Bleight Drive. She shared that this demolition permit has expired and applicant will need to reapply. She shared staff will be contacting the masonic lodge on their intentions. She shared that staff received first submission on 2 single family homes on a parcel on Fayette Street. Lastly, she provided an update on the new single family homes at the corner of Fayette and Jefferson Street and working with the developer in order to start releasing bonds.

VII. NEW BUSINESS

VIII. ARB UPDATES

IX. TOWN COUNCIL UPDATES

Councilmember Baker gave Town Manager Emily Kyriazi the floor to present the Town Council's draft updated strategic plan after being in place for one year. Mrs. Kyriazi asked the Planning Commission review the draft. She shared that the Town Council is asking for input from the Planning Commission, the Architectural Review Board, and the citizens on the plan. She stated that this will be on the next Planning Commission agenda for discussion.

Councilmember Baker shared information about the Town's Holiday Bizarre that is scheduled for December 13th. He also shared that at the last Council meeting, the Haymarket Day parade winners were recognized along with the volunteer work from Park Valley Church and Scout troop 924. He shared that the Haymarket Food Pantry gave a presentation as well at the last meeting.

1. Amended Strategic Plan from December 1 Town Council Meeting

X. ADJOURNMENT

With no further business before the Planning Commission, Commissioner Young moved to adjourn seconded by Commissioner Kress. The motion carried unanimously.

Motion made by Commissioner Young, Seconded by Commissioner Kress.
Voting Yea: Chairman Gonzalez, Vice Chairman Baker, Commissioner Young, Commissioner Kress

Town of Haymarket
15000 Washington Street, #100
Haymarket, VA 20169
703-753-2600

STAFF REPORT

PC Meeting Date:	January 20, 2026
Agenda Title:	Schoolhouse Commons Rezoning
Zoning District:	B-1 Town Center
Requested Action:	Public Hearing for Planning Commission
Staff Lead:	Lydia Schauss, Town Planner
	Emily Kyriazi, Town Manager and Zoning Administrator

EXECUTIVE SUMMARY

The applicant has submitted a rezoning application for the Schoolhouse Commons property, requesting a change from the existing B-1 Town Center zoning designation to a split zoned configuration consisting of B-1 Town Center and R-2 Residential.

The purpose of the rezoning is to rezone 7.25 acres of the property to R-2, residential, and construct 58 townhouses, while maintaining 1.59 acres as B-1, commercial. The proposed improvements and rezoning on site would create a mixed-use parcel, with a combination of active commercial businesses and residential homes. The surrounding area comprises of mainly residential uses, varying in density and less intense commercial uses. It shall be noted the commercial uses are located within Prince William County. The subject property is on the Town's outer-most eastern border at the Prince William County line.

Staff has reviewed the rezoning request for consistency with the Town's Zoning Ordinance, Comprehensive Plan, and surrounding land use context. Town staff is holding all formal recommendations until public comment is held on January 20th at 7pm.

BACKGROUND

Request: The applicant, Graystone Companies, LLC., has submitted a rezoning application for Schoolhouse Commons Neighborhood on the QBE property for an 8.84 acre Mixed-Use Community.

Site Location: 14600 Washington Street, near the northeast corner of the intersection of Washington St and Greenhill Crossing Dr (Intersection #2) and Washington St and Bleight Dr (Intersection #1).

This property is locally known as Quality Business Engineering (QBE) and may be referred to as such in the following report and discussion.

Zoning: The entirety of the site is currently zoned B-1, Town Center. The total acreage of the current site is 8.84 acres.

Surrounding Land Uses: The parcel currently is home to commercial businesses varying in types of business to include; office use, restaurants, brewery, dance studio, and fitness facilities. The open space fields are for the private use of the property owner and tenants; these fields are not for public use at this time.

Immediately on site near the main building is a Lewis Home single family home that has been repurposed as a restaurant, carry-out use. The proposal specifies the reuse of the Lewis Home, by integrating it into the development as an adaptive reuse project; a planned community center. The historic Gainesville District School building (brick structure) will remain in place with the proposed removal of several tenant spaces on the rear end of the structure. The site is surrounded by R-2 zoned properties to the north, west, and east of the property, with R-1 zoned single family neighborhoods and the Town Park just outside of the adjacent R-2 zoned properties. To the east of the site in Prince William County there are several multitenant commercial buildings and residential subdivisions.

Historical Background and Context: Located on the eastern side of the property, Gainesville District 19 School 35 is a historically significant building with deep ties to the Town's educational heritage. Constructed in 1935, the school was built in response to severe overcrowding at the 1884 Old Town School building, as well as at Haymarket High School, which opened in 1910. Recognizing the growing need for additional educational space, the School Board resolved in 1934 to construct a new facility. Construction began in May 1935, and the school officially opened in December of the same year.

Gainesville District 19 School 35 originally served elementary-grade students. As the Town's population increased, enrollment rose steadily, necessitating a series of expansions over the following decades. The first addition, completed in 1946, included four new classrooms, a clinic/office, a library, and a kitchen and cafeteria. A second expansion in 1954 added four additional classrooms and a vestibule to the west wing. The final major addition occurred in 1963, when five more classrooms were constructed and the cafeteria was expanded once again.
The school remained in the hands of Prince William County until 2013 when it was sold to QBE LLC.

In 2013, the Lewis home was moved from 14710 Washington St to 14600 Washington St for commercial use. The building was located on the Town's property and formerly used as a Police Department. The building is a confirmed Lewis Manufacturing Company Kit Home circa 1926. With historical and architectural markers such as bracket type eaves, window and door trim taper treatments, pillar design, and handwritten numbers (in grease pencil in attic), the home was identified as the La Vitello model from Lewis Manufacturing.

Graystone Companies, LLC., intends the Schoolhouse Commons as a development that complements the existing character of the Town while providing opportunities for commercial and residential growth. The requested rezoning is intended to implement this vision b by downzoning 7.25 of 8.84 acres (GPIN 7397-19-1734) from B-1 Town Center to R-2 Residential District and constructing 58 townhomes. The R-2 district is limited to 8 residential units per acre, with a projected increase in population associated with the development, estimated at approximately 186 residents based on an average of 3.2 persons per household. Graystone developer intends to remove the 1960s edition of the school, resulting in a loss of roughly three tenant spaces, for parking and rezoning of land to R-2.

STAFF REVIEW

Application Review according to Zoning Ordinance Section 58-3.7, Section 58-4.12, and Section 58-4.14 (General Development Plan)

The Schoolhouse Commons Rezoning submission addresses the intent and core requirements for a GDP by providing a written and graphic description of the proposed uses, justification for the zoning map amendment, and a conceptual layout of land use, circulation, and amenities. The document includes statements addressing development intensity, building height, dwelling units, buffering of adjacent properties, and on-site improvements, consistent with the level of detail typically expected at the rezoning stage.

Matters to be Considered in Application Review (per Section 58-4.12 of the Zoning Ordinance)

(§58-4.12(7) and §58-3.7(10))
Vehicular circulation and access are addressed at a conceptual level appropriate for rezoning; however, the analysis focuses primarily on vehicle operations and does not include schematic details regarding pedestrian crossings on Washington Street, bicycle facilities, or multimodal connectivity beyond general acknowledgment of existing conditions.

The town requests a full and clear schematic of the bike lane connecting from Bleight Dr to the Prince William County line, or the southeastern portion of the property, along Washington Street The applicant shall ensure that the Traffic Impact Analysis appropriately considers the bike lane in the study.

Further, the Town requests additional details regarding the proposed mitigation measures for the impact of the increased traffic at the new entry/exit on to the site and the impact of the increased trips per day on Bleight Drive due to the proposed entry/exit on Bleight Drive.

(§58-4.12(8)(2))
The submission does not include a mapped inventory of historic, scenic, or natural features or a detailed preservation plan. The submission acknowledges the presence of a historic and cultural asset (Lewis Home) on the property and identifies these features as considerations in the overall site design. Detailed documentation and site-specific protection measures would typically be evaluated during subsequent stages of development review.

However, based on the proposal to alter the historic structures, it is recommended the applicant address these concerns during the rezoning by providing an archaeological and architectural report on intended actions and subsequent preservation methods for both the Lewis Home and Gainesville District 19 School.

(§58-4.12(8)(5))
The submission provides clear numeric limits for development intensity. Under the proposed R-2 zoning, 7.25 acres (approximately 82% of the site) would be limited to 30% maximum lot coverage, representing a down zoning in allowable development intensity. Under the B-1 zoning, the entire 8.84-acre site could be developed with up to 85% maximum coverage. The Town requests the GDP include proposed total lot coverage according to Town Zoning Ordinance *Section 58-10.6*.

(§58-4.12(8)(6))
The submission identifies special amenities intended to serve future residents and the surrounding community, including common green spaces, pedestrian connections, and shared open space areas integrated into the site layout. The document references enhanced landscaping along Washington Street and within interior open spaces to support buffering, and streetscape improvements.

The Town requests proposed conceptions clearly depicting all setbacks, buffer yards and landscaping requirements. General detail on the final amenity design, landscape details, and plant selections shall be provided during the discussion. Any proposed hardscapes, such as fencing and other barriers shall be proposed in the GDP. Exact detailing of plant selections will be finalized in the site plan phase and in accordance with the approved Plant List in the Town's Zoning Ordinance.

Matters to be Considered in Application Review (per Section 58-4.14 of the Zoning Ordinance)

(§58-4.14) (b) The town planner shall require the development analysis to address the following as applicable:

(1) Land Use Proposal addressing proposed mix of uses; methods of integrating and unifying architectural and site design within land buys; proposed landscaping features; proposed public amenities; proposed recreational facilities and other common open spaces; and relationships of proposed uses and site design.

The applicant proposes rezoning a portion of the subject property to the R-2 district, which would permit development of up to 58 dwelling units. The development analysis describes a residential use consistent with the R-2 district. However, limited detail is provided regarding the integration of architectural design, site layout, landscaping, and common open spaces across the property. As such the town requests additional conceptual mockups, to be provided for review and congruency with surrounding area.

The submitted narrative does not address nearby public assets, including the Town Park, Silver Lake, or James Long Park, nor does it propose or discuss the relationship between development and these existing community amenities. The Town requests the Graystone developer reevaluate the proposed developments impact on the above listed amenities.

(2) Historic site and landmark analysis, addressing the potential effects on significant cultural resources (architectural, historical, archaeological), and cemeteries or grave sites.

The applicant has submitted two conceptual layout options. One option includes relocation of the existing Lewis Home to a different location on the site for proposed use as a community center. Staff notes that the development analysis does not fully address the potential impacts of relocation on the historical integrity of the structure or its relationship to the surrounding site. If approval is granted appropriate applications to relocate the building will be required.

In reference to Gainesville District 19 school building, the Town requests a waiver be filed by Graystone developer for parking to be placed in front of the historic school structure. Additionally, the town requests the submission of a demolition permit to remove the backend of the school building.

Further evaluation of historic, architectural, or archaeological resources may be required at the site plan stage to ensure compliance with applicable preservation standards and determine whether additional mitigation measures are necessary.

(3) *Whether the proposed plan adequately provides water and sanitary services to the proposed development.*

The applicant indicates that water and sanitary sewer service would be provided to support the proposed development. The Town requests a conceptual visual for stormwater management including an infiltration trench or suitable mitigation alternatives.
Detailed utility capacity and infrastructure improvements, if any, will be evaluated during site plan review. Stormwater management is proposed to be addressed through the use of Best Management Practices (BMPs) in accordance with Town and state requirements and will be reviewed in detail at the site plan stage.

(4) *The plan shall identify proposed tree save area, and buffer areas between potentially incompatible uses and along the boundaries of the proposed planned development.*

The development analysis identifies a proposed tree buffer along the southern boundary of the property adjacent to Washington Street. Staff notes that the narrative does not provide detail regarding the width, composition, or long-term maintenance of the buffer. It shall be noted that the majority of the trees currently located along the southern property line are in poor condition or dead. This shall be taken into consideration for the proposed tree buffer. The proposed landscaping along Washington Street will be required to be in accordance with the Town's Streetscape requirements.

The Town requests conceptual documents clearly depicting all setbacks, buffers, and landscaping requirements in accordance with Zoning Ordinance Section 58-10.3 and 58-10.4.

(§58-10.3)
"For lots containing a townhouse structure, the minimum lot frontage on a public street, private accessway, or common area shall be 20 feet, and on end units a minimum total lot width of 35 feet is required."

(§58-10.4)

"(a) Front. Each lot in the R-2 district shall have a front yard with a minimum depth of 15 feet from building face to the front property line. Such yard area may be encumbered by required driveway areas to garages, but not by accessory structures.
(b)Side. Each lot shall provide a minimum side yard of 15 feet from building wall to side property line, except in the case of:

(1) Interior townhouse units where the party wall creates a zero-lot line;
(2) End loading units which may have an open porch not more than five feet or more in which an open deck may encroach an additional ten feet towards the property line; and
(3) Small lot detached single-family dwellings where the minimum setback from building wall to property line shall not be less than three feet to any property and shall be not less than 20 feet in the aggregate between adjoining structures.

(c) Rear. Each lot intended for a permitted use, except a townhouse and a small lot detached single- family dwelling, shall provide a minimum rear yard not less than 25 feet in depth measured from the rear building line to the rear property line. Each townhouse and a small lot detached single-family dwelling shall have a rear yard of 20 feet. Accessory buildings may be located within five feet of the rear property line and shall be 80 square feet or less"

The Town requests the applicant demonstrate all required setbacks and landscaping buffers on the GDP for conformance with the Town's Zoning Ordinance.

(c) The town planner may require the development analysis to address any or all the following:

(1) Transportation system and analysis.

Prepared in accordance with VDOT and Town guidelines, the study analyzes traffic volumes, safety history, level of service, and queuing. The report concludes that, under all scenarios analyzed, the study intersections generally operate at acceptable levels of service with queues remaining within available storage. With development limited operational impacts at Site Access #1 during peak PM hours, and the study outlines specific access modifications and a right turn lane taper as mitigation measure.

The TIA proposes the addition of a westbound right-turn taper on Washington Street (Route 55) at the intersection with Greenhill Crossing Drive, Site Access #1 (Intersection #2), as a mitigation measure for future traffic conditions with development. Analysis using VDOT Road Design Manual (RDM) determined that a right-turn lane is not warranted, but that a right-turn taper is required during the PM and Weekend peak hours based on projected traffic volumes and turning movements. The roadway design speed is identified as 30mph, which results in a required taper length of 100 feet.

Town Staff has requested discussion on the proposed mitigation measures for the increased traffic flow at Washington Street and Greenhill Crossing intersection and the

Washington Street and Bleight Drive intersection. Specifically, the Town is requesting discussion on the current proposal to route vehicles from Greenhill Crossing Drive through the roundabout for access to Washington Street westbound. Staff is asking for alternative options to be discussed.

(2) Development Phasing Plan

Town staff is requesting additional specifications on the phasing of the proposed project be submitted in the GDP.

(3) Architectural Plan

Town staff is requesting the applicant submit architectural conceptions for the proposed residential units, the rehabilitated Lewis home and the old brick school building. Additional detailed architectural concepts shall be submitted for the landscaping and other hardscapes proposed on site, to include all signage.

(4) Special or Unique Landscape Treatment

Town staff are requesting additional specifications be submitted for the landscaping plan and appropriate buffers between proposed uses.

Review of Conformance with the Town's Comprehensive Plan

Town Comprehensive Plan. 1.2.9 Community Design Policy

Commercial/Residential Blend East of Town's Center

"Traveling east from the central portion of town, Haymarket unfolds in a pleasant mix of older, residential homes and low intensity commercial uses such as a veterinary clinic and a Baptist Church. This blend of use's continues to the eastern town limit, where a neo-colonial residential development is across the street from public uses in two Sears houses fronted by a planned village green. The two Sears structures fit this area architecturally and historically and should be preserved, if at all possible. Almost all the land north and south of Washington Street is developed. Much of the available land on the north side of Washington Street seems well suited to low intensity commercial uses, with adequate buffering to separate it from residential neighborhoods. Whenever possible, existing residential buildings should be converted to commercial use, rather than have new buildings constructed, to continue the open, small-town atmosphere and sense of place."

The proposed rezoning would revise the future land use designation of the 7.25 acres from Public Use to Moderate Density Residential. The Town's Comprehensive Plan

encourages a thoughtful mix of residential and commercial uses, particularly in areas that can support walkability, compatibility, and appropriate transitions between uses.

In consideration with the Town's Comprehensive Plan lapse in update, the Town will take into consideration, the recently adopted Strategic Plan.

2025 Strategic Plan: Goals and Strategies:

1. Develop Transportation and Infrastructure to Improve Quality of Life and Maintain Small Town Feel.

1.2 Complete, expand, and maintain the town streetscape

5. Preserve Haymarket History

5.3 Document and archive historical assets

In consideration of the Town's 2008-2013 Comprehensive Plan, the Town wished to work towards designating the parcel as public use and further protecting the historic asset on site. The property owner has successfully protected the main historic asset on site, the old brick school building and further added the Lewis home on site. The owner worked diligently over the last 12 years to ensure these two structures were protected as historic and utilized to the best of their capacity as businesses. The owner previously partnered with Prince William County Parks and Recreation to uphold a previous Proffer on the parcel for the use of the fields as park space. The proffer and associated lease with Prince William County are no longer in effect and the green space is operated for private use only by the property owner.

Town Comments Regarding the GDP & TIA

- The Town is requesting additional evaluation and potential traffic mitigation measures.
    - concerns regarding traffic conditions along Bleight Drive, queues at Site Access #1.
- The Town requests that the applicant evaluate and provide a conceptual plan for a traffic circle, or another suitable alternative, at the intersection of Greenhill Crossing Drive and Washington Street.
    - concerns related to left-turn movements from Greenhill Crossing Drive, exiting the Greenhill Crossing neighborhood heading west onto Washington Street. Considering these concerns
- The Town requests the applicant ensure the extension of the bike lane along Washington Street is considered in the TIA. The Town further requests the applicant address pedestrian safety concerns at the main intersection for the development on Washington Street.
    - concerns regarding pedestrian safety, particularly in relation to adjacent commercial uses and the goal of creating a walkable destination.
    - concerns evaluating how the proposed westbound right-turn taper on Washington Street may affect the continuity and safety of bicycle facilities.
- The Town requests a conceptual mock-up demonstrating Site Access #6 operating as an entry-only access point.
    - concerns regarding its functionality and potential impacts on surrounding traffic operations.
- The Town is requesting statements regarding intended architectural elevations and consideration for different conceptual housing styles for Town review
- The Town is requesting label clarification for curb and gutter along Bleight Dr.
- The Town is requesting a waiver be filed by Graystone developer for parking to be placed in front of the historic school structure
- The Town is requesting the submission of a demolition permit to remove the backend of the school building.
- The Town requests conceptual documents clearly depicting all setbacks, buffers, and landscaping requirements in accordance with Zoning Ordinance Section 58-10.3 and 58-10.4.
- The Town requests a conceptual visual for stormwater management including an infiltration trench or suitable mitigation alternatives.
- The Town requests the Graystone developer reevaluate the proposed developments impact on the Town Park, Silver Lake, and James Long Park.
- The Town requests that the GDP should include proposed total lot coverage according to Town Zoning Ordinance Section 58-10.6.
- The Town requests an archaeological and architectural report on intended actions and subsequent preservation methods for both the Lewis Home and Gainesville District 19 School.

Public Notice and Input
The Town posted notice of public hearing for the rezoning application for all residents of the Town in the Prince William Times on December 23rd, 2025 and January 8th, 2026. Additionally, public hearing signs were posted January 2nd and notice was shared on social media and Haymarket GoGov App. The Planning Commission is holding a public hearing for this application on January 20th, 2026.

Timing
The Planning Commission has until April 20th, 2026, which is 90 days from the first public hearing date, to act on the proposed rezoning proposal.

STAFF CONTACT INFORMATION

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ekyriazi@townofhaymarket.org

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lschauss@townofhaymarket.org

ATTACHMENTS

A- Rezoning Application
B- Schoolhouse Commons Rezoning Package – Excluding Appendices
C- Signed Power of Attorney for REZ2025-001
D- Schoolhouse Commons ZMap (Generalized Development Plan)
E- Appendix A - Schoolhouse Commons Civil Plan Package
F- Appendix B – Schoolhouse Commons TIA
G- Appendix C – Schoolhouse Commons Shared Parking Analysis
H- Schoolhouse Commons Outside Agency Approval Letter

Rezoning Application
For
SCHOOLHOUSE COMMONS
An 8.84-acre Mixed-Use Community
14600 Washington Street
Haymarket, Virginia

Application Date
October 2, 2025

Prepared by:
GRAYSTONE COMPANIES, LLC (Applicant)
15091 Taylors Mill Place | Haymarket, VA 20169
Phone: (703) 929-1328 | sdosky@graystoneco.com

THE KDL GROUP, LLC
PO Box 609 | Haymarket, VA 20169
Phone: (703) 753-7592 | jdavis@kdlgroup.com

GRAYSTONE
COMPANIES

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Appendices

Section I

ILLUSTRATIVE PLAN


COMMON GREENS
COMMUNITY CENTER
COMMON GREENS
RETAIL/ COMMERCIAL
RESIDENTIAL
RESIDENTIAL

Section II

APPLICATION

Check Appropriate Item(s):
☒ Amendment to Zoning Map & CPA
□ Zoning Text Amendment
□ Special Use
□ Variance
□ Appeal of Administrative Decision

Office Use Only:

Date Received: _____
Application Number: _____
Fees Received: _____

Part 1 – to be completed by **ALL** applicants

1-A Identification of Property – For zoning text amendments, this is the property in which the applicant has an interest, which will be affected by the text change. For all other applications, it is the land, which is covered by the application.

1) Number and Street: 14600 Washington Street
2) Present Zoning: B-1 3) Acres: 8.84
4) Legal Description of Property (Omit for zoning text amendment) – Attach if necessary.
See attached.

1-B Property – (Omit for zoning text amendments)

1) The deed restrictions, covenants, trust indentures, etc. on said property are as follows (or copy attached); if NONE, so state: None.

2) a) Has this property or any part thereof ever been considered for Variance, Special Use, Appeal of Administrative Decision or Amendment to the Zoning District Map before?
☒ YES □ NO
b) Date: 2013 c) Former Application No. REZ 20130528
d) What was the disposition of the case? Approved
e) Former Applicant Name: Haymarket Properties Group, LLC
Former Address: 14600 Washington Street Haymarket, VA 20169
Former Phone: (703) 498-8650

1-C Identification of Applicant – All applicants must have standing (an interest in property that will be directly affected by requested action)

1) Applicant Information:
Name: Graystone Companies, LLC
Address: 15091 Taylors Mill Place Haymarket, VA 20169
Phone Number: (703) 929-1328
2) Agent Information (if any):
Name: _____
Address: _____
Phone Number: _____

3) Owners of all property included in this application (omit for zoning text change):
Name: Haymarket Properties Group, LLC
Address: 14600 Washington Street Haymarket, VA 20169
Phone Number: (703) 498-8650
Name: _____
Address: _____
Phone Number: _____

Name: _____
Address: _____
Phone Number: _____
Name: _____
Address: _____
Phone Number: _____

4) If applicant is a Land Trust or Partnership or if the subject property is owned or controlled by a Land Trust or Partnership, List name and interest of **ALL** Land Trust Beneficiaries or Partners and attach evidence that the person submitting the application on behalf of the Land Trust or Partnership is authorized to do so.
Trustee/Partner Name: _____
Address: _____
Phone Number: _____ Interest: _____
_____
Beneficiary/Partner Name: _____
Address: _____
Phone Number: _____ Interest: _____
_____
Beneficiary/Partner Name: _____
Address: _____
Phone Number: _____ Interest: _____
_____

5) Does the applicant have a proprietary interest in the land or land improvements? □ YES X NO (In the case of a zoning text amendment, this means at least one parcel of land is subject to the text change)
If YES, state interest and attach documentation: _____
_____
If NO, state what interest otherwise qualifies the applicant to apply: ____
The applicant is the contract purchaser. _____

6) Names of the owners of improvement(s) on the property in this application if different from above: (Omit for zoning text amendment)
Name: _____
Address: _____
Phone Number: _____
Name: _____
Address: _____
Phone Number: _____
Name: _____
Address: _____
Phone Number: _____

7) If the applicant is a corporation, attach the evidence that the person submitting the application on behalf of the corporation is authorized to do so.
See Authorization letter dated _____.

Part 2 – Complete **ONLY** portion(s) of Pages 3, 4 & 5 pertaining to your case. (as checked at top of Page 1)

2-A Rezoning – (Amendment to the zoning district map) – Applications for Amendments to the Zoning District Map are heard by the Planning Commission which makes a positive or negative recommendation to the Town Council. Only the Town Council has authority to grant or deny amendments to the Zoning District Map.

1) a) Existing Zoning: B-1 b) Proposed Zoning: B-1 and R-2
c) Existing Use: Commercial Uses (B-1)
d) Proposed Use: Commercial Uses (B-1) and Townhouse (R-2)

2) a) The following are submitted with this application:
□ Preliminary Site Plan □ Rendering or Perspective X Other : Zoning Map Amendment Plan
b) Are there any land use intensity (LUI) requirements? □ YES X NO
c) Attach brief justifying this request. This brief should include an analysis of how the rezoning application is supportive or not supportive of relevant goals, objectives, policies or programs in the Comprehensive Plan. (Staff will assist.)

2-B Zoning Text Amendment – Applications for amendments to the zoning text are heard by the Planning Commission, which makes a recommendation to the Town Council. Only the Town Council has the authority to change the zoning text, which is done by passing an amendment to the Town Code.

1) What section(s) of the Town Code is proposed to be amended? _____
_____

2) What is the nature of the proposed change? _____
_____

3) Attach the exact language suggested by the application to be added, deleted, or changed in the Town Code.

4) Attach a written statement, which justifies the proposed change. The statement should also identify potential positive and negative impacts (if any) of the proposed change to the applicant's property, nearby properties, and the entire community if the application is approved or if it is denied.

2-C Special Use Request – Special Use requests are heard by the Planning Commission, which makes a positive or negative recommendation to the Town Council. Only the Town Council has the authority to grant or deny a Special Use.

1) Are development plans submitted with this application? (Staff member will explain.) □ YES □ NO

2) Parking Requirements:
a) Proposed number of parking spaces to be provided: _____
b) Number of parking spaces required by Town Code: _____
c) Attach tabulation of total land area and percentage thereof designated for various uses
d) Are there any land use intensity (LUI) requirements? □ YES □ NO
If YES, attach data.

3) Estimated cost of proposed Special Use project:
a) Land: $_____ Improvements: $_____
b) Estimated completion date: _____

4) Submit a brief justifying the reasons for this request. This brief should include an analysis of how the rezoning application is supportive or not supportive of relevant goals, objectives, policies or programs in the Comprehensive Plan. (Staff will assist.)

2-D Variance Request – Variances are granted or denied by the Zoning Board of Appeals (ZBA). Reversal of ZBA decisions may be secured only through the judicial system.

1) a) All information required may be shown on one sheet if appropriate.
b) Check characteristic(s) of the property preventing it from being used in accordance with the terms of the Town Code (Zoning Ordinance):
□ Too Narrow □ Elevation □ Soil

□ Too Small □ Slope □ Subsurface
□ Too Shallow □ Shape □ Other (Attach specifics)

c) Attach a description and/or drawings of the item(s) checked, giving dimensions were appropriate.

2) Attach requirements for the appropriate zoning district from which relief is sought as described in the Town Code.

3) Attach a brief explanation how the above site zoning conditions prevent any reasonable use of the land under the terms of the Town Code (Zoning Ordinance).

4) a) To the best of your knowledge, can you affirm that the hardship described above was not created by an action of anyone having proprietary interest in the land after the zoning article or applicable part thereof became law? □ YES □ NO

b) If NO, explain why the hardship should not be regarded as self-imposed (self-imposed hardships are not entitled to variance).

_____

c) Are the conditions on the property the result of other man-made changes (such as relocation of a road or highway, etc.)? □ YES □ NO

d) If YES, attach descriptions and maps where appropriate.

e) Do the above-described conditions of hardship for which this request for variance is filed apply only to this property? If YES, attach an explanation. □ YES □ NO

5) Which of the following modifications will allow a reasonable use of the land?
□ Change in the setback requirements □ change in lot coverage requirements
□ Change in height requirements □ change in area requirements
□ Other (attach description)

6) a) Attach description of proposed use.

b) Is proposed use permitted in the zoning district? □ YES □ NO

c) Will the granting of a variance in the form requested be in harmony with the general purpose and intent of the zoning article and district statement of intent and not be injurious to the neighborhood or detrimental to the public welfare? □ YES □ NO

d) Attach a brief elaborating on this last point.

2-E Appeal of Administrative Decision – Administrative decisions are reviewed by the Zoning Board of Appeals (ZBA). Such administrative decisions may be reversed or sustained by the ZBA. Reversal of ZBA decision may be secured only through the judicial system.

1) Date of administrative decision leading to this appeal: _____

2) Attach a brief, which specifically states the decision the administrative official made, the reasons given for the decision and specifically what you are herewith appealing. Elaborate on the reasons for this request, and why the Zoning Board of Appeals in your opinion should overrule the administrative official's decision.

Part 3 – To be completed by ALL applicants

AFFIDAVIT – This part of the application must be notarized. Do not sign until in the presence of a Notary Public.

1) To the best of my knowledge, I hereby affirm that all information in this application and any attached material and documents are true:

a) Signature of **applicant**: _____

b) Signature of **agent** (if any): _____

c) Date: 9/25/2025

Notary Seal

PATRIZIA BERNAL
NOTARY PUBLIC
REGISTRATION # 7368663
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES
SEPTEMBER 30, 2026

2) a) Signed and sworn before me this: 09-25-2025

b) Signature of **Notary**: _____

Legal Description of PACE West School

BEGINNING AT AN IRON PIPE FOUND AT THE SOUTHWEST CORNER OF THE LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, THE NORTHERN RIGHT-OF-WAY LINE OF JOHN MARSHALL HIGHWAY (ROUTE 55) AND IS FURTHER IDENTIFIED AS THE SOUTHEAST CORNER OF THE PROPERTY HEREIN DESCRIBED.

THENCE, DEPARTING SAID LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC AND RUNNING WITH THE SAID NORTHERN RIGHT-OF-WAY OF JOHN MARSHALL HIGHWAY, N 59°39'41" W A DISTANCE OF 454.00 FEET TO AN IRON ROD SET AT THE INTERSECTION OF THE NORTHERN LINE OF SAID JOHN MARSHALL HIGHWAY AND THE EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE.

THENCE, DEPARTING SAID JOHN MARSHALL HIGHWAY AND RUNNING WITH THE EASTERN RIGHT-OF-WAY LINE OF SAID BLEIGHT DRIVE, N 28°02'47" E A DISTANCE OF 829.12 FEET TO AN IRON ROD SET AT THE EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE AND THE SOUTHWEST CORNER OF PARCEL "A", ALEXANDRA'S KEEP BEING THE LAND OF ALEXANDRA'S KEEP HOMEOWNERS ASSOCIATION.

THENCE, DEPARTING SAID EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE AND RUNNING WITH SAID PARCEL "A" AND THE SAME LINE CONTINUED WITH THE AFOREMENTIONED LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, S 59°32'55" E A DISTANCE OF 475.67 FEET, CROSSING OVER AN IRON PIPE FOUND AT 416.38 FEET, TO AN IRON PIPE FOUND AT THE AFOREMENTIONED LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC.

THENCE, CONTINUING WITH THE AFOREMENTIONED LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, S 29°32'37" W A DISTANCE OF 827.60 FEET TO THE POINT OF BEGINNING.

CONTAINING 384,867 SQUARE FEET OR 8.8353 ACRES OF LAND MORE OR LESS.

Section III

SUMMARY NARRATIVE REZONING & COMPREHENSIVE PLAN AMENDMENT

Summary of the Proposed Rezoning and Comprehensive Plan Amendment

This application proposes the rezoning of 7.25 of 8.84 acres (GPIN 7397-19-1734) from B-1 (Town Center District) to R-2 Residential District. This would result in a downzoning, reducing traffic and the impact on adjacent residential neighbors.

The Schoolhouse Commons Zoning Map Amendment and Rezoning Plat dated September 30, 2025, prepared by KDL Group, LLC are contained in Appendix A.

The proposed Comprehensive Plan Amendment would revise the future land use designation of the 7.25 acres from Public Use to Moderate Density Residential.

This rezoning and plan amendment will support a vibrant horizontal mixed-use development that delivers much-needed residential housing options and community-scale commercial uses. The proposal prioritizes preservation of key historic assets. Specifically, the original Gainesville District School building and the only remaining Lewis Home remaining in the Town of Haymarket, by integrating them into the site as adaptive reuse projects, including a planned community center.

Existing Use and Character of the Area

The "Property" that is the subject of this rezoning consists of 8.84 acres of land that was improved with the Gainesville District School in 1935, which was subsequently expanded with additions in 1946, 1954 and 1963. The site was also improved with baseball fields, playgrounds, an asphalt basketball court and associated parking areas.

The school building was converted to commercial retail and office use after the property was sold into private ownership in 2013. The current tenant base includes offices, restaurants, Jui Jitsu, Jazzercise, and a Cookies and Cream shop situated in the historic Lewis Home that was moved to the site. The buildings contain approximately 31,000 square feet of rentable area, of which over 5,000 square feet is unoccupied. The unoccupied space is generally situated in the 1963 rear addition, which lacks requirements for most office or retail (visibility and access from Washington Street, ceilings too low, functional obsolescence).

The former recreational fields have been inactive for years and are no longer equipped or maintained. As such, the site today represents one of the largest underutilized properties within the Town—a unique infill opportunity. The Property is currently zoned B-1 Town Center Commercial and was designated for public use in the 2008 Comprehensive Plan, which relates to the property's former use as a public school.

Surrounding properties to the north, east, west, and south are designated for Moderate Density Residential, and are generally fully developed with single family attached or detached homes. The Property is bordered on the east by the Town boundary, an office/retail building along Washington Street and a new age-restricted townhome community. The Greenhill Crossing subdivision is situated to the north, across Washington Street.

Trends of Growth or Change and Current/Future Requirements of the Town

The Town experienced significant growth from 2000-2020, growing from a population of 1,019 in 2000 to 1,547 by 2020. According to the US Census Bureau, the Town of Haymarket has an estimated population of 1,545 in 2025, which is down from the 2020 census count. Growth has slowed in recent years due in part to the unavailability of vacant land in the Town. Like many other communities across the US, a severe housing shortage estimated between 3-5 million homes has restricted growth.

The Town has expressed a desire to keep the population below 3,500 people due to a trigger in the Virginia Code that would shift more responsibilities and costs to the Town.

This proposal aligns with that population management goal, while also increasing the Towns tax base. At an estimated 3.2 people per household, the proposed townhome community would introduce approximately 186 residents, keeping the Town's total population at just 1,731, less than 50% of the 3,500 threshold.

Schoolhouse Commons will enhance the housing opportunities in Haymarket by providing much needed housing, in a unique horizontal mixed-use development integrated with iconic buildings. The design provides beautiful open spaces, enhances the Washington Street streetscape, cleans up and beautifies the property for neighbors, and enhances the commercial viability for the historic school's tenants. This proposal encourages smart infill development and reuse of existing infrastructure—consistent with the principles of sustainable growth and community preservation.

Transportation Requirements of the Community

The Traffic Impact Analysis (TIA) conducted by Gorove Slade validates the need for the proposed construction of a connection to Bleight Drive, directly across from Dogwood Park Lane, improving neighborhood connectivity and traffic flow.

Additionally, and at the request of VDOT, the applicant proposes to:

- Realign the primary access point on Washington Street opposite Greenhill Crossing.
- Install a dedicated right-turn in lane from Washington Street for improved ingress/egress safety and traffic flow.
- Close and convert the easternmost Washington Street access point to green space, enhancing both safety and streetscape appeal.

Parking has been carefully planned to support both residential and commercial uses, exceeding code by 23 spaces and designed with an emphasis on flexibility and functionality. The demolition of approximately 7,000 rentable square feet of the underutilized 1963 rear addition allows for expanded parking, supporting shared use for resident and commercial visitors.

Our traffic engineer, Gorove Slade, was also engaged to perform an analysis of the surface parking use for the proposed Schoolhouse Commons project and their report is included in Appendix C. The shared parking analysis concluded that at peak demand there will be a surplus of 30 parking spaces for the combined residential and commercial uses.

The transportation upgrades will enhance access and internal circulation; improve vehicular, bicycle, and pedestrian safety on Washington Street and on the site; enhance visibility for commercial tenants, and support the overall walkability of the project. The Washington Street streetscape improvements, in harmony with the Washington Street Enhancement Project, will further fulfill the Town's Comprehensive Plan objectives.

Suitability of the Property for the Proposed Uses and Conservation of Properties and their Values

The following quotes are from the Town's Comprehensive Plan:

"It is the intent of the Town of Haymarket (hereinafter, "the Town"), by adoption of these guidelines, to maintain and promote the historic flavor and consistency of architectural styles in this region of Virginia from circa 1750 to 1900. The ARB shall advise and assist the Town Council in rendering decisions with respect to the rehabilitation, restoration, preservation and protection of historic places and non-historic places by creating between them harmonious transitional areas through the use of Architectural and Landscape materials that are consistent with the unique characteristics of this time period."

"This blend of uses continues to the eastern town limit, where a neo-colonial residential development is across the street from public uses in two Sears {Lewis} houses fronted by a planned village green. The two Sears {Lewis} structures fit this area architecturally and historically and

should be preserved, if at all possible. Landscape materials that are consistent with the unique characteristics of this time period."

"Building and revitalizing the Town are simultaneous and equal objectives emphasizing the historic theme and should be integrated into all developments and adaptive uses."

The Schoolhouse Commons plan preserves historic structures, like the Gainesville School and Lewis House, while creating "harmonious transitional areas" through context-sensitive architecture and landscaping.

"The Washington Street Enhancement Project encompasses the improvement of Washington Street throughout the Town limits and includes enhanced pedestrian, bicyclist, and vehicle access through the Historic Town of Haymarket. The project also includes installation of brick sidewalks, colonial-style streetlights, park benches, trash receptacles, bicycle lanes and racks, brick planters and requisite engineering."

This project will make the desired Washington Street enhancements and add landscaped open space along the streetscape that will blend with the existing Greenhill Crossing landscape across the street.

"Demands for space, convenience and housing style are compromised by the costs of borrowing. Though some households will need to satisfy their housing demand with rented or multi-ownership units, the majority of households will continue to secure housing in single-family attached and detached units. Young households with children traditionally preferring single-family homes with ample yards are now accepting the townhouse environment."

The residential portion of Schoolhouse Commons will provide much needed single family attached homes, which are beautifully integrated with the existing commercial uses, while providing the perfect transition from the single-family homes on Bleight Drive.

The Schoolhouse Commons project has been designed in direct alignment with the goals and principles outlined in the Town's Comprehensive Plan, particularly regarding historic preservation, appropriate architectural design, and the integration of new development into existing fabric. Key citations include:

- The Town's commitment to preserving historic structures, like the Gainesville School and Lewis Houses, and creating "harmonious transitional areas" through context-sensitive architecture and landscaping.
- The priority of integrating adaptive reuse into community revitalization.

- The importance of the Washington Street Enhancement Project, which this development directly supports through improved facades, pedestrian infrastructure, and green space along the corridor.

The existing school and Lewis Home will be preserved and adaptively reused for neighborhood-serving commercial and community uses, contributing to the town's cultural heritage, while introducing appropriate scale residential development in keeping with the R-2 zoning.

Importantly, this application reflects an effective "down-zoning":

- Under current B-1 zoning, the entire 8.84-acre site could be developed with up to 85% lot coverage.
- Under the proposed R-2 zoning, 7.25 acres (82% of the site) would be limited to 30% lot coverage, significantly reducing potential intensity and preserving more open and green space.

The proposal includes buffers, improved landscaping, and a neighborhood green that not only supports community interaction but also enhances the overall property values of the surrounding area.

The Proposed Schoolhouse Commons rezoning and Comprehensive Plan Amendment would accomplish many of the Comprehensive Plan's goals by encouraging a desirable land use pattern which serves to meet future Town needs for housing, roads and highways, employment, public facilities, recreation, and the protection of the environmental and historical character of the town.

According to the Town zoning ordinance:

"The Town Center District, B-1, provides primarily for retail shopping and personal services to be developed either as a unit or in individual parcels oriented to attracting pedestrian shoppers, tourism, and local convenience. Recognizing the economic value of the existing historical area, it shall further be the intent of the district to encourage the retention and rehabilitation of structures and uses in the district that have historic and/or architectural significance. The range, size, hours of operation, lighting, signs, and other developmental aspects of permitted uses may be limited in order to enhance the general character and historic nature of the district."

"Residential R-2. The residential district R-2 is intended for use within those areas near the central core of the Town. This district should provide a suitable environment for families and persons seeking the amenities and convenience of townhouse living, or as an option, smaller detached single-family lots, or conventional singlefamily lots without fear of encroachment or dissimilar uses. This district is designed to stabilize, protect, and promote this type of development."

The Property is uniquely positioned and historically underutilized. The existing adaptive reuse of the School and Lewis Home provides for the opportunity to integrate a local serving neighborhood with the commercial uses and a community center in the existing buildings, while preserving the historic nature of these assets. All while adding much needed housing to form a mixed-use neighborhood. The proposed development will serve to meet the intent of both the B-1 and R-2 zoning districts.

The preservation and enhancement of significantly useable green space provides the community with ample recreational areas, while enhancing the views from and to Washington Street. Additionally, relocating the Lewis Home to front Washington Street will enhance its visibility and present its historic significance and beauty to the Washington Street streetscape – in direct alignment with the Washington Street Enhancement Project.

Conclusion

The proposed zoning amendment is effectively a down zoning of 7.25 acres (R-2 portion), 82%, of the Property. Under the existing B-1 zoning, the entire site could be developed by-right with up to 85% maximum lot coverage whereas the R-2 zoning reduces the maximum lot coverage to 30%. The proposed plan overall density and traffic generation will be significantly reduced from what could be developed by-right under the existing B-1 zoning.

The proposed Schoolhouse Commons rezoning and Comprehensive Plan Amendment achieves multiple Town objectives and benefits, including:

- Preservation of key historic structures and neighborhood character
- A plan that is more compatible with the character and scale of the surrounding neighborhoods
- Providing much needed residential housing
- Converts unutilized land into a town asset and tax base
- Improves the conditions of the existing historic buildings and land to the benefit of the existing commercial tenants, residential neighbors, and the Town
- Provides a smart horizontal mixed-use development that will help support the unique challenges faced by the commercial tenants' lack of road visibility
- Enhancement of the Washington Street corridor at the Gateway for the Town
- Improved circulation and infrastructure without overburdening Town services

Schoolhouse Commons offers a balanced, community-sensitive redevelopment of a prominent and underutilized site—transforming it into a thriving mixed-use neighborhood that reflects the heritage and future vision of the Town of Haymarket.

Section IV

PROFFER STATEMENT

Proffer Statement

To Rezone 7.25 of the 8.84 Acres, GPIN 7397-19-1734, from B-1 (Town Center District) to R-2 (Residential District) in accordance with the Rezoning Plat dated September 30, 2025, prepared by KDL Group, LLC

October 2, 2025

The undersigned owners seek to amend the zoning of 7.25 of the Acres of GPIN parcel 7397-19-1734 (the "Property") from the existing zoning of B-1 (Town Center District) to R-2 (Residential District) zoning classification, subject to the following proffered conditions:

1. The Property shall be developed in substantial conformance with the submitted Zoning Map Amendment Plan entitled "Schoolhouse Commons" dated September 30, 2025 and prepared by KDL Group, LLC, "GDP". Minor modifications, including the location of travel ways, roads, parking, and buildings, shall be determined at the time of final site plan. More substantial variation from the GDP shall be permitted provided the integrity of the overall site layout is not compromised and subject to the concurrence of the Planning Director. The Applicant shall have the right to use the existing structures on the Property for purposes permitted under the existing B-1 zoning.

2. While the Proffer Justification Narrative was not able to recommend or justify any monetary proffers, the Applicant makes a voluntary contribution of $50,000 for each approved unit in excess of 54 units, to be used for enhancements to the park and for public safety. If approved as submitted, the voluntary contribution would be $200,000.

3. The proposed R-2 Residential District shall not exceed a maximum of 58 dwelling units. The residential portion of the property shall be developed as a single unified development to include a common architectural theme.

4. The R-2 Residential District shall be subject to one or more homeowners' associations that will be created and made responsible for the maintenance and repair of common areas, including common open space.

5. The Applicant shall provide amenities for the proposed community within the green spaces of the proposed development. The final locations of such amenities shall be determined at the time of final site plan review.

6. All plantings located within landscape areas shall be consistent with the Concept Landscape Plan. Applicant shall make any changes required for site plan approval. The overall site green area, tree canopy and setback landscaping requirements shall be met during site plan approval.

7. Storm water management for the Property shall employ best management practices ("BMP") and shall be provided during the site plan review process. Upon approval by the Town, the system shall be maintained by the herein referenced owners' association.

8. Sidewalks and bicycle trails shall be interconnected with the surrounding network of public sidewalks and trails external to the property, and within the Property shall form a network of internal sidewalks and bicycle trails connecting residential and nonresidential uses and amenity areas identified in the Concept Development Plan. The Applicant shall construct a 5' brick walk along the Washington Street frontage as shown on the GDP.

9. Provided all necessary Virginia Department of Transportation (VDOT) and Prince William County Department of Transportation (PWCDOT) approvals are obtained, the Applicant shall construct within the existing right-of-way various entrance improvements, generally as said improvements are depicted in the GDP. The final design of said improvements shall be determined in consultation with the Town and VDOT at the time the improvements are shown on said final site plan, with flexibility to address engineering and design considerations.

10. The Property shall be served by public sanitary sewer and water, and the Applicant shall be responsible for the costs and construction of those on and off-site improvements required to provide such service for the net additional demand generated by the development on the Property.

11. The Applicant shall move the existing Lewis Home from its existing location to Washington Street as shown on the GDP. If moving the home is structurally unsafe or damages the structure, Applicant will remodel or rebuild a replica of the home in the location shown on the GDP.

The undersigned hereby warrant that the owners of a legal interest in the subject property have signed this proffer statement, that they have full authority to bind the property to these conditions, and that the proffers contained in this statement are not "unreasonable" as that term is defined by Virginia Code § 15.2-2303.4,

Haymarket Properties Group, LLC

By:

_____

Printed Name:

Commonwealth of Virginia

County of Prince William

The foregoing instrument was acknowledged before me this _____ day of _____, _____, by _____.

_____ My commission Expires:_____

Notary Public

Section V

PROFFER JUSTIFICATION NARRATIVE

SCHOOLHOUSE COMMONS DEVELOPMENT
PRINCE WILLIAM COUNTY AND
TOWN OF HAYMARKET, VIRGINIA

PROFFER JUSTIFICATION NARRATIVE

SEPTEMBER 17, 2025

PREPARED BY:

MUNICAP, INC.
PUBLIC FINANCE

SCHOOLHOUSE COMMONS DEVELOPMENT
PRINCE WILLIAM COUNTY AND
TOWN OF HAYMARKET, VIRGINIA

PROFFER JUSTIFICATION NARRATIVE

Table of Contents

I. Introduction

The purpose of this Proffer Justification Narrative is to satisfy requirements and requests from Prince William County (the "County") and the Town of Haymarket (the "Town") as these requirements and requests relate to the 2016 legislation (as subsequently described, and as subsequently amended) for the proposed Schoolhouse Commons mixed-use development (the "Development"). More specifically, this document addresses legislative requirements and County and Town policy related to proffers that the applicant has elected to propose in connection with the request for rezoning regarding the residential portion of the Development.

Legislation Pertaining to Residential Proffers

Section 15.2-2303.4 of the Code of Virginia (the "Residential Proffer Legislation"), as it was amended effective July 1, 2019, places certain limitations on proffers for residential rezoning cases filed after July 1, 2016, or July 1, 2019, as applicable. As stipulated by the Residential Proffer Legislation, and unless an applicant elects to apply for a rezoning pursuant to Subsection D of that statute, a local government may only request or accept a proffer if it addresses an impact that is specifically attributable to a proposed new residential development, and, if it is an offsite proffer, it addresses an impact to an offsite public facility, such that (a) (i) the new residential development creates a need, or an identifiable portion of a need, for one or more public facility improvements in excess of existing public facility capacity at the time of the rezoning, and (b) (ii) each such new residential development applied for receives a direct and material benefit from a proffer made with respect to any such public facility improvements. For the purposes of the statute, a locality may base its assessment of public facility capacity on the projected impacts specifically attributable to the new residential development.

The Residential Proffer Legislation designates four categories of public improvements and facilities:

- **Public school facility improvements:** construction of new primary and secondary public schools or expansion of existing primary and secondary schools, to include all buildings, structures, parking, and other costs directly related thereto;

- **Public safety facility improvements:** construction of new law enforcement, fire, emergency, medical, and rescue facilities or expansion of existing public facilities, to include all buildings, structures, parking and other costs directly related thereto;

- **Public park facility improvements:** construction of public parks or improvements and/or expansion of existing public parks, with "public parks" including playgrounds and other recreational facilities; and

- **Public transportation facility improvements:** construction of new roads; improvement or expansion of existing roads and related appurtenances as required by applicable standards of the Virginia Department of Transportation, or the applicable standards of a locality; and construction, improvement, or expansion of buildings, structures, parking, and other costs directly related to transit.

According to the Residential Proffer Legislation, expenses of an existing public facility, such as ordinary maintenance or repair, or any capital improvement to an existing public facility, such as a renovation or technology upgrade, that does not expand the capacity of such facility shall be excluded. In addition, a proffer will be deemed unreasonable unless it addresses an impact to public facilities that is specifically attributable to the proposed residential development and there will not be adequate existing capacity at the given facilities for the impacts of the proposed residential development.

This document addresses the projected impacts of the residential portion of the Development on the foregoing infrastructure categories to which residential proffers may be directed.

Proffer Justification Narrative Requirement and Request

In response to the Residential Proffer Legislation, the County adopted policies to ensure any proffer requested or accepted meets its mandated standards. Among them is the requirement that any residential rezoning or proffer amendment application subject to the Residential Proffer Legislation include a justification narrative identifying impacts to public facilities. The requirement states that the justification narrative must, in detail:

- Identify all of the impacts of the proposed rezoning/proffer amendment;
- Propose specific and detailed mitigation strategies and measures to address all of the impacts of the proposed rezoning/proffer amendment;
- Address whether all of the mitigation strategies and measures are consistent with all applicable law, including, but not limited to, the Residential Proffer Legislation; and
- Demonstrate the sufficiency and validity of those mitigation strategies using professional best accepted practices and criteria, including all data, records, and information used by the applicant or its employees or agents in identifying any impacts and developing any proposed mitigation strategies and measures.

The Town has not adopted a policy requiring a justification narrative but has requested that such a narrative be completed based on the residential portion of the Development.

Subsequent sections of this document provide a detailed description of the Development and the potential impacts of the residential portion of the Development on public facilities in the County and the Town and detailed descriptions of the methodologies employed in calculating these impacts.

II. Schoolhouse Commons

The Development

As proposed by Graystone Companies LLC (the "Developer" or "Applicant"), the Development is a mixed-used development consisting of 58 single-family attached units and 26,000 square feet of commercial space. The site currently includes a commercial building of approximately 33,000 square feet, and the planned commercial development represents a reduction and renovation of the current building. The site comprises a single parcel described in Table II-A.1. This parcel is bordered in all directions by additional residential development.

TABLE II-A.1
Base Parcel[a]

GPIN	*Town Zoning*	*Acreage*
7397-19-1734	B-1 - Town Center	8.8353
Total		**8.8353**

[a]Provided by Town of Haymarket Administration and Prince William County Office of Real Estate Assessments.

As noted above, this parcel consists of approximately nine acres of land and is currently zoned within the Town as B-1 – Town Center. This zoning does not permit residential units, so no single-family attached units are permitted by-right. This parcel currently contains approximately 33,000 square feet of commercial space, including office and retail uses. Concurrent to the construction of the residential portion of the Development, this commercial space will be reduced to approximately 26,000 square feet. This commercial development may generate positive tax revenues; however, MuniCap has not evaluated this. As this analysis is intended to fulfill the requirements of the Residential Proffer Legislation, MuniCap examined only the impacts of the residential portion of the Development.

The Applicant is requesting a rezoning of the majority of the site parcel to Town Residential District R-2. Due to the commercial development, a portion will remain zoned as B-1. A site plan showing the proposed Development following the proposed rezoning is provided in Exhibit A on the following page.

EXHIBIT A: SCHOOLHOUSE COMMONS GENERAL DEVELOPMENT PLAN

III. Public Facility Impacts

Overview

As mentioned, this document includes calculations of public facility impacts, which are detailed in the subsequent subsections. Included in each subsection is a discussion of the methodology employed in estimating impacts. These subsections are:

- **Public school facilities –** Impacts are calculated for elementary, middle, and high schools and are based on projected incremental additional students that will result from the residential portion of the Development.

- **Public safety facilities –** Impacts are calculated for both police services and fire and rescue services. These impacts are based on projected incremental additional residents that will result from the residential portion of the Development.

- **Public park facilities –** Impacts are based on projected incremental additional residents that will result from the residential portion of the Development.

- **Transportation facilities –** A separate traffic impact analysis will be provided to address impacts to traffic and transportation.

Within the Town of Haymarket, certain public services are provided by the Town and certain others are provided by the County. Each subsection of this analysis will delineate the services provided by each jurisdiction and any proposed proffer contribution to each jurisdiction within each subcategory as a result.

Level of service ("LOS") standards shown herein represent the County standards as described in the County Comprehensive Plan, or the Town standards as described through various sources. In some cases, the current LOS provided by the County or Town does not meet the stated LOS standard. Any calculation of proffers will take into account the LOS standard, the current County or Town LOS, and the amount pledged in the County's Capital Improvement Program ("County CIP") or Town Budget, which includes Capital Improvement Expenses ("Town CIP") to raise the current LOS to meet the planned LOS standard.

III-A. Public School Facility Impacts

PRINCE WILLIAM COUNTY

Methodology

The Town does not have its own public school facilities. All public school students within the Town attend County schools. To project impacts to County public school facilities, MuniCap first reviewed the student generation factors used by Prince William County Public Schools. These factors are calculated separately by school type (elementary, middle, and high school) and by unit type (single-family detached, single-family attached, and multi-family). Student generation factors are shown in Table III-A.1.

TABLE III-A.1
Current and Historical Student Generation Factors

Historical Data

	School Type	Unit Type			Total
		SFD	SFA	MFA	
2024-25	Elementary	0.366	0.208	0.125	0.233
	Middle	0.177	0.083	0.047	0.102
	High	0.196	0.099	0.081	0.125
	Total	0.739	0.390	0.253	0.461
2023-24	Elementary	0.386	0.209	0.130	0.242
	Middle	0.172	0.079	0.054	0.102
	High	0.218	0.097	0.064	0.126
	Total	0.776	0.385	0.249	0.470
2022-23	Elementary	0.380	0.206	0.101	0.229
	Middle	0.182	0.080	0.053	0.105
	High	0.224	0.094	0.061	0.126
	Total	0.785	0.381	0.216	0.461
2021-22	Elementary	0.382	0.191	0.090	0.221
	Middle	0.186	0.080	0.056	0.107
	High	0.225	0.098	0.060	0.128
	Total	0.793	0.370	0.207	0.457
2020-21	Elementary	0.366	0.191	0.075	0.211
	Middle	0.183	0.080	0.030	0.098
	High	0.222	0.096	0.047	0.122
	Total	0.771	0.368	0.152	0.430
2019-20	Elementary	0.396	0.188	0.082	0.222
	Middle	0.189	0.077	0.036	0.101
	High	0.223	0.095	0.051	0.123
	Total	0.807	0.360	0.170	0.446

Source: Prince William County Public Schools.

MuniCap then applied these student generation factors to the proposed residential units within the Development that are in excess of those that would be allowed under the current zoning designation. For purposes of this exercise it is assumed that all projected students are new to the County rather than relocated from elsewhere within the Prince William County Public Schools system. MuniCap then identified the schools that would be impacted by the residential units based on school boundaries, researched the current capacity at each applicable school, and determined whether the projected net student impacts represented additional students beyond current school capacity.

Projected Net Student Impacts

As previously described, the residential portion of the Development includes 58 single-family attached units with zero units allowed by-right. Based on the student generation factors identified in Table III-A.1, the proposed development will generate an estimated total of 24 students net of by-right, as shown in Table III-A.2.

TABLE III-A.2
Projected Student Generation

School Type	*Units[a]*	*Unit Type*	*Generation Factor[b]*	*Total Projected Students[c]*
Elementary	58	Single-family attached	0.208	**13**
Middle	58	Single-family attached	0.083	**5**
High	58	Single-family attached	0.099	**6**
Total proposed				**24**
Elementary	0	Single-family detached	0.366	**0**
Middle	0	Single-family detached	0.177	**0**
High	0	Single-family detached	0.196	**0**
Less: total-by-right				**0**
Elementary				**13**
Middle				**5**
High				**6**
Net students				**24**

[a]Provided by Developer.
[b]See Table III-A.1.
[c]Projected students are rounded up to the nearest whole number.

Projected Capacity of Public School Facilities

The public school facilities potentially impacted by the residential units are: Buckland Mills Elementary School, Reagan Middle School, and Gainesville High School. Therefore, Table III-A.3 on the following page shows the capacity and projected enrollment of each school. The Development is expected to be completed in 2029. Therefore, projected enrollment is given as of the 2029-2030 school year to coincide with likely completion and stabilization of the Development.

TABLE III-A.3
County School Facilities – Projected Capacity and Enrollment

School	*Capacity[a]*	*Enrollment (2029-30)[a]*	*Excess Capacity*	*Projected Students[b]*	*Proffer Consideration*
Buckland Mills ES	872	775	97	13	Meets Capacity
Reagan MS	1,311	1,243	68	5	Meets Capacity
Gainesville HS	2,557	2,376	181	6	Meets Capacity

[a]Source: Prince William County Public Schools: 2024-2025 Historical, Current, and Projected Enrollment.
[b]See Table III-A.2.

Elementary School Facilities

The Development site is located within the Buckland Mills Elementary School boundaries (see Exhibit C). According to Prince William County Public Schools, the school has a projected capacity of 872 students and a projected future enrollment of 775 students, meaning that the school will have capacity for 97 additional students. Therefore, the thirteen projected elementary school students above by-right that will be created by the residential units do not exceed capacity and do not represent an additional need for Prince William County Public School facilities.

Middle School Facilities

The Development site is located within the Reagan Middle School boundaries (see Exhibit D). According to Prince William County Public Schools, the school has a projected capacity of 1,311 students and a projected future enrollment of 1,243 students, meaning that the school will have capacity for 68 additional students. Therefore, the five projected middle school students above by-right that will be created by the residential units do not exceed capacity and do not represent an additional need for Prince William County Public School facilities.

High School Facilities

The Development site is located within the Gainesville High School boundaries (see Exhibit E). According to Prince William County Public Schools, the school has a projected capacity of 2,409 students and a projected enrollment of 2,376 students, meaning that the school will have capacity for 181 additional students. Therefore, the six projected high school students above by-right that will be created by the residential units do not exceed capacity and do not represent an additional need for Prince William County Public School facilities.

EXHIBIT B: AREA MAP (DEVELOPMENT SITE & SCHOOL FACILITIES)

EXHIBIT C: AREA MAP (DEVELOPMENT SITE, BUCKLAND MILLS ELEMENTARY SCHOOL)

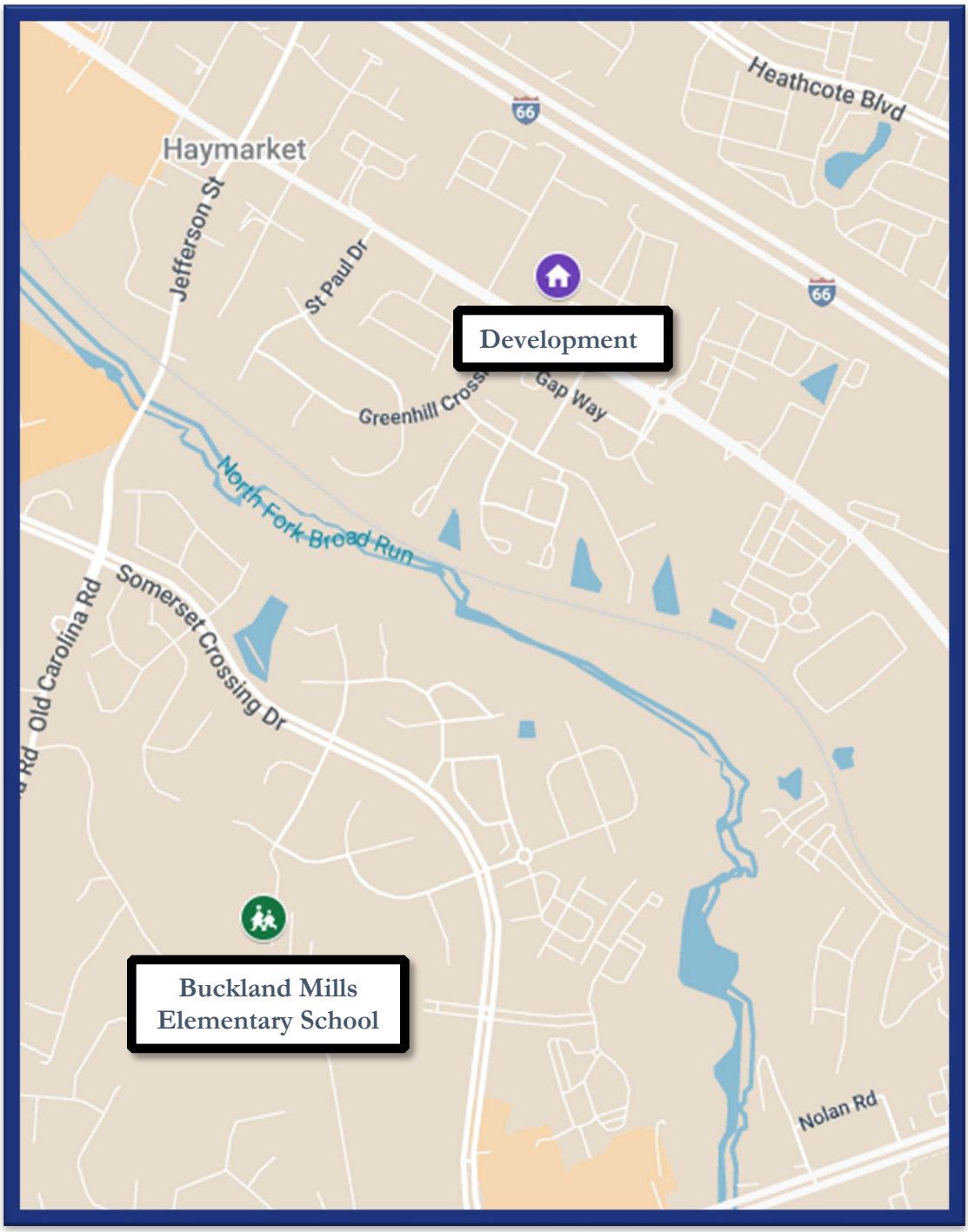


EXHIBIT D: AREA MAP (DEVELOPMENT SITE, REAGAN MIDDLE SCHOOL)

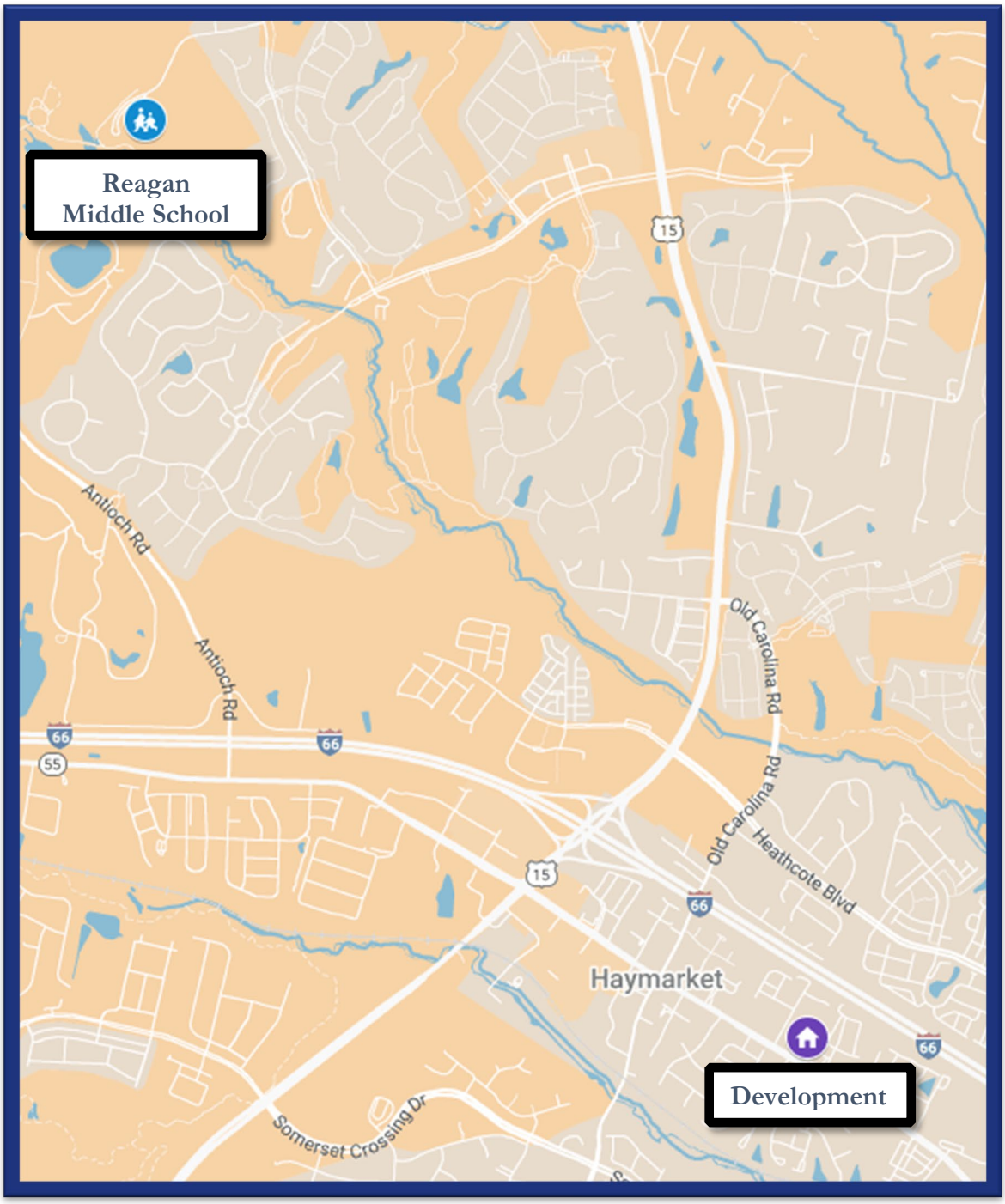


EXHIBIT E: AREA MAP (DEVELOPMENT SITE, GAINESVILLE HIGH SCHOOL)

Mitigation Strategies

The Residential Proffer Legislation stipulates that proffers can only provide for needs exceeding existing capacity. Therefore, any monetary proffer for public school facilities will be calculated on a per student basis for the projected students that will exceed the current capacity.

As detailed above, the projected students resulting from the residential units do not exceed capacity at any of the relevant schools. Therefore, a schools proffer contribution is not required.

TOWN OF HAYMARKET

Methodology and Mitigation Strategies

As noted, all public school students within the Town attend County facilities. Therefore, no proffer contribution for Town public school facilities is required.

III-B. Public Safety Facility Impacts

PRINCE WILLIAM COUNTY

Methodology

Town residents are served by a mix of Town and County public safety facilities. The Town has its own police station and County police officers generally do not assist Town police with service calls. Therefore, impacts to police facilities will be estimated in The Town's portion of this subsection. In contrast, the Town does not have its own fire and rescue facilities and therefore this analysis examines the impact of the residential portion of the Development on County fire and rescue facilities.

To estimate impacts to County and Town public safety facilities, MuniCap first estimated the total population that will reside within the residential portion of the development. MuniCap then detailed the LOS standards for various public safety services as identified in the County Comprehensive Plan and determined through discussions with the Town and calculated the expected increases in demand for services as a result of the residential portion of the Development to determine whether projected demand for services exceeds the County and Town's LOS standards and the capacity of the relevant facilities.

Projected Net Resident Impacts

As previously described, the residential portion of the Development includes 58 single-family attached units. Based on estimated residents per unit, the residential units will house an estimated 186 residents above by-right, as shown in Table III-B.1.

TABLE III-B.1
Projected Residents

Unit Type	*Units[a]*	*Residents Per Unit[b]*	*Total Projected Residents[c]*
Single-family attached	58	3.20	186
Less by-right units (single-family detached)	0	3.20	0
Net residents			**186**

[a]Provided by Developer.
[b]Source: United States Census Bureau, American Community Survey, Table of Selected Housing Characteristics, 2023 Five-Year Estimates. Represents residents per owner-occupied unit in Town of Haymarket.
[c]Residents are rounded to the nearest whole number.

Current Capacity of Public Safety Facilities

Police Facilities

As noted above, the Town provides police services through its own facilities. However, the Town collaborates with the County for use of the County's animal control facilities. The projected demand created by the residential portion of the Development for these facilities is shown in Table III-B.3 on the following page.

TABLE III-B.3
Other Projected Police Facility Impacts

Facility Type	*Projected Resident Impact[a]*	*Sq. Ft. Required per 1,000 Residents[b]*	*Additional Facility Sq. Ft. Requirement*
Animal control	186	67	12

[a]See Table III-B.1.

[b]Source: Prince William County Comprehensive Plan Safety and Secure Community.

The County LOS standard for animal control facilities is 67 square feet per 1,000 residents. According to the Prince William County Population Estimates, the Q2 2025 population of Prince William County is estimated as 508,109 (508.109 residents per thousand). This translates to a need for 34,043 square feet of animal control facility space (67 square feet per thousand residents × 508.109 thousand residents). Based on County Assessor data, the existing Prince William County Animal Services Center includes 27,772 square feet of space (19,440 square feet veterinary hospital and 8,332 square feet office building), implying that the center is already over capacity. Therefore, the projected impact of 12 square feet in necessary animal control facility space that will be generated by the residential portion of the Development represents a requirement in excess of current capacity. However, a project to renovate the center was recently completed and there are no current plans to expand square footage further, and no other relevant capital expenditures are listed in the County CIP. Therefore, a proffer contribution for Animal Control facilities is not calculated.

Fire and Rescue Facilities

The County LOS standards for fire and rescue facilities servicing the Development are broken down into workload capacity and travel times. Tables III-B.4.A and III-B.4.B on the following page summarize the LOS standards according to the County Comprehensive Plan.

TABLE III-B.4
Prince William County Fire and Rescue Level of Service Standards

A. Travel Times

Area	First Unit Travel Time in Minutes
Fire Suppression Emergency Standard - (Countywide)	4.0
Basic Life Support (BLS) Emergency Standard - (Countywide)	4.0
Advanced Life Support (ALS) Emergency Standard (Countywide)	8.0

[a]Source: Prince William County Comprehensive Plan Safety and Secure Community.

B. Workload

Factor	Standard
Responses per Tactical Unit	2,000 per year

[a]Source: Prince William County Comprehensive Plan Safety and Secure Community.

The Development is within the first due area of Station 4, located 0.8 miles away. Due to this distance, it is reasonable to assume that station personnel would be able to respond to an incident at the Development in under four minutes. According to the County Department of Fire and Rescue, the estimated first due population of Station 4 is 35,466 as of August 2025. In Calendar Year 2024, Station 4 had four tactical units, (Engine, Truck, Medic from January through August and Ambulance from September through end of year) each with the capacity to respond to 2,000 incidents per year. In 2024, the units at Station 4 responded to 4,250 total incidents, with Engine 4 responding to 3,595, Truck 4 responding to 1,830, Medic 4 responding to 2,073 and Ambulance 4 responding to 951. This implies that Station 4 is over capacity and cannot accommodate the projected impact of 186 incidents per year generated by residents above by-right at the residential portion of the Development. Table III-B.5 shows this projected call volume increase.

TABLE III-B.5
Projected Fire and Rescue Facility Impacts

Projected Resident Impact[a]	*Average Annual Incident Rate[b]*	*Projected Annual Incident Increase[c]*
186	0.12	23

[a]See Table III-B.1.
[b]Calculated as 4,250 incidents in calendar year 2024 divided by Station 4's first due population of 35,466 as of August 2025.
[c]Projected annual incidents are rounded up to the next whole number.

However, no relevant capital expenditures are listed in the County CIP for Station 4. Therefore, a proffer contribution for fire and rescue facilities is inappropriate.

EXHIBIT F: AREA MAP (DEVELOPMENT SITE & FIRE STATION #4 FACILITY)

Mitigation Strategies

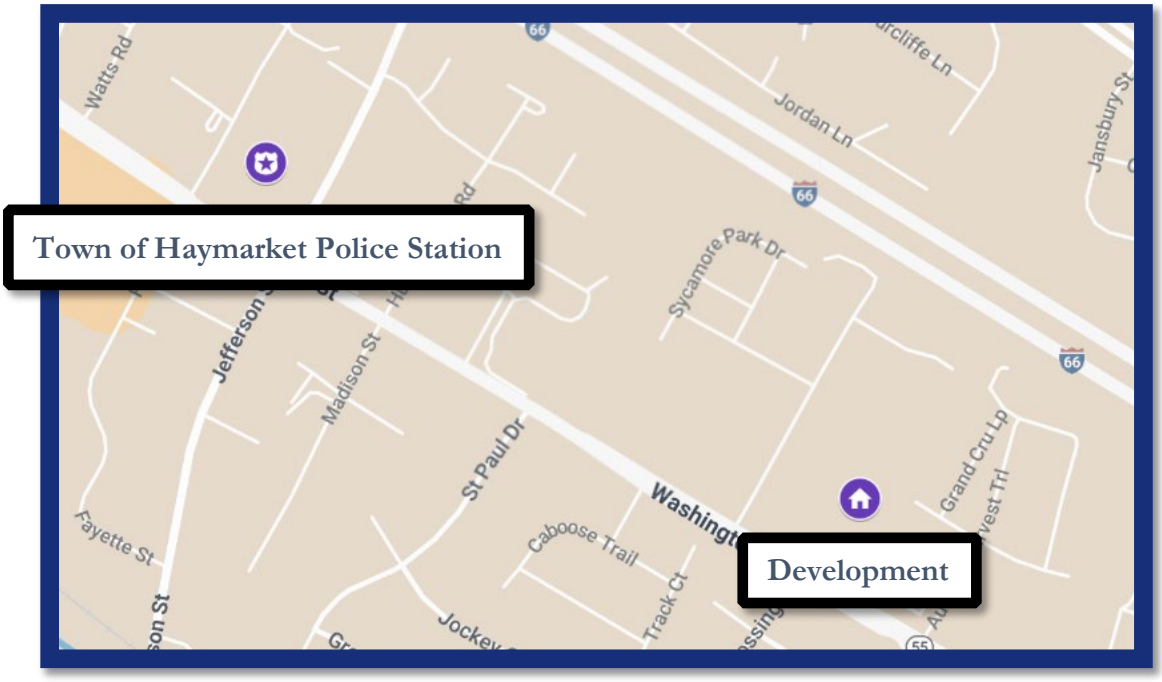
While impacts to Animal Control and Fire and Rescue Facilities from the residential portion of the Development may represent demand beyond current capacity, the County CIP does not include relevant capital improvements that would mitigate these impacts. Therefore, a proffer contribution related to these public safety categories would be inappropriate under the Residential Proffer Legislation.

TOWN OF HAYMARKET

Methodology and Mitigation Strategies

As noted above, the Town has its own police station, shown in Exhibit G below. According to the August 2025 Police Department Report to Council, Town police have responded to 1,208 calls in calendar year 2025, including calls received through dispatch, through direct contact with citizens, and initiated by police officers through their observations. The Town does not have official LOS standards indicating whether the station is currently over capacity or may become over capacity as a result of the residential units. However, in recent conversations with MuniCap, the Town Chief of Police noted that Town police answer service calls within an average of three minutes and thirty seconds and that this is a satisfactory level of service. Additionally, the Town recently hired two police officers and there is no indication that the Town's police force would be unable to meet increases in demand that the residential units may generate. Finally, the Town CIP does not include capital expenditures that would increase Police capacity. Therefore a proffer contribution for Police facilities is not calculated.

EXHIBIT G: AREA MAP (DEVELOPMENT SITE & POLICE DEPARTMENT FACILITY)



III-C. Public Park Facility Impacts

PRINCE WILLIAM COUNTY

Methodology

Town residents are able to access County parks. Therefore, this analysis estimates an appropriate parks proffer contribution in part by reviewing relevant County park facilities. The Town has a single park, impacts to which will be addressed in the Town portion of this subsection.

To estimate County park impacts, MuniCap reviewed the LOS standards for public parks identified in the County Department of Parks, Recreation & Tourism's Parks, Recreation and Open Space Master Plan 2020, adopted October 6, 2020, (the "Master Plan"). The Applicant understands that the Department of Parks, Recreation & Tourism has a list of expanded services and visionary projects in the Master Plan. However, these improvements are speculative and are not accompanied by specific timeframes for construction and/or development in which the residential portion of the Development would receive a direct material benefit. Therefore, these projects do not meet the Residential Proffer Legislation threshold to be included in this analysis.

Projected Net Resident Impacts

The Development includes 58 single-family attached units. Based on the average occupancy of owner-occupied units in the Town, the residential units will house an estimated 186 residents above by-right, as shown in Table III-B.1.

Current Capacity of Public Parks Facilities

Based on the County's established Park Planning Districts, the Development falls within Park Planning District 3. To show the impacts of the residential portion of the Development on the parks system, service area and LOS quality were taken into account. Table III-C.1 on the following page shows the LOS standards for parks and recreation service areas.

TABLE III-C.1
Prince William County Parks and Recreation Service Area Standards

PARK SERVICE AREAS		
PARK TYPE	**WALK/BIKE SERVICE AREA**	**DRIVE TIME SERVICE AREA**
Neighborhood	5 to 10-minute walk/bike time; bus stop within 1/4-mile, preferred	Less than 10 minutes
Community	10 to 15-minute walk/bike time	10 to 20-minute drive time
Regional	Greater than 15-minute walk/bike time	20 to 30-minute drive time
Linear/Greenway	Dependent on Access Points	No Standard
Natural/Cultural Resource	Dependent on Access Points	No Standard
School/Community Use	5 to 10-minute walk/bike time	Less than 10 minutes

Source: Prince William County Parks, Recreation & Open Space Master Plan 2020.

Table III-C.2 notes the developed parks within Park Planning District 3, excluding school use parks due to their connections with the corresponding schools. The County states there are no typical service areas for linear/greenway parks as these parcels may extend across large distances or for natural/cultural resource parks as the locations of these parks are dependent upon the resources being protected. Therefore, service area times have not been calculated for these park types.

TABLE III-C.2
Park Planning District 3 – Service Areas of Developed Parks[a]

Park	*Classification*	*Distance from Development[b]*	*Drive Time Estimate[b]*
Braemar Park	Neighborhood	7.4 miles	16 minutes
Rollins Ford Park	Community	5.4 miles	12 minutes
Prince William Golf Course	Regional	6.3 miles	13 minutes
Broad Run Linear Park (partial)	Linear/greenway	N/A	N/A

[a]Source: Prince William County Comprehensive Plan - Parks Recreation & Tourism.

[b]Estimates determined using Google Maps.

The County evaluates parks and facilities using quality scores and letter grades to assess overall LOS. According to the County Comprehensive Plan – Parks Recreation & Tourism, the County's goal is for all parks and facilities to have a "B" or above LOS letter grade, which corresponds to a quality score of 0.71 or above. The current quality scores and letter grades of the abovementioned parks are shown in Table III-C.3 on the following page. As of this writing, quality scores and letter grades were not assigned to school-use parks.

TABLE III-C.3
Park Planning District 3 – LOS of Developed Parks[a]

Park	*Classification*	*Quality Score*	*LOS Letter Grade*
Braemar Park	Neighborhood	0.57	C
Rollins Ford Park[b]	Community	0.91	A
Prince William Golf Course	Regional	0.73	B
Broad Run Linear Park (partial)	Linear/greenway	0.60	C

[a]Source: Prince William County Comprehensive Plan - Parks Recreation & Tourism.

[b]Rollins Ford Park completed since publication of comprehensive plan. Letter grade and quality score are inferred based on recent completion and discussion with County.

Based on the LOS standards above, Rollins Ford Park and Prince William Golf Course meet the County's stated goal for quality and Braemar Park and Broad Run Linear Park do not. Therefore, the projected impact on neighborhood and linear/greenway park facilities that will be generated by the residential portion of the Development represents a requirement beyond existing capacity. A summary of mitigation strategies follows for these park types.

Mitigation Strategies

Neighborhood Parks

The Master Plan does not list neighborhood parks as a priority for Park Planning District 3. Moreover, the County CIP does not include capital improvements that increase neighborhood park capacity within Park Planning District 3. In addition, the Development will provide its residents with two accessible green spaces, which will feature a community center, a playground with equipment, and open greens for informal sports activities. As such, any proffer related to such facilities would be inappropriate under the Residential Proffer Legislation.

Community Park

The Master Plan notes the following priorities related to community parks in Park Planning District 3.

- Seek opportunities to add additional Community, Regional, Linear/Greenway and Natural/Cultural Resource Parks within this PPD, particularly within the area of the Route 29 Small Area Plan.
- Complete the design and construction of Rollins Ford Park; phase park construction over several budget cycles to realize the full park vision and functionality; seek opportunities to connect Rollins Ford Park with the Broad Run Linear Trail.

Since publication of the Master Plan, Rollins Ford Park has been completed. Due to its recent completion and comments provided to MuniCap by the County Department of Parks, Recreation, &

Tourism, it is assumed to meet County LOS standards. The County CIP does not include additional capital improvements that increase community park capacity within Park Planning District 3. As such, any proffer related to such facilities would be inappropriate under the Residential Proffer Legislation.

Regional Parks

The Master Plan notes the following priorities related to regional parks in Park Planning District 3.

- Seek opportunities to add additional Community, Regional, Linear/Greenway and Natural/Cultural Resource Parks within this PPD, particularly within the area of the Route 29 Small Area Plan.

However, the County CIP does not include capital improvements that increase regional park capacity within Park Planning District 3. As such, any proffer related to such facilities would be inappropriate under the Residential Proffer Legislation.

Linear/Greenway Parks

The Master Plan notes the following priorities related to linear/greenway parks in Park Planning District 3.

- Secure additional land dedications or easements to complete the planned Broad Run Linear Trail between Lake Manassas and Linton Hall Road and identify funding opportunities/partnerships for bridge maintenance and repairs.
- Complete the design and construction of Rollins Ford Park; phase park construction over several budget cycles to realize the full park vision and functionality; seek opportunities to connect Rollins Ford Park with the Broad Run Linear Trail.
- Identify outdoor programming opportunities for families and the district's balanced age segmentation; utilize existing facilities within Broad Run Linear Park as a "nature classroom" to showcase Broad Run and its habitats.

Additionally, the Master Plan lists planned future construction of Bridlewood-Rocky Branch Park which has not been completed as of August 2025. However, the County CIP does not include capital improvements that increase linear/greenway park capacity within Park Planning District 3. As such, any proffer related to such facilities would be inappropriate under the Residential Proffer Legislation.

TOWN OF HAYMARKET

Methodology and Mitigation Strategies

The Town has a single park, the four-acre Haymarket Park and Playground, which is adjacent to the project site and within a five-to-ten-minute walk for residents of the Development. While the Town has not adopted official LOS standards for park facilities, it has indicated in discussions with MuniCap that the park lacks sufficient greenspace and parking to accommodate residents during peak hours. Following completion of the residential portion of the Development, the park may continue to face capacity

constraints; however, the Town CIP does not include capital improvements to expand its capacity. Accordingly, a proffer contribution is not required.

III-D. Transportation Facility Impacts

Methodology

A separate traffic impact analysis will be provided that will address impacts to transportation facilities within both the County and Town.

IV. Conclusions, Assumptions, and Limitations

The preceding narrative provides projections of impacts to public facilities as mandated by the County proffer justification narrative requirement and as requested by the Town. This narrative is being submitted to the County and Town for review.

Summary of Analysis

Based on MuniCap's analysis, a cash proffer to the County or the Town is not required as a result of the Development.

Assumptions and Limitations

MuniCap obtained the information presented and used in this narrative from multiple sources. While these sources are believed to be reliable, MuniCap has not undertaken any efforts to independently verify the veracity of any such information.

While the methodology employed, and the content provided herein, are believed to be consistent with applicable law, including the Residential Proffer Legislation, none of the statements in this document should be construed as legal advice.

Section VI

DEED AND METES & BOUNDS LEGAL DESCRIPTION OF THE PROPERTY

Prepared By/Return To: Box 42
Gifford R. Hampshire - BAR # 28954
Blankingship & Keith, P.C.
9300 West Courthouse Road, Suite 201
Manassas, Virginia 20110
Title Ins.- Fidelity National Title

GPIN: 7397-19-1734

PLAT IS RECORDED AS
INSTR. #2013 10110102176

GENERAL WARRANTY DEED

THIS DEED made this 8th day of October, 2013, by and between THE PRINCE WILLIAM COUNTY SCHOOL BOARD, a political subdivision of the Commonwealth of Virginia, GRANTOR and HAYMARKET PROPERTIES GROUP, LLC, a Virginia limited liability company, GRANTEE.

WITNESSETH:

NOW, THEREFORE, for and in consideration of the sum of One Dollar ($1.00), in cash paid, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Grantor, does hereby grant, bargain, sell and convey unto the Grantee, with GENERAL WARRANTY and English covenants of title, all that lot, piece or parcel of land, and all improvements thereon, and all rights and appurtenances thereto, located in the town of Haymarket and county of Prince William, known as Pace West School, and being more particularly described as follows:

SEE EXHIBIT A FOR LEGAL DESCRIPTION OF PROPERTY.

This being the same property conveyed to Grantor by the deeds recorded in the Land Records of Prince William County in Deed Book 177, page 503, Deed Book 99 at page 260 and Deed Book 97 at page 445.

This conveyance is subject to easements, conditions, restrictions, and rights of way of record, insofar as they may lawfully affect title hereby conveyed or any part thereof.

SEE ATTACHED PLAT

(SIGNATURE ON FOLLOWING PAGE)

Daniel H. Borinsky, Esq.
2080 Old Bridge Rd. Ste. 203
Lake Ridge, VA 22192

Exempt from Grantor's tax
58.1-811.C.5
Assessed Value: 2,759,500.00
Appraised Value: $2,145,000.00

GRANTEES' ADDRESS
15000 Washington St. #200
Haymarket, VA 20169

20131011010217 5
Prince William County, VA Pgs: 3
10/11/2013 1:05:31PM
Michèle B. McQuigg, Clerk

WITNESS the following signature and seal:

THE PRINCE WILLIAM COUNTY SCHOOL BOARD

BY: _____
Milton C. Johns
TITLE: Chairman-At-Large

STATE OF Virginia
COUNTY/CITY OF Manassas, to-wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that MILTON C. JOHNS, Chairman-At-Large of THE PRINCE WILLIAM COUNTY SCHOOL BOARD, whose name is signed to the foregoing Special Warranty Deed dated 10/08, 2013, has this date appeared before me, and acknowledged the same.

Given under my hand and seal this 8th day of October, 2013.

_____
NOTARY PUBLIC

Registration No.: 7323299

My commission expires: 6/30/2014

JANET KRISTIN VALENTI
COMMONWEALTH OF VIRGINIA
REGISTRATION NO. 7323299
MY COMM. EXPIRES 06/30/2014
NOTARY PUBLIC

EXHIBIT A

Legal Description of PACE West School

BEGINNING AT AN IRON PIPE FOUND AT THE SOUTHWEST CORNER OF THE LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, THE NORTHERN RIGHT-OF-WAY LINE OF JOHN MARSHALL HIGHWAY (ROUTE 55) AND IS FURTHER IDENTIFIED AS THE SOUTHEAST CORNER OF THE PROPERTY HEREIN DESCRIBED.

THENCE, DEPARTING SAID LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC AND RUNNING WITH THE SAID NORTHERN RIGHT-OF-WAY OF JOHN MARSHALL HIGHWAY, N 59°39'41" W A DISTANCE OF 454.00 FEET TO AN IRON ROD SET AT THE INTERSECTION OF THE NORTHERN LINE OF SAID JOHN MARSHALL HIGHWAY AND THE EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE.

THENCE, DEPARTING SAID JOHN MARSHALL HIGHWAY AND RUNNING WITH THE EASTERN RIGHT-OF-WAY LINE OF SAID BLEIGHT DRIVE, N 28°02'47" E A DISTANCE OF 829.12 FEET TO AN IRON ROD SET AT THE EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE AND THE SOUTHWEST CORNER OF PARCEL "A", ALEXANDRA'S KEEP BEING THE LAND OF ALEXANDRA'S KEEP HOMEOWNERS ASSOCIATION.

THENCE, DEPARTING SAID EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE AND RUNNING WITH SAID PARCEL "A" AND THE SAME LINE CONTINUED WITH THE AFOREMENTIONED LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, S 59°32'55" E A DISTANCE OF 475.67 FEET, CROSSING OVER AN IRON PIPE FOUND AT 416.38 FEET, TO AN IRON PIPE FOUND AT THE AFOREMENTIONED LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC.

THENCE, CONTINUING WITH THE AFOREMENTIONED LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, S 29°32'37" W A DISTANCE OF 827.60 FEET TO THE POINT OF BEGINNING.

CONTAINING 384,867 SQUARE FEET OR 8.8353 ACRES OF LAND MORE OR LESS.

4816-6923-9574, V. 1

NOTES

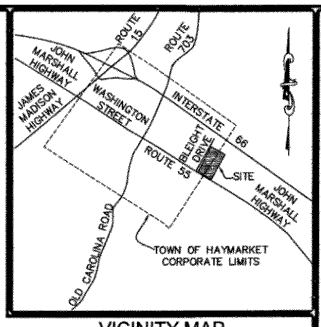
1) THE PROPERTY SHOWN HEREON IS CURRENTLY IN THE NAME OF THE COUNTY SCHOOL BOARD OF PRINCE WILLIAM COUNTY PER DEED BOOK 97 AT PAGE 445 DEED BOOK 99 AT PAGE 260 AND DEED BOOK 177 AT PAGE 503 RECORDED AMONG THE LAND RECORDS OF PRINCE WILLIAM COUNTY VIRGINIA
2) THE GEOGRAPHIC PARCEL IDENTIFICATION NUMBER FOR THE PROPERTY SHOWN HEREON IS 7397-19-1734
3) NO TITLE REPORT FURNISHED THIS SURVEY IS SUBJECT TO ANY EASEMENTS AND RESTRICTIONS OF RECORD IF ANY UNDERLYING EASEMENTS ARE NOT SHOWN ON THIS SURVEY ALL EXISTING PHYSICAL IMPROVEMENTS ARE NOT SHOWN HEREON
4) THIS SURVEY IS BASED UPON A FIELD RUN SURVEY PERFORMED BY RICE ASSOCIATES IN MAY 2013
5) THE PLAT OF THE PROPERTY SHOWN HEREON IS REFERENCED TO THE VIRGINIA COORDINATE SYSTEM OF 1983 (VCS 1983) WHICH IS TIED TO PRINCE WILLIAM COUNTY MONUMENTS GAINESVILLE 2 PW11 AND PW12 PER RECORD PLAT FOR ALEXANDRAS KEEP SUBDIVISION RECORDED AMONG THE LAND RECORDS OF PRINCE WILLIAM COUNTY VIRGINIA AT INSTRUMENT NUMBER 200906050054872 THE PLAT DISTANCES ARE INTENDED TO BE HORIZONTAL DISTANCES MEASURED AT THE MEAN ELEVATION OF THIS PROJECT THE BEARINGS SHOWN ARE REFERENCED TO VCS 1983 GRID NORTH
6) LOCATION OF FENCES (IF SHOWN) ARE APPROXIMATE AND DO NOT CERTIFY OWNERSHIP
7) THIS PLAT WAS FORWARDED ELECTRONICALLY IN READ ONLY FORMAT ANY ATTEMPT AT ALTERATION INVALIDATES THE SEAL AND SIGNATURE AN ORIGINAL HARD COPY REMAINS ON FILE AT RICE ASSOCIATES

201310110102176
Prince William County VA Pgs 1
10/11/2013 1:05 1PM
Michele B McQuigg Clerk

Filed with Instrument Number
201310110102176

COMMONWEALTH OF VIRGINIA
WILLIAM G CUPPY JR
Lic No 2887
5-23-13
LAND SURVEYOR

ABBREVIATION LEGEND	
D B	DEED BOOK
MON	MONUMENT
PG	PAGE
IPF	IRON PIPE FOUND
INSTR	INSTRUMENT
No	NUMBER
IRS	IRON ROD SET WITH CAP
GPIN	GEOGRAPHIC PARCEL IDENTIFICATION NUMBER



VICINITY MAP
1" = 2000'

NAD 83 VIRGINIA STATE GRID NORTH

BLEIGHT DRIVE
(40' RIGHT-OF-WAY)
D B 1092 PG 1944

N28°02 47"E 829 12'

IRS
N 6 979 009 27
E 11 730 722 47
LAT 38 48 34 02
LON 77 37 49 27"

WIRE FENCE

IRS
N 6 979 741 03
E 11 731 112 31
LAT 38 48 41 22
LON 77 37 44 26"

JOHN MARSHALL HIGHWAY
ROUTE 55
(VARIABLE WIDTH RIGHT-OF-WAY)

DETAIL
NOT TO SCALE
CONCRETE CORPORATE MON FOUND
1 55

PACE WEST
THE COUNTY SCHOOL BOARD
OF PRINCE WILLIAM COUNTY
D B 97 PG 445
D B 99 PG 260
D B 177 PG 503
GPIN 7397-19-1734
8 8353 ACRES
#14550 JOHN MARSHALL HIGHWAY

PARCEL "A"
ALEXANDRA'S KEEP
ALEXANDRA'S KEEP
HOMEOWNERS ASSOCIATION
INSTR No 200906050054871
GPIN 7397-19-3765

CHAIN LINK FENCE

N59°39'41"W 454 00'
294 47'
416 38'
S59°32'55"E 475.67'

CONCRETE CORPORATE MON FOUND SEE DETAIL

N 6 978 860 54
E 11 730 976 61
LAT 38 48 32 53
LON 77 37 46 08"

TOWN OF HAYMARKET
PRINCE WILLIAM COUNTY

N 6 979,529 98
E 11 731 471 29
LAT 38 48 39 10
LON 77 37 39 75"

159 53'

N 6 978 779 96
E 11 731 114 29
LAT 38 48 31 72
LON 77 37 44 35

CHAIN LINK FENCE
WIRE FENCE
WIRE FENCE
IPF
CONCRETE CORPORATE MON FOUND

N 6 979 499 95
E 11 731 522 37
LAT 38 48 38 80"
LON 77 37 39 11

59 29'

IPF
S29 32'37"W 827 60'
IPF
IPF

TRUSTED MANAGEMENT
AND SERVICES, LLC
INSTR No 200312010218900
GPIN 7397-19-4508

GRAPHIC SCALE
0 50 100 150
1" = 50

RICE ASSOCIATES
LAND SURVEYING MAPPING CONSULTANTS
10625 GASKINS WAY
MANASSAS, VIRGINIA 20109
(703) 968-3200 FAX (703) 968-2705
WWW RICESURVEYS COM

PLAT SHOWING
THE PROPERTY OF
THE COUNTY SCHOOL BOARD
OF PRINCE WILLIAM COUNTY
THE TOWN OF HAYMARKET VIRGINIA

SCALE 1" = 50'
DATE MAY, 2013
DRAWN BY CGW
CHECKED BY WGL
FILE NAME ID1301 00
SHEET 1 OF 1

REVISIONS			
DATE	REVISION	BY	

SPECIAL POWER OF ATTORNEY AFFIDAVIT

I, Connor Leake, Managing Member of Haymarket Properties Group, LLC (hereinafter "Owner"), owner of property located in the Town of Haymarket, Virginia, identified by Grid Parcel Identification Number (GPIN): 7397-19-1734, do hereby make, constitute, and appoint Shivon Dosky of Graystone Companies LLC (hereinafter "Attorney-in-Fact"), as my true and lawful attorney-in-fact.

I hereby grant to said Attorney-in-Fact full power and authority to act in my name, place and stead, giving unto said Attorney-in-Fact full power and authority to do and perform all acts and make all representations necessary, without any limitation whatsoever, to make application for Rezoning or Proffer Amendment regarding the above-described property within the jurisdiction of the Town of Haymarket, Virginia. This special power of attorney authorizes the Attorney-in-Fact to execute all documents, pay all fees, appear before any boards, commissions, or governmental bodies, provide testimony, and take any other actions necessary or appropriate to complete the rezoning or proffer amendment process as fully as the Owner might or could do if personally present.

The rights, powers, and authority of said Attorney-in-Fact herein granted shall commence and be in full force and effect on October 1, 2025, and shall remain in full force and effect thereafter until actual notice, by certified mail, return receipt requested, is received by the Zoning Administrator of the Town of Haymarket, Virginia, stating that the terms of this power have been revoked or modified.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 1ST day of OCTOBER, 2025.

By: _____ (SEAL)
Name: CONNOR LEAKE
Title: MANAGING MEMBER

COMMONWEALTH OF VIRGINIA:
City/County of Prince William

The foregoing instrument was acknowledged before me this 6th day of November, 2025, by the above-named Attorney-in-Fact.

_____
Notary Public

My Commission Expires: 7/31/2026
Registration Number: 7818572

[NOTARY SEAL]

MAI KIM LUU
COMMONWEALTH OF VIRGINIA
REGISTRATION NO. #7818572
MY COMM. EXPIRES: 07/31/2026
NOTARY PUBLIC

SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT
REZ2025-

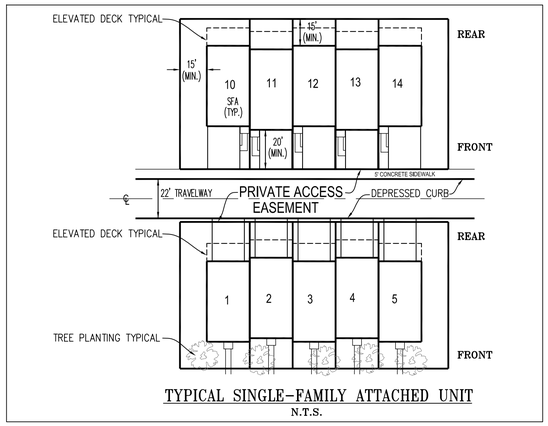
TOWN OF HAYMARKET, VIRGINIA

GENERAL NOTES:

1. THE PROPERTY SHOWN HEREON IS LOCATED ON GPIN 7397-19-1734 AND IS NOW IN THE NAME OF HAYMARKET PROPERTIES GROUP, LLC AS DOCUMENTED IN INSTRUMENT 201310110102175 AMONG THE LAND RECORDS OF PRINCE WILLIAM COUNTY, VIRGINIA.
2. THE BOUNDARY AND IMPROVEMENTS FOUND HEREON ARE TAKEN FROM THE ALTA/ACSM LAND TITLE SURVEY PREPARED BY RICE & ASSOCIATES DATED JUNE 2013 AND A CURRENT FIELD SURVEY BY BL SURVEY ARBORIST, LLC.

   TOPOGRAPHIC INFORMATION DEPICTED HEREON IS TAKEN FROM THE FIELD SURVEY PERFORMED BY BL SURVEY ARBORIST, LLC AND DATED FEBRUARY 1, 2014. THE VERTICAL DATUM IS TAKEN FROM GPS COORDINATES.
3. THE SUBJECT PROPERTY CONSISTS OF APPROXIMATELY 8.84 ACRES AND IS CURRENTLY ZONED B-1 IN ACCORDANCE WITH THE TOWN OF HAYMARKET, VA ZONING ORDINANCE.
4. THERE ARE NO KNOWN CEMETERIES, WOODED AREAS, WITHIN THE PROPERTY AND WITHIN 500 FEET OF THE PROPERTY. FURTHER, THERE ARE NO KNOWN NATURAL, CULTURAL, OR HISTORIC RESOURCES, RPA'S, OR 100-YEAR FLOOD AREAS IDENTIFIED ON THE PRINCE WILLIAM COUNTY, VA ONLINE MAPPING SYSTEM.
5. THE PROPERTY SHOWN HEREON LIES IN FLOOD ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN PER FEMA FLOOD INSURANCE RATE MAP 51153C PANEL #0067D BEARING AN EFFECTIVE DATE OF JANUARY 5, 1995.
6. THE DEVELOPMENT OF THIS PROPERTY IS SUBJECT TO THE APPROVAL CONDITIONS OF THE 2013 REZONING APPLICATION WITH THE TOWN OF HAYMARKET.
7. ALL CONSTRUCTION SHALL CONFORM TO THE TOWN OF HAYMARKET, PWCSA USM, AND/OR VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
8. ALL NEW OR RELOCATED UTILITIES SHALL BE PLACED UNDERGROUND.
9. THE PROPOSED USES WITHIN THE EXISTING BUILDING SHALL BE SERVED BY THE EXISTING PUBLIC WATER AND SEWER FACILITIES OWNED BY PWCSA AT NO COST TO THE TOWN OR COUNTY. THE ANTICIPATED SEWAGE FLOWS GENERATED BY SUBJECT DEVELOPMENT IS XXXX GPD.
10. STORMWATER MANAGEMENT AND BEST MANAGEMENT PRACTICES MEASURES WILL BE IMPLEMENTED WITH THE FINAL SITE PLAN PER THE LATEST VIRGINIA STORMWATER MANAGEMENT HANDBOOK (VSMH).
11. EXISTING WELLS AND SEPTIC SYSTEMS THAT WILL NOT BE USED SHALL BE ABANDONED IN ACCORDANCE WITH CURRENT PRINCE WILLIAM COUNTY HEALTH DEPARTMENT STANDARDS.
12. SITE LIGHTING SHALL BE PROVIDED IN ACCORDANCE WITH THE TOWN OF HAYMARKET ZONING ORDINANCE (SECTION 58-719).
13. LANDSCAPING AND BUFFERING SHALL BE PROVIDED IN ACCORDANCE WITH ARTICLE XVI OF THE TOWN OF HAYMARKET ZONING ORDINANCE.
14. STREET TREES LOCATED IN RESIDENTIAL ZONING DISTRICTS SHALL BE LOCATED GENERALLY WITHIN 20 FEET OF THE PUBLIC RIGHT-OF-WAY (SECTION 58-723(c)).
15. ALL OPEN SPACES SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. THE HOMEOWNERS ASSOCIATION SHALL BE ESTABLISHED PRIOR TO THE APPROVAL OF THE FINAL SITE PLAN FOR THE SUBJECT PROPERTY IN A FORM APPROVED BT THE TOWN.
16. THE HOMEOWNERS ASSOCIATION DOCUMENTS SHALL INCORPORATE A PROVISION THAT RESTRICTS THE CONVERSION OF GARAGES TO LIVING SPACE OR OTHER USES THAT MIGHT RESTRICT THEIR USE FOR VEHICLE PARKING.
17. THE EXISTING CG-12 RAMPS AT DOGWOOD PARK LANE, BLEIGHT DR/JOHN MARSHALL HIGHWAY, AND THE RIRO ENTRANCE TO GPIN 7397-18-3082 WILL NEED TO BE ANALYZED TO DETERMINE IF THEY MEET CURRENT PROWAG/VDOT STANDARDS AND IF THEY DON'T, THEY WILL NEED TO BE REPLACED AS PART OF THIS PROJECT.

VICINITY MAP
SCALE: 1" = 1000'



TYPICAL SINGLE-FAMILY ATTACHED UNIT
N.T.S.

OWNER:

HAYMARKET PROPERTIES GROUP LLC
14600 WASHINGTON STREET
HAYMARKET, VA 20169
GPIN: 7397-19-1734

APPLICANT:

GRAYSTONE COMPANIES, LLC
15091 TAYLORS MILL PLACE
HAYMARKET, VA 20169
PHONE: (703) 929-1328

SHEET INDEX:

REQUIRED MODIFICATIONS/WAIVERS:

1. PARKING BETWEEN COMMERCIAL BUILDING AND EXISTING WASHINGTON STREET.

REVISION BLOCK		
NO.	SHEET NUMBER AND REVISON DESCRIPTION	DATE
1	REV. PER TOWN AND VDOT COMMENTS (JD)	12-23-25

THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE: (703) 753-7592 FAX 703 753-7593
www.kdlgroup.com

COVER SHEET
SCHOOLHOUSE COMMONS
ZONING MAP AMENDMENT
TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

REZ2025-

SCALE: H)
V)
DATE: AUGUST 2025
CHECKED:
DRAWN: JHD
FILE NO: ZMAP-004-HAY
SHEET NO.
1 OF 10

DWG PATH: S:\PROJECTS\PACE WEST SCHOOL\ENG\ZONING MAP AMENDMENT\DELIVERABLES\SCHOOLHOUSE COMMONS ZMAP.dwg

DWG PATH: S:\PROJECTS\PACE WEST SCHOOL\ENG\ZONING MAP AMENDMENT\DELIVERABLES\SCHOOLHOUSE COMMONS ZMAP.dwg

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.
40 0 20 40 80 160

REZ2025–

SCALE: (H) 1"=40'
(V)
DATE: AUGUST 2025
CHECKED:
DRAWN: JHD
FILE NO: ZMAP-004-HAY
SHEET NO. 2 OF 10

ILLUSTRATIVE PLAN

SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT

TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE 703 753-7592 FAX 703 753-7593
www.kdlgroup.com

Section VII, Item1

75

COMMON GREEN DETAIL

NOTE: THESE ARE REPRESENTATIVE EXAMPLES OF BENCHES THAT MAY BE USED FOR THE DEVELOPMENT. THE OWNER SHALL SPECIFY THE FINAL SELECTION ON THE SITE PLAN TO BE REVIEWED AND APPROVED BY THE DIRECTOR OF PLANNING.

PARK BENCH
NOT TO SCALE

PARK BENCH DETAIL

THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE: 703 753-7592 FAX 703 753-7593
www.kdlgroup.com

ILLUSTRATIVE PLAN DETAILS

SCHOOLHOUSE COMMONS

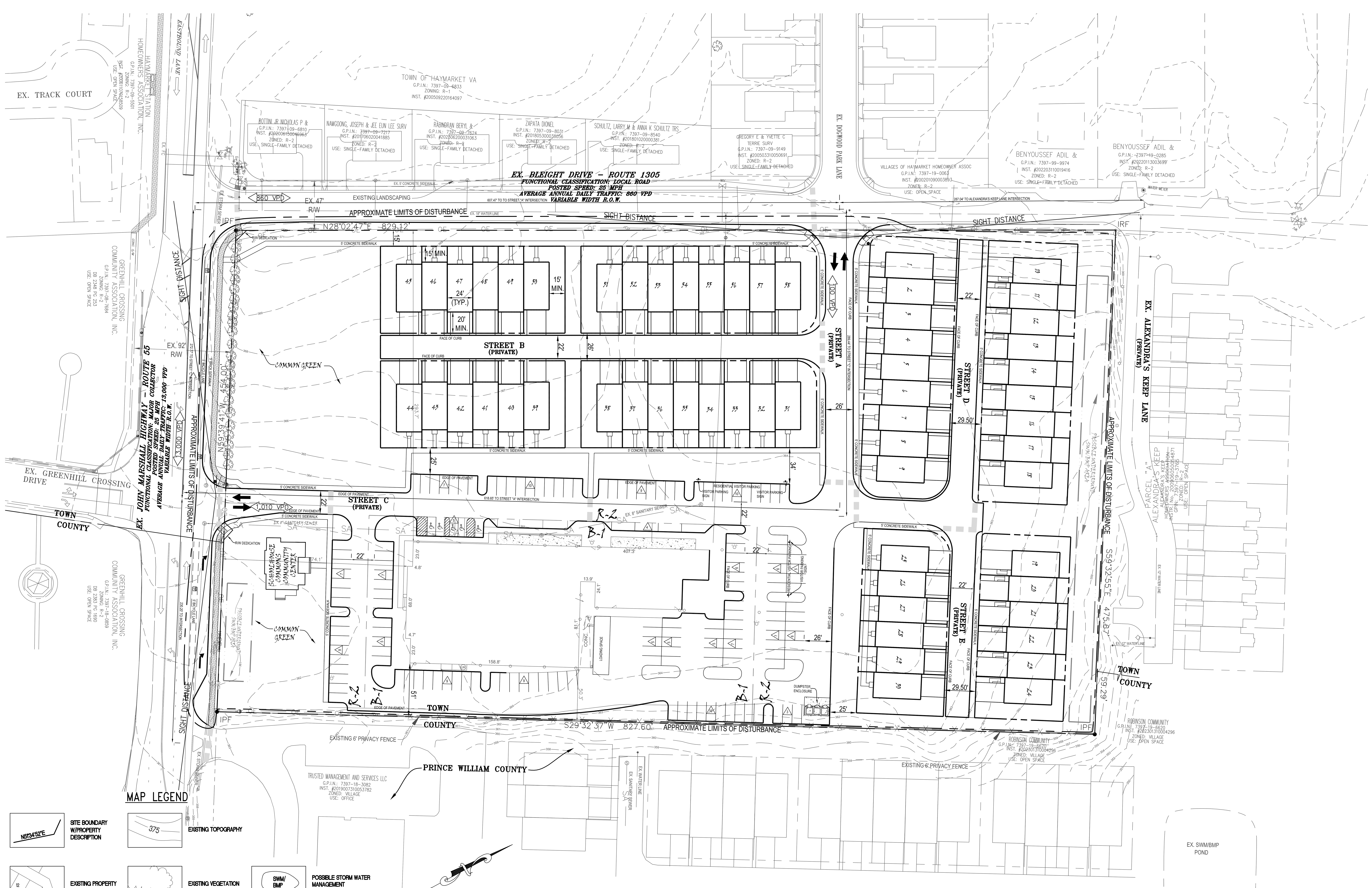
ZONING MAP AMENDMENT

TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

REZ2025-

SCALE: H) AS NOTED	
V)	
DATE:	AUGUST 2025
CHECKED:	
DRAWN:	JHD
FILE NO:	ZMAP-004-HAY
SHEET NO.	
3	OF 10

DWG PATH: S:\PROJECTS\PACE WEST SCHOOL\ENG\ZONING MAP AMENDMENT\DELIVERABLES\SCHOOLHOUSE COMMONS ZMAP.dwg



MAP LEGEND

Symbol	Description
N51°34'52"E	SITE BOUNDARY W/PROPERTY DESCRIPTION
375	EXISTING TOPOGRAPHY
	EXISTING PROPERTY
	EXISTING VEGETATION
SWM/BMP	POSSIBLE STORM WATER MANAGEMENT FACILITY
	EXISTING ROADWAY
	EXISTING BUILDING
	PROPOSED PRIVATE TRAVELWAY
	PROPOSED SFA UNITS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOTES:

1. PORTION OF 5' CONCRETE SIDEWALK RUNNING ALONG THE FRONT OF LOTS 45-58 INSIDE THE VDOT RIGHT-OF-WAY AT EX. JOHN MARSHALL HIGHWAY TO BE PRIVATELY MAINTAINED.
2. VDOT DOES NOT MAINTAIN THE BRICK SIDEWALK WITHIN THE VDOT RIGHT-OF-WAY. THE MAINTENANCE RESPONSIBILITY FOR THE BRICK SIDEWALK LIES WITH THE TOWN OF HAYMARKET.

DWG PATH: S:\PROJECTS\PACE WEST SCHOOL\ENG\ZONING MAP AMENDMENT\DELIVERABLES\SCHOOLHOUSE COMMONS ZMAP.dwg

THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE 703 753-7592 FAX 703 753-7593
www.kdlgroup.com

CONCEPT DEVELOPMENT PLAN

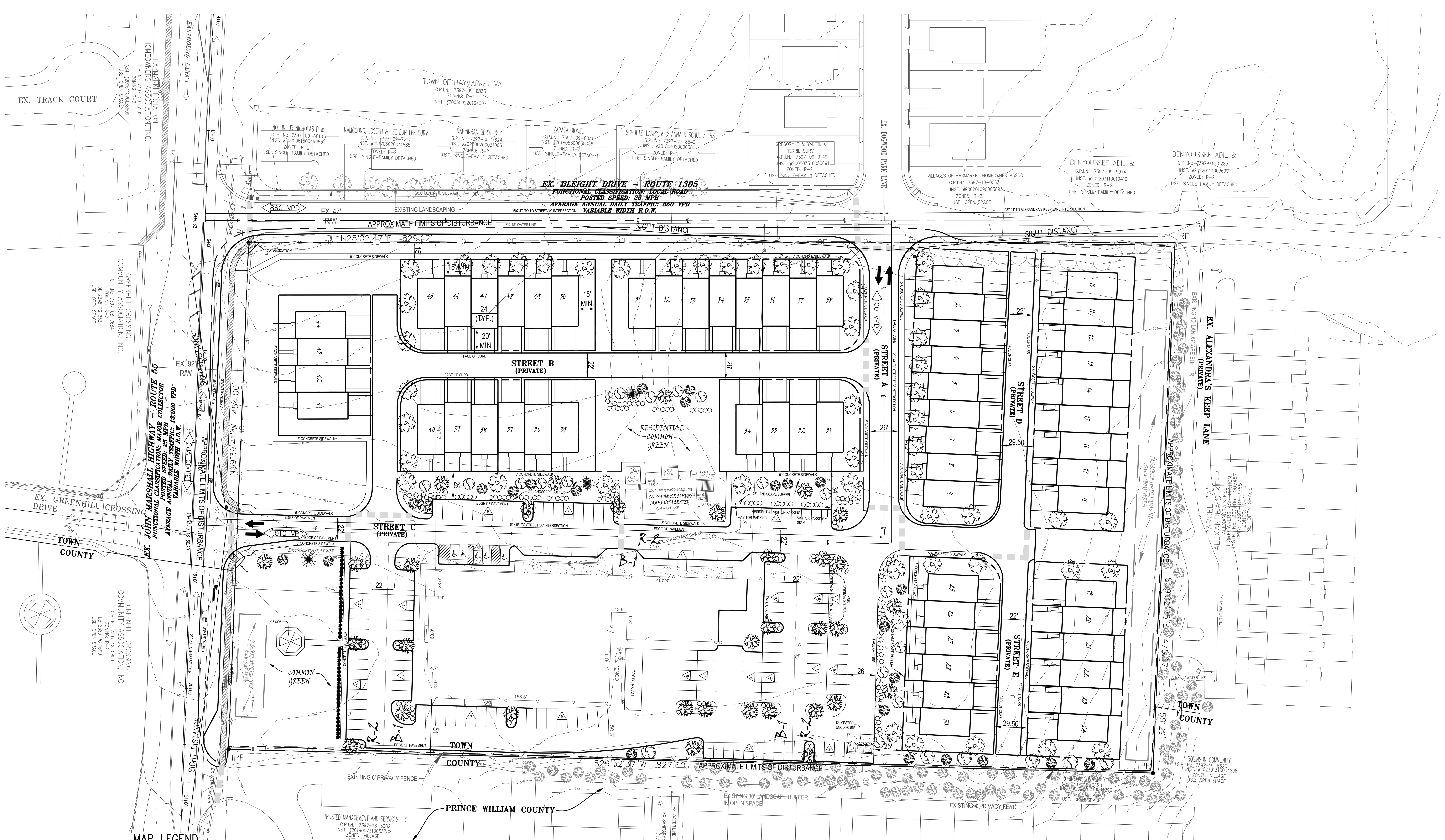
SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT

TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

REZ2025-

SCALE:	H) 1"=40' V)
DATE:	AUGUST 2025
CHECKED:	
DRAWN:	JHD
FILE NO:	ZMAP-004-HAY
SHEET NO.	4 OF 10



MAP LEGEND

- SITE BOUNDARY W/PROPERTY DESCRIPTION
- EXISTING TOPOGRAPHY
- EXISTING PROPERTY
- EXISTING VEGETATION
- POSSIBLE STORM WATER MANAGEMENT FACILITY
- EXISTING ROADWAY
- EXISTING BUILDING
- PROPOSED PRIVATE TRAVELWAY
- PROPOSED SFA UNITS

NOTES:

1. PORTION OF 5' CONCRETE SIDEWALK RUNNING ALONG THE FRONT OF LOTS 45-58 INSIDE THE VDOT RIGHT-OF-WAY AT EX. JOHN MARSHALL HIGHWAY TO BE PRIVATELY MAINTAINED.
2. VDOT DOES NOT MAINTAIN THE BRICK SIDEWALK WITHIN THE VDOT RIGHT-OF-WAY. THE MAINTENANCE RESPONSIBILITY FOR THE BRICK SIDEWALK LIES WITH THE TOWN OF HAYMARKET.

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.

DWG PATH: S:\PROJECTS\PACE WEST SCHOOL\ENG\ZONING MAP AMENDMENT\DELIVERABLES\SCHOOLHOUSE COMMONS ZMAP.dwg

THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE 703 753-7592 FAX 703 753-7593
www.kdlgroup.com

CONCEPT DEVELOPMENT PLAN (ALTERNATIVE LAYOUT)

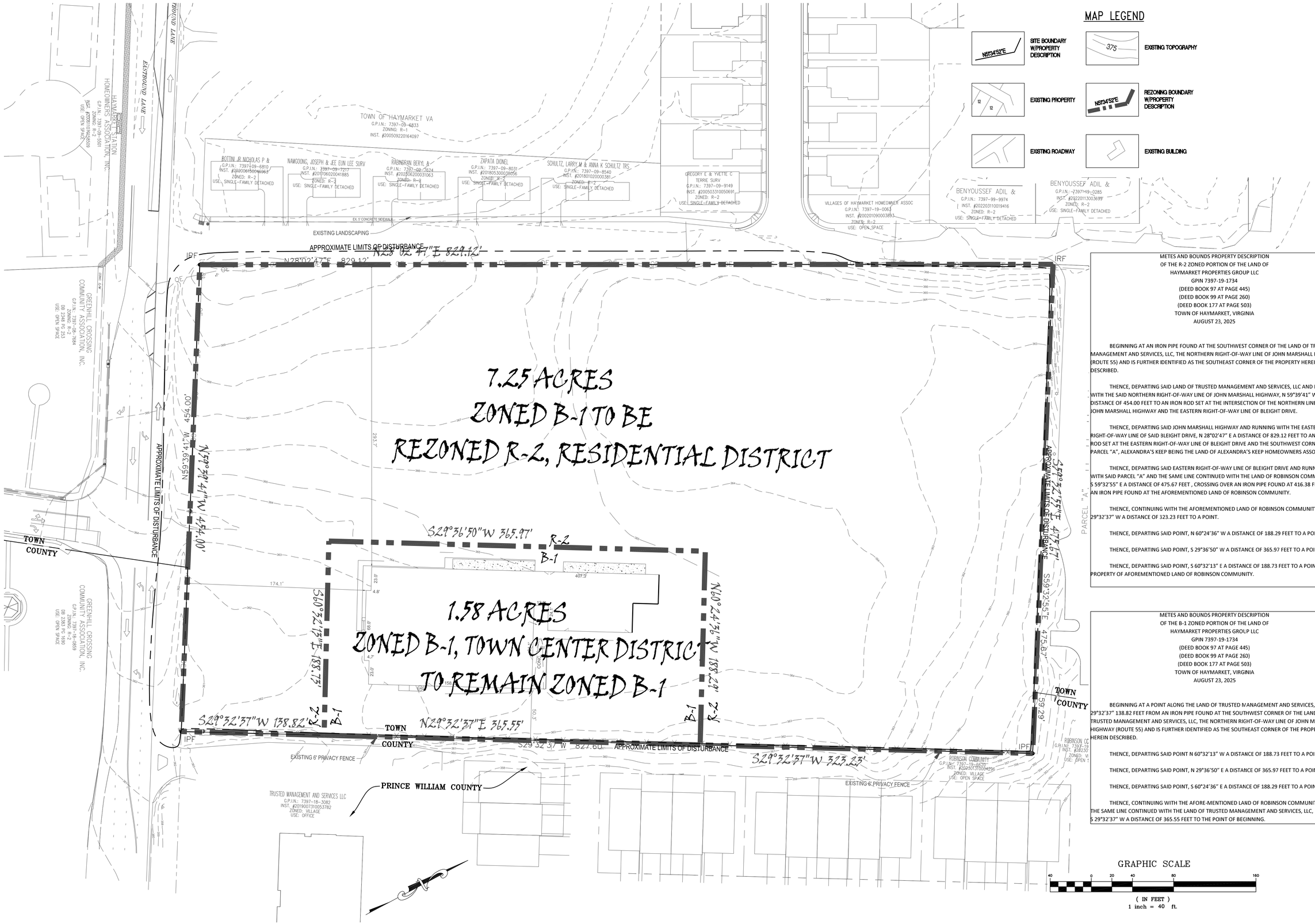
SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT

TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

REZ2025-

SCALE:	H) 1"=40' V)
DATE:	AUGUST 2025
CHECKED:	
DRAWN:	JHD
FILE NO:	ZMAP-004-HAY
SHEET NO.	4A OF 10



METES AND BOUNDS PROPERTY DESCRIPTION
OF THE R-2 ZONED PORTION OF THE LAND OF
HAYMARKET PROPERTIES GROUP LLC
GPIN 7397-19-1734
(DEED BOOK 97 AT PAGE 445)
(DEED BOOK 99 AT PAGE 260)
(DEED BOOK 177 AT PAGE 503)
TOWN OF HAYMARKET, VIRGINIA
AUGUST 23, 2025

BEGINNING AT AN IRON PIPE FOUND AT THE SOUTHWEST CORNER OF THE LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, THE NORTHERN RIGHT-OF-WAY LINE OF JOHN MARSHALL HIGHWAY (ROUTE 55) AND IS FURTHER IDENTIFIED AS THE SOUTHEAST CORNER OF THE PROPERTY HEREIN DESCRIBED.

THENCE, DEPARTING SAID LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC AND RUNNING WITH THE SAID NORTHERN RIGHT-OF-WAY LINE OF JOHN MARSHALL HIGHWAY, N 59°39'41" W A DISTANCE OF 454.00 FEET TO AN IRON ROD SET AT THE INTERSECTION OF THE NORTHERN LINE OF SAID JOHN MARSHALL HIGHWAY AND THE EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE.

THENCE, DEPARTING SAID JOHN MARSHALL HIGHWAY AND RUNNING WITH THE EASTERN RIGHT-OF-WAY LINE OF SAID BLEIGHT DRIVE, N 28°02'47" E A DISTANCE OF 829.12 FEET TO AN IRON ROD SET AT THE EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE AND THE SOUTHWEST CORNER OF PARCEL "A", ALEXANDRA'S KEEP BEING THE LAND OF ALEXANDRA'S KEEP HOMEOWNERS ASSOCIATION.

THENCE, DEPARTING SAID EASTERN RIGHT-OF-WAY LINE OF BLEIGHT DRIVE AND RUNNING WITH SAID PARCEL "A" AND THE SAME LINE CONTINUED WITH THE LAND OF ROBINSON COMMUNITY, S 59°32'55" E A DISTANCE OF 475.67 FEET , CROSSING OVER AN IRON PIPE FOUND AT 416.38 FEET, TO AN IRON PIPE FOUND AT THE AFOREMENTIONED LAND OF ROBINSON COMMUNITY.

THENCE, CONTINUING WITH THE AFOREMENTIONED LAND OF ROBINSON COMMUNITY, S 29°32'37" W A DISTANCE OF 323.23 FEET TO A POINT.

THENCE, DEPARTING SAID POINT, N 60°24'36" W A DISTANCE OF 188.29 FEET TO A POINT.

THENCE, DEPARTING SAID POINT, S 29°36'50" W A DISTANCE OF 365.97 FEET TO A POINT.

THENCE, DEPARTING SAID POINT, S 60°32'13" E A DISTANCE OF 188.73 FEET TO A POINT AT THE PROPERTY OF AFOREMENTIONED LAND OF ROBINSON COMMUNITY.

METES AND BOUNDS PROPERTY DESCRIPTION
OF THE B-1 ZONED PORTION OF THE LAND OF
HAYMARKET PROPERTIES GROUP LLC
GPIN 7397-19-1734
(DEED BOOK 97 AT PAGE 445)
(DEED BOOK 99 AT PAGE 260)
(DEED BOOK 177 AT PAGE 503)
TOWN OF HAYMARKET, VIRGINIA
AUGUST 23, 2025

BEGINNING AT A POINT ALONG THE LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, N 29°32'37" 138.82 FEET FROM AN IRON PIPE FOUND AT THE SOUTHWEST CORNER OF THE LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, THE NORTHERN RIGHT-OF-WAY LINE OF JOHN MARSHALL HIGHWAY (ROUTE 55) AND IS FURTHER IDENTIFIED AS THE SOUTHEAST CORNER OF THE PROPERTY HEREIN DESCRIBED.

THENCE, DEPARTING SAID POINT N 60°32'13" W A DISTANCE OF 188.73 FEET TO A POINT.

THENCE, DEPARTING SAID POINT, N 29°36'50" E A DISTANCE OF 365.97 FEET TO A POINT.

THENCE, DEPARTING SAID POINT, S 60°24'36" E A DISTANCE OF 188.29 FEET TO A POINT.

THENCE, CONTINUING WITH THE AFORE-MENTIONED LAND OF ROBINSON COMMUNITY AND THE SAME LINE CONTINUED WITH THE LAND OF TRUSTED MANAGEMENT AND SERVICES, LLC, S 29°32'37" W A DISTANCE OF 365.55 FEET TO THE POINT OF BEGINNING.

THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE: 703 753-7592 FAX 703 753-7593
www.kdlgroup.com

REZONING PLAT
SCHOOLHOUSE COMMONS
ZONING MAP AMENDMENT
TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

REZ2025-

SCALE: H) 1"=40'
V)
DATE: AUGUST 2025
CHECKED:
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SHEET NO.
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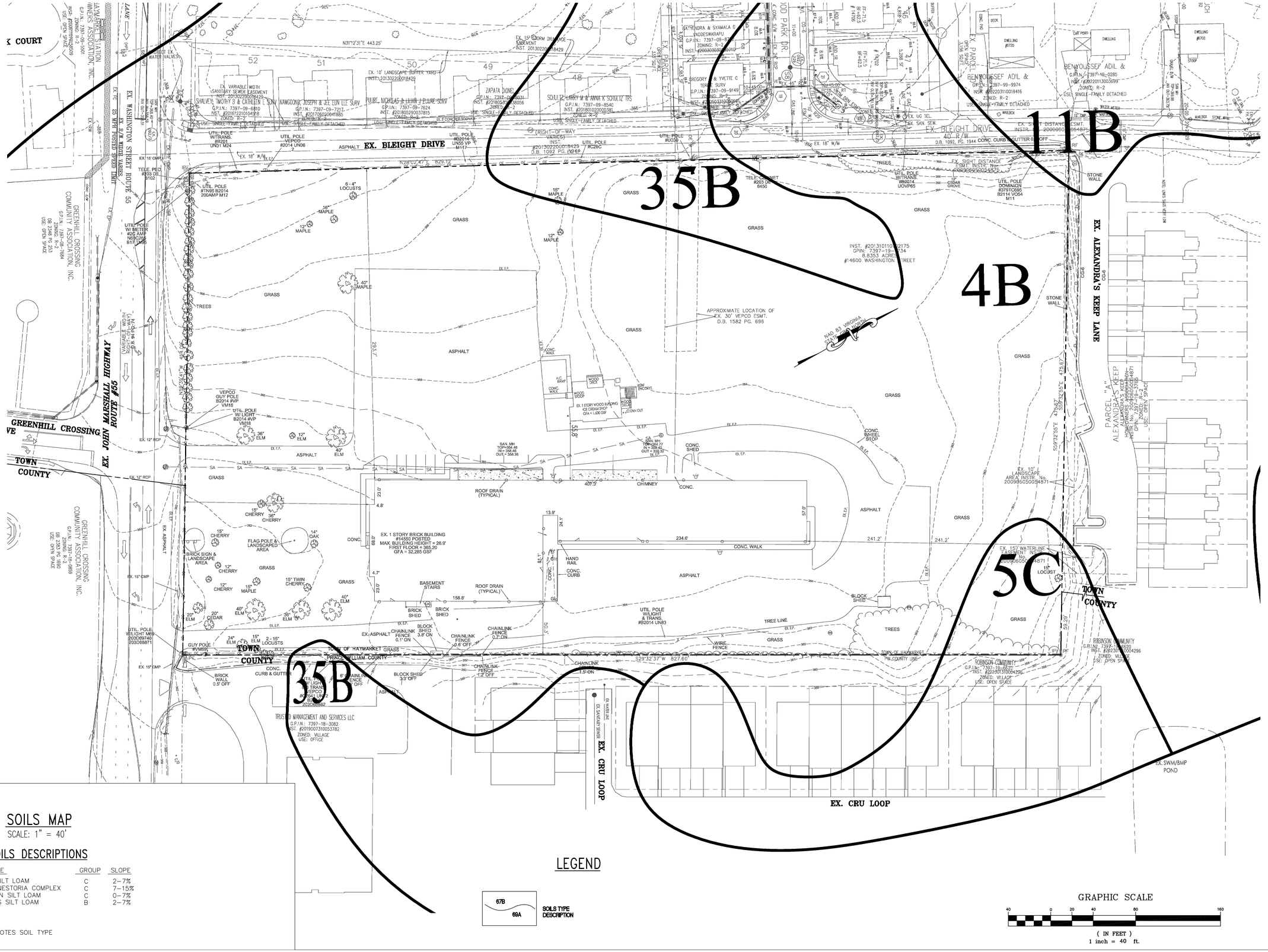
THE KDL GROUP LLC
P.O. BOX 609
HAYMARKET, VA 20168
PHONE 703 753-7592 FAX 703 753-7593
www.kdlgroup.com

EXISTING CONDITIONS PLAN
SCHOOLHOUSE COMMONS
ZONING MAP AMENDMENT
TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA



SOILS MAP
SCALE: 1" = 40'

SOILS DESCRIPTIONS

TYPE	NAME	GROUP	SLOPE
4B	ARCOLA SILT LOAM	C	2-7%
5C	ARCOLA-NESTORIA COMPLEX	C	7-15%
11B	CALVERTON SILT LOAM	C	0-7%
35B	MANASSAS SILT LOAM	B	2-7%

64C	DENOTES SOIL TYPE

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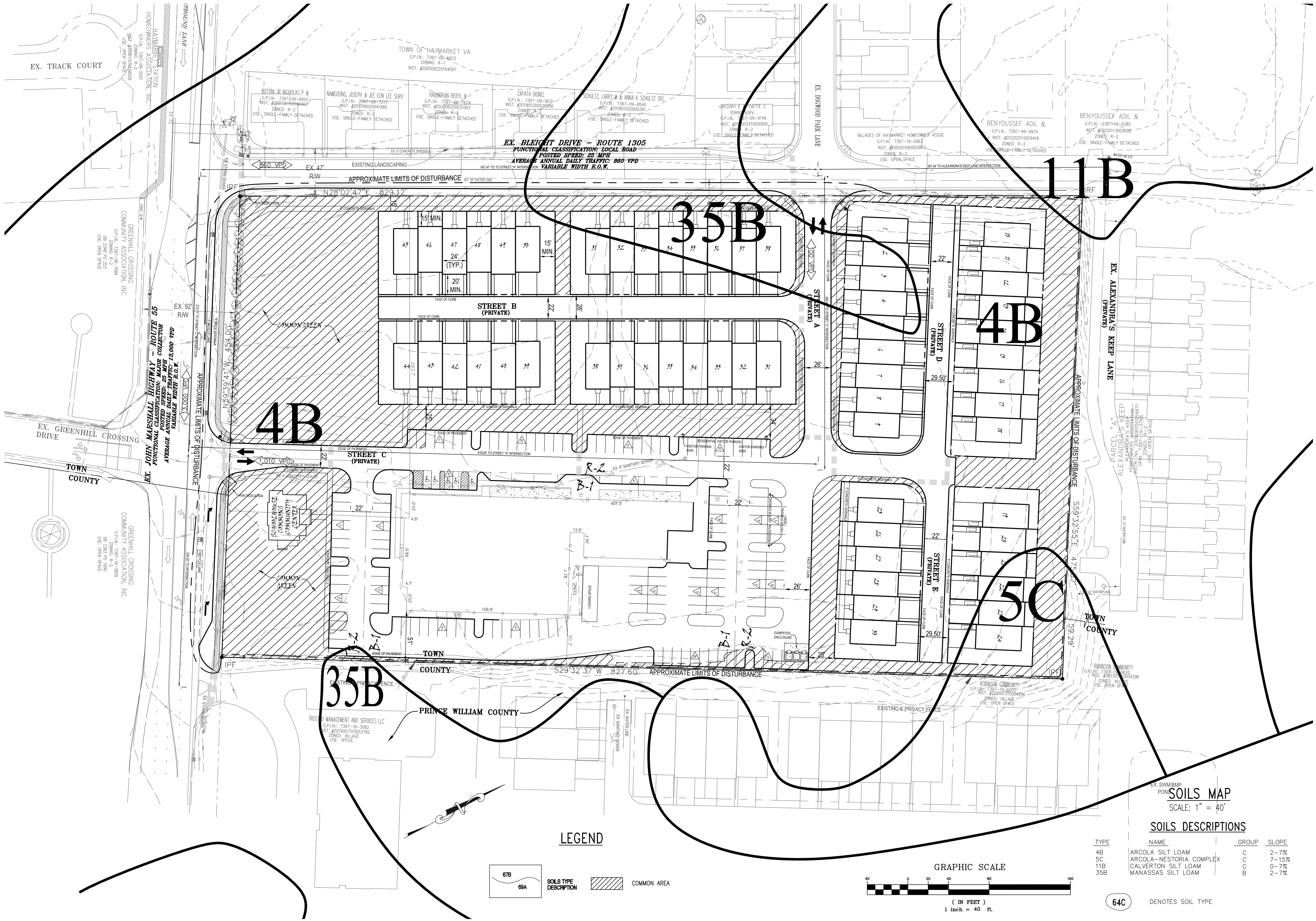

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11B	CALVERTON SILT LOAM	C	0-7%
35B	MANASSAS SILT LOAM	B	2-7%

LEGEND

67B / 69A — SOILS TYPE DESCRIPTION

COMMON AREA

64C — DENOTES SOIL TYPE

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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COMMON AREA PLAN AND SOILS MAP

SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT

TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

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SCHOOLHOUSE COMMONS

GROSS PARCEL AREA	**8.83 AC GPIN 7397-19-1734**	
ZONING:	**B-1 (EXISTING)**	**8.83 AC**
	R-2 (PROPOSED)	**7.25 AC**
	B-1 (REMAINING)	**1.58 AC**

SITE TABULATIONS

B-1, TOWN CENTER DISTRICT

GROSS SITE AREA	**1.58 AC**	
	REQUIRED	**PROVIDED**
BUILDING LOT COVERAGE	85% (MAX)	35.22%
BUILDING HEIGHT	3-STORIES (35' MAX)	35' (MAX)
FLOOR AREA RATIO	NO MAXIMUM	N/A
YARD REQUIREMENTS		
FRONT YARD	10'	37'
SIDE YARD	25' ABUTTING RESIDENTIAL DISTRICT	25'
REAR YARD	25' ABUTTING RESIDENTIAL DISTRICT	44'
BUFFER YARD REQUIREMENTS		
ADJOINING RESIDENTIAL	25' BUFFER YARD (TS)	25'

R-2 RESIDENTIAL (TOWNHOUSE)

SECT. 58-10.1 INTENT - AMENITIES AND CONVENIENCE OF TOWNHOUSE OR SMALL LOT DETACHED

GROSS SITE AREA	**7.25 AC**	
	REQUIRED	**PROVIDED**
MINIMUM LOT SIZE	1,500 S.F. (MIN. LOT AREA)	1,500 S.F. (MIN. LOT AREA)
	2,000 S.F. (MIN. AVERAGE LOT AREA)	2,000 S.F. (MIN. AVERAGE LOT AREA)
BUILDING HEIGHT	2 1/2-STORIES (35' MAX)	3 STORIES 35' (MAX)
MAXIMUM NUMBER OF UNITS PER GROSS ACRE	8 UNITS/AC (MAX)	8.00 UNITS/AC
TOTAL NUMBER OF UNITS ALLOWED	58.00	58
MINIMUM LOT FRONTAGE	20' (INTERIOR UNIT)	24'
	35' (END UNIT)	39'
MINIMUM COMMON AREA	NONE	2.59 AC
YARD REQUIREMENTS		
FRONT YARD	15'	15'
SIDE YARD	15' (END UNIT)	15'
REAR YARD	20'	20'

PARKING TABULATIONS

PROPOSED USE	PARKING REQUIREMENTS	TENANT SPACE SQ. FT.	REQUIRED PARKING	PROPOSED PARKING
QBE	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	6,925	24	
ZANDRAS	1 SPACE PER 100 S.F. OF GROSS FLOOR AREA	2,865	29	
TROUVAILLE	1 SPACE PER 100 S.F. OF GROSS FLOOR AREA	3,300	33	
JUJI JITSU	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	5,170	18	
JAZZERCISE	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	1,750	6	
VACANT	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	2,208	8	
SUBTOTAL			**118**	**141 SPACES (SURFACE PARKING)**
				(INCLUDES 5 H.C. PARKING SPACES)
				*** 76 SPACES B-1 ZONED**
				*** 65 SPACES R-2 ZONED**
TOWNHOUSE (RESIDENT PARKING)	58 UNITS X 2 SPACES PER UNIT		116	116 (GARAGE)
TOWNHOUSE (VISITOR PARKING)	58 UNITS X 0.25 SPACES PER UNIT		15	15 (SURFACE PARKING)
SUBTOTAL			**131**	**131 SPACES**
TOTAL			**249**	**272 SPACES**
SHARED PARKING STUDY RESULTS			-31	
REDUCED TOTAL			**218**	**272 SPACES**

PARKING TABULATIONS (ALTERNATIVE LAYOUT)

PROPOSED USE	PARKING REQUIREMENTS	TENANT SPACE SQ. FT.	REQUIRED PARKING	PROPOSED PARKING
QBE	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	6,925	24	
ZANDRAS	1 SPACE PER 100 S.F. OF GROSS FLOOR AREA	2,865	29	
TROUVAILLE	1 SPACE PER 100 S.F. OF GROSS FLOOR AREA	3,300	33	
JUJI JITSU	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	5,170	18	
JAZZERCISE	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	1,750	6	
VACANT	1 SPACE PER 300 S.F. OF GROSS FLOOR AREA	2,208	8	
SUBTOTAL			**118**	**132 SPACES (SURFACE PARKING)**
				(INCLUDES 5 H.C. PARKING SPACES)
				*** 76 SPACES B-1 ZONED**
				*** 56 SPACES R-2 ZONED**
TOWNHOUSE (RESIDENT PARKING)	58 UNITS X 2 SPACES PER UNIT		116	116 (GARAGE)
TOWNHOUSE (VISITOR PARKING)	58 UNITS X 0.25 SPACES PER UNIT		15	15 (SURFACE PARKING)
SUBTOTAL			**131**	**131 SPACES**
TOTAL			**249**	**263 SPACES**
SHARED PARKING STUDY RESULTS			-31	
REDUCED TOTAL			**218**	**263 SPACES**

OPERATION OF MIXED-USE DEVELOPMENT NARRATIVE:

THE SUBJECT SITE IS CURRENTLY COMPRISED OF APPROXIMATELY 32,000 S.F. OF COMMERCIAL AND OFFICE USES. THE PROPOSED DEVELOPMENT PROGRAM FOR THE SITE INCLUDES APPROXIMATELY 22,218 S.F. OF COMMERCIAL/OFFICE USES AND 58 SINGLE-FAMILY ATTACHED (TOWNHOUSE) UNITS. ACCORDINGLY, 9,782 S.F. OF COMMERCIAL/OFFICE SPACES ARE PLANNED TO BE REMOVED WITH THIS APPLICATION.

BASED ON THE TOWN'S MINIMUM PARKING REQUIREMENTS, 15 VISITOR PARKING SPACES ARE REQUIRED TO SERVE THE PROPOSED TOWNHOUSE UNITS AND A TOTAL OF 118 PARKING SPACES ARE REQUIRED TO SERVE THE 22,218 S.F. OF COMMERCIAL/OFFICE USES FOR A TOTAL OF 133 REQUIRED SPACES. THE CONCEPT DEVELOPMENT PLAN PROPOSES A TOTAL OF 156 SURFACE PARKING SPACES UNDER THE BASE SCENARIO AND A TOAL OF 147 SURFACE PARKING SPACES UNDER THE ALTERNATIVE LAYOUT. ACCORDINGLY, THE VISITOR PARKING SPACES WILL BE INCORPRATED INTO THE PROPOSED SURFACE PARKING SPACES AND IDENTIFIED WITH APPROPRIATE SIGNAGE.

AT THE REQUEST OF THE APPLICANT, A SHARED PARKING ANALYSIS HAS BEEN PREPARED BY GOROVE SLADE TRANSPORTATION PLANNERS AND ENGINEERS DATED DECEMBER 10, 2025. THE ANALYSIS CONCLUDES THAT THE TOTAL PROPOSED PARKING SPACES UNDER THE BASE SCENARIO (272 SPACES) WOULD EXCEED THE WEEKDAY PEAK DEMAND (218 SPACES) BY 54 SPACES AND THE WEEKEND PEAK DEMAND (210 SPACES) BY 62 SPACES. ADDITIONALLY, THE ANALYSIS CONCLUDES THAT THE PROPOSED PARKING SPACES UNDER THE ALTERNATIVE LAYOUT (263 SPACES) WOULD EXCEED THE WEEKDAY PEAK DEMAND (218 SPACES) BY 45 SPACES AND THE WEEKEND PEAK DEMAND (210 SPACES) BY 53 SPACES.

SHARED PARKING ANALYSIS EXHIBIT:

Shared Parking Analysis

Section 58-6.1.B states "The minimum required parking spaces may be reduced if a land owner can provide parking that will be shared by complementary adjacent land uses. Such a proposal must be prepared using the methods set forth in the latest edition of the Shared Parking Manual of the Urban Land Institute (ULI). The necessary calculations and other data that show the suitability of a shared parking proposal must be submitted to the Town in conjunction with a site plan or other applicable development application…"

Shared parking is planned on-site to accommodate the proposed parking reduction. Shared parking is the use of a parking space to serve two or more individual land uses without conflict or encroachment. The ability to share parking spaces is the result of two conditions:

- Variations in the accumulation of vehicles by hour, by day, or by season at the individual land uses, and
- Relationships among the land uses that result in visiting multiple land uses on the same trip.

The key goal of shared parking analysis is to find the balance between providing adequate parking to support a development from a commercial viewpoint and minimizing the negative aspects of excessive land area or resources devoted to parking.

The process below outlines the shared parking methodology:

1. *Determine* the applicable parking ratios – The base parking ratios were split between residents/employees and visitors using the parking ratios provided in the Urban Land Institute's (ULI) *Shared Parking*, 3rd Edition (2020). The base parking ratios per the Town of Haymarket Zoning Ordinance is shown in Table 3.

Table 3: Required Base Parking Supply (Haymarket ZO)

Land Use		Development	*Base Parking Ratio	Base Parking Supply
Recreation Facility	(Jiu Jitsu/Jazzercize)	6,920 SF	1.0 /300 SF	24 spaces
General Office	(QBE)	6,925 SF	1.0 /300 SF	24 spaces
Vacant		2,208 SF	1.0 /300 SF	8 spaces
Dine-In Restaurant	(Trouvaille)	3,300 SF	1.0 /100 SF	33 spaces
Residential (Reserved)		58 DU	2.00 /DU	116 spaces
Residential (Visitor)		58 DU	0.25 /DU	15 Spaces
Fast Casual Restaurant	(Zandras)	2,865 SF	1.0 /100 SF	29 spaces
				249 spaces

**Town of Haymarket Off-Street Parking Requirements per Zoning Ordinance*

2. *Determine* the number of reserved parking spaces – For the purposes of this analysis, reserved spaces were assumed for only the residential portion of the development.
3. *Determine* the peak parking scenario – This is shown in the following tables. The hourly factors are based on the Urban Land Institute (ULI) *Shared Parking*, 3rd Edition (2020) time-of-day factors. The hourly factors are applied to the base parking ratios shown in Table 3 to determine the peak parking scenario.
4. *Determine* the peak parking demand – This is shown in the tables in the following sections.

The shared parking analysis includes all the proposed uses.

Parking Supply Options

On-Site Parking Supply - Option 1 (263 spaces)

The Applicant is planning to provide a total of 263 parking spaces on-site with this alternative option for the development. The final breakdown of parking provided for each use is subject to change as the project develops and final mix and density are approved. The summarized parking breakdown is shown on Table 4 below.

Table 4: Summarized Parking Tabulations

Proposed Use	# Spaces Required	Provided Spaces
Mixed-Use	118	132
Residential	131	131
TOTAL	**249**	**263**

On-Site Parking Supply – Option 2 (272 spaces)

The Applicant is planning to provide a total of 272 parking spaces on-site with this alternative option for the development. The final breakdown of parking provided for each use is subject to change as the project develops and final mix and density are approved. The summarized parking breakdown is shown on Table 7 below.

Table 7: Summarized Parking Tabulations

Proposed Use	# Spaces Required	Provided Spaces
Mixed-Use	118	141
Residential	131	131
TOTAL	**249**	**272**

Conclusion

This memorandum presented the findings of a shared parking analysis conducted in conjunction with the redevelopment of the Schoolhouse Commons site in the Town of Haymarket Virginia. This memorandum supports the following conclusions:

- Per the Town of Haymarket *Code of Ordinances*, a total of 249 parking spaces would be required for the application.
- Shared parking could be provided on-site in the surface parking lot to further accommodate the minimum parking requirements.
- Option 1 – The provided parking supply would approximately be 263 spaces which would exceed the weekday peak demand (218) by 45 spaces and the weekend peak demand (210) by 53 spaces.
- Option 2 – The provided parking supply would approximately be 272 spaces which would exceed the weekday peak demand (218) by 54 spaces and the weekend peak demand (210) by 62 spaces.
- The shared parking tables and figures show that the uses peak at different times of day and that the on-site surface lot can accommodate the uses at all times of the day.
- The final breakdown of parking provided for each use is subject to change as the project develops and final mix and density are approved.

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SCHOOLHOUSE COMMONS
ZONING MAP AMENDMENT
TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

SITE TABULATIONS

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STORMWATER MANAGEMENT NARRATIVE

THE FRONT HALF OF THE SITE DRAINS TOWARDS EX. WASHINGTON STREET AND IS INTERCEPTED BY AN EXISTING CULVERT PIPE LOCATED IN THE SOUTHEASTERN FRONT CORNER. THE REAR HALF OF THE SITE DRAINS TOWARDS THE NORTHEASTERN REAR CORNER.

THE MAJORITY OF THE SITE'S POST-DEVELOPMENT RUNOFF WILL BE DETAINED USING STORMWATER MANAGEMENT PRACTICES (SWM) IN UNDERGROUND INFILTRATION TRENCHES LOCATED ALONG THE FRONT AND REAR OF THE SUBJECT SITE. THE PROPOSED SWM FACILITIES WILL BE STUDIED AT THE TIME OF SITE PLAN ENGINEERING WITH TOWN REVIEW TO DETERMINE IF UNDERGROUND INFILTRATION TRENCHES WILL BE ADEQUATE OR IF ADDITIONAL TREATMENT IS NEEDED.

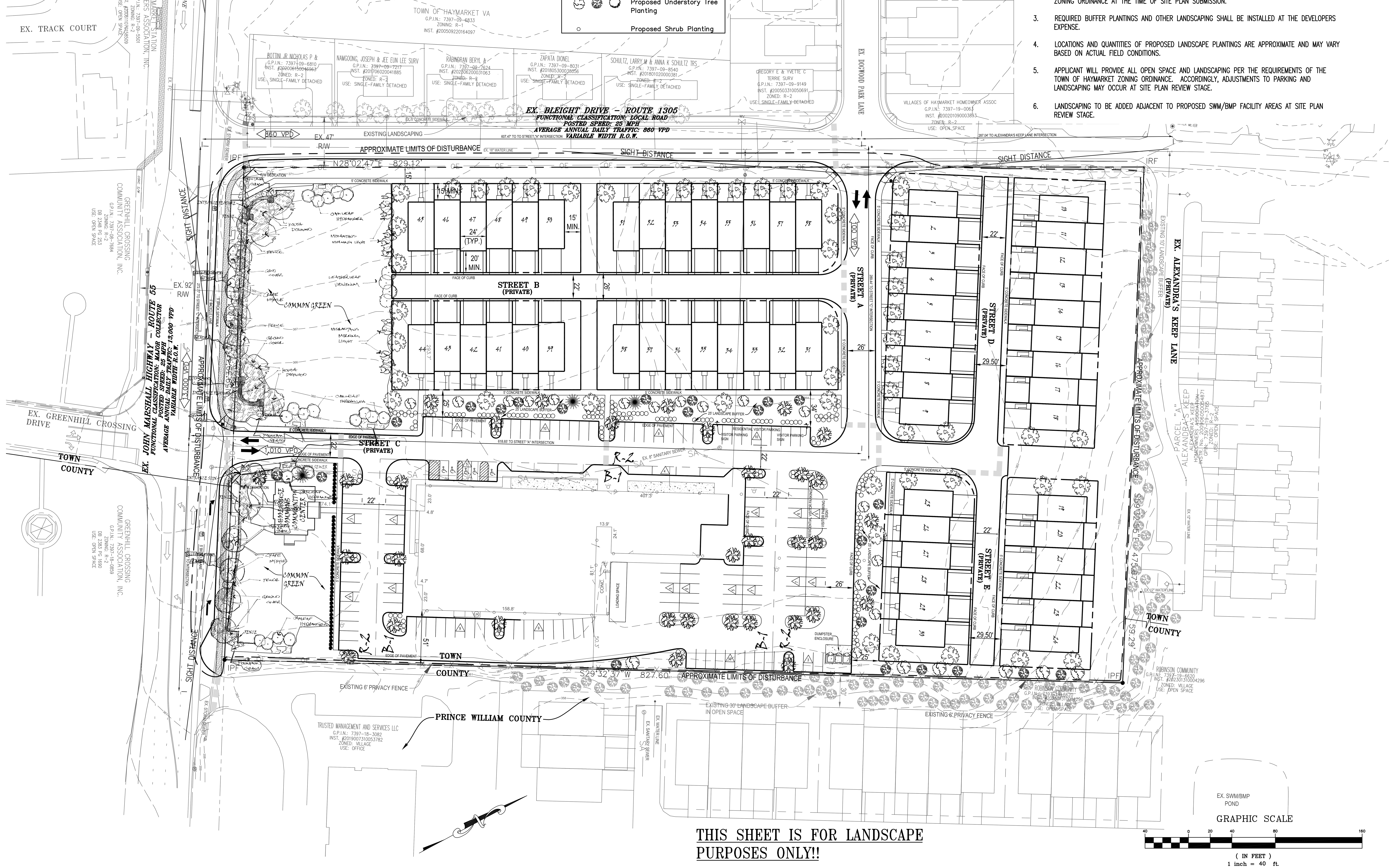
BEST MANAGEMENT PRACTICES (BMP) REQUIREMENTS FOR THE SUBJECT DEVELOPMENT WILL BE SATISFIED THROUGH THE PURCHASE OF OFFSITE NUTRIENT CREDITS FROM AN AUTHORIZED NUTRIENT CREDIT TRADING FACILITY.

LEGEND

- Existing Landscape Buffer Planting
- Proposed Canopy Tree Planting
- Proposed Understory Tree Planting
- Proposed Shrub Planting

NOTES:

1. TYPICAL TREE AND SHRUB LOCATIONS SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY. LANDSCAPE PLANTINGS SHALL BE PROVIDED PER ARTICLE XIX OF THE LATEST TOWN OF HAYMARKET ZONING ORDINANCE AT THE TIME OF SITE PLAN SUBMISSION.
2. BUFFER PLANTINGS SHALL BE PROVIDED PER SECTION 58-19 OF THE LATEST TOWN OF HAYMARKET ZONING ORDINANCE AT THE TIME OF SITE PLAN SUBMISSION.
3. REQUIRED BUFFER PLANTINGS AND OTHER LANDSCAPING SHALL BE INSTALLED AT THE DEVELOPERS EXPENSE.
4. LOCATIONS AND QUANTITIES OF PROPOSED LANDSCAPE PLANTINGS ARE APPROXIMATE AND MAY VARY BASED ON ACTUAL FIELD CONDITIONS.
5. APPLICANT WILL PROVIDE ALL OPEN SPACE AND LANDSCAPING PER THE REQUIREMENTS OF THE TOWN OF HAYMARKET ZONING ORDINANCE. ACCORDINGLY, ADJUSTMENTS TO PARKING AND LANDSCAPING MAY OCCUR AT SITE PLAN REVIEW STAGE.
6. LANDSCAPING TO BE ADDED ADJACENT TO PROPOSED SWM/BMP FACILITY AREAS AT SITE PLAN REVIEW STAGE.



THIS SHEET IS FOR LANDSCAPE PURPOSES ONLY!!

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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CONCEPTUAL LANDSCAPE PLAN

SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT

TOWN OF HAYMARKET PRINCE WILLIAM COUNTY, VIRGINIA

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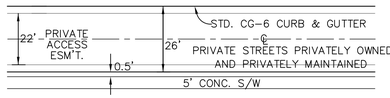

TYPICAL PRIVATE ROADWAY SECTION

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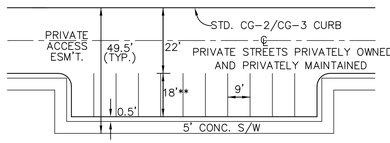
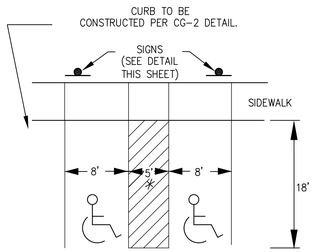


TYPICAL HEAD-IN PARKING DETAIL

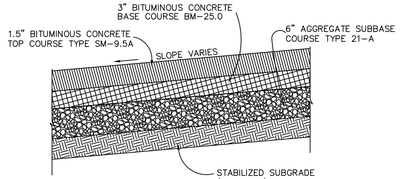
N.T.S.



HANDICAPPED PARKING BAY DETAIL

(NOT TO SCALE)

*8' FOR VAN ACCESSIBLE SPACE



TYPICAL PAVEMENT SECTION – PRIVATE STREET

1. * SUBBASE NOTE: SUBBASE DEPTH IS BASED ON A CBR VALUE OF 4, WHICH MAY BE REVISED ONCE SOIL TESTS OF SUBGRADE ARE PERFORMED.

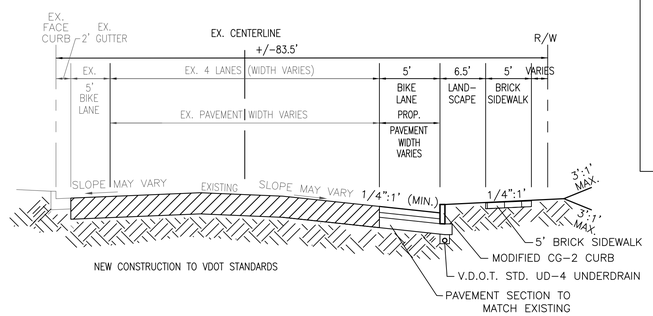
2. ALL FINAL PAVEMENT AND BASE COURSE THICKNESS SHALL BE DESIGNED IN ACCORDANCE WITH THE "DESIGN GUIDE FOR SUBDIVISION ROAD PAVEMENTS IN VIRGINIA", BY N.K. VASWANI, AND SHALL BE BASED ON A SUFFICIENT NUMBER OF CBR TEST TO DETERMINE THE TRUE SUPPORT VALUES OF THE VARIOUS SOILS IN THE SUBGRADE.

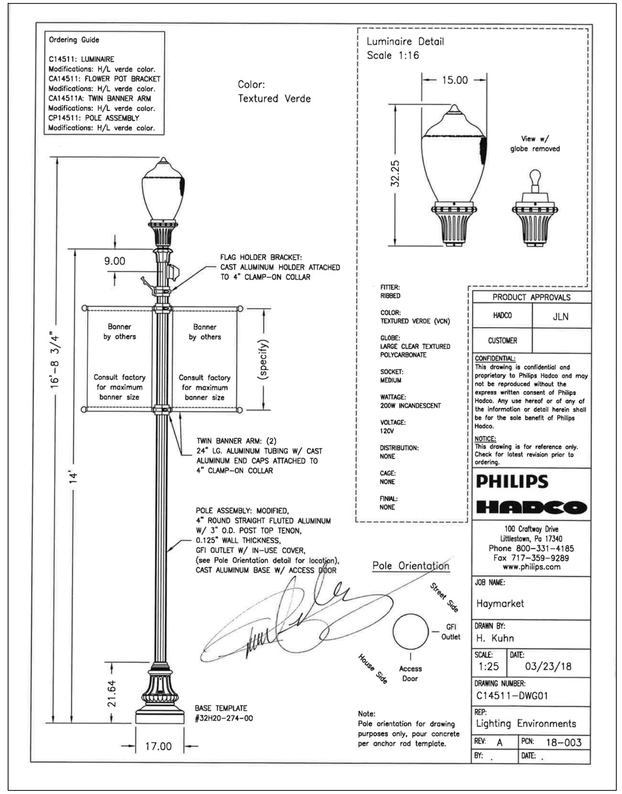
3. A SMOOTHING GRADE SHALL BE MAINTAINED FROM THE CENTERLINE OF THE EXISTING ROAD TO THE PROPOSED ENTRANCE FLOWLINE, TO PRECLUDE THE FORMING OF FALSE GUTTERS AND/OR PONDING OF ANY WATER ON THE ROADWAY.

4. STANDARD GUARDRAIL AND HANDRAIL SHALL BE INSTALLED AT HAZARDOUS LOCATIONS AS DESIGNATED DURING FINAL FIELD INSPECTIONS BY HANOVER COUNTY OR V.D.O.T.

TYPICAL SECTION, WASHINGTON STREET – ROUTE 55 FRONTAGE IMPROVEMENTS (WEST OF STREET "C" ENTRANCE)

(NOT TO SCALE)





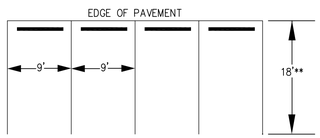
TYPICAL LIGHTING DETAIL

NOTE
SUBGRADE SHALL BE COMPACTED TO 95% DENSITY

SIDEWALK DETAIL

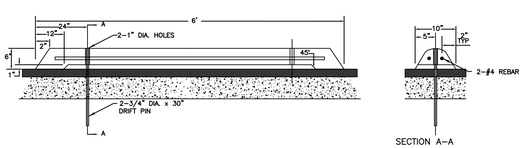
N.T.S.

SIDEWALK CONSTRUCTION SHALL CONFORM TO THE CURRENT VIRGINIA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.



TYPICAL PARKING BAY DETAILS

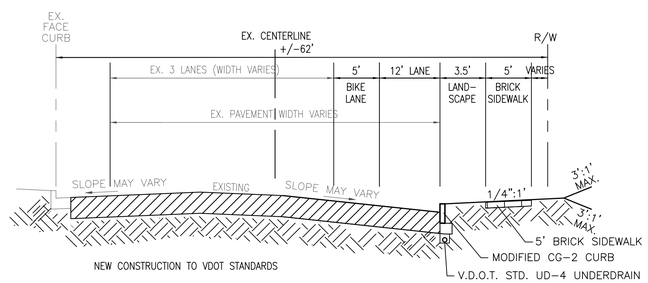
N.T.S.



PRECAST CONCRETE WHEEL STOP (OR APPROVED EQUAL)

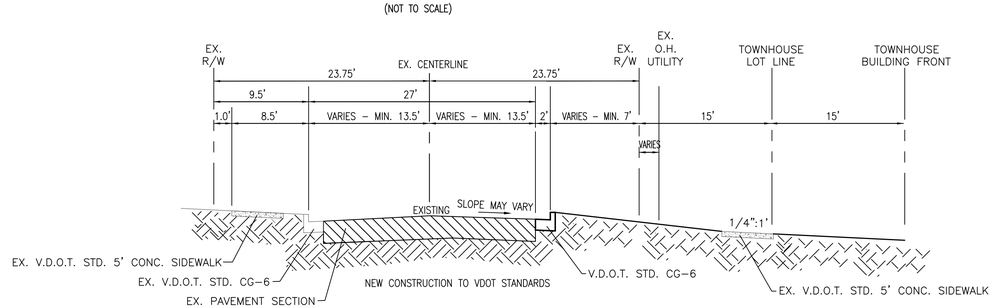
TYPICAL SECTION, WASHINGTON STREET – ROUTE 55 FRONTAGE IMPROVEMENTS (EAST OF STREET "C" ENTRANCE)

(NOT TO SCALE)



TYPICAL SECTION EX. BLEIGHT DRIVE ROADWAY IMPROVEMENTS

(NOT TO SCALE)



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TYPICAL SECTIONS AND MISCELLANEOUS DETAILS

SCHOOLHOUSE COMMONS

ZONING MAP AMENDMENT

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GOROVE SLADE
Transportation Planners and Engineers

TECHNICAL MEMORANDUM

To: Kirk Johnson — Graystone Companies

From: Kayla Ord, PE, PTOE
Gee Sreekanth Gopi, EIT
Mike King

Date: December 10, 2025

Subject: **Schoolhouse Commons – Shared Parking Analysis Memo**

Introduction

This memorandum presents the findings of a shared parking analysis for the proposed Schoolhouse Commons (formerly 14600 Washington Street) development located in the Town of Haymarket, in Prince William County, Virginia. This memorandum includes the following elements:

- A review of the applicable parking requirements.
- A review of the proposed on-site shared parking for the two layout options for the development plan.
- A discussion on the anticipated average parking demand and how the proposed supply exceeds the demand.

The site is currently occupied with approximately 32,000 SF of commercial and office space. The planned development program for the site includes approximately 22,218 SF of commercial/office land uses and about 58 single family attached (townhome) units. Please note, a portion of the commercial uses and office space are planned to be removed with this application while the remaining 22,218 SF is anticipated remain. The location of the site is shown in Figure 1.

4114 Legato Road / Suite 650 / Fairfax, VA 22033 / **T** 703.787.9595 goroveslade.com

Figure 1: Site Location

Background

The proposed development is to be situated on one (1) parcel of land with the land area of approximately 8.8 acres. The parcel is located within the Town of Haymarket and can be identified on Prince William County Mapper with the GPIN: 7397-19-1734. As previously mentioned, the planned development program for the site includes mix uses with approximately 22,218 SF of commercial/office land uses and up to 58 single family attached (townhome) units. Total site build-out is planned for the year 2029.

Minimum Off-Street Parking and Loading

The Town of Haymarket Code of Zoning Ordinance stipulates parking ratios (i.e., the number of parking spaces per unit) in Section 58-6.1. The municipality's minimum parking requirements for the proposed (Mixed-Use) land uses and the number of spaces provided are summarized in Table 1.

Table 1: Off-Street Parking Requirements & Tabulations (Mixed-Use)

Proposed Use	Density (SF)	*Parking Rate (Required)	# Spaces Required
QBE	6,925	1 space/300 sf	24
Zandras	2,865	1 space/100 sf	29
Trouvaille	3,300	1 space/100 sf	33
Jiu Jitsu	5,170	1 space/300 sf	18
Jazzercize	1,750	1 space/300 sf	6
Vacant	2,208	1 space/300 sf	8
Total	**22,218**		**118**

**Town of Haymarket Zoning Ordinance*

Per the Town's parking requirements, the mixed-use portion of the Schoolhouse Commons development would require 118 parking spaces. Based on the two (2) parking supply options for the development, option 1 proposes 132 spaces and option 2 proposes 141 parking spaces for mixed-use purposes, on the surface level parking lot. Please note this exceeds the Town of Haymarket requirements for the proportion of proposed land uses shown in Table 1 above.

Similarly, the Town of Haymarket's minimum parking requirements for the proposed residential use are shown in Table 2 below.

Table 2: Off-Street Parking Requirements & Tabulations (Residential)

Proposed Use	Density (units)	*Parking Rate (Required)	# Required
Single Family Attached	58	2.25/du	131

**Town of Haymarket Zoning Ordinance*

Per the Town's parking requirements, the residential portion of the Schoolhouse Commons development would require 131 parking spaces (116 reserved for residential & 15 reserved for visitor parking). Approximately 116 parking spaces are planned to be provided within the residential units and reserved for residents with the remaining 15 spaces to be provided in the surface lot. Please note that both the plan options propose 131 parking spaces for the residential development.

Shared Parking Analysis

Section 58-6.1.B states "The minimum required parking spaces may be reduced if a land owner can provide parking that will be shared by complementary adjacent land uses. Such a proposal must be prepared using the methods set forth in the latest edition of the Shared Parking Manual of the Urban Land Institute (ULI). The necessary calculations and other data that show the suitability of a shared parking proposal must be submitted to the Town in conjunction with a site plan or other applicable development application…"

Shared parking is planned on-site to accommodate the proposed parking reduction. Shared parking is the use of a parking space to serve two or more individual land uses without conflict or encroachment. The ability to share parking spaces is the result of two conditions:

- Variations in the accumulation of vehicles by hour, by day, or by season at the individual land uses, and
- Relationships among the land uses that result in visiting multiple land uses on the same trip.

The key goal of shared parking analysis is to find the balance between providing adequate parking to support a development from a commercial viewpoint and minimizing the negative aspects of excessive land area or resources devoted to parking.

The process below outlines the shared parking methodology:

1. *Determine* the applicable parking ratios – The base parking ratios were split between residents/employees and visitors using the parking ratios provided in the Urban Land Institute's (ULI) *Shared Parking*, 3rd Edition (2020). The base parking ratios per the Town of Haymarket Zoning Ordinance is shown in Table 3.

Table 3: Required Base Parking Supply (Haymarket ZO)

Land Use	Development	*Base Parking Ratio	Base Parking Supply
Recreation Facility (Jiu Jitsu/Jazzercize)	6,920 SF	1.0 /300 SF	24 spaces
General Office (QBE)	6,925 SF	1.0 /300 SF	24 spaces
Vacant	2,208 SF	1.0 /300 SF	8 spaces
Dine-In Restaurant (Trouvaille)	3,300 SF	1.0 /100 SF	33 spaces
Residential (Reserved)	58 DU	2.00 /DU	116 spaces
Residential (Visitor)	58 DU	0.25 /DU	15 Spaces
Fast Casual Restaurant (Zandras)	2,865 SF	1.0 /100 SF	29 spaces
			249 spaces

**Town of Haymarket Off-Street Parking Requirements per Zoning Ordinance*

2. *Determine* the number of reserved parking spaces – For the purposes of this analysis, reserved spaces were assumed for only the residential portion of the development.
3. *Determine* the peak parking scenario – This is shown in the following tables. The hourly factors are based on the Urban Land Institute (ULI) *Shared Parking*, 3rd Edition (2020) time-of-day factors. The hourly factors are applied to the base parking ratios shown in Table 3 to determine the peak parking scenario.
4. *Determine* the peak parking demand – This is shown in the tables in the following sections.

The shared parking analysis includes all the proposed uses.

Parking Supply Options

On-Site Parking Supply - Option 1 (263 spaces)

The Applicant is planning to provide a total of 263 parking spaces on-site with this alternative option for the development. The final breakdown of parking provided for each use is subject to change as the project develops and final mix and density are approved. The summarized parking breakdown is shown on Table 4 below.

Table 4: Summarized Parking Tabulations

Proposed Use	# Spaces Required	Provided Spaces
Mixed-Use	118	132
Residential	131	131
TOTAL	**249**	**263**

.

Weekday

The weekday parking accumulation calculations are shown in Table 5 and Figure 2. The peak weekday parking demand is anticipated to occur at 7:00 PM. Based on the ULI time-of-day factors, the peak weekday demand is 218 parking spaces, which is less than the 263 spaces provided.

Table 5: Weekday Shared Parking Hourly Characteristics

		Proposed																	
ULI - 3rd Edition		Recreation Facilities - Employees[1]		Residential - Reserved		General Office - Employees[3]		Residential - Visitor		**Vacant[6]		Dine-In Restaurant - [8]		Fast Casual Restaurant - [10]		Recreation Facilities - [2]		General Office - Employees[4]		Total	Surplus
		Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Demand	
Time of Day	*6:00 AM*	75%	0	100%	116	3%	0	0%	0	1%	1	0%	0	5%	2	70%	17	3%	1	137	141
	7:00 AM	75%	0	100%	116	15%	0	10%	2	5%	1	0%	0	10%	3	40%	10	15%	4	136	127
	8:00 AM	75%	0	100%	116	50%	0	20%	3	15%	2	0%	0	20%	6	40%	10	50%	12	149	114
	9:00 AM	75%	0	100%	116	90%	0	20%	3	35%	3	0%	0	30%	9	70%	17	90%	21	169	94
	10:00 AM	75%	0	100%	116	100%	0	20%	3	60%	6	15%	5	55%	16	70%	17	100%	24	187	76
	11:00 AM	75%	0	100%	116	100%	0	20%	3	75%	7	40%	14	85%	25	80%	19	100%	24	208	55
	12:00 PM	75%	0	100%	116	85%	0	20%	3	100%	9	75%	25	100%	29	60%	14	85%	20	216	47
	1:00 PM	75%	0	100%	116	85%	0	20%	3	100%	9	75%	25	100%	29	70%	17	85%	20	219	44
	2:00 PM	75%	0	100%	116	95%	0	20%	3	95%	8	65%	22	90%	26	70%	17	95%	22	214	49
	3:00 PM	75%	0	100%	116	95%	0	20%	3	85%	8	40%	14	60%	18	70%	17	95%	22	198	65
	4:00 PM	75%	0	100%	116	85%	0	20%	3	85%	8	50%	17	55%	16	80%	19	85%	20	199	64
	5:00 PM	100%	0	100%	116	60%	0	40%	6	85%	8	75%	25	60%	18	90%	21	60%	14	208	55
	6:00 PM	100%	0	100%	116	25%	0	60%	9	90%	8	95%	32	85%	25	100%	24	25%	6	220	43
	7:00 PM	75%	0	100%	116	15%	0	100%	15	80%	7	100%	33	80%	23	90%	21	15%	4	218	45
	8:00 PM	50%	0	100%	116	5%	0	100%	15	65%	6	100%	33	50%	15	80%	19	5%	2	206	57
	9:00 PM	20%	0	100%	116	3%	0	100%	15	45%	4	100%	33	30%	9	70%	17	3%	1	195	68
	10:00 PM	20%	0	100%	116	1%	0	100%	15	15%	2	95%	32	20%	6	35%	9	1%	1	181	82
	11:00 PM	20%	0	100%	116	0%	0	80%	12	5%	1	75%	25	10%	3	10%	3	0%	0	160	103
	12:00 AM	0%	0	100%	116	0%	0	50%	8	0%	0	25%	9	5%	2	0%	0	0%	0	135	128

Time of Day Sources:

2. Health Club Visitors - ULI Shared Parking, 3rd Edition,

4. Office Employees - ULI Shared Parking, 3rd Edition

6. Retail Employees - ULI Shared Parking, 3rd Edition

8. Dine-In Restaurant Visitors - ULI Shared Parking, 3rd Edition

10. Fast Casual Restaurant Visitors - ULI Shared Parking, 3rd Edition

***Vacant spaces anticipated to be used*

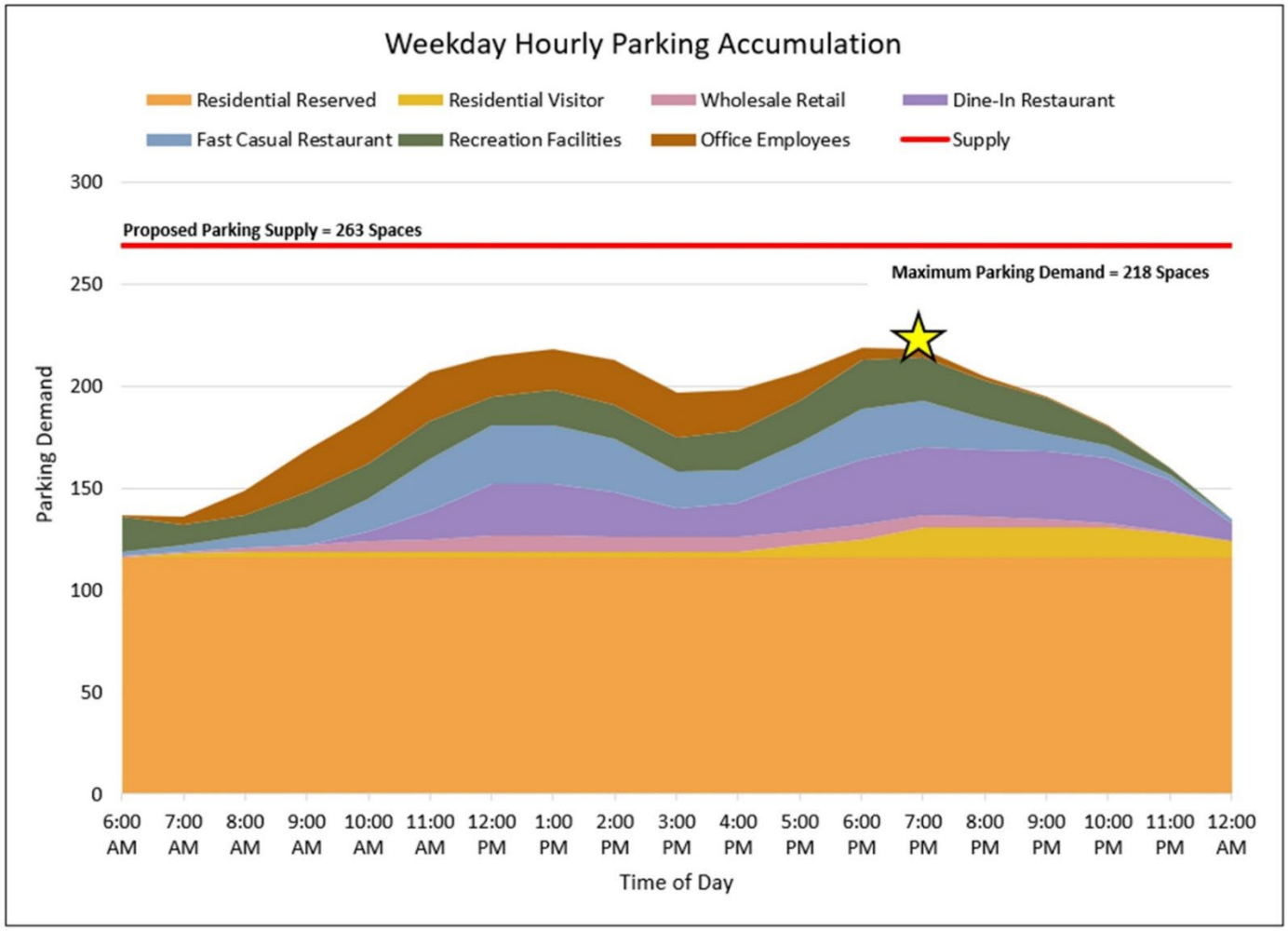

Figure 2: Weekday Shared Parking Hourly Characteristics

The parking supply is anticipated to exceed of the demand during the week by 45 spaces with development plan option 1.

Weekend

The weekend parking accumulation calculations are shown in Table 6 and Figure 3. The peak weekend parking demand is anticipated to occur at 6:00 PM. Based on the ULI time-of-day factors, the peak weekend demand is 210 parking spaces, which is less than the 263 spaces provided.

Table 6: Weekend Shared Parking Hourly Characteristics

	Proposed															
ULI - 3rd Edition		Residential - Reserved		Residential Visitor		**Vacant[6]		Dine-In Restaurant - [8]		Fast Casual Restaurant - [10]		Recreation Facilities - [2]		General Office - Employees[4]		Total	Surplus
		Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Demand	
Time of Day	*6:00 AM*	100%	116	0%	0	1%	1	0%	0	5%	2	80%	19	0%	0	138	125
	7:00 AM	100%	116	20%	3	5%	1	0%	0	10%	3	45%	11	20%	5	139	124
	8:00 AM	100%	116	20%	3	30%	3	0%	0	20%	6	35%	9	60%	14	151	112
	9:00 AM	100%	116	20%	3	50%	4	0%	0	30%	9	50%	12	80%	19	163	100
	10:00 AM	100%	116	20%	3	70%	6	0%	0	55%	16	35%	9	90%	21	171	92
	11:00 AM	100%	116	20%	3	90%	7	15%	5	85%	25	50%	12	100%	24	192	71
	12:00 PM	100%	116	20%	3	95%	7	50%	17	100%	29	50%	12	90%	21	205	58
	1:00 PM	100%	116	20%	3	100%	8	55%	19	100%	29	30%	7	80%	19	201	62
	2:00 PM	100%	116	20%	3	100%	8	45%	15	90%	26	25%	6	60%	14	188	75
	3:00 PM	100%	116	20%	3	95%	7	45%	15	60%	18	30%	7	40%	10	176	87
	4:00 PM	100%	116	20%	3	90%	7	45%	15	55%	16	55%	13	20%	5	175	88
	5:00 PM	100%	116	70%	11	80%	6	60%	20	60%	18	100%	24	10%	3	198	65
	6:00 PM	100%	116	60%	9	75%	6	90%	30	85%	25	95%	22	5%	2	210	53
	7:00 PM	100%	116	100%	15	70%	6	95%	32	80%	23	60%	14	0%	0	206	57
	8:00 PM	100%	116	100%	15	65%	5	100%	33	50%	15	30%	7	0%	0	191	72
	9:00 PM	100%	116	100%	15	50%	4	90%	30	30%	9	10%	3	0%	0	177	86
	10:00 PM	100%	116	100%	15	30%	3	90%	30	20%	6	1%	1	0%	0	171	92
	11:00 PM	100%	116	80%	12	10%	1	90%	30	10%	3	1%	1	0%	0	163	100
	12:00 AM	100%	116	50%	8	0%	0	50%	17	5%	2	0%	0	0%	0	143	120

Time of Day Sources:

2. Health Club Visitors - ULI Shared Parking, 3rd Edition,

4. Office Employees - ULI Shared Parking, 3rd Edition

6. Retail Employees - ULI Shared Parking, 3rd Edition

8. Dine-In Restaurant Visitors - ULI Shared Parking, 3rd Edition

10. Fast Casual Restaurant Visitors - ULI Shared Parking, 3rd Edition

***Vacant spaces anticipated to be used*

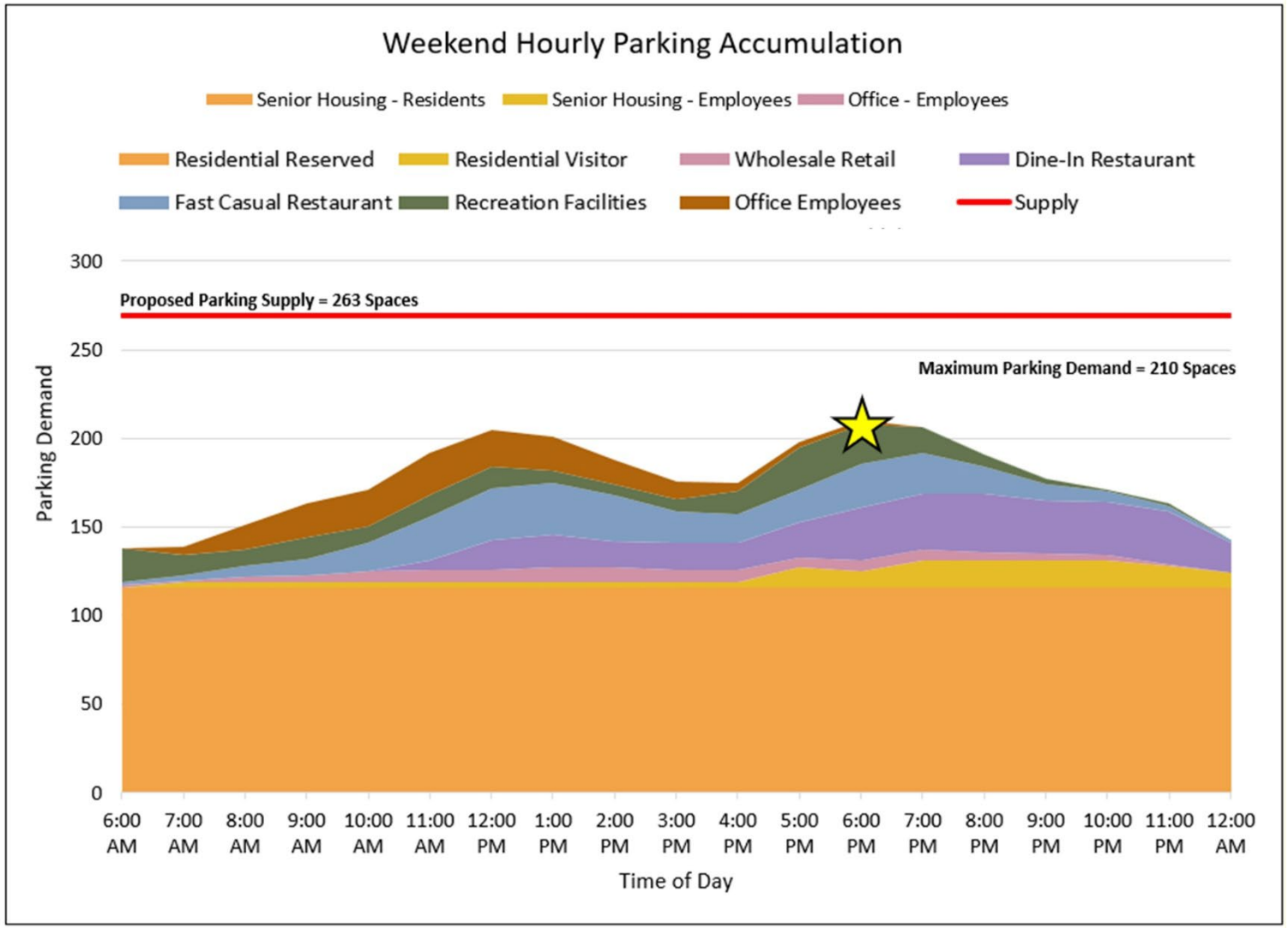

Figure 3: Weekend Shared Parking Hourly Characteristics

The parking supply is anticipated to exceed the demand on the weekend with a surplus of 53 spaces with development plan option 1.

On-Site Parking Supply – Option 2 (272 spaces)

The Applicant is planning to provide a total of 272 parking spaces on-site with this alternative option for the development. The final breakdown of parking provided for each use is subject to change as the project develops and final mix and density are approved. The summarized parking breakdown is shown on Table 7 below.

Table 7: Summarized Parking Tabulations

Proposed Use	# Spaces Required	Provided Spaces
Mixed-Use	118	141
Residential	131	131
TOTAL	**249**	**272**

Weekday

The weekday parking accumulation calculations are shown in Table 8 and Figure 4. The peak weekday parking demand is anticipated to occur at 7:00 PM. Based on the ULI time-of-day factors, the peak weekday demand is 218 parking spaces, which is less than the 272 spaces provided.

Table 8: Weekday Shared Parking Hourly Characteristics

		Proposed																	
ULI - 3rd Edition		Recreation Facilities - Employees[1]		Residential - Reserved		General Office - Employees[3]		Residential - Visitor		**Vacant[6]		Dine-In Restaurant - [8]		Fast Casual Restaurant - [10]		Recreation Facilities - [2]		General Office - Employees[4]		Total	Surplus
		Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Demand	
Time of Day	*6:00 AM*	75%	0	100%	116	3%	0	0%	0	1%	1	0%	0	5%	2	70%	17	3%	1	137	150
	7:00 AM	75%	0	100%	116	15%	0	10%	2	5%	1	0%	0	10%	3	40%	10	15%	4	136	136
	8:00 AM	75%	0	100%	116	50%	0	20%	3	15%	2	0%	0	20%	6	40%	10	50%	12	149	123
	9:00 AM	75%	0	100%	116	90%	0	20%	3	35%	3	0%	0	30%	9	70%	17	90%	21	169	103
	10:00 AM	75%	0	100%	116	100%	0	20%	3	60%	6	15%	5	55%	16	70%	17	100%	24	187	85
	11:00 AM	75%	0	100%	116	100%	0	20%	3	75%	7	40%	14	85%	25	80%	19	100%	24	208	64
	12:00 PM	75%	0	100%	116	85%	0	20%	3	100%	9	75%	25	100%	29	60%	14	85%	20	216	56
	1:00 PM	75%	0	100%	116	85%	0	20%	3	100%	9	75%	25	100%	29	70%	17	85%	20	219	53
	2:00 PM	75%	0	100%	116	95%	0	20%	3	95%	8	65%	22	90%	26	70%	17	95%	22	214	58
	3:00 PM	75%	0	100%	116	95%	0	20%	3	85%	8	40%	14	60%	18	70%	17	95%	22	198	74
	4:00 PM	75%	0	100%	116	85%	0	20%	3	85%	8	50%	17	55%	16	80%	19	85%	20	199	73
	5:00 PM	100%	0	100%	116	60%	0	40%	6	85%	8	75%	25	60%	18	90%	21	60%	14	208	64
	6:00 PM	100%	0	100%	116	25%	0	60%	9	90%	8	95%	32	85%	25	100%	24	25%	6	220	52
	7:00 PM	75%	0	100%	116	15%	0	100%	15	80%	7	100%	33	80%	23	90%	21	15%	4	218	54
	8:00 PM	50%	0	100%	116	5%	0	100%	15	65%	6	100%	33	50%	15	80%	19	5%	2	206	66
	9:00 PM	20%	0	100%	116	3%	0	100%	15	45%	4	100%	33	30%	9	70%	17	3%	1	195	77
	10:00 PM	20%	0	100%	116	1%	0	100%	15	15%	2	95%	32	20%	6	35%	9	1%	1	181	91
	11:00 PM	20%	0	100%	116	0%	0	80%	12	5%	1	75%	25	10%	3	10%	3	0%	0	160	112
	12:00 AM	0%	0	100%	116	0%	0	50%	8	0%	0	25%	9	5%	2	0%	0	0%	0	135	137

Time of Day Sources:

2. Health Club Visitors - ULI Shared Parking, 3rd Edition,

4. Office Employees - ULI Shared Parking, 3rd Edition

6. Retail Employees - ULI Shared Parking, 3rd Edition

8. Dine-In Restaurant Visitors - ULI Shared Parking, 3rd Edition

10. Fast Casual Restaurant Visitors - ULI Shared Parking, 3rd Edition

***Vacant spaces anticipated to be used*

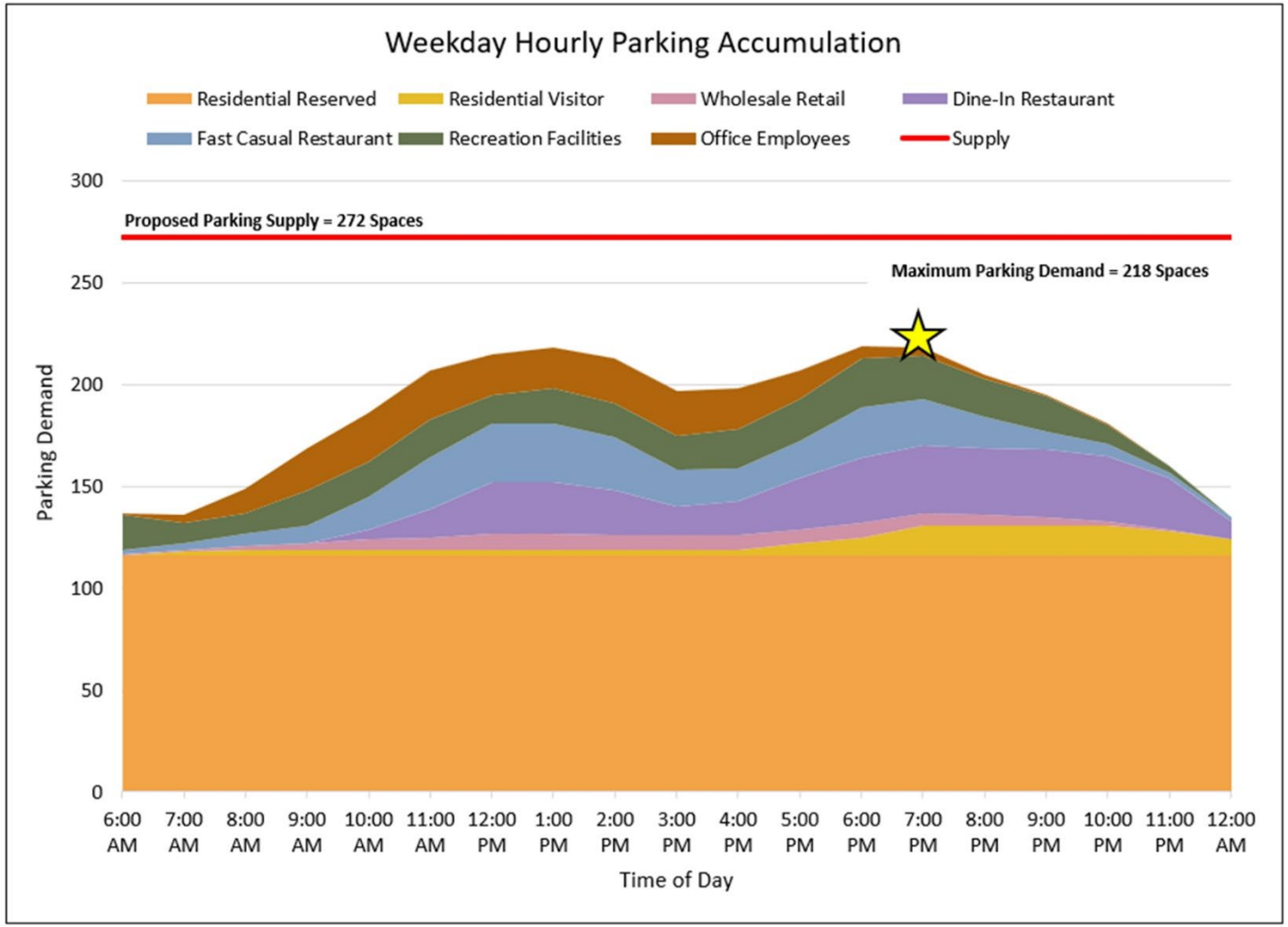

Figure 4: Weekday Shared Parking Hourly Characteristics

The parking supply is anticipated to exceed of the demand during the week by 54 spaces with development plan option 2.

Weekend

The weekend parking accumulation calculations are shown in Table 9 and Figure 5. The peak weekend parking demand is anticipated to occur at 6:00 PM. Based on the ULI time-of-day factors, the peak weekend demand is 210 parking spaces, which is less than the 272 spaces provided.

Table 9: Weekend Shared Parking Hourly Characteristics

	Proposed															
	ULI - 3rd Edition	Residential - Reserved		Residential Visitor		**Vacant[6]		Dine-In Restaurant - [8]		Fast Casual Restaurant - [10]		Recreation Facilities - [2]		General Office - Employees[4]		Total	Surplus
		Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Time of Day Adjust	Demand	Demand	
Time of Day	*6:00 AM*	100%	116	0%	0	1%	1	0%	0	5%	2	80%	19	0%	0	138	134
	7:00 AM	100%	116	20%	3	5%	1	0%	0	10%	3	45%	11	20%	5	139	133
	8:00 AM	100%	116	20%	3	30%	3	0%	0	20%	6	35%	9	60%	14	151	121
	9:00 AM	100%	116	20%	3	50%	4	0%	0	30%	9	50%	12	80%	19	163	109
	10:00 AM	100%	116	20%	3	70%	6	0%	0	55%	16	35%	9	90%	21	171	101
	11:00 AM	100%	116	20%	3	90%	7	15%	5	85%	25	50%	12	100%	24	192	80
	12:00 PM	100%	116	20%	3	95%	7	50%	17	100%	29	50%	12	90%	21	205	67
	1:00 PM	100%	116	20%	3	100%	8	55%	19	100%	29	30%	7	80%	19	201	71
	2:00 PM	100%	116	20%	3	100%	8	45%	15	90%	26	25%	6	60%	14	188	84
	3:00 PM	100%	116	20%	3	95%	7	45%	15	60%	18	30%	7	40%	10	176	96
	4:00 PM	100%	116	20%	3	90%	7	45%	15	55%	16	55%	13	20%	5	175	97
	5:00 PM	100%	116	70%	11	80%	6	60%	20	60%	18	100%	24	10%	3	198	74
	6:00 PM	100%	116	60%	9	75%	6	90%	30	85%	25	95%	22	5%	2	210	62
	7:00 PM	100%	116	100%	15	70%	6	95%	32	80%	23	60%	14	0%	0	206	66
	8:00 PM	100%	116	100%	15	65%	5	100%	33	50%	15	30%	7	0%	0	191	81
	9:00 PM	100%	116	100%	15	50%	4	90%	30	30%	9	10%	3	0%	0	177	95
	10:00 PM	100%	116	100%	15	30%	3	90%	30	20%	6	1%	1	0%	0	171	101
	11:00 PM	100%	116	80%	12	10%	1	90%	30	10%	3	1%	1	0%	0	163	109
	12:00 AM	100%	116	50%	8	0%	0	50%	17	5%	2	0%	0	0%	0	143	129

Time of Day Sources:

2. Health Club Visitors - ULI Shared Parking, 3rd Edition,

4. Office Employees - ULI Shared Parking, 3rd Edition

6. Retail Employees - ULI Shared Parking, 3rd Edition

8. Dine-In Restaurant Visitors - ULI Shared Parking, 3rd Edition

10. Fast Casual Restaurant Visitors - ULI Shared Parking, 3rd Edition

***Vacant spaces anticipated to be used*

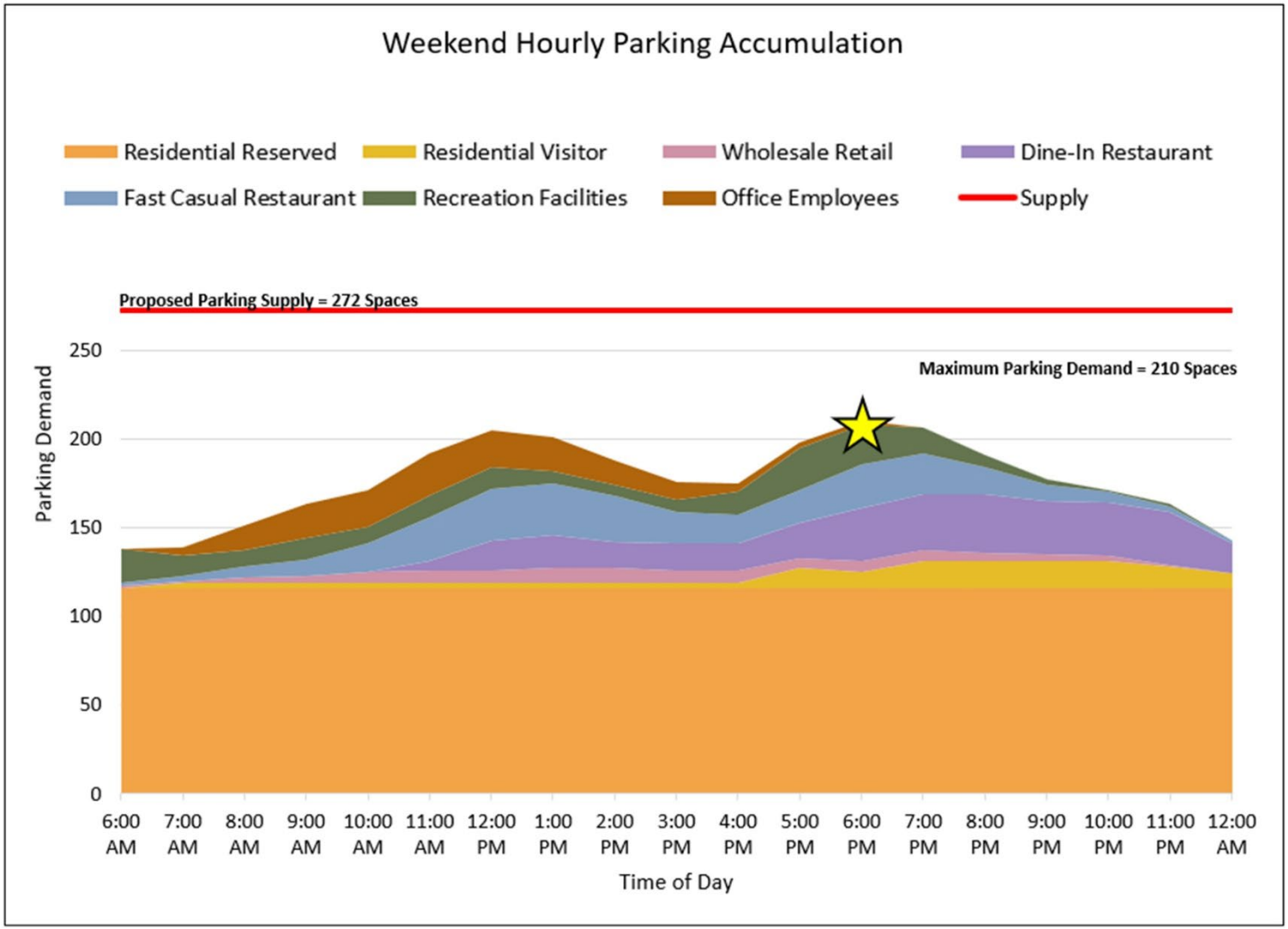

Figure 5: Weekend Shared Parking Hourly Characteristics

The parking supply is anticipated to exceed the demand on the weekend with a surplus of 62 spaces with development plan option 2.

Conclusion

This memorandum presented the findings of a shared parking analysis conducted in conjunction with the redevelopment of the Schoolhouse Commons site in the Town of Haymarket Virginia. This memorandum supports the following conclusions:

- Per the Town of Haymarket *Code of Ordinances*, a total of 249 parking spaces would be required for the application.
- Shared parking could be provided on-site in the surface parking lot to further accommodate the minimum parking requirements.
- Option 1 – The provided parking supply would approximately be 263 spaces which would exceed the weekday peak demand (218) by 45 spaces and the weekend peak demand (210) by 53 spaces.
- Option 2 – The provided parking supply would approximately be 272 spaces which would exceed the weekday peak demand (218) by 54 spaces and the weekend peak demand (210) by 62 spaces.
- The shared parking tables and figures show that the uses peak at different times of day and that the on-site surface lot can accommodate the uses at all times of the day.
- The final breakdown of parking provided for each use is subject to change as the project develops and final mix and density are approved.

Traffic Impact Study

Schoolhouse Commons

Town of Haymarket, Virginia

August 19, 2025

Revised: December 11, 2025

Prepared for:

Graystone Companies, LLC

GOROVE SLADE
Transportation Planners and Engineers

Prepared by:

GOROVE SLADE
Transportation Planners and Engineers

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www.goroveslade.com

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APPENDICES

Executive Summary

Purpose of Report and Study Objectives

This report presents the findings of Traffic Impact Analysis conducted for the proposed Schoolhouse Commons development in the Town of Haymarket, Virginia. This study was developed in accordance with Virginia Department of Transportation ("VDOT") and the Town of Haymarket guidelines.

The document is prepared in accordance with best professional practice and standards that assess the impact of a proposed development on the transportation system and recommends improvements to lessen or negate those impacts. Traffic Impact Analysis involves the evaluation of anticipated roadway conditions with and without the proposed development and recommend transportation improvements to offset both the impacts of the increase in future traffic volumes and the changes in traffic operations due to the development. The analysis assists public officials and developers to balance interrelations between efficient traffic movements with necessary lane access.

Site Location and Study Area

The site is located in the Town of Haymarket. The vehicular study area has six (6) existing intersections, five (5) of which are located along Washington St (Rte. 55) and one (1) located along Bleight Dr.

Description of Proposed Development

The planned development program for the site includes mix uses with approximately 22,218 SF of existing commercial/office land uses to remain and about 58 single family attached (townhome) units. Please note, 65 dwelling units were analyzed in the first TIA submission, the reduced development program (58 du) is expected to reduce delay and queues at the study intersections.

The site is currently occupied by approximately 32,000 SF of existing commercial uses. A portion of the commercial uses and office space are planned to be removed with this application while the remaining 22,218 SF is anticipated remain. The development currently has two access points (one entrance only and one exit only entrance) along Washington St. The current plan for the development proposes one full access entrance (inbound and outbound) along Washington St. The development is also planning a site access by constructing a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln.

Principal Findings, Conclusions, and Proposed Mitigations

Discussions regarding the study assumptions and relevant background information were held with the Town of Haymarket ("The Town") and VDOT staff during a June 13, 2025, scoping meeting. A finalized scope was agreed upon and signed by VDOT and PWCDOT on June 20, 2025.

The analysis presented in this report supports the following assumptions and findings:

Analysis Components

- Existing counts, dated Tuesday June 3, 2025, were collected while schools were in session to reflect typical traffic patterns, and serve as the basis for this study. Existing traffic counts were conducted at the existing intersections on Saturday June,14, 2025. Please note there was approximately 4,700 SF of vacant commercial and church space at the time of collected counts, had the building been fully leased, the traffic volumes for the existing conditions would be slightly higher than presented in the report.
- As determined based on discussions at the scoping meeting, an inherent growth rate of 2% (compounded annually) for the period 2025-2029 has been applied to all through movements along Washington St at all intersections.
- The site is anticipated to generate approximately 24 total trips during the AM peak hour, 26 total trips during the PM peak hour, 429 total daily trips on a typical weekday and 274 Saturday daily trips with reductions.

- One (1) identified background development was included in the study – 6700 Bleight Drive – which is planned to consist of approximately 11 single family attached units.
- The scenarios to be included in this study are Existing Conditions (2025), Future without Development (2029), Future with Development (2029).
- The existing access to the site is served via two (2) intersections, one entrance and one egress. The development proposes to convert the existing entrance only driveway to a full access (inbound and outbound) driveway. The development also proposes to remove the existing exit only driveway as the primary bidirectional entrance would reduce driver confusion and better meet driver expectation. The proposed development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln.

Conclusion

The analysis presented in this report supports the following assumptions and findings:

Infrastructure

- There is one (1) identified infrastructure change with this proposed development. Construction of a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln, will serve as another site access for the proposed development. No additional background infrastructure changes were identified and agreed upon in the scope.

Analysis Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

Existing Conditions (2025):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage lane lengths for all the study intersections.

Total Future without Development (2029):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Total Future with Development (2029):

The results of the Future with Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.
- Please note that while all study intersections and approaches operate at acceptable levels of service, the following lane group was observed to experience larger delay:
    - Intersection #2 Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 –
        - Northbound shared left/thru lane operates at LOS E in the PM peak hour. The overall approach operates acceptably.

  - The 95th percentile queue for the northbound shared left/thru lane is approximately 23 ft (less than one car). Therefore, the queues do not extend to the downstream driveways that serve the residential community.

- The reconfigurations and mitigations for this analysis scenario are as follows:
  - The existing primary driveway entrance (Access #1) will be reconfigured to a full-access driveway (inbound & outbound).
  - The existing exit-only driveway (Access #2) is planned to be closed to address the existing safety issues due to the proximity to the driveway to the east.
  - The addition of a westbound right turn lane at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access) is a proposed mitigation. Please note only a right turn taper is warranted using VDOT Road Design Manual (RDM) Turn Lane Assessment.
- In addition to the mitigation implemented for the Future Conditions with Development (2029) scenario, an alternative scenario was provided that reviewed the capacity of the adjacent roundabout to understand the capacity if existing vehicles were to reroute to utilize the intersection. The analysis confirms that the roundabout operates acceptably if additional vehicles were to use it.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed development will not have a significant impact to the surrounding transportation and roadway network, assuming that all designs planned with the subject proposal, and mitigations discussed in this report are implemented.

Introduction

This report presents the findings of Traffic Impact Analysis conducted for the proposed Schoolhouse Commons development in the Town of Haymarket, Virginia.

The site is currently occupied with approximately 32,000 SF of commercial and office space. The planned development program for the site includes approximately 22,218 SF of commercial/office land uses and about 58 single family attached (townhome) units. Please note, 65 dwelling units were analyzed in the first TIA submission, the reduced development program (58 du) is expected to reduce delay and queues at the study intersections. Also note, a portion of the site is currently occupied by existing commercial uses. A portion of the commercial uses and office space are planned to be removed with this application while the remaining 22,218 SF is anticipated remain. The projected build-out date for the site is assumed to be 2029.

The following tasks were completed as part of this study effort:

- A scoping meeting was held on Friday, June 13, 2025, with VDOT and the Town of Haymarket “The Town” staff to discuss the parameters of this study as well as any relevant background information. A copy of the signed scoping document is included in Appendix A.
- Existing conditions were observed in the field to verify roadway geometry, pedestrian and bicycle infrastructure, and traffic flow characteristics.
- Existing traffic counts conducted at the existing intersections on Tuesday, June 3, 2025, during the weekday morning and weekday afternoon peak periods were used as baseline counts. Existing traffic counts were conducted at the existing intersections on Saturday June,14, 2025. Please note there was approximately 4,700 SF of vacant commercial and church space at the time of collected counts, had the building been fully leased, the traffic volumes for the existing conditions would be slightly higher than presented in the report.
- The Future Conditions without Development (2029) scenario was projected based on the existing traffic volumes and an inherent growth rate to account for regional growth on the roadway network. There was one (1) identified background development was included in the study – 6700 Bleight Drive – Which will consist of approximately 11 single family attached units.
- Proposed site traffic volumes were derived based on the methodology outlined in the Institute of Transportation Engineers’ (ITE) Trip Generation Manual, 11th Edition, publication and were assigned to the road network based on the agreed upon direction of approach discussed during the aforementioned scoping meeting.
- The Future Conditions with Development (2029) scenario was projected based on the existing traffic volumes, regional growth, background developments, and plans for the proposed development.
- Intersection capacity and queueing analyses were performed for the identified study intersections for the Existing Conditions (2025), Future without Development (2029), and Future with Development (2029) during the weekday morning (AM), weekday afternoon (PM) peak hours, and weekend afternoon (SAT) peak hour.
- Intersection capacity and queuing analyses were performed using Synchro, version 11, with results based on the Federal Highway Administration’s (FHWA) Highway Capacity Manual (HCM) 6 and (HCM) 2000 methodology and following VDOT’s Traffic Operations and Safety Manual (TOSAM).

Sources of data for this study include information provided by VDOT, PWCDOT, and the office files and field reconnaissance efforts of Gorove Slade.

Description of the Existing Site

Site Location

The site is located in the Town of Haymarket. The site is generally bounded by Alexandra's Keep Ln to the north, Washington St (Rte. 55) to the south, an existing residential community and office space to the east, and Bleight Dr to the west. The development proposes to convert the existing entrance only driveway to a full access (inbound and outbound) driveway. The development also proposes to remove the existing exit-only driveway as the primary bidirectional entrance would reduce driver confusion and better meet driver expectations. The development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln. The site entrances for the development are shown on Figure 1 below.

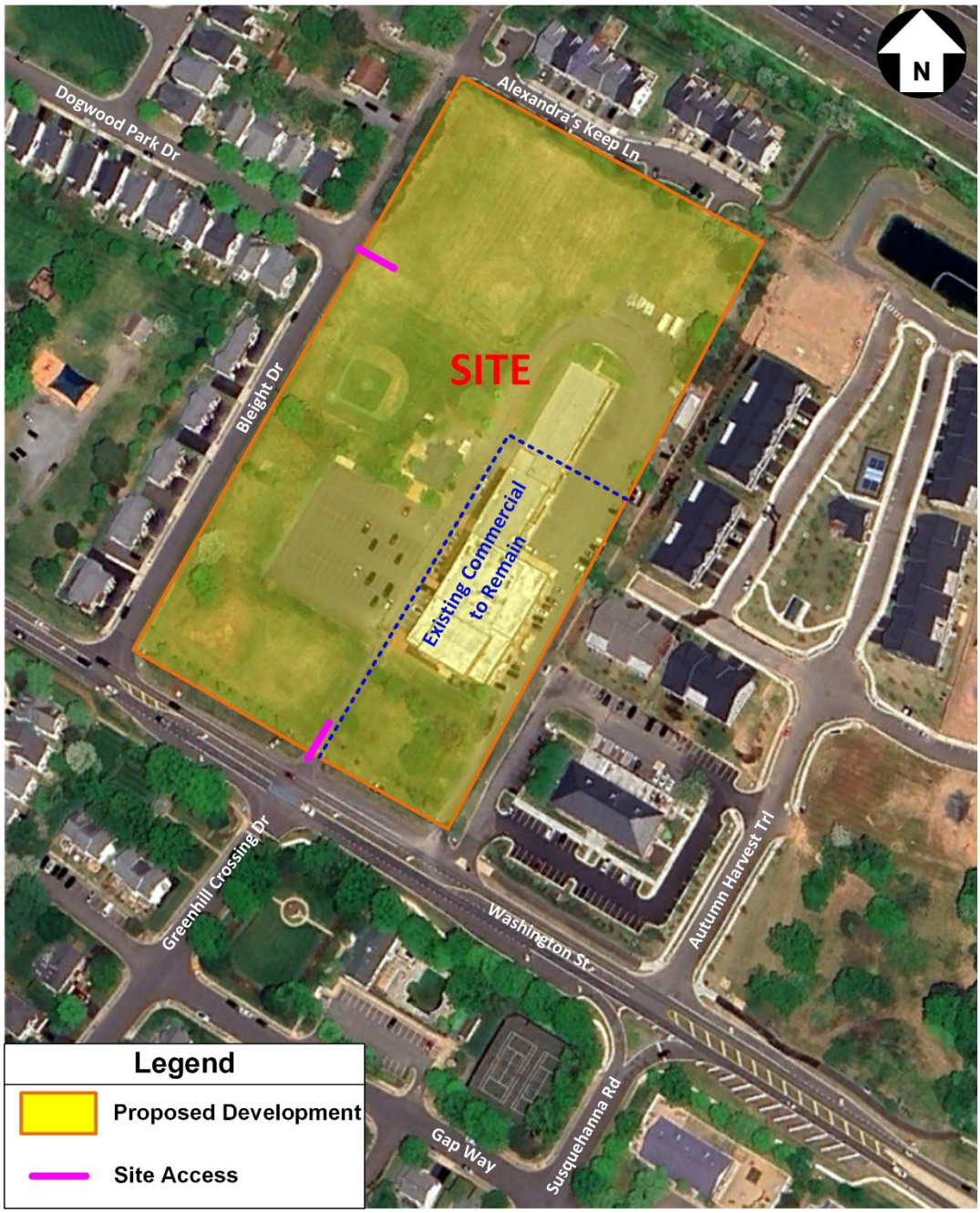


Figure 1: Site Location & Access

Location within Jurisdiction and Region

The site is located in the northeast quadrant of the intersection of Washington St (Rte. 55) & Bleight Dr and is approximately 0.9 miles from the intersection of Washington St (Rte. 55) & James Madison Hwy (US-15). The site is located approximately 1.0 mile southeast of the interchange of James Madison Hwy (US-15) and I-66 shown in Figure 3. The site is also located approximately 1.3 miles northwest of the interchange of John Marshall Hwy (Rte. 55) and Lee Hwy (US-29).

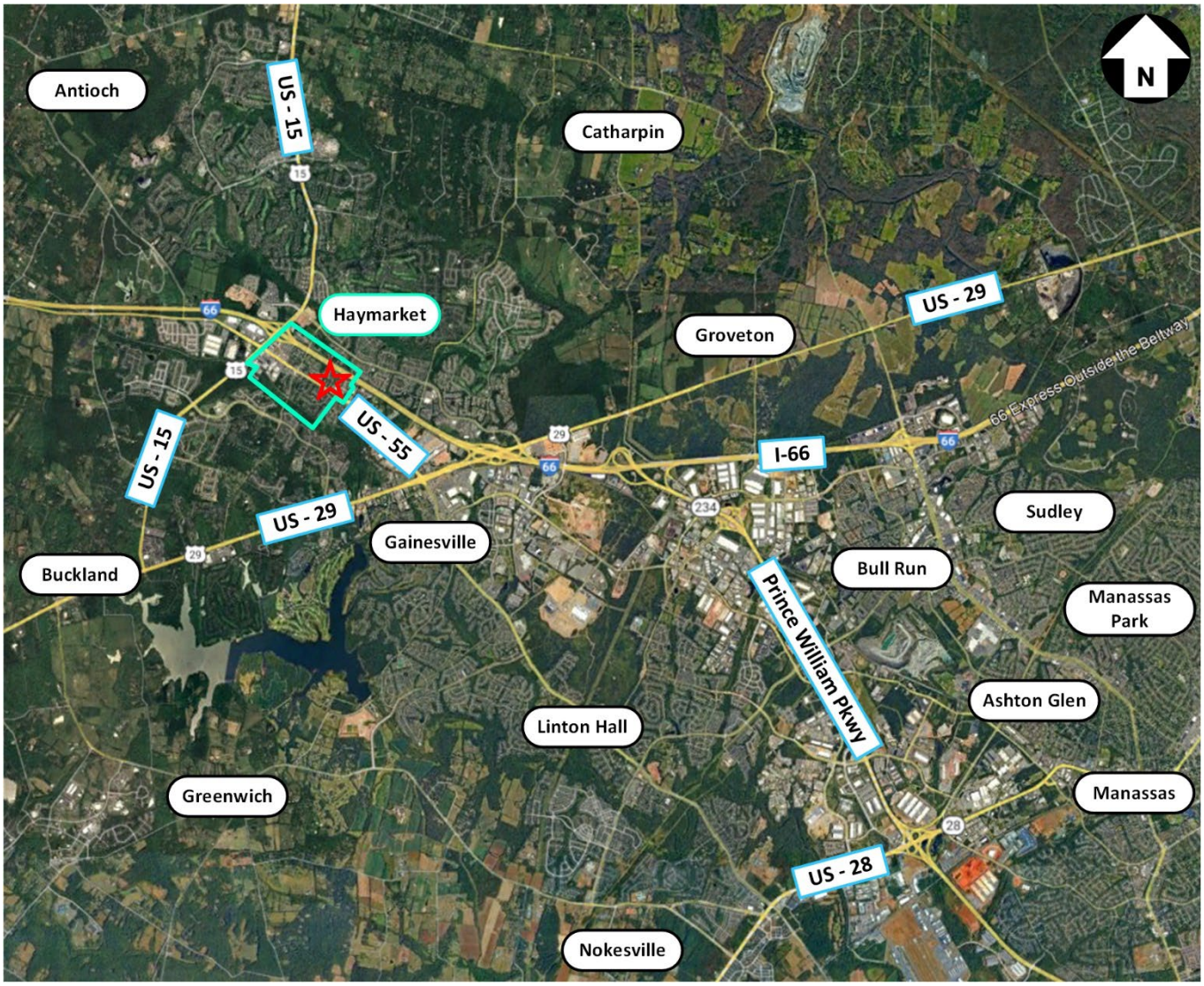


Figure 2: Regional Location

Existing Zoning and Long-Range Land-Use

The existing zoning for the site is Town Center (B-1) as shown on Figure 3 and the Town of Haymarket's Planned Use designation for the site is Public as shown on Figure 4.

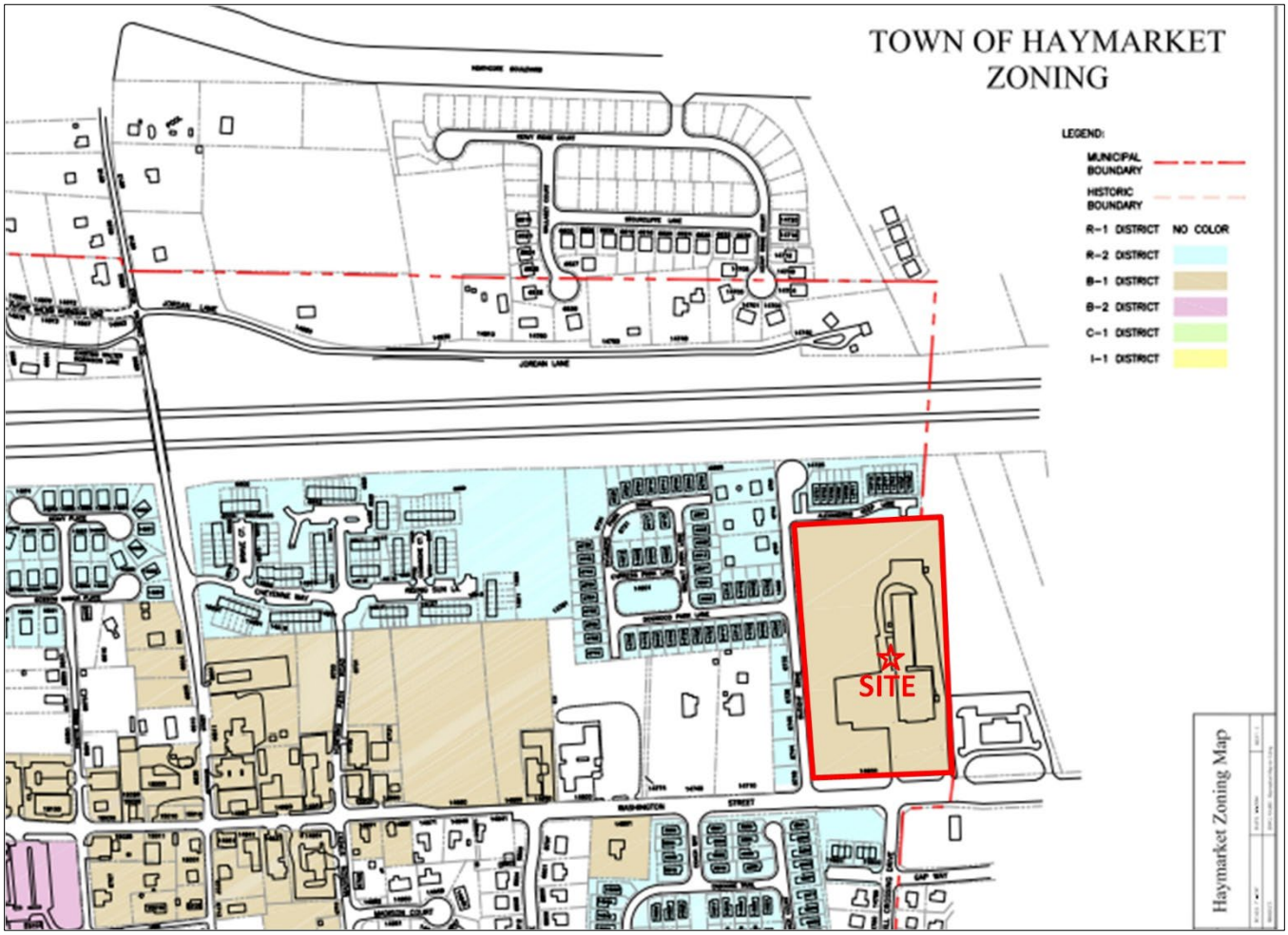


Figure 3: Zoning Map
(Source: Town of Haymarket Zoning)

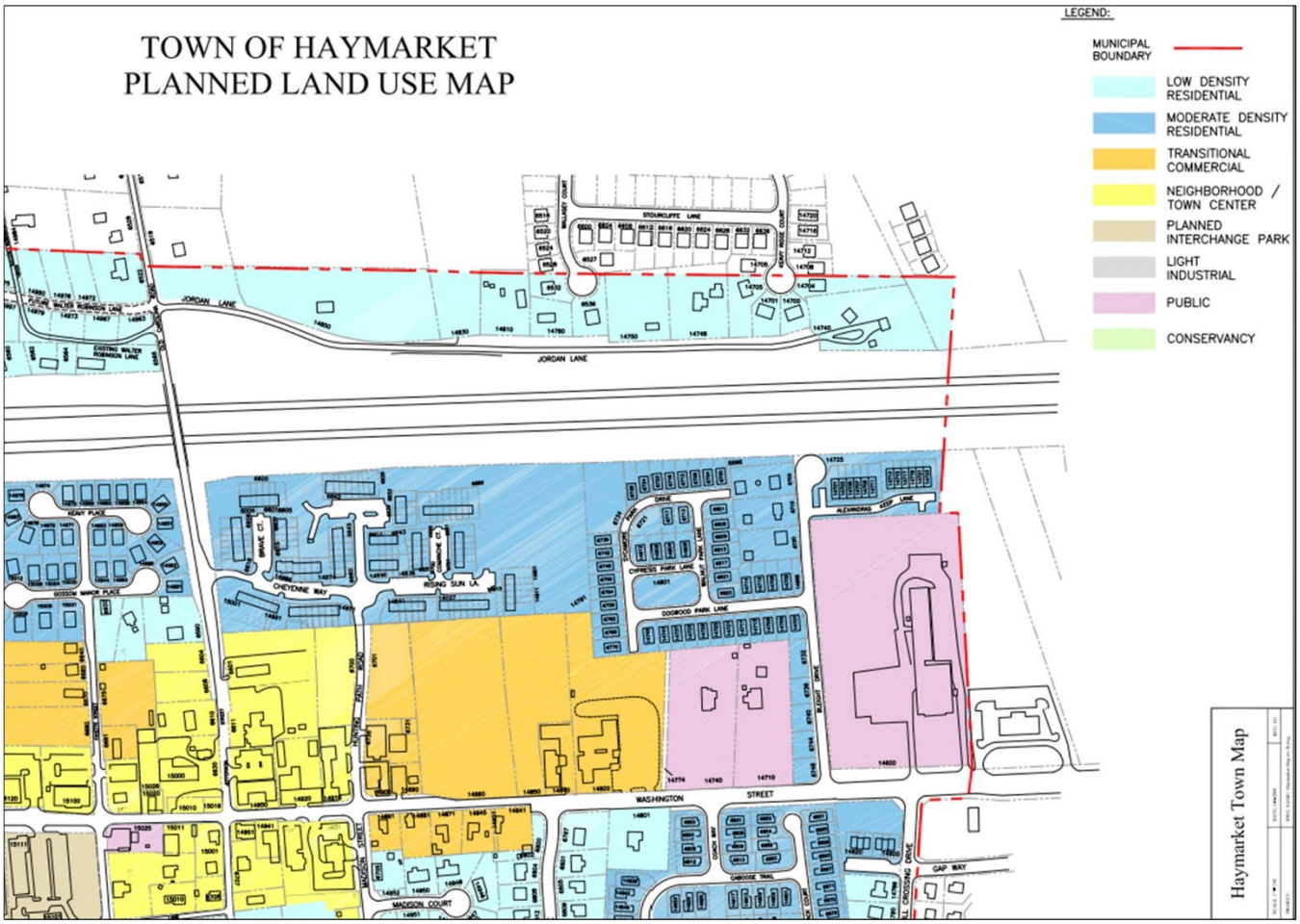


Figure 4: Planned Use Map
(Source: Town of Haymarket Planning Commission)

Descriptions of Geographic Scope of Study and Limits of the Study Area

The geographic scope of the study area was developed in accordance with VDOT and the Town guidance. The vehicular study area includes the following six (6) existing intersections:

Intersection #1: Washington St (Rte. 55) & Bleight Dr (existing full movement, two-way stop controlled);

Intersection #2: Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 (existing full movement on south side, one way entrance on north side, two-way stop controlled);

Intersection #3: Washington St (Rte. 55) & Site Access #2 (existing two-way stop controlled, one way exit);

Intersection #4: Washington St (Rte. 55) & Commercial Access (existing Right-In/Right-Out (RIRO));

Intersection #5: Washington St (Rte. 55) & Autumn Harvest Trl/Susquehanna Rd (existing partial movement, two-way stop controlled);

Intersection #6: Bleight Dr & Dogwood Park Dr/Future Site Access #3 (future site access proposed as fourth leg to existing intersection).

An aerial of the study intersections is provided in Figure 5.

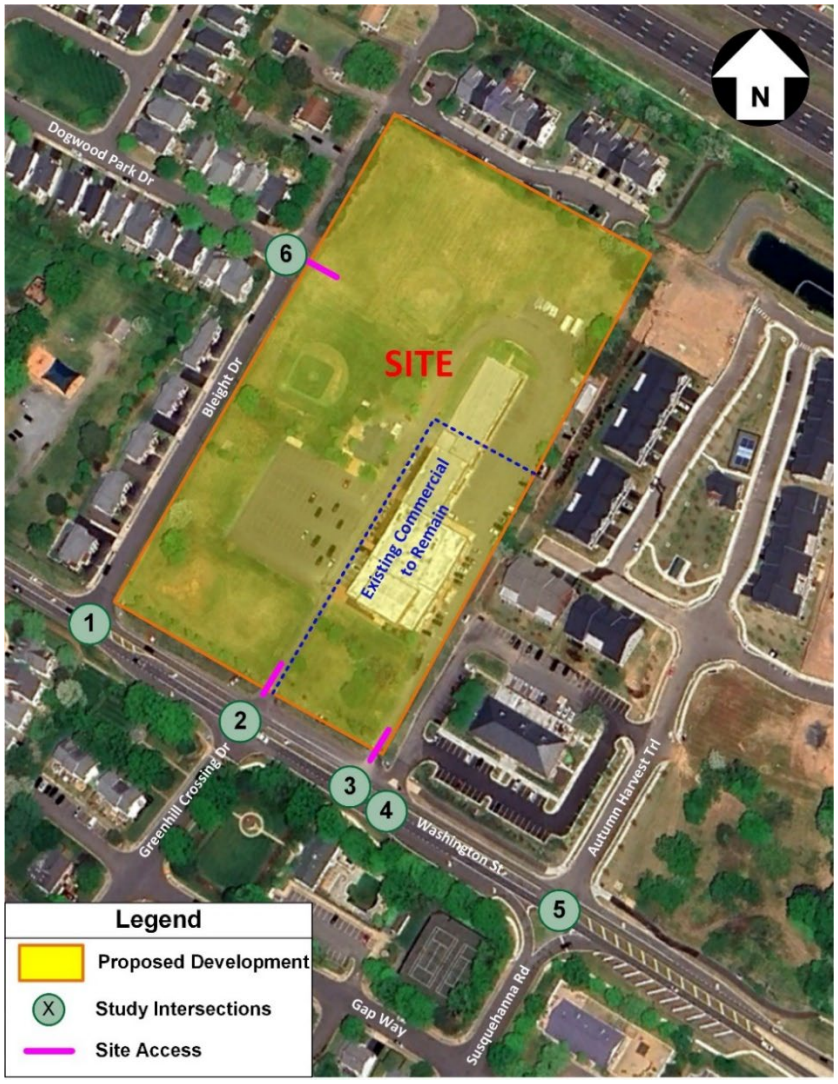


Figure 5: Aerial of Study Boundaries (Study Intersections)

Existing Roadway Network

Washington St (Rte. 55) is the major road for this transportation study and the roadway information is displayed in Table 1 below.

Table 1: Washington St (Rte. 55) Roadway Information

Roadway	RTE #	VDOT Classification	Posted Speed Limit (mph)	AADT (vpd)	k-factor
Washington St	VA 55	Major Collector	25	13,000	8.9%

Source: 2023 VDOT Published AADT Traffic Data

Planned Future Transportation Improvements

Roadway Improvements

There were no roadway improvements identified near the intersections for this transportation study. The roadway configuration for Washington St is expected to remain the same in all analyzed scenarios.

Analysis of Existing Conditions (2025)

In order to project the future traffic conditions, it was necessary to create a baseline "existing" scenario. For the purposes of this report and as agreed to by VDOT and Town staff, 2025 roadway conditions were considered to be as "existing."

Existing Roadway Safety Assessment

Historical crash data was obtained from VDOT's Crash Analysis Tool for the existing study intersections for a five-year period between January 2020 through December 2024. The summary of the reported crashes at the specified intersections are shown in Table 2.

The crash data by intersections is provided in Appendix I of this document.

Table 2: Historical Crash Data Summary (January 2020- December 2024)

	Intersection	Approximate ADT	PDO	IC	Fatality	Total	Crash Rate (Per MEV)
#2	Washington St (Rte. 55) at Greenhill Crossing Dr/Site Entrance	13,000	3	0	0	3	0.13

**Note the same ADT for each intersection was assumed for all years.*

The intersection crash rate was computed for the existing study intersections using the following formula and was calculated as crashes per one million entering vehicles ("MEV"). The approach average daily traffic volumes ($ADT_{approach}$) were derived from calculations based on the existing link ADTs.

$$Rate_{intersection} = \frac{1{,}000{,}000 * \#\ of\ Crashes}{\#\ of\ Years * 365\ \left(\frac{days}{year}\right) * ADT_{approach}}$$

Typically, a crash rate of 1.0 MEV or higher is an indication that further study may be required. A rate over 1.0 MEV does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have an elevated crash rate due to operational, geometric, or other deficiencies.

Table 3: VDOT Crash Data at Washington St (Rte. 55) & Greenhill Crossing Dr/Site Entrance (Intersection #2)

Intersection Crash Analysis	Crash Data for the Intersection of Washington St (Rte. 55) and Greenhill Crossing Dr/Site Entrance (January 2020 - December 2024)						
	2020	2021	2022	2023	2024	Total	Relative Frequency
Crash Severity							
Fatal Collision (Type K)							0.00%
Injury Collision (Type A, B, and C)							0.00%
Type A							
Type B							
Type C							
Property Damage Only (Type PDO)		1		2		3	100.00%
TOTAL*		***1***		***2***		***3***	***100.00%***
Crash Type							
Fixed Object/ Single-Vehicle Crash							0.00%
Head-On							0.00%
Sideswipe / Same Direction							0.00%
Sideswipe / Opposite Direction							0.00%
Rear-End Collision		1				1	33.33%
Angle Collision				2		2	66.67%
Backed Into							0.00%
Pedestrian Collision							0.00%
Deer/Animal							0.00%
Other							0.00%
TOTAL*		***1***		***2***		***3***	***100.00%***
Other Factors							
Distracted Driver							0.00%
Alcohol**							0.00%
Work-Zone							0.00%
Inclement Weather (Non-Dry)				1		1	33.33%
Speeding							0.00%
Pedestrian Injury***							N/A
Time of Day							
AM Peak Period (6 - 10 AM)							*0.00%*
Off Peak - Daytime (10 AM - 3 PM)				*2*		*2*	*66.67%*
PM Peak Period (3 - 7 PM)		*1*				*1*	*33.33%*
Off Peak - Nighttime (7 PM - 6 AM)							*0.00%*
CALCULATED CRASH RATE***						***0.13***	***Crashes per MEV***

* It should be noted that an intersection radius of 150 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

** Instances where the event was classified as "Unknown", "Not Known Whether Impaired", "Ability Not Impaired" were classified as alcohol related to provide a more conservative analysis.

*** Pedestrian injuries are based on the number of pedestrians injured and may not be directly be related to the number of crash incidences (i.e., if one crash occurred injuring two pedestrians, the table would show a "2" instead of a "1").

****Crash rate based on an approximated 12400 ADT.

As shown in Table 3 above, Intersection #2 had 3 reported crashes over the five-year period. The crash report for this intersection shows 100% of the crashes were classified as PDO (Property Damage Only). Average Daily Traffic (ADT) was reported at this intersection based on existing collected counts (2025). The intersection has a calculated crash rate of 0.13 crashes per MEV. Therefore, this intersection is not considered a high crash location.

There were no reported crashes within a 150-foot radius of the other study intersections of this report.

Additionally, study intersection #3 is planned to be removed in the future condition with the proposed development as the existing spacing between the access and the commercial driveway does not meet the VDOT access management standards.

Existing Traffic Volumes

In order to determine the weekday morning (AM) and weekday afternoon (PM) peak hour turning movement traffic volumes, traffic counts were conducted at the following study intersections on Tuesday, June 3, 2025, during the weekday morning, weekday afternoon peak periods, and weekend afternoon (SAT) peak period. Please note there was approximately 4,700 SF of vacant commercial and church space at the time of collected counts, had the building been fully leased, the traffic volumes for the existing conditions would be slightly higher than presented in the report.

The system peak hours for the six (6) study intersections were determined to be:

- Weekday Morning (AM) Peak Hour: 8:00 AM to 9:00 AM
- Weekday Afternoon (PM) Peak Hour: 4:30 PM to 5:30 PM
- Saturday (SAT) Peak Hour: 5:45 PM to 6:45 PM

The 2025 existing road network lane configuration is presented in Figure 6. The 2025 existing conditions peak hour traffic volumes for the six (6) existing intersections within the study area are illustrated in Figure 7. The average daily traffic (“ADT”) volumes, depicted in this figure and in subsequent volume graphics, were calculated based on the PM peak hour turning movement volumes and multiplied by the VDOT historical k-factors from 2023. If the historic k-factor data was not available for a given roadway or roadway segment, then a k-factor of 0.10 was assumed.

Please note all vehicle maneuvers and volumes were balanced throughout the six (6) study intersections. The raw data for the existing turning count movements are provided in Appendix B.

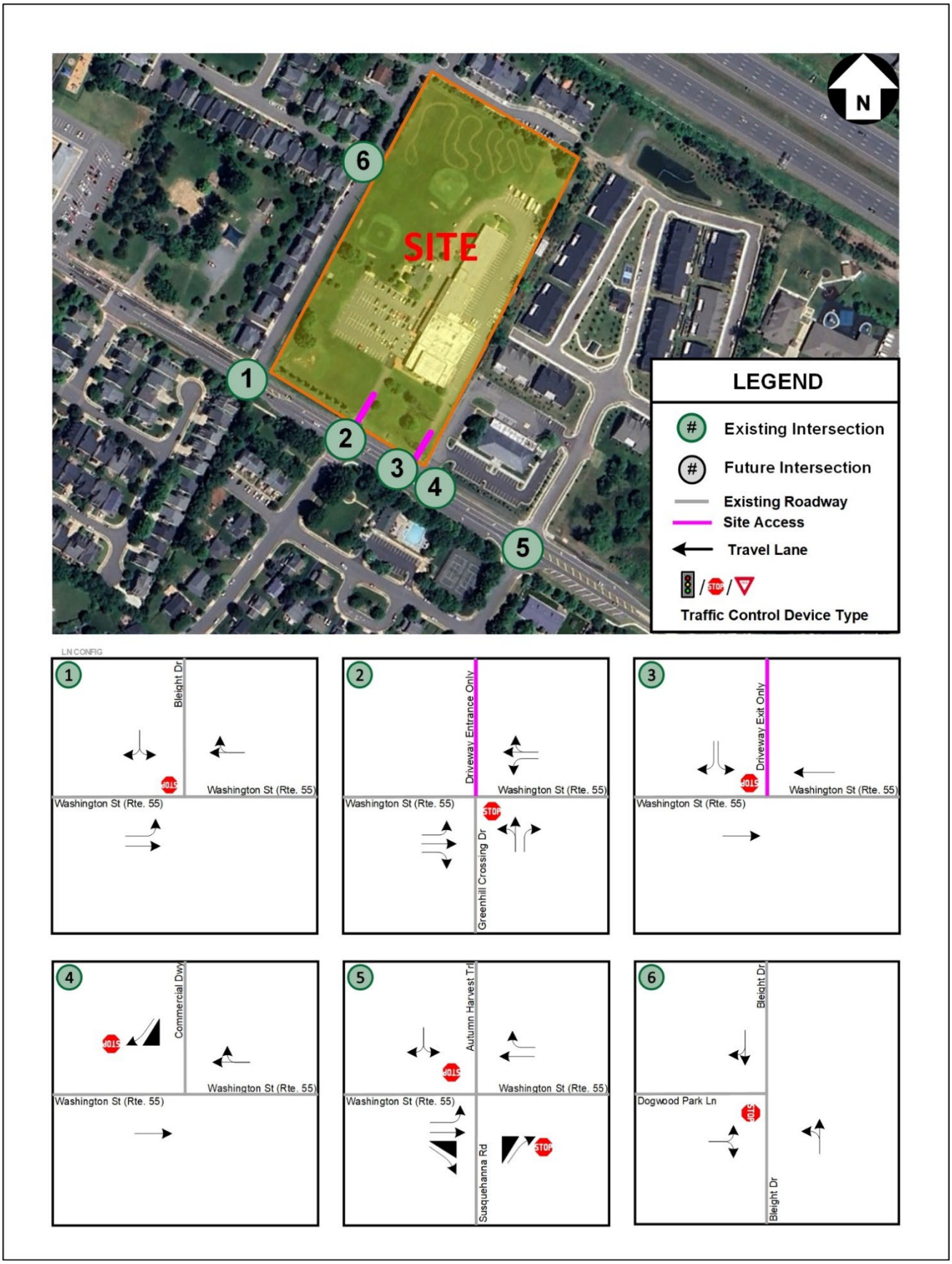


Figure 6: 2025 Existing Conditions – Roadway Network Geometric Configuration and Traffic Control Devices

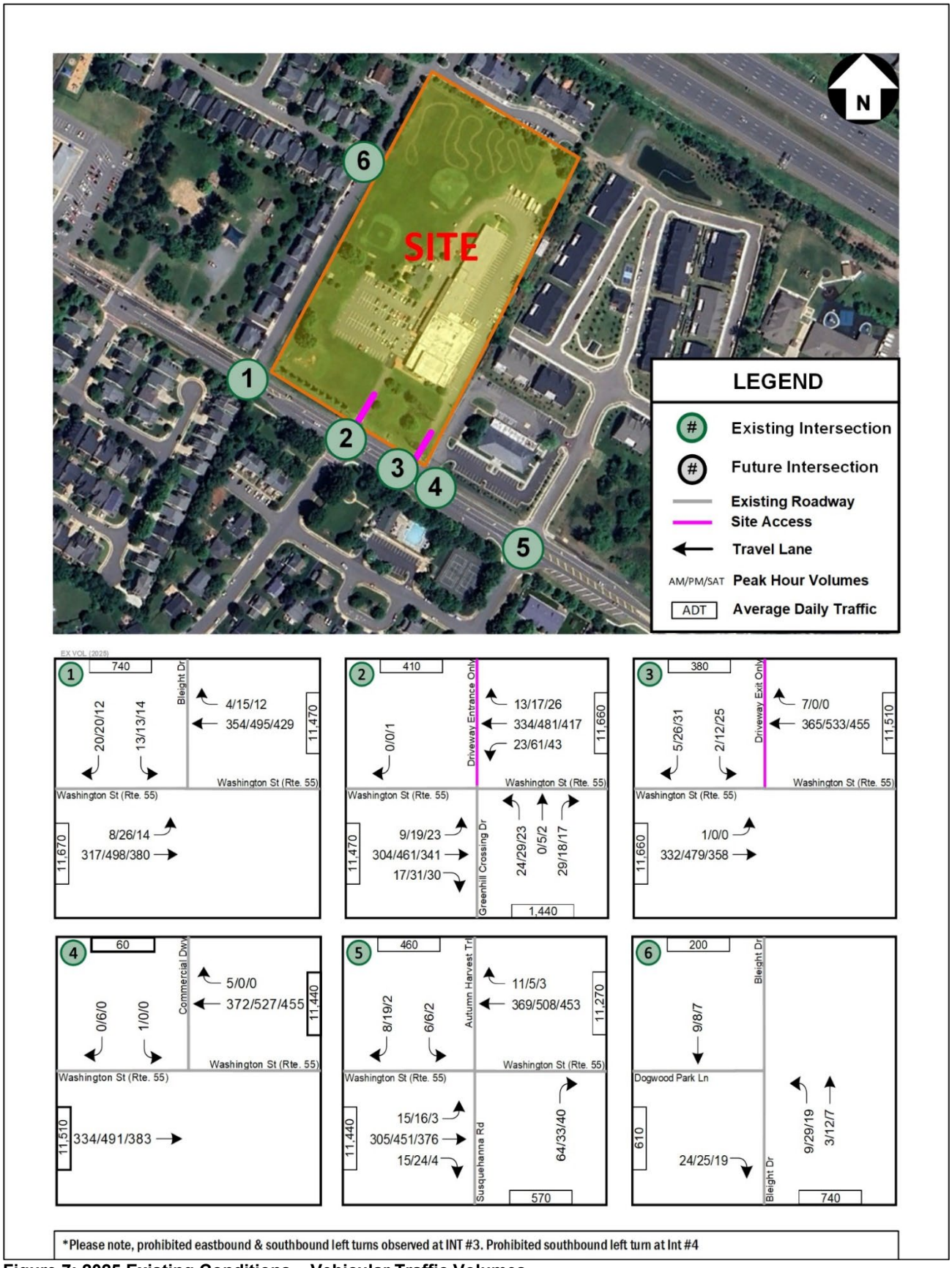


Figure 7: 2025 Existing Conditions – Vehicular Traffic Volumes

It should be noted that Figure 7 above illustrates the peak hour volumes by movement. The existing lane configuration for the study intersections should be referred from Figure 6. Please note that prohibited movements at Intersection #2 and #3 were observed as shown.

Existing Intersection Capacity and Queueing Analysis

Intersection capacity and queuing analyses were performed for the Existing Conditions (2025) scenario at the study area intersections during AM, PM, and SAT peak hours. *Synchro,* version 11, was used to analyze the study intersections with results based on the Federal Highway Administration's (FHWA) Highway Capacity Manual[1] ("HCM") and analysis guidelines provided in VDOT's Traffic Operations and Safety Analysis Manual ("TOSAM"). The analysis herein includes level of service ("LOS"), delay, and queue length comparisons for the turning movements analyzed.

Signal timings and *Synchro* files were obtained from VDOT and were utilized as base for the analysis models. Traffic operation conditions as well as lane configurations were field verified. The existing traffic volumes discussed in the aforementioned section as well as other relevant data were entered into the analysis models. For the purposes of this analysis, the existing peak hour factors ("PHF") were based on the traffic count and utilized on a by-intersection basis; PHF in the range of 0.85 to 1.00 were used for the existing scenario, consistent with VDOT analysis guidelines. Heavy vehicle percentages ("HV%") were based on existing traffic count data for each individual lane group.

Per the scoping meeting with VDOT and the Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM 6th edition methodology and HCM 2000 where applicable. The results of the intersection capacity analyses from *Synchro* are presented in Table 4 and graphically in Figure 8. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections and any approaches that operate at LOS F and E are displayed in red.

The 95th percentile queues were also determined from *Synchro* and are expressed in feet. The lane groups where the queue lengths exceeded the available effective storage capacity of existing turn lanes are displayed in red.

The description of different LOS and delay are included in Appendix J. The detailed analysis worksheets of 2025 Existing Conditions are contained in Appendix C.

Table 4: Existing Conditions (2025) – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	160	A	0.0	0	A	8.6	3	A	8.4	0
	Southbound Approach		***B***	***13.3***		***C***	***15.8***		***C***	***15.5***	
	Southbound Left/Right		B	13.3	8	C	15.8	8	C	15.5	8
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Driveway Entrance Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.1	0	A	8.4	3	A	8.5	3
	Westbound Approach										
	Westbound Left	195	A	8.2	3	A	8.6	5	A	8.2	3
	Northbound Approach		***B***	***13.4***		***C***	***20.9***		***C***	***16.5***	
	Northbound Left/Thru	175	C	17.0	8	D	26.1	15	C	20.6	10
	Northbound Right	175	B	10.5	5	B	11.2	3	B	10.5	3
3	**Washington St (Rte. 55) (E/W) & Driveway Exit Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left		A	8.2	0	--	--	--	--	--	--
	Southbound Approach		***B***	***11.1***		***B***	***12.1***		***B***	***12.0***	
	Southbound Left		B	13.7	0	C	16.3	3	B	14.5	5
	Southbound Right		B	10.0	0	B	10.1	3	A	9.9	3
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**										
	Southbound Approach		***A***	***0.0***		***B***	***11.7***		***A***	***0.0***	
	Southbound Left/Right		A	0.0	0	B	11.7	0	A	0.0	0
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	230	A	8.3	0	A	8.6	0	A	8.3	0
	Northbound Approach		***B***	***10.9***		***B***	***11.4***		***B***	***10.9***	
	Northbound Right		B	10.9	10	B	11.4	5	B	10.9	5
	Southbound approach		***C***	***15.8***		***B***	***14.8***		***C***	***15.3***	
	Southbound Left/Right		C	15.8	3	B	14.8	5	C	15.3	0
6	**Dogwood Park Ln (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach		***A***	***8.5***		***A***	***8.5***		***A***	***8.4***	
	Eastbound Left/Right		A	8.5	3	A	8.5	3	A	8.4	3
	Northbound Approach										
	Northbound Left		A	7.3	0	A	7.3	3	A	7.3	0

NOTES:

[1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.

[2] Prohibited eastbound left turn observed at INT #3.

[3] Prohibited southbound left turns observed at INT #3.

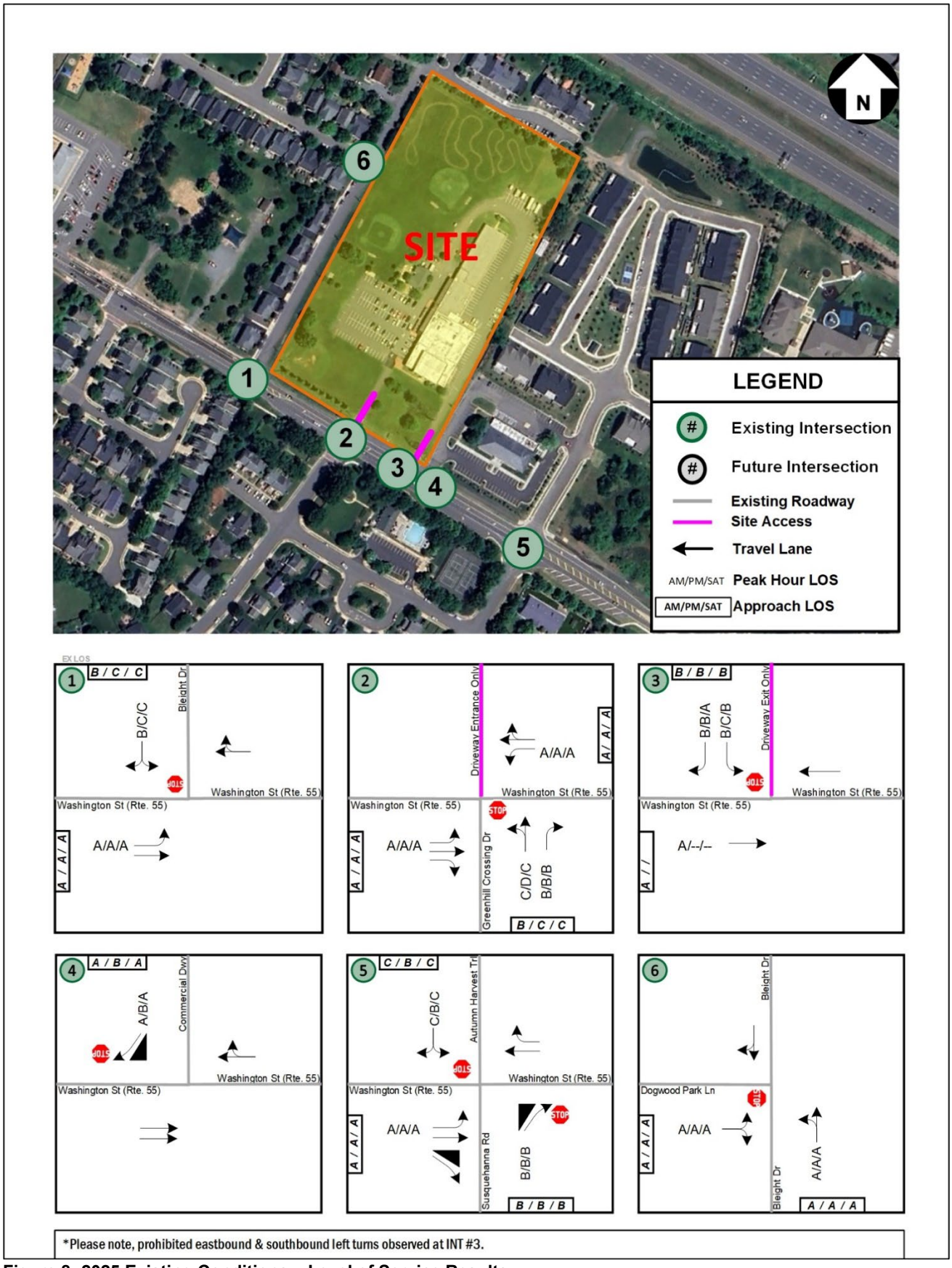


Figure 8: 2025 Existing Conditions – Level of Service Results

As mentioned previously, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM 6th edition methodology and HCM 2000 where applicable.

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

The results of the Existing Conditions (2025) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Analysis of Future Conditions without Development 2029

For the purposes of this study, the development is anticipated to be constructed by 2029; this scenario analyzes the future without development conditions for the year 2029.

The derivation of future without development traffic volumes was based on assumptions and parameters discussed with VDOT and the Town during the scoping process for this report. The future conditions include anticipated inherent regional growth, the inclusion of any potential background developments in the pipeline around the vicinity of the site, and anticipated roadway improvements.

Inherent Regional Growth

The development is anticipated to be completed in 2029. In order to account for increased demand on the traffic network, an inherent growth rate was applied to the future scenarios. This "inherent" growth was anticipated to account for regional development within the at-large area, which would ultimately result in increased roadway demand. Furthermore, the inherent growth was anticipated to account for any potential background developments unaccounted for within the vicinity of the study area. Historical VDOT AADT data for roadways bounding the site are shown in Table 5.

Table 5: Historical Regional Growth within Vicinity of the Road Network

			Published VDOT AADT				
Road Segment:	**From:**	**To:**	**2019**	**2020**	**2021**	**2022**	**2023**
Washington St	Old Carolina Rd	Town of Haymarket Bdry	11,000	7,900	9,000	9,950	13,000

Source: VDOT Published AADT Traffic Data

As agreed upon in the scope for this study, to account for 2029 future conditions, an inherent growth rate of 2.0%, compounded annually over a four-year period, between 2025 to 2029 (and totaling 8.24% growth of the existing volumes) was applied to the mainline through movements on Washington St (Rte. 55) traveling eastbound and westbound.

The inherent regional growth volumes (for the period between 2025 and 2029) are illustrated in Figure 9.

Potential Background Development(s)

One (1) background development was identified in the scoping meeting for inclusion in this study. The 6700 Bleight Drive background development is anticipated to consist of 11 single-family attached dwelling units. Volumes associated with this development are included in the Total Future without Development (future background) scenario of the analysis. The Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication was used to determine the total trips going into and out of the subject study site during the weekday morning (AM), weekday afternoon (PM) peak hours, typical weekday daily trips, and weekend (SAT) peak hour and daily trips. The projected trip generation for the 6700 Bleight Drive development using ITE rates is depicted in below.

Table 6: 6700 Bleight Drive Site Trips

			------ Weekday ------							------ Weekend ------			
Land Use	**ITE Code**	**Size**	**AM Peak Hour**			**PM Peak Hour**			**Daily**	**Saturday Peak Hour**			**Sat Daily**
			In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed Use													
*Single-Family Attached Housing (RATES)	215	11 DU	1	4	5	4	2	6	79	3	3	6	96
		Total Trips	**1**	**4**	**5**	**4**	**2**	**6**	**79**	**3**	**3**	**6**	**96**

**ITE equations not applicable for proposed density - ITE rates used in lieu.*

The 6700 Bleight Drive development is anticipated to generate approximately 5 trips in the AM peak hour, 6 trips in the PM peak hour, 79 typical weekday daily trips, 6 Saturday peak hour trips, and about 96 Saturday daily trips.

Potential Roadway Improvement(s)

There were no identified background transportation improvements near the proposed development.

Future without Development Lane Configuration

There were no adjustments to the roadway configuration identified for the future without development (future background) scenario. Therefore, the lane configuration is assumed to be the same as the existing lane configuration illustrated previously in Figure 6.

Future without Development (2029) Traffic Volumes

In order to forecast the future (without development) traffic volumes for the year 2029, the 2025 existing traffic volumes were combined with the inherent growth traffic volumes presented in Figure 9 and the background trips associated with the one (1) background development shown in Figure 10. The trip generation summary tables for background development will be included in Appendix D.

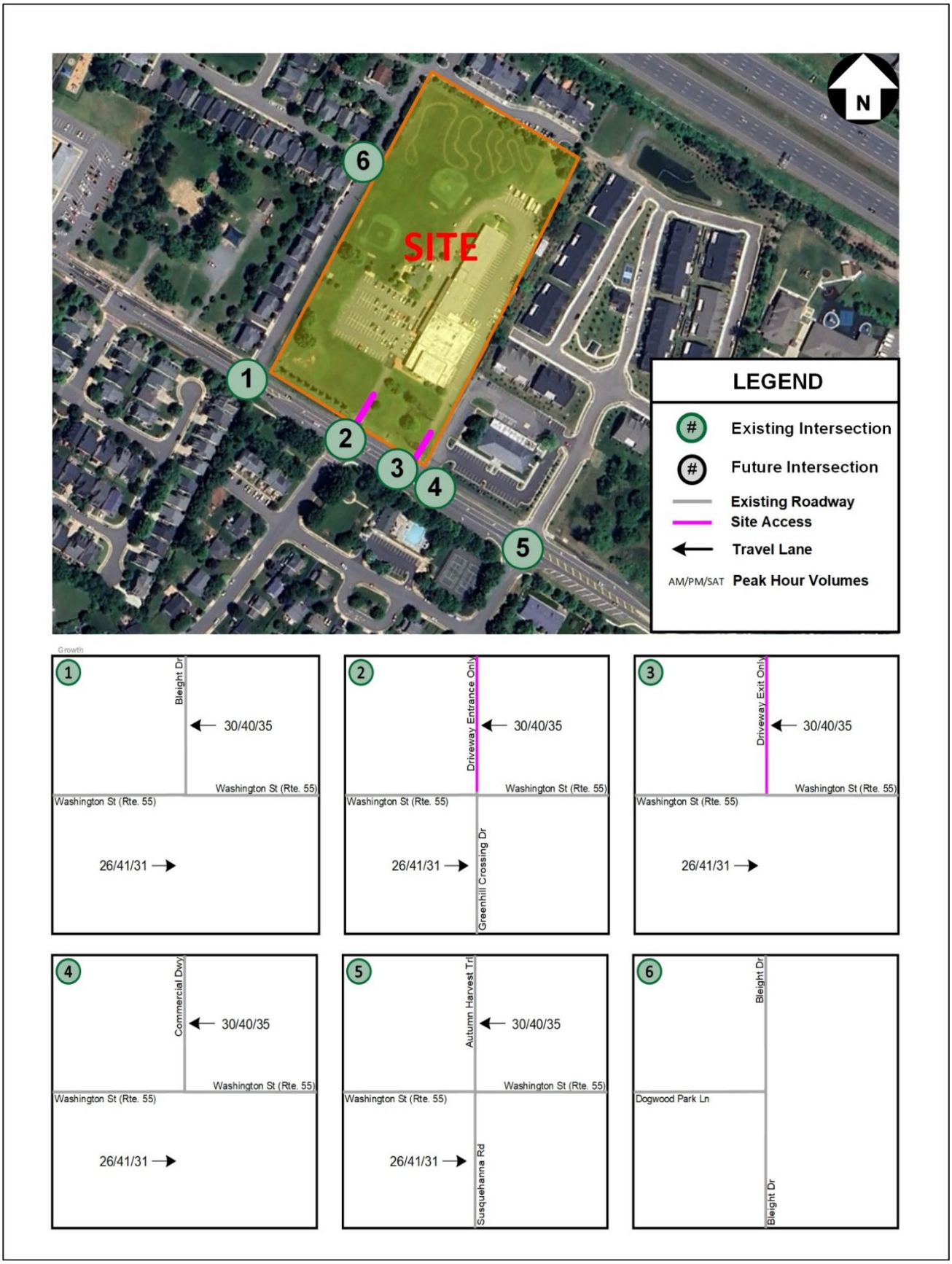


Figure 9: Projected Inherent Regional Growth Traffic Volumes (2025 to 2029)

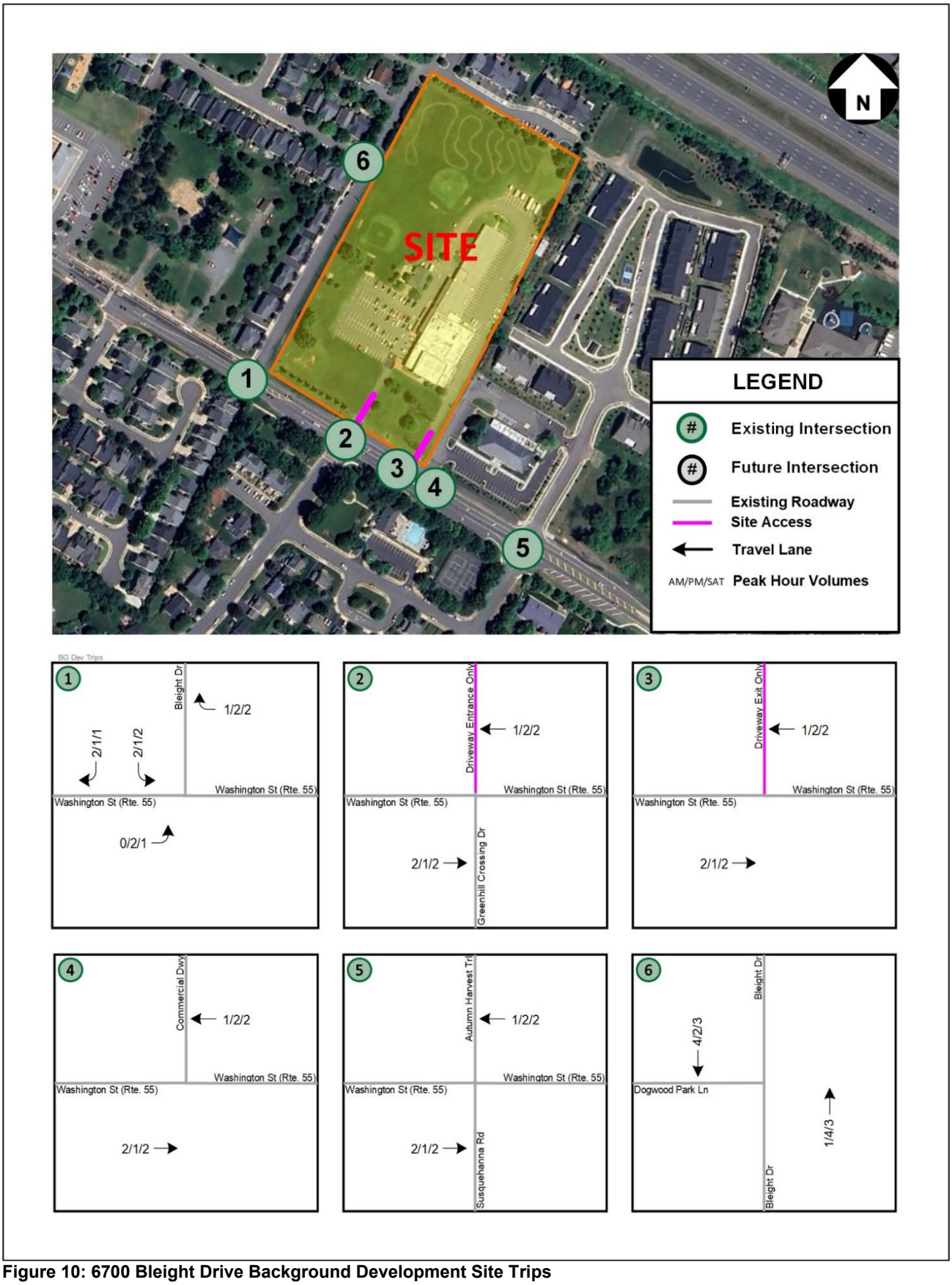


Figure 10: 6700 Bleight Drive Background Development Site Trips

The Future without Development (2029) volumes were derived by adding the projected inherent growth and background development site generated trips to the existing volumes and are illustrated in Figure 11.

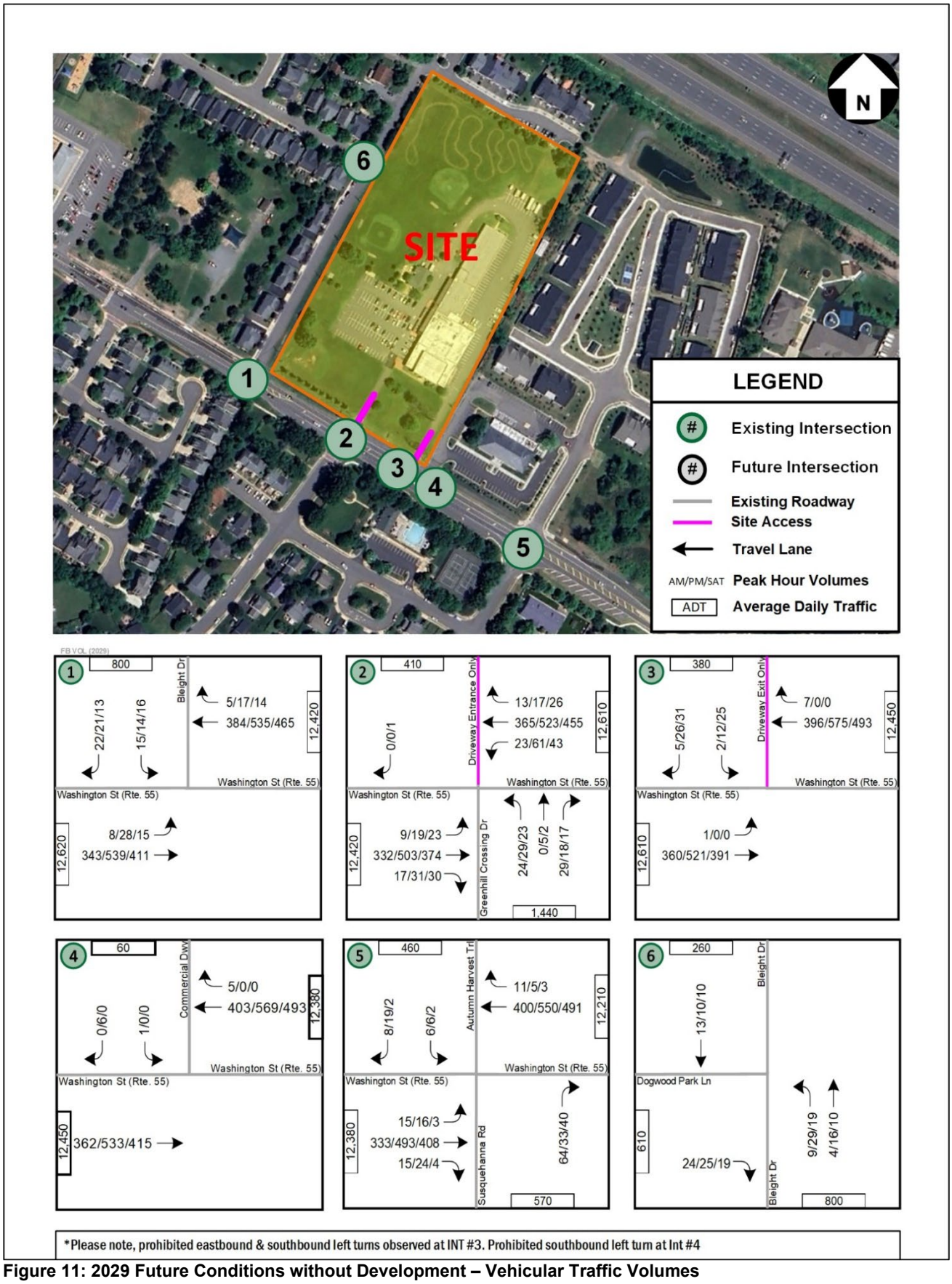


Figure 11: 2029 Future Conditions without Development – Vehicular Traffic Volumes

Future without Development Intersection Capacity and Queueing Analysis

Intersection capacity analyses were performed for the 2029 Future Conditions without Development scenario at the study area intersections during the AM, PM, and SAT peak hours. *Synchro,* version 11, was used to analyze the study intersections with results based on the HCM and analysis guidelines provided in VDOT's TOSAM. The analysis herein includes LOS, delay, and queue length comparisons for the turning movements analyzed.

The intersection PHF utilized in the analysis of future conditions was determined based on the existing traffic counts with a minimum of 0.92. The HV% were based on existing traffic count data.

The results of the intersection capacity analyses from *Synchro* are presented in Table 7 and graphically in Figure 12. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections and any approaches that operate at LOS F and LOS E are displayed in red.

The 95th percentile queues were also determined from *Synchro* and are expressed in feet. The lane groups where the queue lengths exceeded the available storage lengths of future turn lanes are displayed in red.

The detailed analysis worksheets of the 2029 Future Conditions without Development are contained in Appendix E.

Table 7: Future Conditions without Development (2029) – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	160	A	8.4	0	A	8.7	3	A	8.5	0
	Southbound Approach		***B***	***13.4***		***C***	***17.2***		***C***	***16.3***	
	Southbound Left/Right		B	13.4	8	C	17.2	10	C	16.3	8
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Driveway Entrance Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.1	0	A	8.5	3	A	8.6	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***13.4***		***C***	***23.1***		***C***	***17.7***	
	Northbound Left/Thru	175	C	16.9	8	D	29.2	18	C	22.4	10
	Northbound Right	175	B	10.5	3	B	11.5	3	B	10.7	3
3	**Washington St (Rte. 55) (E/W) & Driveway Exit Only (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left		A	8.2	0	--	--	--	--	--	--
	Southbound Approach		***B***	***11.1***		***B***	***12.5***		***B***	***12.4***	
	Southbound Left		B	13.7	0	C	17.4	3	C	15.4	5
	Southbound Right		B	10.0	0	B	10.3	3	B	10.0	3
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**										
	Southbound Approach		***A***	***0.0***		***B***	***12.1***		***A***	***0.0***	
	Southbound Right		A	0.0	0	B	12.1	0	A	0.0	0
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	230	A	8.2	0	A	8.7	3	A	8.4	0
	Northbound Approach		***B***	***10.9***		***B***	***11.8***		***B***	***11.2***	
	Northbound Right		B	10.9	8	B	11.8	5	B	11.2	5
	Southbound approach		***C***	***15.7***		***C***	***15.9***		***C***	***16.4***	
	Southbound Left/Right		C	15.7	3	C	15.9	5	C	16.4	0
6	**Dogwood Park Ln (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach		***A***	***8.5***		***A***	***8.5***		***A***	***8.4***	
	Eastbound Left/Right		A	8.5	3	A	8.5	3	A	8.4	3
	Northbound Approach										
	Northbound Left		A	7.3	0	A	7.3	3	A	7.3	0

NOTES:
[1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.
[2] Prohibited eastbound left turn observed at INT #3.
[3] Prohibited southbound left turns observed at INT #3.

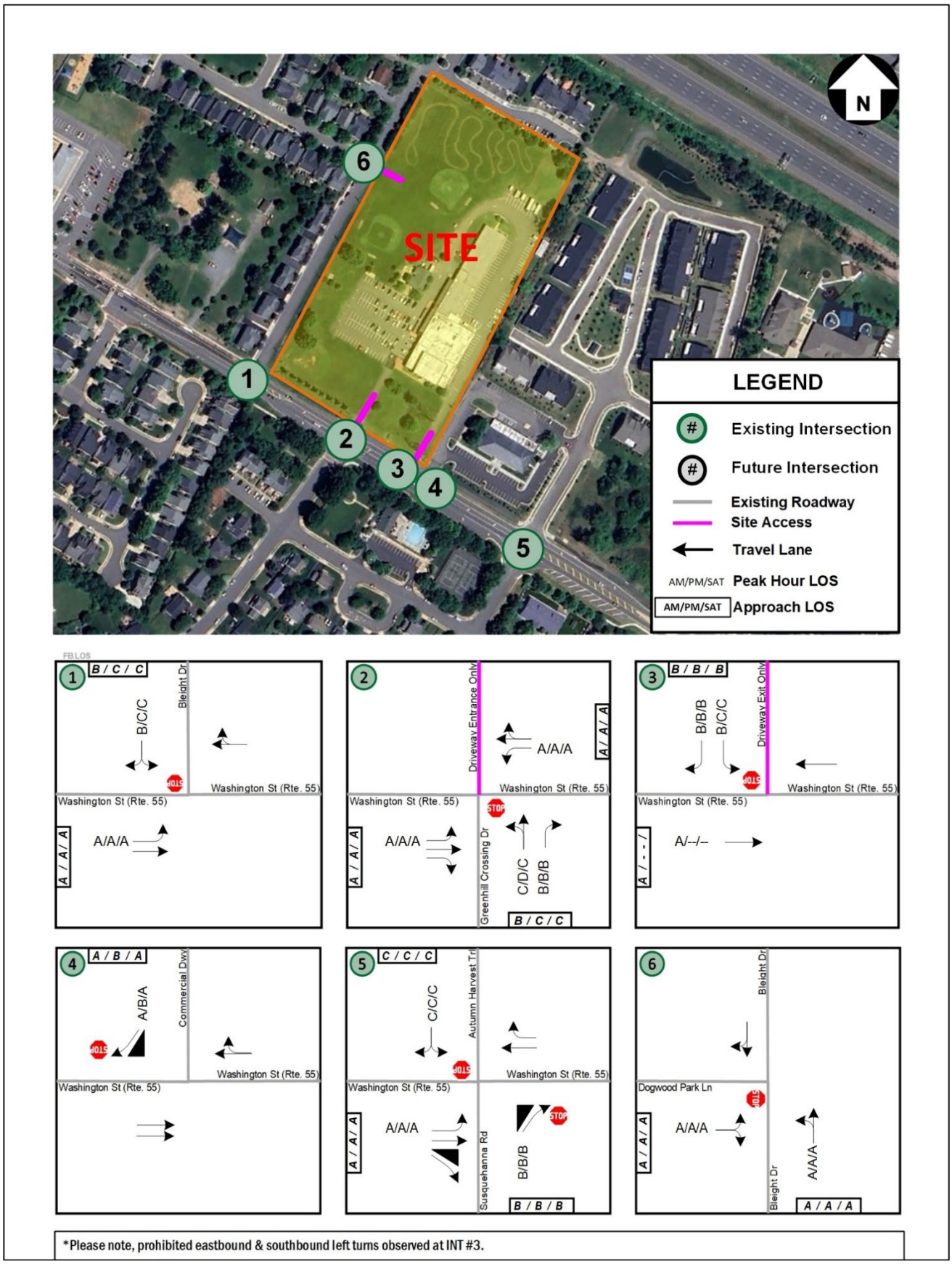


Figure 12: 2029 Future Conditions without Development – Level of Service Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

The results of the Future without Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Analysis of Future Conditions with Development (2029)

For the purposes of this study, the development is anticipated to be constructed by 2029.

Site Description

The site is located in the Town of Haymarket. The site is generally bounded by Alexandra's Keep Ln to the north, Washington St (Rte. 55) to the south, an existing residential community and office space to the east, and Bleight Dr to the west.

The planned development program for the site includes mix uses with approximately 22,218 SF of commercial/office land uses and about 58 single family attached (townhome) units. Please note, a portion of the site is currently occupied by existing commercial uses.

Proposed Site Access

The current plan for the development proposes one full access entrance (inbound and outbound) along Washington St at the existing entrance which is used as a one-way loop today. The existing exit only is planned to removed due to the proximity to the existing commercial driveway to the east. The removal of the access along Washington St is anticipated to increase the safety of the vehicles using the commercial entrance to the east. The development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln as illustrated in Figure 13. Please note that the plans shown in this report are subject to change.

Figure 13: Preliminary Site Layout Plan (For Illustrative Purposes Only; Subject to Change)

Projected Site Trip Generation

In order to calculate the trips generated by the proposed development, the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication was used to determine the total trips going into and out of the subject study site during the weekday morning (AM), weekday afternoon (PM) peak hours, typical weekday daily trips, and weekend (SAT) peak hour and daily trips. The projected trip generation for the proposed development is depicted in Table 8. The anticipated development program will consist of approximately 58 single-family attached dwelling units. Please note, 65 dwelling units were analyzed in the first TIA submission, the proposed development program has since reduced and is expected to result in less site generated trips.

Table 8: Site Trip Generation (Peak Hour of the Adjacent Street; ITE 11th Ed.)

Land Use	ITE Code	Size	Weekday							Weekend			
			AM Peak Hour			PM Peak Hour			Daily	Saturday Peak Hour			Sat Daily
			In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Proposed Use													
Single-Family Attached Housing (EQUATIONS)	215	58 DU	6	18	24	18	13	31	505	21	22	43	322
Total Proposed Trips without Reduction			**6**	**18**	**24**	**18**	**13**	**31**	**505**	**21**	**22**	**43**	**322**
Internal Capture Residential - Restaurant[1]		*15% PM/SAT/DAILY*	*0*	*0*	*0*	*-3*	*-2*	*-5*	*-76*	*-3*	*-3*	*-6*	*-48*
Total Proposed Trips with Reduction			**6**	**18**	**24**	**15**	**11**	**26**	**429**	**18**	**19**	**37**	**274**

The internal reduction is based on the VDOT Updated Administrative Guidelines for the Traffic Impact Analysis Regulations:
(1) residential / non-residential components - smaller of 15% of residential trips or 15% of non-residential trips

As illustrated in the table above, the proposed land use is expected to generate approximately 24 AM peak hour trips, 31 PM peak hour trips, 505 weekday trips, 43 Saturday peak hour trips and 322 Saturday daily trips. The total proposed trip generation with an assumed 15% internal capture reduction (residential to retail/restaurant) is expected to generate approximately 24 AM peak hour trips, 26 PM peak hour trips, 429 weekday trips, 37 Saturday peak hour trips and 274 Saturday daily trips.

Distribution and Assignment of Site Traffic

The distribution and assignment of the site generated trips were based on the existing traffic patterns, engineering judgement, the nature of the proposed development, and with the guidance and input from the VDOT and the Town staff. The site direction of approach for the peak hours trips is illustrated in Figure 14.

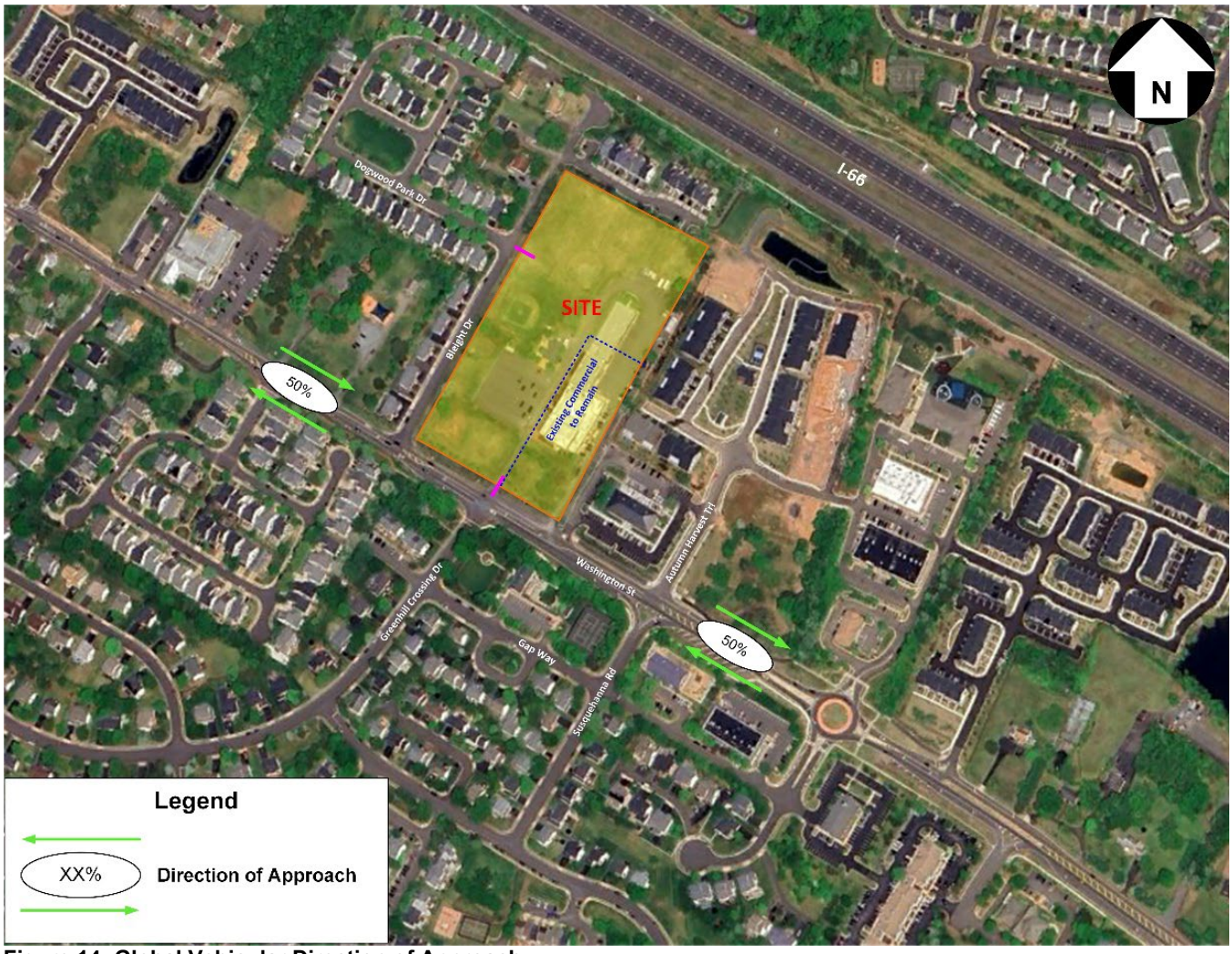


Figure 14: Global Vehicular Direction of Approach

Total Future with Development (2029) Lane Configuration

Intersection #2 (Washington St & Greenhill Crossing Dr/Future Site Access #1) which in existing conditions operates as a driveway entrance only, will be reconfigured to be a full access intersection and include a westbound right turn lane. Additionally, Intersection #3 (Washington St & Future Site Access #2) will be removed . Construction of a fourth leg at Intersection #6 (Bleight Dr & Dogwood Park Ln/Future Site Access #3), will serve as the third site access for the proposed development. The Future with Development (2029) Lane Configurations are illustrated in Figure 15.

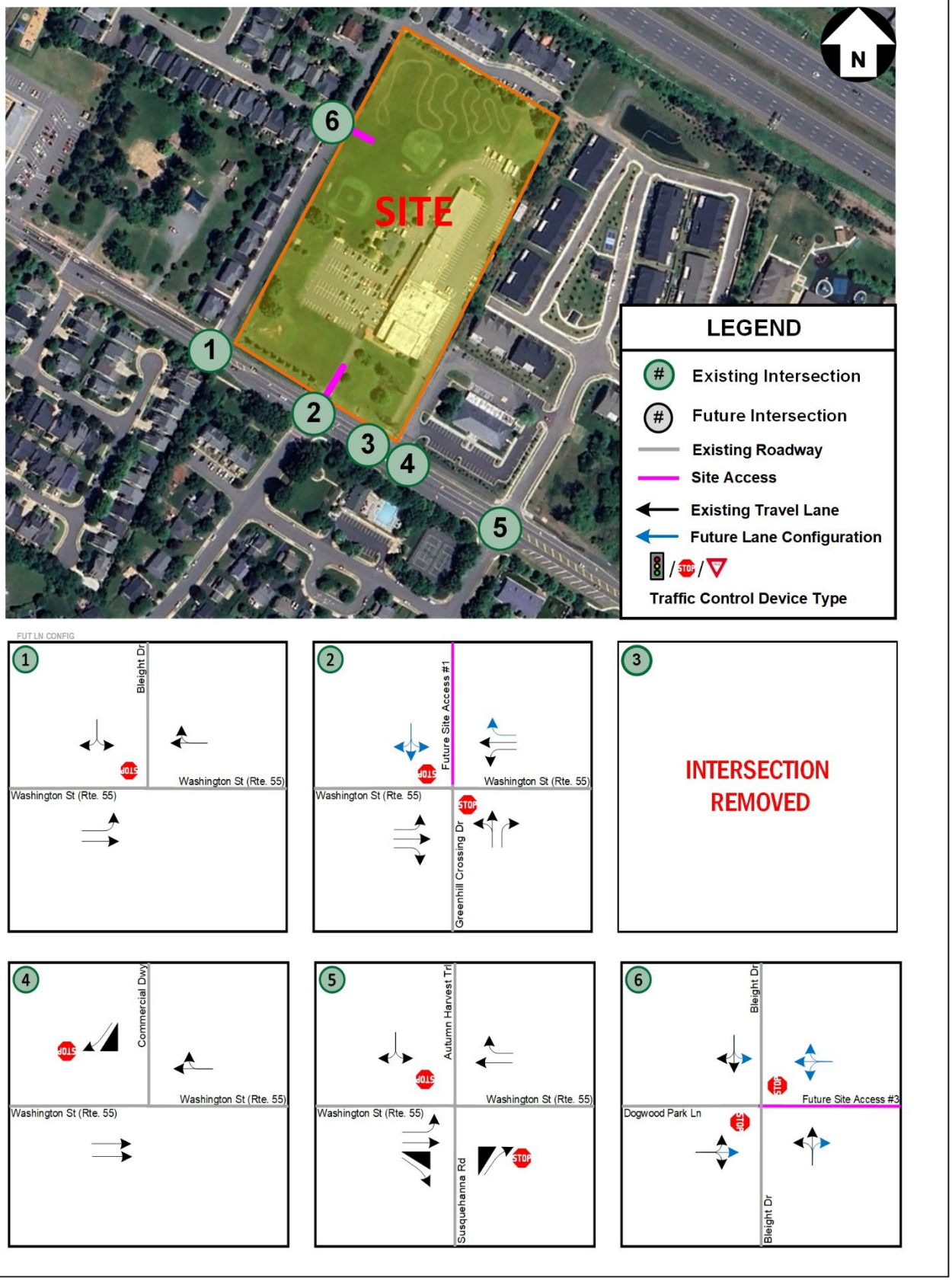


Figure 15: Future with Development 2028 (Roadway Network Geometric Configuration and Traffic Control Devices)

Analysis Scenario: Total Future with Development (2028)

Using the direction of approach, the nature of the proposed development with the associated trip generation, and the location of proposed site entrance per current plans for the development, the site generated trips were assigned to the road network as illustrated in Figure 16. The figure shows site trips assigned to the study area network for the analysis.

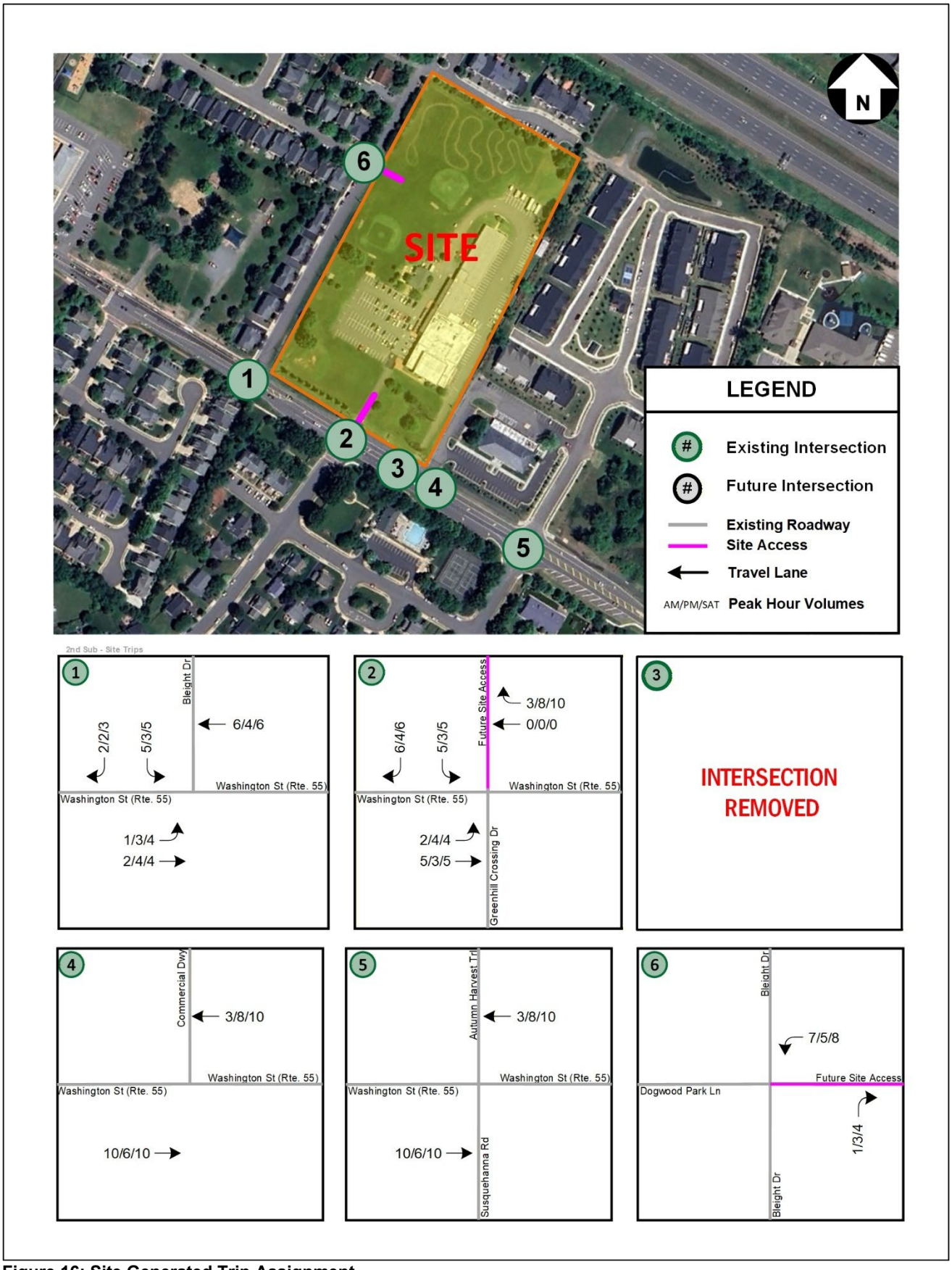


Figure 16: Site Generated Trip Assignment

Rerouted Existing Driveway Volumes

As mentioned previously, Intersection #2 (Washington St & Greenhill Crossing Dr/Future Site Access #1) which in existing conditions operates as a driveway entrance only, will be reconfigured to be a full access intersection. In order to account for the change in access, all of the existing outbound volumes at Intersection #3 were rerouted to the main entrance at Intersection #2. This assumption was made based on the existing surface parking lot located west of the existing site buildings and reconfiguration of the intersection to allow for outbound movements at Intersection 2. The rerouted existing volumes are shown in Figure 17 below.

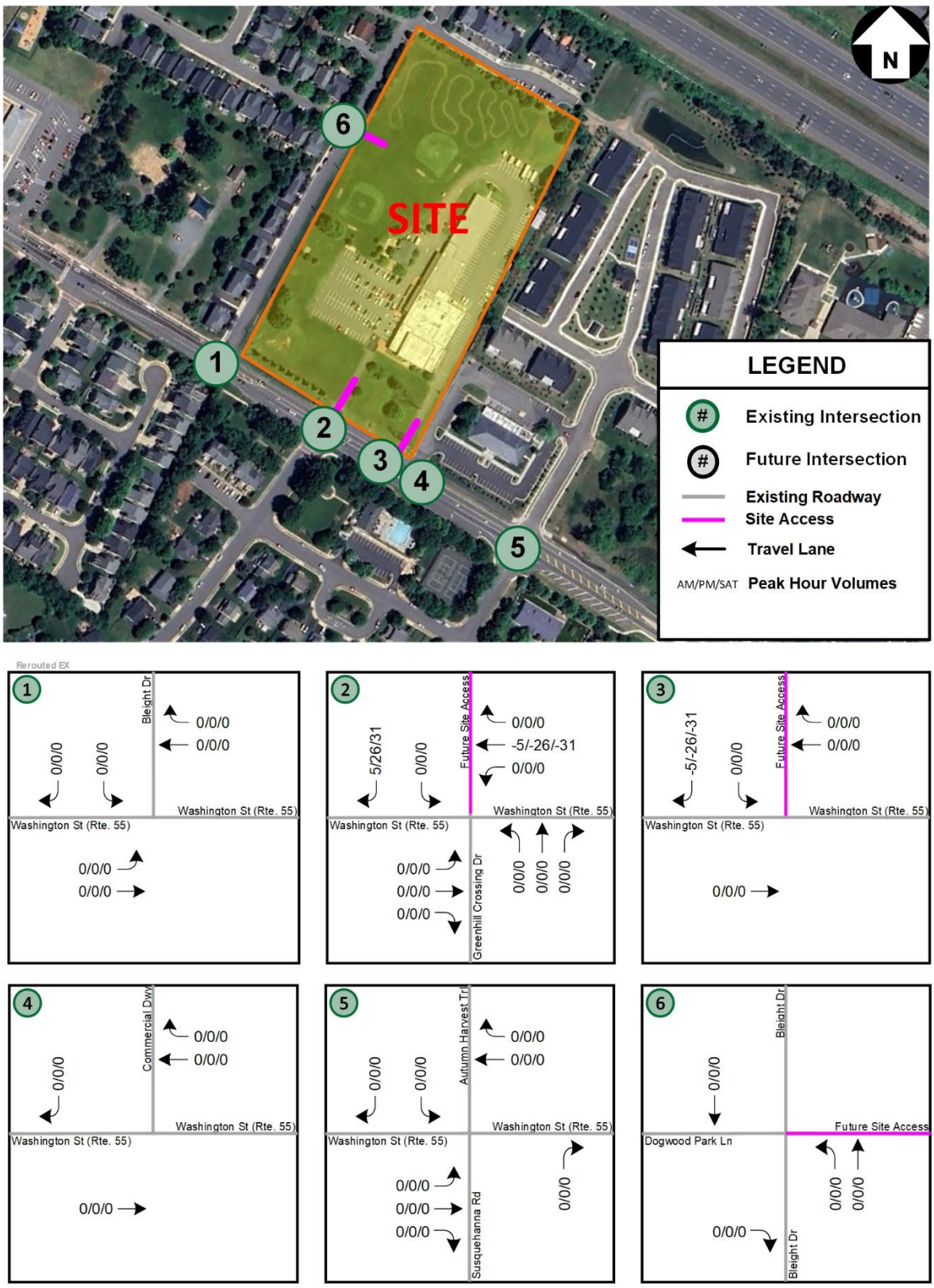


Figure 17: Rerouted Existing Driveway Volumes

Future with Development (2029) Traffic Volumes

The Future with Development (2029) traffic volumes were obtained by adding the site generated trips presented in Figure 16 to the Future without Development (2029) volumes presented previously in Figure 11 and the rerouted existing driveway volumes presented in Figure 17. The Future with Development (2029) vehicular traffic volumes are shown in Figure 18.

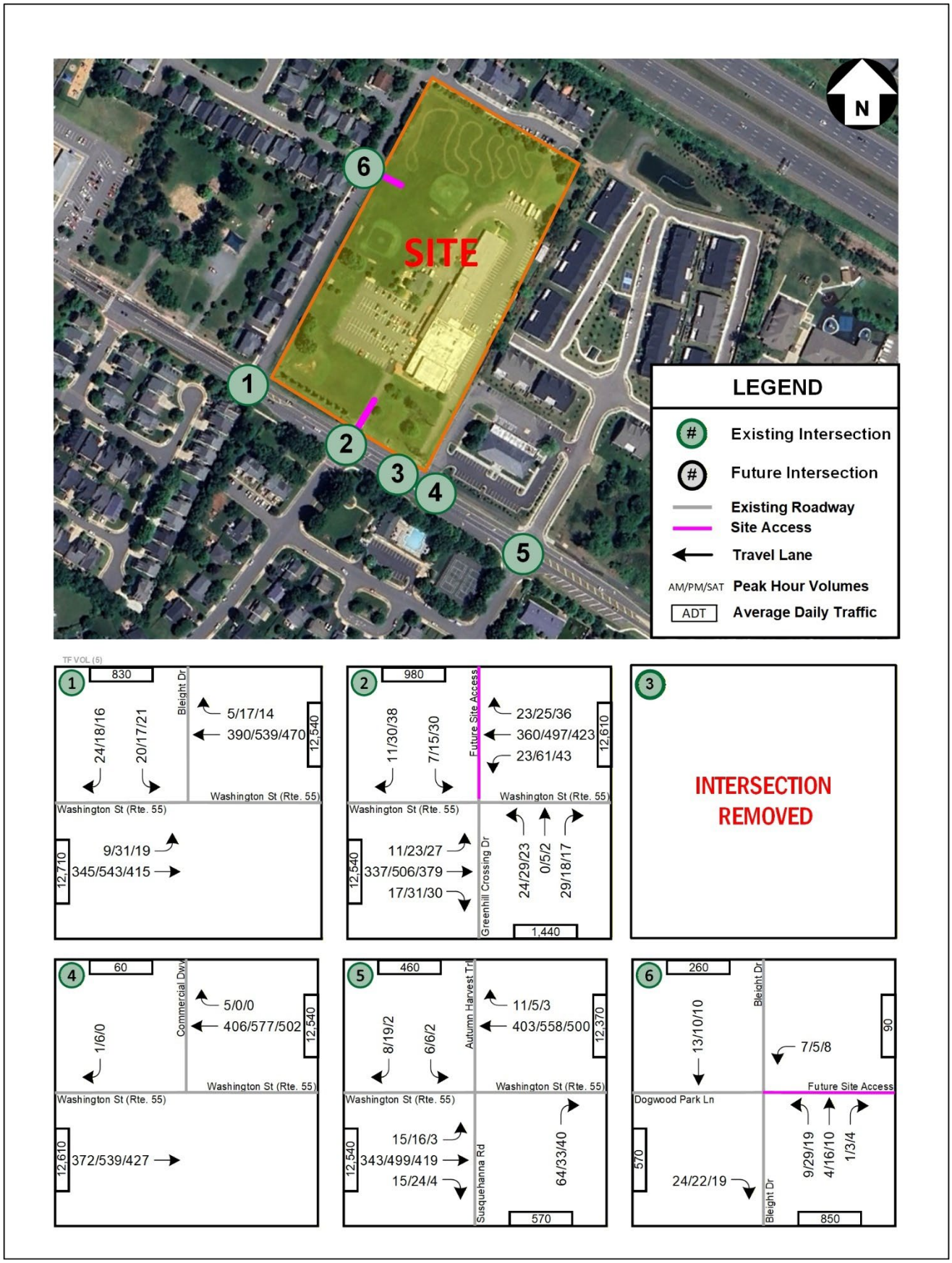


Figure 18: Total Future with Development (2029) Volumes

Future with Development (2029) Intersection Capacity and Queueing Analysis

Intersection capacity analyses were performed for the Future with Development 2029 scenario at the study area intersections during the AM and PM peak hours. *Synchro,* version 11, was used to analyze the study intersections with results based on the HCM and analysis guidelines provided in VDOT's TOSAM. The analysis herein includes LOS, delay, and queue length comparisons for the turning movements analyzed.

The intersection peak hour factor utilized in the analysis of future conditions was determined based on the existing traffic counts with a minimum of 0.92. The HV% were based on existing traffic count data.

Per the scoping meeting with VDOT and the Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS of D or better for traffic operations using the HCM methodology per request by the Town of Haymarket. The results of the intersection capacity analyses from *Synchro* are presented in Table 9 and graphically in Figure 19. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections.

The overall signalized intersections and any approaches that operate at LOS E and LOS F are displayed in red.

The 95th percentile queues were also determined from *Synchro* and are expressed in feet. The lane groups where the queue lengths exceeded the available storage lengths of future turn lanes are displayed in red.

The detailed analysis worksheets of the Future with Development (2029) are contained in Appendix F of this report.

Table 9: Future Conditions with Development (2029) – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	160	A	8.4	0	A	8.7	0	A	8.5	0
	Southbound Approach		***B***	***13.9***		***C***	***18.6***		***C***	***17.1***	
	Southbound Left/Right		B	13.9	8	C	18.6	8	C	17.1	8
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.2	0	A	8.5	3	A	8.5	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***14.7***		***D***	***29.1***		***C***	***21.3***	
	Northbound Left/Thru	175	C	19.7	8	E	38.3	23	D	28.5	13
	Northbound Right	175	B	10.6	3	B	11.6	3	B	10.8	3
	Southbound Approach		***B***	***14.3***		***C***	***20.3***		***C***	***21.0***	
	Southbound Left/Thru/Right		B	14.3	5	C	20.3	15	C	21.0	25
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access (N/S) (TWSC) MIT**										
	Eastbound Approach										
	Eastbound Left	145	A	8.2	0	A	8.5	3	A	8.5	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***14.7***		***D***	***29.1***		***C***	***21.3***	
	Northbound Left/Thru	175	C	19.7	8	E	38.3	23	D	28.5	13
	Northbound Right	175	B	10.6	3	B	11.6	3	B	10.8	3
	Southbound Approach		***B***	***14.2***		***C***	***20.0***		***B***	***20.4***	
	Southbound Left/Thru/Right		B	14.2	3	C	20.0	15	C	20.4	23
3	**Washington St (Rte. 55) (E/W) & Site Access RIRO (N/S) (TWSC)**		Intersection Planned to be Removed			Intersection Planned to be Removed			Intersection Planned to be Removed		
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**										
	Southbound Approach										
	Southbound Right		B	10.9	0	B	12.2	0	A	0.0	0
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	230	A	8.3	0	A	8.7	0	A	8.4	0
	Northbound Approach		***B***	***11.0***		***B***	***11.9***		***B***	***11.3***	
	Northbound Right		B	11.0	8	B	11.9	8	B	11.3	8
	Southbound approach		***C***	***15.9***		***C***	***16.1***		***C***	***16.7***	
	Southbound Left/Right		C	15.9	3	C	16.1	3	C	16.7	3
6	**Dogwood Park Ln (E/W) & Bleight Dr (N/S) (TWSC)**										
	Eastbound Approach		***A***	***8.5***		***A***	***8.4***		***A***	***8.4***	
	Eastbound Left/Right		A	8.5	3	A	8.4	3	A	8.4	3
	Westbound Approach		***A***	***8.9***		***A***	***9.3***		***A***	***9.1***	
	Westbound Left/Thru/Right		A	8.9	0	A	9.3	0	A	9.1	0
	Northbound Approach										
	Northbound Left/Thru/Right		A	7.3	0	A	7.3	3	A	7.3	0

NOTES:
[1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.

**Intersection #2 mitigation includes the addition of a westbound right turn lane.*

The proposed mitigation for the Future with Development (2029) scenario includes the addition of a westbound right turn lane at Intersection #2 and the closing of the existing exit only driveway.

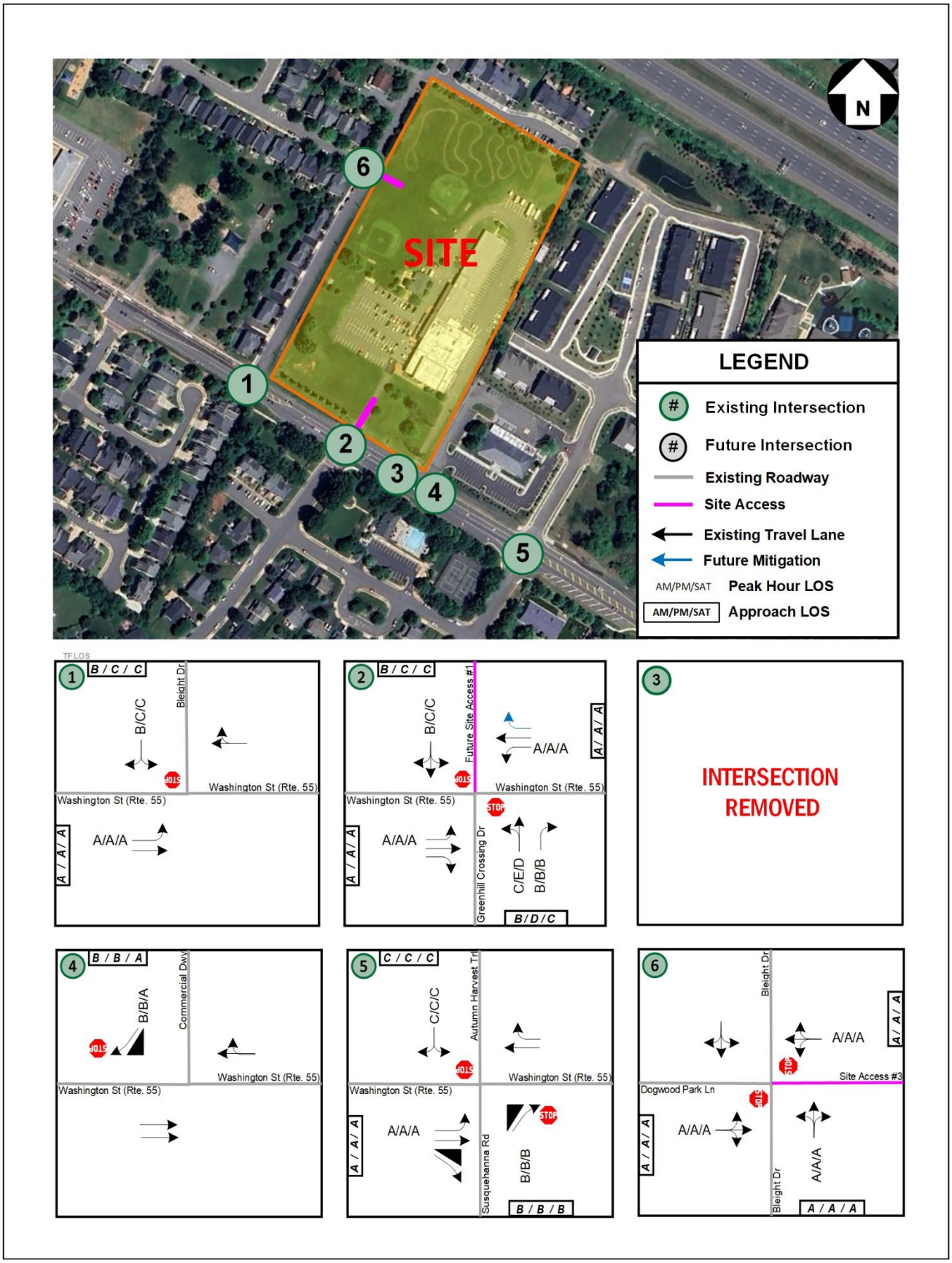


Figure 19: Total Future with Development (2029) – Level of Service Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

The results of the Future with Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Please note that while all study intersections and approaches operate at acceptable levels of service, the following lane group was observed to experience larger delay:

  - Intersection #2 Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 –
    - Northbound shared left/thru lane operates at LOS D (26.1 s) in the existing PM peak hour & LOS E (38.3 s) in the future with development PM peak hour.
    - The 95th percentile queue for the northbound shared left/thru lane is approximately 23 ft (less than one car). Therefore, the queues do not extend to the downstream driveways that serve the residential community.

- The reconfigurations and mitigations for this analysis scenario are as follows:
  - The existing primary driveway entrance (Access #1) will be reconfigured to a full-access driveway (inbound & outbound).
  - The existing exit only driveway (Access #2) is planned to be closed to address the existing safety issues due to the proximity to the driveway to the east.
  - The addition of a westbound right turn lane at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access) is a proposed mitigation. Please note only a right turn taper is warranted using VDOT Road Design Manual (RDM) Turn Lane Assessment.

The detailed analysis worksheets of the Future Conditions with Development (2029) Mitigated are contained in Appendix G.

An additional section discussing the alternative route options for the vehicles making the northbound left turn at Intersection has been included below.

Alternative Routes Analysis

As noted above, the northbound approach at Intersection #2 operates at an acceptable LOS; however the northbound left movement increase to LOS E. Therefore analysis was included to show that alternative routes are available with additional capacity if those vehicles chose to use alternative routes. For the purposes of this analysis, engineering judgment was used to evaluate an alternative route where a proportion of the northbound left turn volumes (45%) were rerouted to make a northbound right turn at Intersection #2 during the weekday peak hours only (AM & PM). These volumes were rerouted to the downstream roundabout intersection of Washington St (RTE. 55) & Gillis Way/Piedmont Center Plaza.

The volumes for this alternative are shown in Figure 20 below.

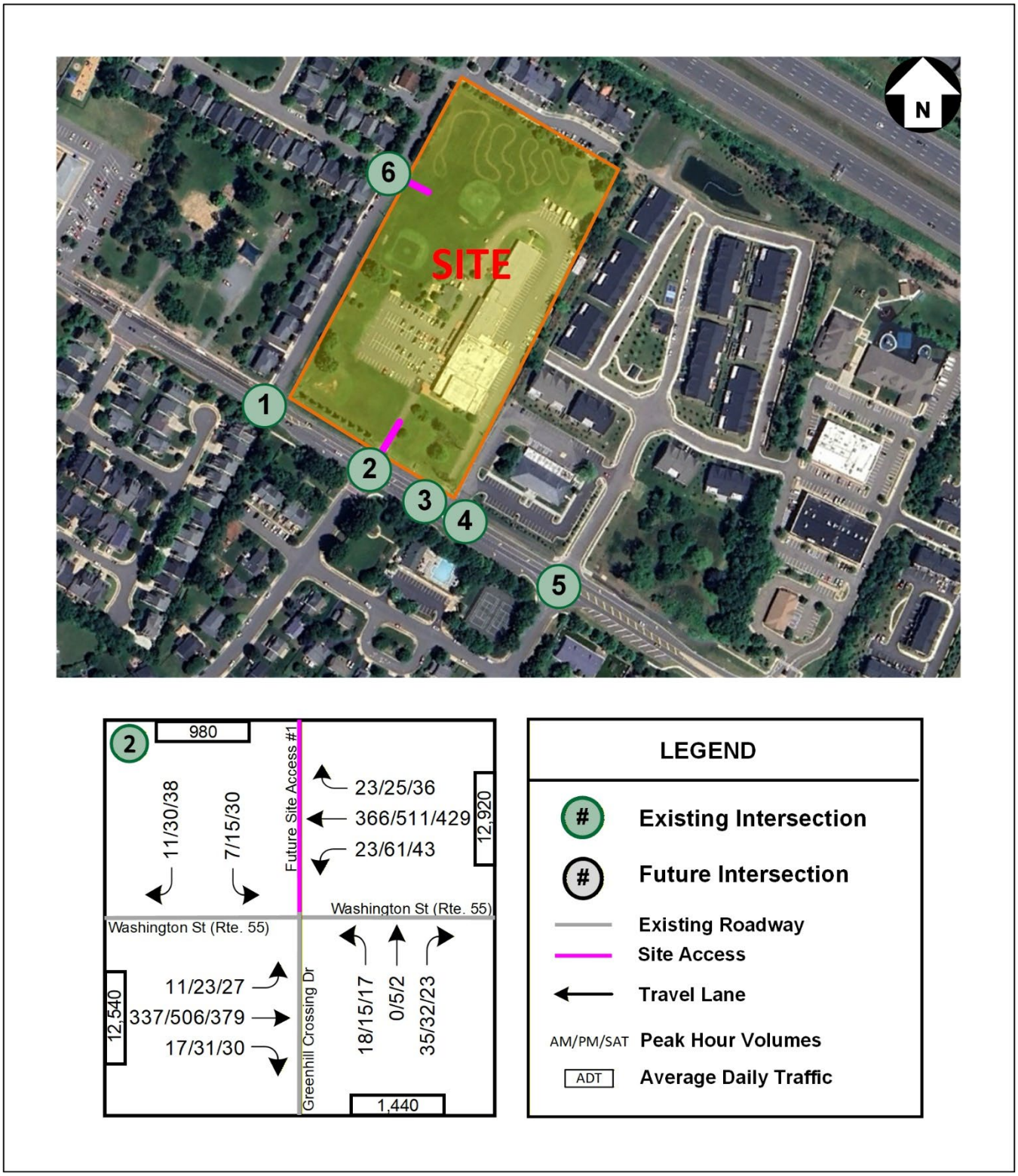


Figure 20: Total Future with Development (2029) Alternative Volumes

Per the scoping meeting with VDOT and the Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS of D or better for traffic operations using the HCM methodology per request by the Town of Haymarket. The results of the intersection capacity analyses from *Synchro* are presented in Table 10 and graphically in Figure 21. The results

are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections.

Table 10: Total Future with Development (2029) Alternative – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
			Synchro			Synchro			Synchro		
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access (N/S) (TWSC)**										
	Eastbound Approach										
	Eastbound Left	145	A	8.2	0	A	8.5	3	A	8.5	3
	Westbound Approach										
	Westbound Left		A	8.2	3	A	8.7	5	A	8.3	3
	Northbound Approach		***B***	***13.6***		***C***	***20.5***		***C***	***18.4***	
	Northbound Left/Thru	175	C	19.5	5	D	34.5	13	D	27.6	10
	Northbound Right	175	B	10.6	5	B	11.7	5	B	10.8	3
	Southbound Approach		***B***	***14.3***		***C***	***20.7***		***C***	***20.8***	
	Southbound Left/Thru/Right		B	14.3	5	C	20.7	15	C	20.8	23

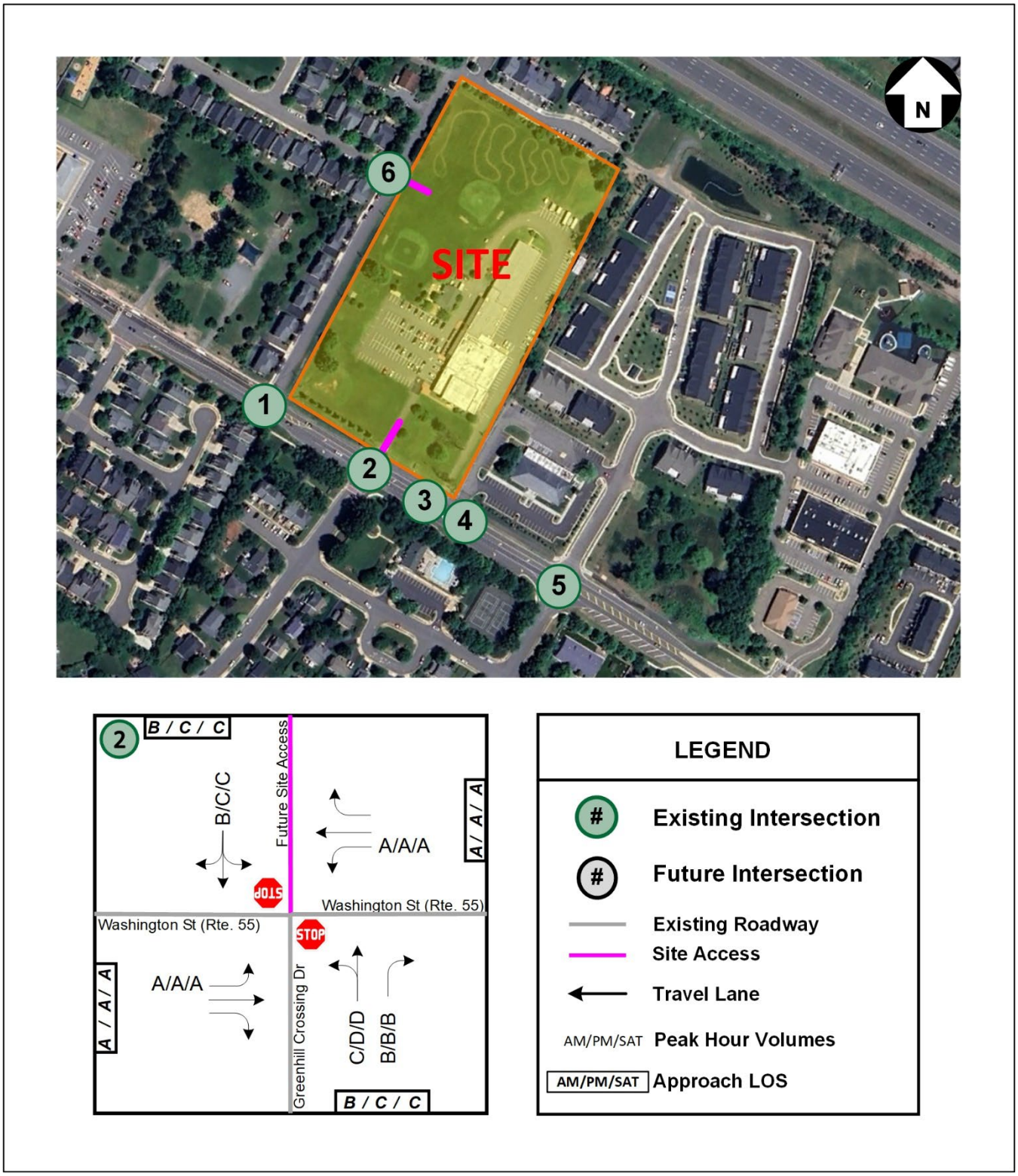


Figure 21: Total Future with Development (2029) Alternative – Level of Service

Sidra (HCM methodology) was used to analysis the existing roundabout intersection of Washington St (RTE. 55) & Gillis Way/Piedmont Center Plaza. The results of the analysis are shown in Table 11 below.

Table 11: Roundabout Analysis at Washington St (RTE. 55) & Gillis Way/Piedmont Center Plaza

No.	Intersection (Movement)	AM Peak Hour			PM Peak Hour			SAT Peak Hour		
		LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue (ft.)
		Synchro			Synchro			Synchro		
1	Gillis Way/Piedmont Center Plaza (N/S) & Washington St (Rte. 55) (E/W) (TWSC) **(Overall)**	**A**	**6.9**		**A**	**9.0**		**A**	**6.6**	
	Eastbound Approach	***A***	***7.4***	***72***	***A***	***9.1***	***100***	***A***	***6.5***	***69***
	Westbound Approach	***A***	***6.7***	***65***	***A***	***9.5***	***108***	***A***	***6.7***	***84***
	Northbound Approach	***A***	***5.7***	***12***	***A***	***7.8***	***22***	***A***	***5.0***	***2***
	Southbound Approach	***A***	***5.7***	***9***	***A***	***7.4***	***18***	***A***	***5.5***	***5***

[1] Effective storage length is based on the storage length plus one-half of the taper length per TOSAM guidelines.

The results of the roundabout analysis show that the intersection operates at acceptable levels of service and does not experience extensive queues even with additional volumes. Therefore, it would be reasonable for drivers to reroute themselves using the roundabout to travel westbound on Washington St (Rte. 55) if they did not want to wait for a gap.

The detailed analysis worksheets of the Future Conditions with Development (2029) Alternative are contained in Appendix H.

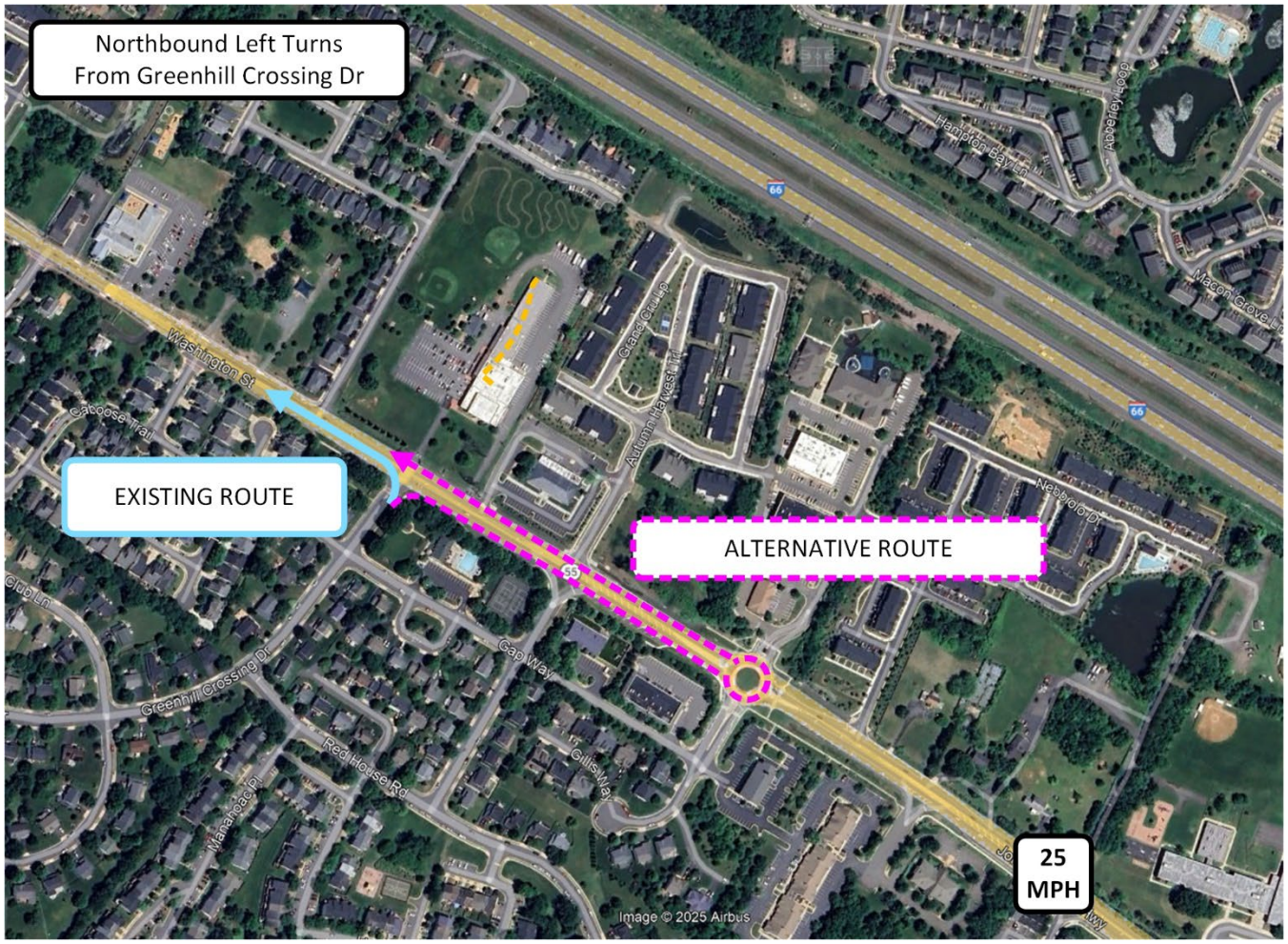


Figure 22: Assumed Reroute Time and Distance

Overall Comparison of Analysis Scenarios

A level of service and delay comparison for all scenarios is presented in Table 12 and queue length comparison is presented in Table 13.

Table 12: Intersection Level of Service and Delay Comparison

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)														
		AM Peak Hour					PM Peak Hour					SAT Peak Hour				
		2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**															
	Eastbound Approach															
	Eastbound Left	A (8.4)	A (8.4)	A (8.4)			A (8.6)	A (8.7)	A (8.7)			A (8.4)	A (8.5)	A (8.5)		
	Southbound Approach	*B (13.3)*	*B (13.4)*	*B (13.9)*			*C (15.8)*	*C (17.2)*	*C (18.6)*			*C (15.5)*	*C (16.3)*	*C (17.1)*		
	Southbound Left/Right	B (13.3)	B (13.4)	B (13.9)			C (15.8)	C (17.2)	C (18.6)			C (15.5)	C (16.3)	C (17.1)		
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access #1 (N/S) (TWSC) *MITIGATED**															
	Eastbound Approach															
	Eastbound Left	A (8.1)	A (8.1)	A (8.2)	A (8.2)	A (8.2)	A (8.4)	A (8.5)	A (8.5)	A (8.5)	A (8.5)	A (8.5)	A (8.6)	A (8.5)	A (8.5)	A (8.5)
	Westbound Approach															
	Westbound Left	A (8.2)	A (8.2)	A (8.2)	A (8.2)	A (8.2)	A (8.6)	A (8.7)	A (8.7)	A (8.7)	A (8.7)	A (8.2)	A (8.3)	A (8.3)	A (8.3)	A (8.3)
	Northbound Approach	*B (13.4)*	*B (13.4)*	*B (14.7)*	*B (14.7)*	*B (13.6)*	*C (20.9)*	*C (23.1)*	*D (29.1)*	*D (29.1)*	*C (20.5)*	*C (16.5)*	*C (17.7)*	*C (21.3)*	*C (21.3)*	*C (18.4)*
	Northbound Left/Thru	C (17)	C (16.9)	C (19.7)	C (19.7)	C (19.5)	D (26.1)	D (29.2)	E (38.3)	E (38.3)	D (34.5)	C (20.6)	C (22.4)	D (28.5)	D (28.5)	D (27.6)
	Northbound Right	B (10.5)	B (10.5)	B (10.6)	B (10.6)	B (10.6)	B (11.2)	B (11.5)	B (11.6)	B (11.6)	B (11.7)	B (10.5)	B (10.7)	B (10.8)	B (10.8)	B (10.8)
	Southbound Approach	*-- (--)*	*-- (--)*	*B (14.3)*	*B (14.2)*	*C (14.3)*	*-- (--)*	*-- (--)*	*C (20.3)*	*C (20.0)*	*C (20.7)*	*-- (--)*	*-- (--)*	*C (21.0)*	*C (20.4)*	*C (20.8)*
	Southbound Left/Thru/Right	-- (--)	-- (--)	B (14.3)	B (14.2)	C (14.3)	-- (--)	-- (--)	C (20.3)	C (20)	C (20.7)	-- (--)	-- (--)	C (21.0)	B (20.4)	C (20.8)
3	**Washington St (Rte. 55) (E/W) & Site Access #2 (N/S) (TWSC)**(To Remove)**															
	Eastbound Approach															
	Eastbound Left	A (8.2)	A (8.2)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
	Southbound Approach	*B (11.1)*	*B (11.1)*	*-- (--)*	*-- (--)*	*-- (--)*	*B (12.1)*	*B (12.5)*	*-- (--)*	*-- (--)*	*-- (--)*	*B (12)*	*B (12.4)*	*-- (--)*	*-- (--)*	*-- (--)*
	Southbound Left	B (13.7)	B (13.7)	-- (--)	-- (--)	-- (--)	C (16.3)	C (17.4)	-- (--)	-- (--)	-- (--)	B (14.5)	C (15.4)	-- (--)	-- (--)	-- (--)
	Southbound Right	B (10)	B (10)	-- (--)	-- (--)	-- (--)	B (10.1)	B (10.3)	-- (--)	-- (--)	-- (--)	A (9.9)	B (10)	-- (--)	-- (--)	-- (--)
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**															
	Southbound Approach	*A (0)*	*A (0)*	*B (10.9)*			*B (11.7)*	*B (12.1)*	*B (12.2)*			*A (0)*	*A (0)*	*A (0)*		
	Southbound Left/Right	A (0)	A (0)	B (10.9)			B (11.7)	B (12.1)	A (12.2)			A (0)	A (0)	A (0)		
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**															
	Eastbound Approach															
	Eastbound Left	A (8.3)	A (8.2)	A (8.3)			A (8.6)	A (8.7)	A (8.7)			A (8.3)	A (8.4)	A (8.4)		
	Northbound Approach	*B (10.9)*	*B (10.9)*	*B (11)*			*B (11.4)*	*B (11.8)*	*B (11.9)*			*B (10.9)*	*B (11.2)*	*B (11.3)*		
	Northbound Right	B (10.9)	B (10.9)	B (11)			B (11.4)	B (11.8)	B (11.9)			B (10.9)	B (11.2)	B (11.3)		
	Southbound approach	*C (15.8)*	*C (15.7)*	*C (15.9)*			*B (14.8)*	*C (15.9)*	*C (16.1)*			*C (15.3)*	*C (16.4)*	*C (16.7)*		
	Southbound Right	C (15.8)	C (15.7)	C (15.9)			B (14.8)	C (15.9)	C (16.1)			C (15.3)	C (16.4)	C (16.7)		
6	**Dogwood Park Ln/Site Access #3 (E/W) & Bleight Dr (N/S) (TWSC)**															
	Eastbound Approach															
	Eastbound Left/Right	A (8.5)	A (8.5)	A (8.5)			A (8.5)	A (8.5)	A (8.4)			A (8.4)	A (8.4)	A (8.4)		
	Westbound Approach	*-- (--)*	*-- (--)*	*A (8.9)*			*-- (--)*	*-- (--)*	*A (9.3)*			*-- (--)*	*-- (--)*	*A (9.1)*		
	Westbound Left/Thru/Right	-- (--)	-- (--)	A (8.9)			-- (--)	-- (--)	A (9.3)			-- (--)	-- (--)	A (9.1)		
	Northbound Approach															
	Northbound Left/Thru/Right	A (7.3)	A (7.3)	A (7.3)			A (7.3)	A (7.3)	A (7.3)			A (7.3)	A (7.3)	A (7.3)		

**Intersection #2 mitigation includes the addition of a westbound right turn lane.*
***Intersection #3 to be removed in future scenarios*

Table 13: Intersection Queue Length Comparison

No.	Intersection (Movement)	95th Percentile Queues (ft.)															
			AM Peak Hour					PM Peak Hour					SAT Peak Hour				
		Effective Storage Length (ft.)	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT	2025 EX	2029 FB	2029 TF	2029 TF MIT	2029 TF ALT
1	**Washington St (Rte. 55) (E/W) & Bleight Dr (N/S) (TWSC)**																
	Eastbound Approach																
	Eastbound Left	160	0	0	0			3	3	0			0	3	0		
	Southbound Approach																
	Southbound Left/Right		8	8	8			8	10	8			8	8	8		
2	**Washington St (Rte. 55) (E/W) & Greenhill Crossing Dr/Site Access #1 (N/S) (TWSC) *MITIGATED**																
	Eastbound Approach																
	Eastbound Left	145	0	0	0	0	0	3	3	3	3	3	3	3	3	3	3
	Westbound Approach																
	Westbound Left	195	3	3	3	3	3	5	5	5	5	5	3	3	3	3	3
	Northbound Approach																
	Northbound Left/Thru	175	8	8	8	8	5	15	18	23	23	13	10	10	13	13	10
	Northbound Right	175	5	3	3	3	5	3	3	3	3	5	3	3	3	3	3
	Southbound Approach																
	Southbound Left/Thru/Right		--	--	5	3	5	--	--	15	13	15	--	--	25	23	23
3	**Washington St (Rte. 55) (E/W) & Site Access #2 (N/S) (TWSC)**(To Remove)**																
	Eastbound Approach																
	Eastbound Left		0	--	--	--	--	0	--	--	--	--	0	--	--	--	--
	Southbound Approach																
	Southbound Left		0	0	0	--	--	3	3	--	--	--	5	5	--	--	--
	Southbound Right		0	0	0	--	--	3	3	--	--	--	3	3	--	--	--
4	**Washington St (Rte. 55) (E/W) & Commercial RIRO (N/S) (TWSC)**																
	Southbound Approach																
	Southbound Left/Right		0	0	0			0	0	0			0	0	0		
5	**Washington St (Rte. 55) (E/W) & Susquehanna Rd/Autumn Harvest Trl (N/S) (TWSC)**																
	Eastbound Approach																
	Eastbound Left	230	0	0	0			0	3	0			0	0	0		
	Northbound Approach																
	Northbound Right		10	8	8			5	5	8			5	5	8		
	Southbound approach																
	Southbound Right		3	3	3			5	5	3			0	0	3		
6	**Dogwood Park Ln/Site Access #3 (E/W) & Bleight Dr (N/S) (TWSC)**																
	Eastbound Approach																
	Eastbound Left/Right		3	3	3			3	3	3			3	3	3		
	Westbound Approach																
	Westbound Left/Thru/Right		--	--	0			--	--	0			--	--	0		
	Northbound Approach																
	Northbound Left/Thru/Right		0	0	0			3	3	3			0	0	0		

**Intersection #2 mitigation includes the addition of a westbound right turn lane.*
***Intersection #3 to be removed in future scenarios*

The results of all the analysis scenarios show the proposed development is not anticipated to have a detrimental effect on the surrounding transportation network as all intersections and all approaches continue to operate at acceptable LOS. It should be noted however that the northbound left movement at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1) operates at LOS E in the PM peak hour.

Please note the lane delay increases by less than 10 s, whereas the approach delay increases by only 6 s. Per VDOT standards, an acceptable Level of Service for an intersection is LOS D. Intersection #2 operates at LOS D in the PM peak hour and therefore would satisfy VDOT typical analysis standards.

This intersection was mitigated through the conversion of the existing driveway inbound only entrance to a full access (inbound & outbound) and the addition of a westbound right turn lane. As discussed in the alternative scenario, a portion of the northbound left turns were rerouted to the existing downstream roundabout (east). The evaluation of the total future with development conditions with the proposed mitigations and alternative scenario show that the development will not have a significant impact on transportation network.

Turn Lane Warrant Assessments

Left and right turn lane warrants are based off VDOT's Road Desing Manual (RDM), Appendix F. In order to determine the need for exclusive left or right turn lanes at the site entrance along Washington St (Rte. 55) and the site entrance along Bleight Dr, the traffic data and anticipated development program provided in the 2029 Future with Development scenario section were utilized to provide a conservative analysis.

Right Turn Lane Assessments

Warrants for right-turn storage lanes on two- and four-lane highways at intersections are based on Figure 3-26 and Figure 3-27 in Appendix F of VDOT's RDM. These figures provide a graphical representation for determining the necessity of a right turn lane by comparing the total volumes of a given approach with their respective right turn volumes.

The results of the northbound right (Bleight Dr) and westbound right (Washington St) turn lane warrant analysis are presented on Table 14 and Figure 23.

Table 14: Right Turn Lane Warrant Assessments at Site Entrances (VDOT RDM-F Fig. 3-27)

Study Scenario	Approach Volume	Right Turn Volume	Minimum Right Turn Taper Threshold	Minimum Right Turn Full Lane Threshold	Treatment
Intersection 2 WBR AM Peak Hour	406	23	29	65	**Not Warranted**
Intersection 2 WBR PM Peak Hour	583	25	20	42	**Taper Required**
Intersection 2 WBR SAT Peak Hour	502	36	20	53	**Taper Required**
Intersection 6 NBR AM Peak Hour	14	1	69	116	**Not Warranted**
Intersection 6 NBR PM Peak Hour	48	3	65	112	**Not Warranted**
Intersection 6 NBR SAT Peak Hour	33	4	67	114	**Not Warranted**

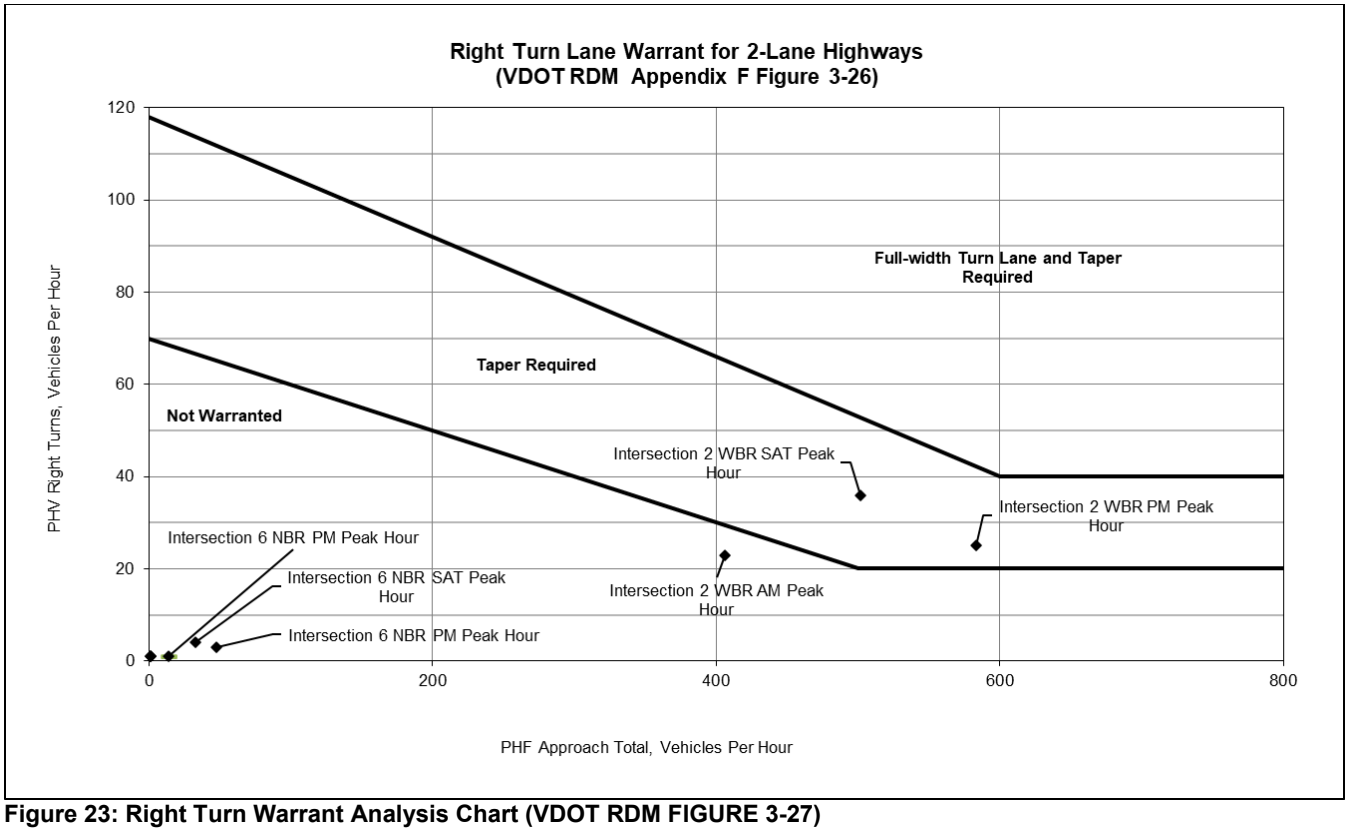


Figure 23: Right Turn Warrant Analysis Chart (VDOT RDM FIGURE 3-27)

As shown above, a westbound right taper is warranted for the site entrance at Intersection #2 (Washington St & Site Access #1) per VDOT RDM based on the Total Future with Development (2029) volumes, design speed (30 mph), and number of right turns. VDOT's RDM requires a 100' (single lane) taper for roadways with a design speed of 30 mph or less.

Intersection 2 – Greenhill Crossing Dr/Site Access #1 (N/S) & Washington St (Rte. 55) (E/W)

i. Westbound Right – Design Speed (30 mph)

100 feet taper length is required (RDM);

Left Turn Lane Assessment

Warrants for left-turn storage lanes on two-lane highways at unsignalized intersections are based on Figure 3-4 to Figure 3-21 in Appendix F of the Virginia Department of Transportation's (VDOT) Road Design Manual (RDM). Please note there is an existing left-turn lane at Intersection #2 (Washington St & Site Access) and a left-turn lane is not feasible nor needed at other proposed site access location.

Access Management Assessment (Intersection Spacing with Adjacent Intersections)

The minimum spacing standards for the Commonwealth of Virginia are specified in VDOT's Road Design Manual (RDM). Appendix F of the RDM focuses primarily on access management practices. The minimum spacing standards are particularly specified in Table 2-2 through Table 2-4. Table 2-2 provides guidance on the minimum spacing standard for commercial entrances, intersections, and median crossovers, and are based on a roadway's speed limit and functional classification. Table 2-3 and 2-4 provide guidance for minimum spacing standards for the spacing between interchanges and intersections or commercial entrances.

Washington St (Rte. 55) in the vicinity of the study area is classified as a "Major Collector" with a speed limit of 25 mph per VDOT Speed Limits Map. This section evaluates the minimum spacing requirements at the proposed site entrances. The applicable intersection spacing requirements (centerline-to-centerline) per RDM Appendix F Table 2-2 are illustrated in Figure 24 below.

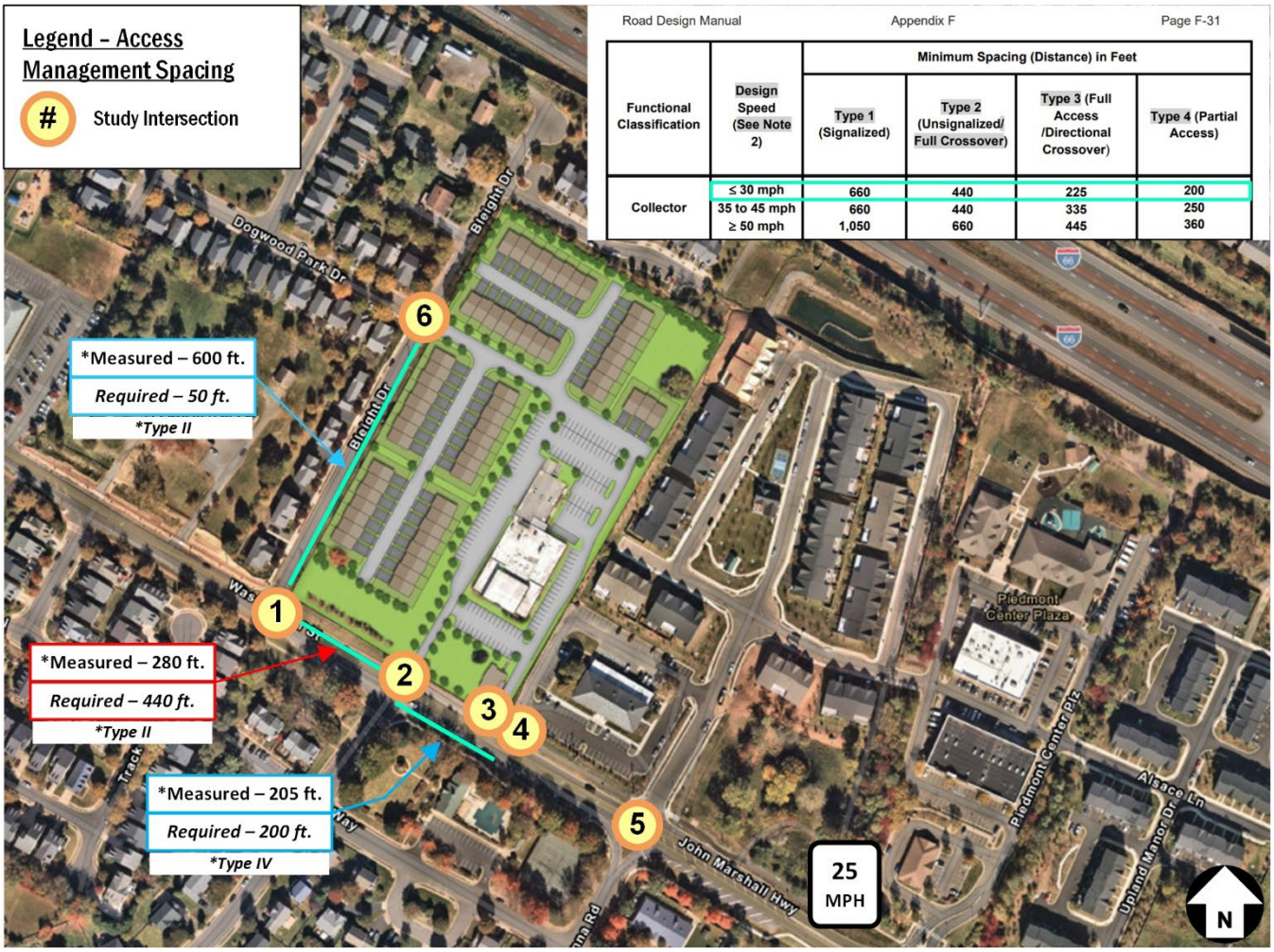


Figure 24: Proposed Intersection Spacing Evaluations

The following intersections would not meet VDOT intersection spacing requirements based on the current design:

- Washington St (Rte. 55)/Bleight Dr & Site Access #1 (Type II Intersection – Full Access)
    - Required spacing – 440 feet; Approximate measured spacing between intersections – 280 feet;
    - This is an existing intersection and is consistent with the character of historically rural towns like Haymarket.
    - Washington St (Rte. 55) & Existing Exit Only Driveway – The existing intersection is planned to be removed due to the proximity to the commercial driveway to the east. The existing spacing between the intersections does not meet VDOT access management standards and presents an unsafe maneuver for the trips coming in to the development and the trips coming out of the commercial driveway.

Please note the locations of Site Access #1 already exists and is not proposed to shift locations.

Conclusion

The analysis presented in this report supports the following assumptions and findings:

Analysis Components

- Existing counts, dated Tuesday June 3, 2025, were collected while most schools were in session to reflect typical traffic patterns, and serve as the basis for this study. Existing traffic counts were conducted at the existing intersections on Saturday June,14, 2025.
- As determined based on discussions at the scoping meeting, an inherent growth rate of 2% (compounded annually) for the period 2025-2029 has been applied to all through movements along Washington St at all intersections.
- The site is anticipated to generate approximately 24 total trips during the AM peak hour, 26 total trips during the PM peak hour, 429 total daily trips on a typical weekday, 37 total trips during the Saturday peak hour, and 274 Saturday daily trips.
- One (1) identified background development was included in the study – 6700 Bleight Drive – Which will consist of approximately 11 single family attached units
- The scenarios to be included in this study are Existing Conditions (2025), Future without Development (2029), Future with Development (2029)
- The existing access to the site is served via two (2) intersections, one entrance and one egress. The development proposes to convert the existing entrance only driveway to a full access (inbound and outbound) driveway. The development also proposes to remove the existing exit only driveway as the primary bidirectional entrance would reduce driver confusion and better meet driver expectation. The proposed development is also planning to construct a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln.

Infrastructure

- There is one (1) identified infrastructure change with this proposed development. Construction of a fourth leg to the intersection of Bleight Dr & Dogwood Park Ln, will serve as another site access for the proposed development. No additional infrastructure changes were identified and agreed upon in the scope.

Analysis Results

Analysis Terms:

- Level of Service (LOS) is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay (in seconds) associated with each directional movement. This evaluation is consistent in all traffic analysis scenarios. Please refer to definitions of Level of Service in Appendix J.
- The 95th percentile queue length refers to the queue length within which 95% of all observed queues are contained during a specific analysis period. This evaluation is consistent in all traffic analysis scenarios.

Existing Conditions (2025):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage lane lengths for all the study intersections.

Total Future without Development (2029):

- All approaches and the overall intersections operate at an acceptable level of service.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.

Total Future with Development (2029):

The results of the Future with Development Conditions (2029) analysis scenario are as follows:

- All the approaches and the overall intersection operate at acceptable levels of service for all of the study intersections.
- All the anticipated 95th percentile queues are contained in the available storage length for all the study intersections.
- Please note that while all study intersections and approaches operate at acceptable levels of service, the following lane group was observed to experience larger delay:
    - Intersection #2 Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access #1 – Northbound shared left/thru lane operates at LOS E in the PM peak hour. The overall approach operates acceptably.
    - The 95th percentile queue for the northbound shared left/thru lane is approximately 23 ft (less than one car). Therefore, the queues do not extend to the downstream driveways that serve the residential community.
- The reconfigurations and mitigations for this analysis scenario are as follows:
    - The existing primary driveway entrance (Access #1) will be reconfigured to a full-access driveway (inbound & outbound).
    - The existing exit-only driveway (Access #2) is planned to be closed to address the existing safety issues due to the proximity to the driveway to the east.
    - The addition of a westbound right turn lane at Intersection #2 (Washington St (Rte. 55) & Greenhill Crossing Dr/Site Access) is a proposed mitigation. Please note only a right turn taper is warranted using VDOT Road Design Manual (RDM) Turn Lane Assessment.
- In addition to the mitigation implemented for the Future Conditions with Development (2029) scenario, an alternative scenario was provided that reviewed the capacity of the adjacent roundabout to understand the capacity if existing vehicles were to reroute to utilize the intersection. The analysis confirms that the roundabout operates acceptably if additional vehicles were to use it.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed development will not have a significant impact to the surrounding transportation and roadway network, assuming that all designs planned with the subject proposal, and mitigations discussed in this report are implemented.

TECHNICAL APPENDICES

APPENDIX LIST

Appendix A – Signed Scoping Document

Appendix B – Existing Turning Movement Counts

Appendix C – Intersection Analysis Worksheets – Existing 2025

Appendix D – Background Development Trip Generation

Appendix E – Intersection Analysis Worksheets – Future without Development (2029)

Appendix F – Intersection Analysis Worksheets – Future with Development (2029)

Appendix G – Intersection Analysis Worksheets – Future with Development (2029) Mitigated

Appendix H – Intersection Analysis Worksheets – Future with Development (2029) Alternative

Appendix I – Crash Data

Appendix J – Description of Traffic Level of Service

APPENDIX A: SIGNED SCOPING DOCUMENT

THIS IS NOT A CHAPTER 870 STUDY

VDOT Virginia Department of Transportation	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: Tele: E-mail:	Chad Baird, Gorove Slade cab@goroveslade.com			
Developer/Owner Name: Tele: E-mail:	Graystone Companies kjohnson@graystoneco.com			
Project Information				
Project Name:	14600 Washington St Development	Locality/County:	Town of Haymarket	
Project Location: (Attach regional and site specific location map)	The proposed development is located north of Washington St, south of I-66, and east of Bleight Dr in the Town of Haymarket.			
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 can be identified with the GPIN 7397-19-1734 and is currently zoned B-1 (Town Center). The development program for the site proposes mixed uses including 26,063 SF of commercial/office uses and up to 60 townhome units. The projected build-out date for the site is 2029. A portion of the site is currently occupied by existing commercial uses. A portion of the commercial uses (5,986 SF of Office) are planned to be removed with this application while the remaining 26,063 SF is anticipated to remain. The site currently has 2 access points on Washington St, one of which aligns with Greenhill Crossing Drive. One additional entrance is proposed along Bleight Dr as the fourth leg to the existing intersection of Bleight Dr and Dogwood Park Ln.			
Proposed Use(s):	Residential ☐	Commercial ☐	Mixed Use ☒	Other ☐

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.

(Check all that apply; attach additional pages as necessary)	**Residential Uses(s)** Number of Units: 60 ITE LU Code(s): 221 **Commercial Use(s)** ITE LU Code(s): Square Ft or Other Variable:		**Other Use(s)** ITE LU Code(s): Independent Variable(s):	
Total Peak Hour Trip Projection:	Less than 100 ☒	100 – 499 ☐	500 – 999 ☐	1,000 or more ☐

Traffic Impact Analysis Assumptions

Study Period	Existing Year: 2025	Build-out Year: 2029	Design Year: N/A
Study Area Boundaries (Attach map)	North: I-66	South: Washington St	
	West: Bleight Dr	East: Autumn Harvest Trl	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	Residential Development along Bleight Dr will be added to the analysis as a background development.		
Consistency With Comprehensive Plan (Land use, transportation plan)	Town of Haymarket Planned Land use Map identifies the parcels' proposed land use as Public however the existing zoning is Town Center B-1.		
Available Traffic Data (Historical, forecasts)	VDOT Historical AADT Data, Turning Movement Counts collected in 2025.		
Trip Distribution (Attach sketch) Figure 2	Road Name: Washington St (to/from West) – 50%	Road Name: Washington St (to/from East) – 50%	
	Road Name: (to/from North) –	Road Name: (to/from South) –	

Annual Vehicle Trip Growth Rate: Note #10	2.0% (2025-2029)	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☒ SAT
		Peak Hour of Adjacent Street Table 1	26 AM / 32 PM / 44 SAT Peak / 522 DAILY

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.

Study Intersections and/or Road Segments (Attach additional sheets as necessary) Please refer to attached Figure 1	1. Washington St and Bleight Dr	6. Bleight Dr and Site Access/ Dogwood Park Dr
	2. Washington St and Greenhill Crossing Dr	7.
	3. Washington St and Site Access	8.
	4. Washington St and Commercial Access	9.
	5. Washington St and Autumn Harvest Trl/Susquehanna Rd	10.
Trip Adjustment Factors	Internal allowance: ☒ Yes ☐ No Reduction: 15% to existing restaurant uses in the plaza only PM/SAT/DAILY	Pass-by allowance: ☐ Yes ☒ No Reduction:
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☐ Other _____	
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length) Note #8	Analysis Software: Synchro version 11 Results: HCM 6 methodology	
Improvement(s) Assumed or to be Considered	None.	
Background Traffic Studies Considered	Residential Development along Bleight Dr	
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	☒ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☒ Bike/Ped Accommodations ☒ Intersection(s) ☐ TDM Measures ☐ Other	

NOTES on ASSUMPTIONS:

1. Turning Movement Counts collected in 2025. The through volumes on the major movements will be balanced appropriately.
2. The scenarios to be included in the study are Existing Conditions (2025), Future without Development (2029) and Future with Development (2029).
3. Peak hour factors will be consistent with VDOT guidelines (VDOT TOSAM v2.0)
    a. Existing peak hour factors by overall intersection (minimum of 0.85) will be used for existing year analysis.
    b. For future year analysis, the PHF will be 0.92 or existing, whichever is higher.
4. Heavy vehicle percentages will be obtained from the collected traffic count data and a minimum of 2% will be used if not specified in counts. For any new intersection, the HV% will be based on a default Synchro value of 2%.
5. Acceptable Level of Service (LOS) for intersection approaches will be per Town of Haymarket's approved Comprehensive Plan. The analysis results will show intersection, approach, and movement LOS.
6. Will provide 95th percentile queues from Synchro at analyzed locations.
7. HCM 6 methodology will be utilized where applicable; HCM 2000 methodology will be utilized if HCM 6 methodology is not applicable for a certain location.
8. Preliminary Access Management/Intersections Spacing and Turn Lanes will be evaluated for the site entrances.
9. An inherent growth rate of 2% (compounded annually) for the period 2025-2029 will be applied to through movements along Washington St at all the intersections.
10. A safety assessment for all the study intersections will be included.
11. All improvements proposed by the background developments will be considered in the study.

SIGNED:  DATE: 06/13/2025
Applicant or Consultant

PRINT NAME: Chad Baird
Applicant or Consultant

SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

SIGNED: _____ DATE: _____
Local Government Representative

PRINT NAME: _____
Local Government Representative

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.

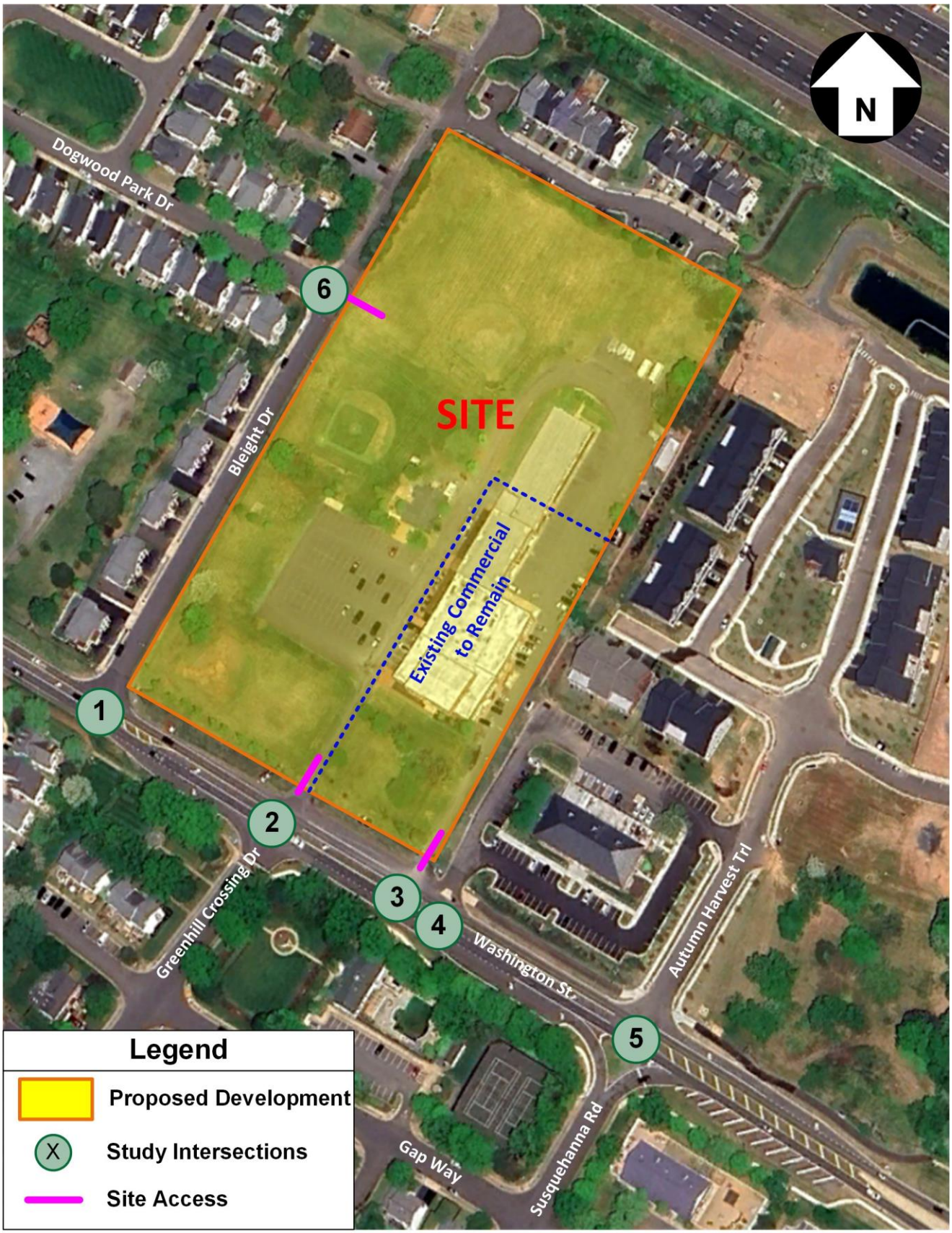


Figure 1: Area Map and Study Intersections

Figure 2: Direction of Approach

Table 1: Trip Generation for Existing Commercial to be Removed – Peak Hour of Adjacent Street Traffic (ITE 11th Edition)

Land Use	ITE Code	Size	Weekday							Weekend			
			AM Peak Hour			PM Peak Hour			Daily	Saturday Peak Hour			Sat Daily
			In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Existing Uses to be Removed													
General Office Building (EQUATIONS)	710	6.0 kSF of GFA	-13	-2	-15	-3	-13	-16	-100	-2	-1	-3	-13
Total Exsting Trips to be Removed			**-13**	**-2**	**-15**	**-3**	**-13**	**-16**	**-100**	**-2**	**-1**	**-3**	**-13**

Note - The office uses are currently vacant. The trips shown in the table represent the trips that the office uses could generate if fully occupied.

Table 2: Trip Generation for Proposed Development - Peak Hour of Adjacent Street Traffic (ITE 11th Edition)

Land Use	ITE Code	Size	Weekday							Weekend			
			AM Peak Hour			PM Peak Hour			Daily	Saturday Peak Hour			Sat Daily
			In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Proposed Use													
Single-Family Attached Housing (EQUATIONS)	215	60 DU	6	20	26	19	13	32	522	21	23	44	348
Total Proposed Trips without Reduction			**6**	**20**	**26**	**19**	**13**	**32**	**522**	**21**	**23**	**44**	**348**
Internal Capture Residential - Restaurant [1]		*15% PM/SAT/DAILY*	*0*	*0*	*0*	*-3*	*-2*	*-5*	*-78*	*-3*	*-3*	*-7*	*-52*
Total Proposed Trips with Reduction			**6**	**20**	**26**	**16**	**11**	**27**	**444**	**18**	**20**	**37**	**296**
Difference in Trips (Proposed - Existing)			**-7**	**18**	**11**	**13**	**-2**	**11**	**344**	**16**	**19**	**34**	**283**

[1] *Internal capture rates consider site trips "captured" within a mixed use development, recognizing that trips from one land use can access another land use within a site development without having to access the adjacent street system. Internal capture allows reduction of site trips from adjacent intersections and roadways.*

The internal reduction is based on the VDOT Updated Administrative Guidelines for the Traffic Impact Analysis Regulations:

(1) residential / non-residential components - smaller of 15% of residential trips or 15% of non-residential trips

Table 3: VDOT Published Roadway Information (2023)

Roadway	RTE #	VDOT Classification	Posted Speed Limit (mph)	AADT (vpd)	k-factor
Washington St	VA 55	Major Collector	25	13,000	8.9%

Source: 2023 VDOT Published AADT Traffic Data

Table 4: VDOT Historical AADTs

Road Segment:	From:	To:	Published VDOT AADT				
			2019	2020	2021	2022	2023
Washington St	Old Carolina Rd	Town of Haymarket Bdry	11,000	7,900	9,000	9,950	13,000

Source: VDOT Published AADT Traffic Data

Figure 3: Preliminary Sketch (For Illustrative Purposes Only)

APPENDIX B: EXISTING TURNING MOVEMENT COUNTS

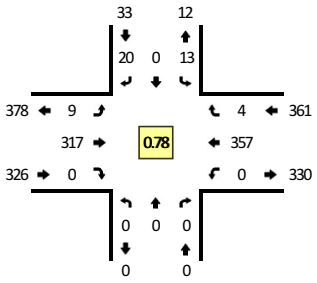
Type of peak hour being reported: Intersection Peak

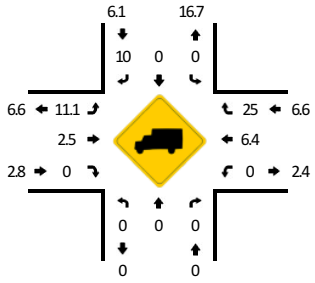
Method for determining peak hour: To

LOCATION: Bleight Dr -- Rte 55
CITY/STATE: Haymarket, VA

QC JOB #: 17110501
DATE: Tue, Jun 3 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM





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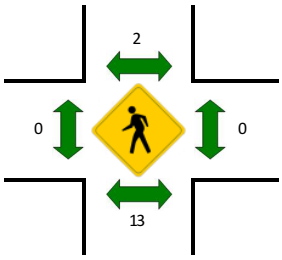
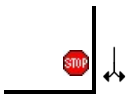
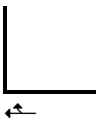
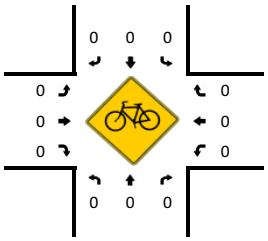
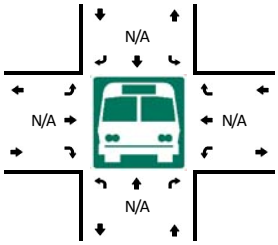
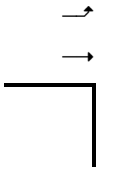


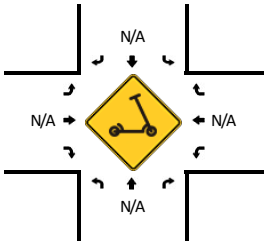












15-Min Count Period Beginning At	Bleight Dr (Northbound)				Bleight Dr (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	1	0	0	0	0	14	0	0	0	20	0	0	35	
6:15 AM	0	0	0	0	2	0	2	0	0	25	0	0	0	24	0	0	53	
6:30 AM	0	0	0	0	4	0	4	0	0	31	0	0	0	26	1	0	66	
6:45 AM	0	0	0	0	3	0	1	0	3	49	0	0	0	54	0	0	110	264
7:00 AM	0	0	0	0	4	0	7	0	3	63	0	0	0	55	1	0	133	362
7:15 AM	0	0	0	0	3	0	2	0	0	53	0	0	0	41	2	0	101	410
7:30 AM	0	0	0	0	3	0	4	0	1	69	0	0	0	62	1	0	140	484
7:45 AM	0	0	0	0	3	0	3	0	1	82	0	0	0	60	0	0	149	523
8:00 AM	0	0	0	0	4	0	1	0	0	71	0	0	0	63	1	0	140	530
8:15 AM	0	0	0	0	1	0	4	0	4	74	0	0	0	77	0	0	160	589
8:30 AM	0	0	0	0	2	0	5	0	1	79	0	0	0	101	2	0	190	639
8:45 AM	0	0	0	0	6	0	10	0	3	93	0	1	0	116	1	0	230	720

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	40	0	12	372	0	4	0	464	4	0	920
Heavy Trucks	0	0	0		0	0	8		4	12	0		0	12	4		40
Buses																	
Pedestrians		16				0				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

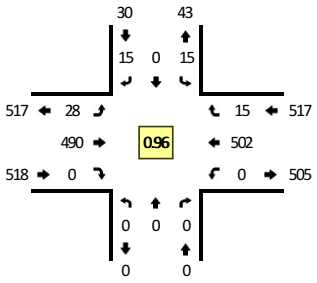
Type of peak hour being reported: Intersection Peak

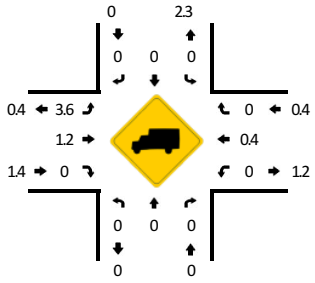
Method for determining peak hour: To

LOCATION: Bleight Dr -- Rte 55
CITY/STATE: Haymarket, VA

QC JOB #: 17110502
DATE: Tue, Jun 3 2025

Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM





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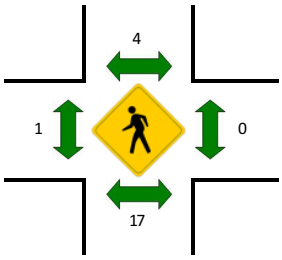
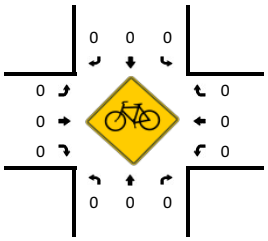
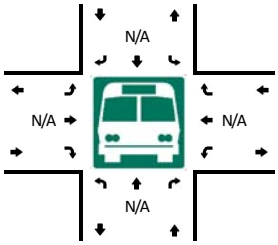
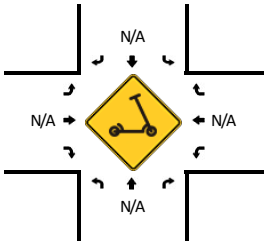








15-Min Count Period Beginning At	Bleight Dr (Northbound)				Bleight Dr (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	4	0	6	97	0	0	0	119	1	0	229	
4:15 PM	0	0	0	0	3	0	2	0	2	95	0	0	0	129	5	0	236	
4:30 PM	0	0	0	0	1	0	5	0	6	134	0	0	0	118	5	0	269	
4:45 PM	0	0	0	0	3	0	3	0	4	129	0	0	0	121	2	0	262	996
5:00 PM	0	0	0	0	2	0	3	0	9	102	0	0	0	133	6	0	255	1022
5:15 PM	0	0	0	0	7	0	4	0	7	133	0	0	0	117	2	0	270	1056
5:30 PM	0	0	0	0	3	0	5	0	8	126	0	0	0	131	5	0	278	1065
5:45 PM	0	0	0	0	5	0	5	0	3	132	0	0	0	110	3	0	258	1061
6:00 PM	0	0	0	0	3	0	2	0	3	111	0	0	0	120	4	0	243	1049
6:15 PM	0	0	0	0	1	0	2	0	6	107	0	0	0	136	5	0	257	1036
6:30 PM	0	0	0	0	6	0	3	0	1	90	0	0	0	130	5	0	235	993
6:45 PM	0	0	0	0	1	0	6	0	3	99	0	0	0	120	6	0	235	970

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	0	20	0	32	504	0	0	0	524	20	0	1112
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		8				12				0				0			20
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

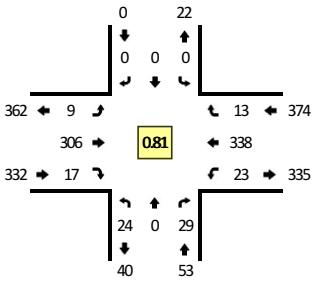
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

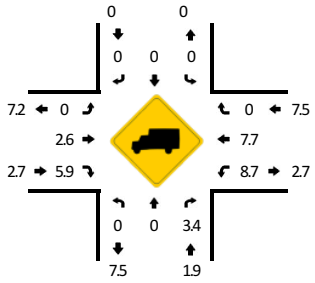
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

LOCATION: Greenhill Crossing Dr/Dwy -- Rte 55
CITY/STATE: Haymarket, VA

QC JOB #: 17110503
DATE: Tue, Jun 3 2025

Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM





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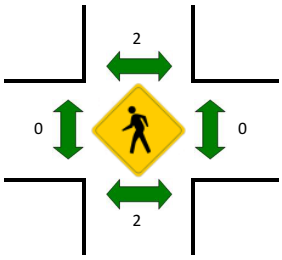
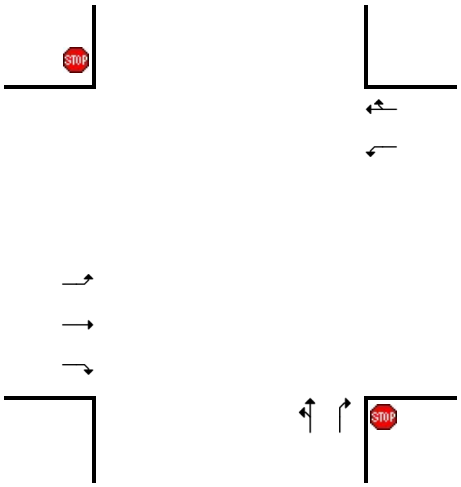
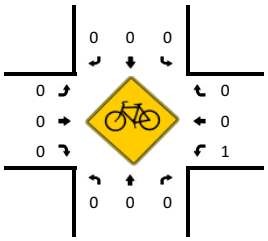
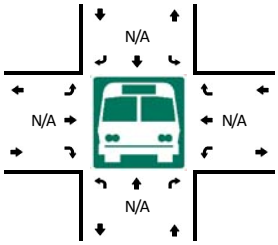
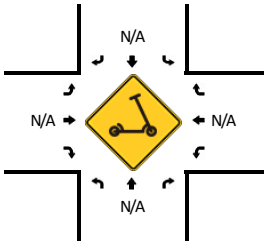










15-Min Count Period Beginning At	Greenhill Crossing Dr/Dwy (Northbound)				Greenhill Crossing Dr/Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	3	0	0	0	0	0	0	15	1	0	2	18	2	0	43	
6:15 AM	7	0	3	0	0	0	0	0	1	26	0	0	0	17	1	0	55	
6:30 AM	7	0	8	0	0	0	0	0	0	35	0	0	2	20	0	0	72	
6:45 AM	8	0	8	0	0	0	0	0	0	51	1	0	2	47	1	0	118	288
7:00 AM	11	0	6	0	0	0	0	0	0	64	3	0	7	45	0	0	136	381
7:15 AM	6	0	5	0	0	0	0	0	0	55	1	0	4	39	0	0	110	436
7:30 AM	7	0	5	0	0	0	0	0	1	66	4	0	3	53	2	0	141	505
7:45 AM	12	0	9	0	0	0	0	0	9	75	2	0	7	49	7	0	170	557
8:00 AM	3	0	6	0	0	0	0	0	7	61	6	0	4	61	4	0	152	573
8:15 AM	11	0	9	0	0	0	0	0	0	72	5	0	7	66	4	0	174	637
8:30 AM	5	0	6	0	0	0	0	0	1	77	2	0	7	100	1	0	199	695
8:45 AM	5	0	8	0	0	0	0	0	1	96	4	0	5	111	4	0	234	759

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	0	32	0	0	0	0	0	4	384	16	0	20	444	16	0	936
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	20	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		4	0	0		4
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

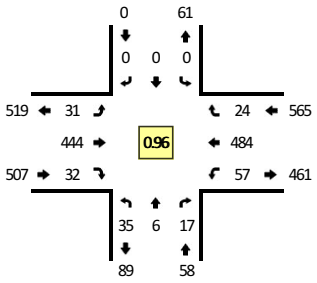
Type of peak hour being reported: Intersection Peak

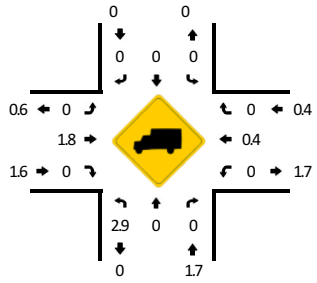
Method for determining peak hour: To

LOCATION: Greenhill Crossing Dr/Dwy -- Rte 55
CITY/STATE: Haymarket, VA

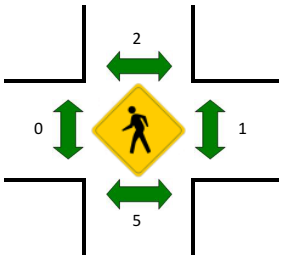
QC JOB #: 17110504
DATE: Tue, Jun 3 2025

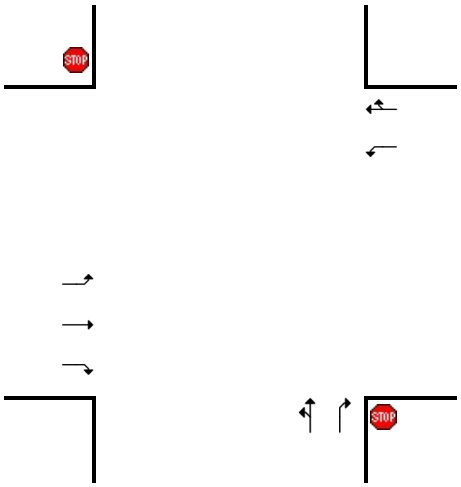
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

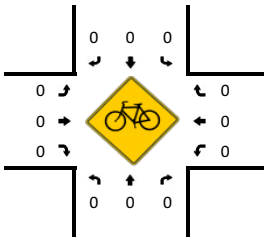


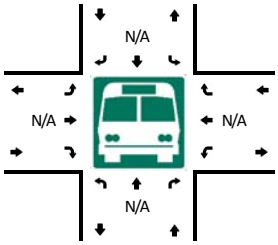


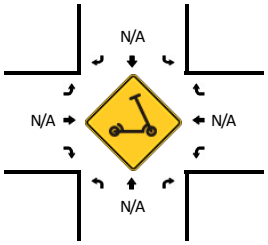
TRUE DATA TO IMPROVE MOBILITY











15-Min Count Period Beginning At	Greenhill Crossing Dr/Dwy (Northbound)				Greenhill Crossing Dr/Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	0	2	0	0	0	0	0	2	95	2	0	17	108	1	0	236	
4:15 PM	8	0	4	0	0	1	0	0	3	86	8	0	10	126	6	0	252	
4:30 PM	7	0	6	0	0	0	0	0	6	120	7	0	16	116	4	0	282	
4:45 PM	9	3	4	0	0	0	0	0	6	119	10	0	12	117	4	0	284	1054
5:00 PM	5	1	3	0	0	0	0	0	3	94	7	0	21	133	2	0	269	1087
5:15 PM	8	1	5	0	0	0	0	0	4	128	7	0	12	112	7	0	284	1119
5:30 PM	13	1	5	0	0	0	0	0	18	103	8	0	12	122	11	0	293	1130
5:45 PM	9	0	7	0	0	0	0	0	14	113	6	0	12	106	8	0	275	1121
6:00 PM	13	1	7	0	0	0	0	0	11	93	8	0	12	115	8	0	268	1120
6:15 PM	12	1	3	0	0	0	0	0	9	93	3	0	11	128	2	0	262	1098
6:30 PM	14	1	5	0	0	0	0	0	9	77	8	0	3	124	6	0	247	1052
6:45 PM	9	0	5	0	0	0	0	0	6	91	0	0	5	120	6	0	242	1019

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	4	20	0	0	0	0	0	72	412	32	0	48	488	44	0	1172
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

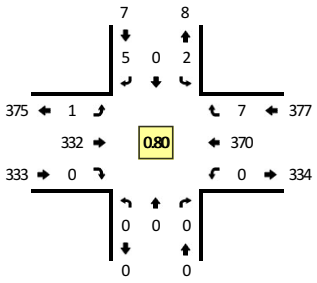
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

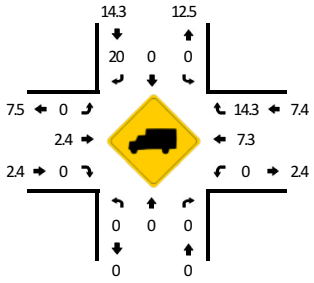
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

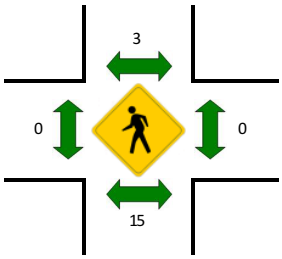
LOCATION: Private Dwy -- Rte 55
CITY/STATE: Gainesville, VA

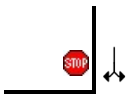
QC JOB #: 17110505
DATE: Tue, Jun 3 2025

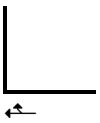
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

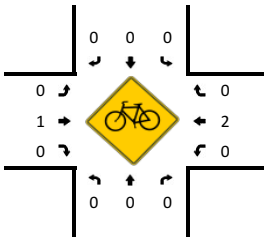


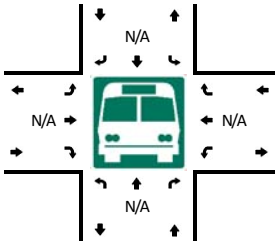


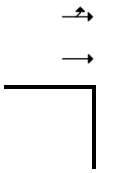


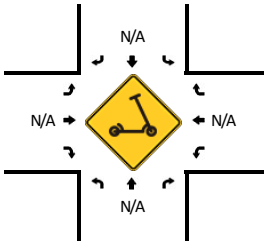












15-Min Count Period Beginning At	Private Dwy (Northbound)				Private Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	1	0	0	0	0	18	0	0	0	22	0	0	41	
6:15 AM	0	0	0	0	0	0	0	0	0	29	0	0	0	18	0	0	47	
6:30 AM	0	0	0	0	0	0	0	0	0	43	0	0	0	23	0	0	66	
6:45 AM	0	0	0	0	7	0	7	0	0	59	0	0	0	43	0	0	116	270
7:00 AM	0	0	0	0	2	0	3	0	0	70	0	0	0	48	0	0	123	352
7:15 AM	0	0	0	0	0	0	0	0	0	59	0	0	0	43	0	0	102	407
7:30 AM	0	0	0	0	1	0	1	0	0	71	0	0	0	57	1	0	131	472
7:45 AM	0	0	0	0	0	0	1	0	0	84	0	0	0	62	1	0	148	504
8:00 AM	0	0	0	0	0	0	0	0	0	68	0	0	0	71	2	0	141	522
8:15 AM	0	0	0	0	1	0	1	0	0	81	0	0	0	74	2	0	159	579
8:30 AM	0	0	0	0	1	0	2	0	0	82	0	0	0	108	1	0	194	642
8:45 AM	0	0	0	0	0	0	2	0	1	101	0	0	0	117	2	0	223	717

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	8	0	4	404	0	0	0	468	8	0	892
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	20	0		32
Buses																	
Pedestrians		12				4				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

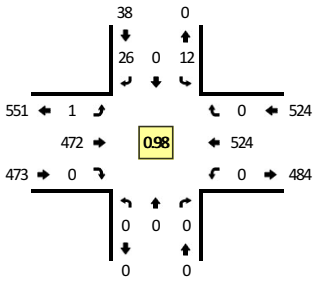
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

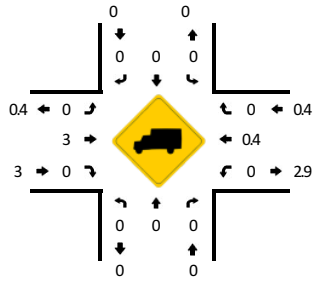
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

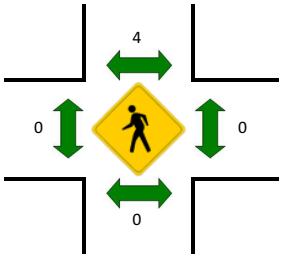
LOCATION: Private Dwy -- Rte 55
CITY/STATE: Gainesville, VA

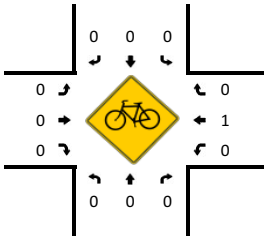
QC JOB #: 17110506
DATE: Tue, Jun 3 2025

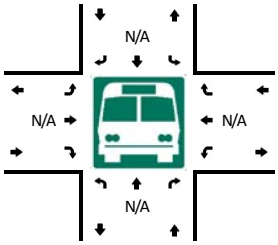
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

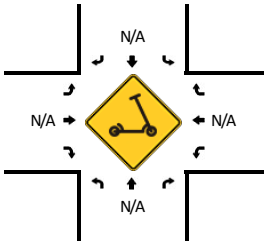












15-Min Count Period Beginning At	Private Dwy (Northbound)				Private Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	3	0	0	98	0	0	0	123	0	0	226	
4:15 PM	0	0	0	0	4	0	3	0	0	90	0	0	0	139	0	0	236	
4:30 PM	0	0	0	0	2	0	3	0	0	122	0	1	0	130	0	0	258	
4:45 PM	0	0	0	0	3	0	4	0	0	125	0	0	0	129	0	0	261	981
5:00 PM	0	0	0	0	2	0	11	0	0	95	0	0	0	143	0	0	251	1006
5:15 PM	0	0	0	0	5	0	8	0	0	130	0	0	0	122	0	0	265	1035
5:30 PM	0	0	0	0	2	0	5	0	0	104	0	0	0	138	0	0	249	1026
5:45 PM	0	0	0	0	4	0	6	0	1	121	0	0	0	120	0	0	252	1017
6:00 PM	0	0	0	0	2	0	6	0	0	99	0	0	0	131	1	0	239	1005
6:15 PM	0	0	0	0	5	0	11	0	0	92	0	0	0	130	0	0	238	978
6:30 PM	0	0	0	0	15	0	16	0	1	83	0	0	0	119	0	0	234	963
6:45 PM	0	0	0	0	3	0	18	0	0	95	0	0	0	113	1	0	230	941

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	20	0	32	0	0	520	0	0	0	488	0	0	1060
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

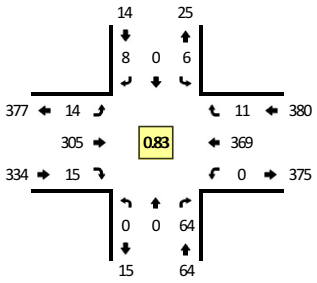
Type of peak hour being reported: Intersection Peak

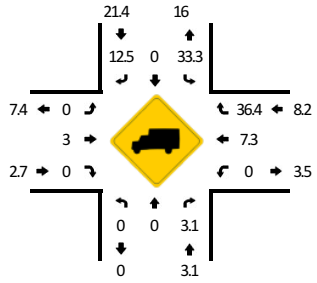
Method for determining peak hour: To

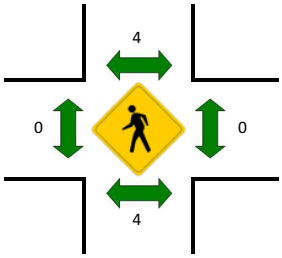
LOCATION: Autumn Harvest Trl/Susquehanna Rd -- Rte 55
CITY/STATE: Gainesville, VA

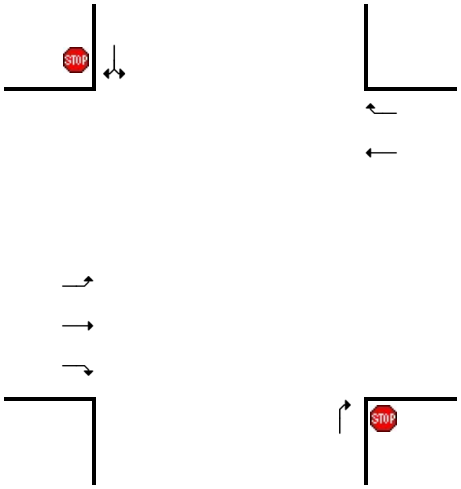
QC JOB #: 17110507
DATE: Tue, Jun 3 2025

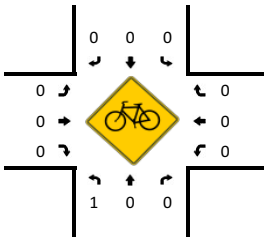
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

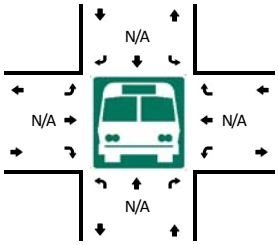


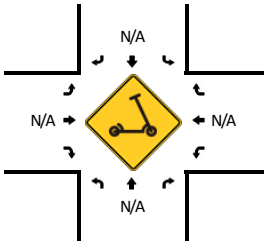












15-Min Count Period Beginning At	Autumn Harvest Trl/Susquehanna Rd (Northbound)				Autumn Harvest Trl/Susquehanna Rd (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	6	0	1	1	0	0	2	16	0	0	0	22	1	0	49	
6:15 AM	0	0	28	0	0	0	0	0	1	25	1	0	0	19	1	0	75	
6:30 AM	0	1	13	0	2	1	1	0	4	40	1	0	0	23	4	0	90	
6:45 AM	0	0	14	0	1	0	1	0	0	64	2	0	0	41	2	0	125	339
7:00 AM	0	0	17	0	0	0	1	0	2	67	3	0	0	47	0	0	137	427
7:15 AM	0	0	14	0	2	0	1	0	1	53	4	0	0	42	1	0	118	470
7:30 AM	0	0	10	0	0	0	0	1	0	66	6	0	0	58	0	0	141	521
7:45 AM	0	0	22	0	3	0	2	0	1	78	6	0	0	63	1	0	176	572
8:00 AM	0	0	11	0	0	0	4	0	3	60	5	0	0	68	2	0	153	588
8:15 AM	0	0	18	0	2	0	2	0	4	75	3	0	0	73	5	0	182	652
8:30 AM	0	0	21	0	2	0	1	0	5	73	4	0	0	110	2	0	218	729
8:45 AM	0	0	14	0	2	0	1	0	2	97	3	0	0	118	2	0	239	792

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	56	0	8	0	4	0	8	388	12	0	0	472	8	0	956
Heavy Trucks	0	0	0		4	0	0		0	12	0		0	20	0		36
Buses																	
Pedestrians		8				8				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

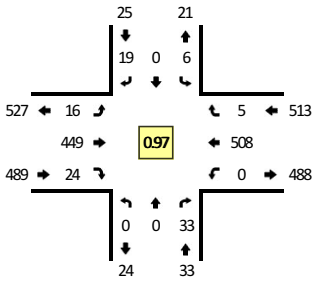
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: To

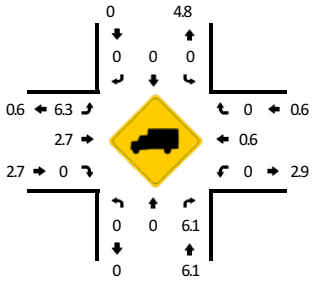
LOCATION: Autumn Harvest Trl/Susquehanna Rd -- Rte 55
CITY/STATE: Gainesville, VA

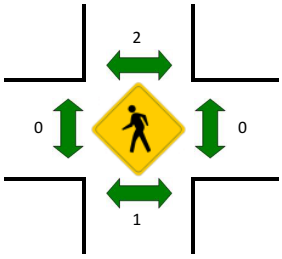
QC JOB #: 17110508
DATE: Tue, Jun 3 2025

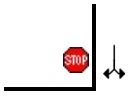
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

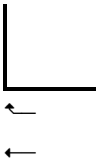


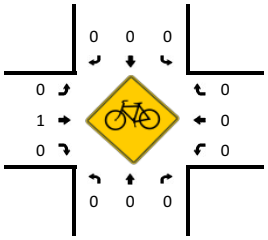
TRUE DATA TO IMPROVE MOBILITY

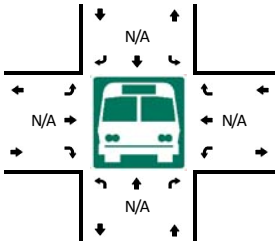


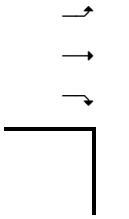


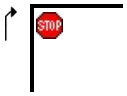


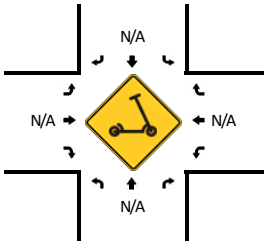












15-Min Count Period Beginning At	Autumn Harvest Trl/Susquehanna Rd (Northbound)				Autumn Harvest Trl/Susquehanna Rd (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	7	0	0	0	1	0	4	92	4	0	0	121	2	0	231	
4:15 PM	0	0	8	0	2	0	2	0	3	88	4	0	0	138	3	0	248	
4:30 PM	0	0	10	0	0	0	4	0	1	117	6	0	0	127	1	0	266	
4:45 PM	0	0	11	0	0	0	3	0	6	117	6	0	0	127	2	0	272	1017
5:00 PM	0	0	5	0	5	0	10	0	5	90	4	0	0	133	1	0	253	1039
5:15 PM	0	0	7	0	1	0	2	0	4	125	8	0	0	121	1	0	269	1060
5:30 PM	0	0	13	0	0	0	5	0	4	98	5	0	0	137	1	0	263	1057
5:45 PM	0	0	4	0	1	0	5	0	6	114	6	0	1	115	3	0	255	1040
6:00 PM	0	0	16	0	2	0	2	0	3	97	3	0	0	131	0	0	254	1041
6:15 PM	0	0	14	0	0	0	1	0	3	95	3	0	0	131	4	0	251	1023
6:30 PM	0	0	7	0	1	0	1	0	2	98	2	0	0	121	1	0	233	993
6:45 PM	0	0	5	0	0	0	1	0	1	95	3	0	0	110	2	0	217	955

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	44	0	0	0	12	0	24	468	24	0	0	508	8	0	1088
Heavy Trucks	0	0	0		0	0	0		4	16	0		0	4	0		24
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/13/2025 9:01 AM

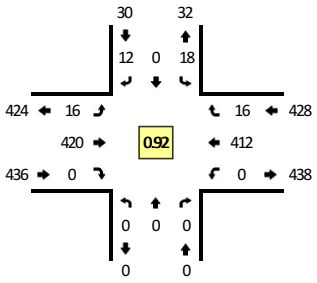
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

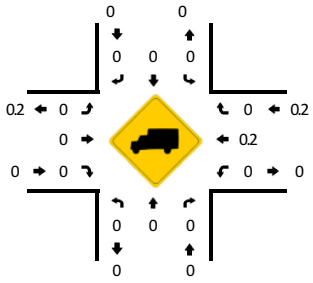
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

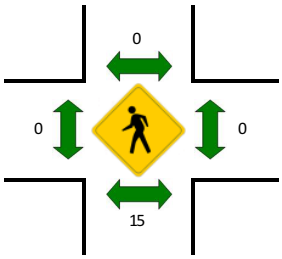
LOCATION: Bleight Dr -- Rte 55
CITY/STATE: Haymarket, VA

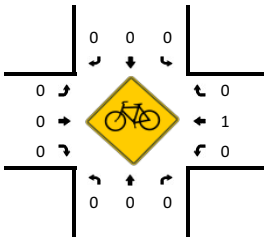
QC JOB #: 17126506
DATE: Sat, Jun 14 2025

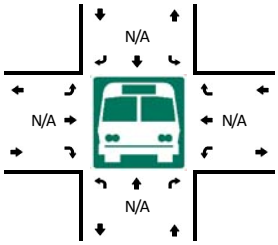
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

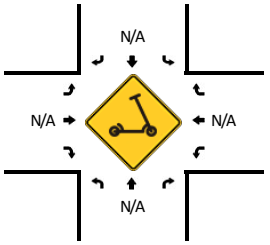












15-Min Count Period Beginning At	Bleight Dr (Northbound)				Bleight Dr (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	0	0	2	0	3	0	2	95	0	0	0	95	3	0	200	
4:45 PM	0	0	0	0	1	0	5	0	3	99	0	0	0	87	1	0	196	
5:00 PM	0	0	0	0	2	0	2	0	3	109	0	0	0	107	2	0	225	
5:15 PM	0	0	0	0	4	0	1	0	3	95	0	0	0	105	6	0	214	835
5:30 PM	0	0	0	0	4	0	2	0	5	111	0	0	0	87	4	0	213	848
5:45 PM	0	0	0	0	8	0	7	0	5	105	0	0	0	113	4	0	242	894
6:00 PM	0	0	0	0	1	0	2	0	4	94	0	0	0	112	4	0	217	886
6:15 PM	0	0	0	0	3	0	0	0	2	90	0	0	0	92	0	0	187	859
6:30 PM	0	0	0	0	2	0	3	0	3	91	0	0	0	112	4	0	215	861
6:45 PM	0	0	0	0	1	0	5	0	5	82	0	0	0	87	7	0	187	806
7:00 PM	0	0	0	0	3	0	2	0	2	89	0	0	0	87	4	0	187	776
7:15 PM	0	0	0	0	2	0	3	0	2	68	0	0	0	76	3	0	154	743

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	32	0	28	0	20	420	0	0	0	452	16	0	968
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/18/2025 9:05 AM

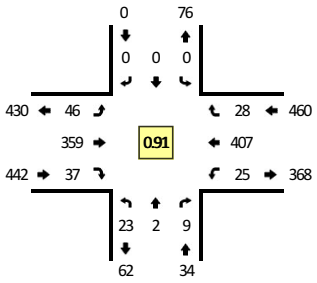
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

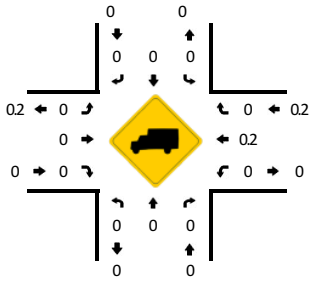
LOCATION: Greenhill Crossing Dr/Dwy -- Rte 55
CITY/STATE: Haymarket, VA

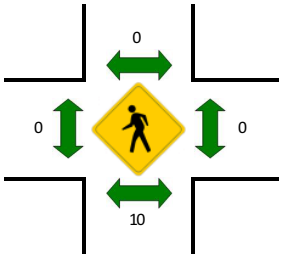
QC JOB #: 17126507
DATE: Sat, Jun 14 2025

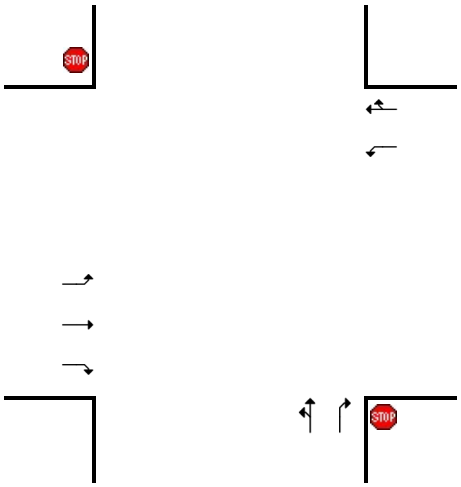
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

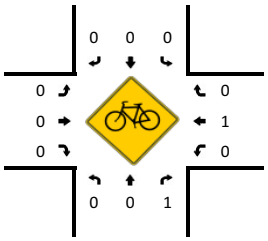


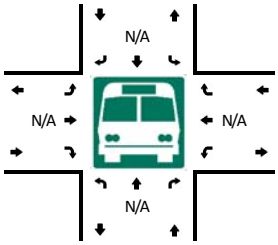
TRUE DATA TO IMPROVE MOBILITY

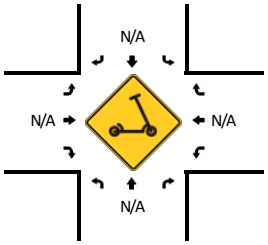












15-Min Count Period Beginning At	Greenhill Crossing Dr/Dwy (Northbound)				Greenhill Crossing Dr/Dwy (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	2	0	2	0	0	0	0	0	5	83	10	0	6	97	7	0	212	
4:45 PM	6	0	4	0	0	0	0	0	4	89	7	0	11	82	4	0	207	
5:00 PM	7	0	3	0	0	0	0	0	5	101	5	0	7	103	7	0	238	
5:15 PM	6	0	2	0	0	0	0	0	16	71	13	0	6	104	6	0	224	881
5:30 PM	7	0	2	0	0	0	0	0	11	98	5	0	6	83	6	0	218	887
5:45 PM	3	2	2	0	0	0	0	0	14	89	14	0	6	117	9	0	256	936
6:00 PM	5	0	7	0	0	0	0	0	5	89	5	0	9	108	9	0	237	935
6:15 PM	7	0	2	0	0	0	1	0	2	87	4	0	11	86	6	0	206	917
6:30 PM	8	0	6	0	0	0	0	0	2	84	7	0	17	105	2	0	231	930
6:45 PM	7	1	3	0	0	0	0	0	9	73	2	0	7	88	6	0	196	870
7:00 PM	7	0	2	0	0	0	0	0	9	77	6	0	4	84	4	0	193	826
7:15 PM	4	0	5	0	0	0	0	0	5	58	8	0	8	74	8	0	170	790

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	8	8	0	0	0	0	0	56	356	56	0	24	468	36	0	1024
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Buses																	
Pedestrians		12				0				0				0			12
Bicycles	0	0	4		0	0	0		0	0	0		0	4	0		8
Scooters																	

Comments:

Report generated on 6/18/2025 9:05 AM

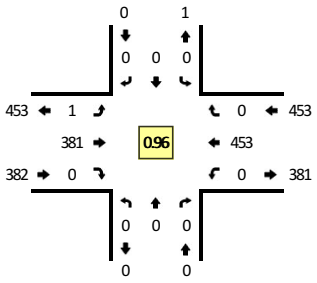
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

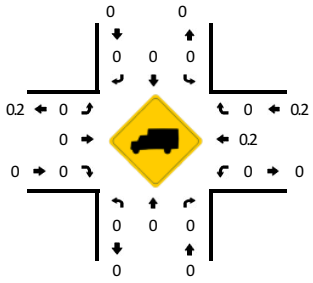
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

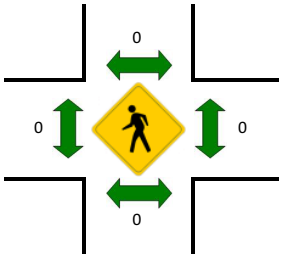
LOCATION: Private Dwy (East) -- Rte 55
CITY/STATE: Gainesville, VA

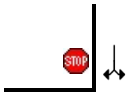
QC JOB #: 17126508
DATE: Sat, Jun 14 2025

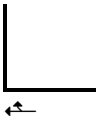
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

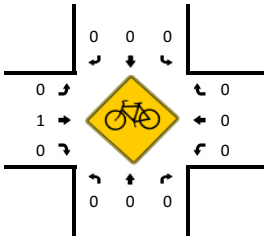


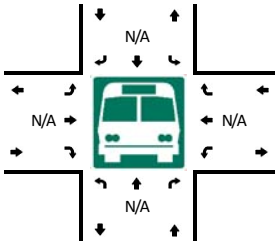


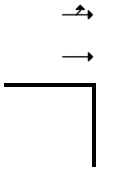


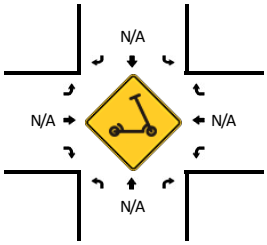












15-Min Count Period Beginning At	Private Dwy (East) (Northbound)				Private Dwy (East) (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	0	0	0	0	1	0	0	88	0	0	0	104	1	0	194	
4:45 PM	0	0	0	0	0	0	2	0	0	99	0	0	0	85	1	0	187	
5:00 PM	0	0	0	0	0	0	0	0	0	110	0	0	0	108	0	0	218	
5:15 PM	0	0	0	0	0	0	0	0	0	77	0	0	0	97	0	0	174	773
5:30 PM	0	0	0	0	0	0	0	0	0	103	0	0	0	89	0	0	192	771
5:45 PM	0	0	0	0	0	0	0	0	0	90	0	0	0	125	0	0	215	799
6:00 PM	0	0	0	0	0	0	0	0	0	97	0	0	0	120	0	0	217	798
6:15 PM	0	0	0	0	0	0	0	0	1	97	0	0	0	94	0	0	192	816
6:30 PM	0	0	0	0	0	0	0	0	0	97	0	0	0	114	0	0	211	835
6:45 PM	0	0	0	0	0	0	0	0	0	81	0	0	0	92	0	0	173	793
7:00 PM	0	0	0	0	0	0	0	0	0	92	0	0	0	84	0	0	176	752
7:15 PM	0	0	0	0	0	0	0	0	0	72	0	0	0	87	0	0	159	719

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	388	0	0	0	480	0	0	868
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/18/2025 9:05 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

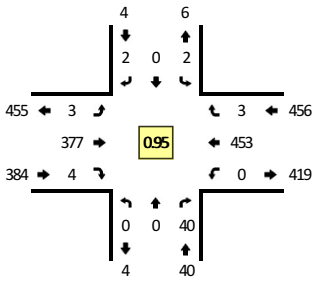
Type of peak hour being reported: Intersection Peak

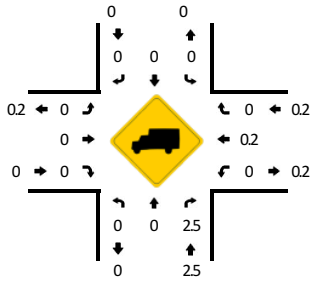
Method for determining peak hour: To

LOCATION: Autumn Harvest Trl/Susquehanna Rd -- Rte 55
CITY/STATE: Gainesville, VA

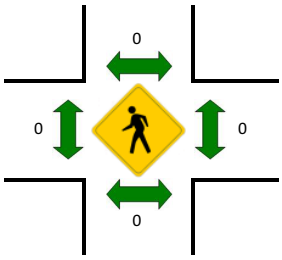
QC JOB #: 17126509
DATE: Sat, Jun 14 2025

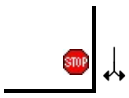
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

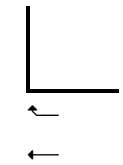


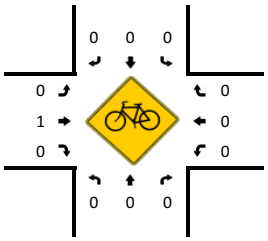


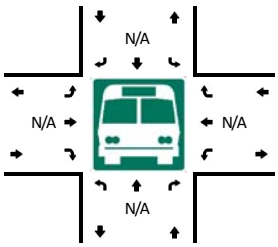
TRUE DATA TO IMPROVE MOBILITY

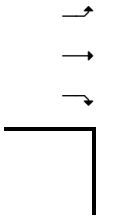


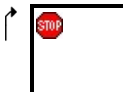


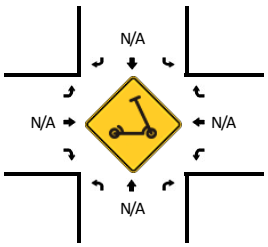












15-Min Count Period Beginning At	Autumn Harvest Trl/Susquehanna Rd (Northbound)				Autumn Harvest Trl/Susquehanna Rd (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	8	0	1	0	2	0	1	86	1	0	0	103	0	0	202	
4:45 PM	0	0	6	0	2	0	1	0	1	94	3	0	0	89	2	0	198	
5:00 PM	0	0	7	0	2	0	1	0	0	108	2	0	0	103	0	0	223	
5:15 PM	0	0	5	0	0	0	1	0	1	75	0	0	0	97	1	0	180	803
5:30 PM	0	0	10	0	0	0	1	0	2	102	2	0	0	92	1	0	210	811
5:45 PM	0	0	12	0	1	0	0	0	1	90	0	0	0	123	0	0	227	840
6:00 PM	0	0	11	0	0	0	0	0	0	96	2	0	0	123	0	0	232	849
6:15 PM	0	0	7	0	0	0	2	0	0	98	1	0	0	92	3	0	203	872
6:30 PM	0	0	10	0	1	0	0	0	2	93	1	0	0	115	0	0	222	884
6:45 PM	0	0	8	0	0	0	0	0	0	84	2	0	0	94	0	0	188	845
7:00 PM	0	0	8	0	0	0	2	0	1	89	1	0	0	80	2	0	183	796
7:15 PM	0	0	1	0	1	0	0	0	1	67	4	0	0	88	0	0	162	755

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	44	0	0	0	0	0	0	384	8	0	0	492	0	0	928
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

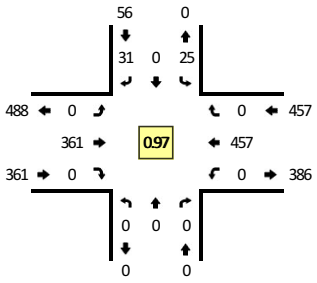
Report generated on 6/18/2025 9:05 AM

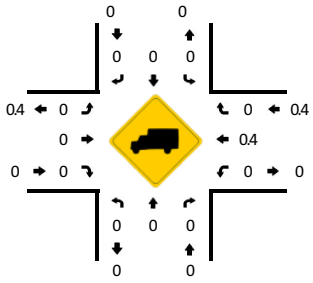
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

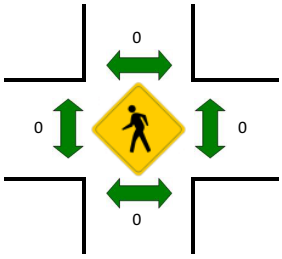
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: To

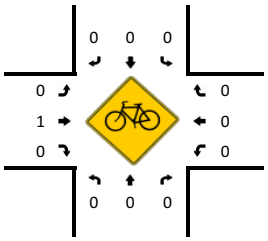
LOCATION: Private Dwy (West) -- Rte 55 | **QC JOB #:** 17126511
CITY/STATE: Gainesville, VA | **DATE:** Sat, Jun 14 2025

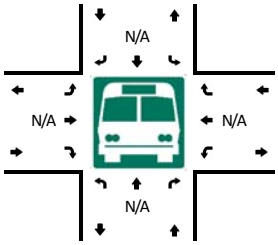
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:00 PM -- 6:15 PM

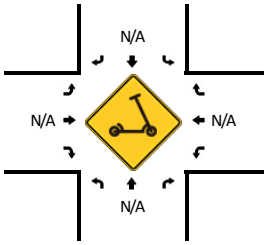












15-Min Count Period Beginning At	Private Dwy (West) (Northbound)				Private Dwy (West) (Southbound)				Rte 55 (Eastbound)				Rte 55 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:30 PM	0	0	0	0	4	0	5	0	0	84	0	0	0	105	0	0	198	
4:45 PM	0	0	0	0	5	0	9	0	0	94	0	0	0	87	0	0	195	
5:00 PM	0	0	0	0	6	0	11	0	0	104	0	0	0	107	1	0	229	
5:15 PM	0	0	0	0	5	0	17	0	0	73	0	0	0	98	0	0	193	815
5:30 PM	0	0	0	0	4	0	5	0	0	100	0	0	0	90	0	0	199	816
5:45 PM	0	0	0	0	3	0	6	0	0	88	0	0	0	126	0	0	223	844
6:00 PM	0	0	0	0	5	0	7	0	0	93	0	0	0	121	0	0	226	841
6:15 PM	0	0	0	0	9	0	7	0	0	90	0	0	0	95	0	0	201	849
6:30 PM	0	0	0	0	8	0	11	0	0	90	0	0	0	115	0	0	224	874
6:45 PM	0	0	0	0	6	0	8	0	0	76	0	0	0	93	0	0	183	834
7:00 PM	0	0	0	0	13	0	8	0	0	79	0	0	0	84	0	0	184	792
7:15 PM	0	0	0	0	10	0	3	0	0	63	0	0	0	87	0	0	163	754

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	20	0	28	0	0	372	0	0	0	484	0	0	904
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/18/2025 9:05 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

APPENDIX C: INTERSECTION ANALYSIS WORKSHEETS (EXISTING 2025)

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	317	354	4	13	20
Future Vol, veh/h	8	317	354	4	13	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	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	9	373	416	5	15	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	421	0	-	0	810	419
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1082	-	-	-	352	617
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1082	-	-	-	349	617
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1082	-	-	-	474
HCM Lane V/C Ratio	0.009	-	-	-	0.082
HCM Control Delay (s)	8.4	-	-	-	13.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	304	17	23	334	13	24	0	29	0	0	0
Future Vol, veh/h	9	304	17	23	334	13	24	0	29	0	0	0
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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	3	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	11	358	20	27	393	15	28	0	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	408	0	0	378	0	0	835	842	358
Stage 1	-	-	-	-	-	-	380	380	-
Stage 2	-	-	-	-	-	-	455	462	-
Critical Hdwy	4.1	-	-	4.19	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1162	-	-	1143	-	-	340	303	684
Stage 1	-	-	-	-	-	-	696	617	-
Stage 2	-	-	-	-	-	-	643	568	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1162	-	-	1143	-	-	329	0	684
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	0	-
Stage 1	-	-	-	-	-	-	690	0	-
Stage 2	-	-	-	-	-	-	628	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.5	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	329	684	1162	-	-	1143	-	-
HCM Lane V/C Ratio	0.086	0.05	0.009	-	-	0.024	-	-
HCM Control Delay (s)	17	10.5	8.1	-	-	8.2	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.2	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	1	332	365	7	2	5
Future Vol, veh/h	1	332	365	7	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	2	7	14	0	20
Mvmt Flow	1	391	429	8	2	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	437	0	-	0	631	219
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.1	-	-	-	6.8	7.3
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.5
Pot Cap-1 Maneuver	1134	-	-	-	418	732
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1134	-	-	-	418	732
Mov Cap-2 Maneuver	-	-	-	-	418	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1134	-	-	-	418	732
HCM Lane V/C Ratio	0.001	-	-	-	0.006	0.008
HCM Control Delay (s)	8.2	-	-	-	13.7	10
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	334	372	5	1	0
Future Vol, veh/h	0	334	372	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	363	404	5	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	586	404
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	0	-	-	0	457	646
Stage 1	0	-	-	0	673	-
Stage 2	0	-	-	0	832	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	457	646
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	832	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	305	15	0	369	11	0	0	64	6	0	8
Future Vol, veh/h	15	305	15	0	369	11	0	0	64	6	0	8
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	3	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	18	359	18	0	434	13	0	0	75	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	-	-	-	0	-	-	359	829	829	434
Stage 1	-	-	-	-	-	-	-	-	-	434	434	-
Stage 2	-	-	-	-	-	-	-	-	-	395	395	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1124	-	0	0	-	-	0	0	683	257	308	599
Stage 1	-	-	0	0	-	-	0	0	-	544	585	-
Stage 2	-	-	0	0	-	-	0	0	-	573	608	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1124	-	-	-	-	-	-	-	683	226	303	599
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	226	303	-
Stage 1	-	-	-	-	-	-	-	-	-	535	585	-
Stage 2	-	-	-	-	-	-	-	-	-	502	598	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	10.9	15.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	683	1124	-	-	-	351
HCM Lane V/C Ratio	0.11	0.016	-	-	-	0.047
HCM Control Delay (s)	10.9	8.3	-	-	-	15.8
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.4	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	9	3	9	0
Future Vol, veh/h	0	24	9	3	9	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	11	4	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	37	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	26	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	975	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	997	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	968	1070	1608	-	-	-
Mov Cap-2 Maneuver	968	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	1070	-	-
HCM Lane V/C Ratio	0.007	-	0.026	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	498	495	15	13	20
Future Vol, veh/h	26	498	495	15	13	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	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	27	508	505	15	13	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	1075	513
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	562	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1036	-	-	-	245	565
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	575	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1036	-	-	-	239	565
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	575	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	368
HCM Lane V/C Ratio	0.026	-	-	-	0.092
HCM Control Delay (s)	8.6	-	-	-	15.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	461	31	61	481	17	29	5	18	0	0	0
Future Vol, veh/h	19	461	31	61	481	17	29	5	18	0	0	0
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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	19	466	31	62	486	17	29	5	18	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	503	0	0	497	0	0	1123	1131	466
Stage 1	-	-	-	-	-	-	504	504	-
Stage 2	-	-	-	-	-	-	619	627	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.47	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.47	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.47	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3
Pot Cap-1 Maneuver	1072	-	-	1067	-	-	222	205	601
Stage 1	-	-	-	-	-	-	597	544	-
Stage 2	-	-	-	-	-	-	528	479	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1072	-	-	1067	-	-	205	0	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	205	0	-
Stage 1	-	-	-	-	-	-	586	0	-
Stage 2	-	-	-	-	-	-	497	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0.9	20.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	205	601	1072	-	-	1067	-	-
HCM Lane V/C Ratio	0.168	0.03	0.018	-	-	0.058	-	-
HCM Control Delay (s)	26.1	11.2	8.4	-	-	8.6	-	-
HCM Lane LOS	D	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	479	533	0	12	26
Future Vol, veh/h	0	479	533	0	12	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	3	0	0	0	0
Mvmt Flow	0	489	544	0	12	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	789	272
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	245	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	332	732
Stage 1	0	-	-	0	551	-
Stage 2	0	-	-	0	779	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	332	732
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	779	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	332	732
HCM Lane V/C Ratio	-	-	0.037	0.036
HCM Control Delay (s)	-	-	16.3	10.1
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	491	527	0	0	6
Future Vol, veh/h	0	491	527	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	501	538	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	538
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	542
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	542
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	542
HCM Lane V/C Ratio	-	-	0.011
HCM Control Delay (s)	-	-	11.7
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	451	24	0	508	5	0	0	33	6	0	19
Future Vol, veh/h	16	451	24	0	508	5	0	0	33	6	0	19
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	465	25	0	524	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	-	-	-	0	-	-	465	1021	1021	524
Stage 1	-	-	-	-	-	-	-	-	-	524	524	-
Stage 2	-	-	-	-	-	-	-	-	-	497	497	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1023	-	0	0	-	-	0	0	595	217	238	557
Stage 1	-	-	0	0	-	-	0	0	-	540	533	-
Stage 2	-	-	0	0	-	-	0	0	-	559	548	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1023	-	-	-	-	-	-	-	595	202	234	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	202	234	-
Stage 1	-	-	-	-	-	-	-	-	-	531	533	-
Stage 2	-	-	-	-	-	-	-	-	-	519	539	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.4	14.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	595	1023	-	-	-	392
HCM Lane V/C Ratio	0.057	0.016	-	-	-	0.066
HCM Control Delay (s)	11.4	8.6	-	-	-	14.8
HCM Lane LOS	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	29	12	8	0
Future Vol, veh/h	0	25	29	12	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	34	14	9	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	91	9	9	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	909	1073	1611	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1073	1611	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	941	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1611	-	1073	-	-
HCM Lane V/C Ratio	0.021	-	0.027	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	380	429	12	14	12
Future Vol, veh/h	14	380	429	12	14	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	16	427	482	13	16	13

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	495	0	-	0	948	489
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	459	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1079	-	-	-	292	567
Stage 1	-	-	-	-	621	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1079	-	-	-	288	567
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	612	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1079	-	-	-	373
HCM Lane V/C Ratio	0.015	-	-	-	0.078
HCM Control Delay (s)	8.4	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	341	30	43	417	26	23	2	17	0	0	1
Future Vol, veh/h	23	341	30	43	417	26	23	2	17	0	0	1
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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	375	33	47	458	29	25	2	19	0	0	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	487	0	0	408	0	0	992	1006	375
Stage 1	-	-	-	-	-	-	425	425	-
Stage 2	-	-	-	-	-	-	567	581	-
Critical Hdwy	4.14	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1066	-	-	1162	-	-	275	243	676
Stage 1	-	-	-	-	-	-	664	590	-
Stage 2	-	-	-	-	-	-	572	503	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1066	-	-	1162	-	-	258	0	676
Mov Cap-2 Maneuver	-	-	-	-	-	-	258	0	-
Stage 1	-	-	-	-	-	-	649	0	-
Stage 2	-	-	-	-	-	-	549	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.7	16.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	258	676	1066	-	-	1162	-	-
HCM Lane V/C Ratio	0.106	0.028	0.024	-	-	0.041	-	-
HCM Control Delay (s)	20.6	10.5	8.5	-	-	8.2	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	358	455	0	25	31
Future Vol, veh/h	0	358	455	0	25	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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	369	469	0	26	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	654	235
Stage 1	-	-	-	-	469	-
Stage 2	-	-	-	-	185	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	404	773
Stage 1	0	-	-	0	602	-
Stage 2	0	-	-	0	834	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	404	773
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	834	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	404	773
HCM Lane V/C Ratio	-	-	0.064	0.041
HCM Control Delay (s)	-	-	14.5	9.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	383	455	0	0	0
Future Vol, veh/h	0	383	455	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	399	474	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	474
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	595
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	595
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	376	4	0	453	3	0	0	40	2	0	2
Future Vol, veh/h	3	376	4	0	453	3	0	0	40	2	0	2
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	396	4	0	477	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	480	0	-	-	-	0	-	-	396	879	879	477
Stage 1	-	-	-	-	-	-	-	-	-	477	477	-
Stage 2	-	-	-	-	-	-	-	-	-	402	402	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1093	-	0	0	-	-	0	0	651	270	288	592
Stage 1	-	-	0	0	-	-	0	0	-	573	559	-
Stage 2	-	-	0	0	-	-	0	0	-	629	604	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1093	-	-	-	-	-	-	-	651	252	287	592
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	252	287	-
Stage 1	-	-	-	-	-	-	-	-	-	571	559	-
Stage 2	-	-	-	-	-	-	-	-	-	587	602	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	10.9	15.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	651	1093	-	-	-	354
HCM Lane V/C Ratio	0.065	0.003	-	-	-	0.012
HCM Control Delay (s)	10.9	8.3	-	-	-	15.3
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	19	7	7	0
Future Vol, veh/h	0	19	19	7	7	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	22	8	8	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	60	8	8	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	947	1074	1612	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	934	1074	1612	-	-	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	5.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1612	-	1074	-	-
HCM Lane V/C Ratio	0.014	-	0.021	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX D: BACKGROUND DEVELOPMENT TRIP GENERATION

6700 Bleight Drive (BG)

Land Use	ITE Code	Size	------ Weekday ------							------ Weekend ------			
			AM Peak Hour			PM Peak Hour			Daily	Saturday Peak Hour			Sat Daily
			In	Out	Total	In	Out	Total	Total	In	Out	Total	Total
Proposed Use													
*Single-Family Attached Housing (RATES)	215	11 DU	1	4	5	4	2	6	79	3	3	6	96
		Total Trips	**1**	**4**	**5**	**4**	**2**	**6**	**79**	**3**	**3**	**6**	**96**

**ITE equations not applicable for proposed density - ITE rates used in lieu.*

APPENDIX E: INTERSECTION ANALYSIS WORKSHEETS – FUTURE WITHOUT DEVELOPMENT (2029)

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	343	384	5	15	22
Future Vol, veh/h	8	343	384	5	15	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	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	9	373	417	5	16	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	422	0	-	0	811	420
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1081	-	-	-	352	617
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1081	-	-	-	349	617
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1081	-	-	-	471
HCM Lane V/C Ratio	0.008	-	-	-	0.085
HCM Control Delay (s)	8.4	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	332	17	23	365	13	24	0	29	0	0	0
Future Vol, veh/h	9	332	17	23	365	13	24	0	29	0	0	0
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	140	-	140	-	-	-	-	-	0	-	-	-
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	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	10	361	18	25	397	14	26	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	411	0	0	379	0	0	835	842	361
Stage 1	-	-	-	-	-	-	381	381	-
Stage 2	-	-	-	-	-	-	454	461	-
Critical Hdwy	4.1	-	-	4.19	-	-	6.4	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327
Pot Cap-1 Maneuver	1159	-	-	1142	-	-	340	303	681
Stage 1	-	-	-	-	-	-	695	617	-
Stage 2	-	-	-	-	-	-	644	569	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1159	-	-	1142	-	-	329	0	681
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	0	-
Stage 1	-	-	-	-	-	-	689	0	-
Stage 2	-	-	-	-	-	-	630	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.5	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	329	681	1159	-	-	1142	-	-
HCM Lane V/C Ratio	0.079	0.046	0.008	-	-	0.022	-	-
HCM Control Delay (s)	16.9	10.5	8.1	-	-	8.2	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	1	360	396	7	2	5
Future Vol, veh/h	1	360	396	7	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	7	14	0	20
Mvmt Flow	1	391	430	8	2	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	438	0	-	0	632	219
Stage 1	-	-	-	-	434	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.1	-	-	-	6.8	7.3
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.5
Pot Cap-1 Maneuver	1133	-	-	-	417	732
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1133	-	-	-	417	732
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1133	-	-	-	417	732
HCM Lane V/C Ratio	0.001	-	-	-	0.005	0.007
HCM Control Delay (s)	8.2	-	-	-	13.7	10
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0	-	-	-	0	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	362	403	5	1	0
Future Vol, veh/h	0	362	403	5	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	393	438	5	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	635	438
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	197	-
Critical Hdwy	-	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	-	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	0	-	-	0	426	618
Stage 1	0	-	-	0	650	-
Stage 2	0	-	-	0	817	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	426	618
Mov Cap-2 Maneuver	-	-	-	-	426	-
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	333	15	0	400	11	0	0	64	6	0	8
Future Vol, veh/h	15	333	15	0	400	11	0	0	64	6	0	8
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
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	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	362	16	0	435	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	-	-	-	0	-	-	362	829	829	435
Stage 1	-	-	-	-	-	-	-	-	-	435	435	-
Stage 2	-	-	-	-	-	-	-	-	-	394	394	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1124	-	0	0	-	-	0	0	680	257	308	598
Stage 1	-	-	0	0	-	-	0	0	-	544	584	-
Stage 2	-	-	0	0	-	-	0	0	-	573	609	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1124	-	-	-	-	-	-	-	680	228	304	598
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	228	304	-
Stage 1	-	-	-	-	-	-	-	-	-	536	584	-
Stage 2	-	-	-	-	-	-	-	-	-	507	600	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	10.9	15.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	680	1124	-	-	-	353
HCM Lane V/C Ratio	0.102	0.015	-	-	-	0.043
HCM Control Delay (s)	10.9	8.2	-	-	-	15.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	9	4	13	0
Future Vol, veh/h	0	24	9	4	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	10	4	14	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	38	14	14	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	974	1066	1604	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	968	1066	1604	-	-	-
Mov Cap-2 Maneuver	968	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1066	-	-
HCM Lane V/C Ratio	0.006	-	0.024	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	539	535	17	14	21
Future Vol, veh/h	28	539	535	17	14	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	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	29	550	546	17	14	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	563	0	-	0	1163	555
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	608	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	999	-	-	-	217	535
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	547	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	999	-	-	-	211	535
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	547	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	999	-	-	-	331
HCM Lane V/C Ratio	0.029	-	-	-	0.108
HCM Control Delay (s)	8.7	-	-	-	17.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	503	31	61	523	17	29	5	18	0	0	0
Future Vol, veh/h	19	503	31	61	523	17	29	5	18	0	0	0
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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	19	508	31	62	528	17	29	5	18	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	545	0	0	539	0	0	1207	1215	508
Stage 1	-	-	-	-	-	-	546	546	-
Stage 2	-	-	-	-	-	-	661	669	-
Critical Hdwy	4.1	-	-	4.12	-	-	6.47	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.47	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.47	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3
Pot Cap-1 Maneuver	1034	-	-	1029	-	-	198	183	569
Stage 1	-	-	-	-	-	-	571	521	-
Stage 2	-	-	-	-	-	-	504	459	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1034	-	-	1029	-	-	183	0	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	0	-
Stage 1	-	-	-	-	-	-	561	0	-
Stage 2	-	-	-	-	-	-	474	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0.9	23.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	183	569	1034	-	-	1029	-	-
HCM Lane V/C Ratio	0.188	0.032	0.019	-	-	0.06	-	-
HCM Control Delay (s)	29.2	11.5	8.5	-	-	8.7	-	-
HCM Lane LOS	D	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.7	0.1	0.1	-	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	521	575	0	12	26
Future Vol, veh/h	0	521	575	0	12	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	3	0	0	0	0
Mvmt Flow	0	532	587	0	12	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	853	294
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	266	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	302	708
Stage 1	0	-	-	0	524	-
Stage 2	0	-	-	0	760	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	302	708
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	302	708
HCM Lane V/C Ratio	-	-	0.041	0.037
HCM Control Delay (s)	-	-	17.4	10.3
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	533	569	0	0	6
Future Vol, veh/h	0	533	569	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	544	581	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	581
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	513
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	513
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	513
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	493	24	0	550	5	0	0	33	6	0	19
Future Vol, veh/h	16	493	24	0	550	5	0	0	33	6	0	19
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	508	25	0	567	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	-	-	-	0	-	-	508	1107	1107	567
Stage 1	-	-	-	-	-	-	-	-	-	567	567	-
Stage 2	-	-	-	-	-	-	-	-	-	540	540	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	986	-	0	0	-	-	0	0	563	189	212	527
Stage 1	-	-	0	0	-	-	0	0	-	512	510	-
Stage 2	-	-	0	0	-	-	0	0	-	530	524	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	986	-	-	-	-	-	-	-	563	175	209	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	175	209	-
Stage 1	-	-	-	-	-	-	-	-	-	504	510	-
Stage 2	-	-	-	-	-	-	-	-	-	490	516	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.8	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	563	986	-	-	-	355
HCM Lane V/C Ratio	0.06	0.017	-	-	-	0.073
HCM Control Delay (s)	11.8	8.7	-	-	-	15.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	25	29	16	10	0
Future Vol, veh/h	0	25	29	16	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	27	32	17	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	92	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	908	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1070	1608	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	1070	-	-
HCM Lane V/C Ratio	0.02	-	0.025	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	411	465	14	16	13
Future Vol, veh/h	15	411	465	14	16	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	16	447	505	15	17	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	520	0	-	0	992	513
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	479	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1056	-	-	-	275	549
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1056	-	-	-	271	549
Mov Cap-2 Maneuver	-	-	-	-	271	-
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1056	-	-	-	351
HCM Lane V/C Ratio	0.015	-	-	-	0.09
HCM Control Delay (s)	8.5	-	-	-	16.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	374	30	43	455	26	23	2	17	0	0	1
Future Vol, veh/h	23	374	30	43	455	26	23	2	17	0	0	1
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	140	-	140	-	-	-	-	-	0	-	-	-
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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	407	33	47	495	28	25	2	18	0	0	1

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	523	0	0	440	0	0	1060	1074	407
Stage 1	-	-	-	-	-	-	457	457	-
Stage 2	-	-	-	-	-	-	603	617	-
Critical Hdwy	4.14	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	1033	-	-	1131	-	-	250	222	648
Stage 1	-	-	-	-	-	-	642	571	-
Stage 2	-	-	-	-	-	-	550	484	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1033	-	-	1131	-	-	234	0	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	234	0	-
Stage 1	-	-	-	-	-	-	627	0	-
Stage 2	-	-	-	-	-	-	527	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.7	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	234	648	1033	-	-	1131	-	-
HCM Lane V/C Ratio	0.116	0.029	0.024	-	-	0.041	-	-
HCM Control Delay (s)	22.4	10.7	8.6	-	-	8.3	-	-
HCM Lane LOS	C	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰	↱
Traffic Vol, veh/h	0	391	493	0	25	31
Future Vol, veh/h	0	391	493	0	25	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	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	403	508	0	26	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	710	254
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	-	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	0	-	-	0	372	752
Stage 1	0	-	-	0	575	-
Stage 2	0	-	-	0	818	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	372	752
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	818	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	372	752
HCM Lane V/C Ratio	-	-	0.069	0.042
HCM Control Delay (s)	-	-	15.4	10
HCM Lane LOS	-	-	C	B
HCM 95th %tile Q(veh)	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	1	415	493	0	0	0
Future Vol, veh/h	1	415	493	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	432	514	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	514	0	-	0	-	514
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	3.3
Pot Cap-1 Maneuver	1062	-	-	0	0	564
Stage 1	-	-	-	0	0	-
Stage 2	-	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1062	-	-	-	-	564
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	1062	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-
HCM Control Delay (s)	8.4	-	-	0
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	408	4	0	491	3	0	0	40	2	0	2
Future Vol, veh/h	3	408	4	0	491	3	0	0	40	2	0	2
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	429	4	0	517	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	520	0	-	-	-	0	-	-	429	952	952	517
Stage 1	-	-	-	-	-	-	-	-	-	517	517	-
Stage 2	-	-	-	-	-	-	-	-	-	435	435	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1056	-	0	0	-	-	0	0	624	241	261	562
Stage 1	-	-	0	0	-	-	0	0	-	545	537	-
Stage 2	-	-	0	0	-	-	0	0	-	604	584	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1056	-	-	-	-	-	-	-	624	224	260	562
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	224	260	-
Stage 1	-	-	-	-	-	-	-	-	-	543	537	-
Stage 2	-	-	-	-	-	-	-	-	-	562	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.2	16.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	624	1056	-	-	-	320
HCM Lane V/C Ratio	0.067	0.003	-	-	-	0.013
HCM Control Delay (s)	11.2	8.4	-	-	-	16.4
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	19	19	10	10	0
Future Vol, veh/h	0	19	19	10	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	21	11	11	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	64	11	11	0	-	0
Stage 1	11	-	-	-	-	-
Stage 2	53	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	942	1070	1608	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	930	1070	1608	-	-	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	4.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	1070	-	-
HCM Lane V/C Ratio	0.013	-	0.019	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX F: INTERSECTION ANALYSIS WORKSHEETS – FUTURE WITH DEVELOPMENT (2029)

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	390	5	20	24
Future Vol, veh/h	9	345	390	5	20	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	10	375	424	5	22	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	822	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1074	-	-	-	346	611
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1074	-	-	-	343	611
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	451
HCM Lane V/C Ratio	0.009	-	-	-	0.106
HCM Control Delay (s)	8.4	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	337	17	23	360	23	24	0	29	7	0	11
Future Vol, veh/h	11	337	17	23	360	23	24	0	29	7	0	11
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	140	-	140	-	-	-	-	-	0	-	-	-
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	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	12	366	18	25	391	25	26	0	32	8	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	384	0	0	850	856	366	869	862	404
Stage 1	-	-	-	-	-	-	390	390	-	454	454	-
Stage 2	-	-	-	-	-	-	460	466	-	415	408	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1154	-	-	1137	-	-	283	297	677	274	295	651
Stage 1	-	-	-	-	-	-	638	611	-	589	573	-
Stage 2	-	-	-	-	-	-	585	566	-	619	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1137	-	-	271	287	677	255	286	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	287	-	255	286	-
Stage 1	-	-	-	-	-	-	632	605	-	583	560	-
Stage 2	-	-	-	-	-	-	562	554	-	584	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	14.7	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	271	677	1154	-	-	1137	-	-	406
HCM Lane V/C Ratio	0.096	0.047	0.01	-	-	0.022	-	-	0.048
HCM Control Delay (s)	19.7	10.6	8.2	-	-	8.2	-	-	14.3
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	372	406	5	0	1
Future Vol, veh/h	0	372	406	5	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	404	441	5	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	441
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	615
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	615
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	615
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	343	15	0	403	11	0	0	64	6	0	8
Future Vol, veh/h	15	343	15	0	403	11	0	0	64	6	0	8
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
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	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	373	16	0	438	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	-	-	-	0	-	-	373	843	843	438
Stage 1	-	-	-	-	-	-	-	-	-	438	438	-
Stage 2	-	-	-	-	-	-	-	-	-	405	405	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1121	-	0	0	-	-	0	0	671	251	303	596
Stage 1	-	-	0	0	-	-	0	0	-	541	582	-
Stage 2	-	-	0	0	-	-	0	0	-	565	602	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1121	-	-	-	-	-	-	-	671	223	299	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	223	299	-
Stage 1	-	-	-	-	-	-	-	-	-	533	582	-
Stage 2	-	-	-	-	-	-	-	-	-	499	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	671	1121	-	-	-	347
HCM Lane V/C Ratio	0.104	0.015	-	-	-	0.044
HCM Control Delay (s)	11	8.3	-	-	-	15.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	7	0	0	9	4	1	0	13	0
Future Vol, veh/h	0	0	24	7	0	0	9	4	1	0	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	8	0	0	10	4	1	0	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	39	14	52	39	5	14	0	0	5	0	0
Stage 1	14	14	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	27	14	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	966	853	1066	947	853	1078	1604	-	-	1616	-	-
Stage 1	1006	884	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	990	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	848	1066	920	848	1078	1604	-	-	1616	-	-
Mov Cap-2 Maneuver	961	848	-	920	848	-	-	-	-	-	-	-
Stage 1	1000	884	-	987	869	-	-	-	-	-	-	-
Stage 2	987	869	-	966	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	8.9	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1066	920	1616	-	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.008	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	543	539	17	17	18
Future Vol, veh/h	31	543	539	17	17	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	32	554	550	17	17	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	1177	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	618	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	213	532
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	206	532
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	301
HCM Lane V/C Ratio	0.032	-	-	-	0.119
HCM Control Delay (s)	8.7	-	-	-	18.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	506	31	61	497	25	29	5	18	15	0	30
Future Vol, veh/h	23	506	31	61	497	25	29	5	18	15	0	30
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	140	-	140	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	23	511	31	62	502	25	29	5	18	15	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	527	0	0	542	0	0	1211	1208	511	1223	1227	515
Stage 1	-	-	-	-	-	-	557	557	-	639	639	-
Stage 2	-	-	-	-	-	-	654	651	-	584	588	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.17	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1050	-	-	1027	-	-	155	185	567	158	180	564
Stage 1	-	-	-	-	-	-	506	515	-	468	474	-
Stage 2	-	-	-	-	-	-	447	468	-	501	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1050	-	-	1027	-	-	138	170	567	140	165	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	170	-	140	165	-
Stage 1	-	-	-	-	-	-	495	504	-	458	446	-
Stage 2	-	-	-	-	-	-	397	440	-	470	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	29.1	20.3
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	567	1050	-	-	1027	-	-	281
HCM Lane V/C Ratio	0.242	0.032	0.022	-	-	0.06	-	-	0.162
HCM Control Delay (s)	38.3	11.6	8.5	-	-	8.7	-	-	20.3
HCM Lane LOS	E	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.1	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	539	577	0	0	6
Future Vol, veh/h	0	539	577	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	550	589	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	589
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	507
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	507
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	507
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	499	24	0	558	5	0	0	33	6	0	19
Future Vol, veh/h	16	499	24	0	558	5	0	0	33	6	0	19
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	514	25	0	575	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	580	0	-	-	-	0	-	-	514	1121	1121	575
Stage 1	-	-	-	-	-	-	-	-	-	575	575	-
Stage 2	-	-	-	-	-	-	-	-	-	546	546	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	979	-	0	0	-	-	0	0	558	185	208	521
Stage 1	-	-	0	0	-	-	0	0	-	507	506	-
Stage 2	-	-	0	0	-	-	0	0	-	526	521	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	979	-	-	-	-	-	-	-	558	171	205	521
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	171	205	-
Stage 1	-	-	-	-	-	-	-	-	-	499	506	-
Stage 2	-	-	-	-	-	-	-	-	-	486	513	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.9	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	558	979	-	-	-	349
HCM Lane V/C Ratio	0.061	0.017	-	-	-	0.074
HCM Control Delay (s)	11.9	8.7	-	-	-	16.1
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	22	5	0	0	29	16	3	0	10	0
Future Vol, veh/h	0	0	22	5	0	0	29	16	3	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	5	0	0	32	17	3	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	94	95	11	106	94	19	11	0	0	20	0	0
Stage 1	11	11	-	83	83	-	-	-	-	-	-	-
Stage 2	83	84	-	23	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	889	795	1070	873	796	1059	1608	-	-	1596	-	-
Stage 1	1010	886	-	925	826	-	-	-	-	-	-	-
Stage 2	925	825	-	995	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	779	1070	841	780	1059	1608	-	-	1596	-	-
Mov Cap-2 Maneuver	876	779	-	841	780	-	-	-	-	-	-	-
Stage 1	990	886	-	907	809	-	-	-	-	-	-	-
Stage 2	907	809	-	973	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.3	4.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	841	1596	-	-
HCM Lane V/C Ratio	0.02	-	-	0.022	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	415	470	14	21	16
Future Vol, veh/h	19	415	470	14	21	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	21	451	511	15	23	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1012	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	493	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1051	-	-	-	267	545
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	262	545
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	338
HCM Lane V/C Ratio	0.02	-	-	-	0.119
HCM Control Delay (s)	8.5	-	-	-	17.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	379	30	43	423	36	23	2	17	30	0	38
Future Vol, veh/h	27	379	30	43	423	36	23	2	17	30	0	38
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	140	-	140	-	-	-	-	-	0	-	-	-
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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	412	33	47	460	39	25	2	18	33	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	499	0	0	445	0	0	1064	1063	412	1071	1077	480
Stage 1	-	-	-	-	-	-	470	470	-	574	574	-
Stage 2	-	-	-	-	-	-	594	593	-	497	503	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1055	-	-	1126	-	-	202	225	644	200	221	590
Stage 1	-	-	-	-	-	-	578	563	-	507	506	-
Stage 2	-	-	-	-	-	-	495	497	-	559	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1055	-	-	1126	-	-	178	210	644	183	206	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	210	-	183	206	-
Stage 1	-	-	-	-	-	-	562	548	-	493	485	-
Stage 2	-	-	-	-	-	-	441	476	-	526	530	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	21.3	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	644	1055	-	-	1126	-	-	298
HCM Lane V/C Ratio	0.151	0.029	0.028	-	-	0.042	-	-	0.248
HCM Control Delay (s)	28.5	10.8	8.5	-	-	8.3	-	-	21
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	0.1	-	-	0.1	-	-	1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	427	502	0	0	0
Future Vol, veh/h	0	427	502	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	445	523	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	523
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	558
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	558
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	419	4	0	500	3	0	0	40	2	0	2
Future Vol, veh/h	3	419	4	0	500	3	0	0	40	2	0	2
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	441	4	0	526	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	-	-	-	0	-	-	441	973	973	526
Stage 1	-	-	-	-	-	-	-	-	-	526	526	-
Stage 2	-	-	-	-	-	-	-	-	-	447	447	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	0	0	-	-	0	0	614	233	254	556
Stage 1	-	-	0	0	-	-	0	0	-	539	532	-
Stage 2	-	-	0	0	-	-	0	0	-	595	577	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1048	-	-	-	-	-	-	-	614	216	253	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	216	253	-
Stage 1	-	-	-	-	-	-	-	-	-	537	532	-
Stage 2	-	-	-	-	-	-	-	-	-	553	575	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.3	16.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	614	1048	-	-	-	311
HCM Lane V/C Ratio	0.069	0.003	-	-	-	0.014
HCM Control Delay (s)	11.3	8.4	-	-	-	16.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Future Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	9	0	0	21	11	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	66	68	11	77	66	13	11	0	0	15	0	0
Stage 1	11	11	-	55	55	-	-	-	-	-	-	-
Stage 2	55	57	-	22	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	927	823	1070	912	825	1067	1608	-	-	1603	-	-
Stage 1	1010	886	-	957	849	-	-	-	-	-	-	-
Stage 2	957	847	-	996	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	812	1070	886	814	1067	1608	-	-	1603	-	-
Mov Cap-2 Maneuver	918	812	-	886	814	-	-	-	-	-	-	-
Stage 1	997	886	-	945	838	-	-	-	-	-	-	-
Stage 2	945	836	-	977	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.1	4.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	886	1603	-	-
HCM Lane V/C Ratio	0.013	-	-	0.019	0.01	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX G: INTERSECTION ANALYSIS WORKSHEETS – FUTURE WITH DEVELOPMENT (2029) MITIGATED

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	390	5	20	24
Future Vol, veh/h	9	345	390	5	20	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	10	375	424	5	22	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	822	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1074	-	-	-	346	611
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1074	-	-	-	343	611
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	451
HCM Lane V/C Ratio	0.009	-	-	-	0.106
HCM Control Delay (s)	8.4	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	337	17	23	360	23	24	0	29	7	0	11
Future Vol, veh/h	11	337	17	23	360	23	24	0	29	7	0	11
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	140	-	140	-	-	0	-	-	0	-	-	-
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	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	12	366	18	25	391	25	26	0	32	8	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	384	0	0	850	856	366	856	849	391
Stage 1	-	-	-	-	-	-	390	390	-	441	441	-
Stage 2	-	-	-	-	-	-	460	466	-	415	408	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1154	-	-	1137	-	-	283	297	677	280	300	662
Stage 1	-	-	-	-	-	-	638	611	-	599	580	-
Stage 2	-	-	-	-	-	-	585	566	-	619	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1154	-	-	1137	-	-	271	287	677	260	290	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	287	-	260	290	-
Stage 1	-	-	-	-	-	-	632	605	-	593	567	-
Stage 2	-	-	-	-	-	-	562	554	-	584	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	14.7	14.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	271	677	1154	-	-	1137	-	-	413
HCM Lane V/C Ratio	0.096	0.047	0.01	-	-	0.022	-	-	0.047
HCM Control Delay (s)	19.7	10.6	8.2	-	-	8.2	-	-	14.2
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	372	406	5	0	1
Future Vol, veh/h	0	372	406	5	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	404	441	5	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	441
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	615
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	615
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	615
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	343	15	0	403	11	0	0	64	6	0	8
Future Vol, veh/h	15	343	15	0	403	11	0	0	64	6	0	8
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
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	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	373	16	0	438	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	-	-	-	0	-	-	373	843	843	438
Stage 1	-	-	-	-	-	-	-	-	-	438	438	-
Stage 2	-	-	-	-	-	-	-	-	-	405	405	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1121	-	0	0	-	-	0	0	671	251	303	596
Stage 1	-	-	0	0	-	-	0	0	-	541	582	-
Stage 2	-	-	0	0	-	-	0	0	-	565	602	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1121	-	-	-	-	-	-	-	671	223	299	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	223	299	-
Stage 1	-	-	-	-	-	-	-	-	-	533	582	-
Stage 2	-	-	-	-	-	-	-	-	-	499	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	15.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	671	1121	-	-	-	347
HCM Lane V/C Ratio	0.104	0.015	-	-	-	0.044
HCM Control Delay (s)	11	8.3	-	-	-	15.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	7	0	0	9	4	1	0	13	0
Future Vol, veh/h	0	0	24	7	0	0	9	4	1	0	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	8	0	0	10	4	1	0	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	39	14	52	39	5	14	0	0	5	0	0
Stage 1	14	14	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	27	14	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	966	853	1066	947	853	1078	1604	-	-	1616	-	-
Stage 1	1006	884	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	990	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	848	1066	920	848	1078	1604	-	-	1616	-	-
Mov Cap-2 Maneuver	961	848	-	920	848	-	-	-	-	-	-	-
Stage 1	1000	884	-	987	869	-	-	-	-	-	-	-
Stage 2	987	869	-	966	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	8.9	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1066	920	1616	-	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.008	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	543	539	17	17	18
Future Vol, veh/h	31	543	539	17	17	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	32	554	550	17	17	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	1177	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	618	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	213	532
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	206	532
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	301
HCM Lane V/C Ratio	0.032	-	-	-	0.119
HCM Control Delay (s)	8.7	-	-	-	18.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	506	31	61	497	25	29	5	18	15	0	30
Future Vol, veh/h	23	506	31	61	497	25	29	5	18	15	0	30
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	140	-	140	-	-	0	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	23	511	31	62	502	25	29	5	18	15	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	527	0	0	542	0	0	1211	1208	511	1210	1214	502
Stage 1	-	-	-	-	-	-	557	557	-	626	626	-
Stage 2	-	-	-	-	-	-	654	651	-	584	588	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.17	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1050	-	-	1027	-	-	155	185	567	161	183	573
Stage 1	-	-	-	-	-	-	506	515	-	475	480	-
Stage 2	-	-	-	-	-	-	447	468	-	501	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1050	-	-	1027	-	-	138	170	567	143	168	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	170	-	143	168	-
Stage 1	-	-	-	-	-	-	495	504	-	465	451	-
Stage 2	-	-	-	-	-	-	398	440	-	470	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.9	29.1	20
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	567	1050	-	-	1027	-	-	286
HCM Lane V/C Ratio	0.242	0.032	0.022	-	-	0.06	-	-	0.159
HCM Control Delay (s)	38.3	11.6	8.5	-	-	8.7	-	-	20
HCM Lane LOS	E	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.1	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	539	577	0	0	6
Future Vol, veh/h	0	539	577	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	550	589	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	589
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	507
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	507
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	507
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	499	24	0	558	5	0	0	33	6	0	19
Future Vol, veh/h	16	499	24	0	558	5	0	0	33	6	0	19
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	514	25	0	575	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	580	0	-	-	-	0	-	-	514	1121	1121	575
Stage 1	-	-	-	-	-	-	-	-	-	575	575	-
Stage 2	-	-	-	-	-	-	-	-	-	546	546	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	979	-	0	0	-	-	0	0	558	185	208	521
Stage 1	-	-	0	0	-	-	0	0	-	507	506	-
Stage 2	-	-	0	0	-	-	0	0	-	526	521	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	979	-	-	-	-	-	-	-	558	171	205	521
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	171	205	-
Stage 1	-	-	-	-	-	-	-	-	-	499	506	-
Stage 2	-	-	-	-	-	-	-	-	-	486	513	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.9	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	558	979	-	-	-	349
HCM Lane V/C Ratio	0.061	0.017	-	-	-	0.074
HCM Control Delay (s)	11.9	8.7	-	-	-	16.1
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	22	5	0	0	29	16	3	0	10	0
Future Vol, veh/h	0	0	22	5	0	0	29	16	3	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	24	5	0	0	32	17	3	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	94	95	11	106	94	19	11	0	0	20	0	0
Stage 1	11	11	-	83	83	-	-	-	-	-	-	-
Stage 2	83	84	-	23	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	889	795	1070	873	796	1059	1608	-	-	1596	-	-
Stage 1	1010	886	-	925	826	-	-	-	-	-	-	-
Stage 2	925	825	-	995	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	779	1070	841	780	1059	1608	-	-	1596	-	-
Mov Cap-2 Maneuver	876	779	-	841	780	-	-	-	-	-	-	-
Stage 1	990	886	-	907	809	-	-	-	-	-	-	-
Stage 2	907	809	-	973	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.3	4.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	841	1596	-	-
HCM Lane V/C Ratio	0.02	-	-	0.022	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	415	470	14	21	16
Future Vol, veh/h	19	415	470	14	21	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	21	451	511	15	23	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1012	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	493	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1051	-	-	-	267	545
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	262	545
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	338
HCM Lane V/C Ratio	0.02	-	-	-	0.119
HCM Control Delay (s)	8.5	-	-	-	17.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	379	30	43	423	36	23	2	17	30	0	38
Future Vol, veh/h	27	379	30	43	423	36	23	2	17	30	0	38
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	140	-	140	-	-	0	-	-	0	-	-	-
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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	412	33	47	460	39	25	2	18	33	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	499	0	0	445	0	0	1064	1063	412	1051	1057	460
Stage 1	-	-	-	-	-	-	470	470	-	554	554	-
Stage 2	-	-	-	-	-	-	594	593	-	497	503	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1055	-	-	1126	-	-	202	225	644	207	227	605
Stage 1	-	-	-	-	-	-	578	563	-	520	517	-
Stage 2	-	-	-	-	-	-	495	497	-	559	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1055	-	-	1126	-	-	178	210	644	189	212	605
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	210	-	189	212	-
Stage 1	-	-	-	-	-	-	562	548	-	506	495	-
Stage 2	-	-	-	-	-	-	442	476	-	526	530	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	21.3	20.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	644	1055	-	-	1126	-	-	307
HCM Lane V/C Ratio	0.151	0.029	0.028	-	-	0.042	-	-	0.241
HCM Control Delay (s)	28.5	10.8	8.5	-	-	8.3	-	-	20.4
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.1	0.1	-	-	0.1	-	-	0.9

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	427	502	0	0	0
Future Vol, veh/h	0	427	502	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	445	523	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	523
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	558
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	558
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	419	4	0	500	3	0	0	40	2	0	2
Future Vol, veh/h	3	419	4	0	500	3	0	0	40	2	0	2
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	441	4	0	526	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	529	0	-	-	-	0	-	-	441	973	973	526
Stage 1	-	-	-	-	-	-	-	-	-	526	526	-
Stage 2	-	-	-	-	-	-	-	-	-	447	447	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1048	-	0	0	-	-	0	0	614	233	254	556
Stage 1	-	-	0	0	-	-	0	0	-	539	532	-
Stage 2	-	-	0	0	-	-	0	0	-	595	577	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1048	-	-	-	-	-	-	-	614	216	253	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	216	253	-
Stage 1	-	-	-	-	-	-	-	-	-	537	532	-
Stage 2	-	-	-	-	-	-	-	-	-	553	575	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.3	16.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	614	1048	-	-	-	311
HCM Lane V/C Ratio	0.069	0.003	-	-	-	0.014
HCM Control Delay (s)	11.3	8.4	-	-	-	16.7
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Future Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	9	0	0	21	11	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	66	68	11	77	66	13	11	0	0	15	0	0
Stage 1	11	11	-	55	55	-	-	-	-	-	-	-
Stage 2	55	57	-	22	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	927	823	1070	912	825	1067	1608	-	-	1603	-	-
Stage 1	1010	886	-	957	849	-	-	-	-	-	-	-
Stage 2	957	847	-	996	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	812	1070	886	814	1067	1608	-	-	1603	-	-
Mov Cap-2 Maneuver	918	812	-	886	814	-	-	-	-	-	-	-
Stage 1	997	886	-	945	838	-	-	-	-	-	-	-
Stage 2	945	836	-	977	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.1	4.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	886	1603	-	-
HCM Lane V/C Ratio	0.013	-	-	0.019	0.01	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX H: TERSECTION ANALYSIS WORKSHEETS – FUTURE WITH DEVELOPMENT (2029) ALTERNATIVE

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	345	390	5	20	24
Future Vol, veh/h	9	345	390	5	20	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	3	6	25	0	10
Mvmt Flow	10	375	424	5	22	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	429	0	-	0	822	427
Stage 1	-	-	-	-	427	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	4.23	-	-	-	6.4	6.3
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.39
Pot Cap-1 Maneuver	1074	-	-	-	346	611
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	685	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1074	-	-	-	343	611
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1074	-	-	-	451
HCM Lane V/C Ratio	0.009	-	-	-	0.106
HCM Control Delay (s)	8.4	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	337	17	23	366	23	18	0	35	7	0	11
Future Vol, veh/h	11	337	17	23	366	23	18	0	35	7	0	11
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	140	-	140	-	-	0	-	-	0	-	-	-
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	6	9	8	0	0	0	3	0	0	0
Mvmt Flow	12	366	18	25	398	25	20	0	38	8	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	423	0	0	384	0	0	857	863	366	866	856	398
Stage 1	-	-	-	-	-	-	390	390	-	448	448	-
Stage 2	-	-	-	-	-	-	467	473	-	418	408	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1147	-	-	1137	-	-	280	295	677	276	297	656
Stage 1	-	-	-	-	-	-	638	611	-	594	576	-
Stage 2	-	-	-	-	-	-	580	562	-	616	600	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1147	-	-	1137	-	-	268	286	677	254	287	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	268	286	-	254	287	-
Stage 1	-	-	-	-	-	-	632	605	-	588	563	-
Stage 2	-	-	-	-	-	-	557	550	-	575	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.5	13.6	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	268	677	1147	-	-	1137	-	-	406
HCM Lane V/C Ratio	0.073	0.056	0.01	-	-	0.022	-	-	0.048
HCM Control Delay (s)	19.5	10.6	8.2	-	-	8.2	-	-	14.3
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.2	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	379	412	5	0	1
Future Vol, veh/h	0	379	412	5	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	412	448	5	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	448
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	610
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	610
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	610
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	349	15	0	409	11	0	0	64	6	0	8
Future Vol, veh/h	15	349	15	0	409	11	0	0	64	6	0	8
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
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	0	0	7	36	0	0	3	33	0	13
Mvmt Flow	16	379	16	0	445	12	0	0	70	7	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	457	0	-	-	-	0	-	-	379	856	856	445
Stage 1	-	-	-	-	-	-	-	-	-	445	445	-
Stage 2	-	-	-	-	-	-	-	-	-	411	411	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.43	6.5	6.33
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.797	4	3.417
Pot Cap-1 Maneuver	1114	-	0	0	-	-	0	0	666	246	297	591
Stage 1	-	-	0	0	-	-	0	0	-	537	578	-
Stage 2	-	-	0	0	-	-	0	0	-	561	598	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1114	-	-	-	-	-	-	-	666	218	293	591
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	218	293	-
Stage 1	-	-	-	-	-	-	-	-	-	529	578	-
Stage 2	-	-	-	-	-	-	-	-	-	495	590	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11	16.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	666	1114	-	-	-	341
HCM Lane V/C Ratio	0.104	0.015	-	-	-	0.045
HCM Control Delay (s)	11	8.3	-	-	-	16.1
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	24	7	0	0	9	4	1	0	13	0
Future Vol, veh/h	0	0	24	7	0	0	9	4	1	0	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	26	8	0	0	10	4	1	0	14	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	39	39	14	52	39	5	14	0	0	5	0	0
Stage 1	14	14	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	27	14	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	966	853	1066	947	853	1078	1604	-	-	1616	-	-
Stage 1	1006	884	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	990	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	961	848	1066	920	848	1078	1604	-	-	1616	-	-
Mov Cap-2 Maneuver	961	848	-	920	848	-	-	-	-	-	-	-
Stage 1	1000	884	-	987	869	-	-	-	-	-	-	-
Stage 2	987	869	-	966	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	8.9	4.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1066	920	1616	-	-
HCM Lane V/C Ratio	0.006	-	-	0.024	0.008	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	543	539	17	17	18
Future Vol, veh/h	31	543	539	17	17	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	4	3	1	0	0	0
Mvmt Flow	32	554	550	17	17	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	567	0	-	0	1177	559
Stage 1	-	-	-	-	559	-
Stage 2	-	-	-	-	618	-
Critical Hdwy	4.14	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.236	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	995	-	-	-	213	532
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	206	532
Mov Cap-2 Maneuver	-	-	-	-	206	-
Stage 1	-	-	-	-	558	-
Stage 2	-	-	-	-	542	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	995	-	-	-	301
HCM Lane V/C Ratio	0.032	-	-	-	0.119
HCM Control Delay (s)	8.7	-	-	-	18.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	506	31	61	511	25	15	5	32	15	0	30
Future Vol, veh/h	23	506	31	61	511	25	15	5	32	15	0	30
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	140	-	140	-	-	0	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	0	3	3	2	1	0	7	0	0	0	0	0
Mvmt Flow	23	511	31	62	516	25	15	5	32	15	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	542	0	0	1225	1222	511	1231	1228	516
Stage 1	-	-	-	-	-	-	557	557	-	640	640	-
Stage 2	-	-	-	-	-	-	668	665	-	591	588	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.17	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.17	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.563	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1038	-	-	1027	-	-	152	181	567	156	180	563
Stage 1	-	-	-	-	-	-	506	515	-	467	473	-
Stage 2	-	-	-	-	-	-	439	461	-	497	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1038	-	-	1027	-	-	135	166	567	135	165	563
Mov Cap-2 Maneuver	-	-	-	-	-	-	135	166	-	135	165	-
Stage 1	-	-	-	-	-	-	495	504	-	457	445	-
Stage 2	-	-	-	-	-	-	390	433	-	454	488	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.9	20.5	20.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	567	1038	-	-	1027	-	-	274
HCM Lane V/C Ratio	0.142	0.057	0.022	-	-	0.06	-	-	0.166
HCM Control Delay (s)	34.5	11.7	8.5	-	-	8.7	-	-	20.7
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0.2	0.1	-	-	0.2	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↱			↗
Traffic Vol, veh/h	0	553	591	0	0	6
Future Vol, veh/h	0	553	591	0	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	564	603	0	0	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	603
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	0	0	498
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	498
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	498
HCM Lane V/C Ratio	-	-	0.012
HCM Control Delay (s)	-	-	12.3
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	513	24	0	572	5	0	0	33	6	0	19
Future Vol, veh/h	16	513	24	0	572	5	0	0	33	6	0	19
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	5	1	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	16	529	25	0	590	5	0	0	34	6	0	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	595	0	-	-	-	0	-	-	529	1151	1151	590
Stage 1	-	-	-	-	-	-	-	-	-	590	590	-
Stage 2	-	-	-	-	-	-	-	-	-	561	561	-
Critical Hdwy	4.15	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.245	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	967	-	0	0	-	-	0	0	548	177	200	511
Stage 1	-	-	0	0	-	-	0	0	-	497	498	-
Stage 2	-	-	0	0	-	-	0	0	-	516	513	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	967	-	-	-	-	-	-	-	548	164	197	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	164	197	-
Stage 1	-	-	-	-	-	-	-	-	-	489	498	-
Stage 2	-	-	-	-	-	-	-	-	-	476	504	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	12	16.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	548	967	-	-	-	339
HCM Lane V/C Ratio	0.062	0.017	-	-	-	0.076
HCM Control Delay (s)	12	8.8	-	-	-	16.5
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	21	5	0	0	29	16	3	0	10	0
Future Vol, veh/h	0	0	21	5	0	0	29	16	3	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	5	0	0	32	17	3	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	94	95	11	106	94	19	11	0	0	20	0	0
Stage 1	11	11	-	83	83	-	-	-	-	-	-	-
Stage 2	83	84	-	23	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	889	795	1070	873	796	1059	1608	-	-	1596	-	-
Stage 1	1010	886	-	925	826	-	-	-	-	-	-	-
Stage 2	925	825	-	995	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	876	779	1070	842	780	1059	1608	-	-	1596	-	-
Mov Cap-2 Maneuver	876	779	-	842	780	-	-	-	-	-	-	-
Stage 1	990	886	-	907	809	-	-	-	-	-	-	-
Stage 2	907	809	-	974	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.3	4.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	842	1596	-	-
HCM Lane V/C Ratio	0.02	-	-	0.021	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.3	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	415	470	14	21	16
Future Vol, veh/h	19	415	470	14	21	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	160	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	8	0	8
Mvmt Flow	21	451	511	15	23	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	526	0	-	0	1012	519
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	493	-
Critical Hdwy	4.1	-	-	-	6.4	6.28
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.372
Pot Cap-1 Maneuver	1051	-	-	-	267	545
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	262	545
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	338
HCM Lane V/C Ratio	0.02	-	-	-	0.119
HCM Control Delay (s)	8.5	-	-	-	17.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	379	30	43	429	36	17	2	23	30	0	38
Future Vol, veh/h	27	379	30	43	429	36	17	2	23	30	0	38
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	140	-	140	-	-	0	-	-	0	-	-	-
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, %	4	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	412	33	47	466	39	18	2	25	33	0	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	505	0	0	445	0	0	1070	1069	412	1060	1063	466
Stage 1	-	-	-	-	-	-	470	470	-	560	560	-
Stage 2	-	-	-	-	-	-	600	599	-	500	503	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1049	-	-	1126	-	-	201	223	644	204	225	601
Stage 1	-	-	-	-	-	-	578	563	-	516	514	-
Stage 2	-	-	-	-	-	-	491	494	-	557	545	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1049	-	-	1126	-	-	177	208	644	184	209	601
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	208	-	184	209	-
Stage 1	-	-	-	-	-	-	562	547	-	502	492	-
Stage 2	-	-	-	-	-	-	438	473	-	519	530	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.7	18.4	20.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	180	644	1049	-	-	1126	-	-	301
HCM Lane V/C Ratio	0.115	0.039	0.028	-	-	0.042	-	-	0.246
HCM Control Delay (s)	27.6	10.8	8.5	-	-	8.3	-	-	20.8
HCM Lane LOS	D	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	0.1	-	-	0.1	-	-	0.9

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	432	508	0	0	0
Future Vol, veh/h	0	432	508	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	450	529	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	529
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	0	554
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	-	554
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	425	4	0	506	3	0	0	40	2	0	2
Future Vol, veh/h	3	425	4	0	506	3	0	0	40	2	0	2
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	-	-	Free	-	-	None	-	-	Stop	-	-	None
Storage Length	225	-	0	-	-	225	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	0	0	3	0	0	0
Mvmt Flow	3	447	4	0	533	3	0	0	42	2	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	-	-	-	0	-	-	447	986	986	533
Stage 1	-	-	-	-	-	-	-	-	-	533	533	-
Stage 2	-	-	-	-	-	-	-	-	-	453	453	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.23	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1042	-	0	0	-	-	0	0	609	229	250	551
Stage 1	-	-	0	0	-	-	0	0	-	534	528	-
Stage 2	-	-	0	0	-	-	0	0	-	590	573	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1042	-	-	-	-	-	-	-	609	213	249	551
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	213	249	-
Stage 1	-	-	-	-	-	-	-	-	-	532	528	-
Stage 2	-	-	-	-	-	-	-	-	-	548	571	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	11.4	16.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	609	1042	-	-	-	307
HCM Lane V/C Ratio	0.069	0.003	-	-	-	0.014
HCM Control Delay (s)	11.4	8.5	-	-	-	16.9
HCM Lane LOS	B	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Future Vol, veh/h	0	0	19	8	0	0	19	10	4	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	9	0	0	21	11	4	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	66	68	11	77	66	13	11	0	0	15	0	0
Stage 1	11	11	-	55	55	-	-	-	-	-	-	-
Stage 2	55	57	-	22	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	927	823	1070	912	825	1067	1608	-	-	1603	-	-
Stage 1	1010	886	-	957	849	-	-	-	-	-	-	-
Stage 2	957	847	-	996	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	918	812	1070	886	814	1067	1608	-	-	1603	-	-
Mov Cap-2 Maneuver	918	812	-	886	814	-	-	-	-	-	-	-
Stage 1	997	886	-	945	838	-	-	-	-	-	-	-
Stage 2	945	836	-	977	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	9.1	4.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1608	-	-	1070	886	1603	-	-
HCM Lane V/C Ratio	0.013	-	-	0.019	0.01	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

APPENDIX I: CRASH DATA

VDOT Crash Data Summary Table

Crash Data for the Intersection of Washington St (Rte. 55) and Greenhill Crossing Dr/Site Entrance (January 2020 - December 2024)									
Document Number	**Date**	**Crash Severity**	**Collsion Type**	**Pedestrain Injury**	**Persons Injured**	**Fatalities**	**Work Zone Related**	**Adverse Weather Conditions**	**Distracted Driver**
210355168	2/3/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
233305159	11/21/2023	PDO. Property Damage Only	2. Angle	0	0	0		yes	no
231355164	5/13/2023	PDO. Property Damage Only	2. Angle	0	0	0		no	no

APPENDIX J: DESCRIPTION OF TRAFFIC LEVEL OF SERVICE

GOROVE SLADE
Transportation Planners and Engineers

TECHNICAL MEMORANDUM

Subject: Level of Service Definitions

Introduction

The purpose of this memorandum is to define the level of service (LOS) metric that commonly used as a measure of effectiveness (MOE) for traffic operations.

All capacity analyses are based on the procedures specified by the Transportation Research Board's (TRB) Highway Capacity Manual (HCM), which is currently on its sixth edition. Level of service ranges from A to F. A brief description of each level of service for signalized and unsignalized intersections is provided below.

Signalized Intersections

Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The levels of service for signalized intersections are defined below:

- **Level of Service A** describes operations with very low average delay per vehicle, i.e., less than 10.0 seconds. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop. Short signal cycle lengths may also contribute to low delay.
- **Level of Service B** describes operations with average delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- **Level of Service C** describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level although many still pass through the intersection without stopping. This is generally considered the lower end of the range of the acceptable level of service in rural areas.
- **Level of Service D** describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high traffic volumes as compared to the roadway capacity. Many vehicles are required to stop and the number of vehicles that do not have to stop declines. Individual signal cycle failures, where all waiting vehicles do not clear the intersection during a single green time, are noticeable. This is generally considered the lower end of the range of the acceptable level of service in urban areas.
- **Level of Service E** describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. These higher delay values generally indicate poor progression, long cycle lengths, and high traffic volumes. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions.
- **Level of Service F** describes operations with average delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when traffic arrives at a flow rate that exceeds the capacity of the intersection. It may also occur at high volumes with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delays.

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Unsignalized Intersections

At an unsignalized intersection, the major street through traffic and right-turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left-turn traffic is dependent on the volume and capacity of the available lanes, and, the number and frequency of acceptable gaps in the major street traffic to make a conflicting turn. The level of service grade is provided for each conflicting movement at an unsignalized intersection and is based on the total average delay experienced by each vehicle. The delay includes the time it takes a vehicle to move from the back of a queue through the intersection.

The unsignalized intersection level of service analysis does not account for variations in driver behavior or the effects of nearby traffic signals. Therefore, the results from this analysis usually indicate worse levels of service than may be experienced in the field. The unsignalized intersection level of service descriptions are provided below:

- **Level of Service A** describes operations where there is very little to no conflicting traffic for a minor side street movement, i.e., an average total delay of less than 10.0 seconds per vehicle.
- **Level of Service B** describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.
- **Level of Service C** describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.
- **Level of Service D** describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.
- **Level of Service E** describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.
- **Level of Service F** describes operations with average total delay of 50 seconds per vehicle. LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through or enter a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal driver behavior.