PLANNING COMMISSION REGULAR MEETING

Tuesday, June 18, 2024 at 7:00 PM

AGENDA

CALL TO ORDER AND ESTABLISHMENT OF A QUORUM.

ADOPTION OF MINUTES.

1. Draft April 16, 2024 Planning Commission Regular Meeting Minutes
2. Draft April 23, 2024 Planning Commission Work Session Meeting Minutes

HEARING OF PUBLIC HEARING ITEMS.

3. SUP 2022-05 Warrenton Village Center, the Owners, Jefferson Associates LP and Warrenton Center, LLC with the Applicant, NewCastle Development Group, seek a Special Use Permit for two parcels totaling approximately 29.05 acres to create a mixed use development in the existing Warrenton Village Center. The proposal includes up to 320 apartments, 34 2 over 2s, and 32 townhomes with the addition of central plaza, parking garage, enhanced internal road network, and pedestrian infrastructure to promote walkability. The properties are zoned Commercial and designated in the New Town Character District of Plan Warrenton 2040. (GPINs 6985-20-7247 and 6984-29-6753)

WORKSESSION ITEMS.

4. ZOTA 2024 - 02 - Zoning Text Amendment to Remove Articles 4 and 5 per State Code. On June 11, 2024, the Town Council adopted Erosion and Sediment Control and Stormwater Management regulations in a standalone document based on a state model ordinance. This procedural text amendment removes Articles 4 and 5 from the Zoning Ordinance as the updated regulations are contained in the new document.

COMMENTS FROM THE COMMISSION.

COMMENTS FROM THE STAFF.

ADJOURN.

PLANNING COMMISSION REGULAR MEETING

21 Main Street

Tuesday, April 16, 2024, at 7:00 PM

MINUTES

A REGULAR MEETING OF THE PLANNING COMMISSION OF THE TOWN OF WARRENTON, VIRGINIA, WAS HELD ON April 16, 2024, at 7:00 PM

Regular Meeting

PRESENT	Mr. Ryan Stewart, Chair; Mr. Terry Lasher, Vice Chair; Ms. Darine Barbour, Secretary; Mr. James Lawrence; Mr. Steve Ainsworth; Ms. Denise Harris, Planning Manager; and Ms. Heather Jenkins, Zoning Administrator
ABSENT	N/A

The minutes laid out will be a brief recap of the agenda items. Please see recorded video for more in-depth information.

REGULAR MEETING - 7:00 PM

At 7:00 PM on Tuesday, April 16, 2024. The Planning Commission meeting was called to order by the Chair and a quorum was established.

Chair Stewart reads a statement regarding how public input works during public hearings. Work Sessions are not open to public input; however, the public is welcome to listen in the open meeting.

APPROVAL OF THE MINUTES.

Commissioner Lawrence motioned to adopt the March 19, 2024, Planning Commission Minutes.

Commissioner Lasher seconded the motion.

Vote 5-0 to approve.

PUBLIC HEARINGS.

1. ZOTA 2023-01 A Zoning Ordinance Text Amendment to Reduce the Setback Requirement for Telecommunication Towers (2ND PUBLIC HEARING - REVISED BY APPLICANT). Zoning Ordinance Section 9-18.10 - Setbacks requires that all telecommunication towers in all zoning districts be set back from property lines at a distance no less than the full height of the tower. The applicant is requesting that the setback requirement be reduced to allow a setback that is less than the height of the tower, with certification provided from an engineer that a lesser setback is appropriate due to the design of the tower. This text amendment application was revised following the February 20, 2024 Public Hearing, where the representative waived the 100-day deadline for Planning Commission action, and requested a deferral to revise the application so that the setback reduction would apply in

all Zoning Districts throughout the Town. Arcola Towers LLC (Applicant)/James P. Downey (Representative)

Ms. Heather Jenkins gave an overview of the application.

Chair Stewart opened the Public Hearing at 7:14 PM.

James Downey, resident 298 Falmouth Street, Applicant's Representative, spoke to the application.

Chair Stewart closed the Public Hearing at 7:17 PM.

Commissioner Lawrence states this is a decision purely for the Zoning Ordinance text amendment application, the fate of a potential future Special Use Permit is not the subject for tonight.

James Downey confirms his understanding.

Chair Stewart clarifies that if the Zoning Ordinance Text Amendment had been initiated by Town Council, then staff would have provided all necessary information requested. However, this application was initiated by an Applicant and the onus is on them to provide information. He finds the application lacking in analysis of impact townwide, Comprehensive Plan conformance, and inventory. No information was provided to demonstrate the need or additional supporting analysis.

Commissioner Ainsworth raised the Cityscape technical memo and stated he is satisfied with what is presented.

Commissioner Lawrence moved to recommend approval of ZOTA 2023-01, the motion was seconded by Commissioner Ainsworth.

Commissioner Lawrence states it is a very technical issue, Cityscape's opinion that technology is in good standing.

Chair Stewart states that expert opinions are valued but he doesn't see the need to modify the Town Zoning Ordinance in every district for the benefit of one applicant in one proposed location without proper analysis of the townwide impact.

Ayes: Ms. Darine Barbour, Secretary; Mr. James Lawrence; Mr. Steve Ainsworth

Nays: Mr. Ryan Stewart, Chair; Mr. Terry Lasher, Vice Chair

Abstention: ***N/A***

Absent:

The motion passed.

WORKSESSION ITEMS.

1. SUP 2022-05 Warrenton Village Center, the Owners, Jefferson Associates LP and Warrenton Center, LLC with the Applicant, New Castle Development Group, seek a Special Use Permit for two parcels totaling approximately 29.05 acres to create a mixed use development in the existing Warrenton Village Center. The proposal includes apartments, 2 over 2s, and townhomes with the addition of central plaza,

parking garage, enhanced internal road network, and pedestrian infrastructure to promote walkability. The properties are zoned Commercial and designated in the New Town Character District of Plan Warrenton 2040. (GPINs 6985-20-7247 and 6984-29-6753)

Chair Stewart explained the next two work sessions would divide topics to be covered by the Applicant. Staff reports are provided at the time of the Public Hearing based on the materials submitted at that time. He then invited the Applicant to begin.

Kendrick Whitmore, Applicant's Representative, gave a detailed presentation covering the following topics.

- Plan Warrenton 2040 Review
- Housing Market & Economic Impacts
- Population & Employment Growth
- Affordable Dwelling Units

The Applicant took a break in the presentation to answer questions.

Commissioner Lawrence asks for an explanation of the 80% AMI.

Mr. Whitmore provides an explanation.

Chair Stewart asks if 10% serves 80% AMI, what happens if the 10% is not filled?

Mr. Whitmore replies stay vacant until filled.

Vice Chair Lasher asks is 80% entry point to access the 10%?

Mr. Whitmore responds Town Zoning Ordinance standards.

Chair Stewart speaks to the Urban Development Areas being established and their assumed growth factors.

Commissioner Ainsworth asks if there will be a sliding scale to incomes within the 80% AMI.

Mr. Whitmore stated they will target the 80% first.

Secretary Barbour expressed concern over the number of 1-2 bedroom vs number of 3 bedroom. She asked if the 2-3 bedroom unit count can be increased to meet housing needs of families?

Mr. Whitmore responds they can work with staff on flexibility to respond to needed demand.

Chair Stewart returns the conversation to Commissioner Ainsworth's previous question, asking how rental rate is set? What is the math behind it?

Mr. Whitmore responds rent is capped based on 30% income.

Chair Stewart asked if the property manager works with individual tenants to allow them to stay if they no longer meet the parameters?

Mr. Whitmore states they will work with renters. He also indicated there would be continuous reporting to Town, work in partnership.

Commissioner Lawrence asks about page 3 of the Market & Fiscal Analysis onsite vs offsite.

Jess Achenbach explains the onsite revenues reference items like property taxes. Offsite revenues reference items like meals tax. Onsite impacts are derived on a capital allocation per capita. Offsite impacts include capital allocation new employees per capita.

Mr. Whitmore then continued the presentation by introducing Mr. Neville Fernandez, the Applicant's Architect, who discussed the following topics.

- Architecture
- Public Improvements

Commissioner Lawrence asks how much of the landscaping is guaranteed.

Mr. Achenbach states the landscaping sheet in SUP plan is conditioned.

Commissioner Lawrence asks if the central plaza is included in Phase 1.

Mr. Fernandez responds the central plaza is but "plaza coffee" building is illustrative and market driven. The Applicant would ideally like an anchor to the central plaza.

Commissioner Ainsworth raises the historical Oak Spring well and spring on the property. He asks if it could be considered for preservation.

Mr. Whitmore responds that they are looking at how to accommodate it.

Chair Stewart asks about the number of stories proposed, and expresses concern over transition to Highland, Oak Springs and adjacent townhomes. Plan Warrenton 2040 states the highest buildings should be in the centered towards Lee Highway and then step down to Oak Springs. He requested a cross section be provided.

Mr. Whitmore responds that they will prepare to answer at the following work session.

Mr. Fernandez provides the setbacks of the buildings and width of Oak Springs Drive.

Chair Stewart asks if the two over twos are rear loaded.

Mr. Fernandez responds yes, correct. Parking in back.

Chair Stewart asks about the presence and location of storm water management, and any natural green infrastructure proposed.

Mr. Achenbach replies that civil engineers will be present at the next meeting; however, they anticipate that stormwater will be covered at time of site plan.

Chair Stewart asks about an internal bike network.

Mr. Fernandez and Mr. Whitmore review the interior network of the site and concepts of the SUP Plans.

Chair Stewart asks about a service alley and requests the Applicant walk through landscaping treatments and other proposed treatments.

Mr. Fernandez indicates a six foot high fence will provide residents a screening from service road with green setbacks beyond the fence.

Mr. Whitmore indicated this topic was raised by staff many times and the Applicant is committed to make it work.

Chair Stewart asks about how public open spaces will be managed and public access easements.

Mr. Whitmore responds the Applicant is committed to deliver public spaces and anticipates providing public access easements. The management company will be responsible for maintenance.

Chair Stewart requests shade trees around the proposed splash pad to provide shelter and comfort for users of the central plaza.

Vice Chair Lasher indicated that while redevelopment preferable, he challenged the Applicant to pay attention to the community character and context.

Vice Chair Lasher encouraged the Applicant to look at being daring with their design around green infrastructure.

Mr. Fernandez replied absolutely.

Chair Stewart asks for any closing remarks and states that next week's meeting will involve stormwater management, water & sewer, transportation, and school impacts.

Chairman Stewart closed the work session.

COMMENTS FROM THE COMMISSION.

Vice Chair Lasher thanks staff for their work.

Secretary Barbour thanks staff for their work.

Chair Stewart thanks staff for their quality and professional work.

COMMENTS FROM THE STAFF.

No comments from Staff.

ADJOURN.

Vice Chair Lasher moved to adjourn, seconded by Commissioner Lawrence. Chair Stewart, with no further business, this meeting was adjourned at 09:04PM.

I hereby certify that this is a true and exact record of actions taken by the Planning Commission of the Town of Warrenton on April 16, 2024.

Darine Barbour, Secretary
Planning Commission

DRAFT

DRAFT

PLANNING COMMISSION WORK SESSION

21 Main Street

Tuesday, April 23, 2024, at 7:00 PM

MINUTES

A WORK SESSION OF THE PLANNING COMMISSION OF THE TOWN OF WARRENTON, VIRGINIA, WAS HELD ON April 23, 2024, at 7:00 PM

WORK SESSION	
PRESENT	Mr. Ryan Stewart, Chair; Ms. Darine Barbour, Secretary; Mr. James Lawrence; Mr. Steve Ainsworth; Ms. Denise Harris, Planning Manager; Martin Crim, Town Attorney; Steven Friend, Director Public Utilities; and Chris Tiesler, Town Transportation Consultant (Kittleson)
ABSENT	Mr. Terry Lasher, Vice Chair

The minutes laid out will be a brief recap of the agenda items. Please see recorded video for more in-depth information.

WORK SESSION - 7:00 PM

At 7:00 PM on Tuesday, April 23, 2024. The Planning Commission meeting was called to order by the Chair and a quorum was established.

Chairman Stewart clarified the agenda listed "Comments from the Commission" twice when the first listing should read "Closed Session."

Secretary Barbour motioned to approve the agenda as intended. Commissioners Ainsworth seconded. The motion passed 4-0 (Lasher Absent).

WORKSESSION ITEMS.

1. SUP 2022-05 Warrenton Village Center, the Owners, Jefferson Associates LP and Warrenton Center, LLC with the Applicant, New Castle Development Group, seek a Special Use Permit for two parcels totaling approximately 29.05 acres to create a mixed-use development in the existing Warrenton Village Center. The proposal includes apartments, 2 over 2s, and townhomes with the addition of central plaza, parking garage, enhanced internal road network, and pedestrian infrastructure to promote walkability. The properties are zoned Commercial and designated in the New Town Character District of Plan Warrenton 2040. (GPINs 6985-20-7247 and 6984-29-6753)

The Planning Commission began its third work session on the application. Chairman Stewart asked staff to give an introduction.

Ms. Harris indicated that tonight's work session would discuss water and sewer needs, transportation, schools, and requested waivers and modifications. The Applicant would be presenting as they have the two previous work session; however, subject matter experts for the Town were also in attendance.

Kendrick Whitmore, Applicant's Representative, began the presentation by answering questions from previous work sessions on the topics of the historical on site spring, shade trees at the central plaza, stormwater management, and architecture.

Mr. Whitmore continued with a detailed presentation covering water and sewer. He indicated the Applicant's anticipated impacts based on six other communities they currently manage. He also covered the impacts anticipated by the Town. Both of which fall within the water and sewer capacity of the Town.

Director Friend covered the water and sewer capacity graphs included in the WRA Study and confirmed that this development was incorporated into the study.

The Planning Commission inquired about the current improvements being made to the sewer facility and confirmed this application is not driving those maintenance improvements. Mr. Friend confirmed the maintenance improvements are necessary due to aging infrastructure.

Mr. Whitmore then introduced Kevin Sitzman, of Gorove Slade, the transportation consultant for the Applicant. Mr. Sitzman provided a detailed review of the transportation system proposed, the bicycle/pedestrian connections, the Traffic Impact Analysis results, intersection analysis, school bus accommodations, emergency and delivery vehicle movements, and a summary of impacts. Specific analysis was provided regarding the entrance to the Highland Lower School. The outcome of the analysis is the existing transportation network is sufficient to handle the proposed development. No turn lanes or signals are warranted.

Mr. Tiesler, the Town's transportation consultant, confirmed the Applicant used the profession's accepted methodologies for conducting the transportation analysis and addressed any questions presented during the review process. Mr. Tiesler concurred with the statement that no warrants are tripped to require new road improvements.

Chairman Stewart referenced a letter from the Chair of the Highland School Board of Trustees indicating concern regarding the garage entrance and the entrance to the Lower School. The Applicant indicated they have studied that intersection and walked through how peak hours are developed. They also indicated they have reached out to Highland School but have yet to be able to meet with the representatives.

Mr. Whitmore presented the anticipated school seat generation numbers based on the calculations Fauquier County Public Schools uses for the entire county. Using the projected enrollment numbers, and the stated capacities of the respective schools, the Applicant presented there is enough capacity in the schools to accommodate this development.

Chairman Stewart referenced the Highland School letter a second time where the Chair of the Board of Trustees indicated that as a private school they anticipated the cost of tuition to be a barrier to rentals and thus would likely not serve this development. Chairman Stewart pointed out he is a Highland parent and a renter in the Town. He requested the school consider this development, if approved, to be part of their potential school community as well.

Mr. Whitmore gave an overview of the waivers and modifications being requested. He stated this was necessary due to the Zoning Ordinance not having caught up to the goals stated in Plan Warrenton 2040 for setbacks between commercial/retail and residential in mixed use developments.

Mr. Whitmore and Mr. Jess Achenbach, the Applicant, presented the requested density, setbacks, and height modification and waiver requests. They offered why the development was seeking the additional height along Oak Springs despite the New Town Character District designating a Transition Zone of 2-3 stories. The Applicant offered other building heights adjacent and around town as examples.

It was pointed out the Smart Scale applicant for the roundabout shaped like a peanut would require right-of-way in an area the Applicant was requesting a waiver to the setbacks.

The Planning Commission expressed a desire to look further at the Transition Zone on Oak Springs Drive and the massing of the proposed apartment building. Plan Warrenton 2040 speaks to preserving the character of the Town. The proposed apartment buildings requests modifications and waivers to a well thought out planning effort to protect the existing neighborhoods.

The Planning Commission indicated they would be open to a Public Hearing when the Applicant is ready to move forward but expressed a concern over the June 27, 2024 decision deadline. Chairman Stewart stated the Planning Commission would like one additional meeting after the Public Hearing in case the Public Hearing needs to be kept open for additional work or speakers. The Applicant indicated they would likely not meet the Planning Commission deadlines for a May Public Hearing. The Chair asked then if the Applicant is not ready in May, to please consider allowing the Planning Commission to have two months after that to act at its July meeting.

With no further business, Chairman Stewart closed the work session.

CLOSED SESSION.

As permitted by Virginia Code §2.2-3711 (A)(8), consultation with legal counsel regarding legal matters requiring the provision of legal advice by such counsel, relating to Special Use Permit conditions of approval and rezoning proffers, the Planning Commission voted 4-0 (Lasher Absent) to go into a closed session with the Town Attorney.

The Planning Commission voted 4-0 (Lasher Absent) themselves out of the Closed Session by certifying nothing was discussed except for the matters specifically identified in the motion to convene the closed session and lawfully permitted to be discussed in a closed session under the provisions of the Virginia Freedom of Information Act.

COMMENTS FROM THE COMMISSION.

There were no comments from the Planning Commission.

COMMENTS FROM THE STAFF.

Ms. Harris informed the Planning Commission there would be a Pardon Our Dust meeting on May 1st for the upcoming construction on Broadview Avenue and construction was due to commence on May 6th.

ADJOURN.

Commissioner Lawrence moved to adjourn, seconded by Secretary Barbour. Chair Stewart, with no further business, this meeting was adjourned at 10:07 PM.

I hereby certify that this is a true and exact record of actions taken by the Planning Commission of the Town of Warrenton on April 23, 2024.

Darine Barbour, Secretary
Planning Commission

DRAFT

Community Development Department

STAFF REPORT

Commission Meeting Date:	June 18, 2024
Agenda Title:	Special Use Permit 2022-05 Warrenton Village Mixed Use
Requested Action:	Hold a Public Hearing
Staff Lead:	Denise Harris, Planning Manager
Decision Deadline:	June 27, 2024 Unless Applicant Defers

EXECUTIVE SUMMARY

Special Use Permit (SUP) 2022-05 Warrenton Village Center, the Owners, Jefferson Associates LP and Warrenton Center, LLC with the Applicant, NewCastle Development Group, seek a Special Use Permit for two parcels totaling approximately 29.05 acres to create a mixed-use development in the existing Warrenton Village Center. The proposal includes up to 320 apartments, 34 two over twos, and 36 townhomes with the addition of central plaza, parking garage, enhanced internal road network, and pedestrian infrastructure to promote walkability. The proposal includes a 10% density bonus and several waiver/modification requests. The properties are zoned Commercial and designated in the New Town Character District of Plan Warrenton 2040. (GPINs 6985-20-7247 and 6984-29-6753)

BACKGROUND

On March 19, 2024, the Planning Commission held a Work Session on SUP 2022-05 Warrenton Village Center Mixed Use. The Applicant, NewCastle Development Partners, presented an overview of the proposal. The Planning Commissioners asked a series of questions related to affordable dwelling units, waivers and modifications, architecture, transportation, economic impacts, water and sewer, density bonuses, walkability, schools, open space, and design. While the Applicant spoke to many of the topics at this meeting, it was agreed upon to hold two more Work Sessions in the month of April to enable the Applicant to provide a deeper analysis on each topic.

The Planning Commission continued its Work Session on April 16, 2024, the Applicant presented to the Planning Commission information related to design of the development. Topics included affordable dwelling units, elevations and building heights, architecture, historical resources, and economic impacts. On April 23, 2024, the Planning Commission Work Session discussed transportation, schools, and water and sewer impacts, and modifications and waivers. The Planning Commission asked the Applicant to consider the character and massing of the proposed structures. At each of these meetings, subject matter experts for the Town were in attendance to answer zoning, transportation, water and sewer questions.

The Applicant indicated they would look at adjustments to the plans to accommodate the requests and may not be able to make revisions in time for a May Public Hearing. The Planning Commission asked the Applicant to allow them two months, whenever the Applicant was ready to move forward, at the Public Hearing stage as that is what is currently available at the Work Session stage (e.g. May and June meetings) by moving the June 27th decision deadline to accommodate the Public Hearing resubmission.

On May 31, 2024, the Applicant resubmitted the SUP application for the June Public Hearing. Based on discussions at the Work Sessions, highlights of the modified application are:

- Developing a new set of elevations that include pitched roofs, stone instead of brick, and massing variations.
- Flipping the townhouses and 2 over 2 blocks to allow for the townhouses to front Branch Drive and the 2 over 2 to front Broadview.
- Added proposed language to the draft Conditions of Approval to accommodate 10% of each block to be reserved for 80% AMI affordable dwelling units, 10 additional units in Block 1 reserved for 70% AMI, and five additional units in Block 1 reserved for 60% AMI.

STAFF RECOMMENDATION

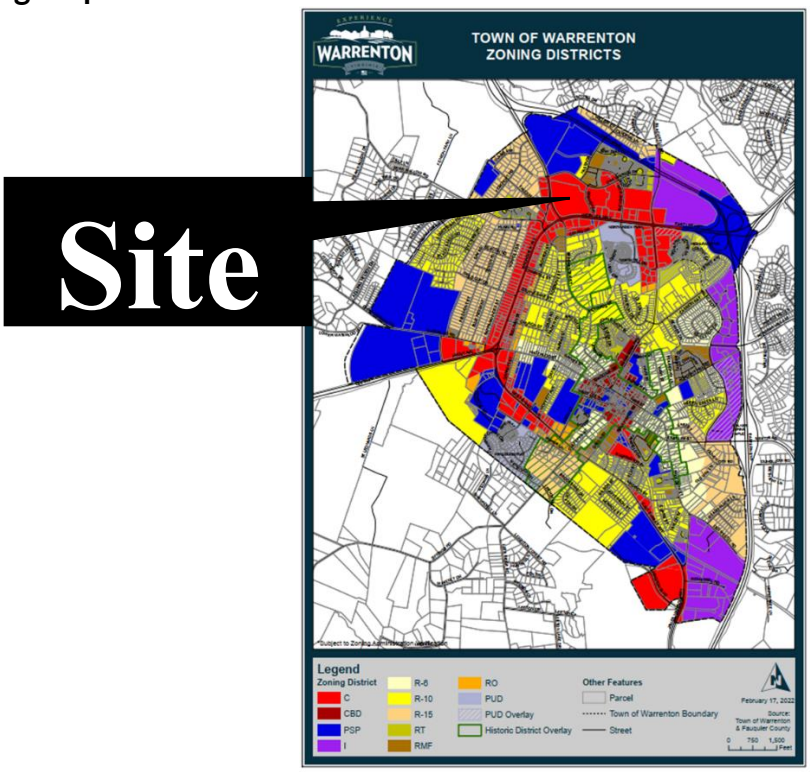
Hold a Public Hearing and make a recommendation for Town Council unless Applicant defers.

Attachment A – Maps

Vicinity Map:



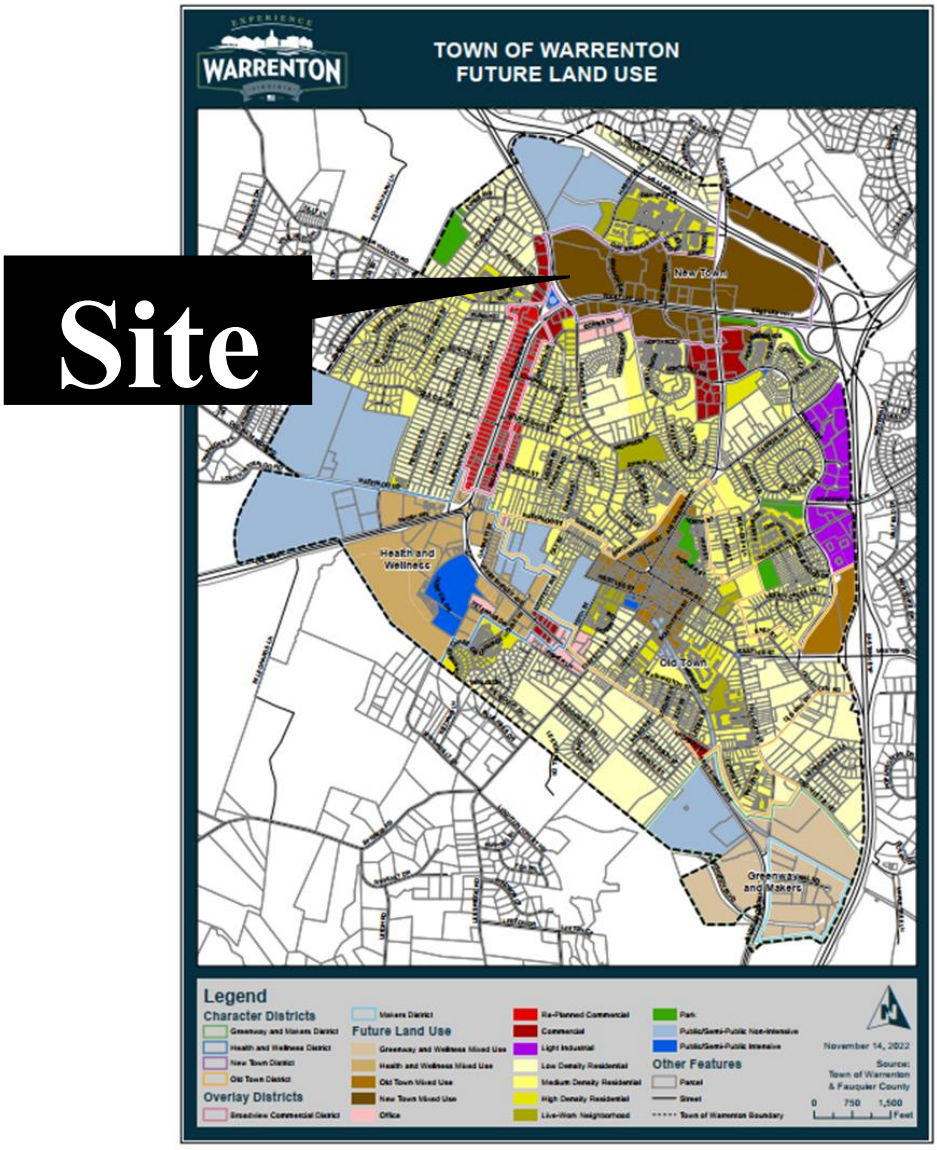
Zoning Map:



Commercial Zoning

Attachment A – Maps

Future Land Use Map:



New Town Character District

Staff Analysis

This analysis is based on the Comprehensive Plan, Zoning Ordinance, and review comments by Town Departments. The standards/analysis tables in the sections below contain the criteria for Planning Commission and Town Council consideration of Special Use Permits, per Article 11-3.10.3.

This request for a Special Use Permit for Warrenton Village Center Mixed Use with Article 3-4.10 and Article 9-25 of the Town Zoning Ordinance. The proposal includes up to 320 apartments, 34 two over twos, and 32 townhomes with the addition of central plaza, parking garage, enhanced internal road network, and pedestrian infrastructure to promote walkability. The proposal includes a 10% density bonus, provisions for affordable dwelling units, and several waiver/modification requests.

The following table summarizes the area characteristics (see maps in Attachment A):

Approx. Direction	Land Use	Future Land Use Map Designation	Zoning
North	Private School/Multi Family/Assisted Living	Public/Semi Public Non Intensive; Live/Work Neighborhood	PSP/R-10/RMF
South	Commercial	New Town District	Commercial
East	Commercial	New Town District	Commercial
West	Commercial	Commercial	Commercial

The properties totaling approximately 29.05 acres are zoned Commercial and designated in the New Town Character District of Plan Warrenton 2040. (GPINs 6985-20-7247 and 6984-29-6753)

Comprehensive Plan Future Land Use

Plan Warrenton 2040 designates Warrenton Village in the New Town Character District. The District encourages quality modern architecture that compliments the historic character of Warrenton. Open spaces contribute to this character to encourage active use tying the commercial and residential uses together. District design elements listed in the Comprehensive Plan encourage frontages with storefront awnings, gallery, arcade, stoops, porches, and yards. Internal streets are walkable and on a grid-pattern with a mix of uses at varying intensities. The summary of this district calls for the following:

"*A form-based transect approach to development would define form with greater maximum height towards Lee Highway and the center of the district, with a gradual step down in scale towards Oak Springs Drive…Frontage along the adjoining neighborhoods shall have a more residential appearance, with setbacks, stoops, and compact green yard space.*"

There are Ten Guiding Principles for all Character Districts listed in the Comprehensive Plan. The first and most emphasized feature being a discernible center. A hardscaped plaza or park *centered* within the entire

development to accommodate neighborhood interactions. Building placement, building massing and design, entrances and facades, ground floor residential use, streetscape design and walkability, multi-purpose public areas, and a mix of residential with non-residential are all part of the envisioned New Town Character District.

Standard	Analysis
Whether the proposed Special Use Permit is consistent with the Comprehensive Plan.	The proposed use falls within the future land use designation of New Town Character District which specifically calls for redevelopment of shopping centers to be mixed use.
The compatibility of the proposed use with other existing or proposed uses in the neighborhood, and adjacent parcels.	The Warrenton Village Center is surrounded by commercial retail, multi-family, and institutional uses. The proposed mixed use is compatible and consistent with the comprehensive plan.

Staff Findings

The Applicant has worked to integrate the proposed mixed use with the existing built environment and is proposing the creation of a central plaza with splash pad, landscaping, and seating in the existing parking lot of Warrenton Village Center. This amenity is part of the design transformation from a commercial strip mall towards a mix-use development. There will be a potential commercial/retail pad on the western side of the central plaza to activate the space. The Applicant is also proposing a dog park immediately north of the existing eastern side of the commercial development. This area currently is an underutilized grassy grove of younger trees.

The Applicant worked with Plan Warrenton 2040 Design Guidelines and the Planning Commission to refine the proposal. Retrofitting an existing shopping center to mixed use provides challenges. However, the Applicant worked to create transportation linkages by extending Hastings Lane; adjust Blocks 2 and 3 to have the more compatible townhomes located next to existing multi-family and townhomes; and developed a second set of architectural drawing to incorporate pitched roofs and stone.

The waivers and modification requests are necessary to achieve the design setbacks and mix of uses envisioned in Plan Warrenton 2040. The Applicant is asking for a height waiver along Oak Springs Drive where the comprehensive plan envisioned a "stepped down" approach to Oak Springs. Plan Warrenton 2040 is a guide that made a high-level goal for the entirety of Oak Springs Drive. The Applicant's justification for the additional height is multi-layered due to topology, the adjacency to a school and commercial assisted living, and the provided setbacks from Oak Springs Drive. Overall, staff finds no outstanding issues.

Transportation and Circulation Analysis

A Transportation Impact Analysis was provided and is being reviewed with the SUP plans by the Virginia Department of Transportation (VDOT) and the Town's transportation consultant. In addition, conducted a "Pipeline Study" of Lee Highway that resulted in the Smartscale funding of a roundabout at the southwest

corner of the proposal at the intersection of Broadview Avenue/Lee Highway/Winchester Street. A second roundabout is funded at the intersection of Lee Highway and Blackwell Road. On June 11, 2024, the Town Council passed a resolution of support to submit Smartscale applications for a roundabout at the intersection of Fletcher Drive and Lee Highway with access management improvements at Branch Drive and Village Center Drive.

The northern portion of Broadview Avenue that touches the proposed parcels is considered a Gateway Street Typology, as noted in the 2017 Complete Streets Guide. This is an alternate Boulevard designation that indicates the roadway crosses from the Town to the County. This means the development would have a more pronounced effect on the entrance impact into Warrenton.

Plan Warrenton 2040 places emphasis on appropriate circulation and connection to promote safe, equitable multimodal transportation. A key aspiration within the Comprehensive Plan states: *"Improve multimodal safety by enacting access management strategies, incorporating bike-friendly policies into new development standards, and deconflicting through-travel and local traffic movements."*

The 2017 Complete Streets Guide categorizes design elements for five distinct street classifications. Each classification encourages multi-modal considerations with an emphasis on connectivity. This is further encouraged by the goals and policies of the Comprehensive Plan to enhance the traveling experience of Warrenton. The Comprehensive Plan provides the following policies:

- *Facilitate new, compact redevelopment in Character Districts to introduce sidewalks and linkages to trails/paths and promote walkability.*
- *Provide and improve sidewalks, crosswalks, pedestrian signals, lighting, and other amenities to make it safer, easier and more comfortable for people to walk.*
- *Require that the proposed street system for new developments will be designed to provide a network of interconnected streets.*
- *In large development parcels, create compact development blocks with internal streets for pedestrian and vehicular circulation to support walk access and decrease auto-trip patterns.*

Standard	**Analysis**
The traffic expected to be generated by the proposed use, the adequacy of access roads and the vehicular and pedestrian circulation elements (on and off-site) of the proposed use, all in relation to the public's interest in pedestrian and vehicular safety, efficient traffic movement and access in case of fire or catastrophe.	The Applicant provided a Transportation Impact Analysis (TIA) to calculate the potential impacts of the addition. The TIA determined no adverse impacts on the surrounding road network and no signal or turn lane warrants are triggered. The Town will be constructing roundabouts on Lee Highway which studies show increase safety and transportation flow by 60%.
Whether the proposed use will facilitate orderly and safe road development and transportation.	

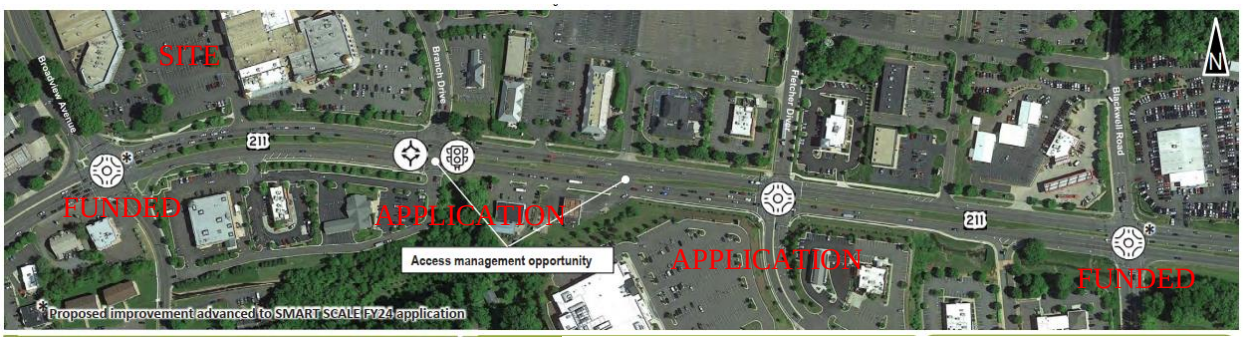
Staff Findings

The proposed development includes creating an extension of Hastings Lane into the site and a parking

garage located behind the proposed apartments with two entry points (one off Oak Springs Drive across from Highland Lower School and one into the alley). The townhouses and two over twos will have garages. The Applicant has conducted autoturn analysis for delivery and emergency vehicles to demonstrate accessibility. The Applicant has also indicated they will work with the schools on potential bus stop locations in ternal to the site. The Applicant is also proposing pedestrian improvements throughout the site with sidewalk connections, raised crosswalks, and adding crosswalks at Hasting Lane and the intersection with Highland's Lower School to create a pedestrian network to the surrounding community.

External to the Site

Warrenton Village is bounded by several important regional roads and neighborhood streets. Lee Highway (BUS29) to the south, including Broadview Avenue (Bus17) to the west, Oak Springs Drive to the north, and Branch Drive to the east. These are roads that the Town and VDOT have been studying for years and making funding applications regardless of the proposal. Plan Warrenton 2040 listed Lee Highway in the Near-Term Recommendations for improvements. VDOT followed this up with a Lee Highway Pipeline Study in 2022 with specific intersection improvements that VDOT had vetted through a public outreach process. The Town then successfully applied for VDOT Smart Scale funding for roundabouts at Lee Highway and Winchester Street and Lee Highway and Blackwell Road. The remaining improvements in the Pipeline Study, including a roundabout at Fletcher Drive and access management improvements at Branch Drive and Village Center Drive, have been submitted for VDOT Smart Scale applications in 2024.



Town of Warrenton VDOT Smart Scale Applications

The Applicant produced a Transportation Impact Analysis (TIA) that was reviewed by the Virginia Department of Transportation (VDOT), the Town transportation consultant (Kittelson), and Town staff. The TIA is a technical document that follows industry standards to determine transportation scenarios using today's base numbers, a percentage growth rate to account for changing needs over time that occur off site, intersection analysis of the surrounding onsite access points, and projected transportation needs based on the impacts of the proposed development and without the proposed development. The TIA was updated based on technical comments to produce a document that indicates the following:

1) Ten intersections were studied as part of the TIA.
2) Annual growth rate of 1% regional growth on Lee Highway was assumed.
3) The approved Waterloo Junction and Warrenton Crossing developments were included in the analysis.

4) Included the funded roundabout at Lee Highway and Winchester Street.
5) The proposal generates less traffic than if 40,000 square feet of by-right retail was developed.
6) The proposal anticipates approximately 154 new vehicle trips during the AM Peak Hour and 197 new vehicle trips during the PM Peak Hour across multiple access points.
7) Intersection analysis with the proposed development finds no new turn lane are warranted by VDOT standards.
8) Intersection analysis with the proposed development finds no new signals are warranted per MUTCD standards.



Bottom line is the TIA finds no additional roadway improvements are needed beyond the planned roundabout at Broadview and Winchester that is funded in VDOT's Smart Scale Round 5. The Applicant is providing sidewalks internal to the site, crosswalks on Oak Springs Drive, and the extension of Hastings Lane for interconnected transportation.

Community Facilities and Environmental Analysis

Plan Warrenton 2040's vision includes key aspirations of fostering high quality, equitable, and accessible community facilities; make responsible and strategic community facility investments that support the Town's vision for a live/work community, sustaining its fiscal well-being and economic resiliency; and provide a high quality of life to capture economic benefits through diverse businesses, employers, and residences. The health, safety, and quality of life for residents is established in part by the community infrastructure. Goals also include:

> *CF-4: Ensure healthy, safe, adequate water and wastewater services.*
> *CF-5: To provide a fiscally responsible infrastructure that maintains a high quality of life for residents, supports current businesses, and attracts new employers with a stable tax structure.*

Standard	Analysis
Whether the proposed Special Use Permit will be served adequately by essential public facilities, services and utilities.	The parcel is located in Town and currently served by Town Police and Fauquier County Emergency Services. There is an existing water and sewer to the site. Public Utilities has determined there is sufficient infrastructure to serve the site.
The location of any existing and/or proposed adequate on and off-site infrastructure.	

Staff Findings

Water and Sewer

The Town of Warrenton conducted water and sewer availability studies to determine townwide what approved, by right, and anticipated development would generate. The WRA Water and Sewer Capacity Evaluation took into account approved projects within the Town, partially approved/in process projects in the Town, vacant parcels in the Town, and then potential future growth in various areas of the Town based on the character districts of Plan Warrenton 2040. At that time, the Warrenton Village proposal was included in the study as an "in process" development, meaning it was an active land use application. The Study assumed a usage of 166,000 gallons per day. The Town Public Utilities Department stated the residential portion will require a water and sewer demand of between 77,000 GPS and 116,000 GPD, and the commercial will require around 44,000 GPD for a total of between 121,000 and 160,000 GPD. This flow demand on top of the existing and already committed demand on the Town's water and wastewater treatment plants is a significant increase to the currently permitted treatment levels of 2.4 and 2.5 MGD respectively. If the density and type of development is deemed acceptable by Planning Commission and the Town Council, the Town's Department of Utilities will respond to meet these requirements.

Schools

Fauquier County Public Schools use a formula for all development across the county to anticipate generated school seats. Using the formula, this proposal generates:

- 49 Elementary Students
- 21 Middle School Students
- 24 High School Students

Fauquier County Public Schools anticipates the projected 2028-2029 enrollment at the currently districted schools to be with program capacity:

- Bradley Elementary: 360 enrollment/588 capacity
- Taylor Middle School: 606 enrollment/850 capacity
- Fauquier High School: 1170 enrollment/1612 capacity

Based on the Fauquier County Public School calculations, there is available capacity in the school system for this proposed development.

Environmental Building

Plan Warrenton 2040 includes the goal *"CF-3: Green infrastructure and sustainability are incorporated into community facilities to promote energy efficiency and environmental protections."* The Applicant is proposing a Condition of Approval that all residential buildings will be designed and certified to a National Green Building Standard, Level Bronze, or higher. If the National Green Building Standard is not available for the project than an equivalent certification from an alternative third-party green building rating system will be accepted.

Attainable/Affordable Housing

Attainable housing for all ages, incomes, and needs is one of the main goals for Housing in Plan Warrenton 2040. Creating housing that caters to the local need while fostering and protecting the character of surrounding neighborhoods and the Town as a whole, new developments are encouraged to be interconnected with shared open spaces for a sense of place. Specifically for the New Town District, the Comprehensive Plan states:

"…each Character District is different when it comes to identifying appropriate housing typologies. For example, …the New Town Character District would promote mixed-use residential in a vertical configuration to support more retail uses."

There is a difference between attainable and affordable housing. While affordable housing is defined by housing subsidized by the government or non-profits, attainable housing is not subsidized. Plan Warrenton 2040 took these distinctions into account when formulating how to create a housing stock that allows for a diverse community. The Plan Warrenton Housing goals include:

H-1: Ensure equitable, attainable housing opportunities across residents of all ages, incomes, and abilities by catering to the needs of a diverse community, including young families, professionals early in their careers, essential workforce, and those entering retirement.

H-2: Character Districts will accommodate a balance of available housing typologies that are compatible to existing neighborhoods in scale, character, and transition.

> *H-2.1: Place an emphasis on physical form of the housing (e.g. number of stories, building profile, and appropriate transitions to adjoining neighborhoods) by updating the Zoning Ordinance, while protecting the character of existing residential neighborhoods.*
>
> *H-2.2: Increase opportunities for multi-family and mixed-use residential development by updating the commercial corridors in the Character Districts to allow for appropriate use and scale transitions into existing neighborhoods.*

Plan Warrenton 2040 protects existing neighborhoods by promoting the Character Districts as the places to accommodate a range of housing typologies. The RKG Demographic and Housing Analysis White Paper that was adopted as part of Plan Warrenton 2040 found single family units make up 75.3% of the Town's housing inventory with the largest share built before 1980. The 2020 report found *"the Town's population trends are skewing towards older age-cohorts while younger age-cohorts have shown minimal growth since 2010. From a housing perspective, the Town appears to lack the diverse housing options (both housing price and type) desired by younger populations who may not desire or are not ready to purchase a home. Roughly, 63.4% of the Town's newly constructed building square footage is comprised of residential properties with 60.0% being single family properties while only 3.5% is classified as multifamily. Almost all of the multifamily development is age-restricted."*

The Rappahannock Rapidan Regional Housing Study confirmed those aged 65+ represent the highest increase in each jurisdiction of PD9 between 2010-2019. Housing demand was estimated at 4,600 housing units across the region and underhoused population of those aged 18-34 and living with a non-spouse/partner. The Study recommended increasing the supply of attainable housing and recognizing the need for a diverse set of housing options across the region. Under the recommendation of increasing

attainable housing, the Study further encourages localities consider targeted incentives for higher density and mixed-use development in potentially designated Urban Development Areas (UDAs). The New Town Character District, where this proposal is located, is a Town adopted UDA and recognized by the Commonwealth of Virginia as such.

The Town of Warrenton Zoning Ordinance Article 9-3 defines persons eligible to rent or buy affordable dwelling units includes those eligible for assistance under the following state or federal programs:

- Virginia Housing Development Authority (now Virginia Housing)
- Section 8 Rental Assistance Program
- Department of Housing and Urban Development Community Block Grant Program
- Farmer's Home Administration Program
- Other programs similar to those named herein as approved by Town Council

Each of these programs utilizes the U.S. Housing and Urban Development (HUD) definitions and calculations for determining Area Median Income (AMI). Warrenton is designated as part of the Washington-Arlington-Alexandria, DC, VA, MD HUD Metro Area. The following chart illustrates the current HUD calculations.

FY 2024 Income Limit Area	Median Family Income Click for More Detail	FY 2024 Income Limit Category	Persons in Family							
			1	2	3	4	5	6	7	8
Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area	$154,700	Very Low (50%) Income Limits ($) Click for More Detail	54,150	61,900	69,650	**77,350**	83,550	89,750	95,950	102,150
		Extremely Low Income Limits ($)* Click for More Detail	32,500	37,150	41,800	**46,400**	50,150	53,850	57,550	61,250
		Low (80%) Income Limits ($) Click for More Detail	68,500	78,250	88,050	**97,800**	105,650	113,450	121,300	129,100

NOTE: **Fauquier County** is part of the **Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area**, so all information presented here applies to all of the Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area. HUD generally uses the Office of Management and Budget (OMB) area definitions in the calculation of income limit program parameters. However, to ensure that program parameters do not vary significantly due to area definition changes, HUD has used custom geographic definitions for the Washington-Arlington-Alexandria, DC-VA-MD HUD Metro FMR Area.

https://www.huduser.gov/portal/datasets/il.htm

Article 9-3 of the Zoning Ordinance further outlines how an affordable housing program would assure the availability for at least 25 years following the date of Town approval, developing in a traditional design technique, and how the units would be offered to the public. These provisions are captured in the draft Conditions of Approval. Article 9-25 for Mixed Use Development Options allows for a density bonus of up to 100% of the allowable density if no less than 10% of the residential units are defined as affordable.

Staff Findings

The Applicant is proposing 10% of the units within each residential block to be dedicated to affordable

housing in each block reserved for residents with household incomes below 80% of the Area Medium Income (AMI). Further, the Applicant is proposing 10 additional dwelling units in Block One reserved for 70% AMI and five additional units in Block One reserved for 60% AMI.

Virginia State Code 15.2-2286.A.3 states *"For the granting of special exceptions under suitable regulations and safeguards; notwithstanding any other provisions of this article, the governing body of any locality may reserve unto itself the right to issue such special exceptions. Conditions imposed in connection with residential special use permits, wherein the applicant proposes affordable housing, shall be consistent with the objective of providing affordable housing. When imposing conditions on residential projects specifying materials and methods of construction or specific design features, the approving body shall consider the impact of the conditions upon the affordability of housing."*

The draft Conditions of Approval include how the program would be administered, as well as provisions that ADUs will be built to similar standards as market rate units and not clustered together in one location. Per the State Code, the Town Council needs to consider the draft Conditions of Approval impact upon the affordability of the units.

Historic/Environmental Resources

Plan Warrenton 2040 includes a Historic Resources chapter that envisions *"The Town and property owners will work toward a common goal of preserving the historic built environment for current and future generations, knowing their efforts will strengthen Warrenton's neighborhoods, complement place-based economic development, encourage local economic growth, promote equity of its residents, and conserve natural resources."*

The subject parcels are not located within the Town's Historic District. The existing shopping center is contained on one larger parcel with six acres of greenfield development, where Block One is located, on the northern parcel.

Staff Findings:

Plan Warrenton's goal of HR-4: Enhance the Environment Through Preservation and Sustainability Practices has been addressed by the Applicant twofold. First, a natural spring is located on the northeast portion of the site. This spring may be the original naming reason for Oak Springs Drive and the historical Oak Spring Manor. Former Architectural Review Board Chair, Steve Wojcik, brought this to the Town's attention by pointing out *"The spring, the house, and part of the family cemetery a few blocks further, are all that remain of the estate of the Edmonds Blackwell family, early settlers of the area during the colonial period, one of whose members was an officer in the Revolutionary War."* When brought to the Applicant's attention, the proposal was adjusted to preserve the spring. The Applicant also stated they are looking to recondition the spring as a public amenity.

Second, the Applicant is proposing a Condition of Approval that all residential buildings will be designed and certified to a National Green Building Standard, Level Bronze, or higher. If the National Green Building Standard is not available for the project then an equivalent certification from an alternative third party green building rating system will be accepted.

Economic Resources Analysis

An economic goal of Plan Warrenton 2040 is to promote a diverse, equitable stable tax base while preserving the character of the community. The New Town District is deemed a major economic development priority with potential to be a destination center for mixed-use bridging entertainment, office, and residential. Per the Comprehensive Plan, the Character Districts are created with the intention of being:

"…a focal point for revitalization to allow for mixed-use and multi-family development at an appropriate scale compatible with the Town's character and existing neighborhoods. Transform aging commercial corridors to vibrant mixed-use neighborhoods."

Another major economic goal of the Comprehensive Plan is to maintain the small-town character while reducing the percentage of Town residents commuting for work. Mixed use developments allow for greater walkability. Additionally, several large County employers located in Town have communicated recruitment issues due to lack of housing in the Town. Some major employers, for instance the schools and hospital, have indicated that their employees face challenges finding housing in Town due to lack of supply.

The Fiscal Sustainability Analysis that was produced as part of the Comprehensive Plan provided the community with development scenarios that walked the community through the economic realities of the Town and the long-standing desires/needs. The analysis communicated that in order for the community to have net positive fiscal impacts, it must grow its housing supply to support the underperforming retails and commercial assets.

The growth in office component will require a concerted economic development effort from the Town to succeed. Simply put, the current marketplace for office development is not robust enough to project such growth by 2039. That said, the introduction of the proposed large-scale mixed-use developments likely will have a transformative effect on how the office market views the Town, particularly how the projected development program incorporates multifamily development, a critical missing component for Warrenton to attract more of the region's younger workforce. The focus on creating a strong connection between living, working, and recreating (restaurant growth) has proven effective throughout the region.

"First, the citizens of Warrenton continue to want higher levels of services and amenities. This desire for improved facilities, expanded choices, and better connectivity will come at a cost. It is a cost that exceeds the Town's existing financial capacity. If built, the sample public enhancements researched/identified through this effort would create a negative fiscal impact on the Town if development activity does not increase to similar levels of surrounding jurisdictions. Simply put, the Town can not 'save its way' to fiscal sustainability. Improving the quality of life for existing residents will require additional revenue (either from new growth or existing residents).

Second, the mix of development matters. The market analysis reveals that the Town does not have the demand to continue to increase retail services. The existing development policies make new construction of any type challenging, even for those uses that have strong market demand (i.e. multifamily development). That said, the mix of uses that are proposed for development (or redevelopment) matter from a fiscal perspective. Residential uses with smaller household sizes will have a smaller fiscal impact on the Town's cost structure. From the nonresidential side, the modeling reveals accommodation and dining uses create a greater fiscal benefit to the Town due to their higher direct revenue streams.

Finally, balancing the mix of uses between residential and nonresidential uses will be critical from both a market perspective and a fiscal one. Simply put, growth in commercial development (particularly retail and dining venues) will require greater consumer spending, which primarily comes from local households. Much of the development projected in Scenario 2 and Scenario 3 will require more residences to increase spending. More strategically, diversifying the Town's housing stock will be important to redefine the local office market, as Millennials are becoming the largest portion of the white-collar labor force. This generation is delaying homebuying and family household formation at a higher rate than previous ones. Having a high quality, well-integrated live/work/recreate community is a fundamental need to attracting these workers (and as a result, their companies)."

Standard	Analysis
Whether the proposed Special Use Permit use will provide desirable employment and enlarge the tax base by encouraging economic development activities consistent with the Comprehensive Plan.	According to all fiscal impact studies conducted previously by the Town and by the Applicant as part of this application, the proposal will result in a net positive fiscal impact.
The number of employees.	N/A
The proposed days/hours of operation.	N/A

Staff Findings

The Town has invested significant resources in determining its fiscal resiliency and what market forces are required to obtain a healthy economic scenario in Town. The findings indicate mixed use developments that add to the housing supply are critical to the fiscal success of the Town.

Open Space, Parks, and Environment

Plan Warrenton 2040 highlights ample open space and access to open space is a priority to public health. Providing access to an open space suitable for the development needs within walking distance is encouraged:

"*Provide a dynamic system of safe, interconnected spaces for a variety of public uses that promote healthy, active, recreational activities in spaces throughout the Town. These spaces will reflect the culture, ecology, and natural environment of Warrenton.*"

Staff Findings

The Applicant is following the Character District Design Guidelines by providing for a central plaza and other public amenities like a dog park, interconnected sidewalks, and residential units in a compact, walkable environment.

Zoning Analysis

The legislative intent of the Commercial District is to encourage the logical and timely development of land for a range of commercial and mixed-use purposes in accordance with the objectives, policies, and proposals of the Comprehensive Plan; to prohibit any use which would create undue impacts on surrounding residential areas; and to assure suitable design to protect the residential environmental of

adjacent and nearby neighborhoods. It is further declared to be the intent of the district to limit traffic congestion, overcrowding of land, noise, glare, and pollution, as to lessen the danger to public safety, and to ensure convenient and safe pedestrian access to and from commercial and mixed-use sites.

Standard	Analysis
The level and impact of any noise emanating from the site, including that generated by the proposed use, in relation to the uses in the immediate area.	The existing use is commercial/retail. All non-residential uses in Town must meet the noise ordinance and residential must meet Town Code.
The proposed location, lighting and type of signs in relation to the proposed use, uses in the area, and the sign requirements of this Ordinance.	The Applicant has stated they will follow Article 6 of the Zoning Ordinance. While conceptual signage was provide, a master sign plan was not included in the application.
The location and area footprint with dimensions (all drawn to scale), nature and height of existing or proposed buildings, structures, walls, and fences on the site and in the neighborhood.	The Applicant is seeking waivers and modifications to the height of the proposed building and possible retaining walls to a fourth story for the apartment units.
The nature and extent of existing or proposed landscaping, screening and buffering on the site and in the neighborhood.	The Applicant provided a landscaping plan and must meet all Zoning Ordinance requirements.
The timing and phasing of the proposed development and the duration of the proposed use.	The Applicant is not proposing specific phasing but is breaking the development into three distinct blocks.
Whether the proposed Special Use Permit at the specified location will contribute to or promote the welfare or convenience of the public.	The welfare of the public is promoted by contributing new housing stock and affordable dwelling units.
Whether, in the case of existing structures proposed to be converted to uses requiring a Special Use Permit, the structures meet all code requirements of the Town of Warrenton.	N/A
The location, character, and size of any outdoor storage.	N/A
The location of any major floodplain and steep slopes.	Steep slopes are illustrated in the SUP Plans and will be addressed at time of site plan.
The location and use of any existing non-conforming uses and structures.	N/A
The location and type of any fuel and fuel storage.	N/A
The location and use of any anticipated accessory uses and structures.	The Applicant states where applicable, all accessory structures will comply with local codes and ordinances.

Standard	Analysis
The area of each proposed use.	Block 1: up to 320 apartments with a 4 story parking garage Block 2: Up to 32 townhouses Block 3: Up to 34 two over twos
The location and screening of parking and loading spaces and/or areas.	Block 1 contains a 4 story parking garage with screening; Blocks 2 and 3 contain garages and driveways.
The location and nature of any proposed security features and provisions.	N/A
Any anticipated odors which may be generated by the uses on site.	Site will comply with Zoning Ordinance.
Refuse and service areas.	Private refuse collection is anticipated with dumpster areas delineated on the SUP Plans.
Whether the proposed Special Use Permit will result in the preservation or destruction, loss or damage of any significant topographic or physical, natural, scenic, archaeological or historic feature.	The Applicant is proposing to preserve a historic natural spring for a public amenity.
The effect of the proposed Special Use Permit on environmentally sensitive land or natural features, wildlife habitat and vegetation, water quality and air quality. The location of any major floodplain and steep slopes.	The Applicant states they will comply with federal, state, or local codes and ordinances regarding wildlife habitats, sensitive land or natural features, vegetation, water quality, and air quality.
The glare or light that may be generated by the proposed use in relation to uses in the immediate area.	Fixture details/cut-sheets and new structures will be required to be provided and reviewed as part of the Site Development Plan submission.

Staff Findings

The Applicant has indicated that items like lighting, landscaping, parking, and signage will all be addressed at the time of the Site Development Plan. As with previous SUP approvals, draft Conditions of Approval attempt to address potential LED lights as the Zoning Ordinance has not yet been updated to address this technology.

Waiver and Modification Requests

Article 2-6.1: The maximum density specified in the zoning ordinance for a given zoning district shall not be exceeded. The maximum density is 5 units per acre or 10 units per acre with inclusion of 10% affordable dwelling units.

- Waiver #1: Increase density to 386 units or 13.28 per acre.

Article 3-4.10.4: Required front yard setback from ROW greater than 50' is 40' minimum, if no parking or loading is proposed.

- Waiver #2: Decrease minimum setback to 14' along Broadview Avenue.

Article 3-4.10.4: Required side/rear yard setbacks is 5' minimum.

- Waiver #3: Decrease side/rear yard setbacks to 0'.

Article 8-8.5: Minimum buffer width for commercial uses adjacent to residential uses is 25', plus 1' for each foot of building height over 35'. Minimum buffer width for rear boundaries of residential uses from public ROW is 25'.

- Waiver #4a: Decrease buffer width between commercial and residential uses to 0'.
- Waiver #4b: Decrease rear buffer width for residential uses from public ROW to 14'.

Article 2-20: Height limit for dwellings may be increased up to 45' and up to three stories provided that front, side and year setbacks increase 1' for each additional foot of building height over 35'.

- Waiver #5: Increase height limit for dwellings as follows:
- 54' max height for Block 1, Oak Springs Drive Frontage
- 36' max height for Block 1, Broadview Avenue Frontage
- 36' max height for Block 2
- 45' max height for Block 3

Article 3-4.4.5.3: No more than six townhouse units shall be grouped contiguously to each other.

- Waiver #6: Increase maximum grouping of townhouse units from six to seven

Article 2-19: Fences and walls may be erected up to a height of six (6) feet in all zoning districts, except for fences or walls that extend within the required front setback.

- Waiver #7: Allow retaining walls in excess of six feet on Oak Springs Drive and Hastings Lane; and around refuse and dumpster enclosures as approved by the Zoning Administrator.

Conditions of Approval

Draft Conditions of Approval (Separate Attachment) address conformance with the SUP plans, use parameters, waivers and modifications, architecturals, affordable dwelling units, transportation, and public amenity improvements.

SPECIAL USE PERMIT

FOR

WARRENTON VILLAGE CENTER

LOCATION OF SITE

TOWN OF WARRENTON

FAUQUIER COUNTY, VIRGINIA 20186

PARCEL ID'S: 6985-20-7247-000, 6984-29-6753

PARCEL IDENTIFICATION TABLE

PARCEL NUMBER	OWNER	ADDRESS	AREA	CURRENT ZONE	CURRENT PLANNED LAND USE	PROPOSED PLANNED LAND USE
6985-20-7247-000	JEFFERSON ASSOCIATES LP	360 OAK SPRINGS DRIVE WARRENTON, VA 20186	6.46 ACRES	C	VACANT	MIXED USE
6984-29-6753-000	WARRENTON CENTER LLC	251 W LEE HIGHWAY WARRENTON, VA 20186	22.59 ACRES	C	RETAIL	MIXED USE
			TOTAL AREA 29.05 ACRES			

REFERENCES AND CONTACTS

REFERENCES

♦ BOUNDARY & TOPOGRAPHIC SURVEY:
ALTA/NSPS LAND TITLE SURVEY
"WARRENTON CENTER, 360 OAK SPRINGS DRIVE, CENTER DISTRICT, TOWN OF WARRENTON, VIRGINIA"
PREPARED BY: BOHLER
DATED: 11/3/21

♦ ARCHITECTURAL PLAN:
CAD FILE: WARRENTON FLOOR PLAN.DWG
PREPARED BY: DYNAMIK DESIGN
DATED: 5/21/2024
SEE GENERAL NOTES REFERENCE ON SHEET 4

GOVERNING AGENCIES

♦ TOWN OF WARRENTON
COMMUNITY DEVELOPMENT
21 MAIN STREET
WARRENTON, VA 20188-0341
CONTACT: ROB WALTON, DIRECTOR OF COMMUNITY DEVELOPMENT
PHONE: (540) 347-2405

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LOCATION MAP

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SCALE: 1" = 2,000'

SHEET INDEX

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OWNER

SEE PARCEL IDENTIFICATION TABLE

DEVELOPER

NEWCASTLE DEVELOPMENT GROUP
100 10TH STREET SE, SUITE 300
CHARLOTTESVILLE, VA 22902
CONTACT: JESS ACHENBACH
PHONE: (434) 260-6628

PREPARED BY

BOHLER

CONTACT: JOHN C. WRIGHT, P.E.

BOHLER
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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY
1	6/30/2023	TOWN COMMENTS	DSH / JCW
2	2/14/2024	TOWN COMMENTS	TAL / JCW
3	5/31/2024	TOWN COMMENTS	TAL / JCW

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PROJECT No.: V212141
DRAWN BY: DSH
CHECKED BY: JCW
DATE: 7/8/2022
CAD I.D.: SUPP -2

PROJECT:

SPECIAL USE PERMIT

FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER
28 BLACKWELL PARK LANE, SUITE 201
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com

COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

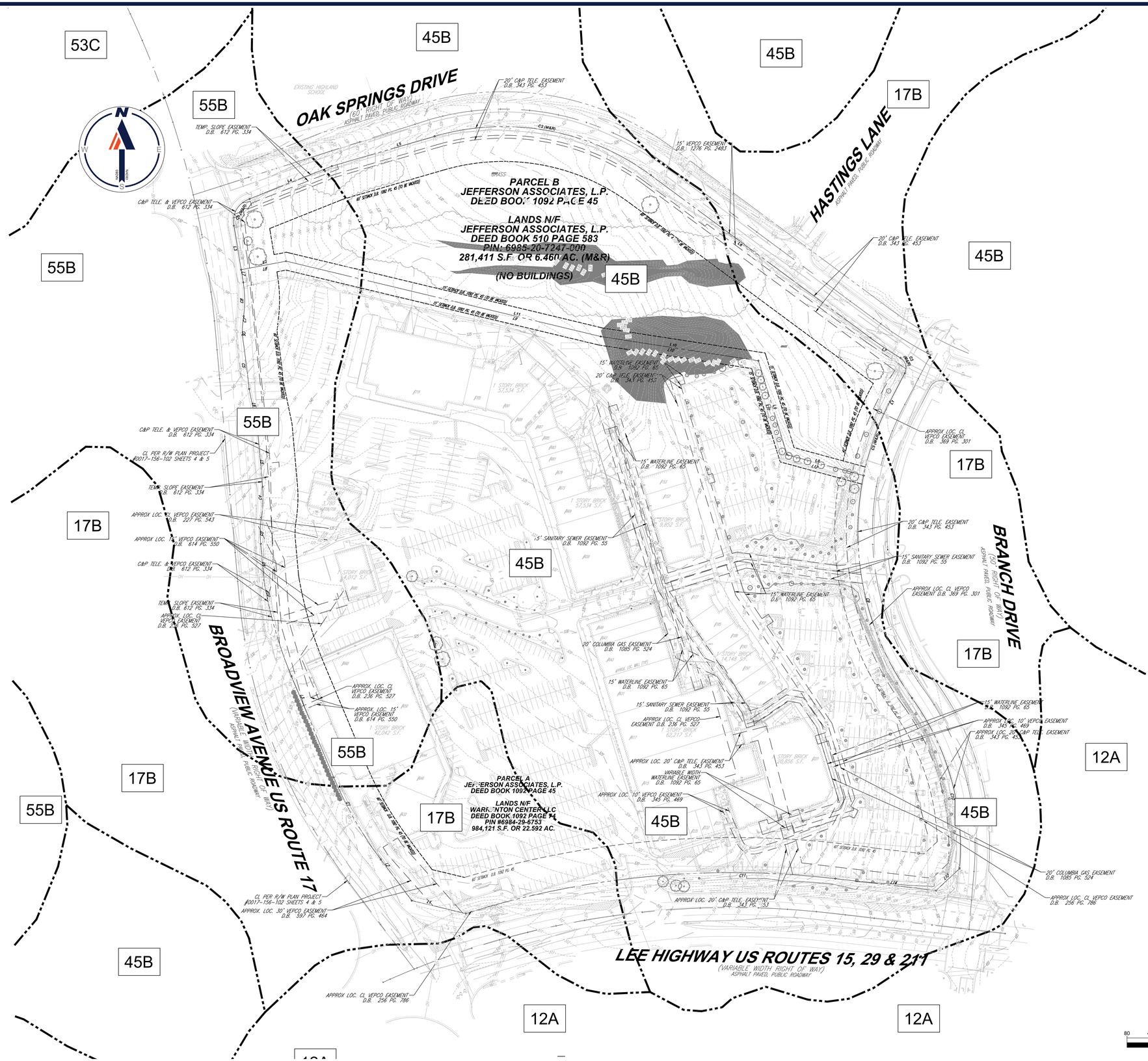
SHEET TITLE:

COVER SHEET

SHEET NUMBER:

1

REVISION 3 - 5/31/2024



HATCH LEGEND

EXTENTS OF STEEP SLOPES

SOILS TABLE

SYMBOL	SOIL NAME	SLOPES
12A	ROHRERSVILLE LOAM	0 TO 2%
17B	MIDDLEBURG LOAM	2 TO 7%
45B	FAUQUIER SILT LOAM	2 TO 7%
53C	GLENELG LOAM	7 TO 15%
55B	ELIOAK LOAM	2 TO 7%

80 40 20 0 80
1"= 80'

BOHLER
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LANDSCAPE ARCHITECTURE
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REVISIONS

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PROJECT No.:	V212141
DRAWN BY:	DSH
CHECKED BY:	JCW
DATE:	7/8/2022
CAD I.D.:	EXST -2

PROJECT:

SPECIAL USE PERMIT

FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER
28 BLACKWELL PARK LANE, SUITE 201
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
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COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

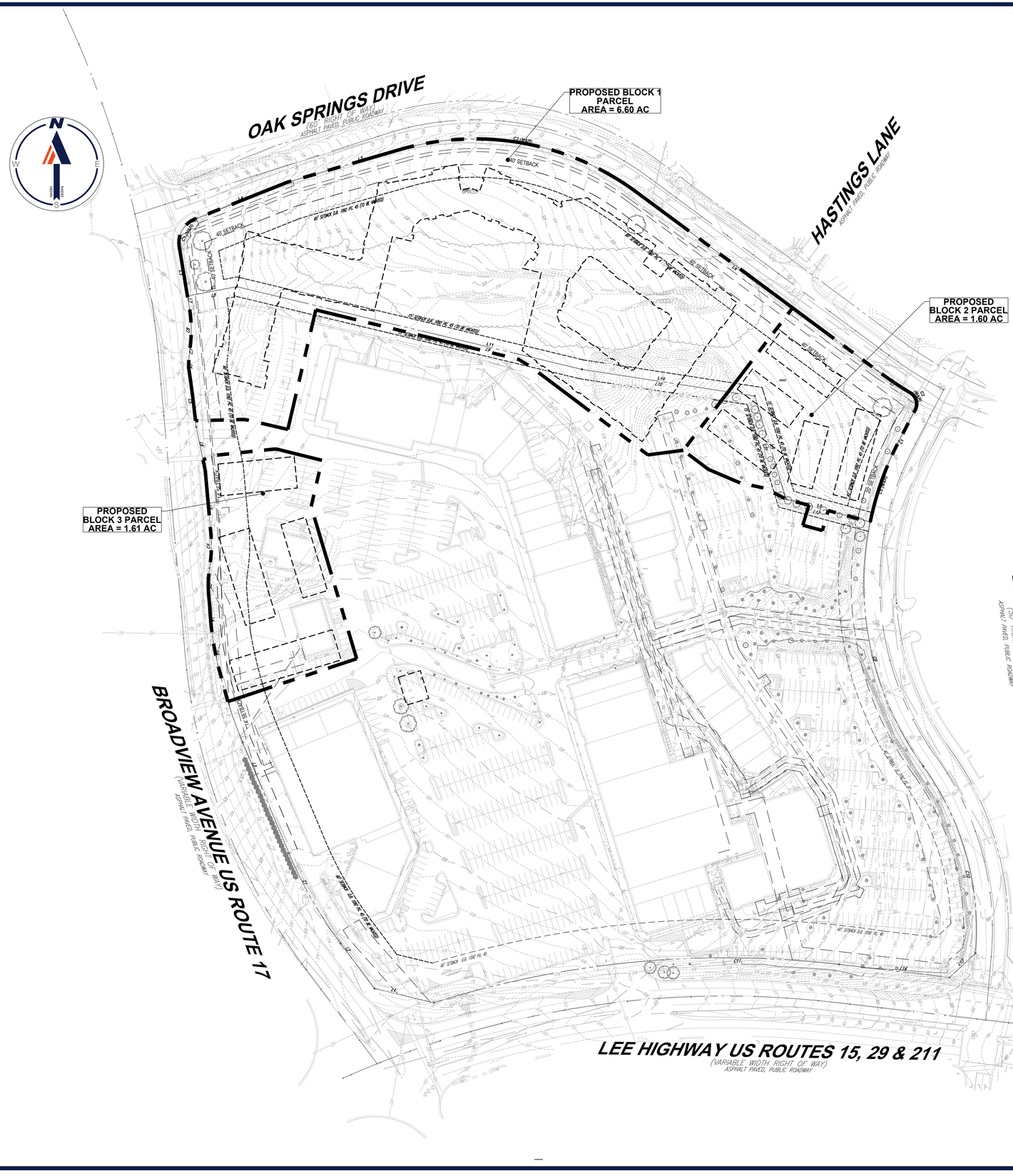
SHEET TITLE:

EXISTING CONDITIONS PLAN

SHEET NUMBER:

2

REVISION 3 - 5/31/2024



LEGEND

- PROPOSED BUILDING OUTLINE
- PROPOSED BLOCK PARCEL LINE

80 40 20 0 80
1"= 80'

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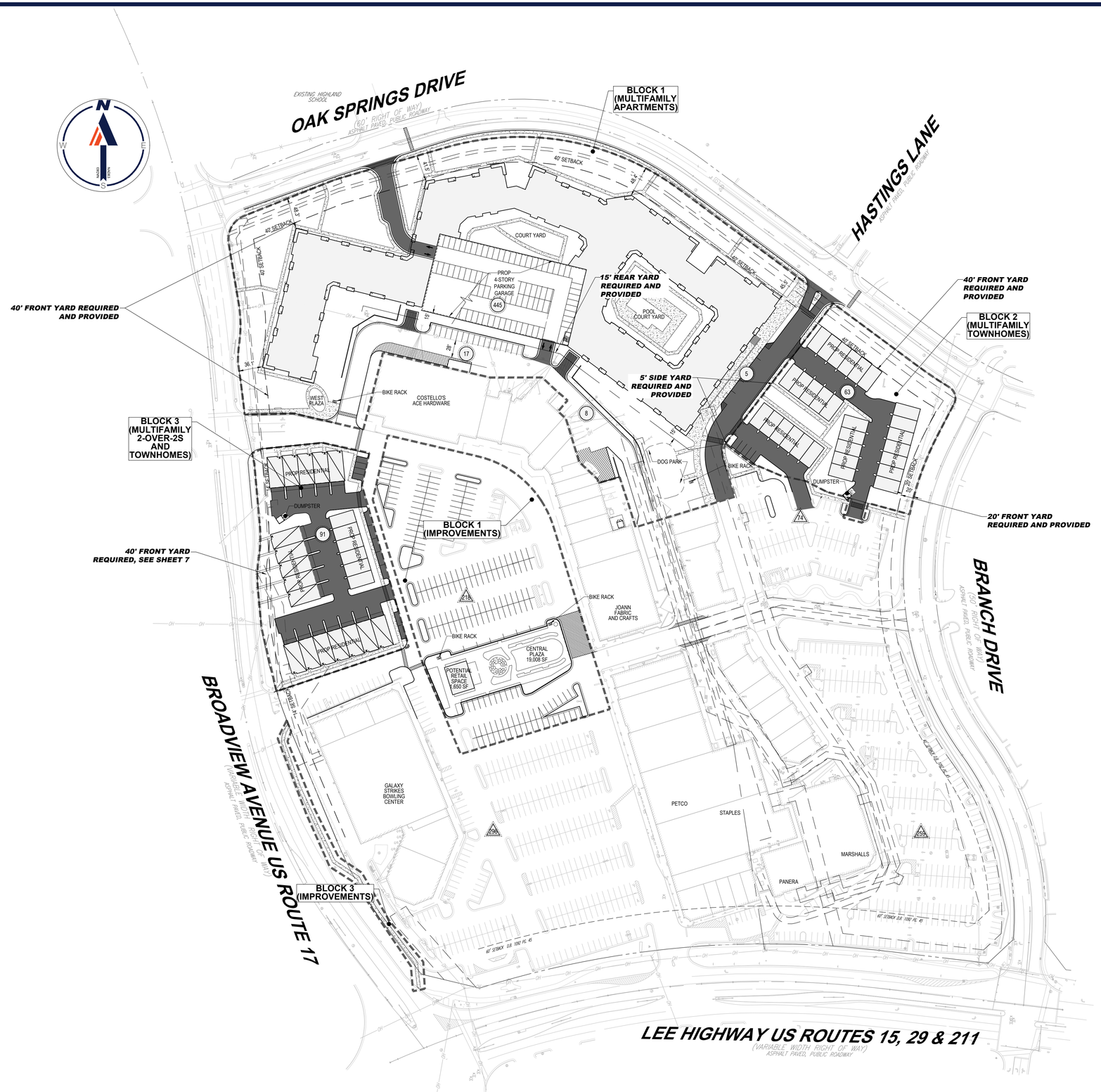
PARCEL OVERVIEW PLAN

SHEET NUMBER:

2A

REVISION 3 - 5/31/2024

May 30, 2024
H:\21\V212141\CAD\DRAWINGS\PLAN SETS\SUP\PV212141 - EXST 1 — LAYOUT 2A - PARCEL OVERVIEW PLAN
TL



ZONING TABULATION TABLE:

LOT SIZE AND YARD SETBACK REQUIREMENTS:

	REQUIRED	PROVIDED
MINIMUM LOT SIZE:	5 ACRES	29.05 ACRES
SETBACK REQUIREMENTS:		
	REQUIRED	MIN PROVIDED
FRONT YARD (OAK SPRINGS, ROW >50')	40'*	40'±
FRONT YARD (BRANCH, ROW <50')	20'*	20'±
FRONT YARD (BROADVIEW, ROW >50')	40'*	14'±
	REQUIRED	MIN PROVIDED
SIDE YARD BUILDING	5'	0'±
	REQUIRED	MIN PROVIDED
SIDE YARD BUILDING	5'	48.7'±
	REQUIRED	MIN PROVIDED
REAR YARD BUILDING	15'	15'±

LOT COVERAGE REQUIREMENTS

	MAX	PROVIDED
PROPOSED LOT COVERAGE: (IMPERVIOUS SURFACES)	85%	83%

*FRONT YARD MAY BE REDUCED BY 20' IF NO PARKING OR LOADING IS PROPOSED. A REDUCTION IN FRONT/REAR/SIDE SETBACKS IS BEING REQUESTED FROM TOWN COUNCIL AT CERTAIN LOCATIONS - SEE SHEET 7 FOR DETAIL.

GENERAL NOTES:

1. THIS PLAN IS BASED ON THE FOLLOWING:
   SURVEY CAD FILES PREPARED BY BOHLER DATED: 11/3/2021
   BUILDING FOOTPRINT CAD FILES PREPARED BY MV&A ARCHITECTS DATED: 5/21/2024
2. ZONING DATA:
   EXISTING ZONE: C - COMMERCIAL
   PROPOSED ZONE: COMMERCIAL WITH MIXED USE
3. USES:
   EXISTING USE: VACANT, RETAIL
   PROPOSED USE: MIXED USE
4. SITE AREA
   PIN'S : 6985-20-7247-0000 6.46 ACRES
   6984-29-6753-0000 22.59 ACRES
5. SITE WILL BE SERVICED BY TOWN WATER AND SEWER.
6. TOPOGRAPHIC INFORMATION:
   HORIZONTAL DATUM: NAD 83
   VERTICAL DATUM: NAVD 88
7. THE PROPOSED BUILDING, DIMENSIONAL ELEMENTS, AND OTHER SITE FEATURES, SUCH AS HARDSCAPE AREAS AND PLAZAS SHOWN ARE CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING.
8. CURB AND PARKING MODIFICATIONS IN WARRENTON CENTER WILL OCCUR AS PART OF EACH DEVELOPMENT BLOCK.
9. A PROPERTY LINE ADJUSTMENT PLAT WILL BE COMPLETED WITH SITE PLAN.
10. A TREE SURVEY WILL BE PROVIDED AT TIME OF SITE PLAN.
11. A PHOTOMETRIC/LIGHTING PLAN WILL BE PROVIDED AT TIME OF SITE PLAN.
12. CONSTRUCTION DETAILS OF ALL SCREENING AND FENCING WILL BE ADDRESSED AT TIME OF SITE PLAN.

HATCH LEGEND

- CONCRETE
- PROP BUILDING (SEE ARCH DRAWINGS)
- DEVELOPMENT BLOCKS
- ASPHALT

80 40 20 0 80
1"= 80'

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CAD I.D.:	SUPP -2

PROJECT:

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PROPOSED DEVELOPMENT

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COMMONWEALTH OF VIRGINIA
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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

OVERALL SITE DEVELOPMENT PLAN

SHEET NUMBER:

3

REVISION 3 - 5/31/2024

May 30, 2024
H:\V212141\CAD\DRAWINGS\PLAN SETS\SUPP\V212141 - SUPP - 1----LAYOUT 3 - OVERALL SITE PLAN
CHECKED PLOT

DEVELOPMENT TABULATION

BLOCK	BLOCK USE	LAND AREA	EXISITNG ZONE	LAND USE	RETAIL	RESIDENTIAL	MAX. ALLOWABLE DENSITY	PROPOSED MAX.	REQUIRED PARKING	PARKING PROVIDED	MAX. BUILDING HEIGHT	MAX. BUILDING HEIGHT PROVIDED
Block 1	Multifamily Apartments	6.60 Ac.	C-Commercial	Mixed Use W/ SUP	1,650	320		320	±144 - 1 bed units (1 space per 1 bed unit) ±144 - 2 bed units (1.5 spaces per 2 bed unit) ±32 - 3 bed units (2 spaces per 3 bed unit) = 320 units, 424 spaces	475 Spaces (445 Garage + 30 Surface spaces)	36'	54' (Oak Springs Drive Frontage) 36' (Broadview Drive Frontage)
Block 2	Multifamily Townhomes	1.60 Ac.	C-Commercial	Mixed Use W/ SUP	-	26		26	2 spaces per unit = 52 spaces	63 Spaces (58 garage + 5 Surface spaces)	36'	36'
Block 3	Multifamily 2-over-2s and Townhomes	1.61 Ac.	C-Commercial	Mixed Use W/ SUP	-	40		40	2 spaces per unit = 80 spaces	91 Spaces (46 Garage + 45 Surface spaces)	36'	45'
Retail	Retail	19.24 Ac.	C-Commercial	Mixed Use W/ SUP	218,142 SF	N/A			Shopping Center: 1/300 GFA for first 12,000 SF + 2 spaces for each 1,000 GFA = 449 spaces	847 spaces	45'	45'
TOTALS:	TOTALS:	29.05 Ac.	C-Commercial	Mixed Use W/ SUP	219,792 SF	391 UNITS	439 Units (See Note 1)	386 Units or 13.28 Units/Ac. 219,792 SF of Commercial	1,005 Spaces Required	1,476 Total Parking Spaces		(See Note 5)

NOTES:

1. FIVE (5) DWELLING UNITS PER ACRE OR 29.05 AC. X 5 = 145.25 UNITS, 1 DWELLING UNITS PER 500 GROSS SF OR NON-RESIDENTIAL FLOOR SPACE OR 219,792 SF/500 SF = 439 UNITS
2. DENSITY BONUS REQUESTED AS 10% OF THE TOTAL NUMBER UNITS WILL BE PROVIDED AS AFFORDABLE HOUSING.
3. 2/2 TOWNHOME UNITS INCLUDE 1 DRIVEWAY SPACE + 1 GARAGE SPACE IN TOTAL PARKING SPACE COUNT.
4. EXISTING COMMERCIAL = 218,142, PROPOSED RETAIL (PLAZA) = 1,650 SF NEW TOTAL = 219,792 SF, NOTE: RETAIL SPACE MAY INCREASE AS EXISTING SPACE IS REDEVELOPED
5. BUILDING HEIGHT MODIFICATION SECTION 9-25 BEING REQUESTED FROM TOWN COUNCIL TO INCREASE BUILDING HEIGHTS. SEE WAIVER INFORMATION ON SHEET 7.

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12. CONSTRUCTION DETAILS OF ALL SCREENING AND FENCING WILL BE ADDRESSED AT TIME OF SITE PLAN.
13. PROPOSED SIDEWALK WIDTH IS 5' MIN. UNLESS OTHERWISE NOTED.

HATCH LEGEND

- CONCRETE
- PROP BUILDING (SEE ARCH DRAWINGS)
- PAVEMENT & ADA STRIPING
- ASPHALT
- DEVELOPMENT AREA

50 25 12.5 0 50
1"= 50'

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CHECKED BY: JCW
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CAD I.D.: SUPP -2

PROJECT:

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PROPOSED DEVELOPMENT

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JOHN C. WRIGHT
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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

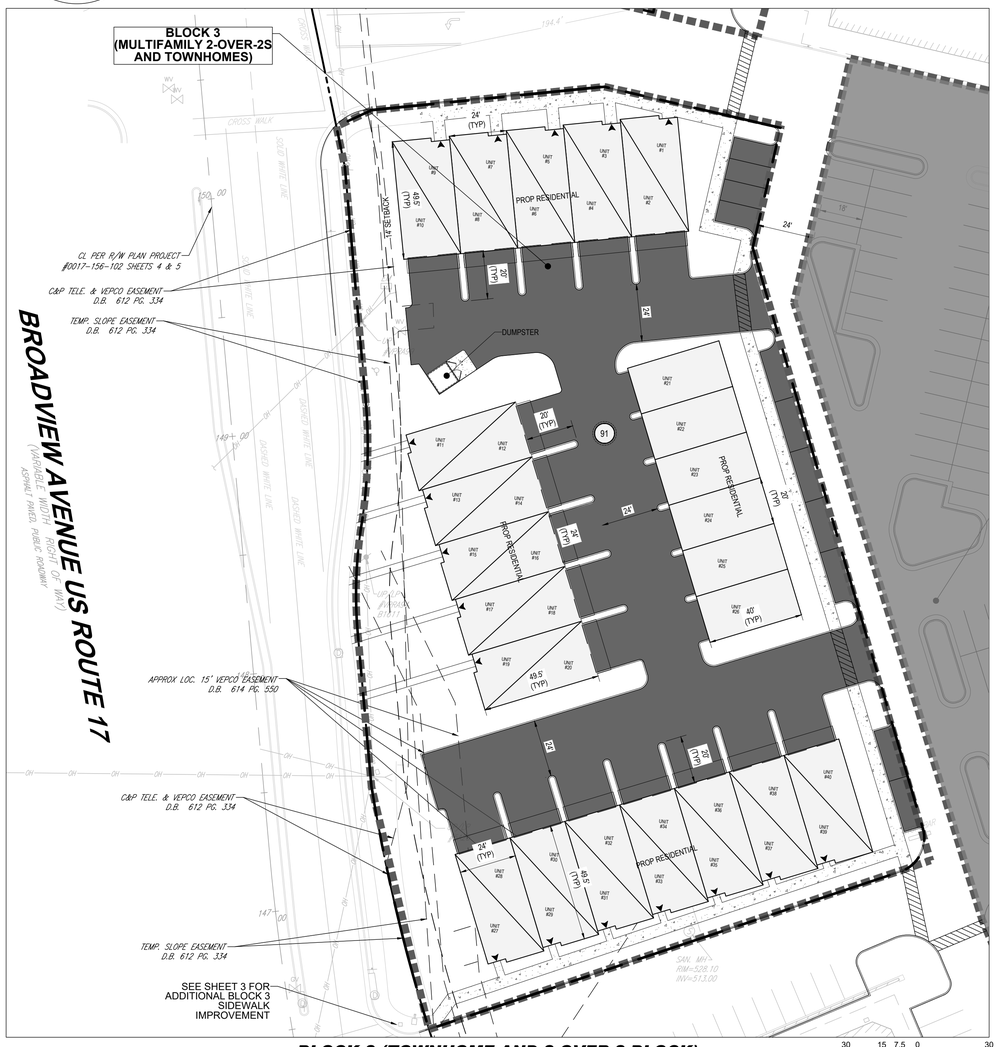
SITE DEVELOPMENT PLAN BLOCK 1

SHEET NUMBER:

4

REVISION 3 - 5/31/2024

May 30, 2024
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CH



NOTES:

1. DECKS ARE NOT SHOWN IN FOOTPRINTS - STANDARD DECKS PROTRUDE 2' OUT FROM FOOTPRINT.

HATCH LEGEND

- CONCRETE
- PROP BUILDING (SEE ARCH DRAWINGS)
- PAVEMENT & ADA STRIPING
- ASPHALT
- DEVELOPMENT BLOCKS

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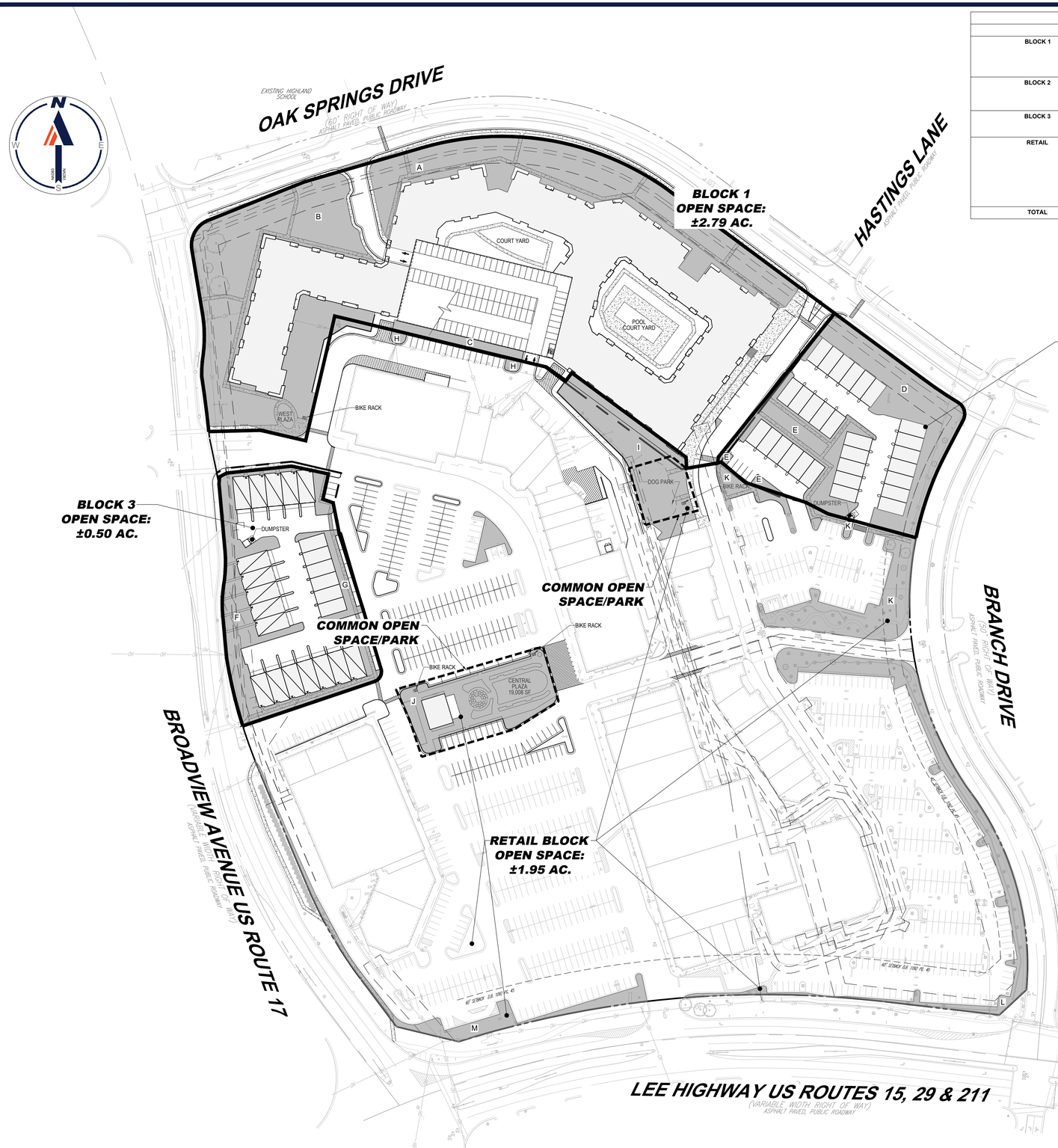
SHEET TITLE:

SITE DEVELOPMENT PLAN - BLOCKS 2 AND 3

SHEET NUMBER:

5

REVISION 3 - 5/31/2024



OPEN SPACE TABULATION				
	AREA	OPEN SPACE REQUIRED	OPEN SPACE PROVIDED	NEW IMPROVEMENTS
BLOCK 1	±6.60 AC.	10% - 0.66 AC. (±28,750 SF)	A: 0.91 AC. (±39,640 SF) B: 1.81 AC. (±78,840 SF) C: 0.07 AC. (±3,050 SF) TOTAL BLOCK 1: 2.79 AC. (±121,530 SF) (42.2%)	A: LANDSCAPING B: RESIDENTIAL PLAZA, BENCH SEATING, BIKE RACK, LANDSCAPING C: LANDSCAPING
BLOCK 2	±1.60 AC.	10% - 0.16 AC. (±6,970 SF)	D: 0.47 AC. (±20,470 SF) E: 0.26 AC. (±11,330 SF) TOTAL BLOCK 2: 0.73 AC. (±31,800 SF) (45.6%)	D: LANDSCAPING E: RESIDENTIAL PLAZA, LANDSCAPING
BLOCK 3	±1.61 AC.	10% - 0.16 AC. (±6,970 SF)	F: 0.43 AC. (±18,860 SF) G: 0.07 AC. (±3,050 SF) TOTAL BLOCK 3: 0.50 AC. (±21,910 SF) (28%)	F: LANDSCAPING G: LANDSCAPING
RETAIL	±19.24 AC.	10% - 1.92 AC. (±83,640 SF)	H: 0.02 AC. (±870 SF) I: 0.39 AC. (±16,990 SF) J: 0.44 AC. (±19,170 SF) K: 0.41 AC. (±17,860 SF) L: 0.45 AC. (±19,600 SF) M: 0.20 AC. (±8,710 SF) LANDSCAPE ISLAND: 0.04 AC. (±1,750 SF) TOTAL BLOCK RETAIL: 1.95 AC. (±84,950 SF) (10.1%)	H: LANDSCAPING I: FENCED DOG PLAY AREA, PICNIC TABLES, BIKE RACK, LANDSCAPING J: BIKE RACK, SPLASH-PAD, LAWN AREA, BENCH SEATING, LANDSCAPING, COMMERCIAL PAD K, L, M: EXISTING CONDITIONS
TOTAL	**±29.05 AC.**	**10% - 2.90 AC. (±126,330 SF)**	**20.6% - 5.97 AC. (±260,050 SF)**	

LEGEND

- OPEN SPACE
- COMMON OPEN SPACE/PARK
- BLOCK AREA FOR OPEN SPACE TABULATION

80 40 20 0 80

1"= 80'

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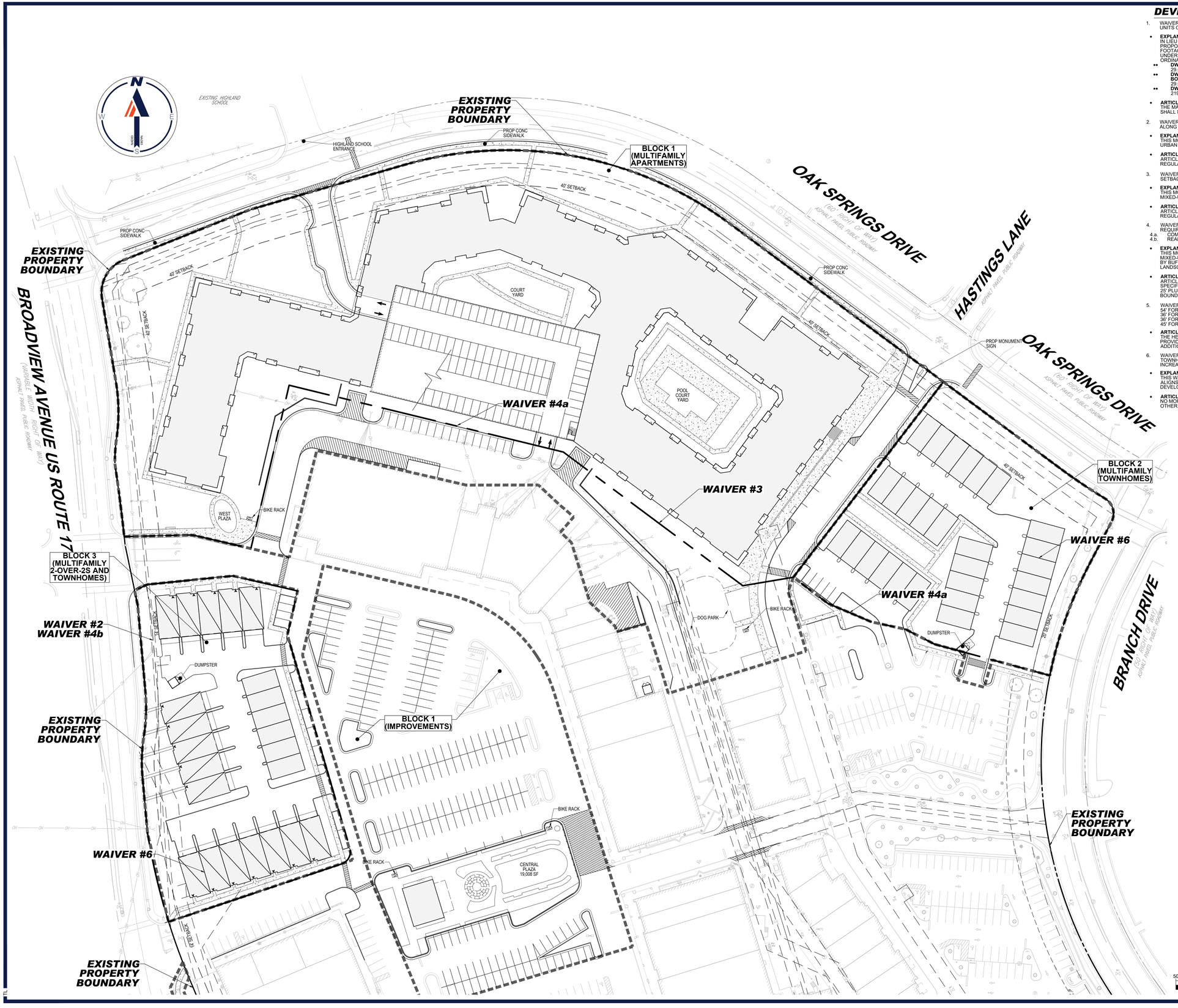
SHEET TITLE:

OPEN SPACE PLAN

SHEET NUMBER:

6

REVISION 3 - 5/31/2024



DEVELOPMENT MODIFICATIONS/WAIVERS

1. WAIVER TO ARTICLES 2-6.1 OF THE TOWN ZONING ORDINANCE FOR DENSITY INCREASE OF 386 UNITS OR 13.28 UNITS/ACRE.

- **EXPLANATION:**
  IN LIEU OF CALCULATING DENSITY ON A DWELLING UNIT PER ACRE BASIS, APPLICANT PROPOSED TO CALCULATE RESIDENTIAL DENSITY BASED ON EXISTING COMMERCIAL SQUARE FOOTAGE (1 DWELLING PER 500 SQUARE FEET OF NON-RESIDENTIAL SPACE, AS ALLOWED UNDER THE MIXED-USE DEVELOPMENT OPTION OF THE COMMERCIAL DISTRICT ZONING ORDINANCE)
  - **DWELLING UNITS ALLOWED PER DU/A = 145 UNITS**
    29.05 ACRES X 5 DU/A = 145 UNITS
  - **DWELLING UNITS ALLOWED PER DU/A CALCULATION (ASSUMING AFFORDABLE HOUSING BONUS):**
    29.05 ACRES X 10 DU/A = 290 UNITS
  - **DWELLING UNITS ALLOWE PER DU/GSF CALCULATION:**
    219,792 GSF / 500 = 439 UNITS
- **ARTICLE 2-6.1:**
  THE MAXIMUM DENSITY SPECIFIED IN THE ZONING ORDINANCE FOR A GIVEN ZONING DISTRICT SHALL NOT BE EXCEEDED. THE REQUIRED MAXIMUM DENSITY IS 5 UNITS PER ACRE.

2. WAIVER TO ARTICLE 3-4.10.4 OF THE TOWN ZONING ORDINANCE FOR FRONT YARD SETBACK ALONG BROADVIEW AVENUE FOR TOWNHOME BLOCK TO BE 14' MIN.

- **EXPLANATION:**
  THIS MODIFICATION WILL ALLOW THE UNITS TO BE CLOSER TO STREET, CREATING A MORE URBAN FORM AND CHARACTER.
- **ARTICLE 3-4.10.4:**
  ARTICLE 3-4.10.4 OF THE ZONING ORDINANCE IS A TABLE STATING LOT AND YARD REGULATIONS PER USE. THE REQUIRED FRONT YARD SETBACK IS TO BE 40' MIN.

3. WAIVER TO ARTICLE 3-4.10.4 OF THE TOWN ZONING ORDINANCE FOR SIDE/REAR YARD SETBACKS ALONG INTERNAL PROPOSED/EXISTING PROPERTY LINES TO 0.

- **EXPLANATION:**
  THIS MODIFICATION WILL ALLOW THE OVERALL DEVELOPMENT TO FUNCTION AS A TRUE MIXED-USE DEVELOPMENT THAT WILL NOT BE SEGMENTED BY INTERNAL SEPARATIONS.
- **ARTICLE 3-4.10.4:**
  ARTICLE 3-4.10.4 OF THE ZONING ORDINANCE IS A TABLE STATING LOT AND YARD REGULATIONS PER USE. THE REQUIRED SIDE YARD SETBACK IS TO BE 5' MIN.

4. WAIVER TO ARTICLE 8-8.5 OF THE TOWN ZONING ORDINANCE FOR LANDSCAPE BUFFER REQUIREMENTS
   4.a. COMMERCIAL USES FROM RESIDENTIAL USES TO 0.
   4.b. REAR BOUNDARIES OF RESIDENTIAL USES FROM PUBLIC RIGHT-OF-WAYS TO 14'.

- **EXPLANATION:**
  THIS MODIFICATION WILL ALLOW THE OVERALL DEVELOPMENT TO FUNCTION AS A TRUE MIXED-USE DEVELOPMENT BY CREATING AN INTEGRATED PROJECT THAT IS NOT SEGMENTED BY BUFFER STRIPS ADJACENT TO RESIDENTIAL AND COMMERCIAL USES. THE SCHEMATIC LANDSCAPING PLAN HAS IDENTIFIED AREAS WHERE PLANTINGS ARE PROPOSED.
- **ARTICLE 8-8.5:**
  ARTICLE 8-8.5 OF THE TOWN ZONING ORDINANCE IS A TABLE STATING LOT AND BUFFER YARD SPECIFICATIONS. THE MINIMUM WIDTH FOR COMMERCIAL USES FROM RESIDENTIAL USES IS 25' PLUS 1' FOR EACH FOOT OF BUILDING HEIGHT OVER 35'. THE MINIMUM WIDTH FOR REAR BOUNDARIES OF RESIDENTIAL USES FROM PUBLIC RIGHT-OF-WAYS IS 25'.

5. WAIVER TO ARTICLE 2-20 OF THE TOWN ZONING ORDINANCE FOR BUILDING HEIGHT:
   54' FOR BLOCK 1 OAK SPRINGS DRIVE FRONTAGE
   36' FOR BLOCK 1 BROADVIEW DRIVE FRONTAGE
   36' FOR BLOCK 2
   45' FOR BLOCK 3

- **ARTICLE 2-20:**
  THE HEIGHT LIMIT FOR DWELLINGS MAY BE INCREASED UP TO 45' AND UP TO THREE STORIES PROVIDED THAT FRONT, SIDE, AND REAR YARD SETBACKS INCREASE 1' FOR EACH ADDITIONAL FOOT OF BUILDING HEIGHT OVER 35'.

6. WAIVER TO ARTICLE 3-4.4.5.3 OF THE TOWN ZONING ORDINANCE FOR MAXIMUM GROUPING OF TOWNHOUSES:
   INCREASE FROM 6 TO 7.

- **EXPLANATION:**
  THIS WAIVER IS NECESSARY FOR UNIT COUNTS TO ENSURE DEVELOPMENT FEASIBILITY AND ALIGNS SEVERAL OTHER GROUPINGS OF 7 TO 8 UNITS IN OTHER TOWNHOUSE DEVELOPMENTS THROUGHOUT THE TOWN OF WARRENTON.
- **ARTICLE 3-4.4.5.3:**
  NO MORE THAN SIX (6) TOWNHOUSE UNITIS SHALL BE GROUPED CONTIGUOUS TO EACH OTHER.

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CHECKED BY:	JCW
DATE:	7/8/2022
CAD I.D.:	SUPP -2

PROJECT:

SPECIAL USE PERMIT

FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER
28 BLACKWELL PARK LANE, SUITE 201
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
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COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

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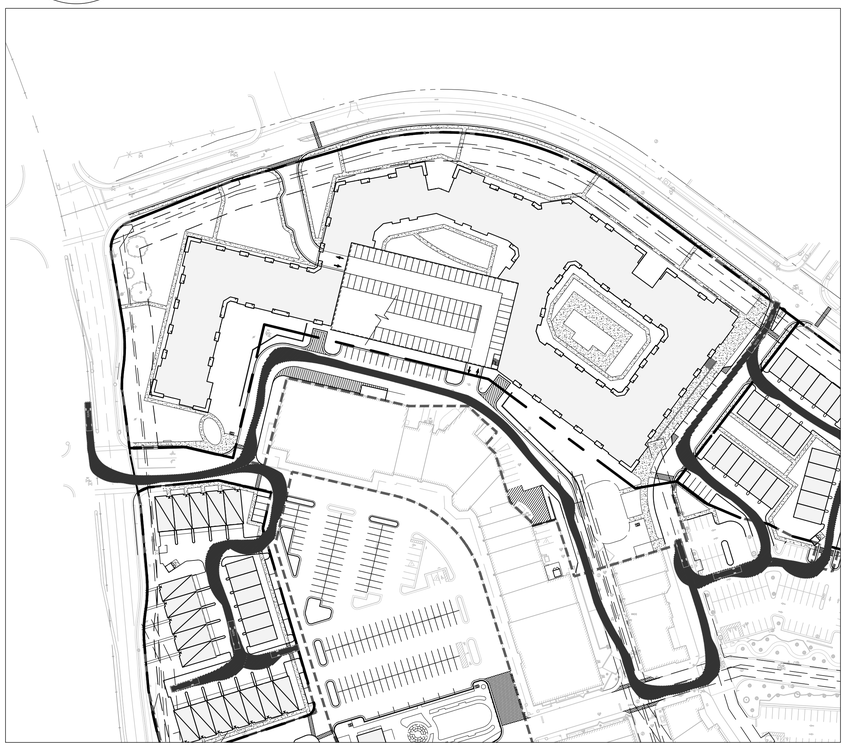
WAIVER INFORMATION

SHEET NUMBER:

7

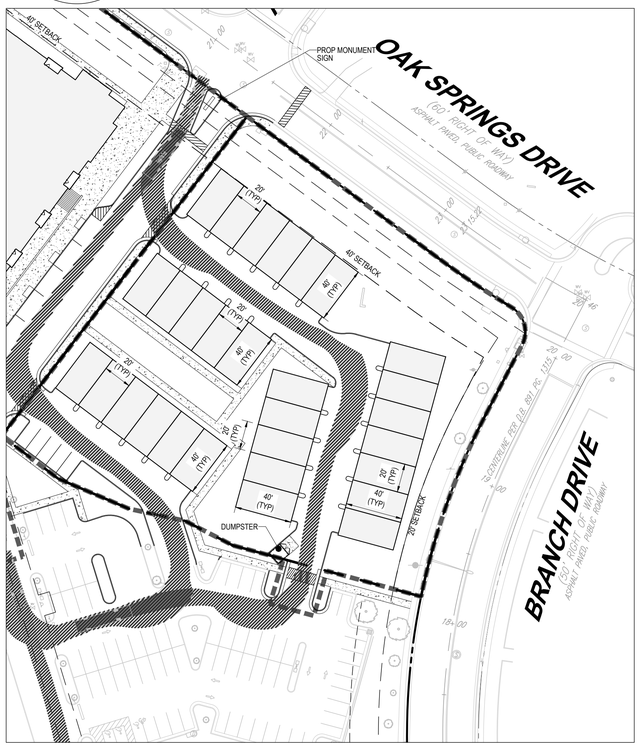
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I:\V212141\CAD\DRAWINGS\PLAN SETS\SUPP\V212141 - SUPP - 1----LAYOUT 7 - WAIVER INFORMATION



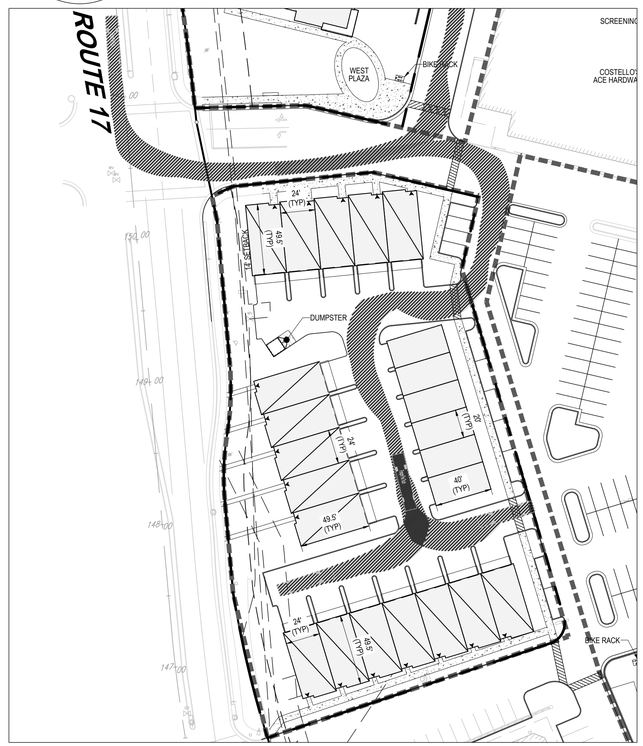
BLOCK 1

100 50 25 0 100
1"= 100'



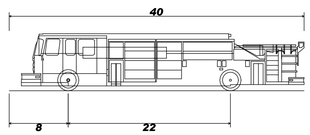
BLOCK 2 (2 OVER 2 BLOCK)

50 25 12.5 0 50
1"= 50'



BLOCK 3 (TOWNHOME BLOCK)

50 25 12.5 0 50
1"= 50'



Pumper Fire Truck	
Overall Length	***40.000ft***
Overall Width	***8.167ft***
Overall Body Height	***7.745ft***
Min Body Ground Clearance	***0.656ft***
Track Width	***8.167ft***
Lock-to-lock time	***5.00s***
Max Wheel Angle	***45.00°***

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CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

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COMMONWEALTH OF VIRGINIA
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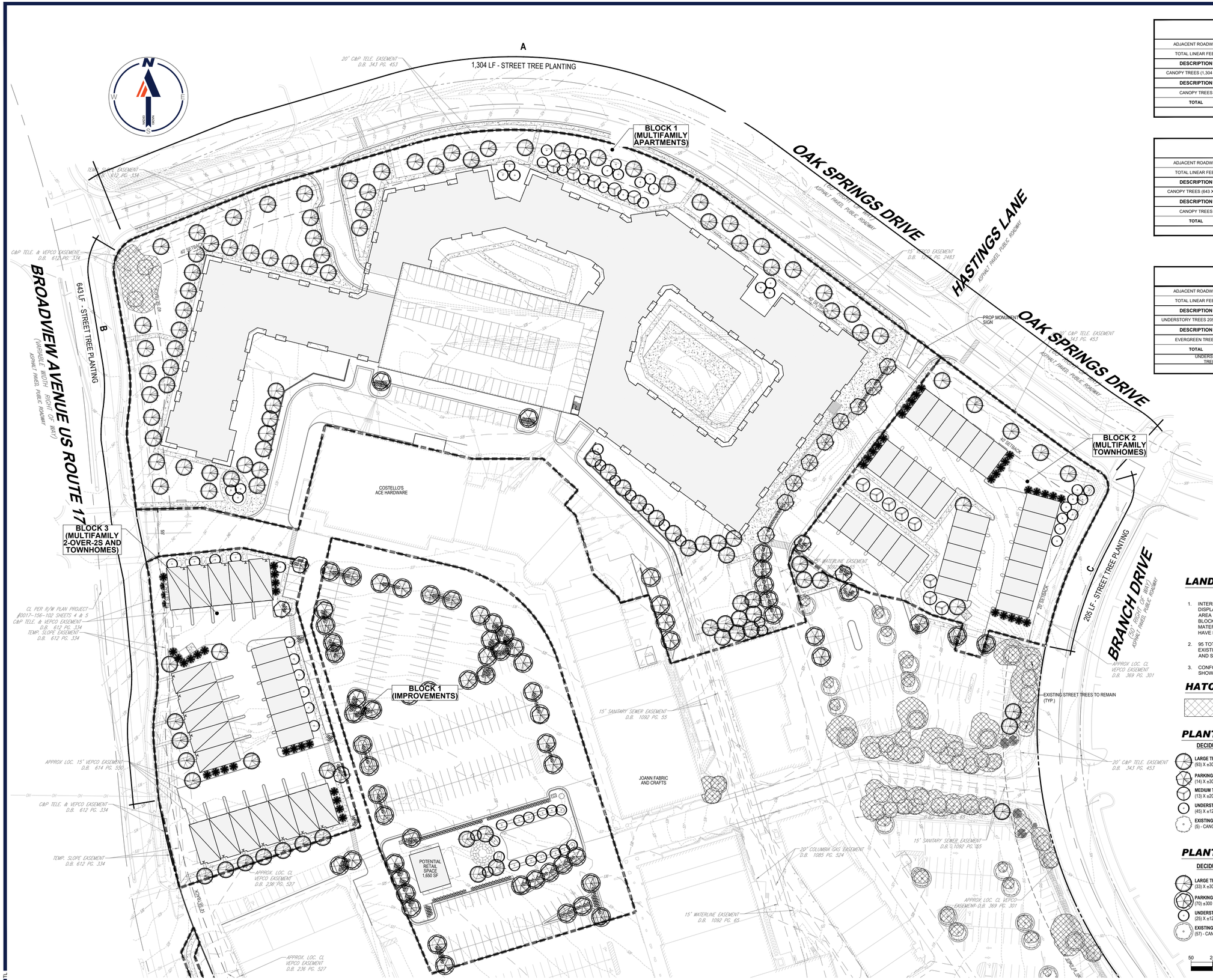
FIRE TRUCK MOVEMENT

SHEET NUMBER:

8

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11:21\V212141\CAD\DRAWINGS\PLAN SETS\SUPP\V212141 - SUPP -1----LAYOUT 8 - FIRE TRUCK MOVEMENT



A

STREET TREE PLANTING SECTION 8-5.5				
ADJACENT ROADWAY	OAK SPRINGS DRIVE			
TOTAL LINEAR FEET	1,304 LF			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
CANOPY TREES (1,304 X 1/50)	27		27	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
CANOPY TREES	0	27	27	100%
TOTAL	0	27	27	100%

B

STREET TREE PLANTING SECTION 8-5.5				
ADJACENT ROADWAY	BROADVIEW AVE - VA ROUTE 17			
TOTAL LINEAR FEET	643 LF			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
CANOPY TREES (643 X 1/50)	13		14	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
CANOPY TREES	0	14	14	100%
TOTAL	0	14	14	100%

C

STREET TREE PLANTING SECTION 8-5.5				
ADJACENT ROADWAY	BRANCH DR			
TOTAL LINEAR FEET	205 LF			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
UNDERSTORY TREES 205 X (2/50)	9		9	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
EVERGREEN TREES	0	9	9	100%
TOTAL	0	9	9	100%
UNDERSTORY TREES ARE PROPOSED IN PLACE OF CANOPY TREES DUE TO OVERHEAD LINES AT RATE OF 2 TO 1				

LANDSCAPE NOTES

1. INTERIOR PARKING LOT AND 20-YEAR TREE CANOPY ANALYSIS IS DISPLAYED FOR RESIDENTIAL BLOCK AREA. RESIDENTIAL BLOCK AREA ENCOMPASSES THE TOTAL AREA OF THE MULTIFAMILY BLOCK, 2 OVER 2 BLOCK, AND TOWNHOME BLOCK. ONLY THE MATERIAL COUNTED TOWARD THE RESIDENTIAL LANDSCAPING HAVE BEEN COUNTED FOR THE 20-YEAR TREE CANOPY.
2. 95 TOTAL TREES PROPOSED IN EXISTING PARKING LOT TO REPLACE EXISTING TREES THAT ARE TO BE REMOVED DUE TO PARKING LOT AND SITE IMPROVEMENTS.
3. CONFORMANCE WITH LANDSCAPING REQUIREMENTS WILL BE SHOWN WITH THE SITE DEVELOPMENT PLAN.

HATCH LEGEND

EXISTING TREE CANOPY TO REMAIN

PLANT LEGEND - RESIDENTIAL

DECIDUOUS

- **LARGE TREE (MIN. 15 FEET)** (93) X ±300 SF EA = 27,900 SF
- **PARKING LOT TREE (MIN. 15 FEET)** (14) X ±300 SF EA = 4,200 SF
- **MEDIUM TREE (MIN. 12 FEET)** (13) X ±200 SF EA = 2,600 SF
- **UNDERSTORY TREE (MIN. 6 FEET)** (45) X ±125 SF EA = 5,625 SF
- **EXISTING LARGE TREE** (5) - CANOPY BASED ON AERIAL IMAGERY

EVERGREEN

- **EVERGEEN TREE (MIN. 8 FEET)** (52) X ±150 SF EA = 7,800 SF
- **PARKING LOT SHRUBS** (42)

PLANT LEGEND - COMMERCIAL

DECIDUOUS

- **LARGE TREE (MIN. 15 FEET)** (33) X ±300 SF EA = 9,900 SF
- **PARKING LOT TREE (MIN. 15 FEET)** (70) ±300 SF EA = 21,000 SF
- **UNDERSTORY TREE (MIN. 6 FEET)** (25) X ±125 SF EA = 3,125 SF
- **EXISTING PARKING LOT TREE** (57) - CANOPY BASED ON AERIAL IMAGERY

EVERGREEN

- **PARKING LOT SHRUBS** (345)

50 25 12.5 0 50
1"= 50'

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FOR

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PROPOSED DEVELOPMENT

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CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

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VA@BohlerEng.com

COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

LANDSCAPE PLAN

SHEET NUMBER:

9

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LANDSCAPE NOTES

1. INTERIOR PARKING LOT AND 20-YEAR TREE CANOPY ANALYSIS IS DISPLAYED FOR RESIDENTIAL BLOCK AREA. RESIDENTIAL BLOCK AREA ENCOMPASSES THE TOTAL AREA OF THE MULTIFAMILY BLOCK, 2 OVER 2 BLOCK, AND TOWNHOME BLOCK. ONLY THE MATERIAL COUNTED TOWARD THE RESIDENTIAL LANDSCAPING HAVE BEEN COUNTED FOR THE 20-YEAR TREE CANOPY.
2. 95 TOTAL TREES PROPOSED IN EXISTING PARKING LOT TO REPLACE EXISTING TREES THAT ARE TO BE REMOVED DUE TO PARKING LOT AND SITE IMPROVEMENTS.
3. CONFORMANCE WITH LANDSCAPING REQUIREMENTS WILL BE SHOWN WITH THE SITE DEVELOPMENT PLAN.

PLANT LEGEND - RESIDENTIAL

DECIDUOUS

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- PARKING LOT TREE (MIN. 15 FEET) (14) X ±300 SF EA = 4,200 SF
- MEDIUM TREE (MIN. 12 FEET) (13) X ±200 SF EA = 2,600 SF
- UNDERSTORY TREE (MIN. 6 FEET) (45) X ±125 SF EA = 5,625 SF
- EXISTING LARGE TREE (5) - CANOPY BASED ON AERIAL IMAGERY

EVERGREEN

- EVERGEEN TREE (MIN. 8 FEET) (52) X ±150 SF EA = 7,800 SF
- PARKING LOT SHRUBS (42)

HATCH LEGEND

- EXISTING TREE CANOPY TO REMAIN
- INTERIOR PARKING LOT AREA
- INTERIOR PARKING LOT LANDSCAPE AREA

100 50 25 0 100

1"= 100'

PLANT LEGEND - COMMERCIAL

DECIDUOUS

- LARGE TREE (MIN. 15 FEET) (33) X ±300 SF EA = 9,900 SF
- PARKING LOT TREE (MIN. 15 FEET) (70) ±300 SF EA = 21,000 SF
- UNDERSTORY TREE (MIN. 6 FEET) (25) X ±125 SF EA = 3,125 SF
- EXISTING PARKING LOT TREE (57) - CANOPY BASED ON AERIAL IMAGERY

EVERGREEN

- PARKING LOT SHRUBS (345)

INTERIOR PARKING LOT LANDSCAPING - COMMERCIAL

SECTION 8-6.2

PARKING LOT AREA	457,772 SF			
PARKING SPACES	847			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
LANDSCAPE AREA 457,772 X 10%	45,777 SF		48,163 SF (10.52%)	
SHADE TREES 847 X (1/8)	106		132	
SHRUBS 847 X (3/8)	317		348	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
CANOPY TREES	57	70	127	100%
SHRUBS	0	345	345	100%
TOTAL	57	415	472	100%

INTERIOR PARKING LOT LANDSCAPING - MULTIFAMILY BLOCK 1

SECTION 8-6.2

PARKING LOT AREA	8,376 SF			
PARKING SPACES	30			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
LANDSCAPE AREA 8,376 X 10%	838 SF		1,127 SF (14.49%)	
SHADE TREES 30 X (1/8)	4		9	
SHRUBS 30 X (3/8)	12		14	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
CANOPY TREES	0	9	9	100%
SHRUBS	0	14	14	100%
TOTAL	0	23	23	100%

INTERIOR PARKING LOT LANDSCAPING - MULTIFAMILY BLOCK 2

SECTION 8-6.2

PARKING LOT AREA	4,308 SF			
PARKING SPACES	5			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
LANDSCAPE AREA 4,308 X 10%	431 SF		672 SF (15.6%)	
SHADE TREES 5 X (1/8)	1		2	
SHRUBS 5 X (3/8)	3		9	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
CANOPY TREES	0	2	2	100%
SHRUBS	0	9	9	100%
TOTAL	0	11	11	100%

INTERIOR PARKING LOT LANDSCAPING - MULTIFAMILY BLOCK 3

SECTION 8-6.2

PARKING LOT AREA	2,173 SF			
PARKING SPACES	11			
DESCRIPTION	**REQUIRED**		**PROVIDED**	
LANDSCAPE AREA 2,173 X 10%	217 SF		920 SF (42.34%)	
SHADE TREES 11 X (1/8)	2		3	
SHRUBS 11 X (3/8)	5		18	
DESCRIPTION	**EXISTING**	**PROPOSED**	**TOTAL QTY**	**PERCENT**
CANOPY TREES	0	3	3	100%
SHRUBS	0	18	18	100%
TOTAL	0	21	21	100%

TREE CANOPY TABLE - COMMERCIAL

SECTION 8-10.3.2

SITE AREA	838,094 SF OR 19.24 AC
PROPOSED ZONE	COMMERCIAL
20 YEAR CANOPY REQUIREMENT	10%
20 YEAR CANOPY REQUIRED	83,809 SF
PROPOSED CANOPY	34,025 SF (4.06%)
EXISTING CANOPY CONSERVATION	51,087 SF (6.10%)
TOTAL 20 YEAR CANOPY PROVIDED	85,112 SF (10.16%)

TREE CANOPY TABLE - MULTIFAMILY BLOCK 1

SECTION 8-10.3.2

SITE AREA	287,496 SF OR 6.60 AC
PROPOSED ZONE	RESIDENTIAL
20 YEAR CANOPY REQUIREMENT	10% (49 UNITS PER ACRE)
20 YEAR CANOPY REQUIRED	28,750 SF
PROPOSED CANOPY	27,825 SF (9.67%)
EXISTING CANOPY CONSERVATION	3,031 SF (1.05%)
TOTAL 20 YEAR CANOPY PROVIDED	30,856 SF (10.72%)

TREE CANOPY TABLE - MULTIFAMILY BLOCK 2

SECTION 8-10.3.2

SITE AREA	69,696 SF OR 1.6 AC
PROPOSED ZONE	RESIDENTIAL
20 YEAR CANOPY REQUIREMENT	10% (25 UNITS PER ACRE)
20 YEAR CANOPY REQUIRED	6,970 SF
PROPOSED CANOPY	8,575 SF (12.3%)
EXISTING CANOPY CONSERVATION	0 SF (0.00%)
TOTAL 20 YEAR CANOPY PROVIDED	8,575 SF (12.3%)

TREE CANOPY TABLE - MULTIFAMILY BLOCK 3

SECTION 8-10.3.2

SITE AREA	70,131 SF OR 1.61 AC
PROPOSED ZONE	RESIDENTIAL
20 YEAR CANOPY REQUIREMENT	15% (19 UNITS PER ACRE)
20 YEAR CANOPY REQUIRED	10,515 SF
PROPOSED CANOPY	10,800 SF (15.40%)
EXISTING CANOPY CONSERVATION	0 SF (0.00%)
TOTAL 20 YEAR CANOPY PROVIDED	10,800 SF (15.40%)

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COMMONWEALTH OF VIRGINIA
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5/31/2024
PROFESSIONAL ENGINEER

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LANDSCAPE PLAN

SHEET NUMBER:

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CASTLE
DEVELOPMENT PARTNERS

WARRENTON VILLAGE MIXED-USE CENTER

WARRENTON, VA

RENDERING • 05-30-2024

CST2021-03

DYNAMIK
DESIGN

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COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

11

REVISION 3 - 5/31/2024

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TL



MULTIFAMILY FRONT ELEVATION

CASTLE DEVELOPMENT PARTNERS

WARRENTON VILLAGE CENTER

WARRENTON, VA

ELEVATION • 05-30-2024

CST2021-03

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FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER

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WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com

COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

12

REVISION 3 - 5/31/2024

May 30, 2024
H:\212\212141\CAD\DRAWINGS\PLAN SETS\SUPPV\212141 SUPP- 1----LAYOUT 12- BUILDING ELEVATIONS 2
TL



MULTIFAMILY ELEVATION- 3 STORY

CASTLE DEVELOPMENT PARTNERS

WARRENTON VILLAGE CENTER

WARRENTON, VA

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5/31/2024
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SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

12B

REVISION 3 - 5/31/2024

May 30, 2024
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MULTIFAMILY SIDE ELEVATION

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JOHN C. WRIGHT
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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

12C

REVISION 3 - 5/31/2024

May 30, 2024
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TL



TOWNHOME - 3 STORY FRONT ELEVATION

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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

13

REVISION 3 - 5/31/2024

May 30, 2024
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TOWNHOME - 3 STORY REAR ELEVATION

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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

13B

REVISION 3 - 5/31/2024

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TOWNHOME - 4 STORY ELEVATION

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PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

13C

REVISION 3 - 5/31/2024

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TOWNHOME - 4 STORY REAR ELEVATION

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PROPOSED DEVELOPMENT

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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

13D

REVISION 3 - 5/31/2024

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MULTIFAMILY FRONT ELEVATION

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PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
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5/31/2024
PROFESSIONAL ENGINEER

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SHEET NUMBER:

14

REVISION 3 - 5/31/2024

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MULTIFAMILY ELEVATION- 3 STORY

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5/31/2024
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SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

14B

REVISION 3 - 5/31/2024

May 30, 2024
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MULTIFAMILY SIDE ELEVATION

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5/31/2024
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TOWNHOME - 3 STORY ELEVATION

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5/31/2024
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REVISION 3 - 5/31/2024

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TOWNHOME - 4 STORY ELEVATION

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DRAWN BY:	DSH
CHECKED BY:	JCW
DATE:	7/8/2022
CAD I.D.:	SUPP -2

PROJECT:

SPECIAL USE PERMIT

FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER

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WARRENTON, VIRGINIA 20186
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COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
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5/31/2024
PROFESSIONAL ENGINEER

SHEET TITLE:

BUILDING ELEVATIONS

SHEET NUMBER:

15B

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RENDERING - WARRENTON VILLAGE CENTER

SCALE 1"=80'-0"

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H:\21\21241\CAD\DRAWINGS\PLAN SETS\SUPPV\21241 - SUPP 1 ---LAYOUT 16 - CONCEPTUAL PLAN RENDERING
TL

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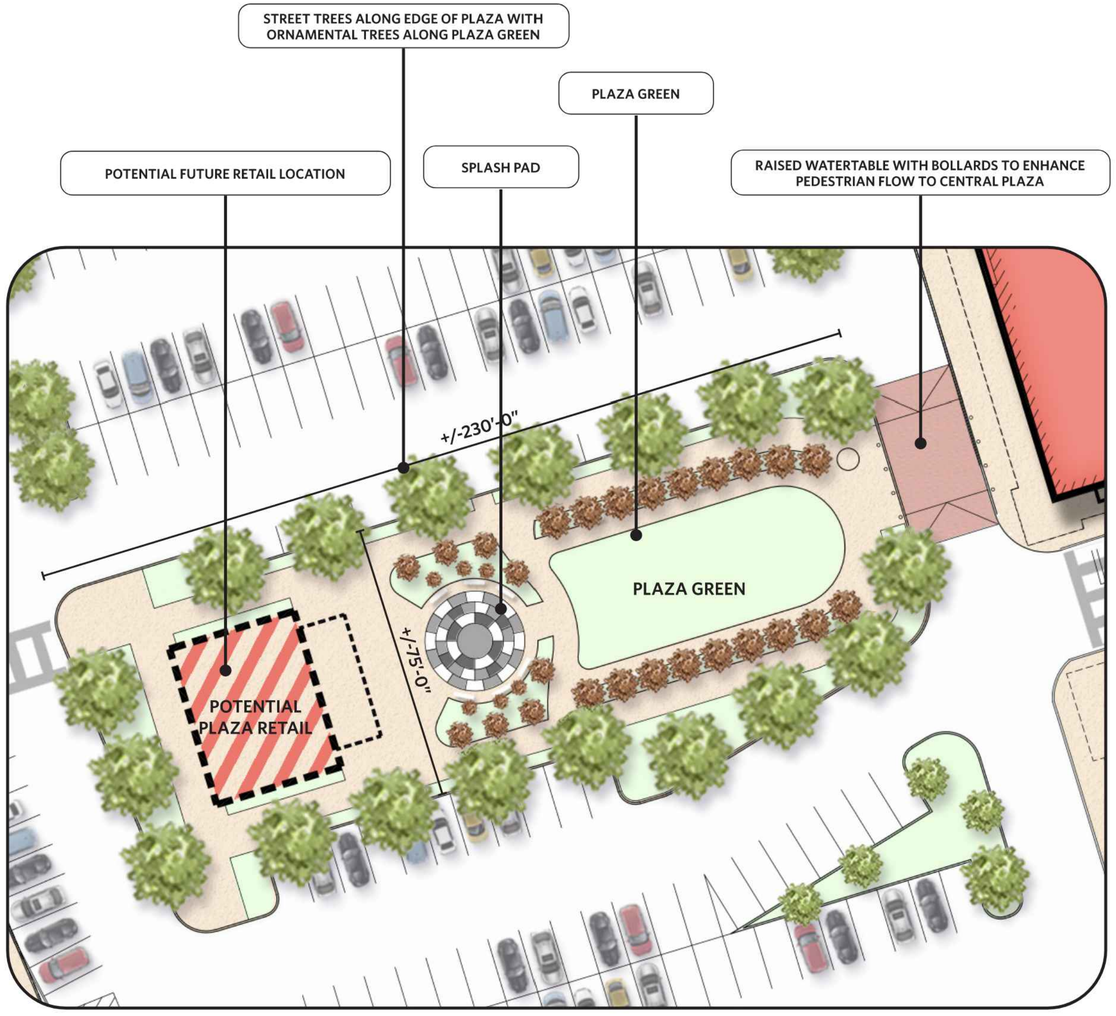
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CONCEPTUAL PLAN RENDERING

SHEET NUMBER:

16

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ENLARGED CONCEPTUAL CENTRAL PLAZA PLAN

SCALE 1"=20'-0"



AERIAL VIEW OF CENTRAL PLAZA

NTS



EYE LEVEL VIEW OF CENTRAL PLAZA

NTS

NOTE: Retail building shown in Central Plaza is for conceptual future development purposes only. No retail building is proposed as part of this SUP.

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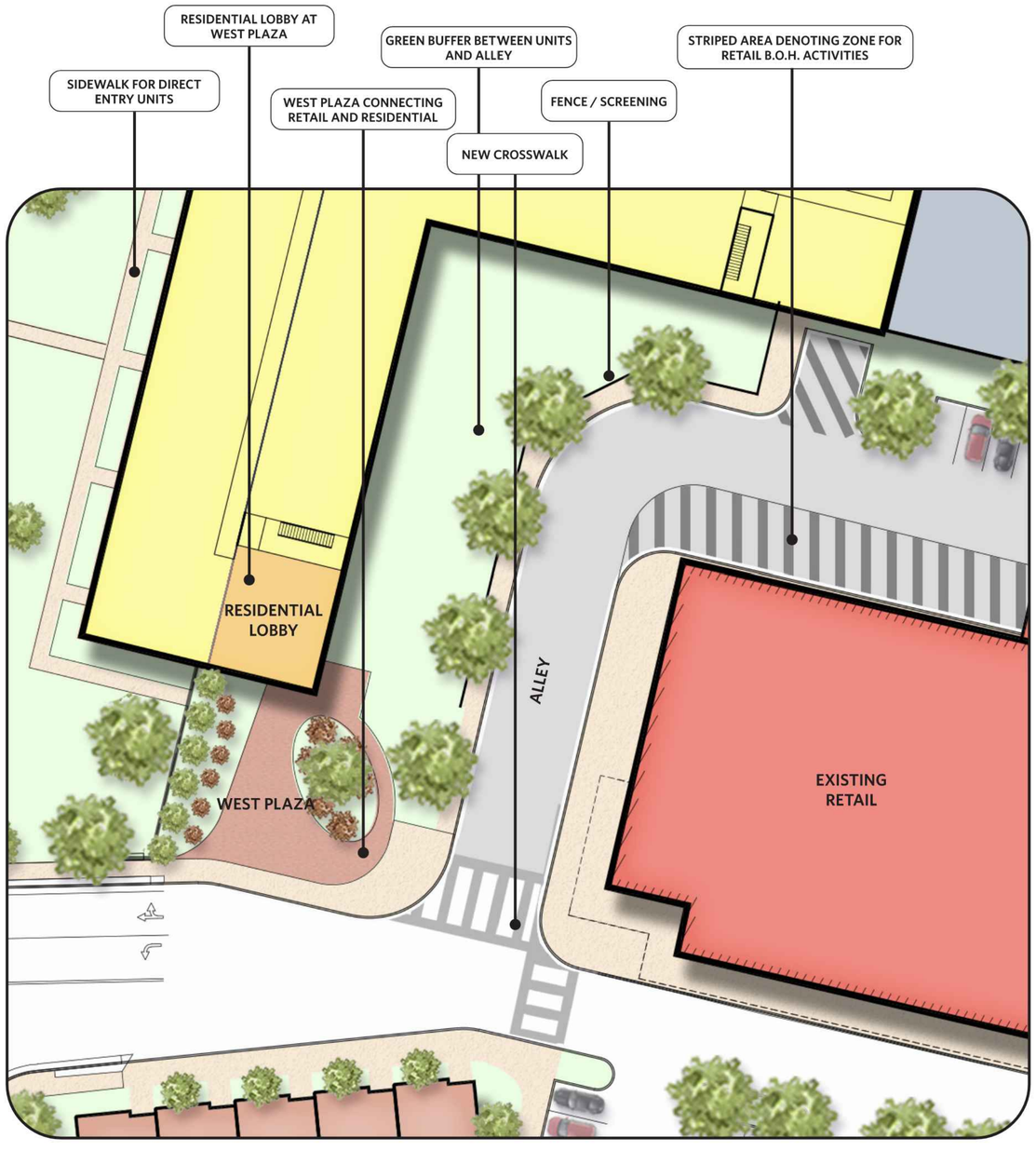
DETAIL - CENTRAL PLAZA

SHEET NUMBER:

17

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ENLARGED CONCEPTUAL WEST PLAZA PLAN

SCALE 1"=20'-0"



TYPICAL SECTION THROUGH ALLEY

SCALE 1/8"=1'-0"



VIEW OF WEST PLAZA AND EXISTING RETAIL BEYOND

NTS

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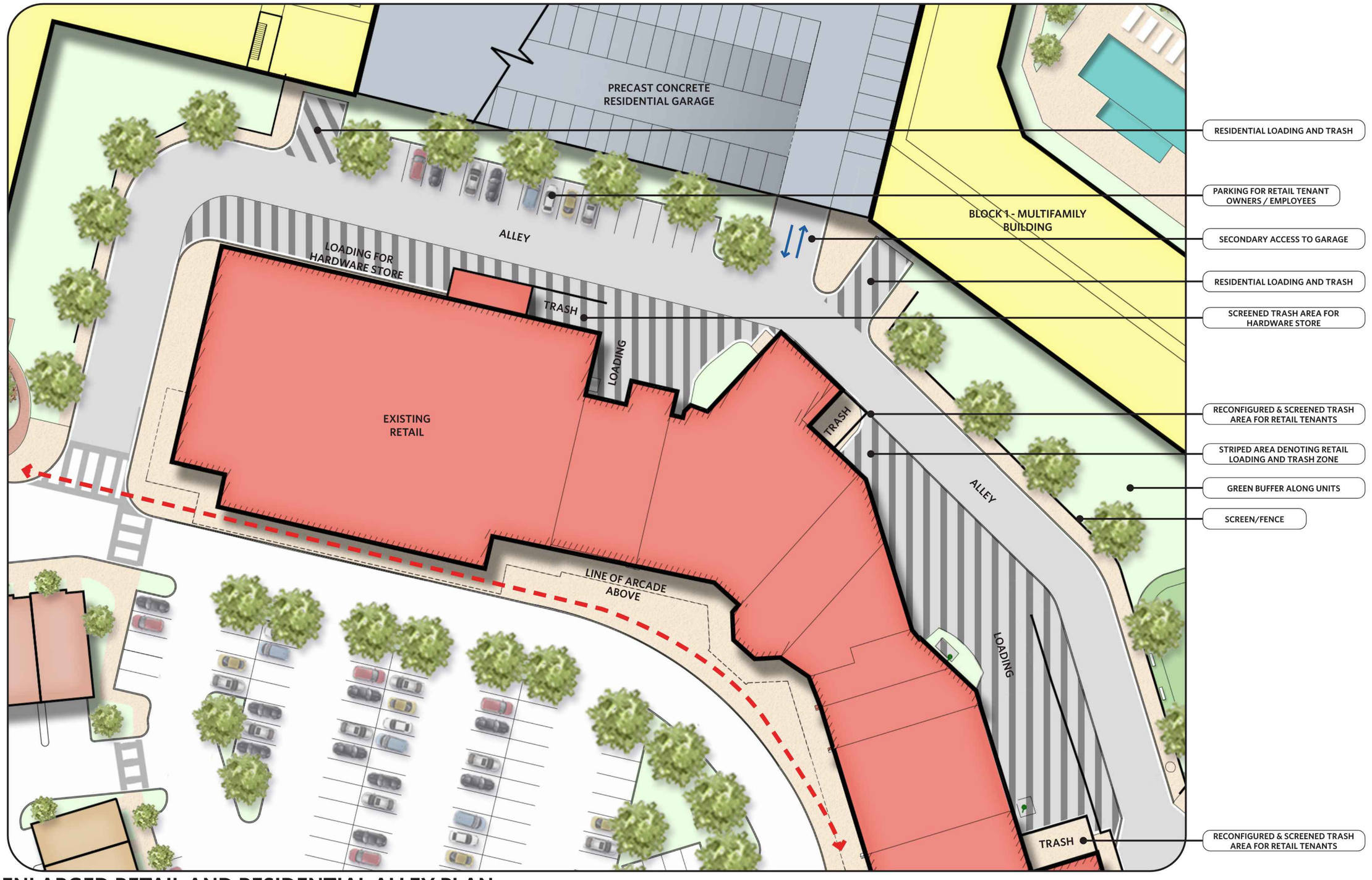
DETAIL - WEST PLAZA

SHEET NUMBER:

18

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ENLARGED RETAIL AND RESIDENTIAL ALLEY PLAN

SCALE 1"=20'-0"

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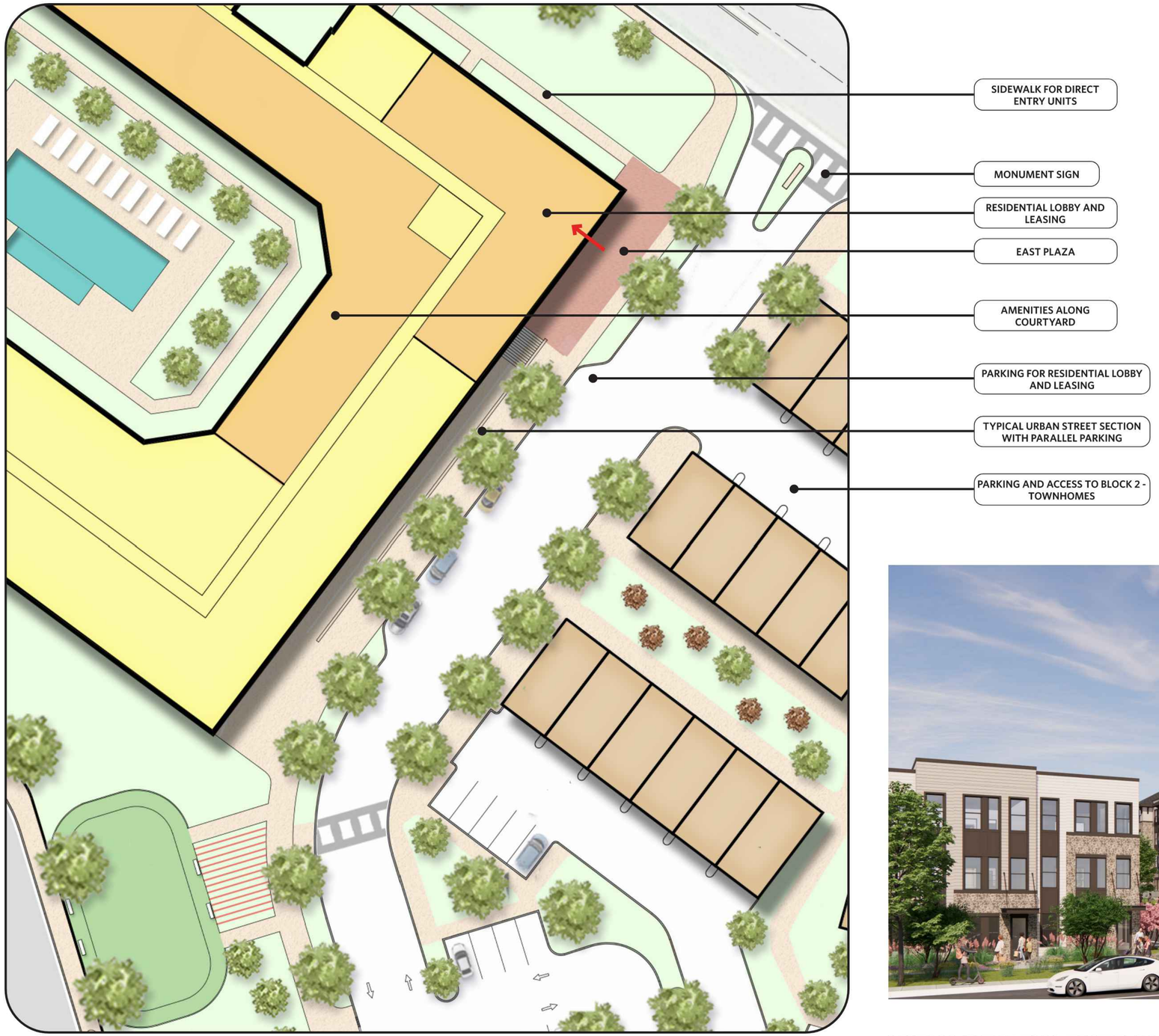
DETAIL - ALLEY

SHEET NUMBER:

19

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ENLARGED PLAN OF NEW ENTRANCE DRIVEWAY

SCALE 1"=20'-0"



VIEW OF NEW ENTRANCE STREET

NTS

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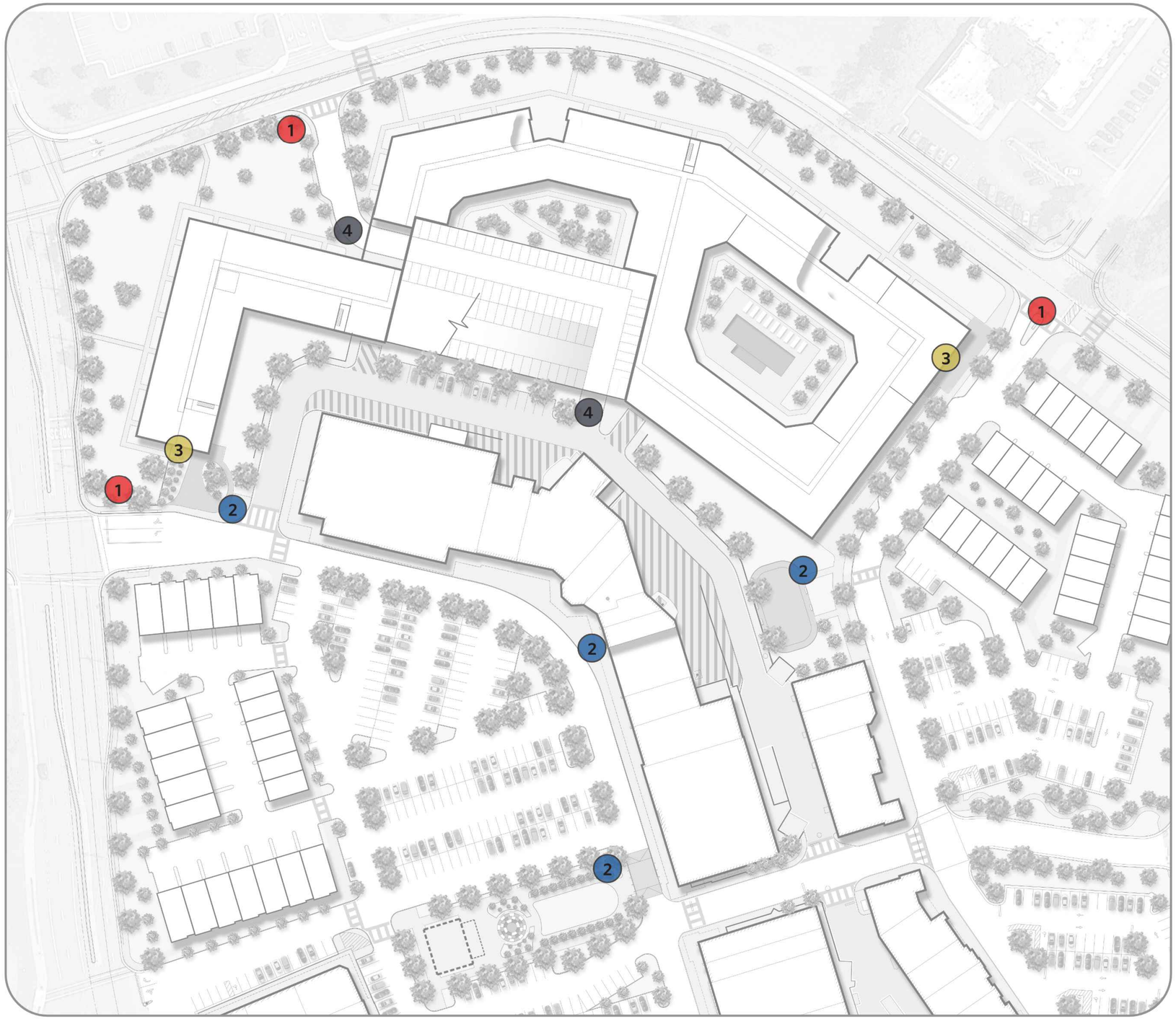
DETAIL - EAST PLAZA

SHEET NUMBER:

20

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CONCEPTUAL SITE SIGNAGE PLAN

SCALE 1"=50'-0"

mv+a MAY 30, 2024



1 MONUMENT SIGNAGE

INCLUDES HORIZONTAL OR VERTICAL PYLON SIGNS , EITHER FREE STANDING OR INTEGRATED INTO THE LANDSCAPE, HIGHLIGHTING THE PROJECT/COMMUNITY NAME AND MAJOR TENANTS



2 WAYFINDING SIGNAGE

SUCH SIGNS COULD BE POST SUPPORTED OR ATTACHED TO OTHER ELEMENTS OF THE STREETSCAPE OR WITHIN LANDSCAPING AND ARE MEANT TO PROVIDE PEDESTRIANS WITH DIRECTION TO TENANTS WITHIN THE PROJECT.



3 CANOPY SIGNAGE

INCLUDES SIGNS THAT MAY BE WALL MOUNTED, CANOPY MOUNTED OR VERTICALLY MOUNTED TO THE FACADE VIA BRACKETS AND TYPICALLY ARE USED TO HIGHLIGHT THE NAME OF THE BUILDING OR THE COMMUNITY.



4 INCIDENTAL SIGNAGE

SIGNS THAT SUPPLEMENT AND PROVIDE NON-TENANT/BRAND IDENTITY INFORMATION USUALLY HIGHLIGHTING OTHER SUPPLEMENTARY PROGRAMS IN A PROJECT.

NOTE: Signage types and location shown here in this plan is conceptual and subject to change with input from stakeholders. All signs to conform to Article 6 - Signage of Zoning Ordinance

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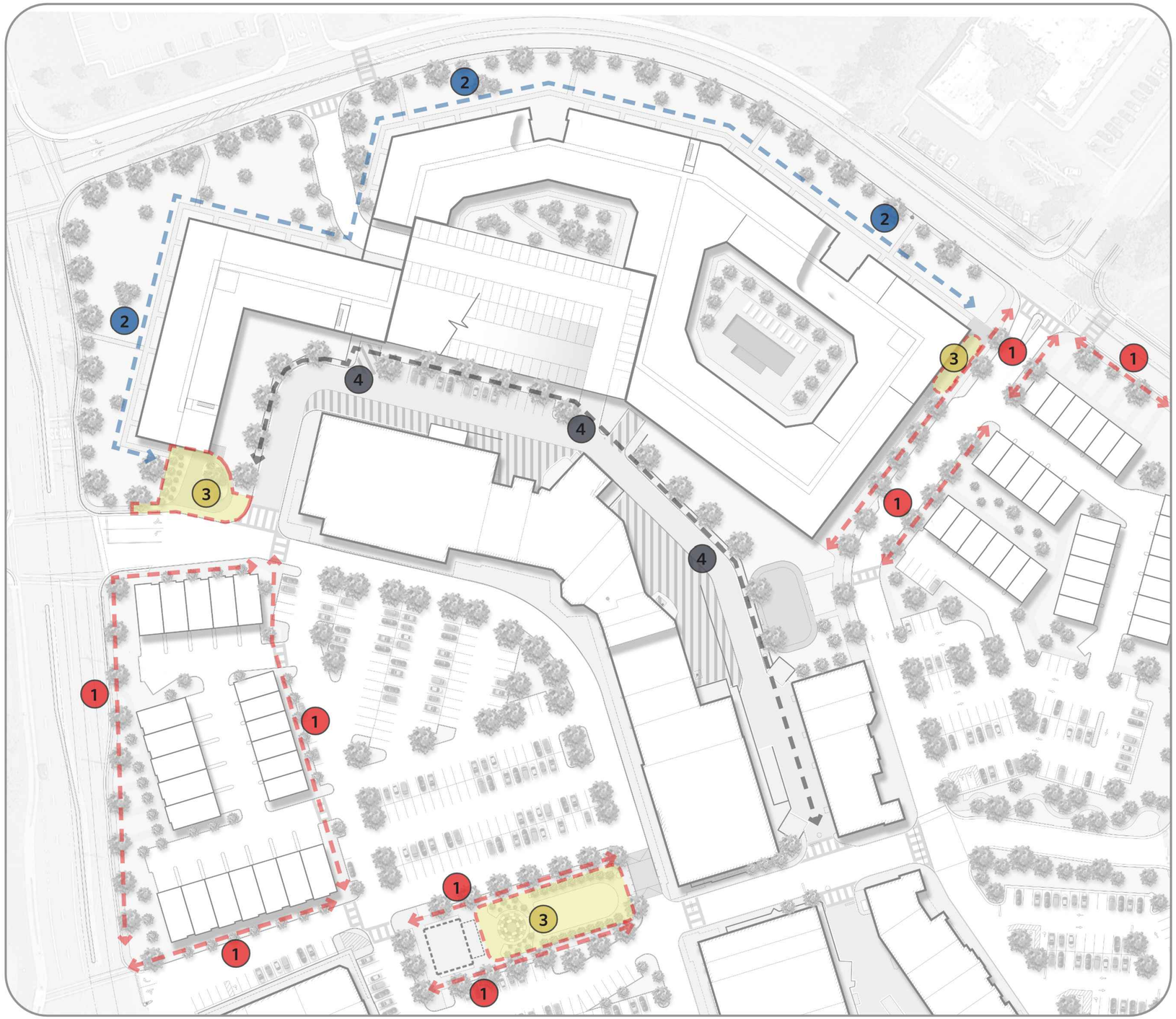
CONCEPTUAL SIGNAGE PLAN

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21

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CONCEPTUAL LIGHTING PLAN

SCALE 1"=50'-0"

mv+a MAY 30, 2024





1 DECORATIVE POST LIGHTING

SUCH LIGHTING ALREADY EXISTS WITHIN SELECTIVE AREAS OF THE SITE. THIS LIGHTING TYPE IS MEANT TO PROVIDE ILLUMINATION ALONG PEDESTRIAN ROUTES/STREETS AND FORMS A NECESSARY COMPONENT OF THE ENTOURAGE THAT MAKES UP URBAN STREETSCAPES.



2 WALL SCONCE LIGHTING

ACCENT LIGHTING MOUNTED ON THE BUILDING ILLUMINATING FEATURES OF THE ARCHITECTURE AS WELL AS PROVIDING UTILITY LIGHTING FOR THE IMMEDIATE SURROUNDINGS/WALKWAYS.





3 ACCENT LIGHTING - BUILDING AND LANDSCAPE

ACCENT LIGHTING UTILIZED TO EMPHASIZE BUILDING ARCHITECTURE/ CANOPY ENTRANCES AS WELL AS LANDSCAPE FEATURES - PLANTING, FURNITURE ELEMENTS, DECORATIVE WALKING PATHS, ETC.



4 UTILITY LIGHTING

POST MOUNTED OR BUILDING MOUNTED LIGHTING THAT IS MEANT TO ILLUMINATE AREAS THAT ARE NOT USUALLY ACCESSED BY PEDESTRIANS OR PART OF THE URBAN STREETSCAPES - ALLEYS, INCIDENTAL PATHS, HIGH VEHICULAR TRAFFIC AREAS

NOTE: Detailed lighting and photometric plan to be provided at site plan. All lighting to conform to Article 9 of Zoning Ordinance.

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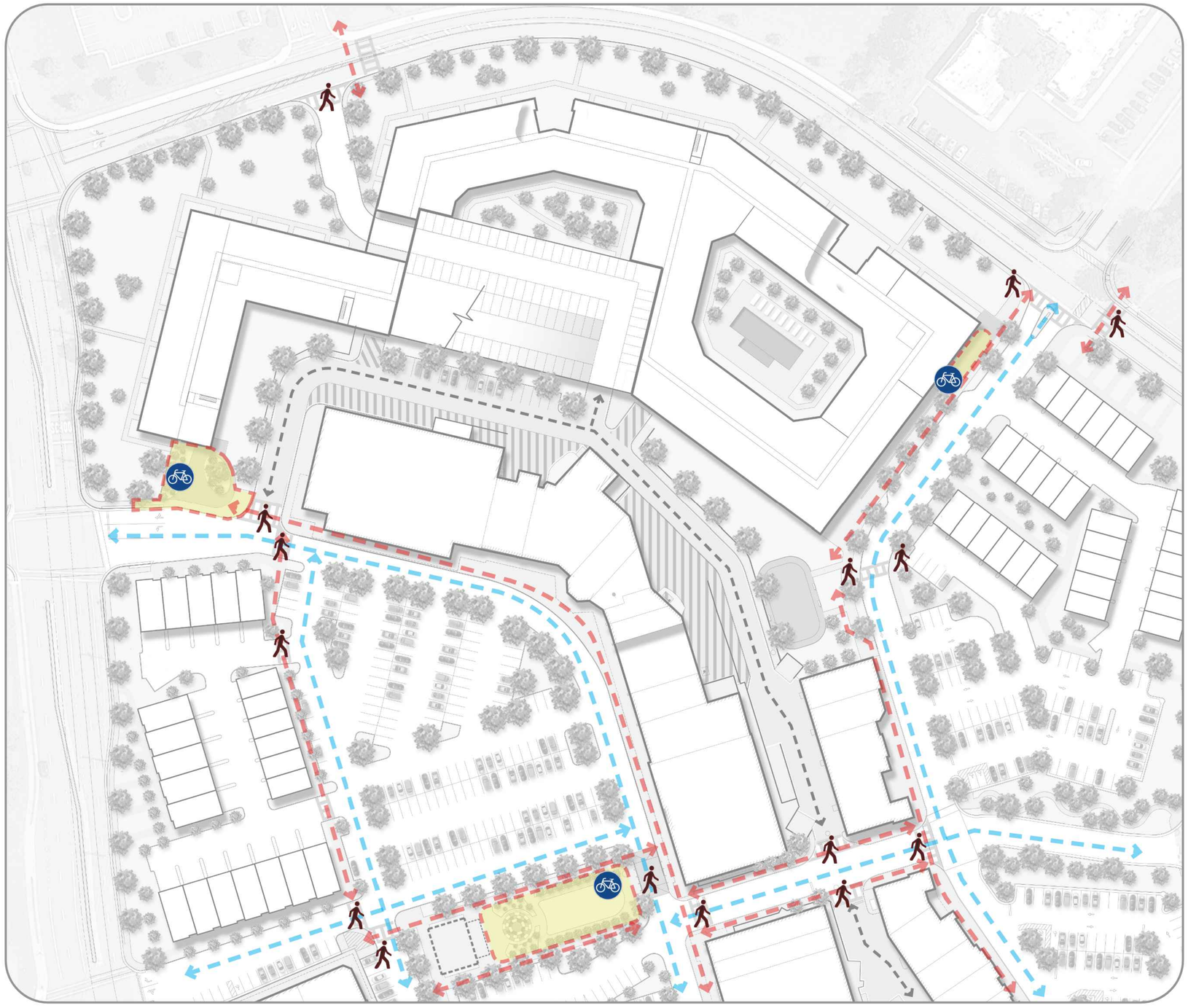
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CONCEPTUAL LIGHTING PLAN

SHEET NUMBER:

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LEGEND

PLAZA / COMMUNITY AREAS

THESE COLORED REGIONS REPRESENT THE PUBLIC PLAZAS IN THE PROJECT ANCHORING BOTH RETAIL AS WELL AS RESIDENTIAL PROGRAMS.

PEDESTRIAN CIRCULATION

THIS DENOTES SOME OF THE MAJOR PEDESTRIAN CIRCULATION ROUTES WITHIN THE CENTER EFFECTIVELY CONNECTING THE NEW RESIDENTIAL PROGRAMS WITH THE EXISTING RETAIL CENTER AND COMMUNITY SPACES/ PLAZAS WITHIN THE PROJECT. CIRCULATION PATHS WILL CONSIST OF MINIMUM 5' WIDTH SIDEWALK AS REQUIRED BY ARTICLE 9-25.1 SUBSECTION G OF THE ZONING CODE.

BICYCLE AND VEHICULAR CIRCULATION

SHARED CIRCULATION CORRIDORS WITHIN THE PROJECT ON CONNECTOR STREETS - EXISTING AND PROPOSED, AS WELL AS PARKING LOTS, ALL CHARACTERISED BY LOW SPEED LIMITS. REDUCED DRIVE WIDTHS AND RAISED CROSSWALKS IN SELECTED AREAS WILL PROVIDE NECESSARY TRAFFIC CALMING AND A DETERRENT TO UNSAFE DRIVING.

SERVICE AND SECONDARY GARAGE CIRCULATION

PRIMARY USE FOR THIS CORRIDOR IS LOADING AND TRASH PICKUP FOR BOTH THE RETAIL AND RESIDENTIAL IN THE PROJECT ALONG WITH SECONDARY GARAGE ACCESS FOR BLOCK 1 - MULTIFAMILY BUILDING.

BIKE PARKING AREAS

BIKE PARKING WILL BE CLUSTERED WITHIN THE CENTRAL, EAST AND WEST PLAZAS FOR USE BY RESIDENTS OR VISITING MEMBERS OF THE COMMUNITY. ADDITIONAL BIKE PARKIING WILL BE DISPERSED ALONG THE RETAIL SIDEWALK FOR USE BY RETAIL CUSTOMERS.

CROSSWALKS

PROPOSED CROSSWALKS PROVIDE ACCESSIBLE MEANS OF CROSSING THE STREET/ALLEYS AS PEDESTRIANS MAKE THEIR WAY BETWEEN THE RESIDENTIAL AND THE RETAIL.

CONCEPTUAL CIRCULATION PLAN

SCALE 1"=50'-0"

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CONCEPTUAL CIRCULATION PLAN

SHEET NUMBER:

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VIEW OF NEW ENTRANCE ACROSS FROM HASTINGS LANE LOOKING AT BLOCK 1 AND BLOCK 2

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CAD I.D.:	SUPP -2

PROJECT:

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FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER
28 BLACKWELL PARK LANE, SUITE 201
WARRENTON, VIRGINIA 20186
Phone: (540) 349-4500
Fax: (540) 349-0321
VA@BohlerEng.com

COMMONWEALTH OF VIRGINIA
JOHN C. WRIGHT
Lic. No. 046960
5/31/2024
PROFESSIONAL ENGINEER

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24

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VIEW ALONG BLOCK 1 MULTIFAMILY APARTMENT BUILDING LOOKING TOWARDS BLOCK 3

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PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
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25

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VIEW ALONG BLOCK 3 SIDEWALK LOOKING TOWARDS THE EXISTING RETAIL

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AERIAL VIEW OF CENTRAL PLAZA STRETCHING BETWEEN THE RETAIL

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FOR

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PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
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27

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AERIAL VIEW OF CENTRAL PLAZA STRETCHING ACROSS THE RETAIL

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FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

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28

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EYE LEVEL VIEW OF CENTRAL PLAZA STRETCHING ACROSS THE RETAIL

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WARRENTON VILLAGE CENTER

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29

REVISION 3 - 5/31/2024

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EYE LEVEL VIEW FROM CENTRAL PLAZA GREEN LOOKING TOWARDS RETAIL AND RESIDENTIAL

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PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

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EYE LEVEL VIEW OF CONNECTION BETWEEN THE RETAIL AND CENTRAL PLAZA

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WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

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EYE LEVEL VIEW OF CENTRAL PLAZA AS APPROACHED FROM THE RETAIL

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OAK SPRINGS DRIVE
CENTER DISTRICT
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VIEW FROM INTERSECTION OF BROADVIEW AVENUE AND EXISTING ENTRANCE

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PROPOSED DEVELOPMENT

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CENTER DISTRICT
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VIEW FROM HASTINGS LANE LOOKING OUT TOWARD OAK SPRINGS

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PROPOSED DEVELOPMENT

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CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

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34

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VIEW FROM EXISTING DRIVE LOOKING OUT TO BROADVIEW AVENUE

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FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
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VIEW FROM INTERSECTION OF OAK SPRINGS AND BROADVIEW AVENUE

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2	2/14/2024	TOWN COMMENTS	TAL / JCW
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PROJECT No.:	V212141
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DATE:	7/8/2022
CAD I.D.:	SUPP -2

PROJECT:

SPECIAL USE PERMIT

FOR

WARRENTON VILLAGE CENTER

PROPOSED DEVELOPMENT

OAK SPRINGS DRIVE
CENTER DISTRICT
TOWN OF WARRENTON, VIRGINIA

BOHLER
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COMMONWEALTH OF VIRGINIA
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5/31/2024
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SHEET TITLE:

RENDERING

SHEET NUMBER:

36

REVISION 3 - 5/31/2024

STATEMENT OF JUSTIFICATION
WARRENTON VILLAGE CENTER
SPECIAL USE PERMIT APPLICATION

GPIN 6985-20-7247-000 and GPIN 6984-29-6753-000

Owner: Jefferson Associates L P, Warrenton Center, LLC
Applicant: NewCastle Development Group

May 31, 2024

INTRODUCTION

NewCastle Development Group (hereinafter, the "Applicant") is seeking a Special Use Permit for two parcels, totaling 29.05 acres and identified as GPINs 6984-20-7247-000 and 6984-29-6753-000 (the "Property"), to add residential units into the existing Warrenton Village Center (the "Center") in order to create a new mixed-use, live/work/play community (the "Proposal"). The Proposal seeks to bring a maximum of 386 residential dwellings to the existing commercial center through a variety of dwelling types, including traditional apartment units, 2-over-2s units and townhomes.

The Property is located within the New Town Warrenton District in the Plan Warrenton 2040 Comprehensive Plan, which is described as "a location for signature office/jobs center; with a greater intensity of mixed use and strong live, work and play options. A mix of uses could be organized around an internal street network and public amenities, such as civic spaces, parks green spaces and public gathering areas." This guidance from Plan Warrenton 2040 was the framework upon which the Proposal was contemplated and designed.

The Proposal seeks to create a critical mass of residential units on the vacant land north of Warrenton Village Center via a multifamily apartment building and structured parking garage that will 1) bring much needed rental supply to the Warrenton housing market and 2) introduce a new supply of consumers to support the existing businesses of not only Warrenton Village Center, but of all of Warrenton's established commercial/retail businesses.

The Applicant proposes to offer a wider range of housing types and price points through two additional sections of housing, which will include 2-over-2 and townhome dwelling units. These infill blocks, which will provide much needed "missing middle" housing types, will be utilized to integrate residential dwellings into the existing commercial center, creating a true mixed-use environment.

Lastly, the Applicant proposes a multitude of new improvements to the existing Warrenton Village Center, including public plazas, increased pedestrian walkability, and an enhanced road network, all of which adhere to the goals and initiatives of the New Town Warrenton District's vision for mixed-use centers.

SPECIAL USE PERMIT – MODIFICATIONS/WAIVERS

The Applicant is requesting the following modifications from Town Council, via approval of a Special Use Permit:

1. Increase in Overall Project Density

- Article 2-6.1: The maximum density specified in the zoning ordinance for a given zoning district shall not be exceeded. The maximum density is 5 units per acre or 10 units per acre with inclusion of 10% affordable dwelling units.
- Waiver Request #1: Increase density to 386 units or 13.28 per acre.
- In lieu of calculating density on a dwelling unit per acre basis, applicant proposes to calculate residential density based on existing commercial square footage (1 dwelling unit per 500 square feet of non-residential space, as allowed under the Mixed-Use Development Option of the Commercial District zoning ordinance)
    - Dwelling units allowed per DU/A calculation:
        - 29.05 acres x 5 DU/A = 145 units
    - Dwelling units allowed per DU/A calculation (assuming affordable housing bonus):
        - 29.05 acres x 10 DU/A = 290 units
    - Dwelling units allowed per DU/GSF calculation:
        - 219,792 GSF / 500 = 439 units
- Proposed dwelling units = 386 units

2. Front Yard Setback Modification along Broadview Avenue
    - Article 3-4.10.4: Required front yard setback from ROW greater than 50' is 40' minimum, if no parking or loading is proposed.
    - Waiver Request #2: Decrease minimum setback to 14' along Broadview Avenue.
    - This modification will allow the units to be closer to street, creating a more urban form and character.

3. Side & Rear Yard Setbacks along all internal property lines
    - Article 3-4.10.4: Required side/rear yard setbacks is 5' minimum.
    - Waiver Request #3: Decrease side/rear yard setbacks to 0'.
    - This modification will allow the overall development to function as a true mixed-use development that will not be segmented by internal separations.

4. Landscape Buffers along internal property lines and public ROW
    - Article 8-8.5: Minimum buffer width for commercial uses adjacent to residential uses is 25', plus 1' for each foot of building height over 35'. Minimum buffer width for rear boundaries of residential uses from public ROW is 25'.
    - Waiver Request #4a: Decrease buffer width between commercial and residential uses to 0'.
    - Waiver Request #4b: Decrease rear buffer width for residential uses from public ROW to 14'.
    - This modification will allow the overall development to function as a true mixed-use development by creating an integrated project that is not segmented by buffer strips adjacent to residential and commercial uses. The schematic landscaping plan has identified areas where plantings are proposed.

5. Height Modifications
    - Article 2-20: Height limit for dwellings may be increased up to 45' and up to three stories provided that front, side and year setbacks increase 1' for each additional foot of building height over 35'.
    - Waiver Request #5: Increase height limit for dwellings as follows:
        - 54' max height for Block 1, Oak Springs Drive Frontage
        - 36' max height for Block 1, Broadview Drive Frontage
        - 36' max height for Block 2

- 45’ max height for Block 3
- This modification will allow for the concentration of increased density that is envisioned in Warrenton Plan 2040. With these increases in height, the desired step down in height towards adjacent properties is still achieved, relative to Warrenton Plan 2040’s proposed 6-story maximum heights along Lee Highway and 3-story maximum heights on the north side of Oak Springs Drive.

6. Maximum Multifamily Townhome Grouping
- Article 3-4.4.5.3: No more than six townhouse units shall be grouped contiguously to each other.
- Waiver Request #6: Increase maximum grouping of townhouse units from six to seven.
- This modification is necessary to provide increased supply of “missing middle” housing type and aligns with several other existing residential communities in Warrenton include grouping of seven or eight units.

7. Other modifications/waivers necessary to implement the proposed development plans.

CREATION OF A MIXED-USE CENTER

The goal of the new Warrenton Village Center is to create a mixed-use community that is representative of the Plan Warrenton 2040’s vision for the New Town Warrenton Character District. The New Town Warrenton District emphasizes highly visible centers with greater intensity of mixed-use and strong live, work and play options. This mix of uses is ideally located around an internal street network and public amenities, such as civic spaces, parks, green space and public gathering areas. This was the guiding directive when designing the Proposal.

The existing Warrenton Village Center is an established commercial center with a wide variety of in-place retail tenants. Due to the existing operations of these long-standing Warrenton businesses, the Proposal does not have the luxury of a “clean slate” from which to design the “quintessential” mixed-use community—impacts to tenants must be minimized, displacement of tenants may not be acceptable and the ability to demise existing structures, if possible, must be done extremely selectively.

So, while the existing commercial structures must remain as is, the Proposal seeks to improve the under-utilized commercial areas with the introduction of public amenities, increased pedestrian circulation and new interesting gathering areas—in this way, the new residential areas will offer a place to live, and the enhanced commercial areas will offer a place to “play.”

The goal of the design is not to create a new apartment community adjacent to an existing commercial center. The goal is to create an integrated village environment where both uses enjoy and thrive off one another and the lines between residential and commercial uses becomes blurred.

The Proposal focuses on two primary components to create a mixed-use community that will have little to no negative impact on existing businesses:

1) introduction of residential dwellings into the existing commercial center to create a live, work, play environment; and

2) installation of new public amenity areas and pedestrian connectivity to tie the different uses together in a cohesive manner.

1) Introduction of Residential Dwellings

The Proposal includes three new residential "blocks." Each block will submit its own Site Development Plan and will meet the general requirements of a "standalone" site plan with respect to open space requirements, parking requirements, landscaping requirements, ADU requirements, etc. While it is not possible for each of the individual blocks to satisfy all the guiding principles of the 2040 Plan, when combined, they will create a cohesive mixed-use center that exhibits all the goals of the New Town Character District. The "Block Sequencing and Required Site Improvements" section later in this Statement of Justification will provide additional detail on how the Applicant proposes to ensure that this comprehensive plan will be realized.

Block 1 (Multi-Family Apartments): located on the vacant land along Oak Springs Drive, between Broadview Avenue and Hastings Lane, this component of the SUP will include a maximum of 320 rental dwellings, comprised of 1-, 2-, and 3-bedroom units, a four-story parking garage and approximately 10,000 square feet of clubhouse and amenity space, including a state-of-the-art fitness facility, work-from-home/co-working spaces, entertainment lounges, cyber and coffee cafes, gathering spaces, and more. The building will also offer two interior courtyards that will include a saltwater pool and resort style pool deck, outdoor kitchens and grilling stations, outdoor game spaces, ample seating and lounging areas, firepits and "brew gardens."

Primary access to the internal, four-story, parking garage will be located on Oak Springs Drive, directly across from the entrance into Highland School. The residential leasing offices and amenity areas will be accessed at the corner of Oak Springs Drive and the new Hastings Lane extension. On-street parallel parking along the Hastings Lane extension will be provided for prospective tenants that are visiting the leasing facilities.

All building frontage facing Broadview Avenue and Branch Drive will be three stories, while building frontage facing Oak Springs Drive will be four stories. All first-floor units along Broadview Avenue, Oak Springs Drive, Branch Drive, and Hastings Lane will feature direct entry access to promote pedestrian walkability.

This block will include the majority of the proposed residential units and will have the greatest impact on bringing much needed housing supply and consumers to Warrenton.

Block 1 Multi-Family Apartment Building Elevation



Block 2 (Multi-Family Townhomes): a maximum of 26 townhome dwelling units are proposed in the northeast corner of the Warrenton Village Center, at the intersection of Oak Springs Drive and Hastings Lane. These will be three story units and feature a two-car garage in each unit and direct pedestrian sidewalk access to all units.

Through its rental townhome product, Block 2 will provide new supply to the highly desirable "missing middle" housing stock.

Block 2 Multi-Family Townhome Elevation



Block 3 (Multi-Family 2-over-2s): a maximum of 34 2-over-2s and 6 townhomes are proposed on the west side of Warrenton Village Center along Broadview Avenue. These buildings will be four stories, with one unit located on the 1st and 2nd floors and a second unit located on the 3rd and 4th floors of each residential "stack." All units will include a one-car garage and direct pedestrian access to first-floor units along Broadview Avenue. The townhomes included in this block will mirror the townhomes found in Block 2 and will face inward in the Center to provide direct residential access into the heart of commercial area.

Block 3 will introduce a new product type to Warrenton in its 2-over-2s and will create true infill into the existing commercial center, better integrating the two uses and promoting walkability between the Central and West Plazas. These units will add additional units to the "missing middle" housing supply.

Block 3 Multi-Family 2-over-2 Elevation



2) Installation of Public Improvements

Central Plaza: the Applicant proposes to create a new Central Plaza at the core of Warrenton Village Center. This public gathering space will include a plaza green with seating and lounging areas for visitors and provide a place for local businesses to hold activities; a splash-pad that will be a major attractor for families with young children and serve as a central landmark for the newly improved center; as well as an area for a potential future retail building that would further activate this public amenity—ownership envisions a coffee or ice cream shop with indoor/outdoor seating that will be a destination for all residents of Warrenton. This plaza will be adorned with street and ornamental trees and planting beds and feature a raised watertable street crossing that will connect the space to the existing retail in a pedestrian safe manner. The new Central Plaza will serve as Warrenton Village Center's vehicular and pedestrian crossroads, a hub that will function as the heart of the Center and is sized, programmed, and planned to allow for community activities as well as everyday use.

East and West Plazas: Smaller public plazas are proposed at the Broadview Avenue entrance and the Hasting Lane entrance into the Warrenton Village Center. These plazas are connecting points celebrating the east and west entrances to the multifamily building and will act as visual links between the residential and commercial areas. These "doorways" into the Center will enhance walkability for the residents by providing easy and direct connection to the retail areas. The plazas will also help transition from public sidewalks to private interior residential lobbies. The 24/7 illuminated interiors of the lobbies will provide visual activation for both plazas and serve as an anchoring use for the open spaces.

The East and West plazas will serve as passive, ceremonial transition zones between the private residential realm and the public retail realm. Their primary intent and use is to connect residents with the rest of the commercial center, while also allowing for a different, less active, and smaller public area for passive recreation.

Dog Park and Picnic Area: a new dog park and seating areas will be accessible to both residents and the general public. The dog park will include a fenced in area for off-leash play, pet water fountains and waste clean up stations. Just outside of the dog area will be picnic table seating areas for pet owners and guests to relax and congregate while their pets play.

Oak Springs Drive Pedestrian Crosswalks: two crosswalks are proposed on Oak Springs Drive—one at Hastings Land and one at the Highland School entrance. These new crosswalks will provide safe points of pedestrian access for people visiting the Center from the north side of Oak Springs Drive.

Completion of Outer Sidewalk Ring: the Proposal seeks to complete a sidewalk ring around the entirety of the Warrenton Village Center. Each residential block will include sidewalks along its outer rim (either along Broadview Avenue, Oak Springs Drive or Branch Drive) to piece together a fully encompassing sidewalk circle.

Additionally, there is currently a large gap in the sidewalk connection along the east side of Broadview Avenue. The Applicant proposes to install a new ~475' section of sidewalk in this area (located behind the Galaxy Strike Bowling Center building). Once completed, this section of sidewalk and the new sidewalks within the residential blocks will complete an outer ring of sidewalks around the entire Warrenton Village Center.

Internal Pedestrian Circulation: residential tenants will benefit from quick and easy access to all the businesses of Warrenton Village Center via new sidewalks, crosswalks and wayfinding markers. All new buildings will be encircled by new sidewalks and will include direct entry access to ground level units (with the exception of those units in Block 1 that will face the rear of the existing commercial building). The addition of the plazas, linked together with internal sidewalks, will serve to better activate and tie together the different uses found within the Center. Finally, new crosswalks are proposed at all primary street crossings. These improvements will not only benefit pedestrian circulation within the site, but will also allow for easier and safer travel for those accessing the site from the outside.

A Conceptual Circulation Plan for pedestrian, vehicular and bicycle traffic can be found on Sheet 23 of the SUP.

Hastings Lane Extension: a new vehicular and pedestrian entrance into the Warrenton Village Center is proposed at the Oak Springs Drive and Hastings Lane intersection. This new entrance will provide a new source of direct ingress/egress into the Center, which will help to facilitate less congestion at the Center's other entrances and result in less traffic on Oak Springs Drive and Branch Drive, as vehicles no longer have to circle around the Center to access one of the existing entrances on Broadview Avenue and Branch Drive.

Oak Spring Preservation: the natural spring from which Oak Springs Drive derives its name is located at the northeast corner of the Center. The Applicant has revised its original site plan in order to preserve this spring and proposes to recondition it into a public amenity, which will include seating areas in a natural and historical environment.

Summary of Improvements, included within each block:

Block 1:

- Multi-family building and parking garage
- Central Plaza
- West Plaza
- East Plaza
- Hastings Lane extension
- Reconfiguration of commercial parking

- Modified Alley, all improvements
- Dog park and picnic area
- Preservation and reconditioning of Oak Spring (natural spring)
- Sidewalks included in Block 1 Improvements – Sheet 4 of SUP
- Two crosswalks across Oaks Springs Drive at Hastings Lane and Highland School entrance

Block 2:
- Townhome dwelling units and parking
- Sidewalks included in Block 2 Improvements – Sheet 5 of SUP
- Restoration of Oak Spring into a natural public amenity

Block 3:
- 2-over-2 dwelling units and parking
- Townhome dwelling units and parking
- Sidewalks included in Block 3 Improvements – Sheet 5 of SUP
- New sidewalk section on east side of Broadview Ave (behind Galaxy Strike Bowling Center building)

ADDITIONAL JUSTIFICATIONS AND PROPOSAL DETAILS

Density

Plan Warrenton 2040 states that the calculation of density on a unit per acre basis can be deficient in a mixed-use environment – "when considering implementation, conventional zoning that separates land uses and measures development intensities by dwelling units per acre (DU/AC) is not compatible with a vision of mixed-use, walkable neighborhoods with a range of housing types" and "if the density requirements for a zoning district are revised accordingly, the chances are high that a typical multi-family building will be built." It recognizes that using DU/AC as a density measurement often gives a false perception of increased density with housing types that are lower in square footage and are stacked vertically, such as the apartments and "2-over-2" units included in the Proposal. To eliminate the false sense of increased density given the proposed housing types, this submittal proposes to utilize an alternative density calculation method that is included in Article 9-25.1.B of the Zoning Ordinance.

Per the Mixed-Use Development Option in Article 9-25.1.B of the Zoning Ordinance, which stipulates that a mixed-use property can be approved for up to one dwelling unit per 500 gross square feet (GSF) of non-residential floor space, the Property could be permitted to have up to 439 units with approval of an SUP, given the proposed 219,792 gross square feet of non-residential floor space (219,792 GSF / 500 GSF = 439 units).

The Warrenton Village Center proposes a maximum of 386 residential dwellings, paired with 219,792 square feet of non-residential uses. Therefore, while the Applicant is requesting a modification for increased density, the request is 53 units less than the maximum amount that can be approved via an SUP.

Plan Warrenton 2040 encourages "setting district standards based on form rather than density" to "achieve the middle-range housing types desired." Accordingly, this proposal prioritizes site design and a mix of housing types over a strict adherence to underlying density requirements. This enhanced site design will mitigate any effects of the additional density, with an emphasis on

walkability, a variety of housing types, and the integration of multiple uses within a single destination location.

Lastly, the Economic and Fiscal Resilience goals of the Plan Warrenton 2040 call for "a range of housing types and housing assistance programs for employees to live in Warrenton." This proposal accomplishes this by including affordable housing and a range of housing types that will be attractive to current Warrenton residents, as well as potential employers looking to bring new business and employees to Warrenton. This proposal supports Plan Warrenton 2040's goal to "promote Character Districts as the place to accommodate a range of housing typologies" by proposing a variety of housing types, including multi-family, 2-over-2s, and townhomes. This new stock of residential units and new housing types will bolster a housing supply that is severely underserved and sorely needed within the Town.

The Applicant's proposal meets and advances nearly all of the housing goals stated in the Plan Warrenton 2040. Additionally, it promotes consolidation of a high amount of density into an infill project, in lieu of sprawl development that is detrimental to the area's rural preservation.

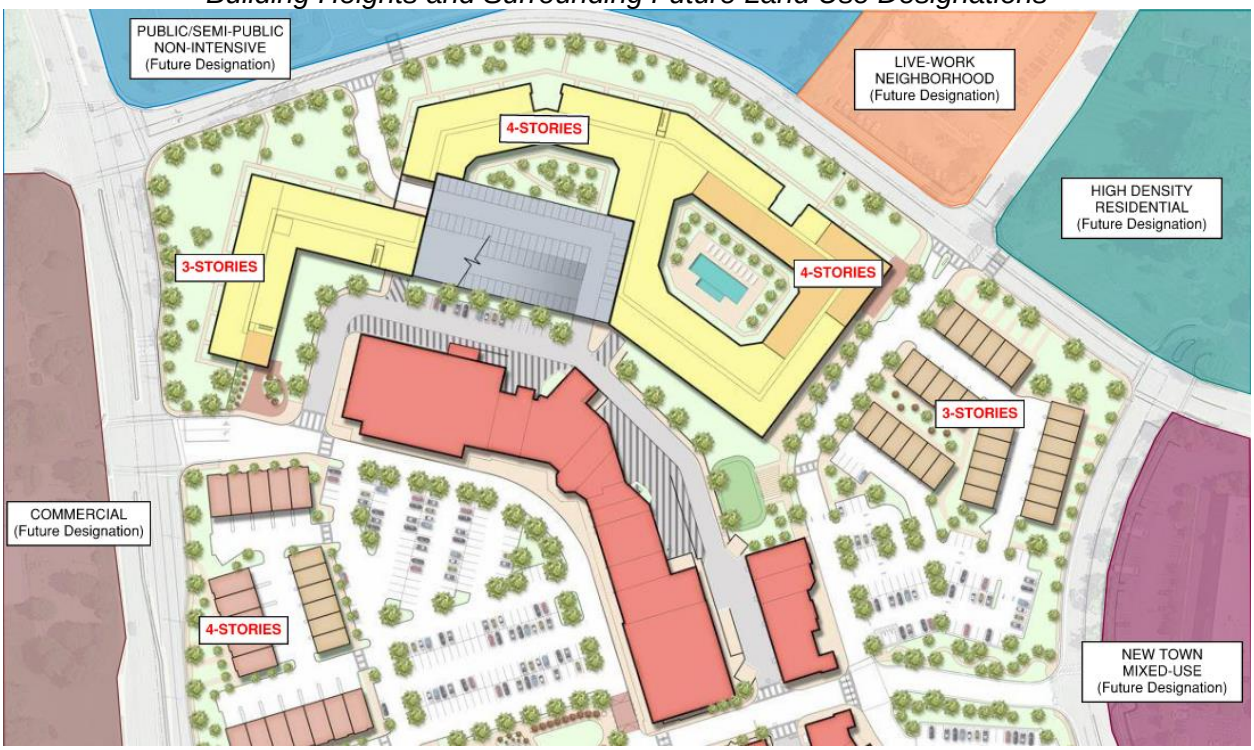
Height

The New Town Character District uses a form-based transect approach to development, which defines form with greater maximum height towards Lee Highway and the center of the district, with a gradual step down in scale towards Oak Springs Drive, where the Property is located. Since the Property is in the Transition Zone, building heights of one-to-three stories or 35' are recommended.

Applicant is seeking a modification for a fourth story along Oak Springs Drive in Block 1, which is one story greater than the three recommended in the Transition Zone. Since Plan Warrenton 2040 envisions developments along Lee Highway and east of Broadview Avenue to be up to six stories, the Property would still maintain a step down in scale towards Oak Springs Drive at four stories. Therefore, the requested height modification is still in conformance with the goal of Plan Warrenton 2040, which is to step down in height towards residential zones.

The goal of the height recommendations of Plan Warrenton 2040 is to step down towards residential zones. The Proposal achieves this goal by locating its three-story sections in the northwest and northeast corners of the Center, nearest to current and future residential uses—most notably, those neighborhoods located on the west side of Broadview Avenue and the 3-story townhome communities located to the northeast across Oaks Springs Drive—and increasing heights in areas that are adjacent to existing commercial and other non-residential uses.

Building Heights and Surrounding Future Land Use Designations



Inclusion of four-story buildings along Oak Springs Drive will provide a more gradual step down from the six stories allowed along Lee Highway to the three-stories allowed in the High-Density Residential areas shown on the Future Land Use Map on the north side of Oak Springs Drive. This will create a better design aesthetic than the stark contrast of a dramatic drop from six stories down to three stories. From a visual perspective along Oak Springs Drive, this modification would allow for three-story buildings on the north side of the street, four-story buildings on the south side of the street in the Transition Zone, then escalating up to six-story buildings along Lee Highway—a gradual and appropriate escalation in heights.

It is noteworthy that Transition Zones are intended to provide appropriate step downs to adjacent single-family residential neighborhoods, which are typically two-story—hence the recommendation of 3-story maximum heights. However, in the case of the Property, it is in a unique Transition Zone that does not adjoin any typical single-family residential. Instead, it is surrounded by commercial, non-residential, and 3- and 4-story residential uses. Therefore, the 3-story maximum is not necessary to provide the appropriate step down to single-family residential, and the proposed 4-story maximum adequately achieves the step down to the adjacent commercial, non-residential and 3- and 4-story residential uses—see adjacent building in illustration below.

Surrounding Properties – Existing Building Uses & Heights



Another transition goal of Plan Warrenton 2040 is that "the neighborhood edge provides the means of transition from the Character District to adjoining properties." Four-story apartments are an appropriate transition to the High-Density Residential areas located to the north, which will be similar in character and use. High-Density Residential will allow up to 12 units per acre, which is in line with the DU/AC proposed at Warrenton Village Center (13.28 DU/AC).

Further, the Future Land Use Plan's Character District Summaries calls for "greater intensity of mixed-use and strong live, work, and play options" in the New Town Warrenton District and notes that this district has "high visibility," due to its proximity to Route 29. The requested modifications to increase density and height support the need for greater intensities and higher visibility in this character district.

Finally, one of the ten guiding principles for the character districts is to place parking behind buildings and away from street frontages. To accomplish this goal, the Applicant has proposed an interior structured parking garage that will not be visible from surrounding streets. Increasing building heights in select areas is the only way to create the necessary density needed to facilitate this improved parking condition and to conceal it behind building facades.

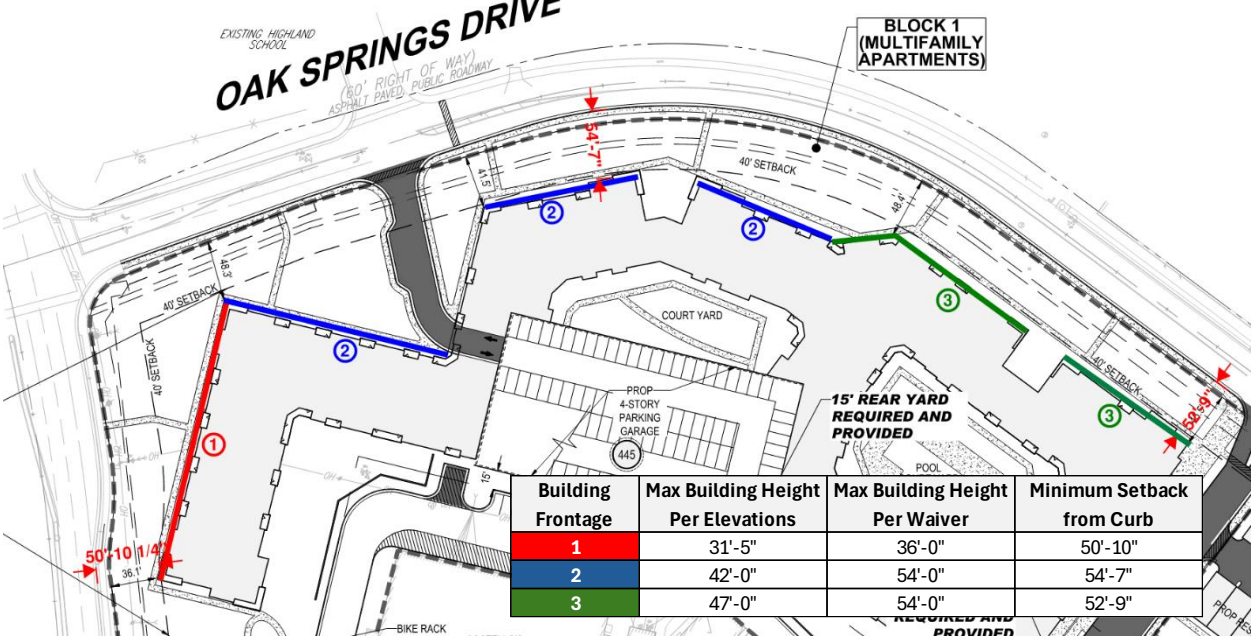
Building Heights and Setbacks

Article 2-20 allows for building height limits to increase above 35' if the corresponding setback increases by an equal amount. The intent of offering a mechanism by which an applicant can increase building heights if corresponding building setbacks are simultaneously and equally increased, is to ensure that an appropriate balance or ratio of height to depth is maintained. The general rule of thumb in land planning is that for every one foot of building height, there should be a minimum of one foot of corresponding setback. Applicant has satisfied this standard by providing appropriately sized setbacks that correspond with the proposed increases in building height limits.

The below illustration examines the three building frontages of the Block 1 apartment building. Anticipated building heights are calculated using the average ground surface elevation across a building's frontage in relation to the highest point of a flat roof (parapets have not been included

in building heights, per IBC code definition). For each building frontage, the corresponding minimum setback from the back of street curb has been provided. Along all three frontages, building setbacks are equal to or greater than the anticipated building height, confirming that the appropriate standard has been achieved.

Block 1 Building Heights and Corresponding Setbacks



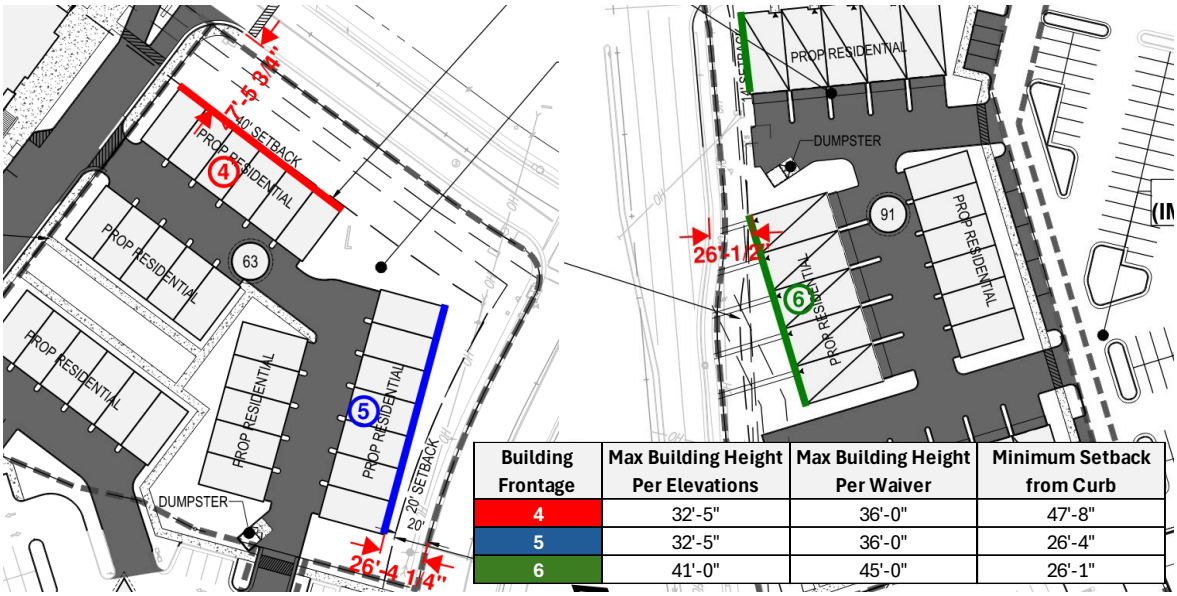
Building Frontage	Max Building Height Per Elevations	Max Building Height Per Waiver	Minimum Setback from Curb
1	31'-5"	36'-0"	50'-10"
2	42'-0"	54'-0"	54'-7"
3	47'-0"	54'-0"	52'-9"

Note—Applicant acknowledges that setbacks are defined by the Town from property lines, however, the point of this exercise is to illustrate that proper height to setback standards have been provided, which apply to the public's viewpoint (i.e. traveling the street) and not an intangible property line. Applicant is therefore requesting a height waiver because it acknowledges that adequate setbacks from property lines have not been provided.

In Block 2, proper anticipated building height to minimum setbacks ratios are provided along Frontage #4 (Oak Springs Drive), but not along Frontage #5 (Branch Drive). The Applicant feels that this is appropriate given the internal nature of Branch Drive as a "cut through" drive within the Warrenton Village Center. Branch Drive serves the Center more as an internal drive than as a primary thoroughfare, in which case it is appropriate to push buildings up onto internal street frontages.

Block 3 (Frontage #6) provides setbacks that are below the 1:1 ratio, as this area of the New Town Character District calls for taller building heights, up to 6 stories. A waiver is already being requested at this location to reduce setbacks to 14'.

Block 2 and Block 3 Building Heights and Corresponding Setbacks



Building Frontage	Max Building Height Per Elevations	Max Building Height Per Waiver	Minimum Setback from Curb
4	32'-5"	36'-0"	47'-8"
5	32'-5"	36'-0"	26'-4"
6	41'-0"	45'-0"	26'-1"

Below is the compiled list of anticipated building heights along street frontages, the maximum height allowed per the Applicant's waiver request, and the corresponding setback from back of curb. Slight height increases have been added into the maximum height limits allowed per the waiver to provide buffer for average ground surface grade changes that may occur during Site Development Plan.

Building Frontage	Location	Block	Max Building Height Per Elevations	Max Building Height Per Waiver	Minimum Setback from Curb
1	Broadview Avenue	1	31'-5"	36'-0"	50'-10"
2	Oak Springs Drive	1	42'-0"	54'-0"	54'-7"
3	Oak Springs Drive	1	47'-0"	54'-0"	52'-9"
4	Oak Springs Drive	2	32'-5"	36'-0"	47'-8"
5	Branch Drive	2	32'-5"	36'-0"	26'-4"
6	Broadview Avenue	3	41'-0"	45'-0"	26'-1"

See Elevation Sheets 11-13B of SUP for a depiction of these measurements.

Affordable Housing

To support the need for affordable housing within the Town of Warrenton, the Applicant proposes that for a minimum affordability period of twenty-five years from the issuance of this Special Use Permit (the "Affordability Period), the following units shall be designated as affordable low-income restricted units (the "Affordable Dwelling Units or ADUs"):

- A minimum of 10% of total dwelling units within each of the three blocks (Block 1, Block 2 and Block 3) will be reserved as 80% AMI ADUs
- An additional ten (10) dwelling units in Block 1 will be reserved as 70% AMI ADUs
- An additional five (5) dwelling units in Block 1 will be reserved as 60% AMI ADUs

Within Block 1, allocation of the Affordable Dwelling Units between 1-, 2- and 3-bedroom units will be at the discretion of the Applicant, so long as the minimum number of units defined above

are maintained as Affordable Dwelling Units. Within Block 2 and Block 3, wherein all units are 3-bedrooms, all ADUs will be 3-bedrooms. The ADUs shall be similar to the market rate units in architectural design, fixture/appliance selections and unit size. No more than three ADU units will be positioned adjacent to one another at any given time.

"Qualified Parties" who will be eligible to rent or purchase one of the ADUs, are defined as:

> For the purposes of qualifying for the lease of an affordable rental ADU a Qualified Party shall be an individual or a family whose gross annual household income does not exceed 60%, 70%, or 80% (dependent on the specific ADU) of the current Multifamily Tax Subsidy Program (MTSP) Income Limits for Fauquier County as published by the Virginia Housing & Development Authority (VHDA), at the time the rental application is opened for such Qualified Party ("AMI").
>
> For the purposes of determining the rent limits for all ADUs, monthly rental rate limits shall be equal to those published by VHDA for 0-, 1-, 2-, and 3-bedroom units and corresponding 60%, 70% and 80% AMIs, with no utility allowances.
>
> For the purposes of qualifying for the purchase of an ADU in Block 2 or Block 3, a Qualified Party shall be an individual or a family whose gross annual household income does not exceed 80% of the current Multifamily Tax Subsidy Program (MTSP) Income Limits for a 4-person household in Fauquier County as published by VHDA, at the time the purchase contract is executed for such Qualified Party.
>
> For purposes of determining the purchase price of any for-sale ADU, that price will not exceed the amount at which the monthly mortgage payment for such unit exceeds the monthly rent limits for 3-bedroom units and 80% AMI income, as published by VHDA. Qualifying Parties must provide a market rate loan commitment prior to closing in order to calculate the proposed mortgage payment.
>
> Persons eligible for assistance under the following state or federal programs:
>
> a. Virginia Housing Development Authority

The ADU status shall be set forth in a deed of restrictive covenants recorded against the Property and shall continue to bind the minimum ADU requirement within each block to the Property for a period of twenty-five years from the issuance of this Special Use Permit; provided, however, that for rental units, the Applicant may recalculate the rental rates for new leases or renewals in accordance with the then current rates published by VHDA.

The Applicant shall establish in a deed of restrictive covenants a program for the administration of this ADU program according to the requirements of these conditions. The Applicant (or Owners Associations with respect to any purchase units if the Applicant is no longer the Declarant) shall make each ADU available for a period of not less than 90 days for rental units and 180 days for purchase units, following the issuance of a certificate of occupancy for each unit.

The Applicant shall designate on the Construction Drawings submitted for building permit approval which units will be the initial ADUs; however, the units that are selected as the initial rental ADU units are not required to remain as the designated rental ADUs for the entirety of the Affordability Period. The Applicant will have the authority to re-designated the rental ADUs from time to time based on leases and vacancies. The Applicant will maintain a building plan set at

the leasing office located in the Block 1 at all times that shows which units are currently designated as rental ADUs.

The documents creating the ADU program shall be reviewed and approved by the Town Attorney prior to their recordation in the Land Records.

ADUs will first be made available to the following persons: those residing or working in the Town of Warrenton or Fauquier County; Town of Warrenton or Fauquier County teachers; Town of Warrenton or Fauquier County first responders; veterans and enlisted members of the United States Armed Forces. The Applicant shall contact the appropriate local Social Service and/or Housing Authority offices for identification and placement of these potential residents.

The community's Property Management Team shall make annual reports to the Zoning Administrator as to the number, type and location of units hereunder that shall have been rented as ADUs and shall verify that they have been rented to Qualified Parties.

These obligations are described in greater detail in the proposed Conditions of Approval.

Condo Sale of Block 2 and Block 3

All dwelling units in all three blocks are intended to be for rent, however, Applicant will maintain the ability to sell the entirety of Block 2 (Multi-Family Townhomes) and/or the entirety of Block 3 (Multi-Family 2-over-2s) as Condos. The Applicant agrees to sell all or none of the units within Block 2 or Block 3, so as to prohibit a mix of for rent and for sale units in the same block.

All conditions of the SUP will continue to be enforced in a block sale scenario through the Declarations of Restrictive Covenants that the Applicant will record and encumber the Block 2 and/or Block 3 parcels. In a block sale scenario, Homeowner Associations will be established to maintain all conditions of the SUP and will own the block parcel, while individual condo owners will own the condo dwelling units.

In a sale scenario, residents/owners of the condos will not be tenants of the apartment community and will not have access to the rental amenities located within Block 1.

In a block sale scenario, 10% of the units within the sold block will be required to be sold as ADUs, in accordance with the language outlined in the SUP's Affordable Housing Conditions of Approval.

Architecture

The Conditions of Approval includes language that the final design of all buildings shall be in general conformance with the materials included in this SUP submittal.

Two options for exterior elevations have been provided to Planning Commission, who will select which option is approved for Town Council review. Elevations for the two options can be found on SUP Sheets 11 – 15B.

A list of prohibited materials is also included in the Conditions of Approval.

One noteworthy architectural feature that has been added to the Block 1 apartment building design is the inclusion of two "building insets or step backs" along Oak Springs Drive. These

features have been added to lengthy sections of the building in order to break up the larger massing areas and to create the sense of agglomeration, as opposed to a single frontage.

Building "Insets" Added to Break Up Massing on Oak Springs Drive



Garage Screening

A structured parking garage is proposed in Block 1. Three of the garage's four sides will be concealed within the apartment building and not visible from the exterior. The south facing façade, while exposed, is not anticipated to be easily viewed from ground level, given its position behind the existing Warrenton Village Center commercial buildings. To mitigate concerns that may remain regarding its visibility, the Applicant will install a screen on the southern facing façade of the garage to minimize its visual impact. A concept of this screening is provided below.

Conceptual Garage Screening Design on South Facing Façade



Block Sequencing and Required Site Improvements

Applicant can develop the blocks in any order. Each block will have its own independent Site Development Plan, separately submitted and approved by the Town of Warrenton.

All improvements included within each individual block are shown on SUP Sheet 4 and Sheet 5.

To ensure that site improvements are completed in a timely manner along with the residential buildings, Applicant agrees that the Town of Warrenton will withhold Certificates of Occupancy (COs) in accordance with the following schedule:

- Block 1: the 215th CO within Block 1 will not be issued until such time as all Block 1 site improvements have been substantially completed;
- Block 2: the 19th CO within Block 2 will not be issued until such time as all Block 2 site improvements have been substantially completed;
- Block 3: the 33rd CO within Block 3 will not be issued until such time as all Block 3 site improvements have been substantially completed.

It is anticipated, but not required, that Block 1 (Multi-family Apartment Building) will commence construction first. Block 2 (Multi-Family Townhomes) is anticipated to commence simultaneously with Block 1 or shortly after, depending on market conditions. Block 3 (Multi-Family 2-over-2s) will commence last, due to in-place tenants in the current retail building at that location (Summit Community Bank). It is anticipated that Block 3 will commence upon lease expiration of current retail tenant, but exact timing is unknown.

Open Space

Each individual residential block/parcel, as well as the residual retail parcel, will individually satisfy the 10% open space requirement.

Applicant will construct all open spaces in general conformance with the renderings and materials included in the SUP and inclusive of the "New Improvements" listed on Sheet 6 "Open Space Plan."

Most Notably:

- Open Space A in Block 1 will include the West Plaza, inclusive of a hardscape residential plaza with bench seating and a bike rack;
- Open Space D in Retail Block will include a fenced in dog play area, picnic table seating and a bike rack;
- Open Space E in Retail Block will include the Central Plaza, inclusive of a lawn area, splash-pad, bench seating, two bike racks, and future commercial pad.

Site Conditions

The proposed development consists of two parcels totaling approximately 29.05 acres. Approximately 22.59 acres are the existing shopping center known as Warrenton Village Center and the remaining 6.46 acres are a vacant semi-wooded parcel with road frontage on Broadview Avenue and Oak Springs Drive. The topography of the site ranges in elevation from 550' at the northwest corner of the site at Broadview Avenue to an elevation of 505' along the eastern property line at Branch Avenue. Site soils consist of various loams such as Rohrersville, Middleburg, Fauquier Silt, Glenelg and Elioak. A detailed tree survey will be provided at the time of Site Development Plan.

The Property is surrounded by a mix of commercial, education and residential uses:

- To the north, across Oak Springs Drive, is Highland School, Brookside Rehab and Nursing Center and the Cedars of Warrenton town home community;
- To the east, across Branch Drive, is Safeway and other commercial businesses included within Warrenton Village Center;

- To the south is Warrenton Village Center;
- To the west, across Broadview Avenue, are standalone commercial and office uses and single family neighborhoods.

Construction Impacts

Construction limits of disturbance will be limited to within the Property. No neighboring or adjoining properties will be included within the limits of disturbance. All construction parking will be contained within the Property and/or specified locations within Warrenton Village Center. No offsite impacts or storage will be required. If substantial rock is discovered at the Property, blasting may be required and permitted in accordance with Town of Warrenton requirements.

Per Gorove Slade's Traffic Impact Analysis, turn lanes are not warranted at the proposed access points on Oak Springs Drive, therefore, the only impact to the public right of way will be the two new connections to Oak Springs Drive and the two new crosswalks on Oak Springs Drive.

Construction Timelines

Block 1 (Multi-family Apartments): Construction will take approximately 24 to 28 months.

Site Work Duration: 6 to 8 months
Vertical Construction Commencement: ~ Month 6
Vertical Construction Duration: 18 to 20 months
Clubhouse/Leasing Delivery: ~ Month 20
First Units Available: ~ Month 20
Construction Completion: ~ Month 26

Block 2 (Multi-family Townhomes): Construction will take approximately 16 months.

Site Work Duration: 3 to 4 months
Vertical Construction Commencement: ~ Month 4
Vertical Construction Duration: 8 to 12 months
First Units Available: ~ Month 12
Construction Completion: ~ Month 16

Block 3 (Multi-family 2-over-2s): Construction will take approximately 16 months.

Site Work Duration: 3 to 4 months
Vertical Construction Commencement: ~ Month 4
Vertical Construction Duration: 8 to 12 months
First Units Available: ~ Month 12
Construction Completion: ~ Month 16

Construction schedules included herein are estimates and subject to change based on potential unanticipated delays, such as those caused by severe weather, material shortages, etc.

Economic Impact

A Fiscal Impact Analysis by S. Patz & Associates, Inc. determined that the Proposal would result in a $46,100 annual surplus for the Town of Warrenton, plus the additional benefit of much needed housing supply.

The full report has been submitted as part of the SUP application.

Traffic Impact Analysis

New access to the Property will be provided via a parking garage entry with direct access to Oak Springs Drive (Town Route 3), a fourth-leg to the existing full-movement intersection of Oak Springs Road at Hastings Lane, and via the existing shopping center accesses to the south.

Based on the capacity and queueing analysis results, the proposed Warrenton Village Center will not have a substantial impact on the surrounding transportation and roadway network. No improvements are warranted or recommended to mitigate traffic concerns created by the Proposal.

It is anticipated that the peak activity times for the proposed residential units would have only a short overlap with the Highland School peak arrival and dismissal times. Based on existing traffic counts, the school driveway on Oak Springs Drive sees most activity after 7:45 AM and has very little traffic after 4:30 PM. Typical peak times for multi-family residences are 7:00-8:00 AM and 5:00-6:00 PM, according to the Institute of Transportation Engineers. Similarly, the Traffic Impact Study prepared for the site indicates that with both Highland School traffic and new trips from the residential units, acceptable traffic operations would be maintained at the shared entrance location during all times of day.
To help mitigate potential traffic concerns during Highland School's peak AM and PM hours, the Applicant proposes to install signage and lighting at the Primary Garage Entrance to encourage residents to use the Secondary Garage Entrance at those times—during Highland School's peak hours, a red light will turn on at the interior exit to the garage's Oak Springs Drive access point with signage saying "Highland School Peak Traffic Hours – Recommend Using Secondary Exit" (or something similar).

The full report on transportation impacts can be found in the Traffic Impact Analysis by Gorove Slade that has been submitted as part of this SUP application.

New Amenities for Public Use

In addition to the extensive package of amenities that will be offered to tenants within the Block 1 multi-family apartment building, the Proposal also includes a variety of new improvements that will be available to and benefit the general public:

- Improved walkability through an enhanced sidewalk and crosswalk network within the Center will make for a more efficient shopping experience.
- New and improved crosswalks on Oak Springs Drive at Hastings Lane and at the Highland School entrance will create easier and safer points of pedestrian access to the Center.
- Traffic slowing measures will create a safer walking environment.
- The Central Plaza will provide a new destination family attraction for residents of Warrenton with its splash-pad, activity area and future eatery.
- The Dog Park will offer a new off-leash area for pets to play, while owners can relax nearby on benches and picnic tables.
- Restoration of Oak Spring along with improved seating areas.

Impact on Community Facilities

Stormwater Management will include, but not be limited to both structural and non-structural best management practices for managing stormwater runoff. This could include underground stormwater facilities, bio-retention areas and rain gardens.

The Property will connect to public water and sewer. The Town of Warrenton Department of Public Works and Utilities has utilized a calculation of 300 gallons per day per unit and determined that there are no concerns with providing adequate capacity for the Proposal.

The Property will rely on Town Services such as fire, rescue, and police services.

Impact on Schools

School age children residing at the proposed community would attend the following public schools:

Elementary:	Bradley
Middle School:	Taylor/Warrenton
High School:	Fauquier

Per existing and projected enrollment data provided by Fauquier County Public Schools, the max capacity and projected enrollments of these schools are shown in the table below. Based on the available data, an increase of 225 elementary students, 244 middle school students and 464 high school students would be required to meet the capacity at any of these schools over the next five years.

Available Capacity at District Public Schools

		Actuals	*% of Capacity*	*Projections*				
Bradley Elementary School								
Max Capacity	588							
		2023-24		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		349	59.4%	341	354	355	363	360
Available Capacity		239		247	234	233	225	228
Taylor/Warrenton Middle School								
Max Capacity	850	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		607	71.4%	607	601	569	601	606
Available Capacity		243		243	249	281	249	244
Fauquier High School								
Max Capacity	1,634	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		1,122	68.7%	1,089	1,111	1,153	1,147	1,170
Available Capacity		512		545	523	481	487	464
COMBINED								
Max Capacity	3,072	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		2,078	67.6%	2,037	2,066	2,077	2,111	2,136
Available Capacity		994		1,035	1,006	995	961	936

Fauquier County Public Schools uses the following calculation to estimate student generation from various housing types:

- Single Family Detached Dwelling: 0.72 students per household
- Single Family Attached Dwelling: 0.45 students per household
- Multi-Family Apartment Dwelling: 0.20 students per household

Fauquier's methodology then allocated students as follows:

- 52% to elementary school
- 22% to middle school
- 26% to high school

Based on the student generation calculation used by Fauquier County Public Schools, at full buildout, Warrenton Village Center is projected to generate the following students:

- Block 1: 320 apartments x 0.20 = 64 students
- Block 2: 36 attached dwellings x 0.45 = 16
- Block 3: 30 attached dwellings x 0.45 = 14
- Total proposed students = 94

With allocations per school as follows:

- 52% to Bradley = 49 students
- 22% to Taylor/Warrenton = 21 students
- 26% to FHS = 24 students

The chart below shows the projected students generated from Warrenton Village Center versus the minimum available capacity at those schools over the next five years.

School	Min. Capacity	New Students	Remaining Capacity
Bradley	225	49	176
Taylor/Warrenton	243	21	222
FHS	464	24	440

Topography

To address grade changes of approximately 45' from west to east across the site and approximately 10' from south to north, the architect and engineering teams have utilized different grade mitigation methods such as stepped buildings, introduction of "basement" units, small retaining walls and adding elevated stoops with sidewalk access.

Below is a building elevation to help illustrate some of these strategies—this elevation is taken from the new Hastings Lane extension, looking west at the proposed multi-family building.

Profile Illustrating the "Stepping" of the Apartment Building



In Section A, at the corner of Oak Springs and Branch Drive, the Property's elevation is at its lowest point. The leasing offices and amenity areas have been located at this corner and the finished floor elevation of the building has been dropped to mitigate the lower elevations and provide direct on-grade access at that point. These sections will also benefit from increased ceiling heights created from the "sunken" finished floor elevation.

In Section B, as the site's elevation rises, residential units will be elevated above the street level, with access to those units provided by a secondary sidewalk that sits on top of a section of masonry retaining wall. One "public" sidewalk will be placed adjacent to the street and run with the slope and a secondary "private" sidewalk will be placed adjacent to the building in an elevated, level position. The elevated residential units will have direct access to the raised secondary sidewalk, which will also create increased privacy for those ground floor residents. See image below for illustration of this concept.

View of Section B Showing "Double Sidewalk" Configuration



In Section C, the finished floor elevation of the building is on-grade at street level and no grade mitigation is required.

In Section D, where there is a steep increase in elevation, the building will step from four-stories to three-stories, utilizing a retaining wall hidden within the building's foundation to mitigate the significant grade change.

Through methods such as these around the Property, the elevation changes across the site will be mitigated in subtle and attractive ways that enhance the aesthetic of the building and avoid large and potentially unsightly retaining walls.

Geotech

A geotechnical report will be completed at the time of Site Development Plan. Results of the study will be incorporated into the certified structural design and approved during the building permit review process.

Block 2 & Block 3 Mail

Block 2 and Block 3 will require cluster mailboxes. The mailbox locations and adequate temporary parking (delivery/pickup) will be approved at Site Development Plan.

Road & Infrastructure Maintenance

The Warrenton Village Center will be owned and maintained by Jefferson Associates L P, Warrenton Center, LLC and/or affiliated entities. These entities will be responsible for the continued maintenance and cleaning of all existing and proposed improvements, including but not limited to residential buildings, private roads, sidewalks, stormwater facilities, parking areas, plazas and open space, as well as continued maintenance of landscaping, including mowing, weeding, mulching and snow removal.

Modified Alley – Improvements, Vehicular Access & Loading, and Screening

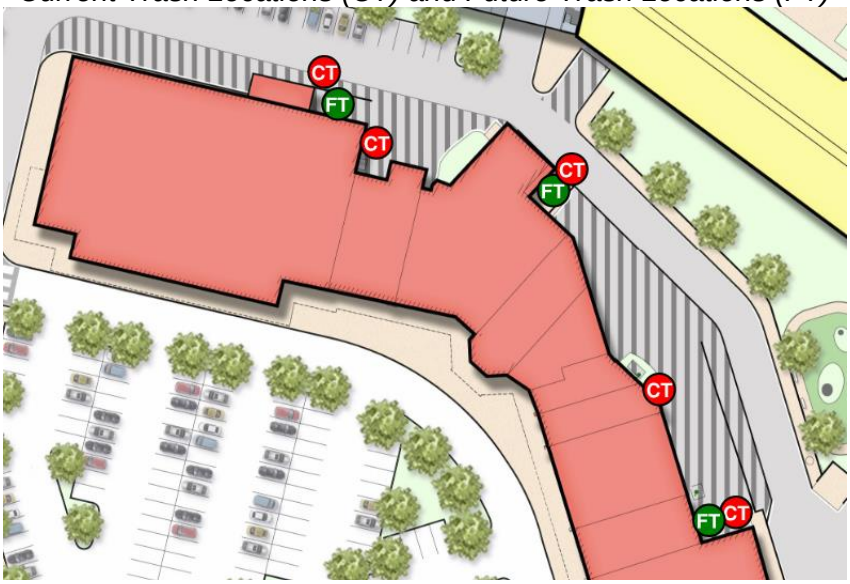
Improvements to the existing alley located behind the retail buildings are proposed with this SUP plan. The primary usage of the Modified Alley will continue to be for “back of house” loading functions and trash pickup areas for the existing commercial buildings. These functions will be improved through several enhancements, including a consolidation of existing dumpster locations into three, centrally located, screened trash areas (see Sheet 19 of SUP), removal and cleanup of existing “ancillary” structures that have been erected adjacent to the commercial buildings, painting of the rear facing commercial façade, and striping of “back of house” areas to designate retail loading and trash zones. This alley will also include approximately twenty-five parking spaces that will be reserved for employees of the commercial tenants.
The Modified Alley will also serve as a secondary vehicular ingress/egress into the garage, as well as provide Residential Loading and Trash Pickup Areas. Two residential loading and trash pickup areas have been designated within the Modified Alley. The primary ingress/egress into the garage will be located on Oak Springs Drive, so as to minimize vehicular traffic in the Modified Alley.

Vehicular studies have been performed to ensure appropriate turning radii will be provided for commercial loading vehicles and adequate lines of site around all corners/turns will be confirmed during Site Development Plan review. These studies were coordinated with the existing shopping center owner to ensure that adequate loading space will be provided for each of the business’s required loading vehicle sizes and types. Additionally, convex traffic safety mirrors can be installed at any location that poses a safety concern.

The Applicant plans to incorporate a number of visual improvements to the Modified Alley, summarized below:

- Garage positioning: the garage has purposefully been located in a parallel position along the rear of the commercial buildings so that the majority of the multi-family building that abuts the “back of house” area is non-residential space.
- Trash screening: commercial trash areas have been consolidated into three locations, all of which will have new privacy fencing installed around the designated areas. Construction details of all screening and fencing will be addressed at the time of Site Development Plan.

Current Trash Locations (CT) and Future Trash Locations (FT)



- Landscape buffers and screening: all portions of the Modified Alley that are within the potential viewshed of residential dwelling units will include 35’ to 50’ of landscape buffers, plus privacy fencing along the drive lanes—see Sheets 18 & 19 of SUP. Construction details of all screening and fencing will be addressed at the time of Site Development Plan.
- Painting: all rear elevations of the commercial building that are adjacent to the Modified Alley will be repainted in a consistent, neutral color.
- Striping: all residential and commercial trash and loading areas will be striped to encourage loading/delivery activity to stay out of the travel way and within the designated locations.
- Demolition: all ancillary structures that have been erected adjacent to the commercial building will be demised and removed. Examples of these ancillary structures are shown below.

"Ancillary Structures" in the Existing Alley



Loading and Trash Pickup Areas

Striped loading and trash pickup areas are proposed along both sides of the Modified Alley. The loading areas are intended to be reserved for exclusive use by either the residential tenants or the commercial tenants, as outlined below:

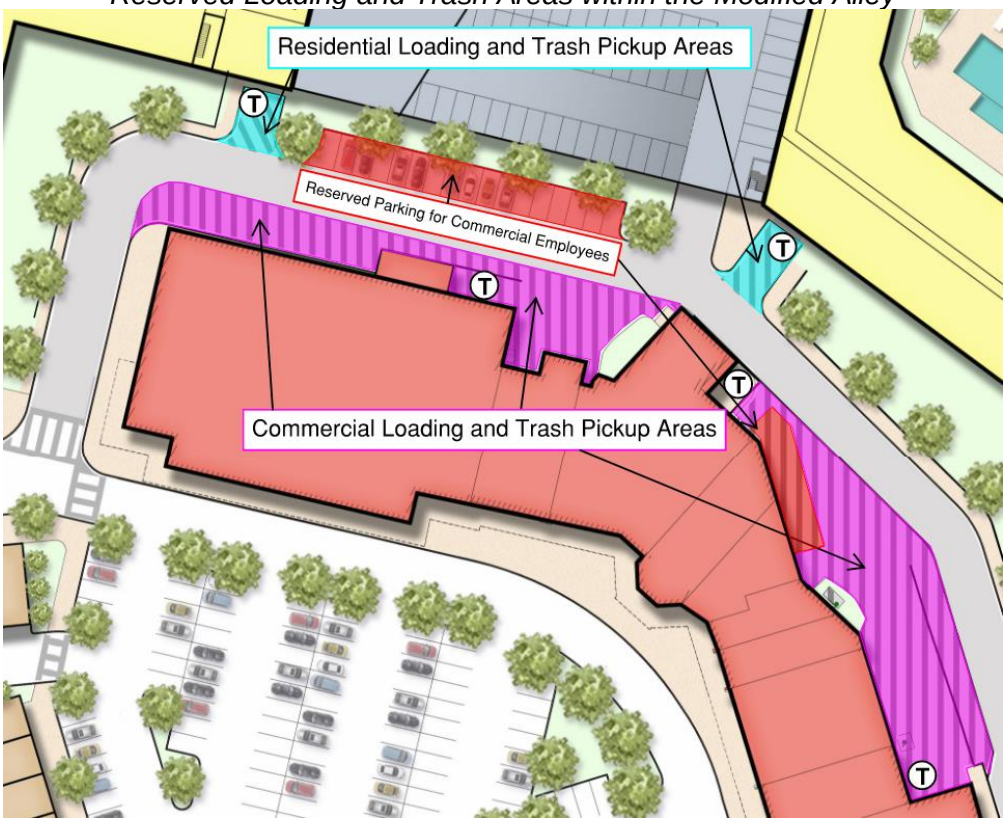
- Commercial Loading and Trash Area (PINK): these striped areas will be reserved for exclusive use by commercial tenants for "back of house" operations. These areas will provide access to necessary loading and delivery areas for the commercial tenants in accordance with their current and future needs. Existing loading areas and loading doors/docks will continue to serve the commercial building—no changes are proposed to the existing commercial loading bays and appropriate turning radii will be provided to ensure that commercial vehicles maintain access to existing loading facilities. Commercial trash dumpsters will be consolidated to the three locations marked with a "T" and will be shielded with privacy fencing. Privately contracted waste management services will pick up trash at these locations on scheduled trash days.
- Residential Loading and Trash Area (BLUE): these striped areas will be reserved for exclusive use by residential tenants for "move in / move out" purposes. Tenants will have the ability to reserve these areas on an hourly basis at specific times to facilitate move ins and move outs. Reservations for use of these spaces will be made through the property management team. These two loading areas are a minimum of 30' deep, which is adequate space to fit the maximum sized commercial rental truck (e.g. U-Haul truck). These areas will also serve as trash pickup locations for the residential building. On scheduled trash days, property management will roll dumpsters from the trash compactors

located on the interior of the building to these locations, where they will be picked up by privately contracted waste management services.

- No ground level residential units will be placed adjacent to the Residential Loading and Trash Areas. Those areas of the buildings will be designated for loading and trash services.

- Reserved Parking for Commercial Employees (RED): to ensure that employees of the commercial tenants do not utilize the loading areas for employee parking, approximately 25 parking spaces will be provided for their exclusive use along the Modified Alley. This will help to provide consistent, unimpeded trash and loading access to both the residential and commercial tenants.

Reserved Loading and Trash Areas within the Modified Alley



Trash

The Applicant shall maintain Warrenton Village Center in a clean and orderly manner and shall arrange for the pickup of trash, litter, and debris on a daily basis through a private refuse collection company.

Deliveries and refuse/solid waste collection shall follow Town Code Section 11-19(9).

Residential Trash Locations: trash facilities are proposed at three locations (found on Sheets 4 & 5 of the SUP):

1) Block 1: A trash compactor will be located within the multi-family building. Trash chutes will be located on all floors of the building for direct deposit of trash from residential floors into the trash compactor. Trash bins will be rolled out by property

management to one of the Residential Loading and Trash Pickup Areas on either side of the garage on trash pickup days.

2) Block 2: It is anticipated that each individual unit will have its own trash bin kept within that unit's garage. Residents will be responsible for rolling trash bins out to the rear alley on trash pickup days.
    a. If the municipality will not allow individual trash bins/pickup, the location for a potential trash dumpster that will serve all residents of Block 2 has been included in the SUP plans.
    b. Block 2 dumpster will be surrounded by privacy fencing, as well as landscape buffering.
3) Block 3: It is anticipated that each individual unit will have its own trash bin kept within that unit's garage. Residents will be responsible for rolling trash bins out to the rear alley on trash pickup days.
    a. If the municipality will not allow individual trash bins/pickup, the location for a potential trash dumpster that will serve all residents of Block 3 has been included in the SUP plans.
    b. Block 3 dumpster will be surrounded by privacy fencing, as well as landscape buffering.

Commercial Trash Locations: trash dumpsters behind the existing retail buildings will be consolidated into the three centrally located trash areas shown on Sheet 19 of the SUP. These trash areas will be hidden from public view with new privacy fencing.

All exterior refuse storage areas will be shielded within enclosures or privacy screening.

Wayfinding

The Applicant will include detailed locations and specifications on all proposed signage and wayfinding in the site plan. All signage will comply with the Zoning Ordinance at the time of Site Development Plan.

A Conceptual Signage Plan can be found on Sheet 21of the SUP.

Lighting

The Applicant will prepare a detailed lighting plan in conformance with §9-8 of the Zoning Ordinance and will install lighting in accordance with that plan. This will be reviewed at the time of Site Plan Development review.
Light pollution restrictions will include:

- All site lighting, to include both new fixtures within the new development areas as well as any non-residential area that is modified as a part of site development, must consist of fully-shielded, full cut-off fixtures to meet the requirements of Article 9, Section 9-8.
- Color temperature of exterior light fixtures will be 3,000 degrees kelvin or lower.
- Average horizontal illumination level of exterior light fixtures will be 3.0 footcandles or less.

A Conceptual Lighting Plan can be found on Sheet 22 of the SUP.

Bicycle Plan

The streets within the retail and residential areas are proposed to function as shared streets for both cars and bicycles. This is appropriate given the low vehicular volumes, short street segments

that limit vehicular speeds, existing and proposed character of the property with significant pedestrian/vehicle interactions, and the need to minimize street widths to keep pedestrian crossing distances short.

Eliminated/shortened travel ways, especially those encouraging speedy vehicular use between Broadview Avenue and Oak Springs Drive, change the nature of available accessways within the Center. This combined with on-street parking – parallel and head-in spaces, reduced driveway widths and raised crosswalks, will automatically provide traffic calming and slower traffic speeds, thereby making it safer for multi-modal use. Visitors entering the site are immediately confronted with a travel landscape that is unlike urban throughfares and more like parking lots with limited speeds, but good visibility. Unlike urban throughfares, which are designed for speedy travel between points A and B, visitors entering the Center will be immediately at B. The proposed streets and accessways encourage visitors to think about parking their vehicles or bikes and setting out on foot.

A Conceptual Circulation Plan, including proposed bicycle travel ways and public bike rack locations, can be found on Sheet 23 of the SUP.

Resident Connectivity to the Town of Warrenton

The Applicant believes that the new residents of Warrenton Village Center should not only benefit the commercial tenants at the Center but should provide new patronage to all of Warrenton's businesses. To do this, the Applicant desires to enhance and promote new and existing transportation networks to other areas of Warrenton.

Warrenton Circuit Rider: to encourage increased use of this public transport by residents, the Applicant proposes the following concepts:

1) There are currently Green Route and Blue Route stops within Warrenton Village Center at the current location of Joann Fabrics. If desired by the Town, the Applicant agrees to work with the Town to establish additional stops at the West Plaza and/or East Plaza residential lobbies.
2) Install permanent signage within residential lobbies to promote this public transportation option.
3) Establish a program with the Town that provides tenants with a monthly stipend for Circuit Rider fares—"Circuit Rider Cash" or something similar that would be accepted by the buses and funded by the apartment community.

Green Building Design

All residential buildings will be designed and certified to a National Green Building Standard (NGBS), Level Bronze, or higher. This certification requires minimum efficiency standards among building materials, plumbing and electrical fixtures, appliances and much more. If NGBS is not available for this project, an equivalent certification from an alternative third-party green building rating system will be acceptable.

EV Stations

To encourage continued growth of electric vehicles, a minimum of 2% of parking spaces within the Block 1 parking garage will include electric charging stations for resident use. Block 2 and Block 3 will not include charging stations, as residents will be able to utilize individual unit garages to supply EV power.

Noise & Exhaust

The proposed development will not produce any noticeable increase in noise or odor.

Emergency Services

All plans will be in conformance with Town Code and approved at Site Development Plan.

Sheet 8 of the SUP provides a Fire Truck Movement plan, confirming 360-degree fire truck access to all buildings.

Community Hours of Operations

All proposed residential rental units in all three blocks (multi-family, townhome and 2-over-2 units) will be part of the same new apartment community. All residents will have access to the community amenities found primarily at the Block 1 multi-family building. Hours of operations for the community's amenities will be as follows:

Leasing Office: 9am-6pm (Monday-Friday), 10am-5pm (Saturday), Closed (Sunday)
Mail & Packaging: 24 hours a day, 7 days a week
Bike Storage: 24 hours a day, 7 days a week
Pool and Pool Deck: 10am – 8pm, 7 days a week (Memorial Day to Labor Day)
Fitness: 24 hours a day, 7 days a week
Co-Working Space: 24 hours a day, 7 days a week
Entertainment Lounge: 24 hours a day, 7 days a week
Gathering Room: 24 hours a day, 7 days a week
Garage Parking: 24 hours a day, 7 days a week

3-Bedroom Unit Maximum

3-bedroom apartments are important to provide a wide range of housing types and price points to the residents of Warrenton. 3-bedroom units provide the lowest rental rates on a per bedroom basis and are therefore pivotal when seeking to provide lower cost options to the Town's residents. In order to minimize concerns regarding potential fiscal impacts of 3-bedroom units, the Applicant agrees to cap 3-bedroom units in Block 1 at 10% of the total Block 1 units.

PLAN WARRENTON 2040

Plan Warrenton 2040 establishes a series of goals for future development within Warrenton. This proposal advances many of these goals, which have been outlined below:

Housing Goals

Character Districts are identified as an opportunity for "expanding housing options" and to "accommodate a range of housing typologies." The Proposal advances this goal via inclusion of multiple housing types.

Goals H-1 and H-1.3 recommend the creation of workforce housing. The Proposal advances this by creating a variety of housing types to provide a wide range of rental price points, as well as inclusion of an affordable housing component.

Goal H-1.1 is to encourage “Missing Middle” housing types. The Proposal advances this goal by providing highly sought after rental dwellings in both townhome and 2-over-2 product types.

Goal H-1.2 of the Plan is to encourage the creation of a range of housing types. The Proposal meets this goal by providing 1-, 2- and 3-bedroom multi-family apartment units, as well as 2-over-2 and townhome dwelling units.

Goal H-2.2 of the Plan provides for appropriate use and scale of development and proper transitions to existing neighborhoods. The Proposal meets this goal by placing higher, four-story buildings in areas closer to existing commercial and future three-story residential, and then steps down to three-story buildings on the west side, where existing neighborhoods and future low density residential are found on the west side of Broadview Avenue.

Open Space, Parks, & Environment Goals

Goals P-3 and P-3.1 focus on providing residents with access to green and public spaces. The Proposal meets this goal by providing significant open space in close proximity to new residential housing, most notably, at the newly proposed Central, East and West Plazas.

Transportation Goals

Goals T-3.6 and T-3.10 focus on encouraging bicycle friendly policies and bicycle parking in new development standards. A bike storage room will be located within the multi-family building for use by all residents, as well as multiple bike racks throughout the site to promote bicycle transportation and recreation.

Goals T-3.4 and T-4.3 focus on creating a walkable network with sidewalk, pedestrian safety features, and increased network connectivity. An extensive new sidewalk network is being proposed throughout the Warrenton Village Center to promote walkability for residents and commercial shoppers alike. Pedestrians will have the ability to easily navigate between the residential, commercial and plaza areas with new sidewalks, crosswalks and vehicular traffic slowing measures.

Economics & Fiscal Resilience Goals

Goal E-1.2 of the Plan calls for a range of housing, with appropriate levels of density and transitions. The Proposal meets this goal by providing a variety of housing types, with height and density tapering down toward existing residential neighborhoods.

Goal E-1.5 of the Plan focuses on a diverse, equitable stable tax base. The Proposal advances this goal by providing opportunities for an increased tax base through its added housing stock.
Goal E-2.2 of the Plan promotes Warrenton’s high quality of life to attract employers to work here. The Proposal will appeal to employers wanting to offer their employees new, high quality housing options. Warrenton Village Center will provide the Town with the first new, Class A apartment community in decades.

Goal E-2.5 of the Plan calls for development of a range of housing types. The Proposal meets this goal by providing 1-, 2- and 3-bedroom multi-family apartment units, as well as 2-Over-2 and townhome dwelling units.

Goal E-3.3 of the Plan focuses on maximizing public spaces and right-of-way for outdoor gathering space. The Proposal meets this goal by adding significant publicly accessible open space to the Property, most notably, at the Central, East and West Plazas.

Land Use & Character Districts

The Plan recommends a set of ten design criteria for projects within a Character District. The proposal meets and advances all these criteria, as shown below:

1. Discernable Center

The highlight of the proposed Warrenton Village Center is the new Central Plaza. The Plaza is centrally located within the 29-acre site at the crossroads of vehicular and pedestrian circulation and positioned to benefit the new residential units and existing commercial businesses alike. The Central Plaza is proposed as approximately one-half acre and includes a spash-pad, public green, hardscapes for seating and decorative planters and flower beds. It is sized, programmed, and designed for everyday use as well as for larger community activities. Additionally, the Central Plaza is bookended by a space for future retail development that would further activate the public amenity. A new raised watertable crosswalk will provide safe pedestrian connectivity and new wayfinding will allow the entire Warrenton Village Center to easily locate and enjoy this new public space.

2. Connected sidewalks with a clear pedestrian path, street trees, and lighting

The new Warrenton Village Center will benefit from a multitude of improvements that will increase pedestrian connectivity throughout the entire site. New sidewalks will be added along the entire perimeter of all residential blocks, including direct sidewalk connectivity to all street facing, ground floor units. The extension of Hastings Lane and accompanying sidewalks will offer a new pedestrian access point from Oak Springs Drive. Multiple sidewalks will link the three new residential blocks to the new public amenities and allow maximum ease of walkability from one side of the Property to the other.

Ample street trees, landscaping and lighting will line the sidewalks along the streets and private drives, providing shade during the day and lighting during the evenings to create a pleasant and safe walking environment.

Detailed landscaping and lighting plans will be provided at Site Development Plan review. Concept plans have been included on Sheets 9 & 10 (landscape) and Sheet 22 (lighting) of the SUP.

The siting of all three blocks, the sidewalk connections leading from the residential to the retail and the consistent street wall and streetscape envisioned will allow for a familiar experience typically seen in traditional mixed-use settings.

3. Buildings that are placed close to the street to create a sense of place

All buildings have been placed along exterior streets to create desirable streetscapes and a sense of place. Majority of parking has been pulled away from streets and concealed from view within a centrally located parking garage—inclusion of the parking garage has eliminated the need for unattractive surface parking lots.

Portions of all three building types (multi-family, 2-over-2s and townhomes) have been faced inwards so that they are visible from the commercial areas to enhance the mixed-use feel of the Center.

Street-facing, ground level units in all residential buildings will have direct access from the units to the sidewalk systems installed along all public and private streets.

4. Parking placed behind buildings and away from street frontages

All parking for Block 1 will be centrally located within a four-story parking garage that has been concealed from public view within the building itself.

Block 2 and Block 3 will have interior garages (two-car garage per townhome unit and one-car garage per 2-over-2 unit), surface parking in the driveways behind all 2-over-2 garages, and visitor parking areas found within both blocks.

5. Complete streets create a balance between cars, pedestrians, and bicyclists

The street networks are designed to slow vehicular traffic, create ease of access for residents and visitors, and promote pedestrian activity.

A bike storage room will be located within the multi-family building for use by all residents, as well as multiple bike racks throughout the site to promote bicycle transportation and recreation—see Sheet 23 of the SUP.

An extensive new sidewalk network is being proposed throughout the Warrenton Village Center to promote walkability for residents and commercial shoppers alike. Pedestrians will have the ability to easily navigate between the residential, commercial and plaza areas with new sidewalks, crosswalks and vehicular traffic slowing measures.

6. Compact street blocs encourage walking

The deliberate location of the Central Plaza and reorganization of vehicular, pedestrian and bicycle traffic around it allows the center to appear as a collection of smaller blocks, providing numerous ways for residents and visitors to explore areas within the Center.

These enhancements will create smaller, more compact blocks to promote easy walkability from the new residential to the existing retail.

Further traffic calming by way of raised crosswalks/watertables at important intersections and elimination of travel ways designed for speed will encourage pedestrian use.

7. A park, trail, or activity center is within a half mile walking radius

The proposed development will link its new residents directly to the adjacent shops and businesses of Warrenton Village Center, turning the existing retail into an active pedestrian amenity. The creation of the Central Plaza, East and the West Plaza will further promote the Warrenton Village Center as a destination for not only residents of the community, but all residents of Warrenton. The location of the plazas and their use and function is directly tied to the role they are expected to play. The Central Plaza is ‘centrally’ located at the crossroads – vehicular and pedestrian to allow it to function as the neighborhood center and is sized, programmed, and

planned to allow for community activities as well as everyday use. The East and West plazas serve as passive, ceremonial transition zones between the private residential realm and the public retail realm. Their primary intent and use is to connect residents with the rest of the commercial center while also allowing for a different, less active and smaller public area for passive recreation.

8. A variety of dwelling types accommodates a wide range of family sizes and income levels and commercial activity

As the first large rental community in the area in over a decade, the proposed Warrenton Village Center will add diversity to the housing market by providing much needed market rate and affordable rental dwellings. The community will offer 1-, 2-, and 3-bedroom apartment units within Block 1, as well as unique 2-over-2 and townhome units to supply the "missing middle" in Blocks 2 and 3—all dwellings are anticipated to be for rent.

9. Neighborhood identity connects district wayfinding and identification with a larger marketing effort to bring private investment to the neighborhood

Warrenton Village Center is an existing neighborhood anchor and community shopping destination. The new Warrenton Village Center will synergistically elevate the overall development, redefining the neighborhood identity as a regional Live-Work-Play destination for both residents and visitors from the surrounding area.

The overall aesthetic of the new Warrenton Village Center brand and identity will be a contemporary design that thoughtfully incorporates Warrenton's rich history, focusing on equestrian inspired materials and textures. The sleek façade of the exterior pairs light colored brick and cementitious panels with warm stone, wood, and dark metal accents.

Signage and wayfinding will exercise these same principles to create a sense of place and affirm the character of the new development. The existing equestrian themed signage at Warrenton Village Center will be contemplated to create fresh branding and wayfinding that complements the existing infrastructure with a new modern and sleek identity.

10. The neighborhood edge provides the means of transition from the Character District to adjoining properties.

The buildings are designed to scale appropriately with the adjacent current and future uses, which are primarily commercial with some periphery residential. At four-stories, the proposed new buildings will be a step down from the six-stories allowed along Lee Highway and create an appropriate transition to the three-story residential areas allowed on the north of Oak Springs Drive.

Comprehensive Plan Future Land Use Analysis

Plan Warrenton 2040 labels this parcel in the Future Land Use Map within the New Town Character District. The New Town designation notes the district "will support the revitalization of the commercial shopping malls with a walkable development pattern that includes a mix of uses." Plan Warrenton also includes the following applicable goals:

Transportation and Circulation Goals

T-1: Improve multi-modal capacity and safety that encourages trips by walking, bicycling, and transit.

T-3 Promote livability in the Town by creating great places for residents and visitors to feel welcome and safe.

Economic and Fiscal Goals

E-1 Grow a strong, diversified, and resilient economy that supports residents and businesses a like.

E-4 Support Character Districts as unique mixed-use neighborhood centers

Standard	Analysis
Whether the proposed Special Use Permit is consistent with the Comprehensive Plan.	The Applicant's proposal has been designed to advance the general goals of the Plan and the specific goals set forth for the New Town Character District, which is identified as "a location for signature office/jobs center; with greater intensity of mixed use and strong live, work and play options. A mix of uses cold be organized around an internal street network and public amenities, such as civic spaces, parks, green spaces and public gathering areas."
The compatibility of the proposed use with other existing or proposed uses in the neighborhood, and adjacent parcels.	The proposed development is surrounded by a mix of commercial, education and residential: • To the north, across Oak Springs Drive, is Highland Private School, Brookside Rehab and Nursing Center and the Cedars of Warrenton town home community. • To the east, across Branch Drive, is Safeway and other commercial businesses included within Warrenton Village Center.

	• To the south is Warrenton Village Center. • To the west, across Broadview Avenue, are standalone commercial and office uses. The proposal is compatible with these uses and proposed uses and the goals of the Comprehensive Plan.

Zoning Analysis

The legislative intent of the Commercial District is to simultaneously encourage appropriate and timely land development while assuring suitable design by prohibiting uses that would create undue impacts on the surrounding residential areas.

Standard	Analysis
The level and impact of any noise emanating from the site, including that generated by the proposed use, in relation to the uses in the immediate area.	The proposed use is a mixed-residential and retail. All non-residential uses must meet the noise standards under Article 9-14.2.
The proposed location, lighting and type of signs in relation to the proposed use, uses in the area, and the sign requirements of this Ordinance.	All signage shall be permitted in accordance with the Plan as shown and shall comply with any Zoning Ordinance regulations at that time.
The location and area footprint with dimensions (all drawn to scale), nature and height of existing or proposed buildings, structures, walls, and fences on the site and in the neighborhood.	The Applicant is seeking a minor modification to the height because it is located between Lee Highway, which allows up to six (6) stories, and Oak Springs Drive which allows up to three (3) stories. The goal of the height recommendations of Plan Warrenton 2040 is to step down towards residential zones. The proposal will achieve this goal in the Transition Zone along Oak Springs Drive. Though a fourth story is proposed by the Applicant for the apartment units, it maintains a step down in scale from the six stories permitted along Lee Highway.

	Additionally, stepping down from six stories to four stories is a more gradual approach and a better design aesthetic than the stark hierarchal contrast of a dramatic drop from six stories down to three stories. From a visual perspective along Oak Springs Drive, maintaining three stories would mean that the structures behind the residential buildings could be twice their size or more with bonus height.
The nature and extent of existing or proposed landscaping, screening and buffering on the site and in the neighborhood.	Applicant acknowledges that landscaping must meet Zoning Ordinance requirements and will be reviewed as part of the Site Development Plan.
The timing and phasing of the proposed development and the duration of the proposed use.	There is no phasing proposed.
Whether the proposed Special Use Permit at the specified location will contribute to or promote the welfare or convenience of the public.	The mixed-use development will promote the welfare of the public by reducing housing costs for renters and promoting a healthier lifestyle be encouraging outdoor activity.
Whether, in the case of existing structures proposed to be converted to uses requiring a Special Use Permit, the structures meet all code requirements of the Town of Warrenton.	No existing structures are being converted
The location, character, and size of any outdoor storage.	No outdoor storage is proposed.
The location of any major floodplain and steep slopes.	Where applicable, all paving that may interact with major floodplains or steep slopes will be done with strict compliance to the flood-proofing and related provisions contained in the Virginia Uniform Statewide Building Code and all other applicable codes and ordinances.
The location and use of any existing non-conforming uses and structures.	There are no non-conforming structures or uses on the site.
The location and type of any fuel and fuel storage.	No fuel storage areas are noted on site.

The location and use of any anticipated accessory uses and structures.	Where applicable, all accessory structure will comply with local codes and ordinances.
The area of each proposed use.	Unique housing types are proposed within each block: Block 1: Multi-Family Apartments Block 2: Multi-Family Townhomes Block 3: Multi-Family 2-over-2s and Townhomes
The location and screening of parking and loading spaces and/or areas.	The Subject Parcel shall meet all parking requirements as outlines in Article 7. Should it be desired to expand the use in any of the buildings located on the Subject Property, the new proposed use shall be required to apply for approvals that meet Zoning Ordinance and additional parking requirements.
The location and nature of any proposed security features and provisions.	Not applicable.
Any anticipated odors which may be generated by uses on site.	The site must remain in compliance with Article 9-14.5 regarding the control of odors
Refuse and service areas.	The Applicant shall maintain Warrenton Village Mixed Use Center in a clean and orderly manner and shall arrange for the pickup of trash, litter and debris on a daily basis through a private refuse collection company. Additionally, trash pickup will be scheduled through the Town of Warrenton's Public Work's & Utilities – Refuse Collection.
Whether the proposed Special Use Permit will result in the preservation or destruction, loss or damage of any significant topographic or physical, natural, scenic, archaeological or historic feature.	No significant or topographic areas are located on site.
The effect of the proposed Special Use Permit on environmentally sensitive land or natural features, wildlife habitat and vegetation, water quality and air quality.	Except where given exceptions by the Special Use Permit, the proposal will comply with any federal, state, or local codes and ordinances regarding wildlife habitats, sensitive land or natural features, vegetation, water quality, and air quality.

The glare or light that may be generated by the proposed use in relation to uses in the immediate area.	A concept lighting plan has been provided. Fixture details/cut-sheets and new structures will be required to be provided and reviewed as part of the Site Development Plan submission.

Transportation and Circulation Analysis

The primary transportation and circulation goal for the Town of Warrenton is to "Promote livability in the Town by integrating multi-modal, interconnected transportation solutions with land use development in each mixed-use Character District and applying traffic calming techniques that foster and protect non-vehicular street activities in established residential neighborhoods." The Transportation and Circulation section of the Comprehensive Plan sets out policies and objectives that work to further this goal. The section includes recommendations addressing improvements for pedestrian use, new street connections, parking and sidewalks, trails, cost sharing, traffic calming techniques, safety, and signage.

Standard	Analysis
The traffic expected to be generated by the proposed use, the adequacy of access roads and the vehicular and pedestrian circulation elements (on and off-site) of the proposed use, all in relation to the public's interest in pedestrian and vehicular safety, efficient traffic movement and access in case of fire or catastrophe.	Mixed-use development of the property will assist in vehicular safety by reducing the amount that residents are required to drive; Additionally, no vehicles associated with the use shall obstruct the travel ways, fire lanes, adjoining road network or encroach upon landscaped areas as shown on the Special Use Permit Plan. No vehicles shall be located within site entranceways or otherwise impede ingress, egress, and internal circulation. Finally, access to the site is adequate as shown in site plan.
Whether the proposed use will facilitate orderly and safe road development and transportation.	

Community Facilities and Services Analysis

Public community facilities in the Town are provided by the Town, Fauquier County, and other public groups for the benefit of all residents. The availability and quality of these facilities, that include, schools, libraries, hospitals, parks, police and fire and rescue services, are evaluated when people are considering moving into the Town or nearby area. The provision of these facilities adds to the desirability of living in the Town. The Comprehensive Plan's primary community facilities and services goals for the Town of Warrenton are:

1. *Foster high-quality, equitable, and accessible community facilities that meet the Town's service requirements and support a high quality of life for the community.*

2. *Make responsible and strategic community facility investments that support the Town's vision for a live/work community, sustaining its fiscal well-being and economic resiliency.*

3. *Promote sustainability in all Town-owned facilities.*

4. *Reinforce the role of County community facilities into the Town fabric.*

5. *Promote livability through properly located Town services, schools, libraries, courts, and County administrative functions.*

6. *Support the connection of residential dwellings to public water and sewer.*

7. *Provide a high quality of life to capture economic benefits through diverse businesses, employers, and residences.*

Public services are essential to the community structure and quality of life, as well as to long-term economic vitality. They support existing and planned developments and contribute to the health, safety, education and general welfare of Warrenton residents.

Standard	Analysis
Whether the proposed Special Use Permit will be served adequately by essential public facilities, services and utilities.	The Subject Parcels shall be served by public water and sewer. The Property Owner is responsible for all improvements required in order to meet the demand of the Subject Uses associated with the Property.
The location of any existing and/or proposed adequate on and off-site infrastructure.	

Economic Resources Analysis

An economic goal of Plan Warrenton 2040 is to promote a diverse, equitable stable tax base while preserving the character of the community.

Standard	Analysis
Whether the proposed Special Use Permit use will provide desirable employment and enlarge the tax base by encouraging economic development activities consistent with the Comprehensive Plan.	Residential use will enlarge the tax base by providing increases in property taxes and increasing the local population, allowing more money to be spent at local businesses. Additional retail space will also create new

	employment opportunities for the residents of Warrenton.
The number of employees.	No changes anticipated by applicant.
The proposed day/hours of operation.	For residential use, not applicable. For retail use, this would be subject to final decisions from the retailers.

WARRENTON VILLAGE CENTER

DESIGN STORY

WARRENTON, VIRGINIA | MAY 31, 2024









DESIGN OBJECTIVE

To transform the existing Warrenton Village retail center into a thriving, walkable, mixed-use, community destination with a sense of place that celebrates the character of Warrenton, while introducing a new, fresh, modern aesthetic.









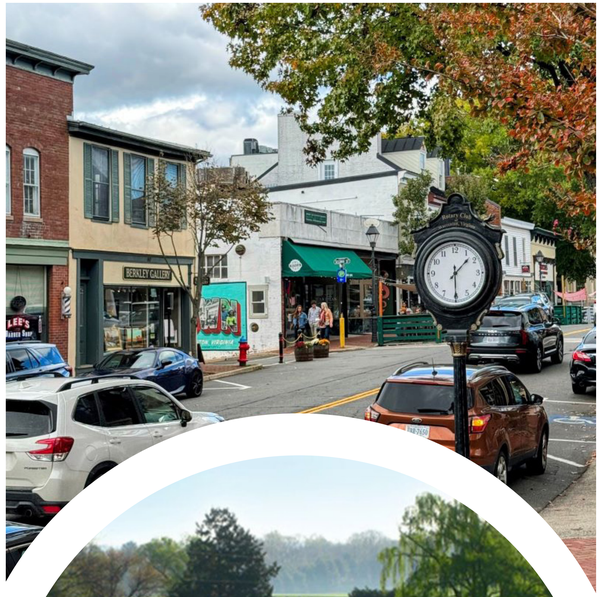
DESIGN IMPLEMENTATION

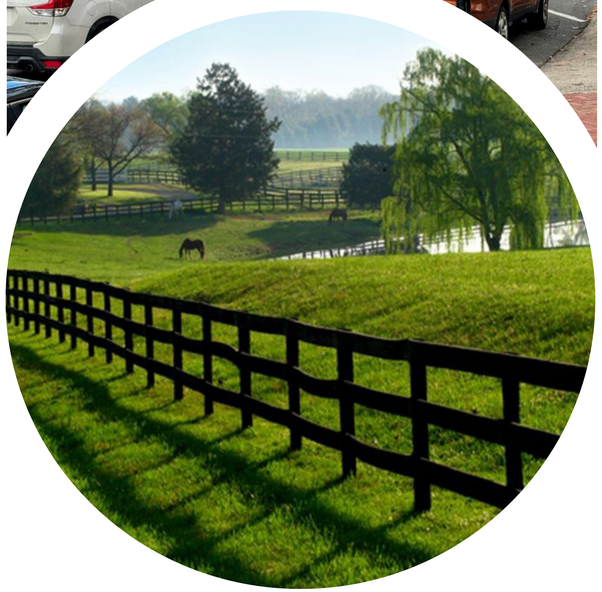
- Purposeful integration of new buildings to create a Live/Work/Play community in line with the goals of the 2040 Warrenton Plan.
- Revitalization of the existing retail with new public gathering spaces, pedestrian connectivity, reduced vehicles speeds, a new Central Plaza for village events, enhanced green spaces, and activated streetscapes.
- Fusion of a new contemporary aesthetic with the warmth of local and historical design influences.















WARRENTON CONTEXT

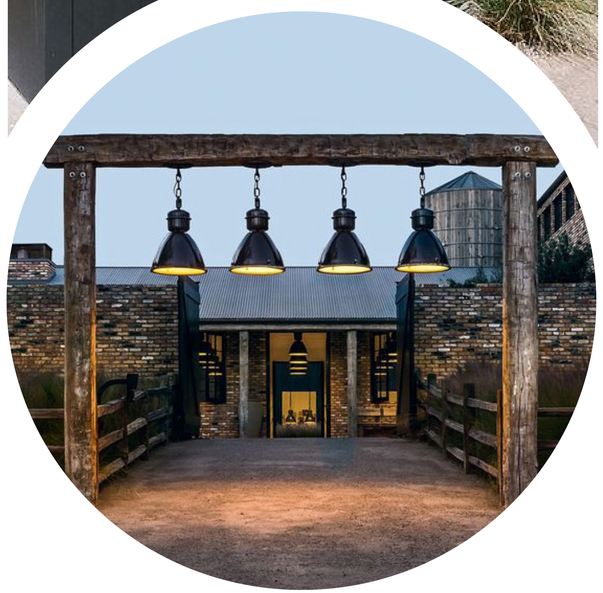
- Historical downtown Warrenton provides inspiration with its textures of brick and stone, dark metal accents and awnings, historical lighting fixtures, traditional lap siding, classic masonry banding and detailing, large windows with dark mullions, and pedestrian friendly streetscapes.
- The greater Warrenton area has deep equine and agricultural industry roots, featuring iconic horse farms and celebrated bucolic landscapes. Inspirations include classic equestrian design features, rich colors and textures, dark metal accents, warm woods, and farmhouse inspired lap siding and stone.





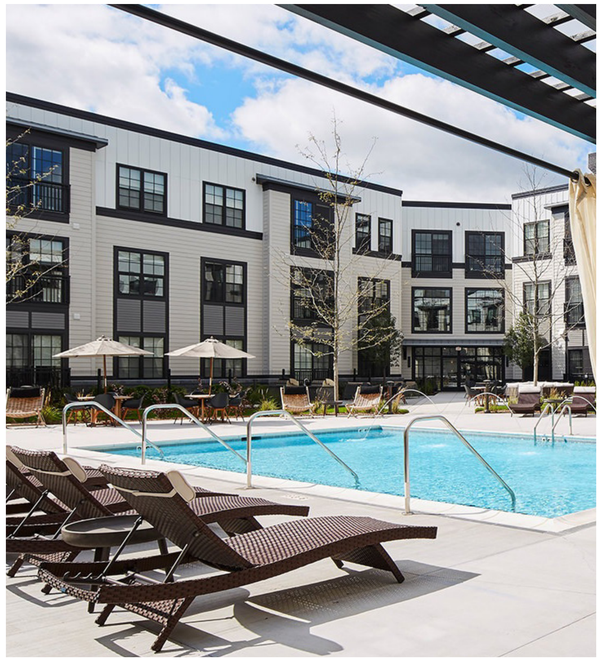












DESIGN APPLICATION

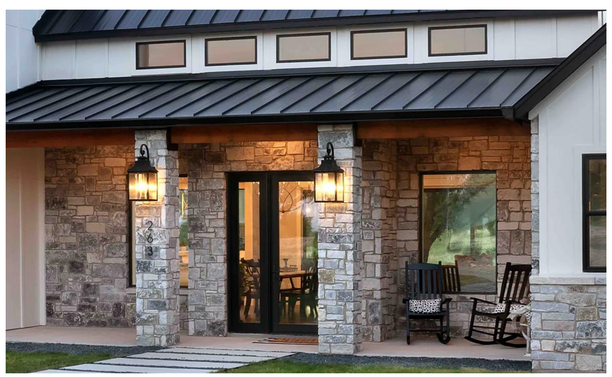
Warrenton's past becomes Warrenton's future. The rich palette of historic materials, textures, and architectural details are reclaimed with a fresh perspective and contemporary context.

RESIDENTIAL DESIGN

The three and four story massing of the residential development is designed to emulate the scale of a walkable town center. A clean, light modern aesthetic is grounded with rich masonry and architectural detailing. The street level is activated with resident access, generous sidewalks and rich landscaping. The articulated façade and generous fenestration break down the scale of the buildings and create visual interest for pedestrians.





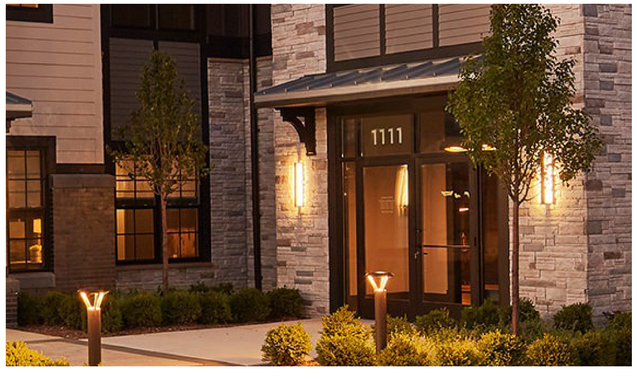




MATERIALS

- Cultured stacked farmstone
- Exterior reveal panel system
- Classic lap siding
- Selective sloped roofs to blend modern and traditional aesthetics
- Corbels
- Wood tones to infuse warmth







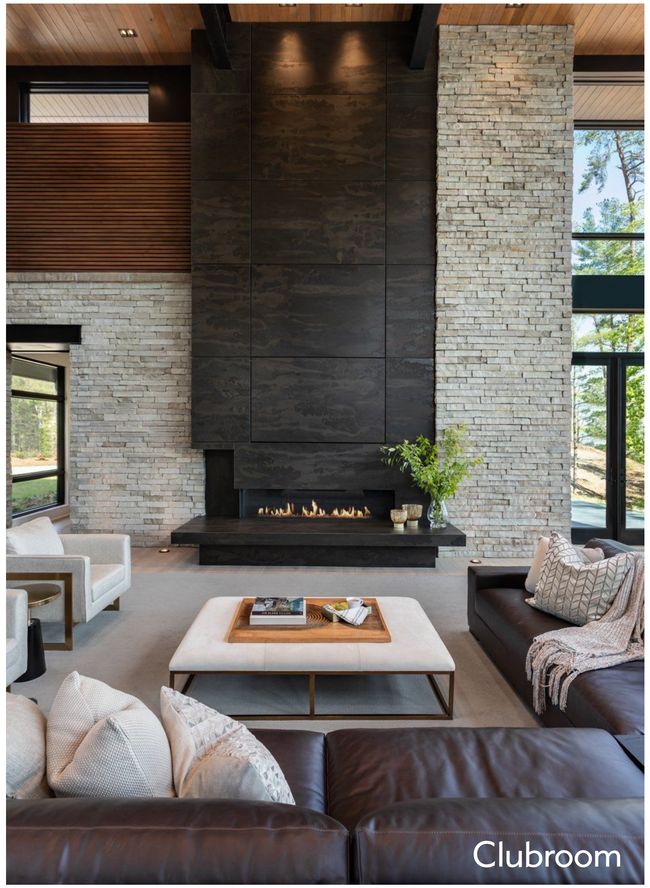


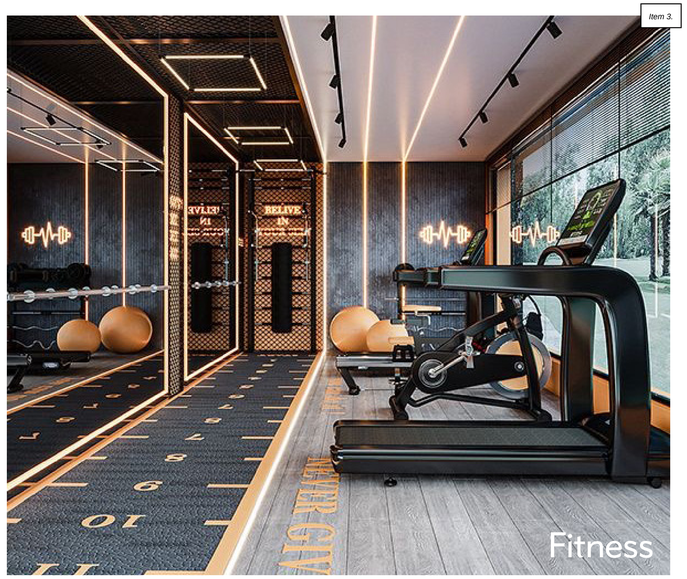
ACCENT FEATURES & STREETSCAPE

- Metal accents & awnings
- Equestrian inspired light fixtures
- Large windows with dark mullions and lintels
- Architectural detailing to provide visual interest at pedestrian level
- Residential street level entries activating the sidewalk
- Pedestrian Connectivity
- Walkable Environment

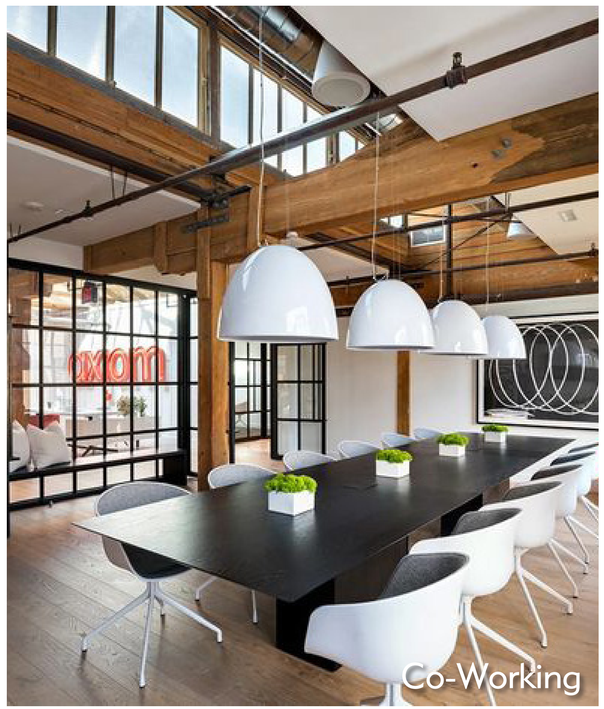


















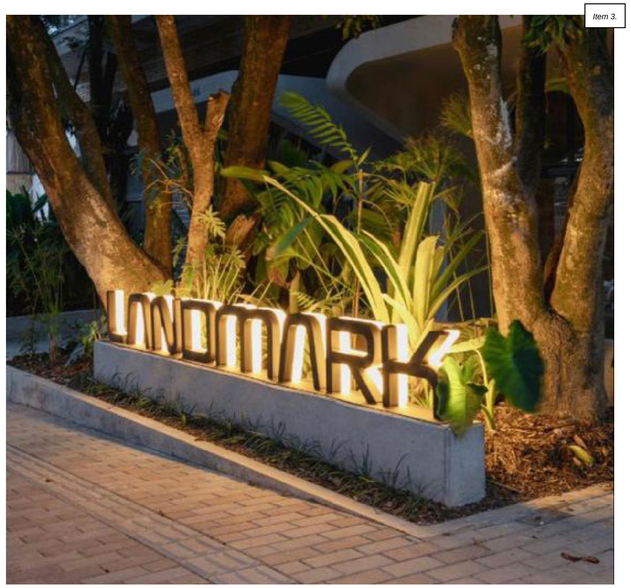
INTERIOR DESIGN CONCEPT

Urban Farmhouse aesthetic blends classic, timeless materials and natural textures with crisp, clean lines, neutral color palettes and light, open spaces. Old is blended with the new to provide spaces that are comfortable and approachable with a nod toward the trends of tomorrow.



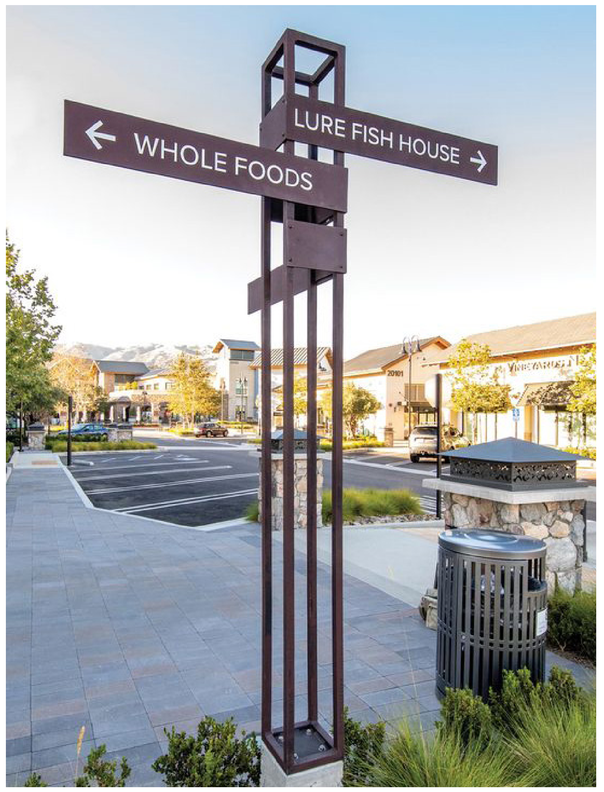














SIGNAGE

Signage and wayfinding are designed to combine key historical elements or notable community themes with clean, sophisticated materials, fonts and applications, bridging the old and the new.

SPECIAL USE PERMIT PROPOSED CONDITIONS
Applicant: NewCastle Development Group, LLC ("The Applicant")
Owner: Jefferson Associates LP; Warrenton Center LLC
Special Use Permit: SUP 22-5, Warrenton Village Mixed-Use Center
Address: 360 Oak Springs Drive, Center District, Town of Warrenton, Virginia 20186
GPIN #: 6984-20-7247-000; 6984-29-6753-000
Zoning: Commercial District
Special Use Permitting Area: +/- 6.46 acres; +/- 22.59 acres
Date: May 31, 2024

In approving a Special Use Permit, the Town Council may impose such conditions, safeguards, and restrictions as may be necessary to avoid, minimize or mitigate any potentially adverse or injurious effect of such special uses upon other properties in the neighborhood, and to carry out the general purpose and intent of this Ordinance. The Council may require a guarantee or bond to ensure that compliance with the imposed conditions. All required conditions shall be set out in the documentation approving the Special Use Permit (SUP).

1. Site Development – The property shall be developed in substantial conformance with these conditions and the plans titled "Special Use Permit for Warrenton Village Center, REVISION 3 – 5/31/2024", and prepared by Bohler Engineering. Minor changes and adjustments may be made to the road and street alignments, entrances, parking, dimensions and location of SWM/BMP facilities, the exact configuration and location of building footprints, and other similar features as shown on the SUP Plan, provided they meet the intent of these Conditions and are approved by the Director of Community Development or the Zoning Administrator.

2. Use Parameters

    1. Special Use Permit Area – The Special Use Permit shall apply to the entire +/- 29.05-acre property.

    2. Use Limitations – Use shall be limited to residential and retail.

3. Waivers and modifications

    1. Article 2-6.1: The maximum density specified in the zoning ordinance for a given zoning district shall not be exceeded. The maximum density is 5 units per acre or 10 units per acre with inclusion of 10% affordable dwelling units.
        - Waiver Request #1: Increase density to 386 units or 13.28 per acre.
    2. Article 3-4.10.4: Required front yard setback from ROW greater than 50' is 40' minimum, if no parking or loading is proposed.
        - Waiver Request #2: Decrease minimum setback to 14' along Broadview Avenue.

3. Article 3-4.10.4: Required side/rear yard setbacks is 5’ minimum.
    - Waiver Request #3: Decrease side/rear yard setbacks to 0’.

4. Article 8-8.5: Minimum buffer width for commercial uses adjacent to residential uses is 25’, plus 1’ for each foot of building height over 35’. Minimum buffer width for rear boundaries of residential uses from public ROW is 25’.
    - Waiver Request #4a: Decrease buffer width between commercial and residential uses to 0’.
    - Waiver Request #4b: Decrease rear buffer width for residential uses from public ROW to 14’.

5. Article 2-20: Height limit for dwellings may be increased up to 45’ and up to three stories provided that front, side and year setbacks increase 1’ for each additional foot of building height over 35’.
    - Waiver Request #5: Increase height limit for dwellings as follows:
        - 54’ max height for Block 1, Oak Springs Drive Frontage
        - 36’ max height for Block 1, Broadview Avenue Frontage
        - 36’ max height for Block 2
        - 45’ max height for Block 3
6. Article 3-4.4.5.3: No more than six townhouse units shall be grouped contiguously to each other.
    - Waiver Request #6: Increase maximum grouping of townhouse units from six to seven.

4. Architecture – The final design of the buildings to be constructed shall generally conform to the elevations and materials included with the Special Use Permit application (hereinafter, the "Elevations"). The Elevations may be subject to minor modification approved by the Zoning Administrator in connection with Site Development Plan review. Additional changes to the design and materials may be made provided that any such changes are approved by the Town prior to the issuance of a building permit. Such approval shall be based on a determination that the changes result in equal to or better than the quality shown on the Elevations.

5. Materials – the following materials will be prohibited from use:

    1. Vinyl siding
    2. EIFS
    3. Corrugated metal siding
    4. Plastic panels

6. Garage Screening – the structured parking garage in Block 1 will include a mesh or fabric screening on its south facing façade.

7. Green Building Design -- all residential buildings will be designed and certified to a National Green Building Standard (NGBS), Level Bronze, or higher. If NGBS is not available for this project, an equivalent certification from an alternative third-party green building rating system will be acceptable.

8. Electric Vehicle Charging Stations – a minimum of 2% of the total spaces included within the Block 1 parking garage will include electric charging stations for tenant use.

9. Affordable Dwelling Units

    1. The Applicant shall provide the following minimum number of Affordable Dwelling Units (ADUs):

        - 10% of total dwelling units within each of the three blocks (Block 1, Block 2 and Block 3) will be reserved as 80% AMI ADUs;

        - Ten (10) additional dwelling units in Block 1 will be reserved as 70% AMI ADUs;

        - Five (5) additional dwelling units in Block 1 will be reserved as 60% AMI ADUs

    2. The Applicant shall maintain the ADU program on all rental units for a period of twenty-five (25) years from the issuance of the Special Use Permit (the "Affordability Period").

    3. Within Block 1, allocation of the ADUs between 1-, 2- and 3-bedroom units will be at the discretion of the Applicant, so long as the minimum number of units defined above are maintained as ADUs. Within Block 2 and Block 3, wherein all units are 3-bedrooms, all ADUs will be 3-bedrooms. The ADUs shall be similar to the market rate units in architectural design, fixture/appliance selections and unit size. No more than three ADU units will be positioned adjacent to one another at any given time.

    4. "Qualified Parties" and "Rent Limits" for ADUs, are defined as:

        - For the purposes of qualifying for the lease of an affordable rental ADU a Qualified Party shall be an individual or a family whose gross annual household income does not exceed 60%, 70%, or 80% (dependent on the specific ADU) of the current Multifamily Tax Subsidy Program (MTSP) Income Limits for Fauquier County as published by the Virginia Housing & Development Authority (VHDA), at the time the rental application is opened for such Qualified Party ("AMI").

        - For the purposes of determining the Rent Limits for all ADUs, monthly rental rate limits shall be equal to those published by

VHDA for 0-, 1-, 2-, and 3-bedroom units and corresponding 60%, 70% and 80% AMIs, with no utility allowances.

- For the purposes of qualifying for the purchase of an ADU in Block 2 or Block 3, a Qualified Party shall be an individual or a family whose gross annual household income does not exceed 80% of the current Multifamily Tax Subsidy Program (MTSP) Income Limits for a 4-person household in Fauquier County as published by VHDA, at the time the purchase contract is executed for such Qualified Party.

- For purposes of determining the purchase price of any for-sale ADU, that price will not exceed the amount at which the monthly mortgage payment for such unit exceeds the monthly rent limits for 3-bedroom units and 80% AMI income, as published by VHDA. Qualifying Parties must provide a market rate loan commitment prior to closing in order to calculate the proposed mortgage payment.

5. The ADU status shall be set forth in a deed of restrictive covenants recorded against the Property and shall continue to bind the minimum ADU requirement within each block to the Property for a period of twenty-five years from the issuance of this Special Use Permit; provided, however, that for rental units, the Applicant may recalculate the rental rates for new leases or renewals in accordance with the then current rates published by VHDA.

6. The Applicant shall establish in a deed of restrictive covenants a program for the administration of this ADU program according to the requirements of these conditions. The Applicant (or Owners Associations with respect to any purchase units if the Applicant is no longer the Declarant) shall make each ADU available for a period of not less than 90 days for rental units and 180 days for purchase units, following the issuance of a certificate of occupancy for each unit.

7. The Applicant shall designate on the Construction Drawings submitted for building permit approval which units will be the initial ADUs; however, the units that are selected as the initial rental ADU units are not required to remain as the designated rental ADUs for the entirety of the Affordability Period. The Applicant will have the authority to re-designated the rental ADUs from time to time based on leases and vacancies. The Applicant will maintain a building plan set at the leasing office located in the Block 1 at all times that shows which units are currently designated as rental ADUs.

8. The documents creating the ADU program shall be reviewed and approved by the Town Attorney prior to their recordation in the Land Records.

9. ADUs will first be made available to the following persons:

    - Those residing or working in the Town of Warrenton or Fauquier County
    - Town of Warrenton or Fauquier County teachers
    - Town of Warrenton or Fauquier County first responders
    - Veterans and enlisted members of the United States Armed Forces

    The Applicant shall contact the appropriate local Social Service and/or Housing Authority offices for identification and placement of local residents.

10. The community's Property Management Team shall make annual reports to the Zoning Administrator as to the number, type and location of units hereunder that shall have been rented as ADUs and shall verify that they have been rented to Qualified Parties.

10. Block Sequencing and Required Site Improvements

1. The Applicant can develop the three blocks included within the Site Development in any order.

2. To ensure that site improvements are completed in a timely manner along with the residential buildings, Applicant agrees that the Town of Warrenton will withhold Certificates of Occupancy (COs) in accordance with the following schedule:

    - Block 1: the 215th CO within Block 1 will not be issued until such time as all Block 1 site improvements have been substantially completed;

    - Block 2: the 19th CO within Block 2 will not be issued until such time as all Block 2 site improvements have been substantially completed;

    - Block 3: the 33rd CO within Block 3 will not be issued until such time as all Block 3 site improvements have been substantially completed.

3. Site improvements allocated to each individual block are shown in SUP Sheets 4 & 5 and generally include the following:

- Block 1:
  - Multi-family building and parking garage
  - Central Plaza
  - West Plaza
  - East Plaza
  - Hastings Lane extension
  - Reconfiguration of commercial parking
  - Modified Alley, all improvements
  - Dog park and picnic area
  - Preservation and reconditioning of Oak Spring (natural spring)
  - Sidewalks included in Block 1 Improvements – Sheet 4 of SUP
  - Two crosswalks across Oaks Springs Drive at Hastings Lane and Highland School entrance

- Block 2:
  - Townhome dwelling units and parking
  - Sidewalks included in Block 2 Improvements – Sheet 5 of SUP

- Block 3:
  - 2-over-2 dwelling units and parking
  - Townhome dwelling units and parking
  - Sidewalks included in Block 3 Improvements – Sheet 5 of SUP
  - New sidewalk section on east side of Broadview Ave (behind Galaxy Strike Bowling Center building)

11. Site Surface – All outdoor areas used for shared open spaces, amenities, facilities, parking, storage, loading, display and driveways shall be constructed and maintained in good repair, free of cracks or damage to the surface.

12. Traffic

    1. Access - Access to the site shall be provided as shown on the SUP Plan, subject to changes as may be approved through at Site Development Plan review.

    2. Loading/Unloading – All loading and unloading of vehicles shall take place on the Subject Property during regular hours of operation and outside of peak travel hours, to the greatest extent possible, in the Loading Area depicted on the Special Use Permit Plan.

    3. Obstruction of Travel Ways – No vehicles associated with the use shall obstruct the travel ways, fire lanes, adjoining road network or encroach

upon landscaped areas as shown on the Special Use Permit Plan. No vehicles shall be located within site entranceways or otherwise impede ingress, egress, and internal circulation.

13. Parking – The Subject Parcel shall meet all parking requirements as outlined in Article 7. Should it be desired to expand the use in any of the buildings located on the Subject Property, the new proposed use shall be required to apply for approvals that meet Zoning Ordinance and additional parking requirements.

14. Sidewalks

    1. The Applicant shall install sidewalks as shown on the SUP Plan.

    2. All sidewalks will be a minimum of 5’.

    3. The Applicant will install a new section of sidewalk along the east side of Winchester Street, between Lee Highway and Broadview Avenue (behind the Galaxy Strike Bowling Center building) as part of Block 3 improvements.

15. Oak Springs Drive Crosswalk(s) – new crosswalks will be installed on Oak Springs Drive at Hasting Lane and at the entrance to Highland School as part of Block 1 improvements. Inclusion of these crosswalks will be contingent upon and subject to Town of Warrenton and VDOT approvals as Site Development Plan.

16. Refuse Storage Area – Any refuse storage areas shall be screened with a solid enclosure constructed of materials that are compatible with the buildings on the property.

17. Site Maintenance – The Owner shall maintain the site in a clean and orderly manner and shall pick up trash, litter and debris on a daily basis.

18. Landscaping – The Owner shall be responsible for the maintenance and replacement of all plantings on site. Any diseased or dead landscaping shall be replaced within one season of dormancy.

19. Stormwater Management – The site is to be planned and designed as a redeveloped site under the State's Runoff Reduction requirements for Stormwater Management (SWM) and in compliance with the Town of Warrenton's SWM Ordinance at time of construction.

20. Water and Sewer – The Subject Parcels shall be served by public water and sewer. The Property Owner is responsible for all improvements required in order to meet the demand of the Subject Uses associated with the Property.

21. Emergency Services

    1. All future Site Development Plans shall illustrate adequate access to the site for Emergency Service vehicles, subject to approval by the Planning Director or Zoning Administrator. Nothing shall be placed or constructed on the site that would prohibit or restrict Emergency Service vehicles from mounting curbs or accessing structures. There shall be no parking of any vehicles in the travel ways.

    2. Fire hydrants shall be installed in locations acceptable to the Town of Warrenton.

    3. Buildings shall have supra boxes installed on them with a fire alarm panel inside the front and rear entrances of the structures.

22. Signs – All signage shall be permitted in accordance with the Plan as shown and shall comply with any Zoning Ordinance regulations at that time.

23. Lighting

    1. All outdoor lighting shall be in conformance with the Zoning Ordinance.

    2. The Applicant shall prepare and submit a photometric plan in connection with Site Development Plan review.

    3. All site lighting, to include both new fixtures within the new development areas as well as any non-residential area that is modified as a part of site development, must consist of fully-shielded, full cut-off fixtures to meet the requirements of Article 9, Section 9-8.

    4. Color temperature of exterior light fixtures will be 3,000 degrees kelvin or lower.

    5. Average horizontal illumination level of exterior light fixtures will be 3.0 footcandles or less.

24. Open Space – each residential block/parcel and the residual retail parcel will individually meet the 10% open space requirement. The Applicant will construct and maintain all open spaces in general conformance with the improvements noted and shown in Sheet 6 of the SUP – “Open Space Plan.”

25. Modified Alley – The Applicant will build and maintain the Modified Alley in general conformance with the improvements shown in this area on the Plan.

26. 3-Bedroom Unit Maximum – A maximum of 10% of the units located in Block 1 will be 3-bedroom units.

27. Condo Sale of Block 2 and Block 3 – Applicant will maintain the ability to sell the entirety of Block 2 (Multi-Family Townhomes) and/or the entirety of Block 3 (Multi-Family 2-Over-2 and Townhomes) as Condos. The Applicant agrees to sell all or none of the units within Block 2 or Block 3, so as to prohibit a mix of for rent and for sale units in the same block.

    All conditions of the SUP will continue to be enforced in a block sale scenario through the Declarations of Restrictive Covenants that the Applicant will record and encumber the Block 2 and/or Block 3 parcels. In a block sale scenario, Homeowner Associations will be established to maintain all conditions of the SUP and will own the block parcel, while individual condo owners will own the condo dwelling units.

    In a sale scenario, residents/owners of the condos will not be tenants of the apartment community and will not have access to the rental amenities located within Block 1.

    In a block sale scenario, 10% of the units within the sold block will be required to be sold as ADUs, in accordance with the language outlined in Section 9 – Affordable Dwelling Units of this Conditions of Approval.

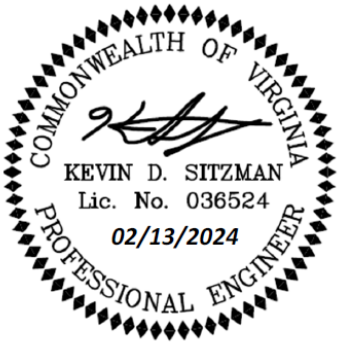
28. Block 1 Amenities – All amenities located within Block 1 will be available for use by tenants of residential rental units owned by the Owner in all three blocks (Block 1, 2 and 3). If residential units within Block 2 and/or Block 3 are sold by the Owner in a condo sale, the fee simple owners of the residential condos will not have access to the Block 1 amenities.

Traffic Impact Analysis

Warrenton Village Center

Town of Warrenton, Virginia

June 30, 2023
Revised February 13, 2024



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Executive Summary

This report presents the findings of a Traffic Impact Analysis (TIA) conducted for the proposed Warrenton Village Center development (the Site / the Development / the Property) situated in the Town of Warrenton, Virginia.

This study was developed in accordance with the Virginia Department of Transportation (VDOT) and the Town of Warrenton (the Town) transportation impact analysis guidelines. The document was prepared in accordance with best professional practices and standards that assess the impact of a proposed development on the transportation system. Traffic operational analyses, as presented in this TIA, involve the evaluation of anticipated roadway conditions with and without the proposed development. The analysis assists public officials and developers to balance the interrelations between efficient traffic movements with necessary lane access. This revised TIA is based on review comments provided by VDOT and the Town.

Site Location and Study Area

The proposed development will be located primarily along the southern frontage of Oak Springs Drive (Town Route 3), east of Broadview Avenue (US Route 17 Business) and west of Branch Drive (Town Route 4) in the Town of Warrenton, Virginia. The vehicular study area includes ten existing intersections along Broadview Avenue, Lee Highway, Branch Drive, and Oak Springs Drive.

Description of Proposed Development

The development will be situated on a single parcel of vacant land (approximately 6.46 acres) and a portion of an adjacent developed parcel of land, which can be identified on Fauquier County Tax Maps with the following GPIN #s: 6985-20-7247-000, and 6984-29-6753-000, respectively. The property is currently zoned as C (Commercial District) with a Future Land Use of Mixed Use as part of the New Town Warrenton Character District (Lee Highway Urban Development Area [UDA]).

The Applicant is proposing to apply for a Special Use Permit (SUP) in order to construct approximately 386 multifamily residential dwelling units (320 multifamily apartments, 36 2-over-2 units, and 30 townhomes) and a parking deck. The site has an anticipated build-out date of 2027.

Access to the site will be provided via one full movement parking deck entry along Oak Springs Drive (Town Route 3) forming the fourth leg of the High School Driveway, one full movement driveway along Oak Springs Drive forming the fourth leg to the existing full-movement intersection of Hastings Lane, and via the existing shopping center accesses to the south.

This report analyzes the trips generated by the Warrenton Village Center Development and its impact on traffic operations on the surrounding road network.

Principal Findings and Conclusions

Discussions regarding the study assumptions and relevant background information were held with VDOT, County, and Town staff during January 2023. The scope details the study assumptions and relevant background information discussed. A copy of the scoping document is included in Appendix A.

The analysis contained herein presents the 2023 Existing Conditions, 2027 Future Conditions without Development, and 2027 Future Conditions with Development:

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

Analysis Components

- 2023 existing volumes were derived via turning movement counts collected at intersections within the study area in February 2023.
- As determined based on review comments from VDOT and the Town, an inherent regional growth of 1.0% per year was applied to the Lee Highway mainline through movements at the intersection of Lee Highway at Broadview Avenue (US

Route 17 Business). The growth volumes were balanced along the road network by increasing the mainline through movements at subsequent study intersections along the road network where applicable for the period between 2023 and 2027 to account for 2027 conditions.

- The trip generation associated with the Site was based on the ITE Trip Generation Manual, 11th Edition publication. The Site in total is expected to generate approximately 154 new trips during the AM peak hour, 197 new trips during the PM peak hour, and 2,602 new daily trips on a typical weekday.
- Intersection capacity and queuing analyses were performed for all analysis scenarios at the study area intersections during the weekday morning (AM) and weekday afternoon (PM) peak hours. *Synchro*, version 11, was used to analyze the study intersections with results based on the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) methodology and analysis guidelines provided in VDOT's Traffic Operations and Safety Analysis Manual (TOSAM) (version 2). The analysis herein includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.
- The analysis also considers an assessment of historical crash data at all existing study intersections.
- The analysis also includes preliminary access management assessment and turn lane warrant assessments for the Site access points along Oak Springs Drive.

Analysis Results

2023 Existing Conditions

- Based on the capacity analysis of Existing Conditions, the two signalized study intersections operate at an overall level of service D or better during both the AM and PM peak hours.
- Based on the capacity analysis of Existing Conditions, three study intersections have at least one approach that operates at levels of service (LOS E or F) for at least one peak hour. The remaining intersection approaches operate at acceptable levels of service during both peak hours.
- Based on the analysis of the Synchro 95th percentile queue lengths, all turning movements have queue lengths that can be accommodated within the available storage length of the turn bays, except the southbound left turn movement at Study Intersection 1 (Broadview Avenue / Lee Highway at Winchester Street).

2027 Future Conditions without Development

- Based on the capacity analysis of 2027 Future Conditions with Development, the signalized study intersection would operate at an overall level of service D or better during both the AM and PM peak hours.
- The planned roundabout is expected to operate at an overall LOS B or better with all approaches operating at LOS D or better during the AM and PM peak hours.
- Based on the capacity analysis of 2027 Future Conditions without Development, two study intersections have at least one approach that would operate at levels of service (LOS E or F) for at least one peak hour. The remaining intersection approaches would operate at acceptable levels of service during both peak hours.
- Based on the analysis of the Synchro 95th percentile queue lengths, all turning movements have queue lengths that could be accommodated within the available storage length of the turn bays.

2027 Future Conditions with Development

- The Site is expected to generate approximately 154 new total trips during the AM peak hour, 197 new trips during the PM peak hour and 2,602 new trips during a typical weekday.

- Based on the capacity analysis of 2027 Future Conditions with Development, the signalized study intersection would operate at an overall level of service D or better during both the AM and PM peak hours.
- The planned roundabout is expected to operate at an overall LOS B with all approaches operating at LOS D or better during the AM and PM peak hours.
- Based on the capacity analysis of the 2027 Future Conditions with Development, two study intersections have at least one approach that would operate at levels of service (LOS E or F) for at least one peak hour (similar to 2027 Future Conditions without Development) during the AM and PM peak hours. The remaining intersection approaches would operate at acceptable levels of service during both peak hours.
- Based on the queuing analysis performed for the 2027 Future Conditions with Development, all turning movements have queue lengths that could be accommodated within the available storage length of the turn bays.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed Development will not have a substantial impact to the surrounding transportation and roadway network, assuming that the site is constructed as depicted on the concept plan. No improvements are warranted or recommend to accommodate the proposed Development.

Introduction

This report presents the findings of a Traffic Impact Analysis (TIA) conducted for the proposed Warrenton Village Center (the Site / the Development / the Property) along the southern frontage of Oak Springs Drive (Town Route 3), east of Broadview Avenue (US Route 17 Business) and west of Branch Drive (Town Route 4) in the Town of Warrenton, Virginia

The development will be situated on a single parcel of vacant land (approximately 6.46 acres) and a portion of an adjacent developed parcel of land, which can be identified on Fauquier County Tax Maps with the following GPIN #s: 6985-20-7247-000, and 6984-29-6753-000, respectively. The property is currently zoned as C (Commercial District) with a Future Land Use of Mixed Use as part of the New Town Warrenton Character District (Lee Highway Urban Development Area [UDA]).

The Applicant is proposing to apply for a Special Use Permit (SUP) in order to construct approximately 386 multifamily residential dwelling units (320 multifamily apartments, 36 2-over-2 units, and 30 townhomes) and a parking deck. The site has an anticipated build-out date of 2027.

Access to the site will be provided via one full movement parking deck entry along Oak Springs Drive (Town Route 3) forming the fourth leg of the High School Driveway, one full movement driveway along Oak Springs Drive forming the fourth leg to the existing full-movement intersection of Hastings Lane, and via the existing shopping center accesses to the south.

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

- A scoping meeting was held on January 3, 2023 with the Virginia Department of Transportation (VDOT), Fauquier County (the County), and the Town of Warrenton (Town) staff to discuss the parameters of this study as well as any relevant background information. A copy of the scoping document is included in Appendix A.
- Review comments of the first TIA submission were provided and addressed in this study submission.
- Existing conditions were observed in the field to verify roadway geometry, pedestrian and bicycle infrastructure, and traffic flow characteristics.
- Signal timings were acquired from VDOT and are provided in Appendix E.
- In order to determine the weekday morning and afternoon peak hour turning movement traffic volumes, traffic counts were conducted in February 2023.
- The 2027 Future Conditions without Development scenario was projected based on the existing traffic volumes, an inherent growth to account for regional growth on the roadway network, two approved background developments, and roadway improvements.
- Proposed site traffic volumes were derived based on the methodology outlined in ITE's 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 2027 Future Conditions with Development scenario was projected based on the existing traffic volumes, regional growth, and the projected trips generated by the proposed development.
- Intersection capacity and queueing analyses were performed for the identified study intersections for the 2023 Existing Conditions, 2027 Future Conditions without Development, and 2027 Future Conditions with Development scenarios during the weekday morning (AM), and weekday afternoon (PM) peak hours.
- Intersection capacity and queuing analyses were performed using *Synchro*, version 11, with LOS and delay results based on the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) 6 methodology and in following VDOT's Traffic Operations and Safety Manual (TOSAM) (version 2).
- The analysis also considers an assessment of historical crash data at all study intersections.

- The analysis also includes preliminary access management assessment and turn lane warrant assessments for the Site access points along Oak Springs Drive.
- The study also includes preliminary discussions on the pedestrian facilities in the study area.

Sources of data for this study include the Institute of Transportation Engineers (ITE), VDOT, the County, the Town and the office files and field reconnaissance efforts of Gorove Slade.

Background Information: Proposed Development (Site & Nearby)

Description of the Existing Site

Site Location

The proposed Development will be located primarily along the southern frontage of Oak Springs Drive (Town Route 3), east of Broadview Avenue (US Route 17 Business) and west of Branch Drive (Town Route 4) in the Town of Warrenton, Virginia. A description of the proposed Development is provided in the *Introduction* section of this report.

Location within Jurisdiction and Region

The Site is located generally on the northern portion of Warrenton approximately 0.5 miles from the north Town line an approximately 1 mile west of the US 17 and US 29 Business interchange. A regional aerial of the Site is provided in **Figure 1.**

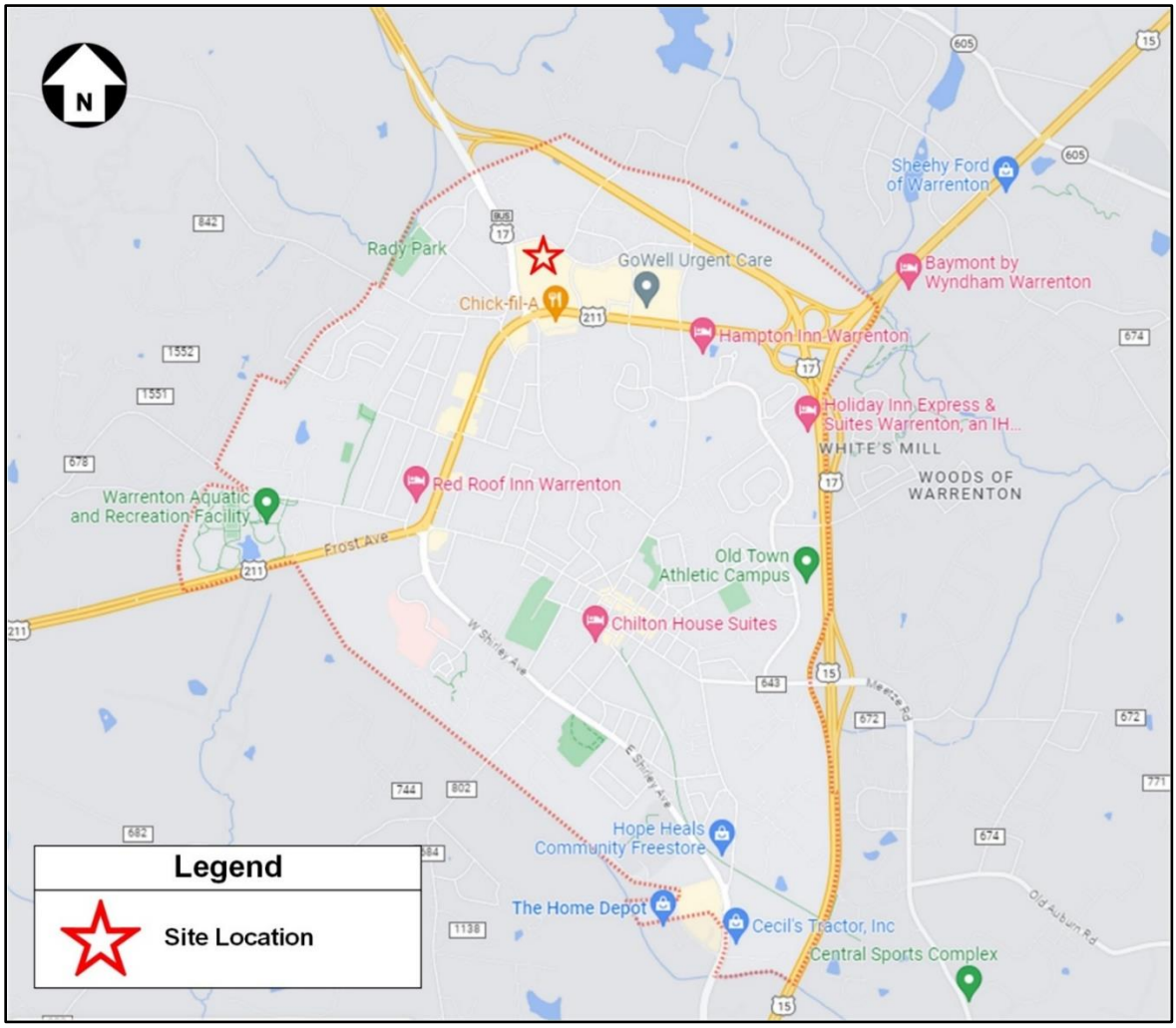


Figure 1: Regional Location

Description of the Parcel

The development will be situated on a single parcel of vacant land (approximately 6.46 acres) and a portion of an adjacent developed parcel of land, which can be identified on Fauquier County Tax Maps with the following GPIN #s: 6985-20-7247-000, and 6984-29-6753-000 as illustrated in **Figure 2.**

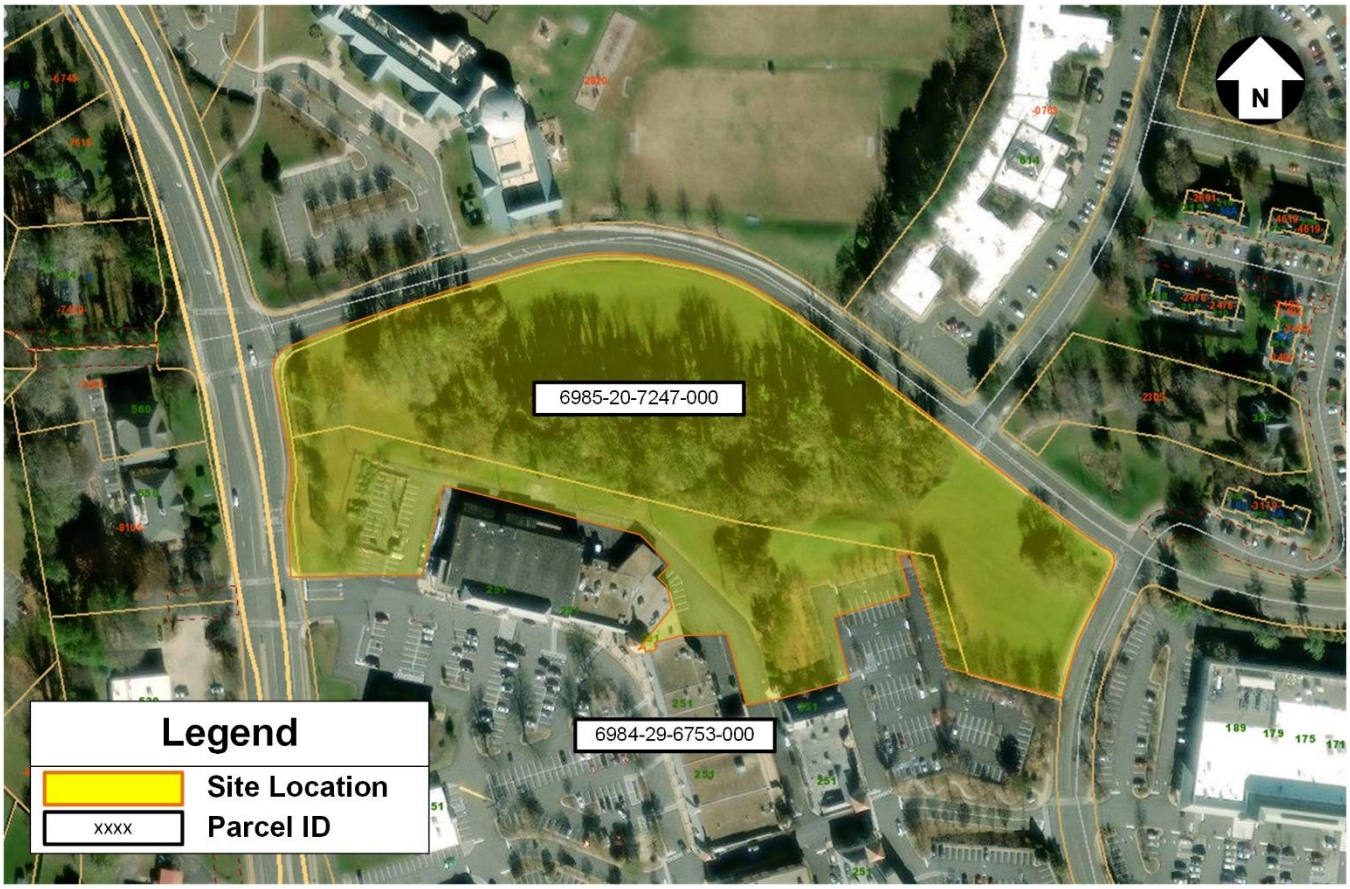


Figure 2: Parcel Map
(Source: https://fauquiergis.maps.arcgis.com/**)**

Existing Zoning and Future Land-Use

The property is currently zoned as C (Commercial District) with a Future Land Use of Mixed Use as part of the New Town Warrenton Character District (Lee Highway Urban Development Area [UDA]).

The existing zoning is presented in Error! Reference source not found.; the Town of Warrenton 2040 Comp Plan future land use is presented in **Figure 4**.

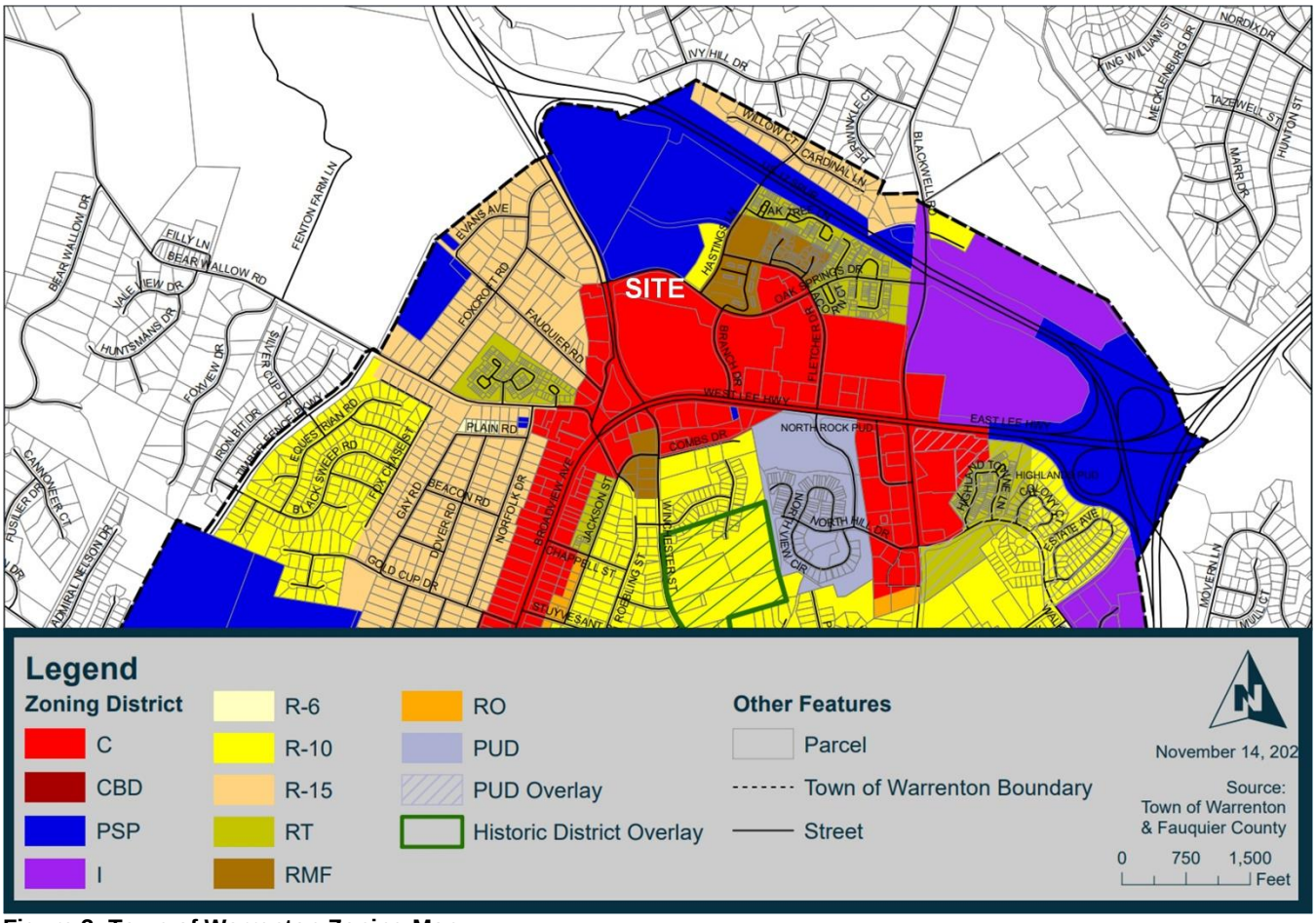


Figure 3: Town of Warrenton Zoning Map

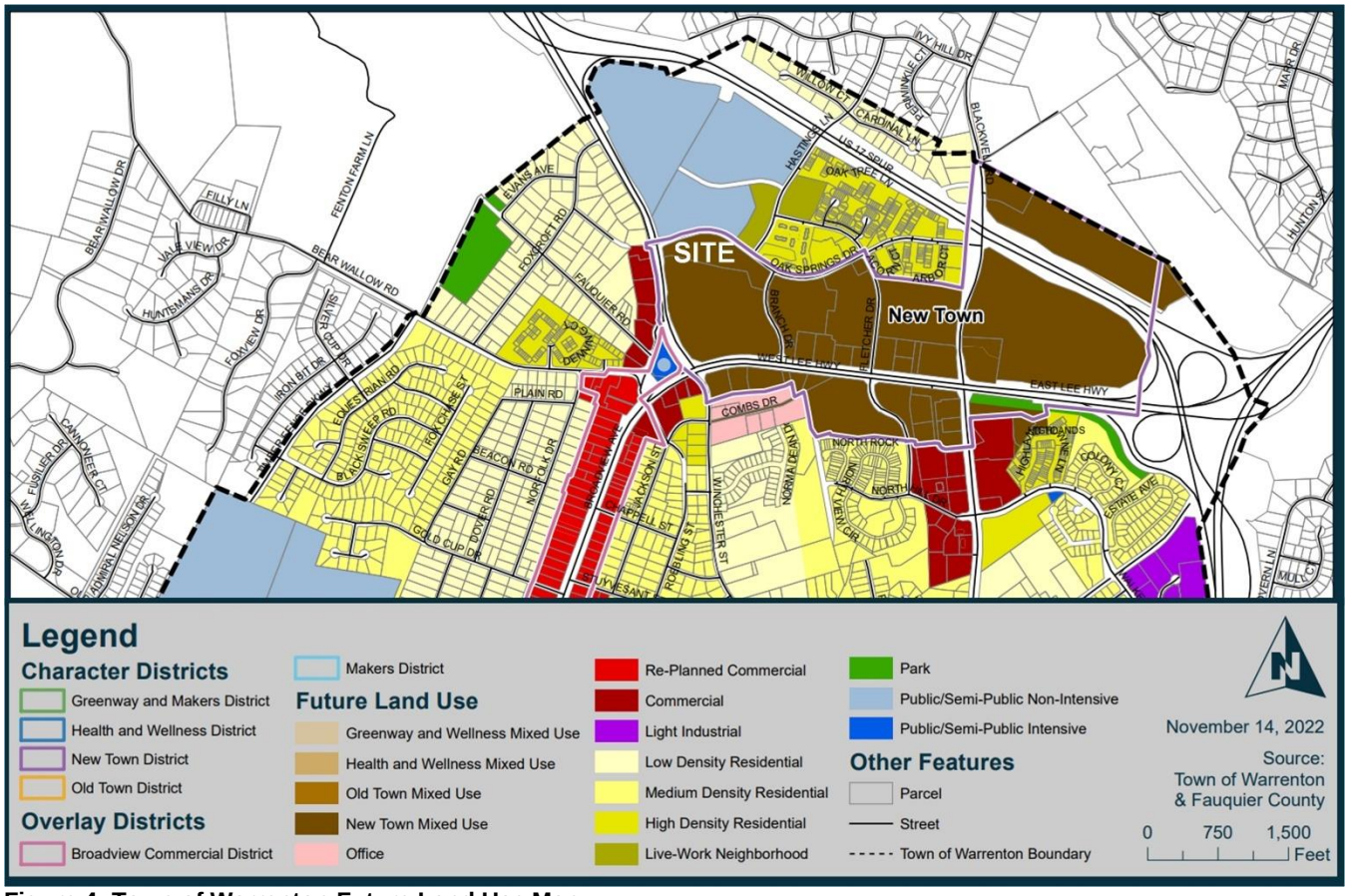


Figure 4: Town of Warrenton Future Land Use Map

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 County guidance. The vehicular study area includes ten existing study intersections. At build out of the Site, the proposed site driveways will form the fourth leg of two existing intersections.

The existing study intersections are as follows:

Intersection 1: Broadview Avenue (US Route 17) / Lee Highway at Broadview Avenue / Winchester Street [existing full-movement, signalized],

Intersection 2: Lee Highway (US Route 17) at Warrenton Village Center Driveway at Chick-fil-a Driveway [existing full-movement, unsignalized],

Intersection 3: Lee Highway (US Route 17) at Branch Drive (Town Route 4) [existing full-movement, signalized],

Intersection 4: Branch Drive (Town Route 4) at Warrenton Village Driveway / Safeway Driveway [existing full-movement, unsignalized],

Intersection 5: Oak Springs Drive (Town Route 3) at Branch Drive (Town Route 4) / Cedar Crest Drive [existing full-movement, unsignalized],

Intersection 6: Oak Springs Drive (Town Route 3) at Hastings Lane / Future Access [existing full-movement, unsignalized, future fourth leg],

Intersection 7: Oak Springs Drive (Town Route 3) at Highland School Driveway / Future Garage Access [existing full-movement, unsignalized, future fourth leg],

Intersection 8: Broadview Avenue (US Route 17 Business) at Oak Springs Drive (Town Route 3) [existing full-movement, unsignalized],

Intersection 9: Broadview Avenue (US Route 17 Business) at Warrenton Village Center South Driveway [existing full-movement, unsignalized],

Intersection 10: Broadview Avenue (US Route 17 Business) at Warrenton Village Center North Driveway [existing full-movement, unsignalized].

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



Figure 5: Aerial of Study Boundaries (Study Intersections)

Existing Roadway Network

A description of the major roadways within the immediate vicinity of the Site is presented below in Error! Reference source not found..

Table 1: Summary of Existing Road Network

Roadway	RTE #	VDOT Classification	Legal/Design Speed Limit (mph)	Lanes	AADT (vpd)	Road Segment Between:		k-factor
Broadview Avenue	US 17 Bus	Other Principal Arterial	35	4 Div	11,000	Bus US 29 Lee Hwy	NCL Warrenton	9.7%
Oak Springs Drive	Town 3	Major Collector	25	2 Undiv	3,100	Broadview Ave	Branch Dr	10.3%
Branch Drive	Town 4	Major Collector	25	4 Undiv	4,300	Lee Highway	Oak Springs Drive	11.1%
Lee Highway	US 211/29 Bus	Other Principal Arterial	40	4 Div	26,000	US 17 Broadview	US 15 Blackwell	7.7%

Lee Highway (US Route 211/US Route 29 Business) is generally a four-lane divided Principal Arterial with a posted speed limit of 40 mph within the vicinity of the Site. The 2021 VDOT ADT on Lee Highway is 26,000 vehicles per day (vpd). For the purposes of this analysis, Lee Highway is assumed to be an east-west roadway.

Broadview Avenue (US 17 Business) is a four-lane divided Principal Arterial with a posted speed limit of 35 mph and a 2021 VDOT ADT of approximately 11,000 vpd. For the purposes of this study, Broadview Avenue is assumed to be a north-south roadway.

Branch Drive (Town Route 4) is a four-lane, undivided Major Collector with a posted speed limit of 25 mph and a 2021 VDOT ADT of approximately 4,300 vpd. For the purposes of this study, Branch Drive is assumed to be a north-south roadway.

Oak Springs Drive (Town Route 3) is a two-lane, undivided Major Collector with a posted speed limit of 25 mph and a 2021 VDOT ADT of approximately 3,100 vpd. For the purposes of this study, Oak Springs Drive is assumed to be an east-west roadway.

Analysis of 2023 Existing Conditions

Existing Roadway Safety Assessment

As agreed upon in the aforementioned scoping meeting, existing crash reports for all existing study intersections over a five-year period between May 2018 and May 2023 were provided by VDOT's Crash Analysis Tool. These reports are summarized in **Table 2** and **Table 3**.

During the five-year period, a total of 88 crashes were recorded at the ten existing study intersections as illustrated in Error! Reference source not found.. Of the 88 recorded crashes, 58 were classified as "Property Damage Only (PDO)," 30 were classified as "Injury Collision (IC), and zero fatalities occurred during the five-year period.

An aerial of the recorded crash locations is provided in **Figure 6**. The crash data by study intersection is provided in Appendix B.

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.

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

It should be noted that according to the Institute of Transportation Engineers' (ITE) Transportation Impact Analysis for Site Development, 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. Based on the crash rates, none of the existing study intersections were considered high crash locations.

The following tables provide detailed reported crash data for all study intersections.

Table 2: Historical Crash Data Summary (May 2018 – May 2023)

	Intersection	Approximate ADT	PDO	IC	Fatality	Total	Crash Rate (Per MEV)
1	Lee Highway (US 211/US 29 BUS) at Broadview Avenue	29,125	28	12	0	40	0.75
2	Lee Highway (US 211/US 29 BUS) at Warrenton Village /	21,375	3	2	0	5	0.13
3	Lee Highway (US 211/US 29 BUS) at Branch Drive	23035	14	5	0	19	0.45
4	Branch Drive at Warrenton Village / Safeway	4485	1	1	0	2	0.24
5	Branch Drive at Oak Springs Drive	4000	2	0	0	2	0.27
6	Oak Springs Drive at Hastings Lane	No Crashes	0	0	0	0	0.00
7	Oak Springs Drive at Highland School Entrance	No Crashes	0	0	0	0	0.00
8	Broadview Avenue at Oak Springs Drive	12010	2	1	0	3	0.14
9	Broadview Avenue at Warrenton Village North	10425	2	2	0	4	0.21
10	Broadview Avenue at Warrenton Village South	13165	6	7	0	13	0.54
Total Reported Crashes Analyzed			**58**	**30**	**0**	**88**	-
Percentages			**65.9%**	**34.1%**	**0.0%**	**100.0%**	-

Based on the crash rates, none of the existing study intersections were considered high crash locations, however, Study Intersections 1 and 10 are on the Culpepper District top 100 PSI list. A pipeline study has been conducted and these locations have been identified for construction of roundabouts.

Table 3: VDOT Crash Data Summary by Type of Collision (May 2018 – May 2023)

	Intersection	Fixed Object/Single Vehicle	Head-on	Sideswipe (Same Direction)	Sideswipe (Opposite Direction)	Rear End	Angle	Backing	Pedestrian	Animal	Other	Total
1	Lee Highway (US 211/US 29 BUS) at Broadview Avenue	0	0	3	0	24	11	0	0	0	2	40
2	Lee Highway (US 211/29 BUS) at Warrenton Village /	2	0	0	0	1	2	0	0	0	0	5
3	Lee Highway (US 211/29 BUS) at Branch Drive	1	0	1	1	6	8	1	0	0	1	19
4	Branch Drive at Warrenton Village / Safeway	0	0	0	0	0	2	0	0	0	0	2
5	Branch Drive at Oak Springs Drive	0	0	0	0	0	2	0	0	0	0	2
6	Oak Springs Drive at Hastings Lane	0	0	0	0	0	0	0	0	0	0	0
7	Oak Springs Drive at Highland School Entrance	0	0	0	0	0	0	0	0	0	0	0
8	Broadview Avenue at Oak Springs Drive	0	0	0	0	0	3	0	0	0	0	3
9	Broadview Avenue at Warrenton Village North	0	0	0	0	0	3	0	0	1	0	4
10	Broadview Avenue at Warrenton Village South	0	3	1	0	1	7	0	0	0	1	13
Total Reported Crashes Analyzed		**3**	**3**	**5**	**1**	**32**	**38**	**1**	**0**	**1**	**4**	**88**
Percentages		**3.4%**	**3.4%**	**5.7%**	**1.1%**	**36.4%**	**43.2%**	**1.1%**	**0.0%**	**1.1%**	**4.5%**	**100.0%**

Approximately 43% of the crashes that occurred were classified as angle collisions and approximately 36% were classified as rear end collisions. Rear end and angle collisions are common at congested signalized intersections. Study Intersection 1 has been identified as a location for a potential roundabout.

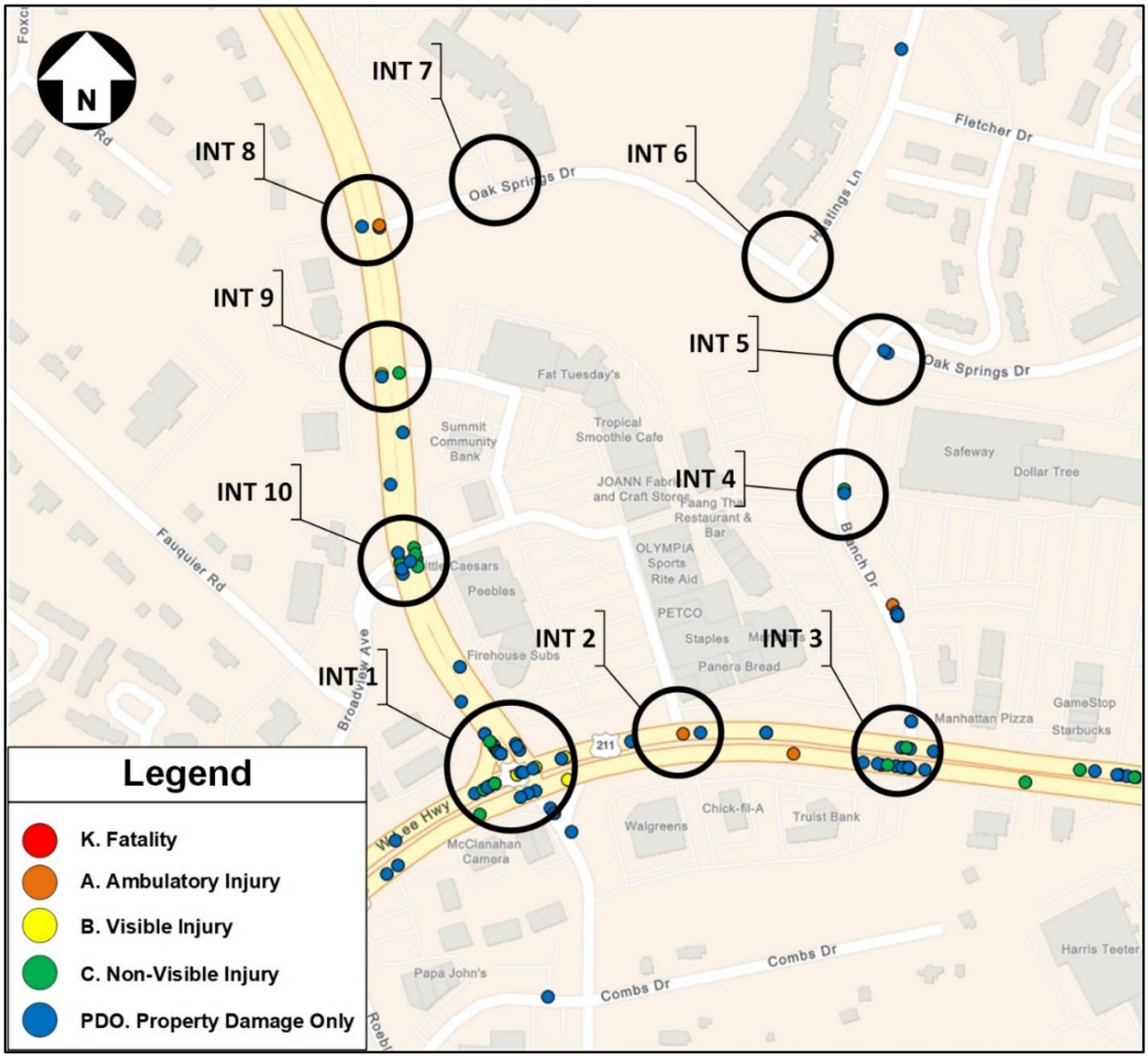


Figure 6: Recorded Crash Location Map

2023 Existing Traffic Volumes

In order to determine the weekday morning (AM) and weekday afternoon (PM) peak hour turning movement traffic volumes, turning movement counts (TMC) were collected at the study intersections in February 2023. The referenced weekday turning movement counts were collected from the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM:

- Study Intersection 1: Lee Highway (US 211/US 29 BUS) at Broadview Avenue (US 17 BUS)
- Study Intersection 2: Lee Highway (US 211/US 29 BUS) at Warrenton Village / Chick-fil-a Driveway
- Study Intersection 3: Lee Highway (US 211/US 29 BUS) at Branch Drive
- Study Intersection 4: Branch Drive at Warrenton Village / Safeway
- Study Intersection 5: Branch Drive at Oak Springs Drive
- Study Intersection 6: Oak Springs Drive at Hastings Lane
- Study Intersection 7: Oak Springs Drive at Highland School Entrance
- Study Intersection 8: Broadview Avenue at Oak Springs Drive
- Study Intersection 9: Broadview Avenue at Warrenton Village North
- Study Intersection 10: Broadview Avenue at Warrenton Village South

- From the turning movement counts, the following system peak hours were determined.
  - AM Peak Hour: 7:30 AM to 8:30 AM
  - PM Peak Hour: 4:00 PM to 5:00 PM

The 2023 existing road network configuration is presented in **Figure 7**. The existing AM and PM peak hour traffic volumes for the existing study intersections are shown in **Figure 8**. The ADT volumes, depicted in **Figure 8** and in subsequent volume graphics, were calculated based on VDOT published k-factors from 2021, if available, or assumed k-factors per approach of 0.10 and the PM peak hour volumes. The raw existing traffic count data is provided in Appendix C.

In addition to turning movement volumes, pedestrians crossing data was collected at all study intersections. The peak hour pedestrian crossing data is presented in **Figure 9**.

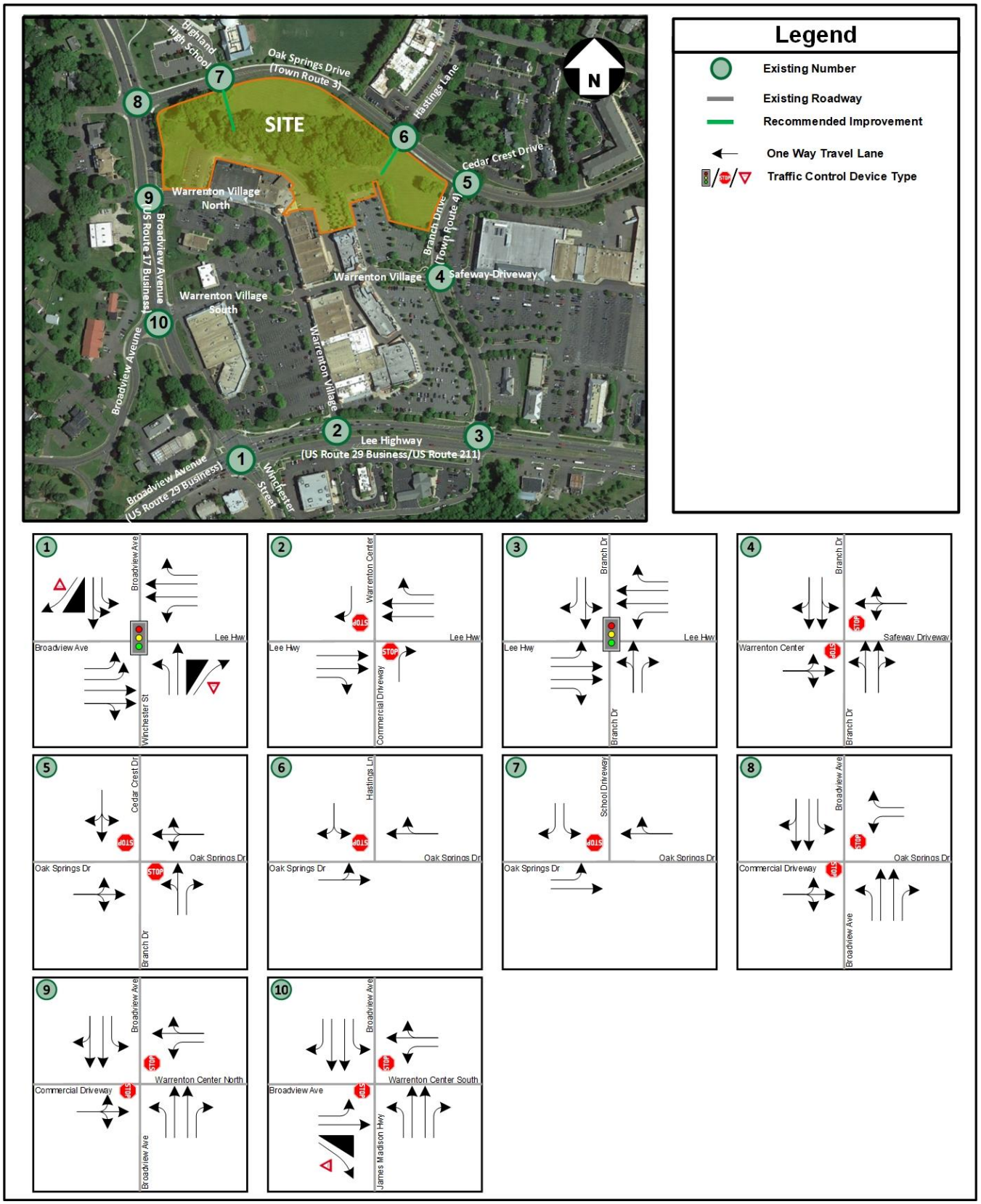


Figure 7: 2023 Existing Conditions – Roadway Network Geometric Configuration and Traffic Control Devices

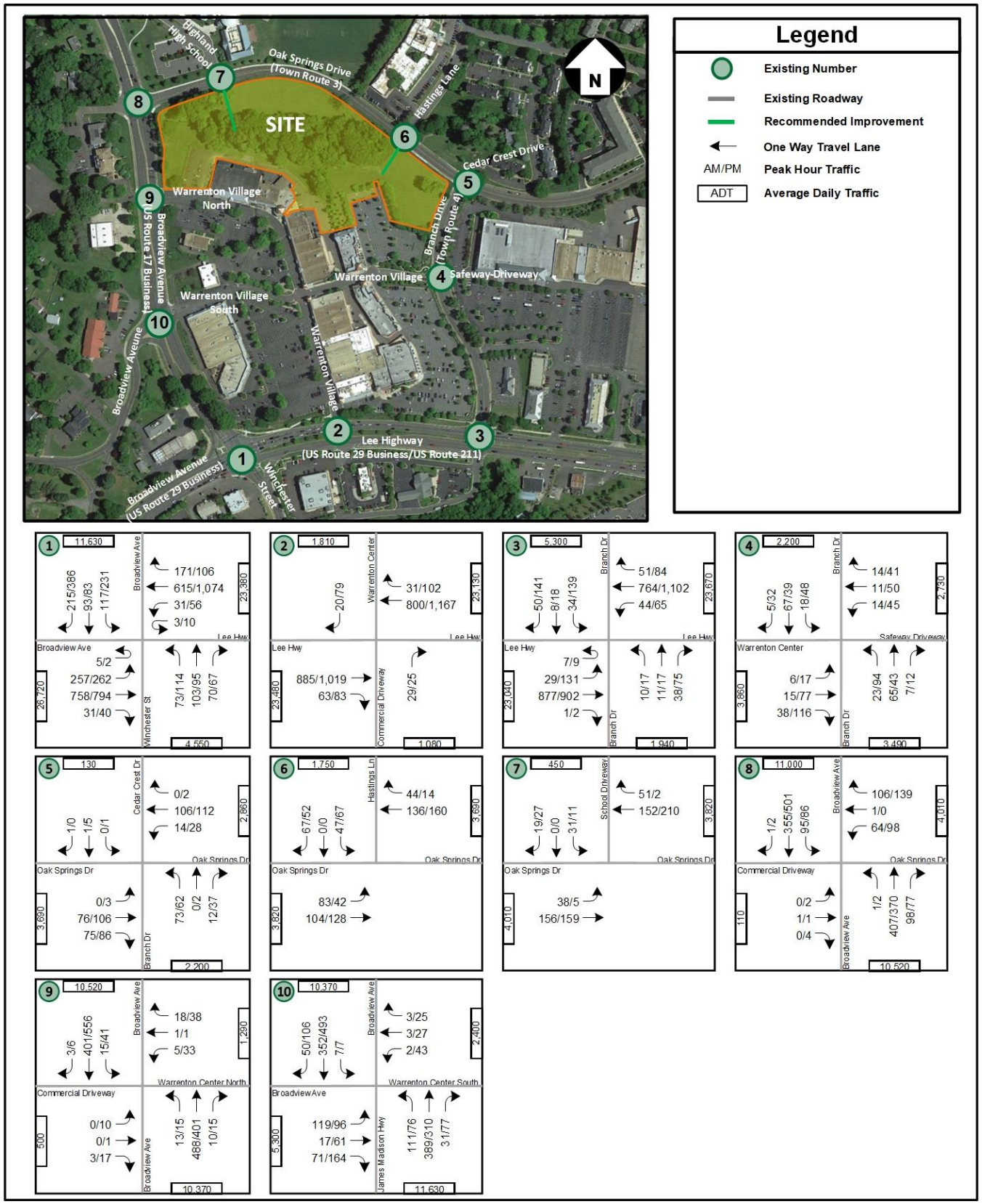


Figure 8: 2023 Existing Conditions – Vehicular Traffic Volumes

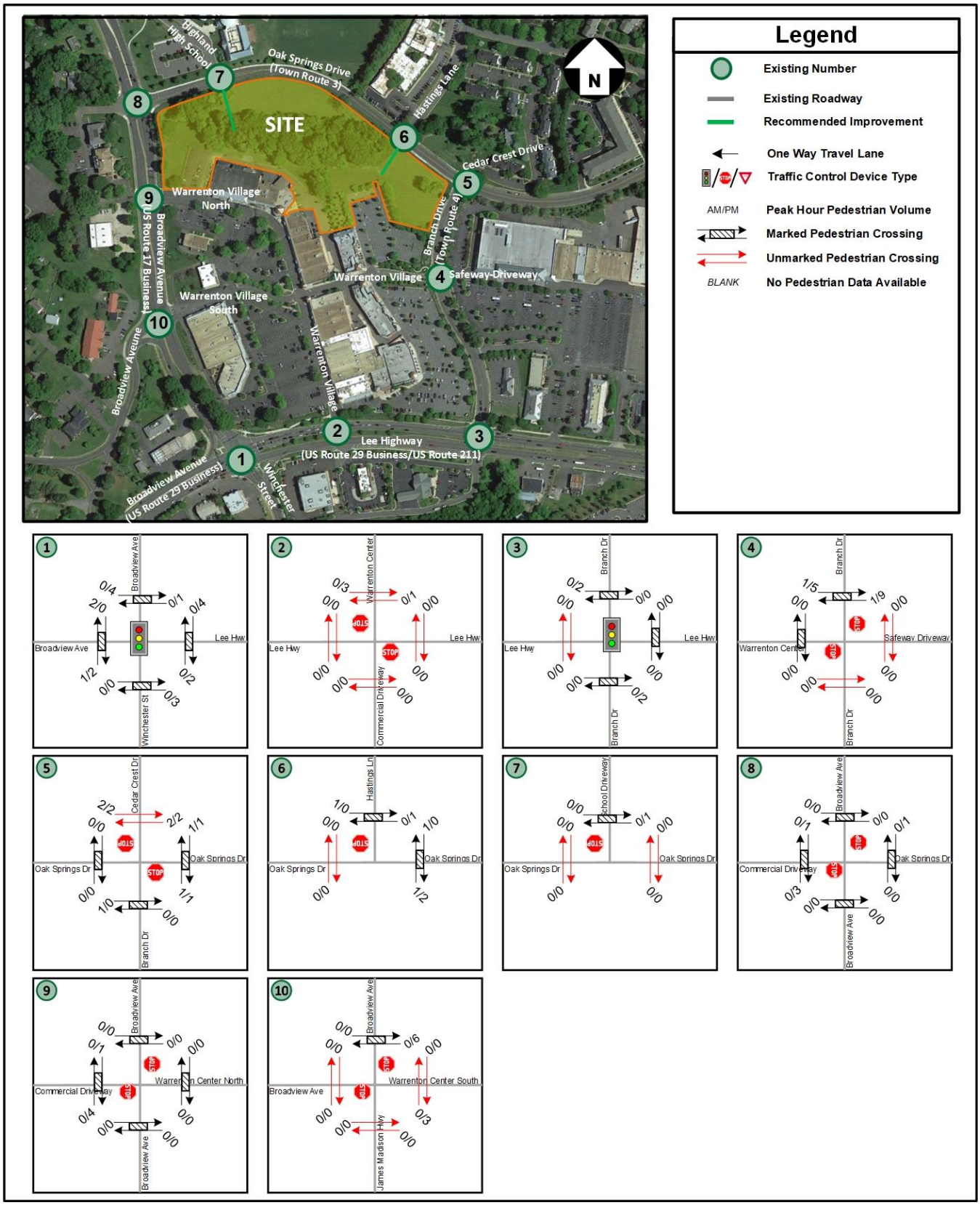


Figure 9: 2023 Existing Conditions – Pedestrian Volumes

Existing Intersection Capacity and Queueing Analysis

Intersection capacity and queuing analyses were performed for the 2023 Existing Conditions scenario at the study area intersections during AM and PM peak hours, in accordance with VDOT's *TOSAM* (version 2) guidelines. *Synchro,* version 11, was used to analyze the study intersections with results based on the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) 6th edition methodology[1] and include level of service (LOS), delay, and queue length comparisons for the turning movements analyzed. Lane configurations at study intersections along the road network were field-verified, and the existing traffic volumes discussed in the aforementioned section as well as other relevant data were entered into the analysis models.

Signal timings were obtained from VDOT and were utilized as a 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) utilized in the analysis of existing conditions were based on the 2023 existing volumes and were modeled in the *Synchro* network on a by-intersection basis. PHF in the range of 0.85 to 1.00 were used for the existing scenario, as agreed to in the scoping document. The heavy vehicle percentages (HV%) utilized per movement were based on the existing traffic counts collected. Pedestrian crossing data utilized per crossing were based on the existing traffic counts collected. Based on *Synchro* guidance and pedestrian count data, all pedestrian calls at both signalized intersections were set to five calls per hour. Note that for analysis purposes, all turning movement counts were coded with a minimum volume of one vehicle in *Synchro*.

Per the scoping meeting with VDOT and Town staff, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM methodology. The results of the intersection capacity and queuing analyses from *Synchro* are presented in **Table 4** and graphically in **Figure 10**. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized/all-way stop control intersections and per approach and lane group for all study intersections. Any overall signalized intersection or approach that operates at LOS E or F is displayed in red.

The queue lengths were reported as the 95th percentile queues 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 D. The signal timing data provided by VDOT is included in Appendix E. The detailed analysis worksheets of 2023 Existing Conditions are contained in Appendix F.

[1] It should be noted that HCM 2000 methodology was used in lieu of HCM 6th if the HCM 6th methodology was not applicable. HCM 6th could not be applicable in such cases as nonstandard National Electrical Manufacturers Association (NEMA) configurations, shared lane configurations, placement of loop detectors, U-turns, etc.

Table 4: 2023 Existing Conditions – Intersection Capacity Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue [2]
			Synchro			Synchro		
1	**Broadview Ave (E/W) at Winchester St (N/S)**							
	Overall Intersection (Signalized)		**D**	**36.4**		**D**	**39.4**	
	Eastbound Approach		***C***	***34.2***		***D***	***40.6***	
	Eastbound Left	250	E	64.9	186	E	72.0	193
	Eastbound Thru/Right		C	24.0	428	C	30.6	428
	Westbound Approach		***C***	***25.5***		***C***	***25.9***	
	Westbound Left	130	F	89.7	78	F	93.8	m119
	Westbound Thru		B	19.8	143	C	22.7	192
	Westbound Right	200	C	33.6	46	B	16.8	m15
	Northbound Approach		***E***	***60.3***		***E***	***66.6***	
	Northbound Left	250	E	61.7	126	E	74.8	188
	Northbound Thru		E	66.5	166	E	67.3	160
	Northbound Right	125	D	49.9	0	D	51.7	17
	Southbound Approach		***D***	***49.2***		***D***	***50.9***	
	Southbound Left	215	E	63.1	167	E	59.2	251
	Southbound Left/Thru		E	62.0	171	E	59.0	257
	Southbound Right		D	36.1	95	D	44.2	417
2	**Broadview Ave (E/W) at Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy (N/S)**							
	Overall Intersection (TWSC)							
	Northbound Approach		***B***	***12.6***		***B***	***13.4***	
	Northbound Right		B	12.6	5	B	13.4	5
	Southbound Approach		***B***	***10.7***		***B***	***13.3***	
	Southbound Right		B	10.7	3	B	13.3	15
3	**Broadview Ave (E/W) at Branch Dr (N/S)**							
	Overall Intersection (Signalized)		**B**	**16.2**		**C**	**31.6**	
	Eastbound Approach		***A***	***9.0***		***C***	***20.9***	
	Eastbound Left	240	F	81.5	m80	F	80.8	225
	Eastbound Thru		A	6.0	133	B	11.6	226
	Eastbound Right	330	A	9.9	m0	B	13.4	m0
	Westbound Approach		***B***	***15.8***		***C***	***28.5***	
	Westbound Left	150	E	67.4	88	E	78.5	123
	Westbound Thru		B	13.2	394	C	26.4	610
	Westbound Right	150	A	9.8	0	B	17.3	0
	Northbound Approach		***E***	***60.3***		***E***	***67.0***	
	Northbound Left/Thru		E	61.0	43	E	68.6	73
	Northbound Right	60	E	59.9	0	E	66.2	0
	Southbound Approach		***E***	***64.7***		***E***	***69.4***	
	Southbound Left/Thru		E	67.2	86	E	78.8	249
	Southbound Right		E	62.7	0	E	59.0	53
4	**Warrenton Village Center Dwy/Shopping Center Dwy (E/W) at Branch Dr (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***A***	***9.4***		***B***	***11.8***	
	Eastbound Left/Thru/Right		A	9.4	8	B	11.8	30
	Westbound Approach		***B***	***10.1***		***B***	***14.2***	
	Westbound Left/Thru/Right		B	10.1	5	B	14.2	28
	Northbound Approach							
	Northbound Left		A	7.4	3	A	7.5	5
	Southbound Approach							
	Southbound Left		A	7.4	0	A	7.4	3
5	**Oak Springs Dr (E/W) at Branch Dr (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left		A	7.5	0	A	7.5	0
	Westbound Approach							
	Westbound Left		A	7.7	0	A	7.7	3
	Northbound Approach		***B***	***11.2***		***B***	***11.4***	
	Northbound Left/Thru		B	11.6	13	B	12.6	13
	Northbound Right		A	9.0	0	A	9.4	5
	Southbound Approach		***B***	***10.0***		***B***	***10.9***	
	Southbound Left/Thru/Right		B	10.0	0	B	10.9	0

Table 4 (Continued): 2023 Existing Conditions – Intersection Capacity Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue [2]
			Synchro			Synchro		
6	**Oak Springs Dr (E/W) at Hastings Ln / Future Access (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left		A	7.9	5	A	7.7	3
	Southbound Approach		***B***	***11.5***		***B***	***11.3***	
	Southbound Left/Thru/Right		B	11.5	18	B	11.3	18
7	**Oak Springs Dr (E/W) at Highland School Dwy / Future Garage Access (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left	75	A	7.8	3	A	7.7	0
	Southbound Approach		***B***	***11.2***		***B***	***10.2***	
	Southbound Left/Thru		B	12.3	5	B	11.5	3
	Southbound Right		A	9.4	3	A	9.7	3
8	**Oak Springs Dr (E/W) at Broadview Ave (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***D***	***25.2***		***C***	***16.8***	
	Eastbound Left/Thru/Right		D	25.2	0	C	16.8	3
	Westbound Approach		***C***	***23.0***		***D***	***27.5***	
	Westbound Left/Thru	125	E	42.8	53	F	51.1	83
	Westbound Right		B	10.8	15	B	10.8	18
	Northbound Approach							
	Northbound Left	90	A	8.1	0	A	8.6	0
	Southbound Approach							
	Southbound Left	225	A	9.3	10	A	8.7	8
9	**Warrenton Village North Dwy (E/W) at Broadview Ave (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***A***	***9.9***		***C***	***20.3***	
	Eastbound Left/Thru/Right		A	9.9	0	C	20.3	10
	Westbound Approach		***B***	***13.8***		***C***	***18.5***	
	Westbound Left		C	22.9	3	D	27.8	18
	Westbound Thru/Right		B	11.4	3	B	10.6	5
	Northbound Approach							
	Northbound Left	150	A	8.3	0	A	8.8	3
	Southbound Approach							
	Southbound Left	110	A	8.7	3	A	8.4	3
10	**Warrenton Village South Dwy/Broadview Ave (E/W) at Broadview Ave/Winchester St (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***E***	***38.8***		***D***	***28.4***	
	Eastbound Left		F	57.3	110	F	52.1	83
	Eastbound Thru		D	29.6	10	E	36.7	40
	Eastbound Right		B	10.1	8	B	11.5	25
	Westbound Approach		***C***	***21.4***		***D***	***33.0***	
	Westbound Left		D	28.0	0	E	47.2	38
	Westbound Thru/Right		C	19.2	3	C	21.3	20
	Northbound Approach							
	Northbound Left	160	A	8.7	10	A	9.2	8
	Southbound Approach							
	Southbound Left	160	A	8.4	0	A	8.2	0

NOTES:

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

[2] m: 95th percentile volume and queues (reported from Synchro) are metered by upstream signal.

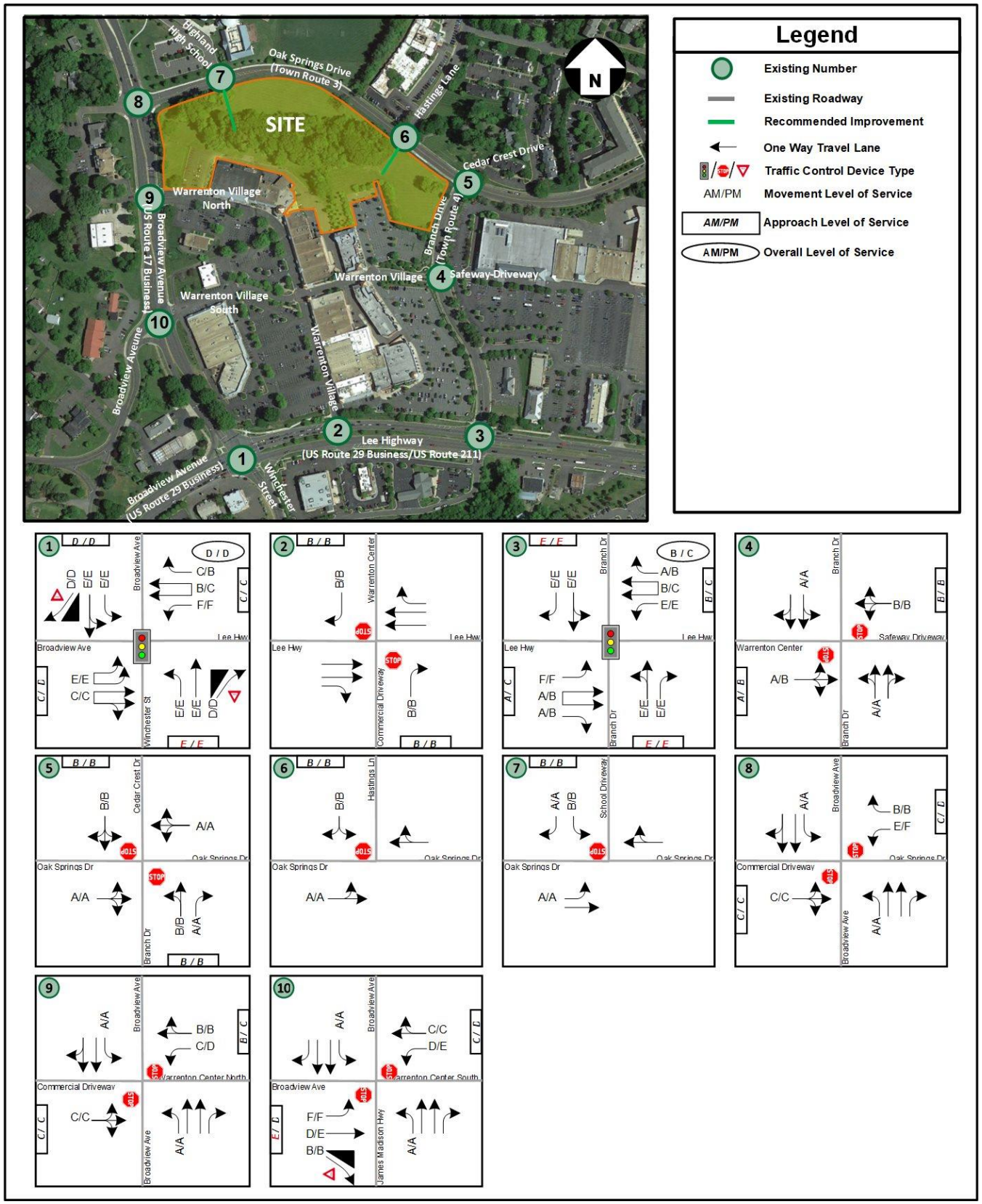


Figure 10: 2023 Existing Conditions – Level of Service Results

Based on the capacity analysis of existing conditions, the two signalized study intersections operate at overall levels of service of D or better during both the AM and PM peak hours.

Based on the capacity analysis of existing conditions, the approaches of all study intersections operate at approach levels of service of D or better during both the AM and PM peak hours, except for the following study intersections that have at least one approach that operates at levels of service E or F during at least one peak hour:

- Study Intersection 1: Lee Highway (US 211/US 29 BUS) at Broadview Avenue / Winchester Street
- Study Intersection 3: Lee Highway (US 211/US 29 BUS) at Branch Drive
- Study Intersection 10: Broadview Avenue at Warrenton Village South

Based on the queuing analysis performed for existing conditions, all turning movements at the study intersections have maximum queue lengths that are accommodated within the available storage lengths of the turn bays except for the southbound left turn movement at Study Intersection 1 (Lee Highway at Broadview Avenue / Winchester Street).

Analysis of 2027 Future Conditions Without Development

For the purposes of this study, the Development is anticipated to be constructed by 2027; this scenario analyzes the future without development conditions for the year 2027.

Future without Development Traffic Volumes

The derivation of future without development traffic volumes was based on assumptions and parameters discussed with VDOT and the County during the scoping process for this study. 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 any anticipated roadway improvements.

Inherent Regional Growth

The Development is anticipated to be complete in 2027. In order to account for increased demand on the traffic network between 2023 and 2027, 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.

To account for 2027 future conditions, an inherent growth rate of 1.0%, (compounded annually) over a four-year period, between 2023 to 2027 (and totaling 4.06% growth of the existing volumes) was applied to the Lee Highway mainline through movements at the intersection of Lee Highway at Broadview Avenue / Winchester Street. The growth volumes were balanced along the road network by increasing the mainline through movements at subsequent study intersections along the road network where applicable.

The inherent regional growth volumes (for the period between 2023 and 2027) are illustrated in **Figure 11.**

Potential Background Development(s)

In addition to the applied inherent regional growth reflecting increased regional traffic demand, a total of two “background” developments within the vicinity of the Site, with their locations depicted in **Figure 12**, were identified in the meeting with VDOT and Town staff for inclusion in this study. The background developments included are as follows:

1. Waterloo Junction
    - Located in the southeast quadrant of Bear Wallow Road and Norfolk Drive, the Waterloo Junction development is anticipated to include 47 townhomes, 6 apartments, and 3,600 square feet of retail space.
2. Patrick Ryan Way Homes
    - Located along Winchester Street at Patrick Ryan Way, this development is expected to consist of 60 single family homes. This development was partially built out at the time the turning movement counts were collected. For the purposes of this study, it was assumed that 40 of the 60 homes are built and occupied.

The assignment of the total combined background trips to the road network is depicted in **Figure 13**. Additional information, including the trips generated and the assignment of trips for each individual background development are included in Appendix G.

Potential Roadway Improvement(s)

As discussed during the scoping meeting, there is one roadway improvement within the vicinity of the site that is either fully funded or would be completely constructed by 2027.

- Smartscale project to construct a roundabout at the intersection of Lee Highway at Winchester Street / Broadview Avenue (Study Intersection 1)

There is one roadway improvement within the vicinity of the site that was previously identified for construction but was not selected for funding and therefore not included in the analysis:

- Smartscale project to construct a six-leg roundabout at the intersection of Broadview Avenue at Warrenton Village South (Study Intersection 10)

Relevant Smartscale excerpts and information are included in Appendix G.

The anticipated 2027 future road network (without the development) is illustrated in **Figure 14.**

Future without Development Traffic Volumes

In order to forecast future roadway traffic volumes for the year 2027, the 2023 existing traffic volumes were combined with the inherent regional growth traffic volumes and the combined background development trips. The 2027 future conditions without Development traffic volumes are illustrated in **Figure 15**.

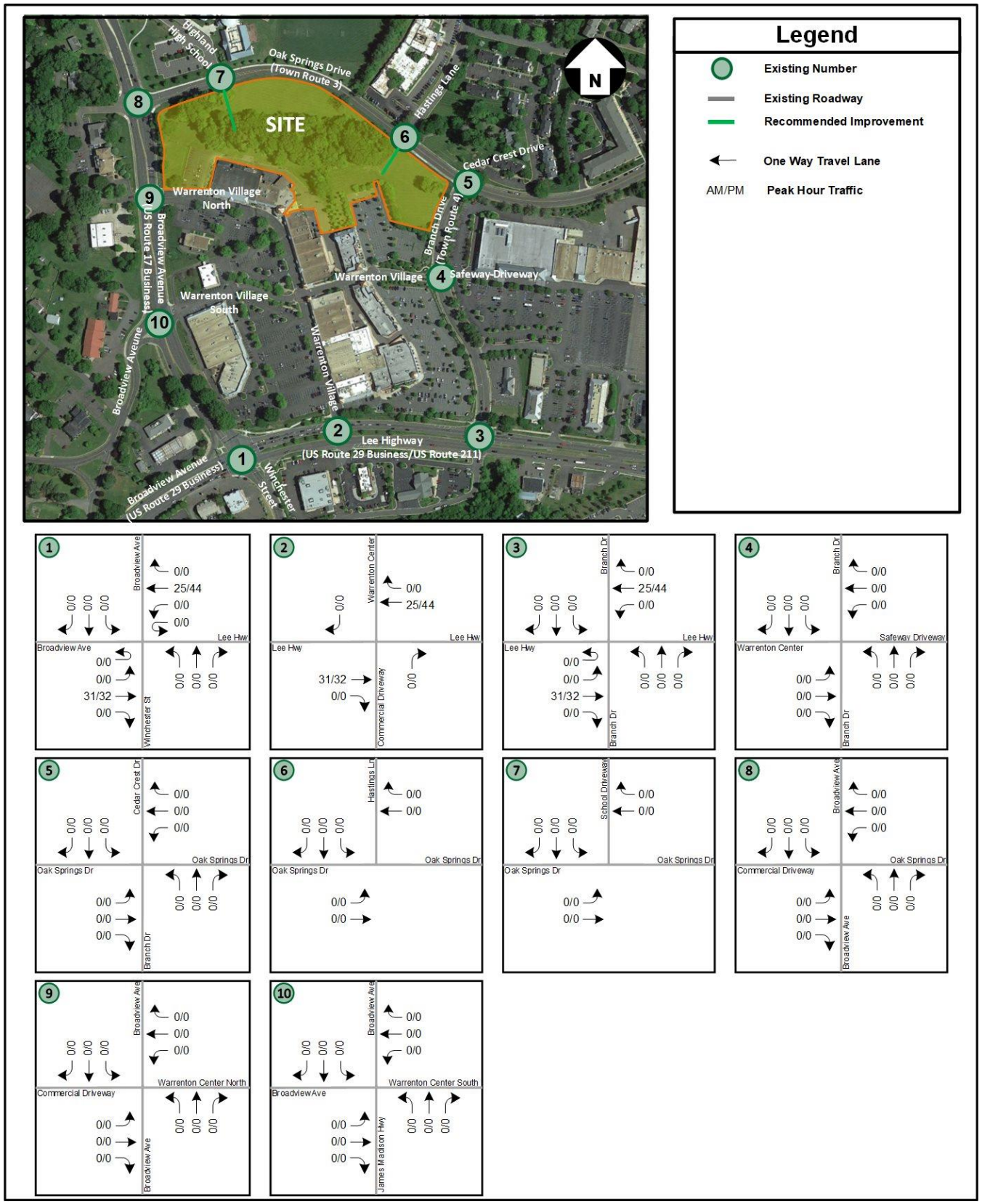


Figure 11: Projected Inherent Regional Growth Traffic Volumes (2023 to 2027)

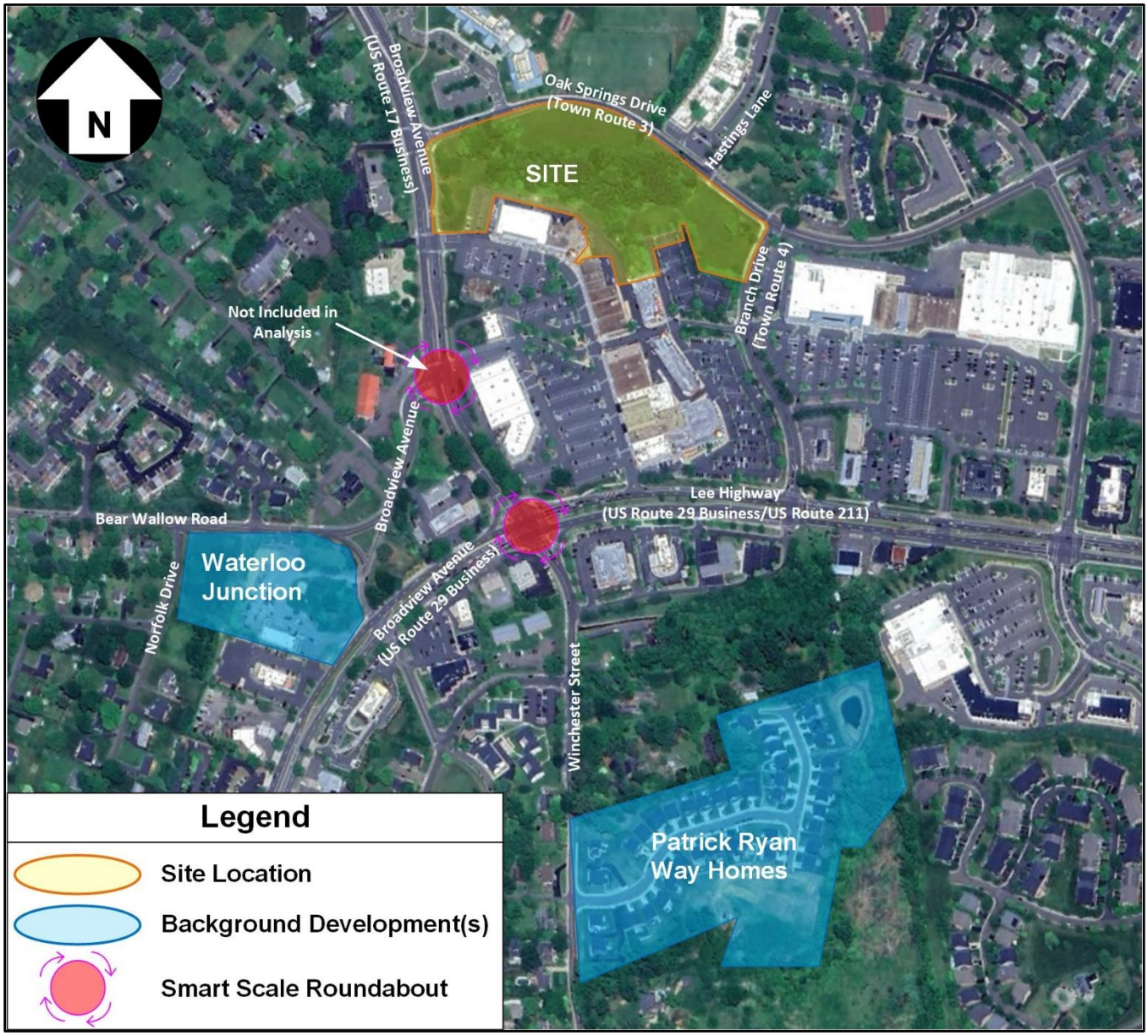


Figure 12: Background Development and Roadway Improvement Map

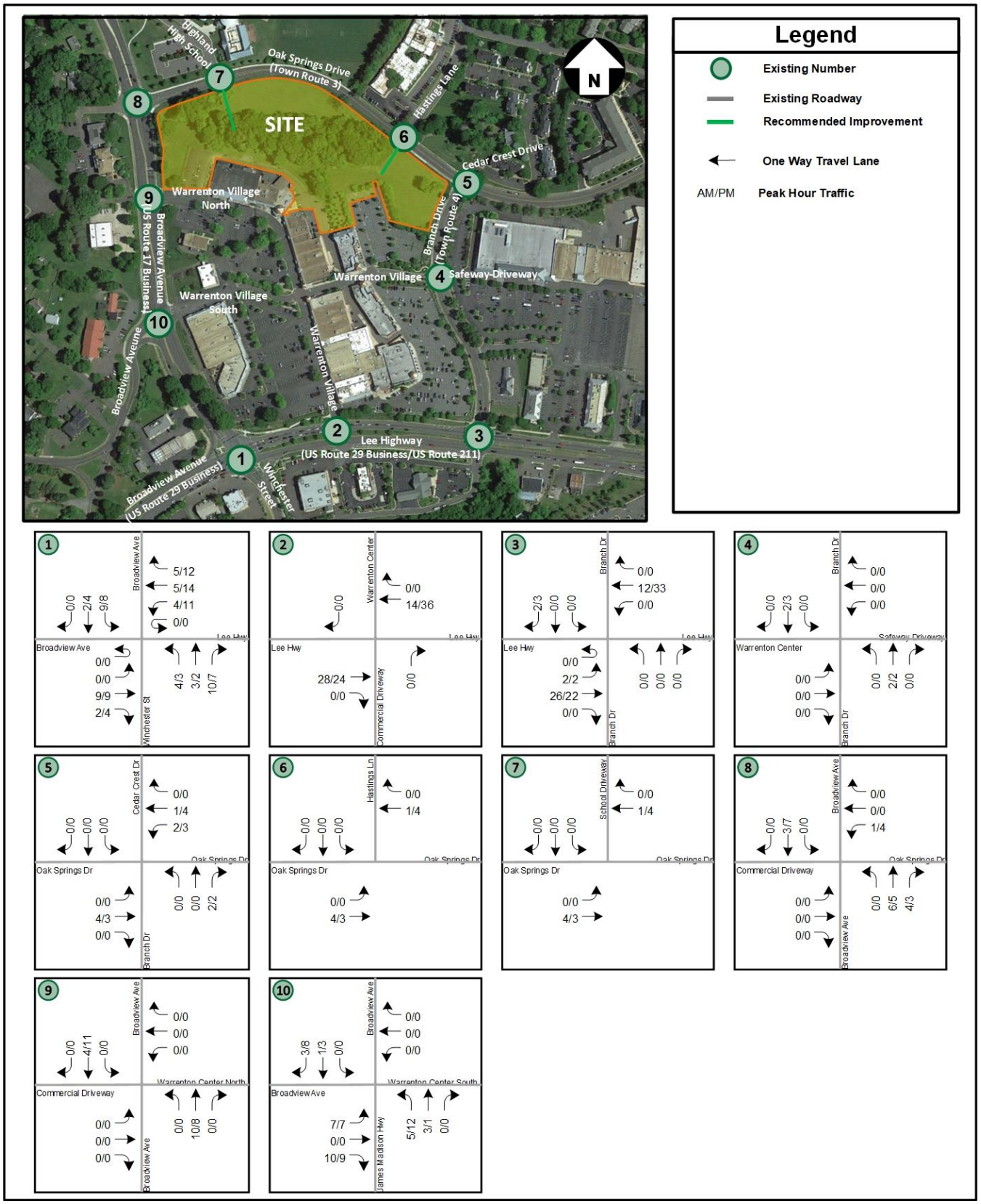


Figure 13: Total Combined Background Development Trips

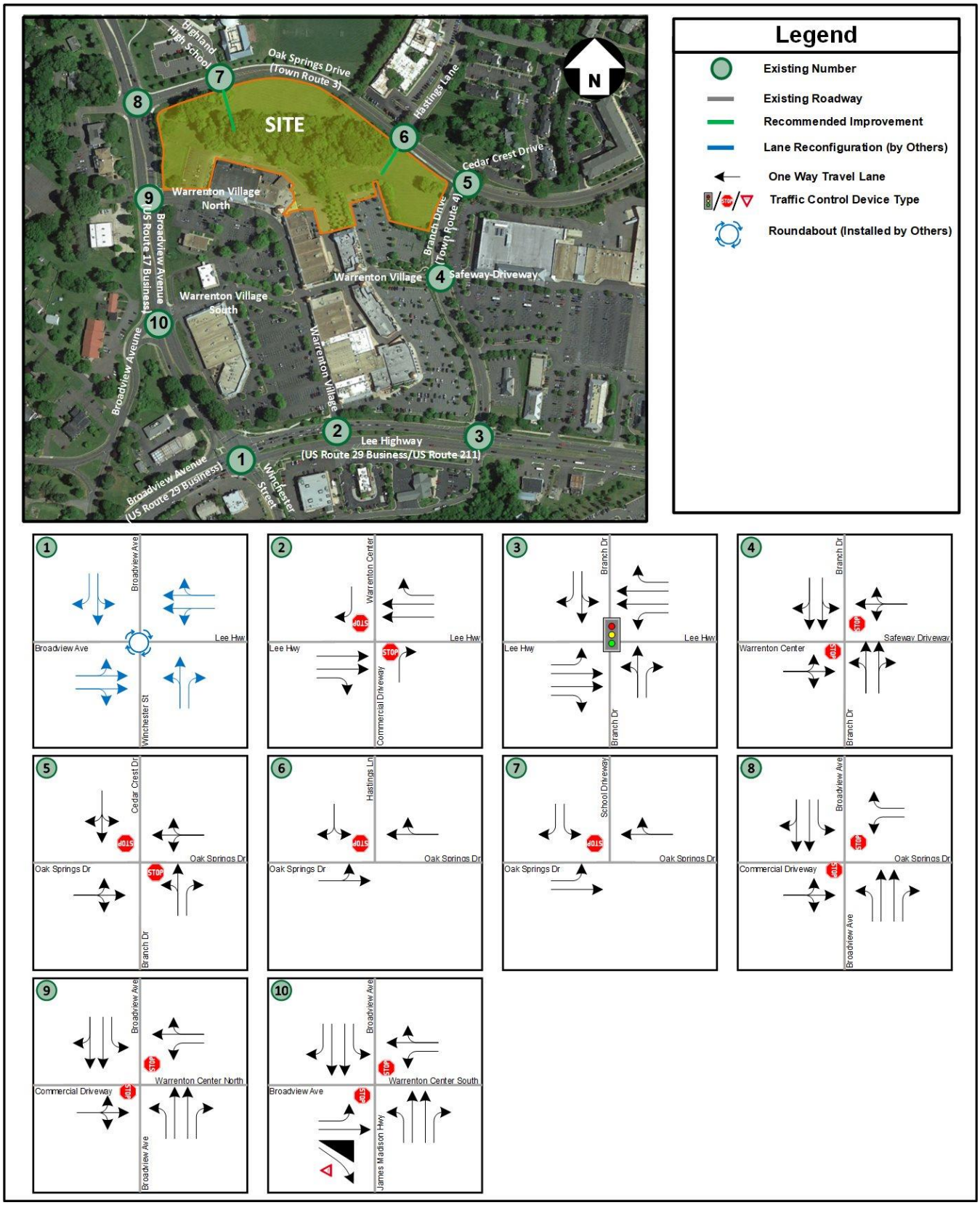


Figure 14: 2027 Future Conditions without Development – Roadway Network Geometric Configuration and Traffic Control Devices

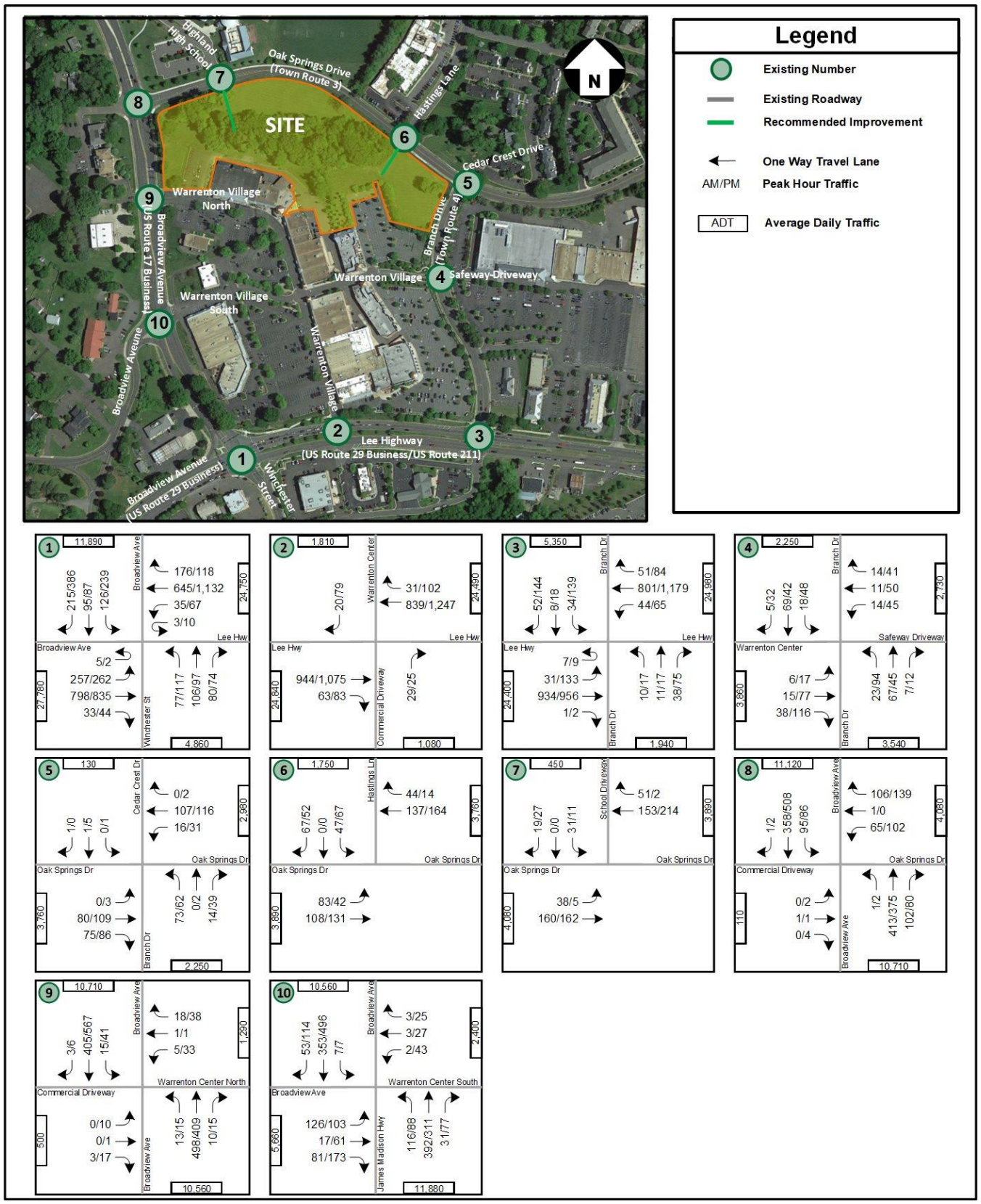


Figure 15: 2027 Future Conditions without Development – Vehicular Traffic Volumes

Future without Development Intersection Capacity and Queuing Analysis

Intersection capacity and queueing analyses were performed for the 2027 Future Conditions without Development scenario at the study area intersections during the AM and PM peak hours, in accordance with VDOT's *TOSAM* (version 2) guidelines. *Synchro,* version 11, was used to analyze the study intersections with results based on TRB's HCM 6th methodology and include LOS, delay, and queue length comparisons for the turning movements analyzed. The roundabout was analyzed using *Sidra*, version 9.

For the purposes of this analysis, the intersection PHF utilized in the analysis of future conditions was determined based on the existing traffic counts, with a minimum of 0.92 as agreed to in the scoping document. The HV% were based on the existing conditions scenario. Note that for analysis purposes, all turning movement counts were coded with a minimum volume of one vehicle in *Synchro*.

Per the scoping meeting with VDOT and County staff, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM methodology. The results of the intersection capacity and queuing analyses from *Synchro* are presented in **Table 5** and graphically in **Figure 16.** 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. Any overall signalized intersection or approach that operates at LOS E or F is displayed in red.

The queue lengths were reported as the 95th percentile queues 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 detailed analysis worksheets of the 2027 Future Conditions without Development are contained in Appendix H.

Table 5: 2027 Future Conditions without Development – Intersection Capacity Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue
			Synchro			Synchro		
1	**Broadview Ave (E/W) at Winchester St (N/S)**							
	Overall Intersection (Roundabout)		**A**	**8.1**		**B**	**17.6**	
	Eastbound Approach		***A***	***7.6***		***B***	***11.1***	
	Eastbound Left/Thru		A	8.0	80	B	11.9	158
	Eastbound Thru/Right		A	7.2	83	B	10.4	158
	Westbound Approach		***A***	***7.6***		***B***	***15.0***	
	Westbound Left/Thru		A	8.0	78	B	16.2	252
	Westbound Thru/Right		A	7.2	81	B	14.0	268
	Northbound Approach		***A***	***9.5***		***B***	***12.4***	
	Northbound Left/Thru		A	9.2	36	B	12.2	56
	Northbound Right		B	10.2	19	B	13.0	22
	Southbound Approach		***A***	***9.1***		***C***	***34.7***	
	Southbound Left/Thru		A	8.6	39	D	35.1	161
	Southbound Right		A	9.7	43	C	34.4	191
2	**Broadview Ave (E/W) at Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy (N/S)**							
	Overall Intersection (TWSC)							
	Northbound Approach		***B***	***13.0***		***B***	***13.9***	
	Northbound Right		B	13.0	5	B	13.9	5
	Southbound Approach		***B***	***10.8***		***B***	***13.9***	
	Southbound Right		B	10.8	3	B	13.9	15
3	**Broadview Ave (E/W) at Branch Dr (N/S)**							
	Overall Intersection (Signalized)		**B**	**19.7**		**C**	**34.0**	
	Eastbound Approach		***B***	***16.4***		***C***	***26.4***	
	Eastbound Left	240	E	67.0	80	E	75.4	224
	Eastbound Thru		B	14.3	485	B	19.1	441
	Eastbound Right	330	A	9.7	0	B	13.4	0
	Westbound Approach		***B***	***15.7***		***C***	***29.6***	
	Westbound Left	150	E	67.4	88	E	78.5	123
	Westbound Thru		B	13.3	400	C	27.8	675
	Westbound Right	150	A	9.7	0	B	17.3	0
	Northbound Approach		***E***	***60.8***		***E***	***67.0***	
	Northbound Left/Thru		E	61.5	44	E	68.6	73
	Northbound Right	60	E	60.4	0	E	66.2	0
	Southbound Approach		***E***	***64.7***		***E***	***69.3***	
	Southbound Left/Thru		E	67.2	86	E	78.8	249
	Southbound Right		E	62.7	0	E	59.1	58
4	**Warrenton Village Center Dwy/Shopping Center Dwy (E/W) at Branch Dr (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***A***	***9.3***		***B***	***11.8***	
	Eastbound Left/Thru/Right		A	9.3	5	B	11.8	30
	Westbound Approach		***B***	***10.0***		***B***	***14.3***	
	Westbound Left/Thru/Right		B	10.0	5	B	14.3	28
	Northbound Approach							
	Northbound Left		A	7.4	3	A	7.5	5
	Southbound Approach							
	Southbound Left		A	7.4	0	A	7.4	3
5	**Oak Springs Dr (E/W) at Branch Dr (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left		A	7.4	0	A	7.5	0
	Westbound Approach							
	Westbound Left		A	7.6	0	A	7.7	3
	Northbound Approach		***B***	***11.0***		***B***	***11.4***	
	Northbound Left/Thru		B	11.4	10	B	12.6	10
	Northbound Right		A	9.0	3	A	9.4	5
	Southbound Approach		***A***	***9.9***		***B***	***11.0***	
	Southbound Left/Thru/Right		A	9.9	0	B	11.0	0

Table 5 (Continued): 2027 Future Conditions without Development – Intersection Capacity Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.)	LOS	Delay (sec/veh)	95th % Queue
			Synchro			Synchro		
6	**Oak Springs Dr (E/W) at Hastings Ln / Future Access (N/S)** **Overall Intersection (TWSC)**							
	Eastbound Approach							
	Eastbound Left		A	7.9	5	A	7.7	3
	Southbound Approach		***B***	***11.1***		***B***	***11.0***	
	Southbound Left/Right		B	11.1	15	B	11.0	15
7	**Oak Springs Dr (E/W) at Highland School Dwy / Future Garage Access (N/S)** **Overall Intersection (TWSC)**							
	Eastbound Approach							
	Eastbound Left	75	A	7.7	3	A	7.7	0
	Southbound Approach		***B***	***10.9***		***B***	***10.1***	
	Southbound Left		B	11.9	5	B	11.2	3
	Southbound Right		A	9.3	3	A	9.6	3
8	**Oak Springs Dr (E/W) at Broadview Ave (N/S)** **Overall Intersection (TWSC)**							
	Eastbound Approach		***C***	***17.8***		***C***	***16.6***	
	Eastbound Left/Thru/Right		C	17.8	0	C	16.6	3
	Westbound Approach		***C***	***19.7***		***D***	***27.9***	
	Westbound Left/Thru	125	D	34.3	40	F	51.0	85
	Westbound Right		B	10.6	13	B	10.7	18
	Northbound Approach							
	Northbound Left	90	A	8.1	0	A	8.5	0
	Southbound Approach							
	Southbound Left	225	A	9.1	8	A	8.7	8
9	**Warrenton Village North Dwy (E/W) at Broadview Ave (N/S)** **Overall Intersection (TWSC)**							
	Eastbound Approach		***C***	***15.6***		***C***	***20.0***	
	Eastbound Left/Thru/Right		C	15.6	0	C	20.0	10
	Westbound Approach		***B***	***13.2***		***C***	***18.3***	
	Westbound Left		C	21.2	3	D	27.3	15
	Westbound Thru/Right		B	11.1	3	B	10.6	5
	Northbound Approach							
	Northbound Left	150	A	8.2	0	A	8.8	3
	Southbound Approach							
	Southbound Left	110	A	8.6	0	A	8.4	3
10	**Warrenton Village South Dwy/Broadview Ave (E/W) at Broadview Ave/Winchester St (N/S)** **Overall Intersection (TWSC)**							
	Eastbound Approach		***D***	***30.7***		***D***	***31.9***	
	Eastbound Left		E	44.6	90	F	62.0	98
	Eastbound Thru		D	26.5	8	E	38.5	43
	Eastbound Right		B	10.0	10	B	11.6	25
	Westbound Approach		***C***	***19.7***		***E***	***35.5***	
	Westbound Left		D	25.4	0	F	51.8	40
	Westbound Thru/Right		C	17.8	3	C	22.1	20
	Northbound Approach							
	Northbound Left	160	A	8.6	10	A	9.3	8
	Southbound Approach							
	Southbound Left	160	A	8.3	0	A	8.2	0

NOTES:

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

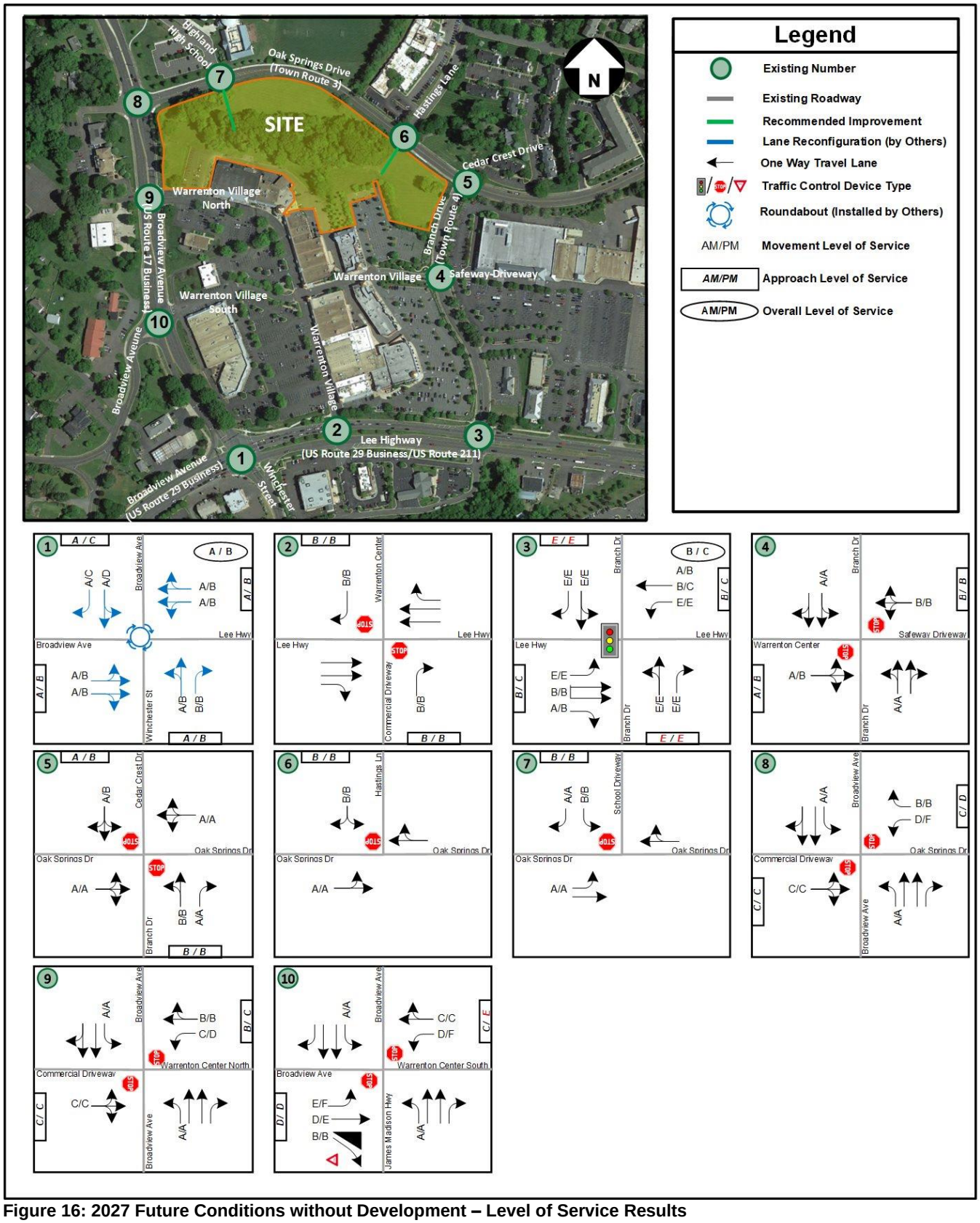


Figure 16: 2027 Future Conditions without Development – Level of Service Results

Study Intersection 1 (Lee Highway at Winchester Street / Broadview Avenue) was approved for a roundabout and received SmartScale funding. As such, this intersection was converted from a signalized intersection to a roundabout in all future conditions.

Based on the capacity analysis of 2027 Future Conditions without Development, the planned roundabout is expected to operate at overall levels of service of B or better during both the AM and PM peak hours.

Based on the capacity analysis of 2027 Future Conditions without Development, the signalized study intersection is expected to operate at overall levels of service of C or better during both the AM and PM peak hours.

Based on the capacity analysis of 2027 Future Conditions without Development, the approaches of all study intersections continue to operate at approach levels of service of D or better during both the AM and PM peak hours, except for the following study intersections that have at least one approach that would operates at level of service E of F during at least one peak hour:

- Study Intersection 3: Lee Highway (US 211/US 29 BUS) at Branch Drive
- Study Intersection 10: Broadview Avenue at Warrenton Village South

Based on the queuing analysis performed for 2027 Future Conditions without Development, all turning movements at the study intersections have maximum queue lengths that are accommodated within the available storage lengths of the turn bays.

Analysis of 2027 Future Conditions with Development

For the purposes of this study, the Development is anticipated to be constructed by 2027; this scenario analyzes the future with development conditions for the year 2027.

Site Description

The development will be situated on a single parcel of vacant land (approximately 6.46 acres) and a portion of an adjacent developed parcel of land, which can be identified on Fauquier County Tax Maps with the following GPIN #s: 6985-20-7247-000, and 6984-29-6753-000, respectively. The property is currently zoned as C (Commercial District) with a Future Land Use of Mixed Use as part of the New Town Warrenton Character District (Lee Highway Urban Development Area [UDA]).

The Applicant is proposing to apply for a Special Use Permit (SUP) in order to construct approximately 386 multifamily residential dwelling units (320 multifamily apartments, 36 2-over-2 units, and 30 townhomes) and a parking deck. The site has an anticipated build-out date of 2027.

A conceptual plan for the Site is illustrated in **Figure 17**

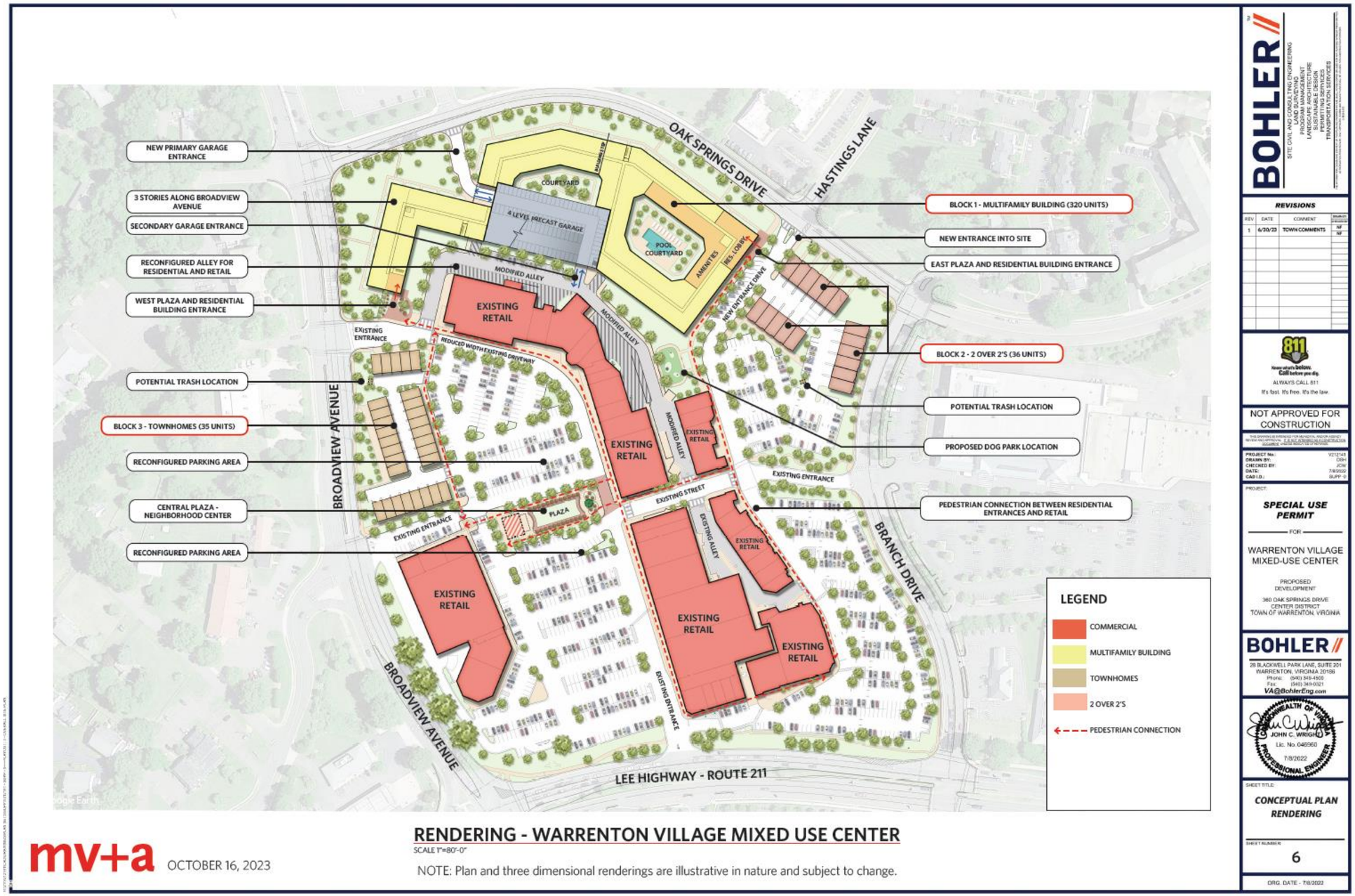


Figure 17: Conceptual Development Plan
Note: Plan provided by Bohler and is for conceptual purposes only.

Proposed Site Access

Access to the site will be provided via one full movement parking deck entry along Oak Springs Drive (Town Route 3) forming the fourth leg of the High School Driveway, one full movement driveway along Oak Springs Drive forming the fourth leg to the existing full-movement intersection of Hastings Lane, and via the existing shopping center accesses to the south.

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 AM and PM peak hours as well as the typical number of weekday daily trips. The projected trip generation for the proposed Development is depicted in **Table 6**Table 6. Of note, as agreed to in the scoping document, no internal capture or pass-by trip reductions were assumed with respect to the proposed Development, and therefore are not assumed within the table.

Table 6: Site Trip Generation (Peak Hour of the Adjacent Street; ITE 11th Ed.)

Land Use	ITE Code	Size	------ Weekday ------						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Multifamily Housing	220	386 DU	37	117	154	124	73	197	2,602

As illustrated in the table above, the Site is expected to generate approximately 154 new trips during the AM peak hour, 197 new trips during the PM peak hour, and 2,602 new daily trips on a typical weekday.

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 and trip distribution are illustrated in **Figure 18**.

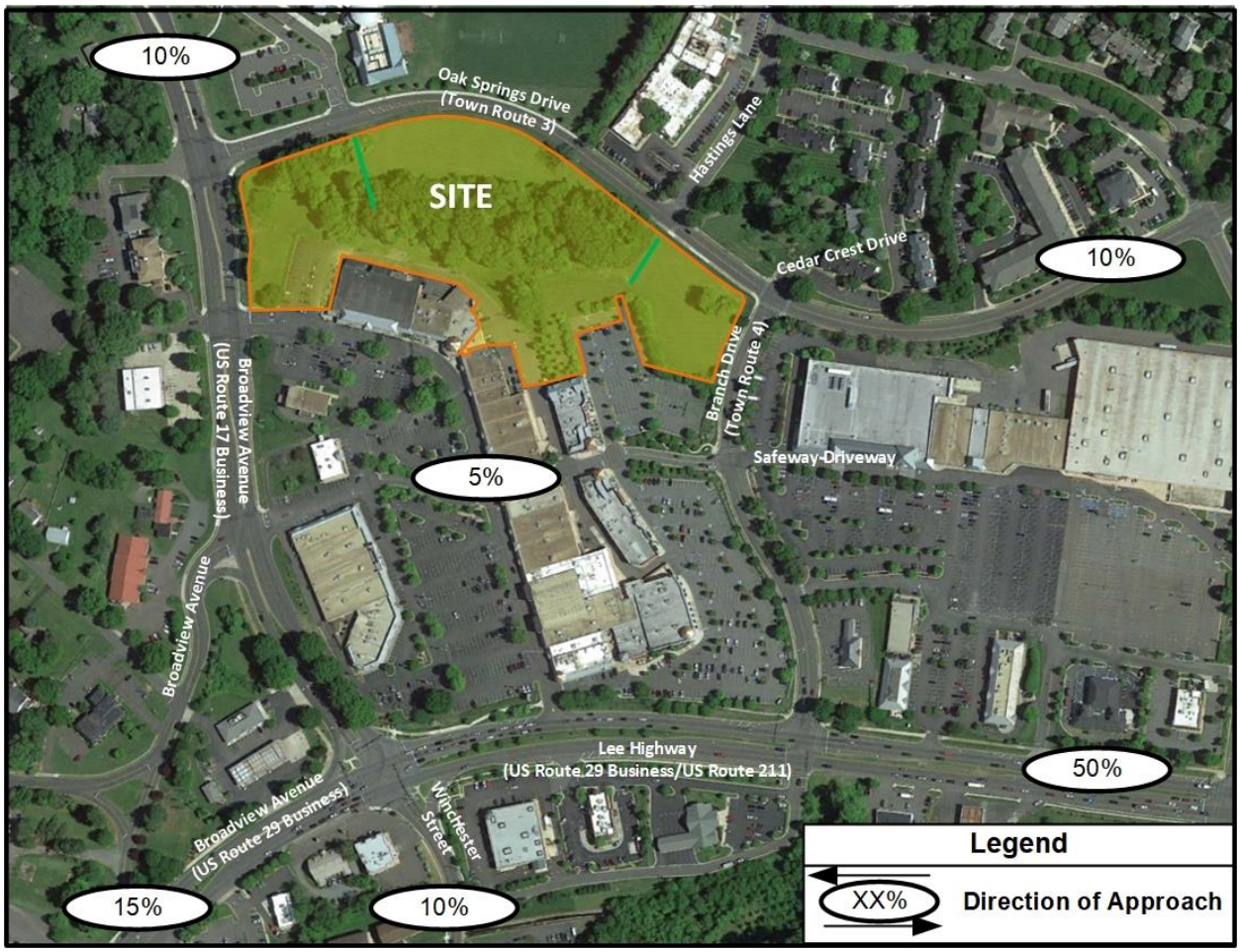


Figure 18: Global Vehicular Direction of Approach (Site Trip Distribution)

Future with Development Traffic Volumes

In order to project future traffic volumes on the roadways in the vicinity of the Development, trips generated from the Development were assigned to the road network based on the previously mentioned direction of approach. The site traffic assignment is illustrated for the AM and PM peak hours in **Figure 19.**

The future with development traffic volumes for were determined by adding the assigned site generated traffic volumes to the 2027 Future Conditions without Development traffic volumes. The 2027 Future Conditions with Development traffic volumes are depicted in **Figure 20.**

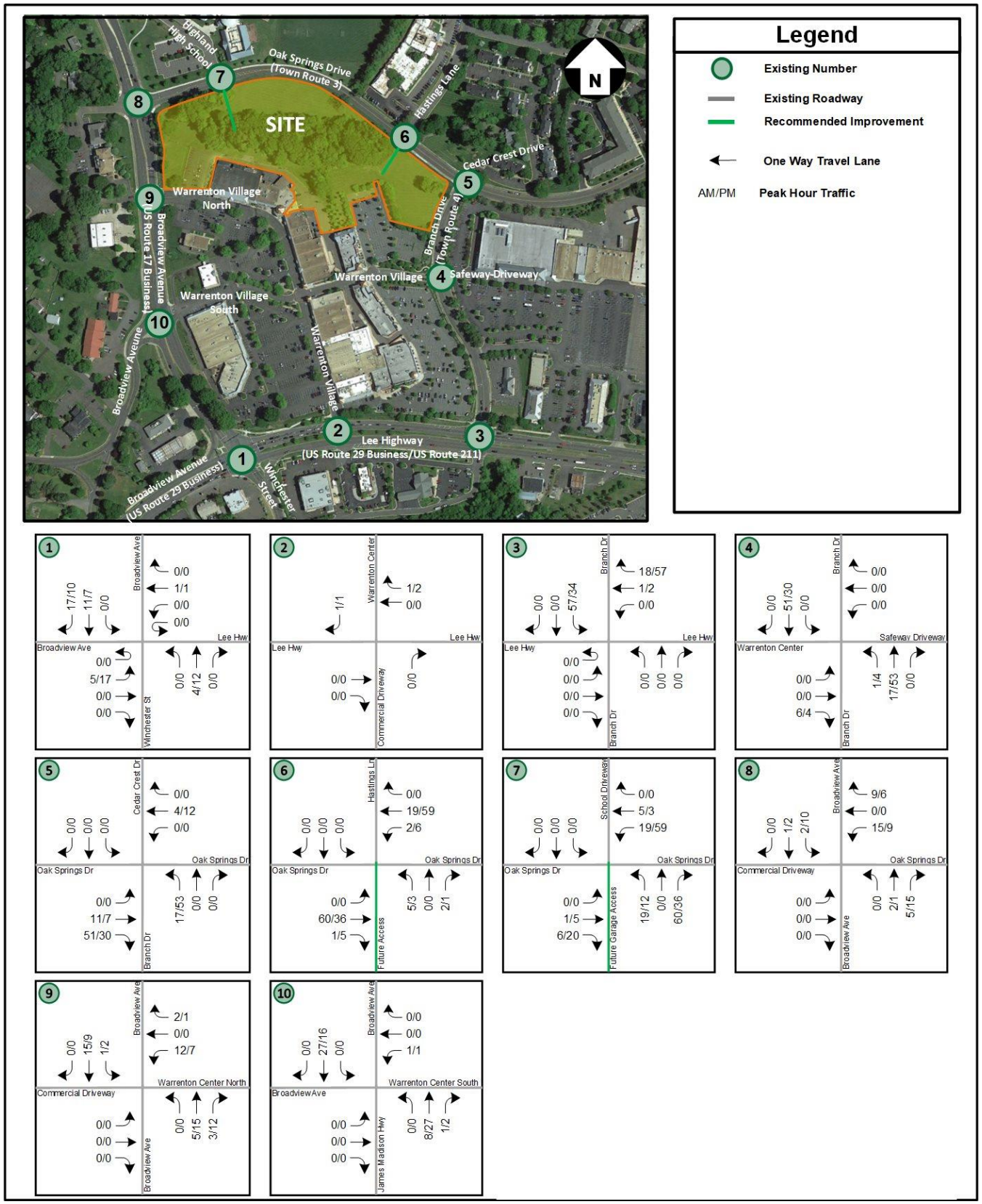


Figure 19: Site Generated Trip Assignment

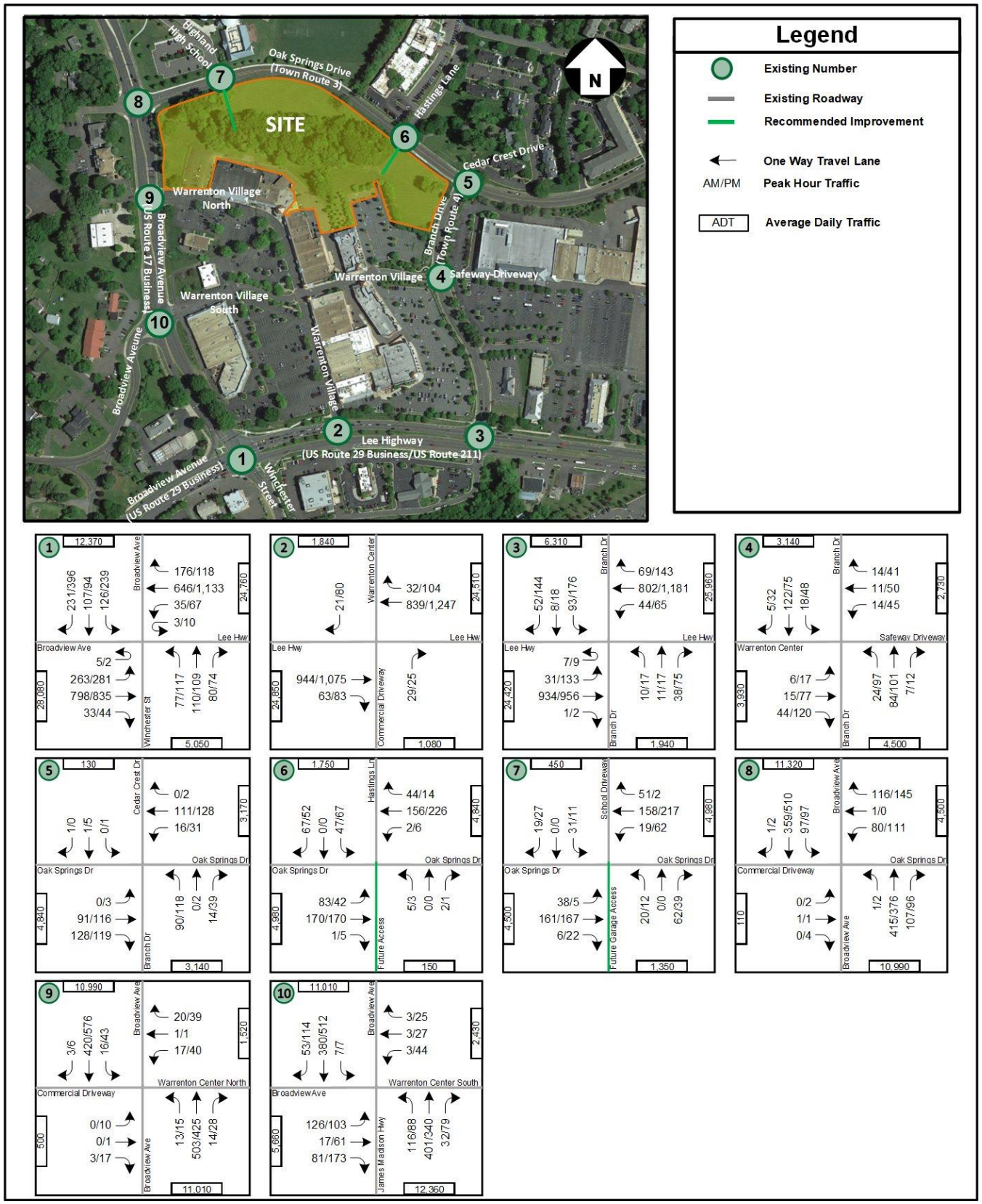


Figure 20: 2027 Future Conditions with Development

Future with Development Intersection Capacity and Queuing Analysis

Intersection capacity and queueing analyses were performed for the 2027 Future Conditions without Development scenario at the study area intersections during the AM and PM peak hours, in accordance with VDOT's *TOSAM* (version 2) guidelines. *Synchro,* version 11, was used to analyze the study intersections with results based on TRB's HCM 6th methodology and include LOS, delay, and queue length comparisons for the turning movements analyzed. Roundabouts were analyzed using *Sidra*, version 9.

For the purposes of this analysis, the intersection PHF utilized in the analysis of future conditions was determined based on the existing traffic counts, with a minimum of 0.92 as agreed to in the scoping document. The HV% were based on the existing conditions scenario, with any new approaches utilizing a default *Synchro* value of 2.0% per movement. Note that for analysis purposes, all turning movement counts were coded with a minimum volume of one vehicle in *Synchro*.

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. The results of the intersection capacity and queuing analyses from *Synchro* are presented in **Table 7** 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. The overall signalized intersections and any approaches that operate at LOS E or F are displayed in red.

The queue lengths were reported as the 95th percentile queues 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 detailed analysis worksheets of the 2027 Future Conditions with Development scenario are contained in Appendix I.

Table 7: 2027 Future Conditions without Development – Intersection Capacity Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue [2]
			Synchro			Synchro		
1	**Broadview Ave (E/W) at Winchester St (N/S)**							
	Overall Intersection (Roundabout)		**B**	**10.1**		**B**	**19.3**	
	Eastbound Approach		***A***	***9.4***		***B***	***11.5***	
	Eastbound Left/Thru		A	10.0	111	B	12.4	170
	Eastbound Thru/Right		A	8.9	116	B	10.8	172
	Westbound Approach		***B***	***10.5***		***B***	***16.3***	
	Westbound Left/Thru		A	11.4	116	B	17.7	272
	Westbound Thru/Right		B	9.8	117	B	15.3	291
	Northbound Approach		***B***	***11.9***		***B***	***13.3***	
	Northbound Left/Thru		B	11.5	47	B	13.2	62
	Northbound Right		B	12.7	23	B	13.7	23
	Southbound Approach		***B***	***10.1***		***D***	***39.6***	
	Southbound Left/Thru		A	9.5	47	D	39.5	170
	Southbound Right		B	10.8	53	D	39.7	172
2	**Broadview Ave (E/W) at Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy (N/S)**							
	Overall Intersection (TWSC)							
	Northbound Approach		***B***	***13.0***		***B***	***13.9***	
	Northbound Right		B	13.0	5	B	13.9	5
	Southbound Approach		***B***	***10.8***		***B***	***13.9***	
	Southbound Right		B	10.8	3	B	13.9	15
3	**Broadview Ave (E/W) at Branch Dr (N/S)**							
	Overall Intersection (Signalized)		**C**	**23.0**		**D**	**35.8**	
	Eastbound Approach		***B***	***19.0***		***C***	***28.1***	
	Eastbound Left	240	E	67.0	80	E	75.4	224
	Eastbound Thru		B	17.0	485	C	21.1	441
	Eastbound Right	330	B	11.6	0	B	14.7	0
	Westbound Approach		***B***	***18.0***		***C***	***31.6***	
	Westbound Left	150	E	67.4	88	E	78.5	123
	Westbound Thru		B	15.8	400	C	30.4	675
	Westbound Right	150	B	11.6	0	B	19.3	26
	Northbound Approach		***E***	***62.1***		***E***	***67.0***	
	Northbound Left/Thru		E	63.0	47	E	68.6	73
	Northbound Right	60	E	61.6	0	E	66.2	0
	Southbound Approach		***E***	***63.4***		***E***	***68.7***	
	Southbound Left/Thru		E	66.7	162	E	78.1	#338
	Southbound Right		E	57.2	0	E	56.4	58
4	**Warrenton Village Center Dwy/Shopping Center Dwy (E/W) at Branch Dr (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***A***	***9.5***		***B***	***12.5***	
	Eastbound Left/Thru/Right		A	9.5	8	B	12.5	35
	Westbound Approach		***B***	***10.4***		***C***	***16.0***	
	Westbound Left/Thru/Right		B	10.4	5	C	16.0	33
	Northbound Approach							
	Northbound Left		A	7.5	3	A	7.6	5
	Southbound Approach							
	Southbound Left		A	7.4	0	A	7.5	3
5	**Oak Springs Dr (E/W) at Branch Dr (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left		A	0.0	0	A	7.5	0
	Westbound Approach							
	Westbound Left		A	7.8	0	A	7.8	3
	Northbound Approach		***B***	***11.8***		***B***	***13.1***	
	Northbound Left/Thru		B	12.2	15	B	14.3	25
	Northbound Right		A	9.2	3	A	9.5	5
	Southbound Approach		***B***	***10.1***		***B***	***11.3***	
	Southbound Left/Thru/Right		B	10.1	0	B	11.3	0

Table 7 (Continued): 2027 Future Conditions without Development – Intersection Capacity Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue [2]
			Synchro			Synchro		
6	**Oak Springs Dr (E/W) at Hastings Ln / Future Access (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach							
	Eastbound Left		A	7.9	5	A	7.9	3
	Westbound Approach							
	Westbound Left		A	7.6	0	A	7.6	0
	Northbound Approach		***B***	***13.6***		***B***	***13.1***	
	Northbound Left/Thru/Right		B	13.6	3	B	13.1	0
	Southbound Approach		***B***	***12.1***		***B***	***12.5***	
	Southbound Left/Thru/Right		B	12.1	18	B	12.5	20
7	**Oak Springs Dr (E/W) at Highland School Dwy / Future Garage Access (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach							
	Eastbound Left	75	A	7.7	3	A	7.7	0
	Westbound Approach							
	Westbound Left		A	7.6	0	A	7.8	3
	Northbound Approach		***B***	***10.8***		***B***	***11.0***	
	Northbound Left/Thru/Right		B	10.8	10	B	11.0	8
	Southbound Approach		***B***	***12.6***		***B***	***11.1***	
	Southbound Left/Thru		B	14.6	8	B	14.7	3
	Southbound Right		A	9.4	3	A	9.6	3
8	**Oak Springs Dr (E/W) at Broadview Ave (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach		***C***	***18.1***		***C***	***17.1***	
	Eastbound Left/Thru/Right		C	18.1	0	C	17.1	3
	Westbound Approach		***C***	***22.4***		***D***	***32.9***	
	Westbound Left/Thru	125	E	39.0	55	F	61.8	103
	Westbound Right		B	10.7	15	B	10.8	20
	Northbound Approach							
	Northbound Left	90	A	8.1	0	A	8.5	0
	Southbound Approach							
	Southbound Left	225	A	9.1	10	A	8.8	8
9	**Warrenton Village North Dwy (E/W) at Broadview Ave (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach		***C***	***16.0***		***C***	***20.7***	
	Eastbound Left/Thru/Right		C	16.0	3	C	20.7	10
	Westbound Approach		***C***	***16.3***		***C***	***20.3***	
	Westbound Left		C	22.8	8	D	30.0	23
	Westbound Thru/Right		B	11.1	3	B	10.7	5
	Northbound Approach							
	Northbound Left	150	A	8.3	0	A	8.8	3
	Southbound Approach							
	Southbound Left	110	A	8.6	3	A	8.5	3
10	**Warrenton Village South Dwy/Broadview Ave (E/W) at Broadview Ave/Winchester St (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach		***D***	***34.4***		***E***	***35.6***	
	Eastbound Left		F	51.0	100	F	71.7	108
	Eastbound Thru		D	27.8	8	E	42.2	45
	Eastbound Right		B	10.1	10	B	11.7	25
	Westbound Approach		***C***	***21.2***		***E***	***40.2***	
	Westbound Left		D	26.6	3	F	60.0	45
	Westbound Thru/Right		C	18.5	3	C	23.5	20
	Northbound Approach							
	Northbound Left	160	A	8.7	10	A	9.4	8
	Southbound Approach							
	Southbound Left	160	A	8.3	0	A	8.3	0

NOTES:

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

[2] #: 95th percentile queues (reported from Synchro) exceed capacity; actual queues may be longer. Queues shown are based on the maximum after two cycles.

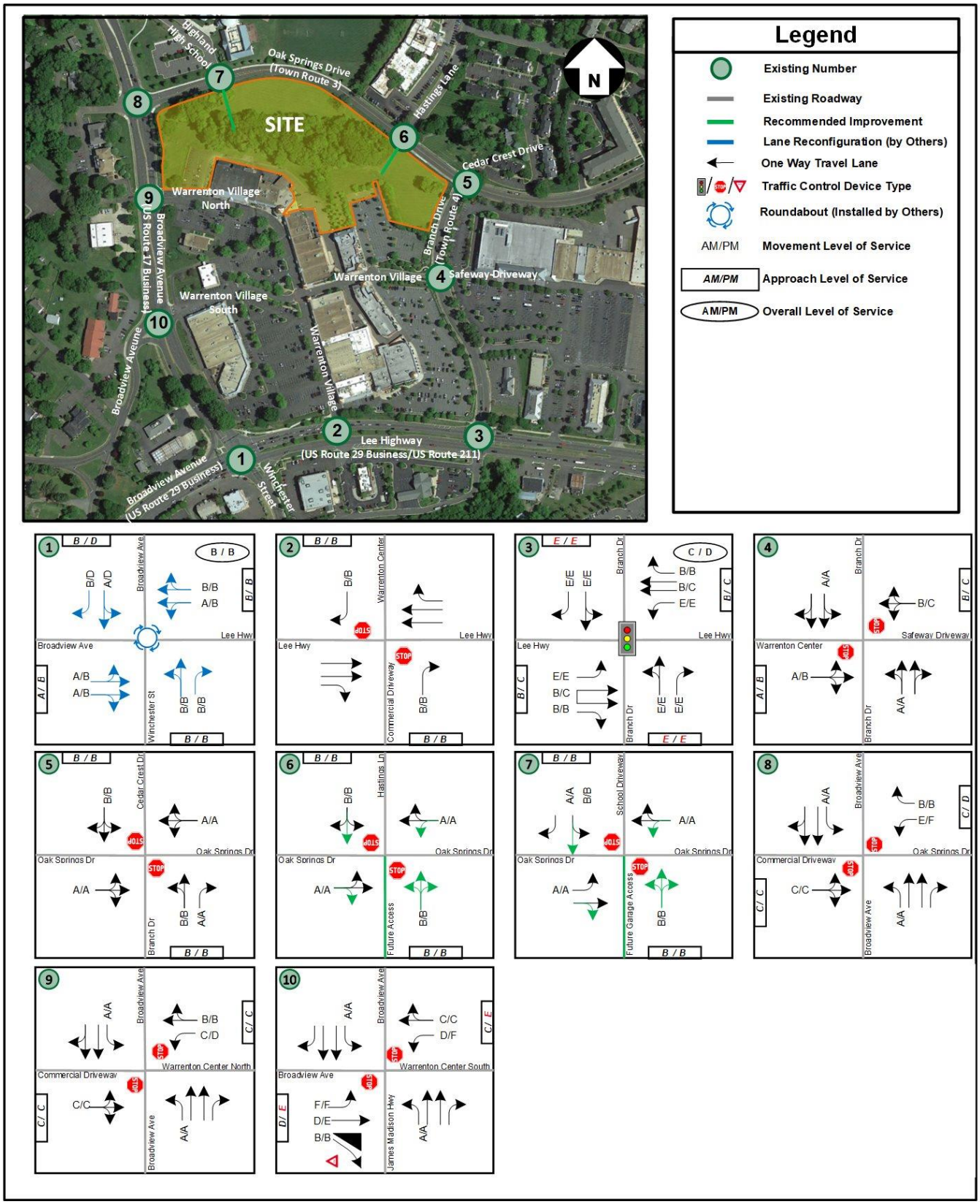


Figure 21: 2027 Future Conditions without Development – Level of Service Results

As mentioned previously, per the agreed upon scoping document, it would be considered desirable to achieve an approach LOS D or better for traffic operations using HCM methodology. Furthermore, if an overall intersection or approach was operating at an unacceptable LOS under future without development conditions, it was assumed acceptable to achieve non-degradation.

The planned roundabout is expected to operate at an overall LOS B with all approaches operating at LOS D or better during the AM and PM peak hours.

Based on the capacity analysis of 2027 Future Conditions without Development, the signalized study intersection is expected to continue to operate at overall levels of service of D or better during both the AM and PM peak hours.

Based on the capacity analysis of 2027 Future Conditions without Development, the approaches of all study intersections continue to operate at approach levels of service of D or better during both the AM and PM peak hours, except for the following study intersections that have at least one approach that would operate at level of service E of F (similar to 2027 Future Conditions without Development) during at least one peak hour:

- Study Intersection 3: Lee Highway (US 211/US 29 BUS) at Branch Drive
- Study Intersection 10: Broadview Avenue at Warrenton Village South

Based on the queuing analysis performed for 2027 Future Conditions without Development, all turning movements at the study intersections have maximum queue lengths that are accommodated within the available storage lengths of the turn bays.

Note that Study Intersection 10 (Broadview Avenue at Warrenton Village South) was previously identified by the Town for construction of a roundabout but was not selected for funding and therefore not included in the analysis. Therefore, no improvements are recommended for construction by the proposed Development.

In general, the signalized intersection would operate with longer vehicular delays for the side-streets and mainline left turning movements. These delays are a result of VDOT prioritization of through traffic on the mainline, as is typical along commuter corridors, to accommodate the largest possible volume of through traffic in the area along the mainlines and therefore have a better overall traffic operation than if all movements were prioritized equally.

No improvements are warranted or recommended as part of the proposed Development.

Preliminary Left and Right Turn Lane Warrant Assessments

Left and right turn lane warrants are based off VDOT's Road Design Manual (RDM), Appendix F. In order to determine the need for exclusive left and/or right turn lanes or tapers at the study intersections, the traffic data and anticipated development program provided in the 2027 Future Conditions with Development scenario section were utilized.

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.

Warrants for left-turn storage lanes on two-lane highways at unsignalized intersections are based on Figure 3-5 to Figure 3-21 in Appendix F of VDOT's RDM. The figures provide graphical representations for determining the necessity of a left turn lane by comparing the advancing volumes of a given approach and the respective opposing volumes with respect to the percentage of left turning vehicles of the advancing volumes and the design speed of a given roadway.

If the turn lanes and / or tapers are not provided or would not meet the minimum requirements per VDOT's RDM, turn lane waivers requests would need to be submitted as separate documentation and be approved by VDOT.

A summary of the turn lane warrant analysis is presented in **Table 8** through **Table 11**.

Table 8: Summary of Left Turn Lane Warrants at Site Entrances (2-Lane) – Build 2027

Study Scenario	Opposing Vol. (VPH)	Advancing Vol. (VPH)	Left Turn Vol. (VPH)	Left Turn %	Minimum Opposing Threshold (VPH)	VDOT RDM F Figure	Treatment
INT 6 - WBL AM - TF 2027	254	202	2	0.99%	1,208	Fig. 3-4	Not Warranted
INT 6 - WBL PM - TF 2027	217	246	6	2.44%	1,054	Fig. 3-4	Not Warranted
INT 7 - WBL AM - TF 2027	205	228	19	8.33%	841	Fig. 3-5	Not Warranted
INT 7 - WBL PM - TF 2027	194	281	62	22.06%	274	Fig. 3-8	Not Warranted

Table 9: Summary of Right Turn Lane Warrants at Site Entrances (2-Lane) - Build 2027

Study Scenario	Approach Volume	Right Turn Volume	Minimum Right Turn Taper Threshold	Minimum Right Turn Full Lane Threshold	Treatment
INT 4 - NBR - 2027 TF AM Peak	95	7	37	90	Not Warranted
INT 4 - NBR - 2027 TF PM Peak	149	12	36	90	Not Warranted
INT 4 - SBR - 2027 TF AM Peak	90	5	37	90	Not Warranted
INT 4 - SBR - 2027 TF PM Peak	119	32	36	90	Not Warranted

Table 10: Summary of Left Turn Lane Warrants at Brach Drive (Study Intersection 4) (4-Lane) - Existing 2023

Study Scenario	Opposing Vol. (VPH)	Advancing Vol. (VPH)	Left Turning Vol.	Left Turn %	Treatment
INT 4 - NBL - 2023 EX AM Peak	90	95	23	24.2%	Not Warranted
INT 4 - NBL - 2023 EX PM Peak	119	149	94	63.1%	Full-width Turn Lane and Taper Warranted (for Undivided and Divided)
INT 4 - SBL - 2023 EX AM Peak	95	90	18	20.0%	Not Warranted
INT 4 - SBL - 2023 EX PM Peak	149	119	48	40.3%	Full-width Turn Lane and Taper Warranted (for Undivided)

Table 11: Summary of Left Turn Lane Warrants at Brach Drive (Study Intersection 4) (4-Lane) – Build 2027

Study Scenario	Opposing Vol. (VPH)	Advancing Vol. (VPH)	Left Turning Vol.	Left Turn %	Treatment
INT 4 - NBL - 2027 TF AM Peak	145	115	24	20.9%	Not Warranted
INT 4 - NBL - 2027 TF PM Peak	155	210	97	46.2%	Full-width Turn Lane and Taper Warranted (for Undivided and Divided)
INT 4 - SBL - 2027 TF AM Peak	115	145	18	12.4%	Not Warranted
INT 4 - SBL - 2027 TF PM Peak	210	155	48	31.0%	Full-width Turn Lane and Taper Warranted (for Undivided)

No turn lanes are warranted at the site entrances. At the request of VDOT and the Town, turn lanes were evaluated at the Study Intersection 4 (Branch Drive at Warrenton Village Driveway / Safeway Driveway). The northbound left turn lane is warranted under Build 2027 conditions, but it is also warranted under existing conditions. Therefore, a northbound left turn

lane on Branch Drive is not recommended to be installed by the proposed Development. Graphics and information regarding the methodology used to determine the turn lane warrants are provided in Appendix J.

Preliminary Access Management Evaluation (Intersection Spacing)

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 standard 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.

As mentioned previously, Oak Springs Road is classified by VDOT as "Major Collector," with a posted speed limit of 25 mph. Based on the applicable intersection spacing requirements (centerline-to-centerline) per RDM Appendix F Table 2-2, **Table 12** lists the summary of the future intersections with corresponding roadway information and the appropriate distance requirements. **Figure 22** shows the approximate proposed distances between the study intersections and the corresponding required distances with the proposed intersections in place for the Site.

Table 12: Future Intersection Spacing

Functional Classification	Design Speed (See Note 2)	Minimum Spacing (Distance) in Feet			
		Type 1 (Signalized)	Type 2 (Unsignalized/ Full Crossover)	Type 3 (Full Access /Directional Crossover)	Type 4 (Partial Access)
Principal Arterial	≤ 30 mph	1,050	880	440	250
	35 to 45 mph	1,320	1,050	565	305
	≥ 50 mph	2,640	1,320	750	495
Minor Arterial	≤ 30 mph	880	660	355	200
	35 to 45 mph	1,050	660	470	250
	≥ 50 mph	1,320	1,050	555	425
Collector	≤ 30 mph	660	440	225	200
	35 to 45 mph	660	440	335	250
	≥ 50 mph	1,050	660	445	360
Local Street	See Note 1				

TABLE 2-2 MINIMUM SPACING STANDARDS FOR COMMERCIAL ACCESSES, INTERSECTIONS AND MEDIAN CROSSOVERS*

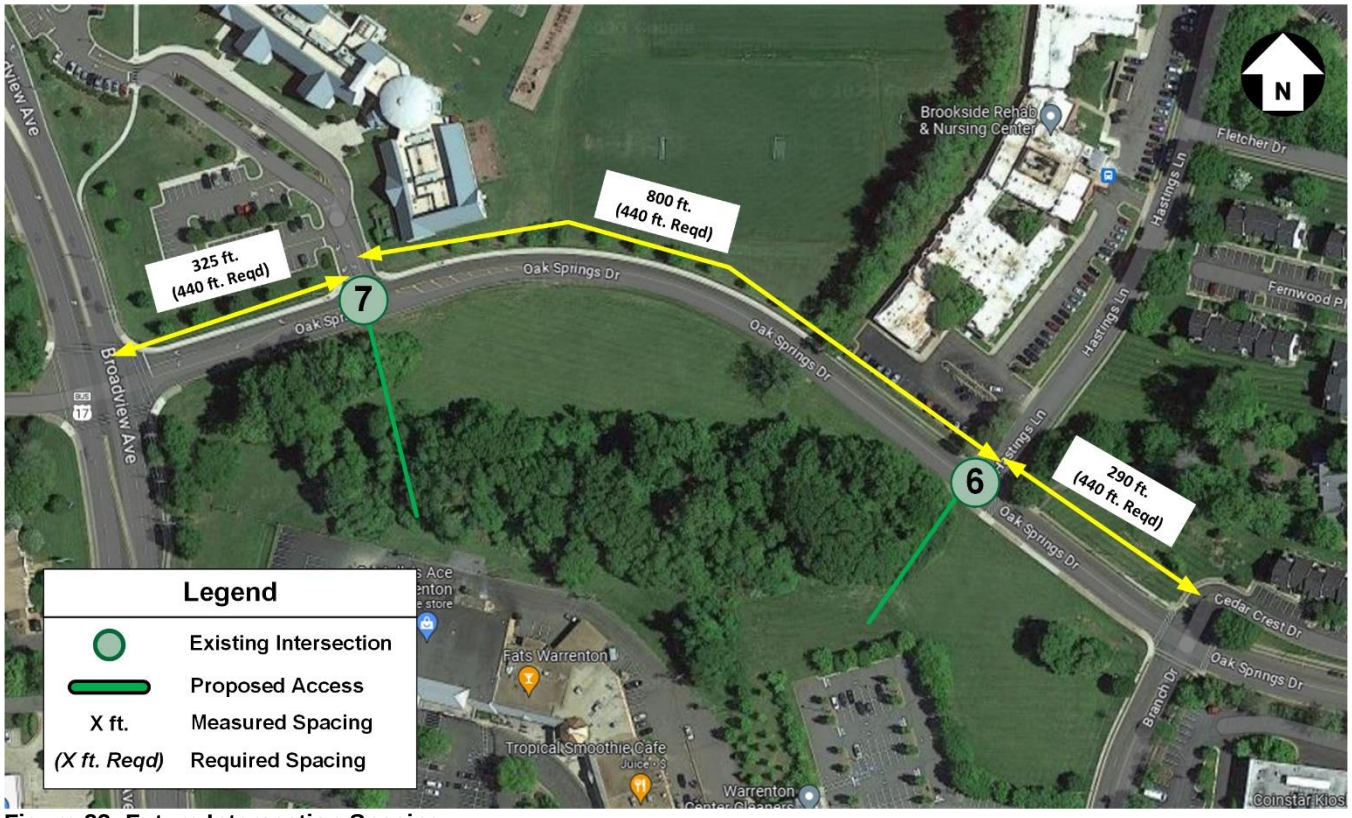


Figure 22: Future Intersection Spacing

As described in

Table 12**2** and depicted in **Figure 22,** the two proposed entrances do not meet the spacing requirements for unsignalized intersections on a 25 mph Major Collector. However, the entrances are proposed as the fourth leg to existing intersections instead of creating new entrances with offsets. However, Oak Springs Drive does not appear to be a VDOT maintained roadway, so an Access Management Exception (AM-E) request will not be submitted.

Preliminary Signal Warrant Analysis

Signal warrants are based on *Chapter 4C: Traffic Control Signal Needs Studies* of the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition. Chapter 4C discusses nine (9) separate warrants, by which only one warrant needs to be satisfied to justify the installation of a traffic control signal. In order to provide an assessment for the possible signalization of Broadview Avenue at Oak Springs Road (Study Intersection 8) under the build 2027 traffic volumes, Warrant Two (Four-Hour Vehicular Volume) was analyzed, since the warrant usually is a significant factor signalization and is often the warrant that is most readily satisfied for typical conditions.

Portions of the MUTCD used in this analysis are provided in Appendix K.

Warrant Two: Four-Hour Vehicular Volume

Warrant Two is satisfied when the plotted points representing the vehicles per hour (vph) on the major street (total of both approaches and the corresponding vph on the high-volume minor-street approach (one direction only), for each of any four hours of an average day, all fall above either MUTCD Figure 4C-1 or Figure 4C-2 (depending on the applicability) for the future combination of approach lanes.

The traffic volumes utilized to evaluate Warrant Two, using Figure 4C-1 are shown in **Table 13** for the study intersection. It should be noted that the intersection was analyzed as being two lanes on the major approach and one lane on the minor approach. In addition, only two hourly volumes were utilized, the build 2027 AM and PM peak hour volumes, because it is not anticipated that the other hourly volumes would be any higher or more likely to satisfy the conditions than that of the two selected. Lastly, as the capacity analysis of future conditions indicated that 100% of right turners could perform right turn maneuvers on red from the side-street approaches and there are currently exclusive northbound and westbound right turn lanes, a 100% right turn on red (RTOR) reduction was applied to all approaches, as depicted below.

Table 13: Volume Projections – Broadview Avenue at Oak Springs Road (Intersection 8)

Time Period	Broadview Ave (NB/SB)	Oak Springs Dr (WBL)
7:30AM to 8:30 AM	872	80
4:00 PM to 5:00 PM	985	110

Note: 100% right turn reductions are applied on all approaches

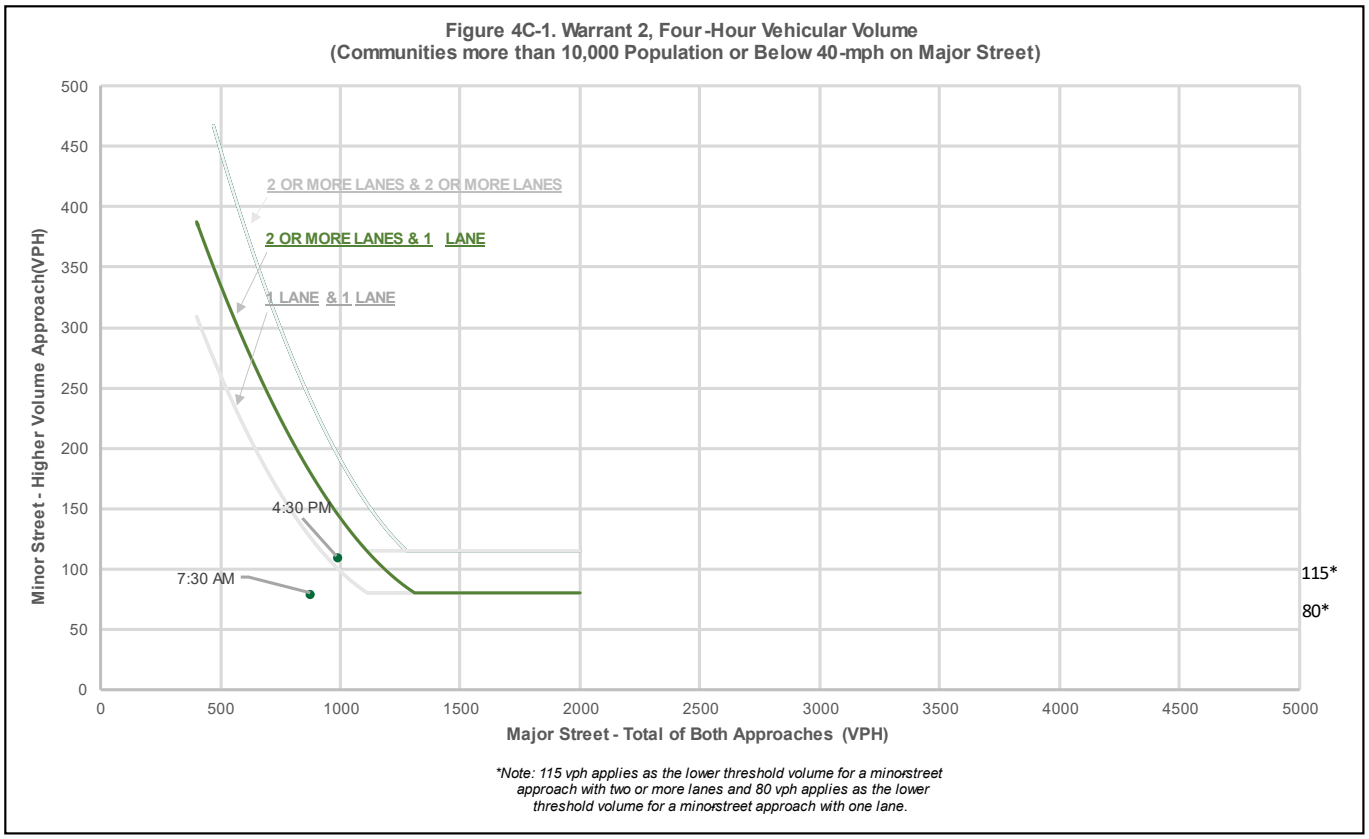


Figure 23: Four-Hour Warrant Analysis – Broadview Avenue at Oak Springs Road (Intersection 8)

As seen in the figure above, the build 2027 peak hour traffic volumes with a 100% RTOR reduction does not meet the threshold for two of the four hours required. As mentioned earlier, it is most likely that the next two hours with the highest traffic volume will generate even lower trips than the AM and PM peak hours. Therefore, based on traffic volumes, a signal would not be warranted at this intersection under this analysis.

The minor street volume is above the minimum threshold of 80 vehicles to warrant a signal; however, the major street volume is not high enough.

Additionally, the capacity analysis in the 2011 TIA shows that all reported movements at this unsignalized study intersection are anticipated to operate at LOS C or better during both AM and PM peak hours. This capacity analysis is acceptable and an indication that there is not an operational need for signalization.

Bicycle and Pedestrian Accommodations

The property currently contains a sidewalk with a buffer across the north side of the Oak Springs frontage. The existing sidewalk will be maintained with the proposed development, and sidewalk will be constructed along the south side of Oak Springs Road across the property frontage. There is at least one crosswalk at every study intersection, with the exception of Study Intersection 2 (Lee Highway at Warrenton Village / Chick-fil-a Driveway).

The school and mixed-use area create opportunities for the proposed Site to create paths and areas for multimodal connectivity. As shown on the concept plan, The Site is proposing a multitude of improvements that will increase pedestrian connectivity throughout the entire area. New sidewalks will be added along the entire perimeter of all residential blocks, including direct sidewalk connectivity to ground floor units. The extension of Hastings Lane and accompanying sidewalks will offer a new pedestrian access point from Oak Springs Drive. The proposed road that will connect the Hastings Lane extension through the existing commercial building and into the heart of the retail center via a new cut-through street that will allow maximum ease to walk from one side of the site to the other.

The unsignalized pedestrian crossings were reviewed as per TE-384.1 and will be submitted as a separate document.

Conclusions

This report presents the findings of a Traffic Impact Analysis (TIA) conducted for the proposed Warrenton Village Center (the Site / the Development / the Property) along the southern frontage of Oak Springs Drive (Town Route 3), east of Broadview Avenue (US Route 17 Business) and west of Branch Drive (Town Route 4) in the Town of Warrenton, Virginia

The development will be situated on a single parcel of vacant land (approximately 6.46 acres) and a portion of an adjacent developed parcel of land, which can be identified on Fauquier County Tax Maps with the following GPIN #s: 6985-20-7247-000, and 6984-29-6753-000, respectively. The property is currently zoned as C (Commercial District) with a Future Land Use of Mixed Use as part of the New Town Warrenton Character District (Lee Highway Urban Development Area [UDA]).

The Applicant is proposing to apply for a Special Use Permit (SUP) in order to construct approximately 386 multifamily residential dwelling units (320 multifamily apartments, 36 2-over-2 units, and 30 townhomes) and a parking deck. The site has an anticipated build-out date of 2027.

Access to the site will be provided via one full movement parking deck entry along Oak Springs Drive (Town Route 3) forming the fourth leg of the High School Driveway, one full movement driveway along Oak Springs Drive forming the fourth leg to the existing full-movement intersection of Hastings Lane, and via the existing shopping center accesses to the south.

Analysis Components

- 2023 existing volumes were derived via turning movement counts collected at intersections within the study area in February 2023.
- As determined based on review comments from VDOT and the Town, an inherent regional growth of 1.0% per year was applied to the Lee Highway mainline through movements at the intersection of Lee Highway at Broadview Avenue (US Route 17 Business). The growth volumes were balanced along the road network by increasing the mainline through movements at subsequent study intersections along the road network where applicable for the period between 2023 and 2027 to account for 2027 conditions.
- The trip generation associated with the Site was based on the ITE Trip Generation Manual, 11th Edition publication. The Site in total is expected to generate approximately 154 new trips during the AM peak hour, 197 new trips during the PM peak hour, and 2,602 new daily trips on a typical weekday.
- Intersection capacity and queuing analyses were performed for all analysis scenarios at the study area intersections during the weekday morning (AM) and weekday afternoon (PM) peak hours. *Synchro*, version 11, was used to analyze the study intersections with results based on the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) methodology and analysis guidelines provided in VDOT's Traffic Operations and Safety Analysis Manual (TOSAM) (version 2). The analysis herein includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.
- The analysis also considers an assessment of historical crash data at all existing study intersections.
- The analysis also includes preliminary access management assessment and turn lane warrant assessments for the Site access points along Oak Springs Drive.

Analysis Results

2023 Existing Conditions

- Based on the capacity analysis of Existing Conditions, the two signalized study intersections operate at an overall level of service D or better during both the AM and PM peak hours.

- Based on the capacity analysis of Existing Conditions, three study intersections have at least one approach that operates at levels of service (LOS E or F) for at least one peak hour. The remaining intersection approaches operate at acceptable levels of service during both peak hours.
- Based on the analysis of the Synchro 95th percentile queue lengths, all turning movements have queue lengths that can be accommodated within the available storage length of the turn bays, except the southbound left turn movement at Study Intersection 1 (Broadview Avenue / Lee Highway at Winchester Street).

2027 Future Conditions without Development

- Based on the capacity analysis of 2027 Future Conditions with Development, the signalized study intersection would operate at an overall level of service D or better during both the AM and PM peak hours.
- The planned roundabout is expected to operate at an overall LOS B or better with all approaches operating at LOS D or better during the AM and PM peak hours.
- Based on the capacity analysis of 2027 Future Conditions without Development, two study intersections have at least one approach that would operate at levels of service (LOS E or F) for at least one peak hour. The remaining intersection approaches would operate at acceptable levels of service during both peak hours.
- Based on the analysis of the Synchro 95th percentile queue lengths, all turning movements have queue lengths that could be accommodated within the available storage length of the turn bays.

2027 Future Conditions with Development

- The Site is expected to generate approximately 154 new total trips during the AM peak hour, 197 new trips during the PM peak hour and 2,602 new trips during a typical weekday.
- Based on the capacity analysis of 2027 Future Conditions with Development, the signalized study intersection would operate at an overall level of service D or better during both the AM and PM peak hours.
- The planned roundabout is expected to operate at an overall LOS B with all approaches operating at LOS D or better during the AM and PM peak hours.
- Based on the capacity analysis of the 2027 Future Conditions with Development, two study intersections have at least one approach that would operate at levels of service (LOS E or F) for at least one peak hour (similar to 2027 Future Conditions without Development) during the AM and PM peak hours. The remaining intersection approaches would operate at acceptable levels of service during both peak hours.
- Based on the queuing analysis performed for the 2027 Future Conditions with Development, all turning movements have queue lengths that could be accommodated within the available storage length of the turn bays.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed Development will not have a substantial impact to the surrounding transportation and roadway network, assuming that the site is constructed as depicted on the concept plan. No improvements are warranted or recommend to accommodate the proposed Development.

Transportation Technical Appendix

Warrenton Village Center

Town of Warrenton, Virginia

GOROVE SLADE
Transportation Planners and Engineers

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Appendix G – Background Development and Roadway Improvement Excepts

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Appendix J – Turn Lane Warrant Tables and Charts

Appendix K – MUTCD 4-Hour Warrant

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:	Kevin Sitzman, Gorove Slade Associates, Inc. 703.787.9595 kevin.sitzman@goroveslade.com		
Developer/Owner Name: Tele: E-mail:	Jess Achenbach jachenbach@castledp.com		
Project Information			
Project Name:	Warrenton Village Mixed-Use Center	Locality/County:	Town of Warrenton
Project Location: (Attach regional and site specific location map)	The proposed development will be located primarily along the southern frontage of Oak Springs Drive (Town Route 3), east of Broadview Avenue (US Route 17 Business) and west of Branch Drive (Town Route 4) in the Town of Warrenton, Virginia. **(See Figure 1).**		
Submission Type	Comp Plan ☐	REZ/SUP ☒	Site Plan ☐ / Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The development will be situated on a single parcel of vacant land (approximately 6.46 acres) and a portion of an adjacent developed parcel of land, which can be identified on Fauquier County Tax Maps with the following GPIN #s: 6985-20-7247-000, and 6984-29-6753-000, respectively. The property is currently zoned as C (Commercial District) with a Future Land Use of Mixed Use as part of the New Town Warrenton Character District (Lee Highway Urban Development Area [UDA]). The Applicant is proposing to apply for a Special Use Permit (SUP) in order to construct approximately 376 multifamily residential dwelling units (320 multifamily apartments, 36 2-over-2 units, and 20 townhomes) and a parking deck. The site has an anticipated build-out date of 2027. Access to the site will be provided via one full movement parking deck entry along Oak Springs Drive (Town Route 3) forming the forth leg of the High School Driveway, one full movement driveway along Oak Springs Drive forming the fourth-leg to the existing full-movement intersection of Hastings Lane, and via the existing shopping center accesses to the south.		
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☒ / Commercial ☐ / Mixed Use ☐ / Other ☐		
	Residential Uses(s) ITE LU Code(s): 220 Number of Units: 376 **Other Use(s)**	**Commercial Use(s)** ITE LU Code(s): Square Ft or Other Variable:	

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.

	ITE LU Code(s): Square Ft or Other Variable:			
Total Peak Hour Trip Projection:	Less than 100 ☐	100 – 499 ☒	500 – 999 ☐	1,000 or more ☐

Traffic Impact Analysis Assumptions

Study Period	Existing Year: 2023	Build-out Year: 2027	Design Year: N/A
Study Area Boundaries (Attach map)	North: Oak Springs Drive (Town Route 3)		South: US Route 211 / 29 Business
	West: Broadview Avenue (US Route 17 Business)		East: Branch Drive (Town Route 4)
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	Waterloo Junction Single Family homes along Patrick Ryan Way Smart Scale Roundabouts 1. Broadview/Winchester/Lee 2. Roebling/Broadview		
Consistency With Comprehensive Plan (Land use, transportation plan)	Yes		
Available Traffic Data (Historical, forecasts)	2023 TMC's VDOT Historical AADT Data		
Trip Distribution **(Please refer to attached Figure 2 in Supplement)**	Road Name: (to/from the North) – N/A		Road Name: (to/from the South) – N/A
	Road Name: (to/from the West) – N/A		Road Name: (to/from the East) – N/A
Annual Vehicle Trip Growth Rate: (See Note 2.)	1.0%/yr. (2023 to 2027)	Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT
		Peak Hour of the Adj. (to be used in study)	AM: 150 / PM: 192 / Daily: 2,534

Study Intersections and/or Road Segments (Attach additional sheets as necessary) **(Please refer to attached Figure 1.)**				
	1.	Broadview Avenue (US Route 17) / Lee Highway at Broadview Avenue / Winchester Street	6.	Oak Springs Drive (Town Route 3) at Hastings Lane / Future Access
	2.	Lee Highway (US Route 17) at Warrenton Village Center Driveway at Chick-fil-a Driveway	7.	Oak Springs Drive (Town Route 3) at Highland School Driveway / Future Garage Access
	3.	Lee Highway (US Route 17) at Branch Drive (Town Route 4)	8.	Broadview Avenue (US Route 17 Business) at Oak Springs Drive (Town Route 3)
	4.	Branch Drive (Town Route 4) at Warrenton Village Driveway / Safeway Driveway	9.	Broadview Avenue (US Route 17 Business) at Warrenton Village Center South Driveway
	5.	Oak Springs Drive (Town Route 3) at Branch Drive (Town Route 4) / Cedar Crest Drive	10.	Broadview Avenue (US Route 17 Business) at Warrenton Village Center North Driveway

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.

Trip Adjustment Factors	Internal allowance Reduction: ☐ Yes ☒ No	Pass-by allowance Reduction: ☐ Yes ☒ No
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☒ SIDRA ☐ CORSIM ☐ Other _____	
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Existing traffic signals that could be affected: 1. Broadview Avenue (US Route 17) / Lee Highway at Broadview Avenue / Winchester Street 2. Lee Highway (US Route 17) at Branch Drive (Town Route 4) Analysis Software: Synchro version 11 Results: HCM 6 Methodology (See Note 7) Queue Lengths to be Reported: 95th Percentile	
Improvement(s) Assumed or to be Considered	Smart Scale Roundabouts 1. Broadview/Winchester/Lee 2. Roebling/Broadview	
Background Traffic Studies Considered	Waterloo Junction Single Family homes along Patrick Ryan Way	
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. The scenarios to be included in the study are Existing Conditions (2023), Future without Development (2027) and Future with Development (2027). The study will analyze AM and PM peak hours.
2. Existing traffic volumes will be based on 2023 traffic count data. In order to project 2027 future conditions, a regional growth of 1.0% per annum will be applied to all turning movements at all study intersections.
3. Existing peak hour factors will be based on the traffic counts and utilized on a by-intersection basis. Peak hours factors by intersection in the range of 0.85 to 1.00 will be used for existing scenario. Peak hour factors of 0.92 will be used for all future scenarios if the existing peak hour factor by intersection is less than 0.92.
4. Heavy vehicle percentages (HV%) will be based on existing counts per movement. For any new leg or intersection, the HV% will be based on a default *Synchro* value of 2.0% per movement.
5. For any approach, a level of service (LOS) D or better would be considered as acceptable/desirable traffic operation condition. For all approaches, the projected future conditions without development LOS and delay will be maintained in the future with development condition. Will show intersection, approach, and movement LOS.
6. 95th percentile queues will be provided from *Synchro*.
7. HCM 6 methodology will be utilized where applicable; HCM 2000 methodology will be utilized if HCM 6 methodology is not applicable.
8. Preliminary access management and turn lane warrant assessments will be conducted for the site entrances.
9. Crash Data obtained from VDOT's Crash Analysis Tool will be analyzed at existing intersections.

SIGNED:  DATE: 6/30/2023
Applicant or Consultant

PRINT NAME: Kevin Sitzman
Applicant or Consultant

SIGNED: _____ DATE: _____
VDOT Representative

PRINT NAME: _____
VDOT Representative

SIGNED: _____ DATE: _____
Local Government Representative

PRINT NAME: _____
Local Government Representative

Table 1: Historic Growth (Based on VDOT Traffic Data)

Road Segment:	From:	To:	Published VDOT AADT					Growth Rate			
			2015	2016	2017	2018	2019	2015 - 2019	2016 - 2019	2017 - 2019	2018 - 2019
Broadview Avenue	Bus US 29 Lee Hwy	NCL Warrenton	10,000	10,000	10,000	10,000	11,000	2%	3%	5%	10%
Oak Springs Drive	Broadview Ave	Branch Dr	3,200	3,200	3,200	3,200	3,100	-1%	-1%	-2%	-3%
Branch Drive	Lee Highway	Oak Springs Drive	3,800	4,200	4,200	4,300	4,300	3%	1%	1%	0%



Figure 1: Site Location and Study Intersections

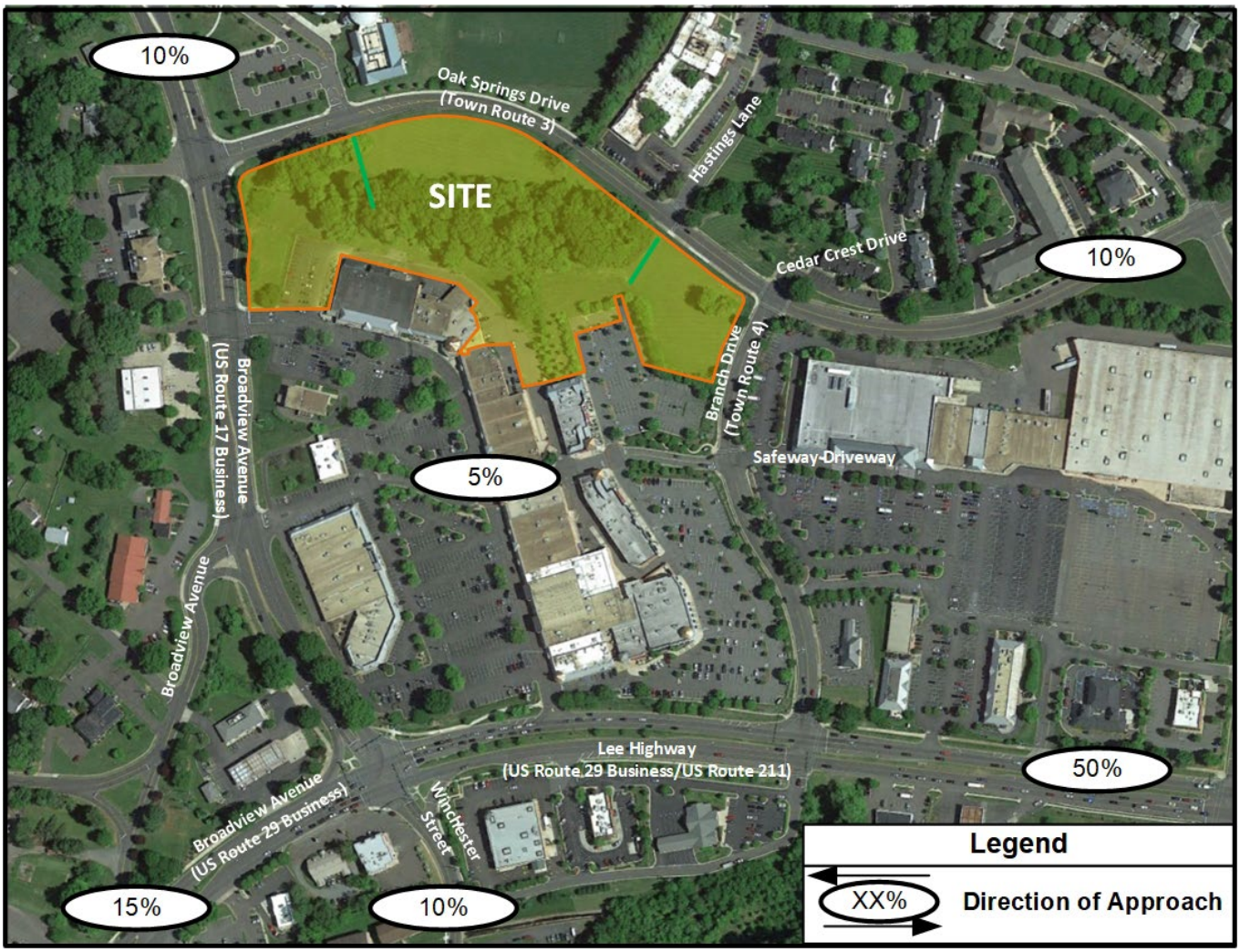


Figure 2: Direction of Approach

Table 2: Trip Generation – Peak Hour of the Adjacent Street (ITE 11th Edition) – To Be Used in Study

Land Use	ITE Code	Size	------ Weekday ------						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Multifamily Housing	220	376 DU	36	114	150	121	71	192	2,534

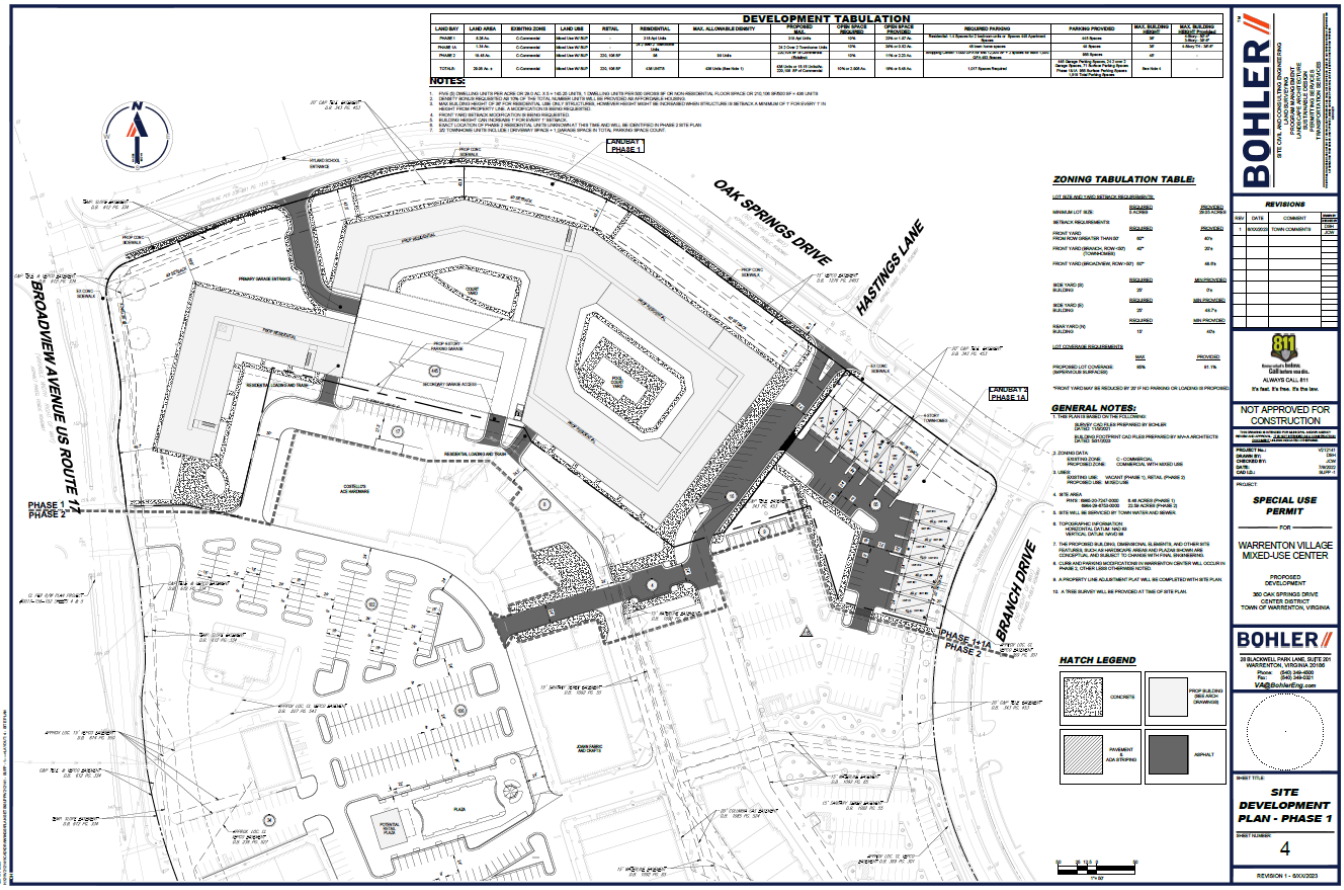


Figure 3: Illustrative Site Plan (Provided by Bohler)
Note: For conceptual purposes only.

B. Crash Data by Study Intersection

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Broadview Avenue (US 17 BUS) (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	2	6	1	1	2		12	30.00%
Type A	*1*						*1*	
Type B		*2*			*2*		*4*	
Type C	*1*	*4*	*1*	*1*			*7*	
Property Damage Only (Type PDO)	3	8	3	8	6		28	70.00%
TOTAL*	***5***	***14***	***4***	***9***	***8***		***40***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash								0.00%
Head-On								0.00%
Sideswipe / Same Direction		1			2		3	7.50%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision	3	8	4	5	4		24	60.00%
Angle Collision	1	5		4	1		11	27.50%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other	1				1		2	5.00%
TOTAL*	***5***	***14***	***4***	***9***	***8***		***40***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**	1						1	2.50%
Work-Zone								0.00%
Inclement Weather (Non-Dry)		1			2		3	7.50%
Speeding	2						2	5.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)	*1*	*5*		*2*			*8*	*20.00%*
Off Peak - Daytime (10 AM - 3 PM)	*1*	*5*	*3*	*4*	*4*		*17*	*42.50%*
PM Peak Period (3 - 7 PM)	*2*	*3*	*1*	*3*	*2*		*11*	*27.50%*
Off Peak - Nighttime (7 PM - 6 AM)	*1*	*1*			*2*		*4*	*10.00%*
CALCULATED CRASH RATE***							***0.75***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Broadview Avenue (US 17 BUS) (May 2018 - April 2023)

Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
182555077	9/11/2018	A. Severe Injury	16. Other	0	1	0		no	no
181915232	7/5/2018	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
181845228	6/28/2018	PDO. Property Damage Only	2. Angle	0	0	0		no	no
182415104	8/20/2018	C. Nonvisible Injury	1. Rear End	0	1	0		no	no
182885118	10/13/2018	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
192075126	7/20/2019	B. Visible Injury	2. Angle	0	1	0		no	no
193445038	8/21/2019	PDO. Property Damage Only	2. Angle	0	0	0		no	no
191415326	5/15/2019	PDO. Property Damage Only	2. Angle	0	0	0		no	no
191685219	5/22/2019	PDO. Property Damage Only	2. Angle	0	0	0		no	no
190705057	3/5/2019	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
190935057	4/2/2019	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
192325410	8/20/2019	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
191895108	7/5/2019	C. Nonvisible Injury	1. Rear End	0	5	0		no	no
193445107	10/30/2019	C. Nonvisible Injury	1. Rear End	0	1	0		no	no
193445122	11/14/2019	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
193445083	10/13/2019	C. Nonvisible Injury	1. Rear End	0	1	0		no	no
193445100	10/22/2019	C. Nonvisible Injury	1. Rear End	0	3	0		yes	no
193445071	9/30/2019	PDO. Property Damage Only	4. Sideswipe - Same Direction	0	0	0		no	no
191295165	5/8/2019	B. Visible Injury	2. Angle	0	1	0		no	no
203495122	12/11/2020	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
202175264	7/29/2020	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
203175313	11/2/2020	C. Nonvisible Injury	1. Rear End	0	1	0		no	no
201635154	6/2/2020	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
212215197	7/25/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
212285259	8/6/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
211945123	7/6/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
211535051	5/26/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Broadview Avenue (US 17 BUS) (May 2018 - April 2023)

Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
212725106	9/20/2021	C. Nonvisible Injury	1. Rear End	0	1	0		no	no
213275307	11/17/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
211805101	6/21/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
213145192	11/6/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
210905134	3/20/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
220205117	1/12/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
222345164	8/21/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
220975211	3/18/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
222795285	10/6/2022	B. Visible Injury	8. Non-Collision	0	1	0		no	no
222015106	7/14/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
221295161	5/7/2022	B. Visible Injury	4. Sideswipe - Same Direction	0	1	0		yes	no
220135226	1/6/2022	PDO. Property Damage Only	2. Angle	0	0	0		no	no
222165194	7/8/2022	PDO. Property Damage Only	4. Sideswipe - Same Direction	0	0	0		yes	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Warrenton Village / Chick-fil-a Driveway (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)		1			1		2	40.00%
Type A		*1*			*1*		*2*	
Type B								
Type C								
Property Damage Only (Type PDO)			1		2		3	60.00%
TOTAL*		***1***	***1***		***3***		***5***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash			1		1		2	40.00%
Head-On								0.00%
Sideswipe / Same Direction								0.00%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision					1		1	20.00%
Angle Collision		1			1		2	40.00%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other								0.00%
TOTAL*		***1***	***1***		***3***		***5***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**					1		1	20.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)			1				1	20.00%
Speeding					1		1	20.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)								*0.00%*
Off Peak - Daytime (10 AM - 3 PM)					*1*		*1*	*20.00%*
PM Peak Period (3 - 7 PM)		*1*			*1*		*2*	*40.00%*
Off Peak - Nighttime (7 PM - 6 AM)			*1*		*1*		*2*	*40.00%*
CALCULATED CRASH RATE***							***0.13***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Warrenton Village / Chick-fil-a Driveway (May 2018 - April 2023)

Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
193445020	7/26/2019	A. Severe Injury	2. Angle	0	1	0		no	no
203025223	10/25/2020	PDO. Property Damage Only	9. Fixed Object - Off Road	0	0	0		yes	no
222785213	9/17/2022	A. Severe Injury	9. Fixed Object - Off Road	0	1	0		no	no
222135133	7/28/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
223325320	11/1/2022	PDO. Property Damage Only	2. Angle	0	0	0		no	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Branch Drive (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	1		2	1	1		5	26.32%
Type A								
Type B								
Type C	*1*		*2*	*1*	*1*		*5*	
Property Damage Only (Type PDO)	2	1		3	8		14	73.68%
TOTAL*	***3***	***1***	***2***	***4***	***9***		***19***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash				1			1	5.26%
Head-On								0.00%
Sideswipe / Same Direction	1						1	5.26%
Sideswipe / Opposite Direction				1			1	5.26%
Rear-End Collision	2			1	3		6	31.58%
Angle Collision			2	1	5		8	42.11%
Backed Into		1					1	5.26%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other					1		1	5.26%
TOTAL*	***3***	***1***	***2***	***4***	***9***		***19***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**								0.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)				2	1		3	15.79%
Speeding			1		1		2	10.53%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)	*1*			*1*	*1*		*3*	*15.79%*
Off Peak - Daytime (10 AM - 3 PM)			*2*	*2*	*2*		*6*	*31.58%*
PM Peak Period (3 - 7 PM)	*2*	*1*		*1*	*6*		*10*	*52.63%*
Off Peak - Nighttime (7 PM - 6 AM)								*0.00%*
CALCULATED CRASH RATE***							***0.45***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Lee Highway (US 211/US 29 BUS) and Branch Drive (May 2018 - April 2023)

Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
190035248	12/24/2018	PDO. Property Damage Only	4. Sideswipe - Same Direction	0	0	0		no	no
182955427	10/20/2018	C. Nonvisible Injury	1. Rear End	0	2	0		no	no
183655065	12/17/2018	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
193445084	10/13/2019	PDO. Property Damage Only	15. Backed Into	0	0	0		no	no
201995197	7/12/2020	C. Nonvisible Injury	2. Angle	0	1	0		no	no
201275157	4/1/2020	C. Nonvisible Injury	2. Angle	0	1	0		no	no
211335075	5/10/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
212925308	10/10/2021	PDO. Property Damage Only	9. Fixed Object - Off Road	0	0	0		yes	no
212705186	9/20/2021	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
211935132	6/22/2021	C. Nonvisible Injury	5. Sideswipe - Opposite Direction	0	2	0		yes	no
222805102	10/6/2022	PDO. Property Damage Only	2. Angle	0	0	0		no	no
220825133	3/21/2022	PDO. Property Damage Only	2. Angle	0	0	0		no	no
221965176	7/9/2022	PDO. Property Damage Only	2. Angle	0	0	0		yes	no
221965175	6/29/2022	PDO. Property Damage Only	2. Angle	0	0	0		no	no
221735151	6/2/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
222205137	8/6/2022	PDO. Property Damage Only	2. Angle	0	0	0		no	no
222695228	9/24/2022	C. Nonvisible Injury	1. Rear End	0	1	0		no	no
220385210	2/6/2022	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
222975113	10/23/2022	PDO. Property Damage Only	16. Other	0	0	0		no	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Branch Drive and Warrenton Village / Safeway (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)					1		1	50.00%
Type A								
Type B								
Type C					*1*		*1*	
Property Damage Only (Type PDO)				1			1	50.00%
TOTAL*				***1***	***1***		***2***	***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								0.00%
Angle Collision				1	1		2	100.00%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other								0.00%
TOTAL*				***1***	***1***		***2***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**				1			1	50.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)					1		1	50.00%
Speeding								0.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)					*1*		*1*	*50.00%*
Off Peak - Daytime (10 AM - 3 PM)								*0.00%*
PM Peak Period (3 - 7 PM)				*1*			*1*	*50.00%*
Off Peak - Nighttime (7 PM - 6 AM)								*0.00%*
CALCULATED CRASH RATE***							***0.24***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Branch Drive and Warrenton Village / Safeway (May 2018 - April 2023)									
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
213055189	10/15/2021	PDO: Property Damage Only	2. Angle	0	0	0		no	no
223255325	11/11/2022	C. Nonvisible Injury	2. Angle	0	1	0		yes	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Branch Drive and Oak Springs Drive (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	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		1		2	100.00%
TOTAL*			***1***		***1***		***2***	***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								0.00%
Angle Collision			1		1		2	100.00%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other								0.00%
TOTAL*			***1***		***1***		***2***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**								0.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)								0.00%
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)					*1*		*1*	*50.00%*
PM Peak Period (3 - 7 PM)			*1*				*1*	*50.00%*
Off Peak - Nighttime (7 PM - 6 AM)								*0.00%*
CALCULATED CRASH RATE***							***0.27***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Branch Drive and Oak Springs Drive (May 2018 - April 2023)

Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
202745301	9/18/2020	PDO: Property Damage Only	2. Angle	0	0	0		no	no
220335106	1/31/2022	PDO: Property Damage Only	2. Angle	0	0	0		no	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Broadview Avenue and Oak Springs Drive (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	1						1	33.33%
Type A	*1*						*1*	
Type B								
Type C								
Property Damage Only (Type PDO)			2				2	66.67%
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								0.00%
Angle Collision	1		2				3	100.00%
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)								0.00%
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)			*1*				*1*	*33.33%*
PM Peak Period (3 - 7 PM)	*1*		*1*				*2*	*66.67%*
Off Peak - Nighttime (7 PM - 6 AM)								*0.00%*
CALCULATED CRASH RATE***							***0.14***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Broadview Avenue and Oak Springs Drive (May 2018 - April 2023)									
Document Number	**Date**	**Crash Severity**	**Collsion Type**	**Pedestrain Injury**	**Persons Injured**	**Fatalities**	**Work Zone Related**	**Adverse Weather Conditions**	**Distracted Driver**
182435282	8/23/2018	A. Severe Injury	2. Angle	0	1	0		no	no
202585163	2/22/2020	PDO. Property Damage Only	2. Angle	0	0	0		no	no
202115210	7/15/2020	PDO. Property Damage Only	2. Angle	0	0	0		no	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Broadview Avenue and Warrenton Village North (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)			1		1		2	50.00%
Type A								
Type B			*1*				*1*	
Type C					*1*		*1*	
Property Damage Only (Type PDO)		1		1			2	50.00%
TOTAL*		***1***	***1***	***1***	***1***		***4***	***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								0.00%
Angle Collision			1	1	1		3	75.00%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal		1					1	25.00%
Other								0.00%
TOTAL*		***1***	***1***	***1***	***1***		***4***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**					1		1	25.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)					1		1	25.00%
Speeding								0.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)		*1*					*1*	*25.00%*
Off Peak - Daytime (10 AM - 3 PM)								*0.00%*
PM Peak Period (3 - 7 PM)			*1*	*1*	*1*		*3*	*75.00%*
Off Peak - Nighttime (7 PM - 6 AM)								*0.00%*
CALCULATED CRASH RATE***							***0.21***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Broadview Avenue and Warrenton Village North (May 2018 - April 2023)									
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
192545226	9/11/2019	PDO. Property Damage Only	10. Deer	0	0	0		no	no
202765309	9/20/2020	B. Visible Injury	2. Angle	0	1	0		no	no
211665121	5/27/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
223465170	12/6/2022	C. Nonvisible Injury	2. Angle	0	1	0		yes	no

VDOT Crash Data Summary Table

Intersection Crash Analysis	Crash Data for the Intersection of Broadview Avenue and Warrenton Village South (May 2018 - April 2023)							
	2018	2019	2020	2021	2022	2023	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	2			2	3		7	53.85%
Type A								
Type B								
Type C	*2*			*2*	*3*		*7*	
Property Damage Only (Type PDO)	1		2	2	1		6	46.15%
TOTAL*	***3***		***2***	***4***	***4***		***13***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash								0.00%
Head-On	1				2		3	23.08%
Sideswipe / Same Direction				1			1	7.69%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision			1				1	7.69%
Angle Collision	1		1	3	2		7	53.85%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other	1						1	7.69%
TOTAL*	***3***		***2***	***4***	***4***		***13***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**	1						1	7.69%
Work-Zone								0.00%
Inclement Weather (Non-Dry)								0.00%
Speeding			1				1	7.69%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)					*1*		*1*	*7.69%*
Off Peak - Daytime (10 AM - 3 PM)	*1*		*2*	*2*	*2*		*7*	*53.85%*
PM Peak Period (3 - 7 PM)	*1*			*2*	*1*		*4*	*30.77%*
Off Peak - Nighttime (7 PM - 6 AM)	*1*						*1*	*7.69%*
CALCULATED CRASH RATE***							***0.54***	***Crashes per MEV***

* It should be noted that an intersection radius of 300 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").

VDOT Crash Data Summary Table

Crash Data for the Intersection of Broadview Avenue and Warrenton Village South (May 2018 - April 2023)

Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Work Zone Related	Adverse Weather Conditions	Distracted Driver
182505243	9/5/2018	C. Nonvisible Injury	6. Fixed Object in Road	0	1	0		no	no
182835057	10/4/2018	C. Nonvisible Injury	2. Angle	0	1	0		no	no
182135102	7/31/2018	PDO. Property Damage Only	3. Head On	0	0	0		no	no
201265208	2/25/2020	PDO. Property Damage Only	1. Rear End	0	0	0		no	no
201265233	3/12/2020	PDO. Property Damage Only	2. Angle	0	0	0		no	no
213625118	12/15/2021	C. Nonvisible Injury	2. Angle	0	2	0		no	no
213145191	11/3/2021	PDO. Property Damage Only	2. Angle	0	0	0		no	no
210135154	1/6/2021	C. Nonvisible Injury	2. Angle	0	1	0		no	no
212425152	8/23/2021	PDO. Property Damage Only	4. Sideswipe - Same Direction	0	0	0		no	no
221235227	4/29/2022	C. Nonvisible Injury	3. Head On	0	1	0		no	no
221045273	3/28/2022	PDO. Property Damage Only	3. Head On	0	0	0		no	no
220945207	3/29/2022	C. Nonvisible Injury	2. Angle	0	1	0		no	no
223325319	11/23/2022	C. Nonvisible Injury	2. Angle	0	1	0		no	no

C. Turning Movement Counts Data

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/Winchester St & US 17/US 211/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-001
Date: 2/9/2023

Data - Total

NS/EW Streets:	US 17/Winchester St				US 17/Winchester St				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	5	5	2	0	28	3	15	0	18	155	2	1	2	48	21	1	306
6:15 AM	7	0	6	0	15	2	19	0	21	167	1	1	0	78	32	1	350
6:30 AM	7	9	8	0	18	1	31	0	18	179	2	0	0	90	27	0	390
6:45 AM	12	11	8	0	27	5	45	0	23	163	0	3	6	122	32	0	457
7:00 AM	13	13	10	0	27	3	97	0	46	171	1	1	7	134	41	0	564
7:15 AM	20	8	11	0	31	8	89	0	58	208	5	2	6	119	31	1	597
7:30 AM	15	25	14	0	28	9	34	0	83	220	13	1	6	154	49	0	651
7:45 AM	27	42	32	0	34	40	61	0	73	169	5	2	5	162	64	1	717
8:00 AM	14	19	12	0	22	26	61	0	57	204	7	2	9	140	29	1	603
8:15 AM	17	17	12	0	26	18	59	0	44	165	6	0	11	159	29	1	564
8:30 AM	24	11	21	0	29	13	61	0	52	159	13	2	11	125	28	3	552
8:45 AM	16	17	8	0	45	26	54	0	53	170	16	4	4	141	24	3	581
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	177	177	144	0	330	154	626	0	546	2130	71	19	67	1472	407	12	6332
APPROACH %'s :	35.54%	35.54%	28.92%	0.00%	29.73%	13.87%	56.40%	0.00%	19.74%	77.01%	2.57%	0.69%	3.42%	75.18%	20.79%	0.61%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	76	94	69	0	115	83	245	0	271	801	30	7	26	575	173	3	2568
PEAK HR FACTOR :	0.704	0.560	0.539	0.000	0.846	0.519	0.688	0.000	0.816	0.910	0.577	0.875	0.722	0.887	0.676	0.750	0.895
	0.592				0.820				0.875				0.837				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	29	18	21	0	72	18	94	1	51	194	14	0	7	309	23	1	852
4:15 PM	32	27	15	0	46	23	86	1	69	167	9	1	19	240	40	1	776
4:30 PM	24	28	16	0	50	23	103	0	71	223	9	1	17	261	24	4	854
4:45 PM	29	22	15	0	44	19	94	0	67	210	8	0	13	264	19	4	808
5:00 PM	12	35	13	0	47	14	63	0	68	170	13	2	14	265	23	4	743
5:15 PM	18	34	18	0	46	18	75	0	60	180	11	1	13	284	28	1	787
5:30 PM	22	29	15	0	28	19	69	0	44	183	7	4	12	218	40	1	691
5:45 PM	16	27	16	0	37	23	74	0	47	176	8	1	8	252	25	6	716
6:00 PM	32	23	15	0	42	14	44	0	54	135	12	1	19	222	23	3	639
6:15 PM	14	12	17	0	42	19	45	0	47	144	6	1	17	236	34	4	638
6:30 PM	19	16	20	0	26	13	42	0	49	137	8	0	16	185	22	4	557
6:45 PM	14	17	20	0	25	10	35	0	43	107	9	1	13	194	24	4	516
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	261	288	201	0	505	213	824	2	670	2026	114	13	168	2930	325	37	8577
APPROACH %'s :	34.80%	38.40%	26.80%	0.00%	32.71%	13.80%	53.37%	0.13%	23.73%	71.77%	4.04%	0.46%	4.86%	84.68%	9.39%	1.07%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	114	95	67	0	212	83	377	2	258	794	40	2	56	1074	106	10	3290
PEAK HR FACTOR :	0.891	0.848	0.798	0.000	0.736	0.902	0.915	0.500	0.908	0.890	0.714	0.500	0.737	0.869	0.663	0.625	0.963
	0.932				0.911				0.900				0.916				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/Winchester St & US 17/US 211/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-001
Date: 2/9/2023

Data - Cars

NS/EW Streets:	US 17/Winchester St				US 17/Winchester St				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	5	5	2	0	27	3	14	0	16	149	2	1	2	48	21	1	296
6:15 AM	7	0	6	0	15	2	19	0	18	163	1	1	0	74	31	1	338
6:30 AM	7	9	8	0	17	1	29	0	15	171	1	0	0	87	27	0	372
6:45 AM	12	11	8	0	27	5	43	0	22	160	0	3	5	112	31	0	439
7:00 AM	12	13	10	0	26	3	92	0	39	165	1	1	7	127	40	0	536
7:15 AM	19	7	11	0	28	8	83	0	55	196	5	2	6	112	30	1	563
7:30 AM	14	25	13	0	25	9	30	0	81	213	13	1	6	146	48	0	624
7:45 AM	25	42	31	0	33	40	61	0	70	159	5	2	5	155	63	1	692
8:00 AM	12	18	12	0	22	25	61	0	54	199	6	2	9	131	27	1	579
8:15 AM	16	16	11	0	24	17	57	0	39	157	6	0	11	136	26	1	517
8:30 AM	23	9	21	0	27	13	49	0	51	155	12	2	11	108	25	3	509
8:45 AM	14	17	7	0	43	26	50	0	52	166	16	4	3	125	22	3	548
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	166	172	140	0	314	152	588	0	512	2053	68	19	65	1361	391	12	6013
APPROACH %'s :	34.73%	35.98%	29.29%	0.00%	29.79%	14.42%	55.79%	0.00%	19.31%	77.41%	2.56%	0.72%	3.55%	74.41%	21.38%	0.66%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	70	92	67	0	108	82	235	0	260	767	29	7	26	544	168	3	2458
PEAK HR FACTOR :	0.700	0.548	0.540	0.000	0.818	0.513	0.708	0.000	0.802	0.900	0.558	0.875	0.722	0.877	0.667	0.750	0.888
	0.584				0.793				0.863				0.827				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	29	18	21	0	72	18	90	1	50	190	14	0	7	303	23	1	837
4:15 PM	32	27	15	0	45	23	79	1	67	164	9	1	19	235	40	1	758
4:30 PM	24	27	16	0	49	23	101	0	69	220	9	1	17	251	24	4	835
4:45 PM	29	22	15	0	44	19	91	0	64	205	8	0	13	260	17	4	791
5:00 PM	12	35	13	0	47	14	61	0	67	168	13	2	13	261	23	4	733
5:15 PM	18	34	17	0	46	18	74	0	59	177	11	1	13	278	28	1	775
5:30 PM	22	29	15	0	28	18	67	0	44	181	7	4	12	214	40	1	682
5:45 PM	16	27	16	0	37	23	72	0	45	172	8	1	7	250	24	6	704
6:00 PM	31	23	15	0	42	14	44	0	53	132	12	1	19	220	23	3	632
6:15 PM	14	12	17	0	42	19	44	0	46	141	6	1	17	235	33	4	631
6:30 PM	19	16	19	0	26	13	42	0	48	137	8	0	16	179	22	4	549
6:45 PM	14	17	20	0	25	10	35	0	42	104	9	1	13	191	23	4	508
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	260	287	199	0	503	212	800	2	654	1991	114	13	166	2877	320	37	8435
APPROACH %'s :	34.85%	38.47%	26.68%	0.00%	33.16%	13.97%	52.74%	0.13%	23.59%	71.83%	4.11%	0.47%	4.88%	84.62%	9.41%	1.09%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	114	94	67	0	210	83	361	2	250	779	40	2	56	1049	104	10	3221
PEAK HR FACTOR :	0.891	0.870	0.798	0.000	0.729	0.902	0.894	0.500	0.906	0.885	0.714	0.500	0.737	0.866	0.650	0.625	0.962
	0.929				0.906				0.895				0.912				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/Winchester St & US 17/US 211/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-001
Date: 2/9/2023

Data - HT

NS/EW Streets:	US 17/Winchester St				US 17/Winchester St				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	1	0	1	0	2	6	0	0	0	0	0	0	10
6:15 AM	0	0	0	0	0	0	0	0	3	4	0	0	0	4	1	0	12
6:30 AM	0	0	0	0	1	0	2	0	3	8	1	0	0	3	0	0	18
6:45 AM	0	0	0	0	0	0	2	0	1	3	0	0	1	10	1	0	18
7:00 AM	1	0	0	0	1	0	5	0	7	6	0	0	0	7	1	0	28
7:15 AM	1	1	0	0	3	0	6	0	3	12	0	0	0	7	1	0	34
7:30 AM	1	0	1	0	3	0	4	0	2	7	0	0	0	8	1	0	27
7:45 AM	2	0	1	0	1	0	0	0	3	10	0	0	0	7	1	0	25
8:00 AM	2	1	0	0	0	1	0	0	3	5	1	0	0	9	2	0	24
8:15 AM	1	1	1	0	2	1	2	0	5	8	0	0	0	23	3	0	47
8:30 AM	1	2	0	0	2	0	12	0	1	4	1	0	0	17	3	0	43
8:45 AM	2	0	1	0	2	0	4	0	1	4	0	0	1	16	2	0	33
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	11	5	4	0	16	2	38	0	34	77	3	0	2	111	16	0	319
APPROACH %'s :	55.00%	25.00%	20.00%	0.00%	28.57%	3.57%	67.86%	0.00%	29.82%	67.54%	2.63%	0.00%	1.55%	86.05%	12.40%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	6	2	2	0	7	1	10	0	11	34	1	0	0	31	5	0	110
PEAK HR FACTOR :	0.750	0.500	0.500	0.000	0.583	0.250	0.417	0.000	0.917	0.708	0.250	0.000	0.000	0.861	0.625	0.000	0.809
	0.833				0.500				0.767				0.818				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	4	0	1	4	0	0	0	6	0	0	15
4:15 PM	0	0	0	0	1	0	7	0	2	3	0	0	0	5	0	0	18
4:30 PM	0	1	0	0	1	0	2	0	2	3	0	0	0	10	0	0	19
4:45 PM	0	0	0	0	0	0	3	0	3	5	0	0	0	4	2	0	17
5:00 PM	0	0	0	0	0	0	2	0	1	2	0	0	1	4	0	0	10
5:15 PM	0	0	1	0	0	0	1	0	1	3	0	0	0	6	0	0	12
5:30 PM	0	0	0	0	0	1	2	0	0	2	0	0	0	4	0	0	9
5:45 PM	0	0	0	0	0	0	2	0	2	4	0	0	1	2	1	0	12
6:00 PM	1	0	0	0	0	0	0	0	1	3	0	0	0	2	0	0	7
6:15 PM	0	0	0	0	0	0	1	0	1	3	0	0	0	1	1	0	7
6:30 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	6	0	0	8
6:45 PM	0	0	0	0	0	0	0	0	1	3	0	0	0	3	1	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	2	0	2	1	24	0	16	35	0	0	2	53	5	0	142
APPROACH %'s :	25.00%	25.00%	50.00%	0.00%	7.41%	3.70%	88.89%	0.00%	31.37%	68.63%	0.00%	0.00%	3.33%	88.33%	8.33%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	1	0	0	2	0	16	0	8	15	0	0	0	25	2	0	69
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.500	0.000	0.571	0.000	0.667	0.750	0.000	0.000	0.000	0.625	0.250	0.000	0.908
	0.250				0.563				0.719				0.675				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/Winchester St & US 17/US 211/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-001
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	US 17/Winchester St				US 17/Winchester St				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1.5	0.5	1	0	2	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/Winchester St & US 17/US 211/Broadview Ave **Project ID:** 23-260020-001
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	US 17/Winchester St		US 17/Winchester St		US 17/US 211/Broadview Ave		US 17/US 211/Broadview Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	2	3
8:30 AM	1	0	0	0	0	0	0	0	1
8:45 AM	0	1	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	1	0	0	0	0	1	2	5
APPROACH %'s :	50.00%	50.00%					33.33%	66.67%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	1	1	2	0	0	4
4:15 PM	1	1	0	0	1	2	0	0	5
4:30 PM	1	0	0	0	0	0	0	0	1
4:45 PM	2	0	0	2	0	0	2	0	6
5:00 PM	0	0	0	0	0	4	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	2	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	2	0	0	0	3	0	0	0	5
6:15 PM	1	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	1	1	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	7	1	1	4	7	8	2	0	30
APPROACH %'s :	87.50%	12.50%	20.00%	80.00%	46.67%	53.33%	100.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	4	1	0	3	2	4	2	0	16
PEAK HR FACTOR :	0.500	0.250		0.375	0.500	0.500	0.250		0.667
	0.625		0.375		0.500		0.250		

Prepared by National Data & Surveying Services

US 17/Winchester St & US 17/US 211/Broadview Ave

Peak Hour Turning Movement Count

ID: 23-260020-001
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	6:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 07:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	2568	0	3290
PHF	0.90		0.96

SOUTHBOUND (US 17/Winchester St)

	L	T	R	U	Total	
AM	245	83	115	0	538	AM
NOON	0	0	0	0	0	NOON
PM	377	83	212	2	461	PM
	1	0.5	1.5	0		

EASTBOUND (US 17/US 211/Broadview Ave)

	AM	NOON	PM	
	903	0	1567	
0	7	0	2	
2	271	0	258	
1.5	801	0	794	
0.5	30	0	40	
	AM	NOON	PM	

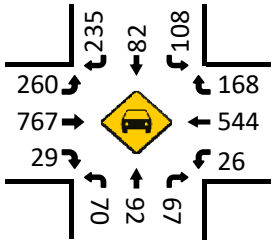
WESTBOUND (US 17/US 211/Broadview Ave)

	PM	NOON	AM	
1	106	0	173	
2	1074	0	575	
1	56	0	26	
0	10	0	3	
	1083	0	988	
	PM	NOON	AM	

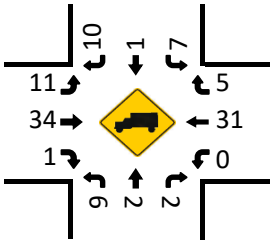
NORTHBOUND (US 17/Winchester St)

	L	T	R	U	Total	
PM	179	0	114	95	67	PM
NOON	0	0	0	0	0	NOON
AM	139	0	76	94	69	AM
	0	1	1	1		

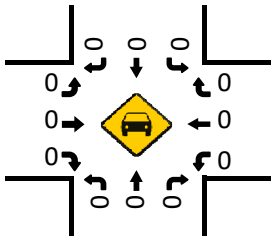
Cars (AM)



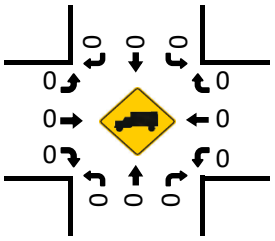
HT (AM)



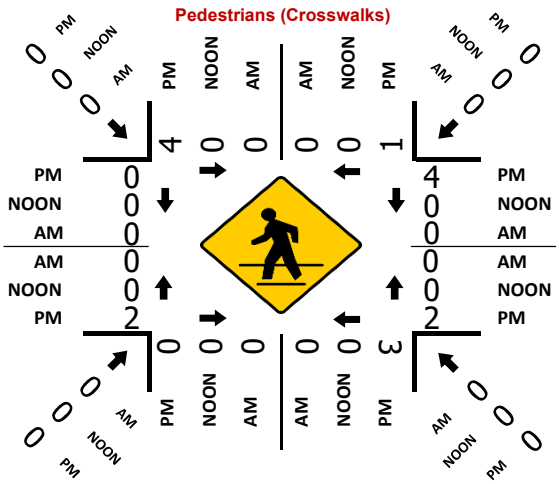
Cars (NOON)



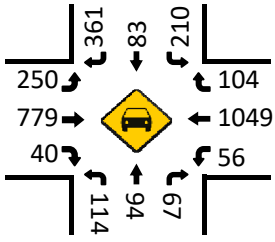
HT (NOON)



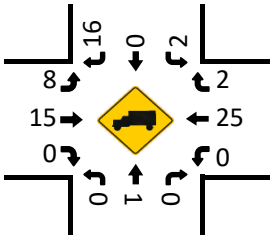
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy & US 17/US 211/Broadview Ave
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-002
Date: 2/9/2023

Data - Total

NS/EW Streets:	Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	183	0	0	0	67	2	0	252
6:15 AM	0	0	0	0	0	0	0	0	0	192	0	0	0	115	0	0	307
6:30 AM	0	0	0	0	0	0	0	0	0	203	0	0	0	113	2	0	318
6:45 AM	0	0	0	0	0	0	2	0	0	196	0	0	0	157	1	0	356
7:00 AM	0	0	0	0	0	0	1	0	0	212	0	0	0	185	4	0	402
7:15 AM	0	0	0	0	0	0	3	0	0	244	0	0	0	164	3	0	414
7:30 AM	0	0	0	0	0	0	3	0	0	269	0	0	0	196	9	0	477
7:45 AM	0	0	0	0	0	0	8	0	0	236	0	0	0	234	9	0	487
8:00 AM	0	0	0	0	0	0	3	0	0	236	0	0	0	168	6	0	413
8:15 AM	0	0	0	0	0	0	6	0	0	207	0	0	0	196	7	0	416
8:30 AM	0	0	0	0	0	0	6	0	0	208	0	0	0	159	10	0	383
8:45 AM	0	0	0	0	0	0	7	0	0	230	0	0	0	168	23	0	428
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	39	0	0	2616	0	0	0	1922	76	0	4653
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	96.20%	3.80%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	20	0	0	948	0	0	0	794	31	0	1793
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.881	0.000	0.000	0.000	0.848	0.861	0.000	0.920
					0.625				0.881				0.849				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	17	0	0	291	0	0	0	320	25	0	653
4:15 PM	0	0	0	0	0	0	19	0	0	227	0	0	0	284	25	0	555
4:30 PM	0	0	0	0	0	0	17	0	0	295	0	0	0	286	18	0	616
4:45 PM	0	0	0	0	0	0	26	0	0	271	0	0	0	274	34	0	605
5:00 PM	0	0	0	0	0	0	20	0	0	236	0	0	0	295	35	0	586
5:15 PM	0	0	0	0	0	0	26	0	0	245	0	0	0	302	24	0	597
5:30 PM	0	0	0	0	0	0	16	0	0	223	0	0	0	244	16	0	499
5:45 PM	0	0	0	0	0	0	20	0	0	239	0	0	0	277	38	0	574
6:00 PM	0	0	0	0	0	0	29	0	0	190	0	0	0	250	38	0	507
6:15 PM	0	0	0	0	0	0	25	0	0	212	0	0	0	248	42	0	527
6:30 PM	0	0	0	0	0	0	24	0	0	185	0	0	0	203	22	0	434
6:45 PM	0	0	0	0	0	0	21	0	0	158	0	0	0	219	22	0	420
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	260	0	0	2772	0	0	0	3202	339	0	6573
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	90.43%	9.57%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	79	0	0	1084	0	0	0	1164	102	0	2429
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.000	0.000	0.919	0.000	0.000	0.000	0.909	0.750	0.000	0.930
					0.760				0.919				0.917				

National Data & Surveying Services Intersection Turning Movement Count

Location: Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy & US 17/US 211/Broadview Ave
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-002
Date: 2/9/2023

Data - Cars

NS/EW Streets:	Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	176	0	0	0	67	2	0	245
6:15 AM	0	0	0	0	0	0	0	0	0	188	0	0	0	110	0	0	298
6:30 AM	0	0	0	0	0	0	0	0	0	194	0	0	0	110	2	0	306
6:45 AM	0	0	0	0	0	0	2	0	0	193	0	0	0	144	1	0	340
7:00 AM	0	0	0	0	0	0	1	0	0	205	0	0	0	178	4	0	388
7:15 AM	0	0	0	0	0	0	2	0	0	229	0	0	0	156	3	0	390
7:30 AM	0	0	0	0	0	0	3	0	0	258	0	0	0	188	9	0	458
7:45 AM	0	0	0	0	0	0	8	0	0	224	0	0	0	225	9	0	466
8:00 AM	0	0	0	0	0	0	3	0	0	231	0	0	0	156	6	0	396
8:15 AM	0	0	0	0	0	0	6	0	0	196	0	0	0	172	7	0	381
8:30 AM	0	0	0	0	0	0	6	0	0	204	0	0	0	137	10	0	357
8:45 AM	0	0	0	0	0	0	7	0	0	221	0	0	0	151	23	0	402
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	38	0	0	2519	0	0	0	1794	76	0	4427
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	95.94%	4.06%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	20	0	0	909	0	0	0	741	31	0	1701
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.881	0.000	0.000	0.000	0.823	0.861	0.000	0.913
							0.625			0.881				0.825			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	17	0	0	286	0	0	0	314	25	0	642
4:15 PM	0	0	0	0	0	0	19	0	0	223	0	0	0	277	25	0	544
4:30 PM	0	0	0	0	0	0	17	0	0	291	0	0	0	278	18	0	604
4:45 PM	0	0	0	0	0	0	26	0	0	266	0	0	0	268	34	0	594
5:00 PM	0	0	0	0	0	0	19	0	0	234	0	0	0	291	35	0	579
5:15 PM	0	0	0	0	0	0	26	0	0	241	0	0	0	296	24	0	587
5:30 PM	0	0	0	0	0	0	15	0	0	221	0	0	0	241	16	0	493
5:45 PM	0	0	0	0	0	0	20	0	0	235	0	0	0	273	38	0	566
6:00 PM	0	0	0	0	0	0	29	0	0	187	0	0	0	248	38	0	502
6:15 PM	0	0	0	0	0	0	25	0	0	209	0	0	0	246	42	0	522
6:30 PM	0	0	0	0	0	0	24	0	0	184	0	0	0	197	22	0	427
6:45 PM	0	0	0	0	0	0	21	0	0	155	0	0	0	215	22	0	413
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	258	0	0	2732	0	0	0	3144	339	0	6473
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	90.27%	9.73%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	79	0	0	1066	0	0	0	1137	102	0	2384
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.760	0.000	0.000	0.916	0.000	0.000	0.000	0.905	0.750	0.000	0.928
							0.760			0.916				0.914			

National Data & Surveying Services Intersection Turning Movement Count

Location: Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy & US 17/US 211/Broadview Ave
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-002
Date: 2/9/2023

Data - HT

NS/EW Streets:	Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7
6:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	0	9
6:30 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	3	0	0	12
6:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	13	0	0	16
7:00 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	14
7:15 AM	0	0	0	0	0	0	1	0	0	15	0	0	0	8	0	0	24
7:30 AM	0	0	0	0	0	0	0	0	0	11	0	0	0	8	0	0	19
7:45 AM	0	0	0	0	0	0	0	0	0	12	0	0	0	9	0	0	21
8:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	12	0	0	17
8:15 AM	0	0	0	0	0	0	0	0	0	11	0	0	0	24	0	0	35
8:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	22	0	0	26
8:45 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	17	0	0	26
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	1	0	0	97	0	0	0	128	0	0	226
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	39	0	0	0	53	0	0	92
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.000	0.000	0.000	0.552	0.000	0.000	0.657
										0.813				0.552			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11
4:15 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	0	11
4:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	0	12
4:45 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11
5:00 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	4	0	0	7
5:15 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	10
5:30 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
6:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
6:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	5
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	7
6:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	2	0	0	40	0	0	0	58	0	0	100
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	18	0	0	0	27	0	0	45
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.900	0.000	0.000	0.000	0.844	0.000	0.000	0.938
										0.900				0.844			

National Data & Surveying Services Intersection Turning Movement Count

Location: Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy & US 17/US 211/Broadview Ave
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-002
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy				US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	3	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy & US 17/L **Project ID:** 23-260020-002
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Warrenton Village Center Dwy (Chipotle)/Walgreens		Warrenton Village Center Dwy (Chipotle)/Walgreens		US 17/US 211/Broadview Ave		US 17/US 211/Broadview Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	1
APPROACH %'s :	100.00%	0.00%							
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	0	0	0	0	0	1
4:30 PM	1	0	0	0	0	0	0	0	1
4:45 PM	2	0	0	0	0	0	0	0	2
5:00 PM	0	2	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	4	3	0	0	0	0	0	0	7
APPROACH %'s :	57.14%	42.86%							
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	3	1	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.375	0.250							0.500
	0.500								

Prepared by National Data & Surveying Services

Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy & US 17/US 211/Broadview Ave

Peak Hour Turning Movement Count

ID: 23-260020-002
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	6:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 07:00 PM

SOUTHBOUND — Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy

AM	20	0	0	0	31	AM
NOON	0	0	0	0	0	NOON
PM	79	0	0	0	102	PM

EASTBOUND — US 17/US 211/Broadview Ave

AM	NOON	PM	
814	0	1243	
0	0	0	0
0	0	0	0
948	0	1084	3
0	0	0	0

WESTBOUND — US 17/US 211/Broadview Ave

	PM	NOON	AM
1	102	0	31
2	1164	0	794
0	0	0	0
0	0	0	0
	1084	0	948

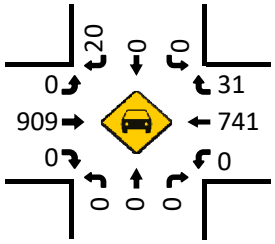
NORTHBOUND — Warrenton Village Center Dwy (Chipotle)/Walgreens Dwy

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

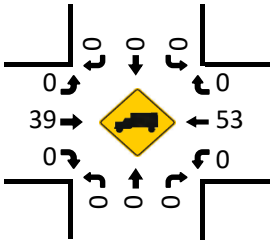
CONTROL: 1-Way Stop(SB)

TEV	1793	0	2429
	AM	NOON	PM
PHF	0.92		0.93

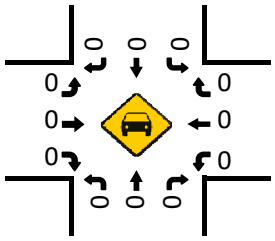
Cars (AM)



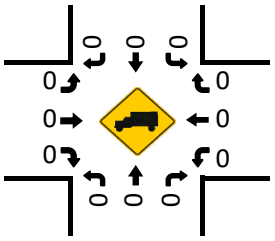
HT (AM)



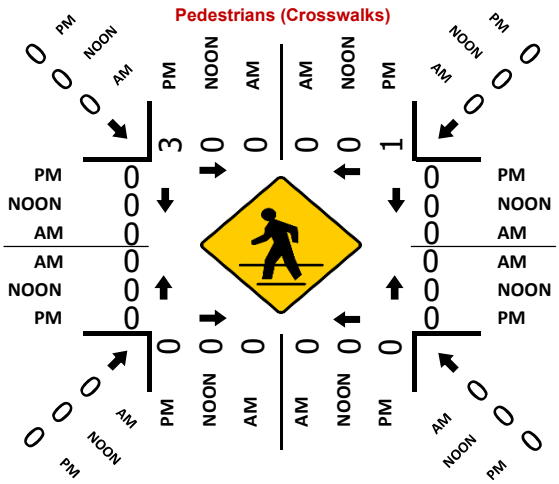
Cars (NOON)



HT (NOON)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
3
0
0
0
1
0
0
0
0
0
0
0
0
0
0
0
0
0

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & US 211/Lee Hwy/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-003
Date: 2/9/2023

Data - Total

NS/EW Streets:	Branch Dr				Branch Dr				US 211/Lee Hwy/Broadview Ave				US 211/Lee Hwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	4	0	3	1	1	0	0	180	0	0	3	69	3	0	265
6:15 AM	0	0	4	0	2	1	7	0	4	180	0	0	6	106	3	0	313
6:30 AM	0	0	8	0	1	1	4	0	4	190	0	0	11	114	3	0	336
6:45 AM	1	1	7	0	2	0	8	0	9	176	0	0	7	152	9	0	372
7:00 AM	3	0	6	0	1	1	12	0	5	213	1	1	11	167	4	0	425
7:15 AM	2	0	8	0	5	5	7	0	8	225	0	2	10	158	6	0	436
7:30 AM	4	4	14	0	3	1	9	0	6	245	0	2	10	192	15	0	505
7:45 AM	2	5	10	0	11	3	11	0	9	220	0	3	11	223	18	0	526
8:00 AM	1	2	8	0	10	2	4	0	7	215	0	1	11	172	12	0	445
8:15 AM	3	0	6	0	10	2	26	0	7	195	1	1	12	169	6	0	438
8:30 AM	4	3	9	0	12	5	9	0	10	187	0	2	17	156	5	2	421
8:45 AM	0	3	11	0	11	2	11	0	11	214	2	3	17	176	14	0	475
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	18	95	0	71	24	109	0	80	2440	4	15	126	1854	98	2	4957
APPROACH %'s :	15.67%	13.43%	70.90%	0.00%	34.80%	11.76%	53.43%	0.00%	3.15%	96.10%	0.16%	0.59%	6.06%	89.13%	4.71%	0.10%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	10	11	38	0	34	8	50	0	29	875	1	7	44	756	51	0	1914
PEAK HR FACTOR :	0.625	0.550	0.679	0.000	0.773	0.667	0.481	0.000	0.806	0.893	0.250	0.583	0.917	0.848	0.708	0.000	0.910
	0.670				0.605				0.901				0.844				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	4	15	0	40	4	39	0	23	252	1	1	17	275	26	1	705
4:15 PM	3	4	18	0	39	4	36	0	34	208	1	3	14	272	23	0	659
4:30 PM	5	7	20	0	34	6	24	0	35	218	0	1	15	269	10	0	644
4:45 PM	2	2	22	0	26	4	42	0	39	224	0	4	18	277	25	0	685
5:00 PM	2	3	16	0	30	7	31	0	28	205	1	4	19	298	22	2	668
5:15 PM	4	8	16	0	26	6	31	0	29	203	0	3	14	266	15	2	623
5:30 PM	3	4	13	0	30	1	20	0	18	187	0	3	13	241	19	0	552
5:45 PM	5	2	17	0	31	2	21	0	25	210	0	3	22	279	19	0	636
6:00 PM	6	2	12	0	44	5	28	0	29	160	1	1	16	262	15	0	581
6:15 PM	3	5	17	0	30	4	25	0	19	160	0	6	13	247	17	1	547
6:30 PM	4	4	16	0	32	4	21	0	13	162	0	0	22	202	19	5	504
6:45 PM	1	1	9	0	27	9	20	0	17	149	0	4	10	214	11	0	472
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	45	46	191	0	389	56	338	0	309	2338	4	33	193	3102	221	11	7276
APPROACH %'s :	15.96%	16.31%	67.73%	0.00%	49.68%	7.15%	43.17%	0.00%	11.51%	87.11%	0.15%	1.23%	5.47%	87.95%	6.27%	0.31%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	17	17	75	0	139	18	141	0	131	902	2	9	64	1093	84	1	2693
PEAK HR FACTOR :	0.607	0.607	0.852	0.000	0.869	0.750	0.839	0.000	0.840	0.895	0.500	0.563	0.889	0.986	0.808	0.250	0.955
	0.852				0.898				0.942				0.970				

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & US 211/Lee Hwy/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-003
Date: 2/9/2023

Data - Cars

NS/EW Streets:	Branch Dr				Branch Dr				US 211/Lee Hwy/Broadview Ave				US 211/Lee Hwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	1	0	4	0	3	1	1	0	0	174	0	0	3	69	3	0	259
6:15 AM	0	0	4	0	2	1	6	0	3	176	0	0	6	102	3	0	303
6:30 AM	0	0	8	0	1	1	4	0	3	183	0	0	11	111	3	0	325
6:45 AM	1	1	6	0	1	0	5	0	9	173	0	0	6	142	9	0	353
7:00 AM	3	0	6	0	1	1	11	0	5	206	1	1	11	161	4	0	411
7:15 AM	2	0	8	0	4	5	7	0	8	210	0	2	10	150	6	0	412
7:30 AM	4	4	14	0	3	1	9	0	6	235	0	2	10	184	15	0	487
7:45 AM	2	5	10	0	11	3	11	0	9	208	0	3	11	214	18	0	505
8:00 AM	1	2	8	0	9	2	3	0	7	211	0	1	11	161	12	0	428
8:15 AM	3	0	6	0	10	2	18	0	7	184	1	0	11	154	6	0	402
8:30 AM	4	3	9	0	11	5	8	0	10	183	0	2	15	135	5	2	392
8:45 AM	0	2	11	0	10	2	10	0	11	206	2	3	17	159	14	0	447
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	17	94	0	66	24	93	0	78	2349	4	14	122	1742	98	2	4724
APPROACH %'s :	15.91%	12.88%	71.21%	0.00%	36.07%	13.11%	50.82%	0.00%	3.19%	96.07%	0.16%	0.57%	6.21%	88.70%	4.99%	0.10%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	10	11	38	0	33	8	41	0	29	838	1	6	43	713	51	0	1822
PEAK HR FACTOR :	0.625	0.550	0.679	0.000	0.750	0.667	0.569	0.000	0.806	0.891	0.250	0.500	0.977	0.833	0.708	0.000	0.902
	0.670				0.683				0.899				0.830				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	4	15	0	40	4	39	0	23	247	1	1	17	269	25	1	693
4:15 PM	3	4	18	0	39	4	35	0	34	206	1	3	14	265	23	0	649
4:30 PM	5	7	20	0	33	6	24	0	35	213	0	1	15	262	10	0	631
4:45 PM	2	2	22	0	26	4	42	0	39	218	0	4	18	271	25	0	673
5:00 PM	2	3	15	0	30	7	30	0	28	203	1	4	19	295	21	2	660
5:15 PM	4	8	16	0	26	6	29	0	29	199	0	3	14	262	14	2	612
5:30 PM	3	4	13	0	29	1	20	0	18	185	0	3	13	237	19	0	545
5:45 PM	5	2	17	0	31	2	21	0	25	206	0	3	22	276	19	0	629
6:00 PM	6	2	12	0	44	5	27	0	29	158	1	1	16	261	15	0	577
6:15 PM	3	5	17	0	30	4	25	0	19	156	0	6	13	245	17	1	541
6:30 PM	4	4	16	0	32	4	21	0	13	161	0	0	22	196	19	5	497
6:45 PM	1	1	9	0	27	9	19	0	17	146	0	4	10	211	11	0	465
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	45	46	190	0	387	56	332	0	309	2298	4	33	193	3050	218	11	7172
APPROACH %'s :	16.01%	16.37%	67.62%	0.00%	49.94%	7.23%	42.84%	0.00%	11.69%	86.91%	0.15%	1.25%	5.56%	87.85%	6.28%	0.32%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	17	17	75	0	138	18	140	0	131	884	2	9	64	1067	83	1	2646
PEAK HR FACTOR :	0.607	0.607	0.852	0.000	0.863	0.750	0.833	0.000	0.840	0.895	0.500	0.563	0.889	0.984	0.830	0.250	0.955
	0.852				0.892				0.943				0.967				

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & US 211/Lee Hwy/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-003
Date: 2/9/2023

Data - HT

NS/EW Streets:	Branch Dr				Branch Dr				US 211/Lee Hwy/Broadview Ave				US 211/Lee Hwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	6
6:15 AM	0	0	0	0	0	0	1	0	1	4	0	0	0	4	0	0	10
6:30 AM	0	0	0	0	0	0	0	0	1	7	0	0	0	3	0	0	11
6:45 AM	0	0	1	0	1	0	3	0	0	3	0	0	1	10	0	0	19
7:00 AM	0	0	0	0	0	0	1	0	0	7	0	0	0	6	0	0	14
7:15 AM	0	0	0	0	1	0	0	0	0	15	0	0	0	8	0	0	24
7:30 AM	0	0	0	0	0	0	0	0	0	10	0	0	0	8	0	0	18
7:45 AM	0	0	0	0	0	0	0	0	0	12	0	0	0	9	0	0	21
8:00 AM	0	0	0	0	1	0	1	0	0	4	0	0	0	11	0	0	17
8:15 AM	0	0	0	0	0	0	8	0	0	11	0	1	1	15	0	0	36
8:30 AM	0	0	0	0	1	0	1	0	0	4	0	0	2	21	0	0	29
8:45 AM	0	1	0	0	1	0	1	0	0	8	0	0	0	17	0	0	28
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	1	0	5	0	16	0	2	91	0	1	4	112	0	0	233
APPROACH %'s :	0.00%	50.00%	50.00%	0.00%	23.81%	0.00%	76.19%	0.00%	2.13%	96.81%	0.00%	1.06%	3.45%	96.55%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	9	0	0	37	0	1	1	43	0	0	92
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.281	0.000	0.000	0.771	0.000	0.250	0.250	0.717	0.000	0.000	0.639
							0.313				0.792				0.688		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	1	0	12
4:15 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	7	0	0	10
4:30 PM	0	0	0	0	1	0	0	0	0	5	0	0	0	7	0	0	13
4:45 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	12
5:00 PM	0	0	1	0	0	0	1	0	0	2	0	0	0	3	1	0	8
5:15 PM	0	0	0	0	0	0	2	0	0	4	0	0	0	4	1	0	11
5:30 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	4	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	0	7
6:00 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	4
6:15 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	6	0	0	7
6:45 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	3	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	2	0	6	0	0	40	0	0	0	52	3	0	104
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	25.00%	0.00%	75.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	94.55%	5.45%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	1	0	0	18	0	0	0	26	1	0	47
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.750	0.000	0.000	0.000	0.929	0.250	0.000	0.904
							0.500				0.750				0.964		

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & US 211/Lee Hwy/Broadview Ave
City: Warrenton
Control: Signalized

Project ID: 23-260020-003
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	Branch Dr				Branch Dr				US 211/Lee Hwy/Broadview Ave				US 211/Lee Hwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	0.5	1	0	0.5	0.5	1	0	1	2	1	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500
														0.500			

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & US 211/Lee Hwy/Broadview Ave **Project ID:** 23-260020-003
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Branch Dr		Branch Dr		US 211/Lee Hwy/Broadview Ave		US 211/Lee Hwy/Broadview Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	2	0	0	0	0	0	0	0	2
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	1	1	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	1	0	0	0	0	0	0	4
APPROACH %'s :	75.00%	25.00%							
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	2	0	0	0	0	2
5:00 PM	0	2	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	1	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	1	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	2	1	2	0	1	0	0	8
APPROACH %'s :	50.00%	50.00%	33.33%	66.67%	0.00%	100.00%			
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	2	0	0	2	0	0	0	0	4
PEAK HR FACTOR :	0.500			0.250					0.500
	0.500		0.250						

Prepared by National Data & Surveying Services

Branch Dr & US 211/Lee Hwy/Broadview Ave

Peak Hour Turning Movement Count

ID: 23-260020-003
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	6:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 07:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	1914	0	2693
PHF	0.91		0.95

SOUTHBOUND (Branch Dr)

AM	50	8	34	0	91	AM
NOON	0	0	0	0	0	NOON
PM	141	18	139	0	232	PM
	1	0.5	0.5	0		

EASTBOUND (US 211/Lee Hwy/Broadview Ave)

AM	NOON	PM	
823	0	1260	
7	0	9	0
29	0	131	1
875	0	902	2
1	0	2	1

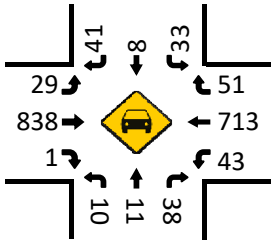
WESTBOUND (US 211/Lee Hwy/Broadview Ave)

	PM	NOON	AM
1	84	0	51
2	1093	0	756
1	64	0	44
0	1	0	0
	1117	0	947

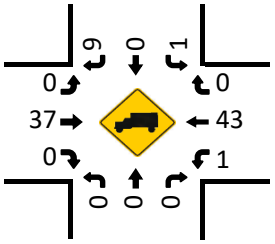
NORTHBOUND (Branch Dr)

PM	84	0	17	17	75	PM
NOON	0	0	0	0	0	NOON
AM	53	0	10	11	38	AM
		0	0.5	0.5	1	

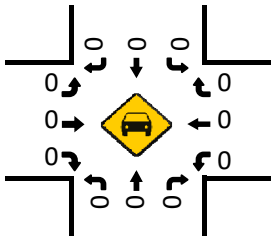
Cars (AM)



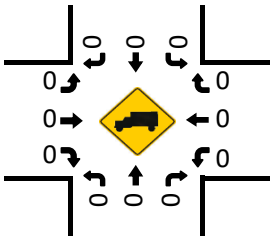
HT (AM)



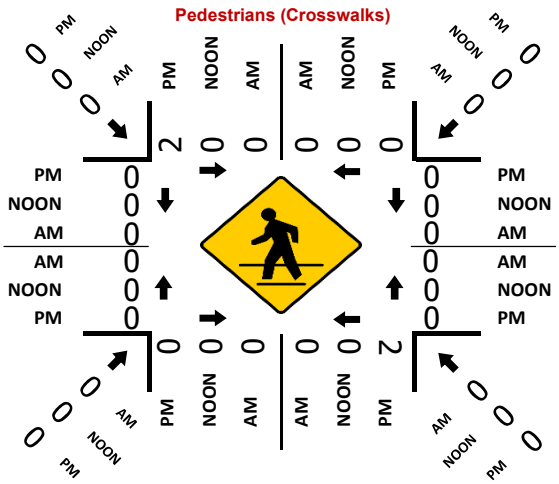
Cars (NOON)



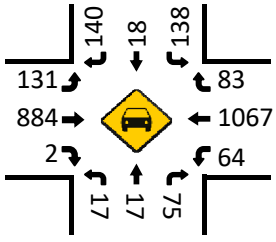
HT (NOON)



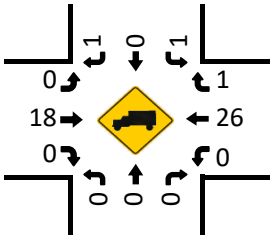
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Warrenton Village Center Dwy/Shopping Center Dwy
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-004
Date: 2/9/2023

Data - Total

NS/EW Streets:	Branch Dr				Branch Dr				Warrenton Village Center Dwy/Shopping Center Dwy				Warrenton Village Center Dwy/Shopping Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	2	0	0	2	5	0	0	0	4	2	0	1	0	0	0	18
6:15 AM	0	1	1	0	1	2	0	0	0	1	0	0	4	2	0	0	12
6:30 AM	1	3	1	0	1	4	0	0	0	3	2	0	3	1	0	0	19
6:45 AM	7	2	0	0	3	8	0	0	0	1	0	0	2	2	0	0	25
7:00 AM	3	6	0	0	0	9	0	0	0	4	5	0	3	6	1	0	37
7:15 AM	3	6	1	0	5	8	2	0	1	5	5	0	3	3	5	0	47
7:30 AM	10	16	0	0	2	10	1	0	0	5	5	0	1	3	5	0	58
7:45 AM	5	26	3	0	5	21	1	0	4	3	9	0	3	2	3	0	85
8:00 AM	6	14	3	0	6	16	0	0	1	4	10	0	2	4	2	0	68
8:15 AM	2	9	1	0	5	20	3	0	1	3	14	0	8	2	4	0	72
8:30 AM	9	5	0	0	3	17	5	0	3	2	5	0	1	4	3	0	57
8:45 AM	8	9	1	0	2	14	4	0	1	6	7	0	3	2	0	0	57
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	56	99	11	0	35	134	16	0	11	41	64	0	34	31	23	0	555
APPROACH %'s :	33.73%	59.64%	6.63%	0.00%	18.92%	72.43%	8.65%	0.00%	9.48%	35.34%	55.17%	0.00%	38.64%	35.23%	26.14%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	23	65	7	0	18	67	5	0	6	15	38	0	14	11	14	0	283
PEAK HR FACTOR :	0.575	0.625	0.583	0.000	0.750	0.798	0.417	0.000	0.375	0.750	0.679	0.000	0.438	0.688	0.700	0.000	0.832
	0.699				0.804				0.819				0.696				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	32	10	0	0	11	13	8	0	3	22	29	0	14	12	6	0	160
4:15 PM	19	6	3	0	10	11	8	0	6	22	28	0	10	12	14	0	149
4:30 PM	15	16	5	0	13	9	10	0	2	20	33	0	7	10	12	0	152
4:45 PM	28	11	4	0	14	6	6	0	6	13	26	0	14	16	9	0	153
5:00 PM	28	9	1	0	12	13	10	0	3	12	35	0	7	12	12	0	154
5:15 PM	25	7	3	0	12	9	9	0	6	12	30	0	11	9	12	0	145
5:30 PM	27	15	4	0	6	0	10	0	11	26	32	0	6	14	10	0	161
5:45 PM	28	6	2	0	9	6	8	0	5	22	32	0	12	21	7	0	158
6:00 PM	29	9	1	0	5	6	9	0	8	22	48	0	10	17	13	0	177
6:15 PM	20	16	2	0	4	6	6	0	6	17	32	0	8	14	8	0	139
6:30 PM	18	8	2	0	3	9	4	0	4	10	25	0	10	17	4	0	114
6:45 PM	10	6	0	0	1	5	7	0	4	9	36	0	4	7	10	0	99
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	279	119	27	0	100	93	95	0	64	207	386	0	113	161	117	0	1761
APPROACH %'s :	65.65%	28.00%	6.35%	0.00%	34.72%	32.29%	32.99%	0.00%	9.74%	31.51%	58.75%	0.00%	28.90%	41.18%	29.92%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	109	37	10	0	32	21	36	0	30	82	142	0	39	61	42	0	641
PEAK HR FACTOR :	0.940	0.617	0.625	0.000	0.667	0.583	0.900	0.000	0.682	0.788	0.740	0.000	0.813	0.726	0.808	0.000	0.905
	0.848				0.742				0.814				0.888				

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Warrenton Village Center Dwy/Shopping Center Dwy
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-004
Date: 2/9/2023

Data - Cars

NS/EW Streets:	Branch Dr				Branch Dr				Warrenton Village Center Dwy/Shopping Center Dwy				Warrenton Village Center Dwy/Shopping Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	2	0	0	2	5	0	0	0	4	2	0	1	0	0	0	18
6:15 AM	0	0	1	0	1	2	0	0	0	1	0	0	3	2	0	0	10
6:30 AM	1	3	0	0	1	4	0	0	0	3	1	0	3	1	0	0	17
6:45 AM	6	2	0	0	3	6	0	0	0	1	0	0	1	1	0	0	20
7:00 AM	3	6	0	0	0	8	0	0	0	4	5	0	3	5	1	0	35
7:15 AM	3	6	1	0	4	8	1	0	1	5	4	0	3	3	5	0	44
7:30 AM	10	16	0	0	2	10	1	0	0	5	5	0	1	3	5	0	58
7:45 AM	5	26	3	0	5	21	1	0	4	3	9	0	3	1	3	0	84
8:00 AM	6	14	3	0	6	13	0	0	1	4	10	0	2	4	2	0	65
8:15 AM	2	9	1	0	5	14	3	0	1	3	14	0	8	2	4	0	66
8:30 AM	9	5	0	0	3	16	5	0	3	2	4	0	1	3	3	0	54
8:45 AM	8	9	1	0	2	13	4	0	1	6	7	0	1	2	0	0	54
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	55	98	10	0	34	120	15	0	11	41	61	0	30	27	23	0	525
APPROACH %'s :	33.74%	60.12%	6.13%	0.00%	20.12%	71.01%	8.88%	0.00%	9.73%	36.28%	53.98%	0.00%	37.50%	33.75%	28.75%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	23	65	7	0	18	58	5	0	6	15	38	0	14	10	14	0	273
PEAK HR FACTOR :	0.575	0.625	0.583	0.000	0.750	0.690	0.417	0.000	0.375	0.750	0.679	0.000	0.438	0.625	0.700	0.000	0.813
	0.699				0.750				0.819				0.679				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	32	9	0	0	11	13	8	0	3	22	29	0	14	12	6	0	159
4:15 PM	19	6	3	0	10	10	8	0	6	22	27	0	10	11	13	0	145
4:30 PM	15	16	5	0	13	9	10	0	2	20	32	0	7	10	11	0	150
4:45 PM	28	11	4	0	14	6	6	0	6	13	26	0	14	16	9	0	153
5:00 PM	28	9	1	0	12	12	10	0	3	12	35	0	7	11	12	0	152
5:15 PM	25	7	3	0	12	7	9	0	6	12	30	0	11	9	12	0	143
5:30 PM	27	15	4	0	6	0	10	0	11	26	32	0	6	14	10	0	161
5:45 PM	28	6	2	0	9	6	8	0	5	22	32	0	12	20	7	0	157
6:00 PM	29	9	1	0	5	5	9	0	8	22	48	0	10	17	13	0	176
6:15 PM	20	16	2	0	4	6	6	0	6	17	32	0	8	14	8	0	139
6:30 PM	18	8	2	0	3	9	4	0	4	10	25	0	10	16	4	0	113
6:45 PM	10	6	0	0	1	4	7	0	4	9	36	0	3	7	10	0	97
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	279	118	27	0	100	87	95	0	64	207	384	0	112	157	115	0	1745
APPROACH %'s :	65.80%	27.83%	6.37%	0.00%	35.46%	30.85%	33.69%	0.00%	9.77%	31.60%	58.63%	0.00%	29.17%	40.89%	29.95%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	109	37	10	0	32	18	36	0	30	82	142	0	39	60	42	0	637
PEAK HR FACTOR :	0.940	0.617	0.625	0.000	0.667	0.643	0.900	0.000	0.682	0.788	0.740	0.000	0.813	0.750	0.808	0.000	0.905
	0.848				0.768				0.814				0.881				

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Warrenton Village Center Dwy/Shopping Center Dwy
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-004
Date: 2/9/2023

Data - HT

NS/EW Streets:	Branch Dr				Branch Dr				Warrenton Village Center Dwy/Shopping Center Dwy				Warrenton Village Center Dwy/Shopping Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
6:30 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
6:45 AM	1	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	5
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	3
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	1	0	1	14	1	0	0	0	3	0	4	4	0	0	30
APPROACH %'s :	33.33%	33.33%	33.33%	0.00%	6.25%	87.50%	6.25%	0.00%	0.00%	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	9	0	0	0	0	0	0	0	1	0	0	10
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.417
						0.375								0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
5:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	6	0	0	0	0	2	0	1	4	2	0	16
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	14.29%	57.14%	28.57%	0.00%	
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.500
						0.375								0.250			

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Warrenton Village Center Dwy/Shopping Center Dwy
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-004
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	Branch Dr				Branch Dr				Warrenton Village Center Dwy/Shopping Center Dwy				Warrenton Village Center Dwy/Shopping Center Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	05:15 PM - 06:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
							0.250				0.250						

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Warrenton Village Center Dwy/Shopping Center Dwy **Project ID:** 23-260020-004
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Branch Dr		Branch Dr		Warrenton Village Center Dwy/Shopping Center		Warrenton Village Center Dwy/Shopping Center		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	2	0	0	0	0	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	1	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	3	3	0	0	0	0	0	0	6
APPROACH %'s :	50.00%	50.00%							
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	1	1	0	0	0	0	0	0	2
PEAK HR FACTOR :	0.250	0.250							0.500
	0.500								

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	5	0	0	0	0	0	0	5
4:15 PM	1	2	0	0	1	0	0	0	4
4:30 PM	1	2	0	0	0	0	0	0	3
4:45 PM	3	0	0	0	0	1	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	2	1	0	0	0	0	0	0	3
5:30 PM	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	2	1	0	0	0	0	0	0	3
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	2	0	0	0	0	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	10	13	0	0	1	1	0	0	25
APPROACH %'s :	43.48%	56.52%			50.00%	50.00%			
PEAK HR :	05:15 PM - 06:15 PM								TOTAL
PEAK HR VOL :	5	2	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.625	0.500							0.583
	0.583								

Prepared by National Data & Surveying Services

Branch Dr & Warrenton Village Center Dwy/Shopping Center Dwy

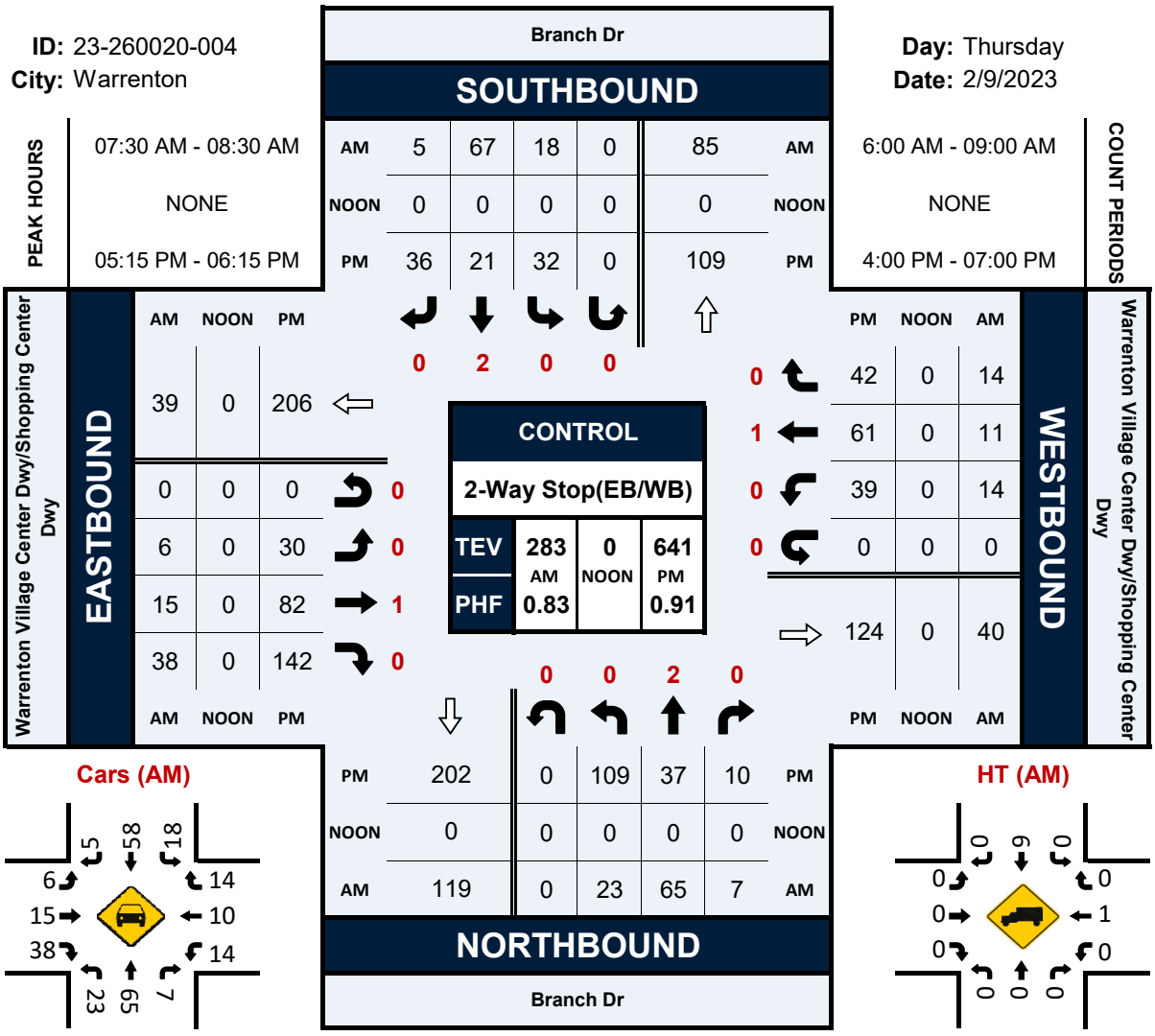
Peak Hour Turning Movement Count

ID: 23-260020-004
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	
AM	07:30 AM - 08:30 AM
NOON	NONE
PM	05:15 PM - 06:15 PM

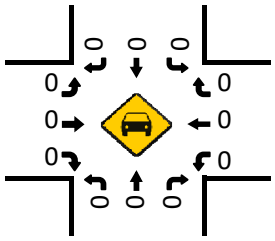
COUNT PERIODS	
AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 07:00 PM



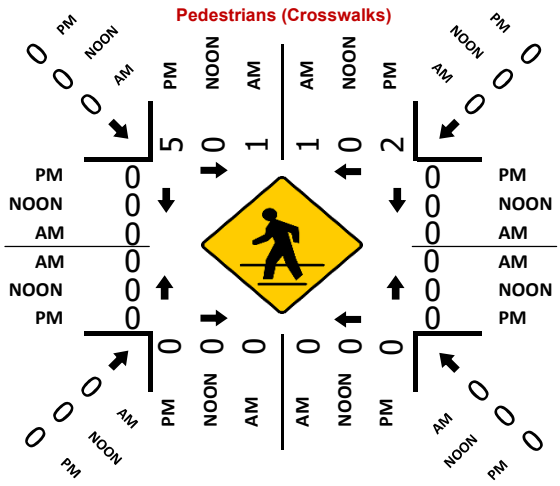
Cars (AM)

HT (AM)

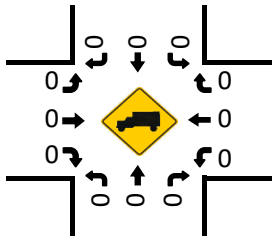
Cars (NOON)



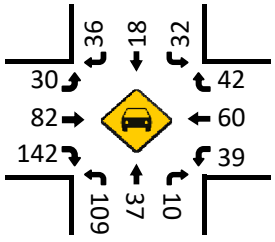
Pedestrians (Crosswalks)



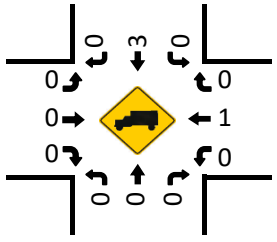
HT (NOON)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(NB/SB)

Project ID: 23-260020-005
Date: 2/9/2023

Data - Total

NS/EW Streets:	Branch Dr				Branch Dr				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	0	0	0	0	0	0	0	0	3	6	0	1	0	0	0	12
6:15 AM	0	0	1	0	0	0	0	0	0	2	3	0	0	4	0	0	10
6:30 AM	3	0	0	0	0	1	0	0	0	3	4	0	0	6	0	0	17
6:45 AM	2	0	0	0	0	0	0	0	1	3	9	0	2	6	1	0	24
7:00 AM	6	0	0	0	1	0	0	0	0	5	6	0	3	12	0	0	33
7:15 AM	12	0	1	0	0	2	0	0	0	15	9	0	4	10	0	0	53
7:30 AM	17	0	2	0	0	1	0	0	0	15	7	0	5	18	0	0	65
7:45 AM	31	0	4	0	0	0	1	0	0	20	23	0	4	49	0	0	132
8:00 AM	14	0	3	0	0	0	0	0	0	14	21	0	1	22	0	0	75
8:15 AM	11	0	3	0	0	0	0	0	0	27	24	0	4	17	0	0	86
8:30 AM	9	0	2	0	0	0	1	0	0	17	18	0	7	19	0	0	73
8:45 AM	7	0	3	0	0	2	1	0	1	26	15	0	3	19	0	0	77
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	114	0	19	0	1	6	3	0	2	150	145	0	34	182	1	0	657
APPROACH %'s :	85.71%	0.00%	14.29%	0.00%	10.00%	60.00%	30.00%	0.00%	0.67%	50.51%	48.82%	0.00%	15.67%	83.87%	0.46%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	65	0	12	0	0	0	2	0	0	78	86	0	16	107	0	0	366
PEAK HR FACTOR :	0.524	0.000	0.750	0.000	0.000	0.000	0.500	0.000	0.000	0.722	0.896	0.000	0.571	0.546	0.000	0.000	0.693
	0.550				0.500				0.804				0.580				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	15	0	4	0	1	1	0	0	1	34	21	0	9	25	1	0	112
4:15 PM	13	2	10	1	0	2	0	0	2	21	20	0	6	25	1	0	103
4:30 PM	19	0	11	0	0	1	0	0	0	30	26	0	5	33	0	0	125
4:45 PM	14	0	12	0	0	1	0	0	0	20	19	0	8	29	0	0	103
5:00 PM	18	1	4	0	0	1	0	0	1	22	20	0	12	27	0	0	106
5:15 PM	19	1	6	0	0	3	0	0	1	12	21	0	6	29	0	0	98
5:30 PM	26	1	8	0	1	0	0	0	0	23	12	0	4	26	1	0	102
5:45 PM	12	1	6	0	0	0	0	0	0	20	15	0	8	20	2	0	84
6:00 PM	22	2	6	0	0	0	0	0	0	15	13	0	8	14	1	0	81
6:15 PM	18	1	10	0	0	0	0	0	1	16	10	0	5	5	1	0	67
6:30 PM	10	3	4	0	1	2	1	0	0	15	7	0	7	9	0	0	59
6:45 PM	13	0	6	0	0	0	0	0	0	12	5	0	8	3	1	0	48
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	199	12	87	1	3	11	1	0	6	240	189	0	86	245	8	0	1088
APPROACH %'s :	66.56%	4.01%	29.10%	0.33%	20.00%	73.33%	6.67%	0.00%	1.38%	55.17%	43.45%	0.00%	25.37%	72.27%	2.36%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	61	2	37	1	1	5	0	0	3	105	86	0	28	112	2	0	443
PEAK HR FACTOR :	0.803	0.250	0.771	0.250	0.250	0.625	0.000	0.000	0.375	0.772	0.827	0.000	0.778	0.848	0.500	0.000	0.886
	0.842				0.750				0.866				0.934				

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(NB/SB)

Project ID: 23-260020-005
Date: 2/9/2023

Data - Cars

NS/EW Streets:	Branch Dr				Branch Dr				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	2	0	0	0	0	0	0	0	0	3	6	0	1	0	0	0	12
6:15 AM	0	0	0	0	0	0	0	0	0	2	3	0	0	4	0	0	9
6:30 AM	3	0	0	0	0	1	0	0	0	2	4	0	0	6	0	0	16
6:45 AM	2	0	0	0	0	0	0	0	1	3	8	0	1	6	1	0	22
7:00 AM	6	0	0	0	1	0	0	0	0	3	5	0	3	12	0	0	30
7:15 AM	12	0	1	0	0	2	0	0	0	15	8	0	3	10	0	0	51
7:30 AM	17	0	2	0	0	1	0	0	0	15	7	0	5	18	0	0	65
7:45 AM	31	0	4	0	0	0	1	0	0	20	23	0	4	48	0	0	131
8:00 AM	14	0	3	0	0	0	0	0	0	13	19	0	0	22	0	0	71
8:15 AM	11	0	3	0	0	0	0	0	0	27	18	0	4	17	0	0	80
8:30 AM	9	0	2	0	0	0	1	0	0	16	18	0	6	19	0	0	71
8:45 AM	7	0	3	0	0	2	1	0	1	26	14	0	3	19	0	0	76
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	114	0	18	0	1	6	3	0	2	145	133	0	30	181	1	0	634
APPROACH %'s :	86.36%	0.00%	13.64%	0.00%	10.00%	60.00%	30.00%	0.00%	0.71%	51.79%	47.50%	0.00%	14.15%	85.38%	0.47%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	65	0	12	0	0	0	2	0	0	76	78	0	14	106	0	0	353
PEAK HR FACTOR :	0.524	0.000	0.750	0.000	0.000	0.000	0.500	0.000	0.000	0.704	0.848	0.000	0.583	0.552	0.000	0.000	0.674
	0.550				0.500				0.856				0.577				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	14	0	4	0	1	1	0	0	1	34	21	0	9	25	1	0	111
4:15 PM	13	2	9	1	0	2	0	0	2	20	20	0	5	25	1	0	100
4:30 PM	18	0	11	0	0	1	0	0	0	29	26	0	5	33	0	0	123
4:45 PM	14	0	12	0	0	1	0	0	0	19	19	0	8	28	0	0	101
5:00 PM	18	1	4	0	0	1	0	0	1	22	20	0	11	26	0	0	104
5:15 PM	19	1	6	0	0	3	0	0	1	12	20	0	5	29	0	0	96
5:30 PM	26	1	8	0	1	0	0	0	0	23	12	0	4	26	1	0	102
5:45 PM	12	1	6	0	0	0	0	0	0	20	15	0	8	20	2	0	84
6:00 PM	22	2	6	0	0	0	0	0	0	15	13	0	7	14	1	0	80
6:15 PM	18	1	10	0	0	0	0	0	1	16	10	0	5	5	1	0	67
6:30 PM	10	3	4	0	1	2	1	0	0	15	7	0	7	9	0	0	59
6:45 PM	13	0	6	0	0	0	0	0	0	12	5	0	7	3	1	0	47
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	197	12	86	1	3	11	1	0	6	237	188	0	81	243	8	0	1074
APPROACH %'s :	66.55%	4.05%	29.05%	0.34%	20.00%	73.33%	6.67%	0.00%	1.39%	54.99%	43.62%	0.00%	24.40%	73.19%	2.41%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	59	2	36	1	1	5	0	0	3	102	86	0	27	111	2	0	435
PEAK HR FACTOR :	0.819	0.250	0.750	0.250	0.250	0.625	0.000	0.000	0.375	0.750	0.827	0.000	0.750	0.841	0.500	0.000	0.884
	0.845				0.750				0.853				0.921				

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(NB/SB)

Project ID: 23-260020-005
Date: 2/9/2023

Data - HT

NS/EW Streets:	Branch Dr				Branch Dr				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
7:00 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	1	2	0	1	0	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1	0	0	0	0	0	0	5	12	0	4	1	0	0	23
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	29.41%	70.59%	0.00%	80.00%	20.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	2	8	0	2	1	0	0	13
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.333	0.000	0.500	0.250	0.000	0.000	0.542
										0.417				0.750			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	3
4:30 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	1	0	0	0	0	0	0	3	1	0	5	2	0	0	14
APPROACH %'s :	66.67%	0.00%	33.33%	0.00%					0.00%	75.00%	25.00%	0.00%	71.43%	28.57%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	2	0	1	0	0	0	0	0	0	3	0	0	1	1	0	0	8
PEAK HR FACTOR :	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.250	0.250	0.000	0.000	0.667
			0.750							0.750				0.500			

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(NB/SB)

Project ID: 23-260020-005
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	Branch Dr				Branch Dr				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: Branch Dr & Oak Springs Dr
City: Warrenton
Project ID: 23-260020-005
Date: 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Branch Dr		Branch Dr		Oak Springs Dr		Oak Springs Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	1	0	0	0	0	0	0	0	1
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	1	0	0	1	0	0	1	3
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	1	1	0	0	0	0	0	0	2
8:15 AM	1	0	1	0	1	1	0	0	4
8:30 AM	2	2	0	0	1	0	0	0	5
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	6	5	1	0	3	1	0	1	17
APPROACH %'s :	54.55%	45.45%	100.00%	0.00%	75.00%	25.00%	0.00%	100.00%	
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	4	3	1	0	2	1	0	0	11
PEAK HR FACTOR :	0.500	0.375	0.250		0.500	0.250			0.550
	0.438		0.250		0.375				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	2	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	1	0	0	0	1
4:30 PM	0	1	0	0	0	1	0	0	2
4:45 PM	0	1	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	1	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	1	0	0	2
6:00 PM	3	2	0	0	1	0	0	0	6
6:15 PM	1	0	0	0	0	1	0	0	2
6:30 PM	0	1	0	0	0	0	0	0	1
6:45 PM	0	0	1	0	0	1	0	0	2
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	6	7	1	1	3	4	0	0	22
APPROACH %'s :	46.15%	53.85%	50.00%	50.00%	42.86%	57.14%			
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	2	2	0	0	1	1	0	0	6
PEAK HR FACTOR :	0.250	0.500			0.250	0.250			0.750
	0.500				0.500				

Prepared by National Data & Surveying Services

Branch Dr & Oak Springs Dr

Peak Hour Turning Movement Count

ID: 23-260020-005
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	
AM	07:45 AM - 08:45 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS	
AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 07:00 PM

SOUTHBOUND (Branch Dr)

AM	2	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	5	1	0	7	PM
	0	1	0	0		

EASTBOUND (Oak Springs Dr)

AM	NOON	PM	
174	0	173	
0	0	0	0
0	0	3	0
78	0	105	1
86	0	86	0
AM	NOON	PM	

WESTBOUND (Oak Springs Dr)

PM	NOON	AM	
2	0	0	0
112	0	107	1
28	0	16	0
0	0	0	0
143	0	90	
PM	NOON	AM	

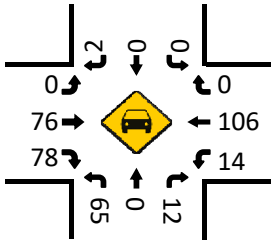
CONTROL: 2-Way Stop(NB/SB)

TEV	366	0	443
	AM	NOON	PM
PHF	0.69		0.89

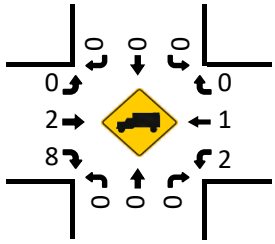
NORTHBOUND (Branch Dr)

	0	0	2	0	
PM	120	1	61	2	37	PM
NOON	0	0	0	0	0	NOON
AM	102	0	65	0	12	AM

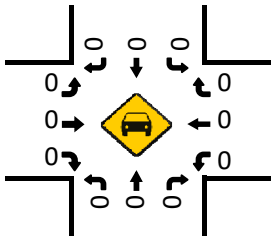
Cars (AM)



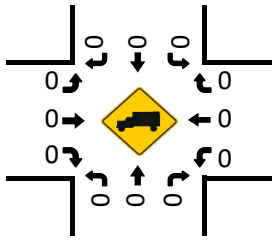
HT (AM)



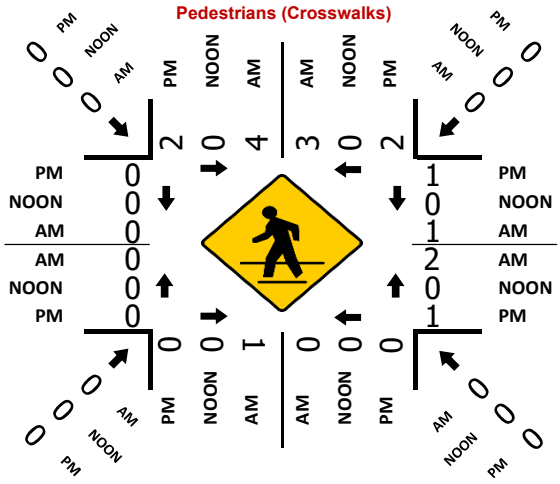
Cars (NOON)



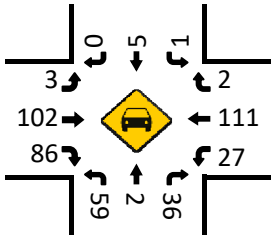
HT (NOON)



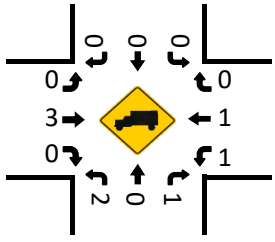
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: Hastings Ln & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-006
Date: 2/9/2023

Data - Total

NS/EW Streets:	Hastings Ln				Hastings Ln				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	4	0	0	0	1	5	0	0	0	1	1	0	12
6:15 AM	0	0	0	0	3	0	3	0	1	2	0	0	0	4	0	0	13
6:30 AM	0	0	0	0	2	0	5	0	3	5	0	0	0	6	3	0	24
6:45 AM	0	0	0	0	4	0	8	0	6	9	0	0	0	7	1	0	35
7:00 AM	0	0	0	0	5	0	5	0	7	7	0	0	0	14	4	0	42
7:15 AM	0	0	0	0	5	0	16	0	11	18	0	0	0	16	6	0	72
7:30 AM	0	0	0	0	2	0	13	0	17	20	0	0	0	24	10	0	86
7:45 AM	0	0	0	0	5	0	6	0	18	39	0	0	0	68	12	0	148
8:00 AM	0	0	0	0	14	0	20	0	24	20	0	0	0	27	10	0	115
8:15 AM	0	0	0	0	26	0	28	0	24	25	0	0	0	17	12	0	132
8:30 AM	0	0	0	0	16	0	20	0	8	19	0	0	0	21	7	0	91
8:45 AM	0	0	0	0	2	0	7	0	9	41	0	0	0	21	7	0	87
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	88	0	131	0	129	210	0	0	0	226	73	0	857
APPROACH %'s :					40.18%	0.00%	59.82%	0.00%	38.05%	61.95%	0.00%	0.00%	0.00%	75.59%	24.41%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	61	0	74	0	74	103	0	0	0	133	41	0	486
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.587	0.000	0.661	0.000	0.771	0.660	0.000	0.000	0.000	0.489	0.854	0.000	0.821
					0.625				0.776				0.544				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	24	0	12	0	7	32	0	0	0	39	1	0	115
4:15 PM	0	0	0	0	15	0	9	0	12	29	0	0	0	35	3	0	103
4:30 PM	0	0	0	0	21	0	14	0	12	36	0	0	0	46	6	0	135
4:45 PM	0	0	0	0	7	0	17	0	11	31	0	0	0	40	2	0	108
5:00 PM	0	0	0	0	13	0	2	0	16	30	0	0	0	43	3	0	107
5:15 PM	0	0	0	0	11	0	10	0	12	23	0	0	0	40	8	0	104
5:30 PM	0	0	0	0	2	0	11	0	14	32	0	0	0	43	8	0	110
5:45 PM	0	0	0	0	7	0	10	0	6	28	0	0	0	28	5	0	84
6:00 PM	0	0	0	0	15	0	6	0	8	14	0	0	0	31	5	0	79
6:15 PM	0	0	0	0	8	0	6	0	6	18	0	0	0	15	7	0	60
6:30 PM	0	0	0	0	5	0	4	0	4	18	0	0	0	16	5	0	52
6:45 PM	0	0	0	0	4	0	5	0	4	12	0	0	0	8	8	0	41
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	132	0	106	0	112	303	0	0	0	384	61	0	1098
APPROACH %'s :					55.46%	0.00%	44.54%	0.00%	26.99%	73.01%	0.00%	0.00%	0.00%	86.29%	13.71%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	67	0	52	0	42	128	0	0	0	160	12	0	461
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.698	0.000	0.765	0.000	0.875	0.889	0.000	0.000	0.000	0.870	0.500	0.000	0.854
					0.826				0.885				0.827				

National Data & Surveying Services Intersection Turning Movement Count

Location: Hastings Ln & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-006
Date: 2/9/2023

Data - Cars

NS/EW Streets:	Hastings Ln				Hastings Ln				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	4	0	0	0	1	5	0	0	0	1	1	0	12
6:15 AM	0	0	0	0	3	0	3	0	1	2	0	0	0	4	0	0	13
6:30 AM	0	0	0	0	2	0	5	0	2	4	0	0	0	6	3	0	22
6:45 AM	0	0	0	0	3	0	8	0	5	9	0	0	0	7	1	0	33
7:00 AM	0	0	0	0	4	0	5	0	7	5	0	0	0	14	4	0	39
7:15 AM	0	0	0	0	5	0	16	0	11	17	0	0	0	16	6	0	71
7:30 AM	0	0	0	0	2	0	13	0	17	20	0	0	0	24	10	0	86
7:45 AM	0	0	0	0	5	0	6	0	15	39	0	0	0	67	12	0	144
8:00 AM	0	0	0	0	12	0	20	0	22	19	0	0	0	27	10	0	110
8:15 AM	0	0	0	0	20	0	28	0	24	25	0	0	0	17	12	0	126
8:30 AM	0	0	0	0	16	0	20	0	8	18	0	0	0	21	7	0	90
8:45 AM	0	0	0	0	2	0	7	0	9	40	0	0	0	21	7	0	86
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	78	0	131	0	122	203	0	0	0	225	73	0	832
APPROACH %'s :					37.32%	0.00%	62.68%	0.00%	37.54%	62.46%	0.00%	0.00%	0.00%	75.50%	24.50%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	53	0	74	0	69	101	0	0	0	132	41	0	470
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.663	0.000	0.661	0.000	0.719	0.647	0.000	0.000	0.000	0.493	0.854	0.000	0.816
							0.661				0.787				0.547		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	24	0	12	0	7	32	0	0	0	38	1	0	114
4:15 PM	0	0	0	0	15	0	8	0	11	28	0	0	0	35	3	0	100
4:30 PM	0	0	0	0	21	0	14	0	12	35	0	0	0	45	6	0	133
4:45 PM	0	0	0	0	7	0	17	0	11	30	0	0	0	39	2	0	106
5:00 PM	0	0	0	0	12	0	2	0	15	30	0	0	0	42	3	0	104
5:15 PM	0	0	0	0	11	0	10	0	12	23	0	0	0	40	8	0	104
5:30 PM	0	0	0	0	2	0	11	0	14	32	0	0	0	43	8	0	110
5:45 PM	0	0	0	0	7	0	10	0	5	28	0	0	0	28	5	0	83
6:00 PM	0	0	0	0	15	0	6	0	8	14	0	0	0	31	5	0	79
6:15 PM	0	0	0	0	8	0	6	0	6	18	0	0	0	15	7	0	60
6:30 PM	0	0	0	0	5	0	4	0	3	18	0	0	0	16	5	0	51
6:45 PM	0	0	0	0	4	0	5	0	4	12	0	0	0	8	8	0	41
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	131	0	105	0	108	300	0	0	0	380	61	0	1085
APPROACH %'s :					55.51%	0.00%	44.49%	0.00%	26.47%	73.53%	0.00%	0.00%	0.00%	86.17%	13.83%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	67	0	51	0	41	125	0	0	0	157	12	0	453
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.698	0.000	0.750	0.000	0.854	0.893	0.000	0.000	0.000	0.872	0.500	0.000	0.852
							0.819				0.883				0.828		

National Data & Surveying Services Intersection Turning Movement Count

Location: Hastings Ln & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-006
Date: 2/9/2023

Data - HT

NS/EW Streets:	Hastings Ln				Hastings Ln				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
7:00 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	3
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	4
8:00 AM	0	0	0	0	2	0	0	0	2	1	0	0	0	0	0	0	5
8:15 AM	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	10	0	0	0	7	7	0	0	0	1	0	0	25
APPROACH %'s :					100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	8	0	0	0	5	2	0	0	0	1	0	0	16
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.333	0.000	0.000	0.000	0.417	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.667
					0.333				0.583				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:00 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	1	0	4	3	0	0	0	4	0	0	13
APPROACH %'s :					50.00%	0.00%	50.00%	0.00%	57.14%	42.86%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	1	3	0	0	0	3	0	0	8
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.750	0.000	0.000	0.000	0.750	0.000	0.000	0.667
					0.250				0.500				0.750				

National Data & Surveying Services Intersection Turning Movement Count

Location: Hastings Ln & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-006
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	Hastings Ln				Hastings Ln				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: Hastings Ln & Oak Springs Dr
City: Warrenton
Project ID: 23-260020-006
Date: 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Hastings Ln		Hastings Ln		Oak Springs Dr		Oak Springs Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	1	0	0	0	0	0	0	0	1
7:00 AM	1	2	0	0	0	1	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	0	1
8:15 AM	1	0	0	0	1	0	0	0	2
8:30 AM	0	1	0	0	0	0	0	0	1
8:45 AM	1	0	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	4	3	0	0	1	2	0	0	10
APPROACH %'s :	57.14%	42.86%			33.33%	66.67%			
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	1	1	0	0	1	1	0	0	4
PEAK HR FACTOR :	0.250	0.250			0.250	0.250			0.500
	0.500				0.500				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	2	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	2	0	0	0	0	0	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	1	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	2	2	0	0	2	1	0	0	7
APPROACH %'s :	50.00%	50.00%			66.67%	33.33%			
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	1	0	0	2	0	0	0	3
PEAK HR FACTOR :		0.250			0.250				0.375
	0.250				0.250				

Prepared by National Data & Surveying Services

Hastings Ln & Oak Springs Dr

Peak Hour Turning Movement Count

ID: 23-260020-006
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	COUNT PERIODS
07:45 AM - 08:45 AM	6:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 07:00 PM

SOUTHBOUND (Hastings Ln)

AM	74	0	61	0	115	AM
NOON	0	0	0	0	0	NOON
PM	52	0	67	0	54	PM

EASTBOUND (Oak Springs Dr)

AM	NOON	PM	
207	0	212	
0	0	0	0
74	0	42	0
103	0	128	1
0	0	0	0

WESTBOUND (Oak Springs Dr)

PM	NOON	AM	
12	0	41	0
160	0	133	1
0	0	0	0
0	0	0	0
195	0	164	

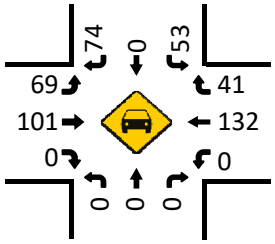
NORTHBOUND (Hastings Ln)

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

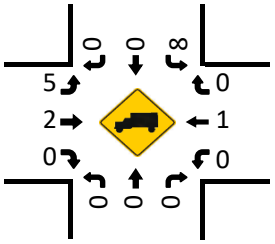
CONTROL: 1-Way Stop(SB)

TEV	486	0	461
	AM	NOON	PM
PHF	0.82		0.85

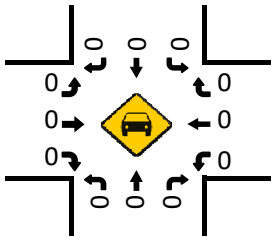
Cars (AM)



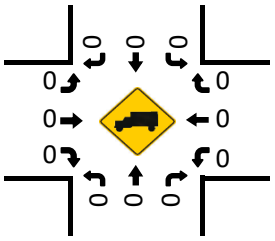
HT (AM)



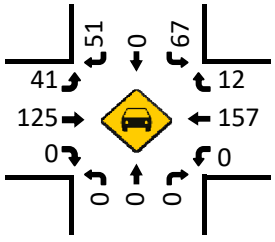
Cars (NOON)



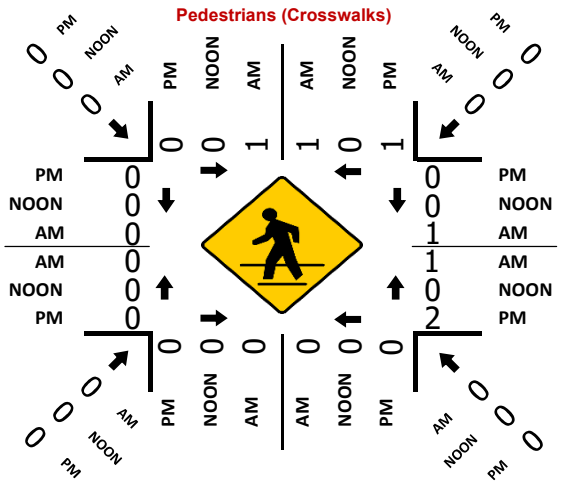
HT (NOON)



Cars (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
1
1
0
1
0
0
0
0
0
0
0
0
0
0
0
0

National Data & Surveying Services Intersection Turning Movement Count

Location: Highland School Dwy & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-007
Date: 2/9/2023

Data - Total

NS/EW Streets:	Highland School Dwy				Highland School Dwy				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	7
6:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	0	11
6:30 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	11	0	0	18
6:45 AM	0	0	0	0	0	0	0	0	0	15	0	0	0	14	0	0	29
7:00 AM	0	0	0	0	0	0	0	0	2	15	0	0	0	16	4	0	37
7:15 AM	0	0	0	0	0	0	2	0	1	28	0	0	0	30	2	0	63
7:30 AM	0	0	0	0	3	0	4	0	13	34	0	0	0	25	10	0	89
7:45 AM	0	0	0	0	25	0	8	0	19	32	0	0	0	43	33	0	160
8:00 AM	0	0	0	0	2	0	6	0	5	43	0	0	0	42	5	0	103
8:15 AM	0	0	0	0	1	0	1	0	1	47	0	0	0	42	3	0	95
8:30 AM	0	0	0	0	0	0	3	0	5	28	0	0	0	32	7	0	75
8:45 AM	0	0	0	0	19	0	14	0	20	30	0	0	0	17	13	0	113
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	50	0	38	0	66	289	0	0	0	280	77	0	800
APPROACH %'s :					56.82%	0.00%	43.18%	0.00%	18.59%	81.41%	0.00%	0.00%	0.00%	78.43%	21.57%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	31	0	19	0	38	156	0	0	0	152	51	0	447
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.310	0.000	0.594	0.000	0.500	0.830	0.000	0.000	0.000	0.884	0.386	0.000	0.698
						0.379				0.951				0.668			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	2	0	1	0	2	35	0	0	0	50	1	0	91
4:15 PM	0	0	0	0	2	0	6	0	2	39	0	0	0	44	0	0	93
4:30 PM	0	0	0	0	4	0	17	0	1	44	0	0	0	59	1	0	126
4:45 PM	0	0	0	0	1	0	3	0	0	41	0	0	0	57	0	0	102
5:00 PM	0	0	0	0	0	0	0	0	0	46	0	0	0	44	1	0	91
5:15 PM	0	0	0	0	1	0	0	0	0	34	0	0	0	49	1	0	85
5:30 PM	0	0	0	0	0	0	0	0	1	47	0	0	0	54	0	0	102
5:45 PM	0	0	0	0	0	0	2	0	0	33	0	0	0	37	0	0	72
6:00 PM	0	0	0	0	0	0	0	0	0	22	0	0	0	38	0	0	60
6:15 PM	0	0	0	0	1	0	0	0	0	23	0	0	0	21	0	0	45
6:30 PM	0	0	0	0	0	0	1	0	0	22	0	0	0	20	0	0	43
6:45 PM	0	0	0	0	0	0	0	0	0	16	0	0	0	13	0	0	29
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	11	0	30	0	6	402	0	0	0	486	4	0	939
APPROACH %'s :					26.83%	0.00%	73.17%	0.00%	1.47%	98.53%	0.00%	0.00%	0.00%	99.18%	0.82%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	7	0	26	0	3	170	0	0	0	204	2	0	412
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.438	0.000	0.382	0.000	0.375	0.924	0.000	0.000	0.000	0.864	0.500	0.000	0.817
						0.393				0.940				0.858			

National Data & Surveying Services Intersection Turning Movement Count

Location: Highland School Dwy & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-007
Date: 2/9/2023

Data - Cars

NS/EW Streets:	Highland School Dwy				Highland School Dwy				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	7
6:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	0	11
6:30 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	11	0	0	16
6:45 AM	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	28
7:00 AM	0	0	0	0	0	0	0	0	2	13	0	0	0	16	4	0	35
7:15 AM	0	0	0	0	0	0	2	0	1	27	0	0	0	30	2	0	62
7:30 AM	0	0	0	0	3	0	4	0	13	34	0	0	0	25	10	0	89
7:45 AM	0	0	0	0	25	0	8	0	19	29	0	0	0	42	33	0	156
8:00 AM	0	0	0	0	2	0	6	0	5	40	0	0	0	42	5	0	100
8:15 AM	0	0	0	0	1	0	1	0	1	47	0	0	0	42	3	0	95
8:30 AM	0	0	0	0	0	0	3	0	5	27	0	0	0	32	7	0	74
8:45 AM	0	0	0	0	19	0	14	0	20	29	0	0	0	17	13	0	112
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	50	0	38	0	66	275	0	0	0	279	77	0	785
APPROACH %'s :					56.82%	0.00%	43.18%	0.00%	19.35%	80.65%	0.00%	0.00%	0.00%	78.37%	21.63%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	31	0	19	0	38	150	0	0	0	151	51	0	440
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.310	0.000	0.594	0.000	0.500	0.798	0.000	0.000	0.000	0.899	0.386	0.000	0.705
						0.379				0.979				0.673			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	2	0	1	0	2	35	0	0	0	49	1	0	90
4:15 PM	0	0	0	0	2	0	6	0	2	37	0	0	0	43	0	0	90
4:30 PM	0	0	0	0	4	0	17	0	1	43	0	0	0	58	1	0	124
4:45 PM	0	0	0	0	1	0	3	0	0	40	0	0	0	56	0	0	100
5:00 PM	0	0	0	0	0	0	0	0	0	45	0	0	0	43	1	0	89
5:15 PM	0	0	0	0	1	0	0	0	0	34	0	0	0	49	1	0	85
5:30 PM	0	0	0	0	0	0	0	0	1	47	0	0	0	54	0	0	102
5:45 PM	0	0	0	0	0	0	2	0	0	32	0	0	0	37	0	0	71
6:00 PM	0	0	0	0	0	0	0	0	0	22	0	0	0	38	0	0	60
6:15 PM	0	0	0	0	1	0	0	0	0	23	0	0	0	21	0	0	45
6:30 PM	0	0	0	0	0	0	1	0	0	21	0	0	0	20	0	0	42
6:45 PM	0	0	0	0	0	0	0	0	0	16	0	0	0	13	0	0	29
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	11	0	30	0	6	395	0	0	0	481	4	0	927
APPROACH %'s :					26.83%	0.00%	73.17%	0.00%	1.50%	98.50%	0.00%	0.00%	0.00%	99.18%	0.82%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	7	0	26	0	3	165	0	0	0	200	2	0	403
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.438	0.000	0.382	0.000	0.375	0.917	0.000	0.000	0.000	0.862	0.500	0.000	0.813
						0.393				0.933				0.856			

National Data & Surveying Services Intersection Turning Movement Count

Location: Highland School Dwy & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-007
Date: 2/9/2023

Data - HT

NS/EW Streets:	Highland School Dwy				Highland School Dwy				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
6:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	14	0	0	0	1	0	0	15
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.000	0.438
										0.500				0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0	0	12
APPROACH %'s :									0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	9
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.000	1.000	0.000	0.000	0.750
										0.625				1.000			

National Data & Surveying Services Intersection Turning Movement Count

Location: Highland School Dwy & Oak Springs Dr
City: Warrenton
Control: 1-Way Stop(SB)

Project ID: 23-260020-007
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	Highland School Dwy				Highland School Dwy				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: Highland School Dwy & Oak Springs Dr
City: Warrenton
Project ID: 23-260020-007
Date: 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Highland School Dwy		Highland School Dwy		Oak Springs Dr		Oak Springs Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	0	1
APPROACH %'s :	100.00%	0.00%							
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	0	0	0	3
APPROACH %'s :	0.00%	100.00%							
PEAK HR :	04:15 PM - 05:15 PM								TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	0	2
PEAK HR FACTOR :		0.500							0.500
	0.500								

Prepared by National Data & Surveying Services

Highland School Dwy & Oak Springs Dr

Peak Hour Turning Movement Count

ID: 23-260020-007
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	
AM	07:30 AM - 08:30 AM
NOON	NONE
PM	04:15 PM - 05:15 PM

COUNT PERIODS	
AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 07:00 PM

Highland School Dwy

SOUTHBOUND

AM	19	0	31	0	89	AM
NOON	0	0	0	0	0	NOON
PM	26	0	7	0	5	PM

EASTBOUND (Oak Springs Dr)

AM	NOON	PM		
171	0	230		
0	0	0	0	
38	0	3	1	
156	0	170	1	
0	0	0	0	
AM	NOON	PM		

WESTBOUND (Oak Springs Dr)

PM	NOON	AM	
2	0	51	0
204	0	152	1
0	0	0	0
0	0	0	0
177	0	187	
PM	NOON	AM	

CONTROL

1-Way stop(SB)

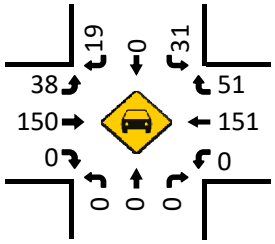
TEV	447	0	412
	AM	NOON	PM
PHF	0.70		0.82

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

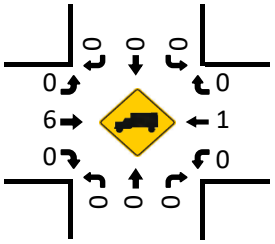
NORTHBOUND

Highland School Dwy

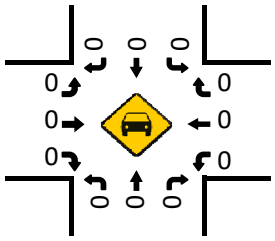
Cars (AM)



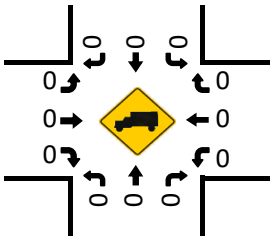
HT (AM)



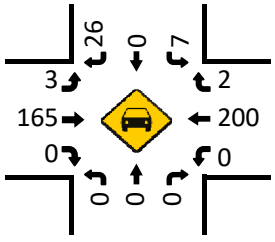
Cars (NOON)



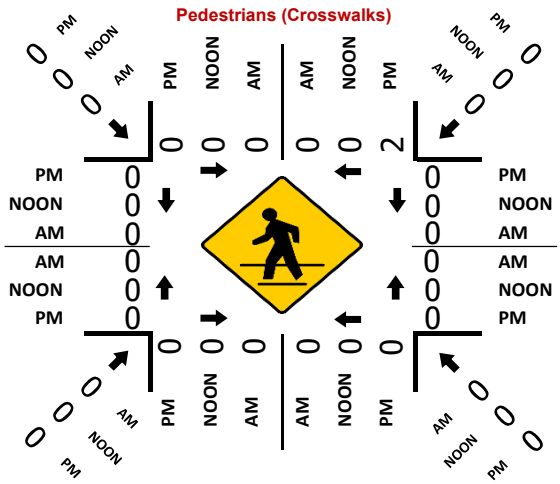
HT (NOON)



Cars (PM)



Pedestrians (Crosswalks)


PM
NOON
AM
0
0
0
0
0
0
0
0
0
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0
0
2
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0

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-008
Date: 2/9/2023

Data - Total

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	38	1	0	5	29	0	0	0	0	0	0	0	0	1	0	74
6:15 AM	0	38	2	0	2	28	0	0	0	0	0	0	3	0	3	0	76
6:30 AM	0	49	3	0	4	38	0	0	0	0	0	0	6	0	6	0	106
6:45 AM	0	48	5	0	10	59	0	0	0	0	0	0	6	0	7	0	135
7:00 AM	1	65	13	0	5	113	1	0	0	0	0	0	13	0	4	0	215
7:15 AM	0	71	15	0	13	88	0	0	0	0	1	0	18	0	14	0	220
7:30 AM	1	121	29	0	17	79	1	0	0	1	0	0	9	0	18	0	276
7:45 AM	0	152	27	0	24	108	0	0	0	0	0	0	12	0	41	0	364
8:00 AM	0	73	21	0	28	90	0	0	0	0	0	0	20	0	26	0	258
8:15 AM	0	59	21	0	26	78	0	0	0	0	0	0	22	1	20	0	227
8:30 AM	0	60	18	0	19	74	1	0	0	0	0	0	23	1	12	0	208
8:45 AM	1	61	31	1	15	93	2	0	0	0	0	0	22	0	10	0	236
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	835	186	1	168	877	5	0	0	1	1	0	154	2	162	0	2395
APPROACH %'s :	0.29%	81.46%	18.15%	0.10%	16.00%	83.52%	0.48%	0.00%	0.00%	50.00%	50.00%	0.00%	48.43%	0.63%	50.94%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	1	405	98	0	95	355	1	0	0	1	0	0	63	1	105	0	1125
PEAK HR FACTOR :	0.250	0.666	0.845	0.000	0.848	0.822	0.250	0.000	0.000	0.250	0.000	0.000	0.716	0.250	0.640	0.000	0.773
		0.704				0.854				0.250				0.797			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	81	19	0	19	128	0	0	1	0	1	0	20	0	32	0	302
4:15 PM	0	95	24	0	16	142	0	0	1	0	0	0	13	0	34	0	325
4:30 PM	0	119	16	0	30	108	0	0	0	0	2	0	40	0	39	0	354
4:45 PM	1	75	18	0	21	119	2	0	0	1	1	0	24	0	34	0	296
5:00 PM	1	94	19	0	27	107	0	0	0	1	1	0	13	0	33	0	296
5:15 PM	0	85	14	0	19	116	0	0	0	0	1	0	18	0	31	0	284
5:30 PM	1	68	21	0	26	93	0	0	0	1	0	0	25	0	28	0	263
5:45 PM	0	83	9	0	24	106	1	0	0	0	0	0	22	0	18	0	263
6:00 PM	0	66	11	0	13	64	0	0	0	0	1	0	13	0	23	0	191
6:15 PM	0	66	11	0	10	87	0	0	0	0	0	0	8	0	14	0	196
6:30 PM	0	56	12	0	10	54	0	0	1	0	1	0	9	0	13	0	156
6:45 PM	0	52	8	0	8	53	0	0	0	0	0	0	3	1	8	0	133
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	940	182	0	223	1177	3	0	3	3	8	0	208	1	307	0	3059
APPROACH %'s :	0.36%	83.48%	16.16%	0.00%	15.89%	83.89%	0.21%	0.00%	21.43%	21.43%	57.14%	0.00%	40.31%	0.19%	59.50%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	2	370	77	0	86	497	2	0	2	1	4	0	97	0	139	0	1277
PEAK HR FACTOR :	0.500	0.777	0.802	0.000	0.717	0.875	0.250	0.000	0.500	0.250	0.500	0.000	0.606	0.000	0.891	0.000	0.902
		0.831				0.926				0.875				0.747			

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-008
Date: 2/9/2023

Data - Cars

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	35	1	0	5	28	0	0	0	0	0	0	0	0	1	0	70
6:15 AM	0	35	2	0	2	28	0	0	0	0	0	0	3	0	3	0	73
6:30 AM	0	47	2	0	3	36	0	0	0	0	0	0	6	0	6	0	100
6:45 AM	0	45	5	0	9	56	0	0	0	0	0	0	6	0	7	0	128
7:00 AM	1	57	11	0	5	106	0	0	0	0	0	0	13	0	4	0	197
7:15 AM	0	67	15	0	12	81	0	0	0	0	1	0	18	0	14	0	208
7:30 AM	1	117	29	0	17	71	1	0	0	1	0	0	9	0	18	0	264
7:45 AM	0	146	26	0	22	107	0	0	0	0	0	0	12	0	40	0	353
8:00 AM	0	67	21	0	25	89	0	0	0	0	0	0	20	0	26	0	248
8:15 AM	0	52	21	0	26	72	0	0	0	0	0	0	22	1	20	0	214
8:30 AM	0	56	17	0	19	59	1	0	0	0	0	0	23	1	12	0	188
8:45 AM	1	58	31	1	14	88	2	0	0	0	0	0	22	0	10	0	227
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	782	181	1	159	821	4	0	0	1	1	0	154	2	161	0	2270
APPROACH %'s :	0.31%	80.87%	18.72%	0.10%	16.16%	83.43%	0.41%	0.00%	0.00%	50.00%	50.00%	0.00%	48.58%	0.63%	50.79%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	1	382	97	0	90	339	1	0	0	1	0	0	63	1	104	0	1079
PEAK HR FACTOR :	0.250	0.654	0.836	0.000	0.865	0.792	0.250	0.000	0.000	0.250	0.000	0.000	0.716	0.250	0.650	0.000	0.764
	0.698				0.833				0.250				0.808				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	80	19	0	19	124	0	0	1	0	1	0	20	0	31	0	296
4:15 PM	0	93	22	0	16	134	0	0	1	0	0	0	12	0	34	0	312
4:30 PM	0	115	15	0	30	105	0	0	0	0	2	0	40	0	38	0	345
4:45 PM	1	71	18	0	20	116	2	0	0	1	1	0	24	0	33	0	287
5:00 PM	1	93	18	0	27	105	0	0	0	1	1	0	13	0	32	0	291
5:15 PM	0	83	14	0	19	115	0	0	0	0	1	0	18	0	31	0	281
5:30 PM	1	68	21	0	26	92	0	0	0	1	0	0	25	0	28	0	262
5:45 PM	0	82	8	0	24	105	1	0	0	0	0	0	22	0	18	0	260
6:00 PM	0	65	11	0	13	64	0	0	0	0	1	0	13	0	23	0	190
6:15 PM	0	66	11	0	10	86	0	0	0	0	0	0	8	0	14	0	195
6:30 PM	0	56	11	0	10	53	0	0	1	0	1	0	9	0	13	0	154
6:45 PM	0	51	8	0	8	52	0	0	0	0	0	0	3	1	8	0	131
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	923	176	0	222	1151	3	0	3	3	8	0	207	1	303	0	3004
APPROACH %'s :	0.36%	83.68%	15.96%	0.00%	16.13%	83.65%	0.22%	0.00%	21.43%	21.43%	57.14%	0.00%	40.51%	0.20%	59.30%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	2	359	74	0	85	479	2	0	2	1	4	0	96	0	136	0	1240
PEAK HR FACTOR :	0.500	0.780	0.841	0.000	0.708	0.894	0.250	0.000	0.500	0.250	0.500	0.000	0.600	0.000	0.895	0.000	0.899
	0.837				0.943				0.875				0.744				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-008
Date: 2/9/2023

Data - HT

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
6:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:30 AM	0	2	1	0	1	2	0	0	0	0	0	0	0	0	0	0	6
6:45 AM	0	3	0	0	1	3	0	0	0	0	0	0	0	0	0	0	7
7:00 AM	0	8	2	0	0	7	1	0	0	0	0	0	0	0	0	0	18
7:15 AM	0	4	0	0	1	7	0	0	0	0	0	0	0	0	0	0	12
7:30 AM	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	0	12
7:45 AM	0	6	1	0	2	1	0	0	0	0	0	0	0	0	1	0	11
8:00 AM	0	6	0	0	3	1	0	0	0	0	0	0	0	0	0	0	10
8:15 AM	0	7	0	0	0	6	0	0	0	0	0	0	0	0	0	0	13
8:30 AM	0	4	1	0	0	15	0	0	0	0	0	0	0	0	0	0	20
8:45 AM	0	3	0	0	1	5	0	0	0	0	0	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	53	5	0	9	56	1	0	0	0	0	0	0	0	1	0	125
APPROACH %'s :	0.00%	91.38%	8.62%	0.00%	13.64%	84.85%	1.52%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	23	1	0	5	16	0	0	0	0	0	0	0	0	1	0	46
PEAK HR FACTOR :	0.000	0.821	0.250	0.000	0.417	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.885
	0.857				0.656								0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	1	0	6
4:15 PM	0	2	2	0	0	8	0	0	0	0	0	0	1	0	0	0	13
4:30 PM	0	4	1	0	0	3	0	0	0	0	0	0	0	0	1	0	9
4:45 PM	0	4	0	0	1	3	0	0	0	0	0	0	0	0	1	0	9
5:00 PM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	1	0	5
5:15 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
6:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	17	6	0	1	26	0	0	0	0	0	0	1	0	4	0	55
APPROACH %'s :	0.00%	73.91%	26.09%	0.00%	3.70%	96.30%	0.00%	0.00%					20.00%	0.00%	80.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	11	3	0	1	18	0	0	0	0	0	0	1	0	3	0	37
PEAK HR FACTOR :	0.000	0.688	0.375	0.000	0.250	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.750	0.000	0.712
	0.700				0.594								1.000				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Oak Springs Dr
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-008
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Oak Springs Dr				Oak Springs Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Oak Springs Dr **Project ID:** 23-260020-008
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	US 17/US 211/Broadview Ave		US 17/US 211/Broadview Ave		Oak Springs Dr		Oak Springs Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	1	0	1
7:00 AM	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	1	1	3
APPROACH %'s :					100.00%	0.00%	50.00%	50.00%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	1	2
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	1	2	0	3
5:00 PM	0	1	0	0	0	0	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	1	0	1
6:00 PM	0	0	0	0	3	0	0	0	3
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	3	1	5	2	12
APPROACH %'s :	0.00%	100.00%			75.00%	25.00%	71.43%	28.57%	
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	1	3	1	5
PEAK HR FACTOR :						0.250	0.375	0.250	0.417
					0.250		0.500		

Prepared by National Data & Surveying Services

US 17/US 211/Broadview Ave & Oak Springs Dr

Peak Hour Turning Movement Count

ID: 23-260020-008
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	6:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 07:00 PM

SOUTHBOUND (US 17/US 211/Broadview Ave)

AM	1	355	95	0	510	AM
NOON	0	0	0	0	0	NOON
PM	2	497	86	0	511	PM

EASTBOUND (Oak Springs Dr)

AM	NOON	PM	
3	0	4	
0	0	0	0
0	0	2	0
1	0	1	1
0	0	4	0

WESTBOUND (Oak Springs Dr)

PM	NOON	AM	
139	0	105	1
0	0	1	0
97	0	63	1
0	0	0	0
164	0	194	

NORTHBOUND (US 17/US 211/Broadview Ave)

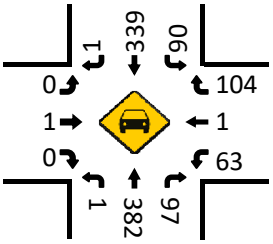
PM	598	0	2	370	77	PM
NOON	0	0	0	0	0	NOON
AM	418	0	1	405	98	AM

CONTROL

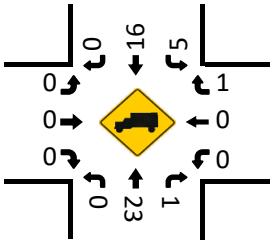
2-Way Stop(EB/WB)

TEV	1125 AM	0 NOON	1277 PM
PHF	0.77		0.90

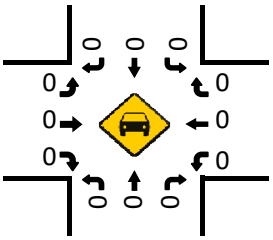
Cars (AM)



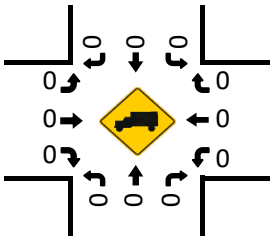
HT (AM)



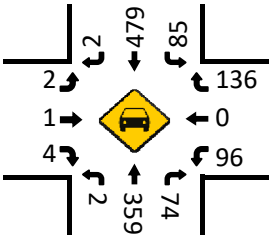
Cars (NOON)



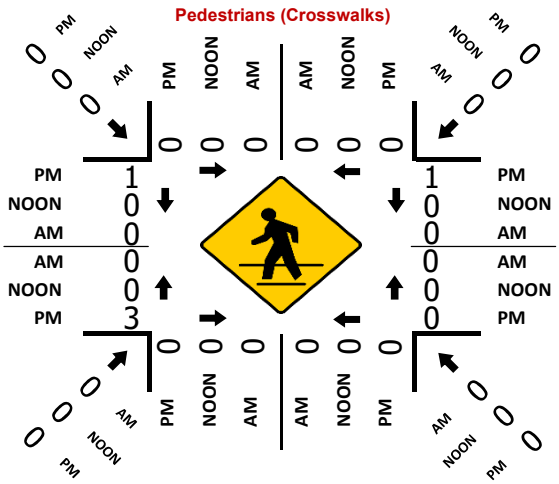
HT (NOON)



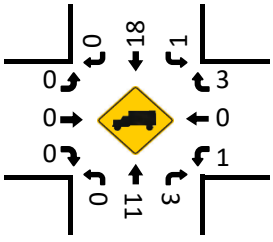
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Warrenton Village North Dwy
City: Warrenton
Control: 1-Way stop(WB)

Project ID: 23-260020-009
Date: 2/9/2023

Data - Total

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Warrenton Village North Dwy				Warrenton Village North Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	38	1	0	0	28	1	0	0	0	1	0	1	0	0	0	70
6:15 AM	0	41	0	0	0	31	0	0	0	0	0	0	0	0	0	0	72
6:30 AM	0	51	0	0	1	43	0	0	0	0	0	0	0	0	0	0	95
6:45 AM	0	52	0	0	1	64	0	0	0	0	0	0	0	0	1	0	118
7:00 AM	6	78	0	0	2	123	0	0	0	0	1	0	2	0	2	0	214
7:15 AM	1	84	1	0	0	107	0	0	0	0	1	0	0	0	1	0	195
7:30 AM	2	153	1	0	3	82	0	0	0	0	0	0	0	1	0	0	242
7:45 AM	7	169	2	0	4	118	1	0	0	0	0	0	1	0	8	0	310
8:00 AM	3	89	5	0	4	106	1	0	0	0	0	0	3	0	5	0	216
8:15 AM	1	77	2	0	4	95	1	0	0	0	3	0	1	0	5	0	189
8:30 AM	4	75	4	0	3	92	1	0	0	0	2	0	2	0	5	0	188
8:45 AM	8	83	1	0	1	116	0	0	2	0	4	0	4	0	5	0	224
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	32	990	17	0	23	1005	5	0	2	0	12	0	14	1	32	0	2133
APPROACH %'s :	3.08%	95.28%	1.64%	0.00%	2.23%	97.29%	0.48%	0.00%	14.29%	0.00%	85.71%	0.00%	29.79%	2.13%	68.09%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	13	495	9	0	11	413	2	0	0	0	1	0	4	1	14	0	963
PEAK HR FACTOR :	0.464	0.732	0.450	0.000	0.688	0.875	0.500	0.000	0.000	0.000	0.250	0.000	0.333	0.250	0.438	0.000	0.777
	0.726				0.866				0.250				0.528				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	87	6	0	17	131	2	0	2	0	4	0	11	1	11	0	275
4:15 PM	5	104	1	1	8	146	1	0	2	0	3	0	3	0	13	0	287
4:30 PM	2	124	8	1	8	140	1	0	4	1	5	0	10	0	8	0	312
4:45 PM	3	85	0	0	7	135	2	1	2	0	5	0	9	0	5	0	254
5:00 PM	5	102	2	0	9	108	4	0	3	1	6	0	6	0	9	0	255
5:15 PM	8	91	1	0	12	121	1	0	1	1	6	0	9	0	7	0	258
5:30 PM	5	83	3	0	5	114	0	0	0	1	3	0	8	0	8	0	230
5:45 PM	2	81	3	0	13	113	1	0	0	0	1	0	2	0	10	0	226
6:00 PM	5	70	3	0	10	68	1	0	2	1	5	0	2	0	5	0	172
6:15 PM	1	62	0	0	7	88	0	0	0	0	2	0	9	0	15	0	184
6:30 PM	0	60	3	0	4	59	1	0	1	0	2	0	9	0	7	0	146
6:45 PM	3	59	1	0	8	48	0	0	0	0	5	0	3	1	1	0	129
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	42	1008	31	2	108	1271	14	1	17	5	47	0	81	2	99	0	2728
APPROACH %'s :	3.88%	93.07%	2.86%	0.18%	7.75%	91.18%	1.00%	0.07%	24.64%	7.25%	68.12%	0.00%	44.51%	1.10%	54.40%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	13	400	15	2	40	552	6	1	10	1	17	0	33	1	37	0	1128
PEAK HR FACTOR :	0.650	0.806	0.469	0.500	0.588	0.945	0.750	0.250	0.625	0.250	0.850	0.000	0.750	0.250	0.712	0.000	0.904
	0.796				0.966				0.700				0.772				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Warrenton Village North Dwy
City: Warrenton
Control: 1-Way stop(WB)

Project ID: 23-260020-009
Date: 2/9/2023

Data - Cars

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Warrenton Village North Dwy				Warrenton Village North Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	35	1	0	0	28	0	0	0	0	0	0	1	0	0	0	65
6:15 AM	0	38	0	0	0	31	0	0	0	0	0	0	0	0	0	0	69
6:30 AM	0	48	0	0	1	41	0	0	0	0	0	0	0	0	0	0	90
6:45 AM	0	50	0	0	0	62	0	0	0	0	0	0	0	0	0	0	112
7:00 AM	6	68	0	0	2	117	0	0	0	0	0	0	2	0	2	0	197
7:15 AM	1	80	1	0	0	99	0	0	0	0	1	0	0	0	1	0	183
7:30 AM	2	149	1	0	3	74	0	0	0	0	0	0	0	1	0	0	230
7:45 AM	7	163	2	0	4	117	1	0	0	0	0	0	1	0	7	0	302
8:00 AM	3	83	5	0	4	105	1	0	0	0	0	0	3	0	5	0	209
8:15 AM	1	70	2	0	4	89	1	0	0	0	3	0	1	0	5	0	176
8:30 AM	4	71	2	0	3	77	1	0	0	0	2	0	2	0	4	0	166
8:45 AM	8	81	1	0	1	111	0	0	2	0	4	0	4	0	4	0	216
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	32	936	15	0	22	951	4	0	2	0	10	0	14	1	28	0	2015
APPROACH %'s :	3.26%	95.22%	1.53%	0.00%	2.25%	97.34%	0.41%	0.00%	16.67%	0.00%	83.33%	0.00%	32.56%	2.33%	65.12%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	13	475	9	0	11	395	2	0	0	0	1	0	4	1	13	0	924
PEAK HR FACTOR :	0.464	0.729	0.450	0.000	0.688	0.844	0.500	0.000	0.000	0.000	0.250	0.000	0.333	0.250	0.464	0.000	0.765
	0.722				0.836				0.250				0.563				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	86	6	0	17	127	2	0	2	0	4	0	11	1	11	0	270
4:15 PM	5	102	1	1	8	137	1	0	2	0	3	0	3	0	11	0	274
4:30 PM	2	119	8	1	8	137	1	0	4	1	5	0	10	0	8	0	304
4:45 PM	3	81	0	0	7	132	2	1	2	0	5	0	9	0	5	0	247
5:00 PM	5	101	2	0	9	106	4	0	3	1	6	0	6	0	8	0	251
5:15 PM	8	89	1	0	12	120	1	0	1	1	6	0	9	0	7	0	255
5:30 PM	4	83	3	0	5	113	0	0	0	1	2	0	8	0	8	0	227
5:45 PM	2	80	3	0	13	112	1	0	0	0	1	0	2	0	9	0	223
6:00 PM	4	69	3	0	10	68	1	0	2	1	5	0	2	0	5	0	170
6:15 PM	1	62	0	0	7	87	0	0	0	0	2	0	9	0	15	0	183
6:30 PM	0	60	3	0	3	59	1	0	1	0	2	0	9	0	6	0	144
6:45 PM	3	58	1	0	8	47	0	0	0	0	5	0	3	1	1	0	127
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	40	990	31	2	107	1245	14	1	17	5	46	0	81	2	94	0	2675
APPROACH %'s :	3.76%	93.13%	2.92%	0.19%	7.83%	91.08%	1.02%	0.07%	25.00%	7.35%	67.65%	0.00%	45.76%	1.13%	53.11%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	13	388	15	2	40	533	6	1	10	1	17	0	33	1	35	0	1095
PEAK HR FACTOR :	0.650	0.815	0.469	0.500	0.588	0.973	0.750	0.250	0.625	0.250	0.850	0.000	0.750	0.250	0.795	0.000	0.900
	0.804				0.993				0.700				0.750				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Warrenton Village North Dwy
City: Warrenton
Control: 1-Way stop(WB)

Project ID: 23-260020-009
Date: 2/9/2023

Data - HT

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Warrenton Village North Dwy				Warrenton Village North Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	3	0	0	0	0	1	0	0	0	1	0	0	0	0	0	5
6:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
6:30 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
6:45 AM	0	2	0	0	1	2	0	0	0	0	0	0	0	0	1	0	6
7:00 AM	0	10	0	0	0	6	0	0	0	0	1	0	0	0	0	0	17
7:15 AM	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	0	12
7:30 AM	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	0	12
7:45 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	1	0	8
8:00 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
8:15 AM	0	7	0	0	0	6	0	0	0	0	0	0	0	0	0	0	13
8:30 AM	0	4	2	0	0	15	0	0	0	0	0	0	0	0	1	0	22
8:45 AM	0	2	0	0	0	5	0	0	0	0	0	0	0	0	1	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	54	2	0	1	54	1	0	0	0	2	0	0	0	4	0	118
APPROACH %'s :	0.00%	96.43%	3.57%	0.00%	1.79%	96.43%	1.79%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	20	0	0	0	18	0	0	0	0	0	0	0	0	1	0	39
PEAK HR FACTOR :	0.000	0.833	0.000	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.813
		0.833				0.563								0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	2	0	0	0	9	0	0	0	0	0	0	0	0	2	0	13
4:30 PM	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7
5:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	1	0	4
5:15 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	3
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
6:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
6:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	18	0	0	1	26	0	0	0	0	1	0	0	0	5	0	53
APPROACH %'s :	10.00%	90.00%	0.00%	0.00%	3.70%	96.30%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	12	0	0	0	19	0	0	0	0	0	0	0	0	2	0	33
PEAK HR FACTOR :	0.000	0.600	0.000	0.000	0.000	0.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.635
		0.600				0.528								0.250			

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Warrenton Village North Dwy
City: Warrenton
Control: 1-Way stop(WB)

Project ID: 23-260020-009
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	US 17/US 211/Broadview Ave				US 17/US 211/Broadview Ave				Warrenton Village North Dwy				Warrenton Village North Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	0	0	0	1	0	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave & Warrenton Village North Dwy **Project ID:** 23-260020-009
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	US 17/US 211/Broadview Ave		US 17/US 211/Broadview Ave		Warrenton Village North Dwy		Warrenton Village North Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	1	0	1
7:00 AM	0	0	0	0	0	0	0	1	1
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0	1
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	1	1	3
APPROACH %'s :	100.00%	0.00%					50.00%	50.00%	
PEAK HR :	07:15 AM - 08:15 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	1	2
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	3	0	3
5:00 PM	0	0	2	0	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	2	0	0	0	2
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	0	2	0	2	0	4	2	10
APPROACH %'s :			100.00%	0.00%	100.00%	0.00%	66.67%	33.33%	
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	4	1	5
PEAK HR FACTOR :							0.333	0.250	0.417
							0.417		

Prepared by National Data & Surveying Services

US 17/US 211/Broadview Ave & Warrenton Village North Dwy

Peak Hour Turning Movement Count

ID: 23-260020-009
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	6:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 07:00 PM

SOUTHBOUND — US 17/US 211/Broadview Ave

AM	2	413	11	0	509	AM
NOON	0	0	0	0	0	NOON
PM	6	552	40	1	448	PM
	0	2	1	0		

EASTBOUND — Warrenton Village North Dwy

AM	NOON	PM	
16	0	20	
0	0	0	0
0	0	10	0
0	0	1	1
1	0	17	0
AM	NOON	PM	

WESTBOUND — Warrenton Village North Dwy

PM	NOON	AM	
37	0	14	0.5
1	0	1	0.5
33	0	4	1
0	0	0	0
56	0	20	
PM	NOON	AM	

CONTROL

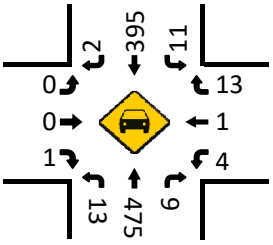
1-Way stop(WB)

TEV	963	0	1128
	AM	NOON	PM
PHF	0.78		0.90

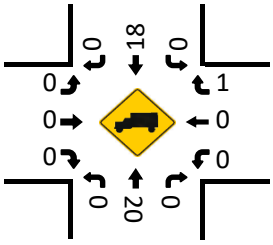
NORTHBOUND — US 17/US 211/Broadview Ave

	0	1	2	1		
PM	604	2	13	400	15	PM
NOON	0	0	0	0	0	NOON
AM	418	0	13	495	9	AM

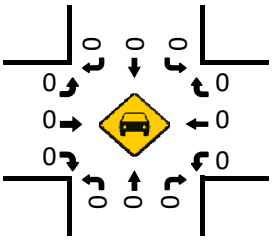
Cars (AM)



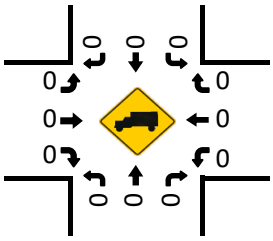
HT (AM)



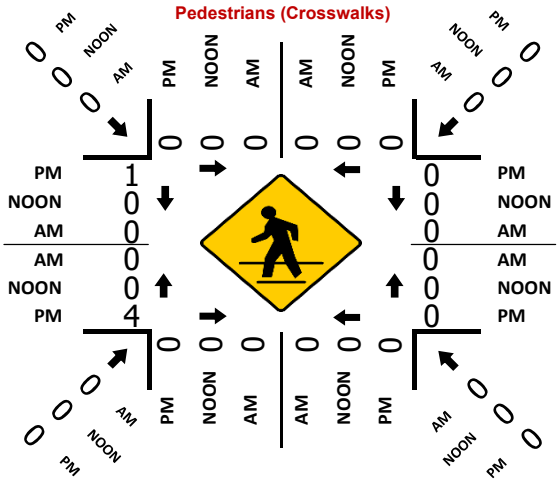
Cars (NOON)



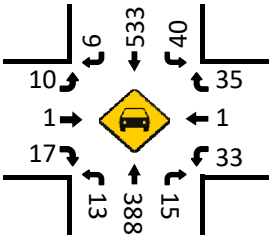
HT (NOON)



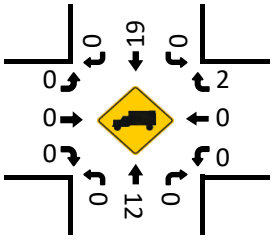
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave/Winchester St & Warrenton Village South Dwy/Broadview Ave
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-010
Date: 2/9/2023

Data - Total

NS/EW Streets:	US 17/US 211/Broadview Ave/Winchester St				US 17/US 211/Broadview Ave/Winchester St				Warrenton Village South Dwy/Broadview Ave				Warrenton Village South Dwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	25	17	2	0	0	20	8	0	22	4	24	0	0	1	0	0	123
6:15 AM	29	21	2	0	0	26	7	0	20	1	13	0	0	2	0	0	121
6:30 AM	27	26	1	1	0	35	8	0	26	2	12	0	0	3	0	0	141
6:45 AM	32	31	3	0	0	57	7	0	20	2	21	0	0	2	0	0	175
7:00 AM	32	58	7	1	1	117	7	0	24	5	16	0	3	1	2	0	274
7:15 AM	26	66	6	0	0	98	11	0	26	8	19	0	1	0	0	0	261
7:30 AM	30	120	8	0	4	59	19	0	30	5	13	0	0	3	3	0	294
7:45 AM	34	136	7	0	1	106	11	0	39	4	25	0	1	0	0	0	364
8:00 AM	20	78	9	0	1	98	11	0	22	4	20	0	0	0	0	0	263
8:15 AM	26	55	7	1	1	89	7	0	23	4	13	0	1	0	0	0	227
8:30 AM	20	65	7	0	0	91	7	0	17	1	16	0	0	5	0	0	229
8:45 AM	14	71	9	0	0	108	15	0	20	8	19	0	0	1	2	0	267
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	315	744	68	3	8	904	118	0	289	48	211	0	6	18	7	0	2739
APPROACH %'s :	27.88%	65.84%	6.02%	0.27%	0.78%	87.77%	11.46%	0.00%	52.74%	8.76%	38.50%	0.00%	19.35%	58.06%	22.58%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	122	380	28	1	6	380	48	0	119	22	73	0	5	4	5	0	1193
PEAK HR FACTOR :	0.897	0.699	0.875	0.250	0.375	0.812	0.632	0.000	0.763	0.688	0.730	0.000	0.417	0.333	0.417	0.000	0.819
	0.750				0.868				0.787				0.583				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	15	66	12	0	3	124	21	0	21	10	46	0	14	7	9	0	348
4:15 PM	28	93	18	0	2	124	27	0	20	12	39	0	6	3	2	0	374
4:30 PM	14	87	20	0	0	121	33	0	34	27	44	0	9	7	10	0	406
4:45 PM	19	64	27	0	2	124	25	0	21	12	35	0	14	10	4	0	357
5:00 PM	17	86	18	0	6	88	26	0	18	11	23	0	9	15	4	0	321
5:15 PM	17	77	32	1	4	100	31	0	13	10	30	0	13	10	10	0	348
5:30 PM	34	54	23	0	2	96	28	0	32	16	16	0	10	11	6	0	328
5:45 PM	16	64	21	0	5	97	14	0	10	9	27	0	7	9	12	0	291
6:00 PM	14	57	27	0	1	60	13	0	15	14	35	0	10	14	7	0	267
6:15 PM	20	49	25	1	7	72	21	0	8	16	22	0	8	7	5	0	261
6:30 PM	15	46	22	3	2	55	13	0	9	11	16	0	8	11	7	0	218
6:45 PM	21	37	27	0	2	48	6	0	17	11	10	0	14	4	9	0	206
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	230	780	272	5	36	1109	258	0	218	159	343	0	122	108	85	0	3725
APPROACH %'s :	17.87%	60.61%	21.13%	0.39%	2.57%	79.04%	18.39%	0.00%	30.28%	22.08%	47.64%	0.00%	38.73%	34.29%	26.98%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	76	310	77	0	7	493	106	0	96	61	164	0	43	27	25	0	1485
PEAK HR FACTOR :	0.679	0.833	0.713	0.000	0.583	0.994	0.803	0.000	0.706	0.565	0.891	0.000	0.768	0.675	0.625	0.000	0.914
	0.833				0.984				0.764				0.792				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave/Winchester St & Warrenton Village South Dwy/Broadview Ave
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-010
Date: 2/9/2023

Data - Cars

NS/EW Streets:	US 17/US 211/Broadview Ave/Winchester St				US 17/US 211/Broadview Ave/Winchester St				Warrenton Village South Dwy/Broadview Ave				Warrenton Village South Dwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	25	15	2	0	0	19	8	0	21	4	23	0	0	1	0	0	118
6:15 AM	29	18	1	0	0	26	7	0	20	1	13	0	0	2	0	0	117
6:30 AM	27	23	1	1	0	33	8	0	26	2	11	0	0	3	0	0	135
6:45 AM	32	29	3	0	0	55	7	0	20	2	21	0	0	2	0	0	171
7:00 AM	32	50	7	1	1	111	6	0	23	5	15	0	3	1	1	0	256
7:15 AM	25	62	6	0	0	91	10	0	26	8	19	0	0	0	0	0	247
7:30 AM	30	117	8	0	4	53	17	0	30	5	12	0	0	3	2	0	281
7:45 AM	34	132	7	0	1	106	10	0	37	4	24	0	1	0	0	0	356
8:00 AM	20	72	9	0	1	97	11	0	22	4	20	0	0	0	0	0	256
8:15 AM	25	48	7	1	1	84	6	0	23	4	13	0	1	0	0	0	213
8:30 AM	19	59	7	0	0	77	6	0	17	1	15	0	0	5	0	0	206
8:45 AM	13	69	9	0	0	104	14	0	20	8	18	0	0	1	2	0	258
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	311	694	67	3	8	856	110	0	285	48	204	0	5	18	5	0	2614
APPROACH %'s :	28.93%	64.56%	6.23%	0.28%	0.82%	87.89%	11.29%	0.00%	53.07%	8.94%	37.99%	0.00%	17.86%	64.29%	17.86%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	121	361	28	1	6	361	43	0	116	22	70	0	4	4	3	0	1140
PEAK HR FACTOR :	0.890	0.684	0.875	0.250	0.375	0.813	0.632	0.000	0.784	0.688	0.729	0.000	0.333	0.333	0.375	0.000	0.801
	0.738				0.869				0.800				0.550				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	15	65	12	0	3	120	21	0	21	10	46	0	14	7	9	0	343
4:15 PM	28	91	18	0	2	116	26	0	20	12	39	0	6	3	2	0	363
4:30 PM	14	84	20	0	0	118	33	0	32	27	43	0	9	7	10	0	397
4:45 PM	18	60	27	0	2	121	25	0	21	12	35	0	14	10	4	0	349
5:00 PM	17	85	18	0	6	86	26	0	18	11	23	0	9	14	4	0	317
5:15 PM	17	76	32	1	4	99	31	0	13	10	30	0	13	10	9	0	345
5:30 PM	34	54	23	0	2	94	28	0	31	16	16	0	9	11	6	0	324
5:45 PM	16	62	20	0	5	96	14	0	10	9	27	0	7	9	12	0	287
6:00 PM	14	56	27	0	1	60	13	0	15	14	35	0	10	14	7	0	266
6:15 PM	19	49	24	1	7	71	21	0	8	16	22	0	8	7	5	0	258
6:30 PM	15	46	21	3	2	55	13	0	9	11	16	0	8	11	7	0	217
6:45 PM	21	36	26	0	2	47	6	0	17	11	10	0	14	4	9	0	203
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	228	764	268	5	36	1083	257	0	215	159	342	0	121	107	84	0	3669
APPROACH %'s :	18.02%	60.40%	21.19%	0.40%	2.62%	78.71%	18.68%	0.00%	30.03%	22.21%	47.77%	0.00%	38.78%	34.29%	26.92%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	75	300	77	0	7	475	105	0	94	61	163	0	43	27	25	0	1452
PEAK HR FACTOR :	0.670	0.824	0.713	0.000	0.583	0.981	0.795	0.000	0.734	0.565	0.886	0.000	0.768	0.675	0.625	0.000	0.914
	0.825				0.972				0.779				0.792				

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave/Winchester St & Warrenton Village South Dwy/Broadview Ave
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-010
Date: 2/9/2023

Data - HT

NS/EW Streets:	US 17/US 211/Broadview Ave/Winchester St				US 17/US 211/Broadview Ave/Winchester St				Warrenton Village South Dwy/Broadview Ave				Warrenton Village South Dwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	2	0	0	0	1	0	0	1	0	1	0	0	0	0	0	5
6:15 AM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:30 AM	0	3	0	0	0	2	0	0	0	0	1	0	0	0	0	0	6
6:45 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
7:00 AM	0	8	0	0	0	6	1	0	1	0	1	0	0	0	1	0	18
7:15 AM	1	4	0	0	0	7	1	0	0	0	0	0	1	0	0	0	14
7:30 AM	0	3	0	0	0	6	2	0	0	0	1	0	0	0	1	0	13
7:45 AM	0	4	0	0	0	0	1	0	2	0	1	0	0	0	0	0	8
8:00 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
8:15 AM	1	7	0	0	0	5	1	0	0	0	0	0	0	0	0	0	14
8:30 AM	1	6	0	0	0	14	1	0	0	0	1	0	0	0	0	0	23
8:45 AM	1	2	0	0	0	4	1	0	0	0	1	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	50	1	0	0	48	8	0	4	0	7	0	1	0	2	0	125
APPROACH %'s :	7.27%	90.91%	1.82%	0.00%	0.00%	85.71%	14.29%	0.00%	36.36%	0.00%	63.64%	0.00%	33.33%	0.00%	66.67%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	1	19	0	0	0	19	5	0	3	0	3	0	1	0	2	0	53
PEAK HR FACTOR :	0.250	0.594	0.000	0.000	0.000	0.679	0.625	0.000	0.375	0.000	0.750	0.000	0.250	0.000	0.500	0.000	0.736
	0.625				0.750				0.500				0.750				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	2	0	0	0	8	1	0	0	0	0	0	0	0	0	0	11
4:30 PM	0	3	0	0	0	3	0	0	2	0	1	0	0	0	0	0	9
4:45 PM	1	4	0	0	0	3	0	0	0	0	0	0	0	0	0	0	8
5:00 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	4
5:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
5:30 PM	0	0	0	0	0	2	0	0	1	0	0	0	1	0	0	0	4
5:45 PM	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
6:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:45 PM	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	16	4	0	0	26	1	0	3	0	1	0	1	1	1	0	56
APPROACH %'s :	9.09%	72.73%	18.18%	0.00%	0.00%	96.30%	3.70%	0.00%	75.00%	0.00%	25.00%	0.00%	33.33%	33.33%	33.33%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	1	10	0	0	0	18	1	0	2	0	1	0	0	0	0	0	33
PEAK HR FACTOR :	0.250	0.625	0.000	0.000	0.000	0.563	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.750
	0.550				0.528				0.250								

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave/Winchester St & Warrenton Village South Dwy/Broadview Ave
City: Warrenton
Control: 2-Way Stop(EB/WB)

Project ID: 23-260020-010
Date: 2/9/2023

Data - Bikes

NS/EW Streets:	US 17/US 211/Broadview Ave/Winchester St				US 17/US 211/Broadview Ave/Winchester St				Warrenton Village South Dwy/Broadview Ave				Warrenton Village South Dwy/Broadview Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	1	0	1	2	1	0	1	1	1	0	1	0.5	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

National Data & Surveying Services Intersection Turning Movement Count

Location: US 17/US 211/Broadview Ave/Winchester St & Warrenton Village Sc **Project ID:** 23-260020-010
City: Warrenton **Date:** 2/9/2023

Data - Pedestrians (Crosswalks)

NS/EW Streets:	US 17/US 211/Broadview Ave/Winchester St		US 17/US 211/Broadview Ave/Winchester St		Warrenton Village South Dwy/Broadview Ave		Warrenton Village South Dwy/Broadview Ave		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
6:00 AM	0	0	0	0	0	2	0	0	2
6:15 AM	0	0	0	0	0	0	0	0	0
6:30 AM	0	1	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	2	0	0	3
APPROACH %'s :	0.00%	100.00%			0.00%	100.00%			
PEAK HR :	07:00 AM - 08:00 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :									

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
4:00 PM	0	1	0	0	0	0	0	0	1
4:15 PM	0	4	0	0	3	0	0	0	7
4:30 PM	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
TOTAL VOLUMES :	0	6	0	0	3	0	0	0	9
APPROACH %'s :	0.00%	100.00%			100.00%	0.00%			
PEAK HR :	04:00 PM - 05:00 PM								TOTAL
PEAK HR VOL :	0	6	0	0	3	0	0	0	9
PEAK HR FACTOR :		0.375			0.250				0.321
	0.375				0.250				

Prepared by National Data & Surveying Services

US 17/US 211/Broadview Ave/Winchester St & Warrenton Village South Dwy/Broadview Ave

Peak Hour Turning Movement Count

ID: 23-260020-010
City: Warrenton

Day: Thursday
Date: 2/9/2023

PEAK HOURS

AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:00 PM - 05:00 PM

COUNT PERIODS

AM	6:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 07:00 PM

SOUTHBOUND — US 17/US 211/Broadview Ave/Winchester St

AM	48	380	6	0	504	AM
NOON	0	0	0	0	0	NOON
PM	106	493	7	0	431	PM
	1	2	1	0		

EASTBOUND — Warrenton Village South Dwy/Broadview Ave

AM	NOON	PM	
174	0	209	
0	0	0	0
119	0	96	1
22	0	61	1
73	0	164	1
AM	NOON	PM	

WESTBOUND — Warrenton Village South Dwy/Broadview Ave

	PM	NOON	AM
0.5	25	0	5
0.5	27	0	4
1	43	0	5
0	0	0	0
	145	0	56
	PM	NOON	AM

CONTROL

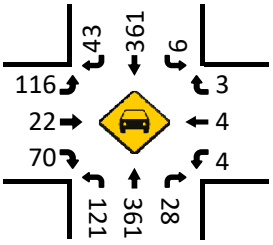
2-Way Stop(EB/WB)

TEV	1193 AM	0 NOON	1485 PM
PHF	0.82		0.91

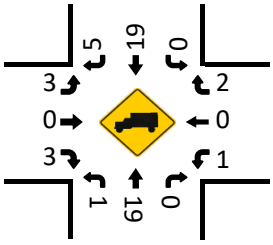
NORTHBOUND — US 17/US 211/Broadview Ave/Winchester St

PM	700	0	76	310	77	PM
NOON	0	0	0	0	0	NOON
AM	459	1	122	380	28	AM
		0	1	2	1	

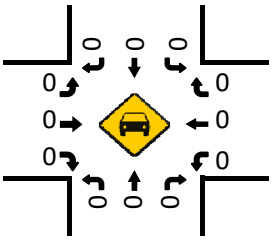
Cars (AM)



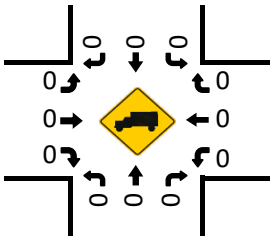
HT (AM)



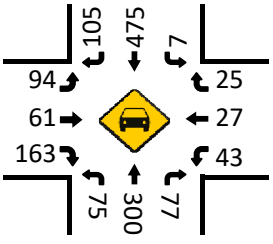
Cars (NOON)



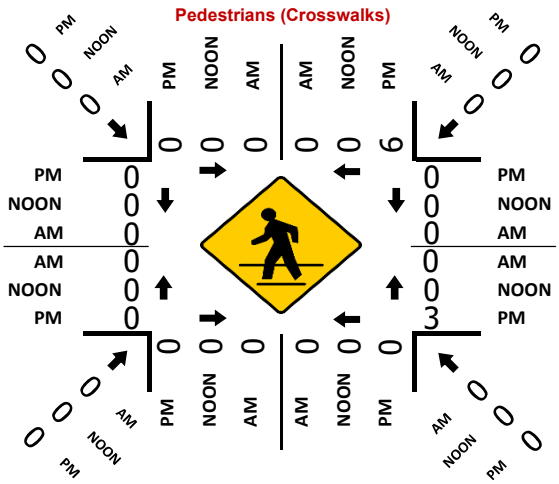
HT (NOON)



Cars (PM)



Pedestrians (Crosswalks)


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

D. HCM Level of Service Definitions

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.

E. VDOT Signal Timings

Plan 1

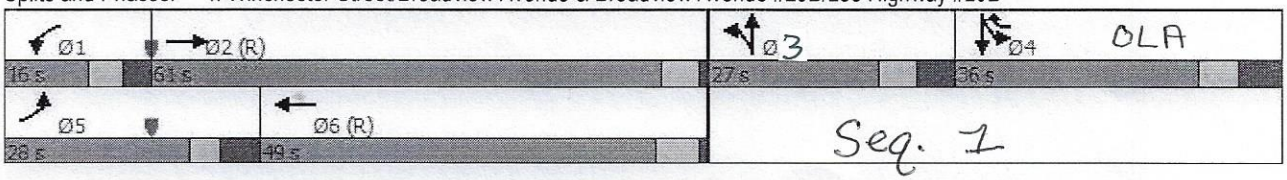
Timing Report, Sorted By Phase
4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B 01/02/2020

Phase Number	1	2	4	5	6	3
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	16	61	36	28	49	27
Maximum Split (%)	11.4%	43.6%	25.7%	20.0%	35.0%	19.3%
Minimum Split (s)	12.9	27.2	15.4	13.8	32.8	14.2
Yellow Time (s)	3.8	4.2	4.5	3.4	4.8	4.1
All-Red Time (s)	3.1	1	4.9	4.4	1	4.2
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	24		20	29
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	112	128	76	112	0	49
End Time (s)	128	49	112	0	49	76
Yield/Force Off (s)	121.1	43.8	102.6	132.2	43.2	67.7
Yield/Force Off 170(s)	121.1	28.8	78.6	132.2	23.2	39.7
Local Start Time (s)	124	0	88	124	12	61
Local Yield (s)	133.1	55.8	114.6	4.2	55.2	79.7
Local Yield 170(s)	133.1	40.8	90.6	4.2	35.2	51.7
MAX 1	40	40	25	25	40	25

Intersection Summary	
Cycle Length	140
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 128 (91%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green

Splits and Phases: 4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B



OLA + 4

Plan 2

Timing Report, Sorted By Phase

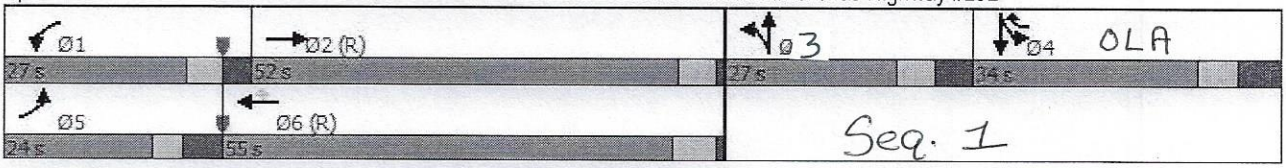
4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B 01/02/2020

Phase Number	1	2	4	5	6	3
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	27	52	34	24	55	27
Maximum Split (%)	19.3%	37.1%	24.3%	17.1%	39.3%	19.3%
Minimum Split (s)	12.9	27.2	15.4	13.8	32.8	14.3
Yellow Time (s)	3.8	4.2	4.5	3.4	4.8	4.1
All-Red Time (s)	3.1	1	4.9	4.4	1	4.2
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	24		20	29
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	121	8	87	121	5	60
End Time (s)	8	60	121	5	60	87
Yield/Force Off (s)	1.1	54.8	111.6	137.2	54.2	78.7
Yield/Force Off 170(s)	1.1	39.8	87.6	137.2	34.2	50.7
Local Start Time (s)	116	3	82	116	0	55
Local Yield (s)	136.1	49.8	106.6	132.2	49.2	73.7
Local Yield 170(s)	136.1	34.8	82.6	132.2	29.2	45.7
MAX 1	40	40	25	25	40	25

Intersection Summary	
Cycle Length	140
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 5 (4%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green

Splits and Phases: 4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B



OLA + 4

Timing Report, Sorted By Phase

Plan 3

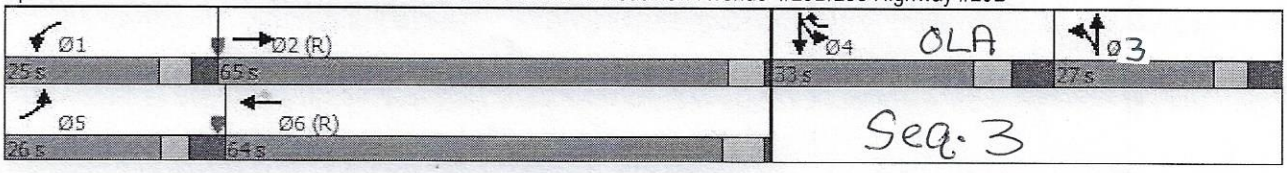
4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B 01/03/2020

Phase Number	1	2	4	5	6	3
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	25	65	33	26	64	27
Maximum Split (%)	16.7%	43.3%	22.0%	17.3%	42.7%	18.0%
Minimum Split (s)	14.9	27.2	15.4	13.8	32.8	14.3
Yellow Time (s)	3.8	4.2	4.5	3.4	4.8	4.1
All-Red Time (s)	3.1	1	4.9	4.4	1	4.2
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	24		20	29
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	31	56	121	31	57	4
End Time (s)	56	121	4	57	121	31
Yield/Force Off (s)	49.1	115.8	144.6	49.2	115.2	22.7
Yield/Force Off 170(s)	49.1	100.8	120.6	49.2	95.2	144.7
Local Start Time (s)	125	0	65	125	1	98
Local Yield (s)	143.1	59.8	88.6	143.2	59.2	116.7
Local Yield 170(s)	143.1	44.8	64.6	143.2	39.2	88.7
MAX 1	40	46	25	25	48	25

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	90

Offset: 56 (37%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green

Splits and Phases: 4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B



OLA + 4

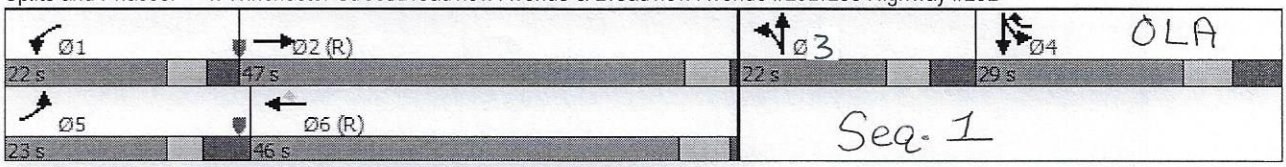
Plan 4

Timing Report, Sorted By Phase
4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B 01/03/2020

Phase Number	1	2	4	5	6	3
Movement	WBL	EBT	SBTL	EBL	WBT	NBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	22	47	29	23	46	22
Maximum Split (%)	18.3%	39.2%	24.2%	19.2%	38.3%	18.3%
Minimum Split (s)	12.9	27.2	15.4	13.8	32.8	14.3
Yellow Time (s)	3.8	4.2	4.5	3.4	4.8	4.1
All-Red Time (s)	3.1	1	4.9	4.4	1	4.2
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	7
Flash Dont Walk (s)		15	24		20	29
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	115	17	86	115	18	64
End Time (s)	17	64	115	18	64	86
Yield/Force Off (s)	10.1	58.8	105.6	10.2	58.2	77.7
Yield/Force Off 170(s)	10.1	43.8	81.6	10.2	38.2	49.7
Local Start Time (s)	98	0	69	98	1	47
Local Yield (s)	113.1	41.8	88.6	113.2	41.2	60.7
Local Yield 170(s)	113.1	26.8	64.6	113.2	21.2	32.7
MAX 1	40	40	25	25	40	25

Intersection Summary			
Cycle Length		120	
Control Type	Actuated-Coordinated		
Natural Cycle		80	
Offset: 17 (14%), Referenced to phase 2:EBT and 6:WBT, Start of 1st Green			

Splits and Phases: 4: Winchester Street/Broadview Avenue & Broadview Avenue #29B/Lee Highway #29B



OLA +4

Timing Report, Sorted By Phase
3: Branch Drive & Lee Highway #29B

Plan 1

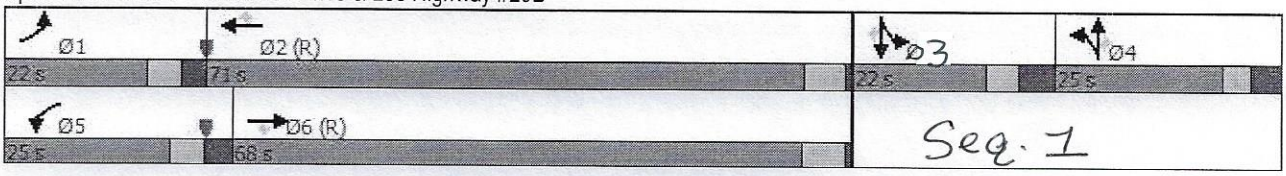
01/02/2020

Phase Number	1	2	4	5	6	3
Movement	EBL	WBT	NBTL	WBL	EBT	SBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	22	71	25	25	68	22
Maximum Split (%)	15.7%	50.7%	17.9%	17.9%	48.6%	15.7%
Minimum Split (s)	12.4	27.6	12.6	12.8	27.7	13.5
Yellow Time (s)	3.7	4.6	3	3.7	4.7	3.5
All-Red Time (s)	2.7	1	3	3.1	1	4
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	
Flash Dont Walk (s)		17	27		12	
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	yes	yes	yes	yes	yes	yes
Start Time (s)	119	1	94	119	4	72
End Time (s)	1	72	119	4	72	94
Yield/Force Off (s)	134.6	66.4	112.4	137.2	66.3	86.5
Yield/Force Off 170(s)	134.6	51.4	84.4	137.2	51.3	86.5
Local Start Time (s)	118	0	93	118	3	71
Local Yield (s)	133.6	65.4	111.4	136.2	65.3	85.5
Local Yield 170(s)	133.6	50.4	83.4	136.2	50.3	85.5
MAX 1	18	45	35	18	45	35

Intersection Summary	
Cycle Length	140
Control Type	Actuated-Coordinated
Natural Cycle	70

Offset: 1 (1%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green

Splits and Phases: 3: Branch Drive & Lee Highway #29B



Timing Report, Sorted By Phase
3: Branch Drive & Lee Highway #29B

Plan 2

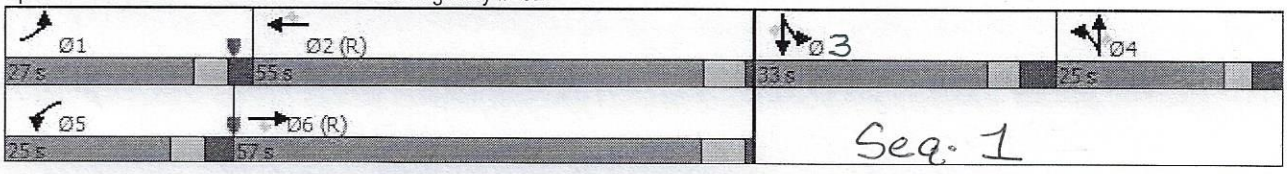
01/02/2020

Phase Number	1	2	4	5	6	3
Movement	EBL	WBT	NBTL	WBL	EBT	SBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	27	55	25	25	57	33
Maximum Split (%)	19.3%	39.3%	17.9%	17.9%	40.7%	23.6%
Minimum Split (s)	12.4	27.6	12.6	12.8	27.7	13.5
Yellow Time (s)	3.7	4.6	3	3.7	4.7	3.5
All-Red Time (s)	2.7	1	3.6	3.1	1	4
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	
Flash Dont Walk (s)		17	27		12	
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	125	12	100	125	10	67
End Time (s)	12	67	125	10	67	100
Yield/Force Off (s)	5.6	61.4	118.4	3.2	61.3	92.5
Yield/Force Off 170(s)	5.6	46.4	90.4	3.2	46.3	92.5
Local Start Time (s)	115	2	90	115	0	57
Local Yield (s)	135.6	51.4	108.4	133.2	51.3	82.5
Local Yield 170(s)	135.6	36.4	80.4	133.2	36.3	82.5
MAX 1	18	45	35	18	45	35

Intersection Summary	
Cycle Length	140
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 10 (7%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green

Splits and Phases: 3: Branch Drive & Lee Highway #29B



Timing Report, Sorted By Phase
3: Branch Drive & Lee Highway #29B

Plan 3

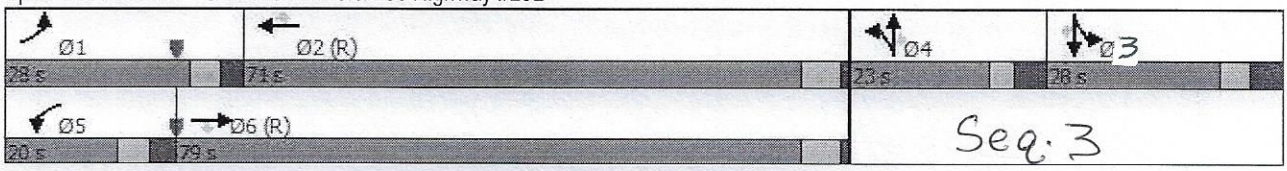
01/03/2020

Phase Number	1	2	4	5	6	3
Movement	EBL	WBT	NBTL	WBL	EBT	SBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	28	71	23	20	79	28
Maximum Split (%)	18.7%	47.3%	15.3%	13.3%	52.7%	18.7%
Minimum Split (s)	12.4	27.6	12.6	12.8	27.7	13.5
Yellow Time (s)	3.7	4.6	3	3.7	4.7	3.5
All-Red Time (s)	2.7	1	3.6	3.1	1	4
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	
Flash Dont Walk (s)		17	27		12	
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	26	54	125	26	46	148
End Time (s)	54	125	148	46	125	26
Yield/Force Off (s)	47.6	119.4	141.4	39.2	119.3	18.5
Yield/Force Off 170(s)	47.6	104.4	113.4	39.2	104.3	18.5
Local Start Time (s)	130	8	79	130	0	102
Local Yield (s)	1.6	73.4	95.4	143.2	73.3	122.5
Local Yield 170(s)	1.6	58.4	67.4	143.2	58.3	122.5
MAX I	18	45	35	18	45	35

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	80

Offset: 46 (31%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green

Splits and Phases: 3: Branch Drive & Lee Highway #29B



Timing Report, Sorted By Phase
3: Branch Drive & Lee Highway #29B

Plan 4

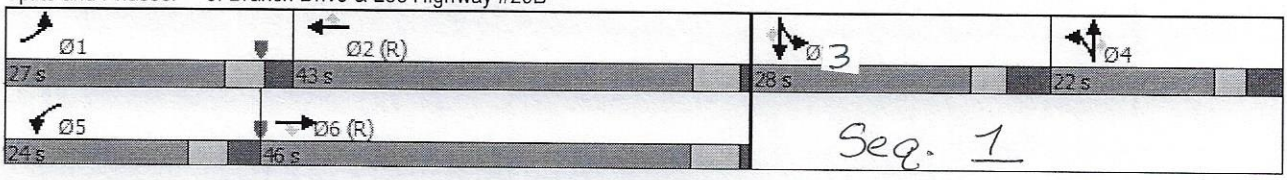
01/03/2020

Phase Number	1	2	4	5	6	3
Movement	EBL	WBT	NBTL	WBL	EBT	SBTL
Lead/Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize						
Recall Mode	None	C-Min	None	None	C-Min	None
Maximum Split (s)	27	43	22	24	46	28
Maximum Split (%)	22.5%	35.8%	18.3%	20.0%	38.3%	23.3%
Minimum Split (s)	12.4	27.6	12.6	12.8	27.7	13.5
Yellow Time (s)	3.7	4.6	3	3.7	4.7	3.5
All-Red Time (s)	2.7	1	3.6	3.1	1	4
Minimum Initial (s)	6	15	6	6	15	6
Vehicle Extension (s)	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0
Walk Time (s)		7	7		7	
Flash Dont Walk (s)		17	27		12	
Dual Entry	No	Yes	No	No	Yes	No
Inhibit Max	yes	yes	yes	yes	yes	yes
Start Time (s)	100	7	78	100	4	50
End Time (s)	7	50	100	4	50	78
Yield/Force Off (s)	0.6	44.4	93.4	117.2	44.3	70.5
Yield/Force Off 170(s)	0.6	29.4	65.4	117.2	29.3	70.5
Local Start Time (s)	96	3	74	96	0	46
Local Yield (s)	116.6	40.4	89.4	113.2	40.3	66.5
Local Yield 170(s)	116.6	25.4	61.4	113.2	25.3	66.5
MAX 1	18	45	35	18	45	35

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	75

Offset: 4 (3%), Referenced to phase 2:WBT and 6:EBT, Start of 1st Green

Splits and Phases: 3: Branch Drive & Lee Highway #29B



F. 2023 Existing Conditions – Capacity Analysis Worksheets



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	298	896	38	699	194	83	117	80	117	122	244
v/c Ratio	0.72	0.51	0.37	0.48	0.21	0.49	0.62	0.21	0.59	0.58	0.41
Control Delay	69.1	26.2	96.7	21.6	3.5	68.2	73.8	1.2	69.4	67.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.1	26.2	96.7	21.6	3.5	68.2	73.8	1.2	69.4	67.7	11.1
Queue Length 50th (ft)	141	287	38	249	32	76	108	0	112	116	41
Queue Length 95th (ft)	186	428	78	143	46	126	166	0	167	171	95
Internal Link Dist (ft)		1315		334			509			538	
Turn Bay Length (ft)	250		130		200	250		125	215		
Base Capacity (vph)	481	1758	118	1450	1006	224	249	447	313	335	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.51	0.32	0.48	0.19	0.37	0.47	0.18	0.37	0.36	0.39

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	5	257	758	31	3	31	615	171	73	103	70	117
Future Volume (vph)	5	257	758	31	3	31	615	171	73	103	70	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			0%				-1%			2%		
Total Lost time (s)		7.8	5.2			6.9	5.8	9.4	8.3	8.3	6.9	9.4
Lane Util. Factor		0.97	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95
Frpb, ped/bikes		1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3338	3452			1814	3359	1561	1655	1844	1537	1649
Flt Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3338	3452			1814	3359	1561	1655	1844	1537	1649
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	6	292	861	35	3	35	699	194	83	117	80	133
RTOR Reduction (vph)	0	0	1	0	0	0	0	87	0	0	67	0
Lane Group Flow (vph)	0	298	895	0	0	38	699	107	83	117	13	117
Confl. Peds. (#/hr)												
Heavy Vehicles (%)	0%	5%	4%	3%	0%	0%	8%	4%	8%	2%	4%	5%
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Split	NA	custom	Split
Protected Phases	5	5	2		1	1	6	4	3	3		4
Permitted Phases								6			1 3	
Actuated Green, G (s)		17.4	71.0			8.1	60.2	77.0	14.3	14.3	22.4	16.8
Effective Green, g (s)		17.4	71.0			8.1	60.2	77.0	14.3	14.3	22.4	16.8
Actuated g/C Ratio		0.12	0.51			0.06	0.43	0.55	0.10	0.10	0.16	0.12
Clearance Time (s)		7.8	5.2			6.9	5.8	9.4	8.3	8.3		9.4
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		414	1750			104	1444	858	169	188	245	197
v/s Ratio Prot		c0.09	c0.26			0.02	0.21	0.01	0.05	c0.06		c0.07
v/s Ratio Perm								0.05			0.01	
v/c Ratio		0.72	0.51			0.37	0.48	0.12	0.49	0.62	0.05	0.59
Uniform Delay, d1		59.0	23.0			63.5	28.7	15.2	59.4	60.3	49.8	58.4
Progression Factor		1.00	1.00			1.38	0.65	2.21	1.00	1.00	1.00	1.00
Incremental Delay, d2		5.9	1.1			2.1	1.1	0.1	2.2	6.3	0.1	4.7
Delay (s)		64.9	24.0			89.7	19.8	33.6	61.7	66.5	49.9	63.1
Level of Service		E	C			F	B	C	E	E	D	E
Approach Delay (s)			34.2				25.5			60.3		
Approach LOS			C				C			E		

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	93	215
Future Volume (vph)	93	215
Ideal Flow (vphpl)	1900	1900
Grade (%)	-2%	
Total Lost time (s)	9.4	9.4
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.99	1.00
Satd. Flow (prot)	1769	1558
Flt Permitted	0.99	1.00
Satd. Flow (perm)	1769	1558
Peak-hour factor, PHF	0.88	0.88
Adj. Flow (vph)	106	244
RTOR Reduction (vph)	0	127
Lane Group Flow (vph)	122	117
Confl. Peds. (#/hr)		3
Heavy Vehicles (%)	2%	3%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	16.8	43.6
Effective Green, g (s)	16.8	43.6
Actuated g/C Ratio	0.12	0.31
Clearance Time (s)	9.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	212	485
v/s Ratio Prot	0.07	
v/s Ratio Perm		0.07
v/c Ratio	0.58	0.24
Uniform Delay, d1	58.2	35.9
Progression Factor	1.00	1.00
Incremental Delay, d2	3.7	0.3
Delay (s)	62.0	36.1
Level of Service	E	D
Approach Delay (s)	49.2	
Approach LOS	D	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

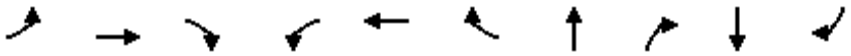
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱			↱			↱
Traffic Vol, veh/h	0	885	63	0	800	31	0	0	29	0	0	20
Future Vol, veh/h	0	885	63	0	800	31	0	0	29	0	0	20
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	-	-	110	-	-	300	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	3	-	-	3	-	-	-11	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	7	0	0	0	3	0	0	0
Mvmt Flow	0	962	68	0	870	34	0	0	32	0	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	481	-	-	435
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.26	-	-	5.8
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.33	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	508	0	0	656
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	508	-	-	656
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.6	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	508	-	-	-	-	656
HCM Lane V/C Ratio	0.062	-	-	-	-	0.033
HCM Control Delay (s)	12.6	-	-	-	-	10.7
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	40	964	1	48	840	56	23	42	46	55
v/c Ratio	0.36	0.41	0.00	0.41	0.37	0.05	0.15	0.16	0.40	0.28
Control Delay	84.6	7.2	0.0	72.4	16.2	0.1	56.4	1.4	71.9	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.6	7.2	0.0	72.4	16.2	0.1	56.4	1.4	71.9	3.4
Queue Length 50th (ft)	40	127	0	44	188	0	21	0	43	0
Queue Length 95th (ft)	m80	133	m0	88	394	0	43	0	86	0
Internal Link Dist (ft)		457			1504		131		565	
Turn Bay Length (ft)	240		330	150		150		60		
Base Capacity (vph)	199	2364	1143	227	2284	1125	286	358	185	248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.41	0.00	0.21	0.37	0.05	0.08	0.12	0.25	0.22

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	29	877	1	44	764	51	10	11	38	34	8
Future Volume (vph)	7	29	877	1	44	764	51	10	11	38	34	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-4%			2%			0%			-1%
Total Lost time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.0	6.0		7.5
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (prot)		1791	3541	1647	1752	3372	1599		1856	1615		1792
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (perm)		1791	3541	1647	1752	3372	1599		1856	1615		1792
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	8	32	964	1	48	840	56	11	12	42	37	9
RTOR Reduction (vph)	0	0	0	0	0	0	21	0	0	39	0	0
Lane Group Flow (vph)	0	40	964	1	48	840	35	0	23	3	0	46
Heavy Vehicles (%)	14%	0%	4%	0%	2%	6%	0%	0%	0%	0%	3%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	1	6		5	2		4	4		3	3
Permitted Phases				6			2			4		
Actuated Green, G (s)		7.5	87.3	87.3	8.1	88.4	88.4		10.7	10.7		7.9
Effective Green, g (s)		7.5	87.3	87.3	8.1	88.4	88.4		10.7	10.7		7.9
Actuated g/C Ratio		0.05	0.62	0.62	0.06	0.63	0.63		0.08	0.08		0.06
Clearance Time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.0	6.0		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		95	2208	1027	101	2129	1009		141	123		101
v/s Ratio Prot		0.02	c0.27		c0.03	0.25			c0.01			c0.03
v/s Ratio Perm				0.00			0.02			0.00		
v/c Ratio		0.42	0.44	0.00	0.48	0.39	0.04		0.16	0.03		0.46
Uniform Delay, d1		64.1	13.6	9.9	63.9	12.7	9.7		60.5	59.8		64.0
Progression Factor		1.23	0.40	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		2.7	0.6	0.0	3.5	0.5	0.1		0.5	0.1		3.2
Delay (s)		81.5	6.0	9.9	67.4	13.2	9.8		61.0	59.9		67.2
Level of Service		F	A	A	E	B	A		E	E		E
Approach Delay (s)			9.0			15.8			60.3			64.7
Approach LOS			A			B			E			E

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	7.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1375
Flt Permitted	1.00
Satd. Flow (perm)	1375
Peak-hour factor, PHF	0.91
Adj. Flow (vph)	55
RTOR Reduction (vph)	52
Lane Group Flow (vph)	3
Heavy Vehicles (%)	18%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	7.9
Effective Green, g (s)	7.9
Actuated g/C Ratio	0.06
Clearance Time (s)	7.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	77
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.04
Uniform Delay, d1	62.5
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	62.7
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	15	38	14	11	14	23	65	7	18	67	5
Future Vol, veh/h	6	15	38	14	11	14	23	65	7	18	67	5
Conflicting Peds, #/hr	0	0	2	2	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, %	-	-8	-	-	-2	-	-	1	-	-	-1	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	9	0	0	0	0	0	13	0
Mvmt Flow	7	18	45	16	13	16	27	76	8	21	79	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	223	262	45	227	261	42	85	0	0	84	0	0
Stage 1	124	124	-	134	134	-	-	-	-	-	-	-
Stage 2	99	138	-	93	127	-	-	-	-	-	-	-
Critical Hdwy	5.9	4.9	6.1	7.1	6.28	6.7	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	4.9	3.9	-	6.1	5.28	-	-	-	-	-	-	-
Critical Hdwy Stg 2	4.9	3.9	-	6.1	5.28	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.09	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	794	726	1032	733	645	1028	1524	-	-	1526	-	-
Stage 1	922	842	-	874	780	-	-	-	-	-	-	-
Stage 2	943	836	-	919	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	750	702	1030	669	624	1028	1524	-	-	1526	-	-
Mov Cap-2 Maneuver	750	702	-	669	624	-	-	-	-	-	-	-
Stage 1	904	830	-	857	765	-	-	-	-	-	-	-
Stage 2	895	820	-	847	774	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	10.1	1.8	1.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	890	748	1526	-	-
HCM Lane V/C Ratio	0.018	-	-	0.078	0.061	0.014	-	-
HCM Control Delay (s)	7.4	0	-	9.4	10.1	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	1	76	75	14	106	1	73	1	12	1	1	1
Future Vol, veh/h	1	76	75	14	106	1	73	1	12	1	1	1
Conflicting Peds, #/hr	4	0	1	1	0	4	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	2	-	-	-5	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	1	11	7	1	0	0	0	0	0	0	0
Mvmt Flow	1	89	88	16	125	1	86	1	14	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	130	0	0	178	0	0	295	298	136	307	342	130
Stage 1	-	-	-	-	-	-	136	136	-	162	162	-
Stage 2	-	-	-	-	-	-	159	162	-	145	180	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.5	6.9	6.4	6.1	5.5	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.9	-	5.1	4.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.9	-	5.1	4.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1468	-	-	1368	-	-	640	597	911	707	642	942
Stage 1	-	-	-	-	-	-	859	776	-	884	803	-
Stage 2	-	-	-	-	-	-	833	754	-	898	793	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1463	-	-	1367	-	-	631	586	909	684	630	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	631	586	-	684	630	-
Stage 1	-	-	-	-	-	-	857	774	-	880	790	-
Stage 2	-	-	-	-	-	-	820	742	-	880	791	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.9	11.2	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	630	909	1463	-	-	1367	-	-	729
HCM Lane V/C Ratio	0.138	0.016	0.001	-	-	0.012	-	-	0.005
HCM Control Delay (s)	11.6	9	7.5	0	-	7.7	0	-	10
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	104	136	44	47	67
Future Vol, veh/h	83	104	136	44	47	67
Conflicting Peds, #/hr	1	0	0	1	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	1	-	-5	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	6	1	1	0	17	0
Mvmt Flow	98	122	160	52	55	79

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	213	0	-	0	505	189
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	318	-
Critical Hdwy	4.16	-	-	-	5.57	5.7
Critical Hdwy Stg 1	-	-	-	-	4.57	-
Critical Hdwy Stg 2	-	-	-	-	4.57	-
Follow-up Hdwy	2.254	-	-	-	3.653	3.3
Pot Cap-1 Maneuver	1334	-	-	-	577	881
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1333	-	-	-	530	879
Mov Cap-2 Maneuver	-	-	-	-	530	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	769	-

Approach	EB	WB	SB
HCM Control Delay, s	3.5	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1333	-	-	-	691
HCM Lane V/C Ratio	0.073	-	-	-	0.194
HCM Control Delay (s)	7.9	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	156	152	51	31	19
Future Vol, veh/h	38	156	152	51	31	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	3	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	4	1	0	0	0
Mvmt Flow	45	184	179	60	36	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	239	0	-	0	483	209
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	274	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1340	-	-	-	546	836
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	777	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1340	-	-	-	527	836
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	777	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1340	-	-	-	527	836
HCM Lane V/C Ratio	0.033	-	-	-	0.069	0.027
HCM Control Delay (s)	7.8	-	-	-	12.3	9.4
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	64	1	106	1	407	98	95	355	1
Future Vol, veh/h	1	1	1	64	1	106	1	407	98	95	355	1
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	-	-	-	100	-	0	90	-	130	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	2	-	-	3	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	1	0	6	1	5	5	0
Mvmt Flow	1	1	1	75	1	125	1	479	115	112	418	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	885	1239	210	915	1124	240	419	0	0	594	0	0
Stage 1	643	643	-	481	481	-	-	-	-	-	-	-
Stage 2	242	596	-	434	643	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.1	6.7	8.3	7.3	7.32	4.1	-	-	4.2	-	-
Critical Hdwy Stg 1	6.1	5.1	-	7.3	6.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.1	-	7.3	6.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.31	2.2	-	-	2.25	-	-
Pot Cap-1 Maneuver	268	203	811	188	161	744	1151	-	-	958	-	-
Stage 1	465	506	-	486	501	-	-	-	-	-	-	-
Stage 2	766	529	-	523	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	179	811	170	142	744	1151	-	-	958	-	-
Mov Cap-2 Maneuver	202	179	-	170	142	-	-	-	-	-	-	-
Stage 1	465	447	-	486	500	-	-	-	-	-	-	-
Stage 2	636	528	-	460	361	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.3	23	0	1.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1151	-	-	255	169	744	958	-	-
HCM Lane V/C Ratio	0.001	-	-	0.014	0.452	0.168	0.117	-	-
HCM Control Delay (s)	8.1	-	-	19.3	42.8	10.8	9.3	-	-
HCM Lane LOS	A	-	-	C	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.1	0.6	0.4	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	3	5	1	18	13	488	10	15	401	3
Future Vol, veh/h	1	1	3	5	1	18	13	488	10	15	401	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	135	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	3	-	-	4	-	-	-2	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	6	0	5	0	0	4	0
Mvmt Flow	1	1	4	6	1	21	15	574	12	18	472	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	828	1126	238	877	1116	287	476	0	0	586	0	0
Stage 1	510	510	-	604	604	-	-	-	-	-	-	-
Stage 2	318	616	-	273	512	-	-	-	-	-	-	-
Critical Hdwy	8.5	7.5	7.4	8.1	7.1	7.32	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.36	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	212	151	744	212	174	681	1097	-	-	999	-	-
Stage 1	451	469	-	413	444	-	-	-	-	-	-	-
Stage 2	616	409	-	684	496	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	146	744	205	168	681	1097	-	-	999	-	-
Mov Cap-2 Maneuver	199	146	-	205	168	-	-	-	-	-	-	-
Stage 1	445	461	-	407	438	-	-	-	-	-	-	-
Stage 2	587	403	-	667	487	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	13.8	0.2	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	314	205	587	999	-	-
HCM Lane V/C Ratio	0.014	-	-	0.019	0.029	0.038	0.018	-	-
HCM Control Delay (s)	8.3	-	-	16.7	23.1	11.4	8.7	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	119	17	71	2	3	3	111	389	31	7	352	50
Future Vol, veh/h	119	17	71	2	3	3	111	389	31	7	352	50
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	100	-	230	0	-	-	160	-	175	160	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	3	-	-	-3	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	0	3	0	0	33	1	5	0	0	3	8
Mvmt Flow	140	20	84	2	4	4	131	458	36	8	414	59

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	923	1186	207	953	1209	229	473	0	0	494	0	0
Stage 1	430	430	-	720	720	-	-	-	-	-	-	-
Stage 2	493	756	-	233	489	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.96	7.5	6.5	7.56	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.33	3.5	4	3.63	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	225	190	796	217	184	687	1092	-	-	1080	-	-
Stage 1	574	587	-	390	435	-	-	-	-	-	-	-
Stage 2	526	419	-	755	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	166	796	159	161	687	1092	-	-	1080	-	-
Mov Cap-2 Maneuver	199	166	-	159	161	-	-	-	-	-	-	-
Stage 1	505	583	-	343	383	-	-	-	-	-	-	-
Stage 2	456	369	-	648	549	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.8	21.4	1.8	0.1
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1092	-	-	199	166	796	159	261	1080	-	-
HCM Lane V/C Ratio	0.12	-	-	0.704	0.12	0.105	0.015	0.027	0.008	-	-
HCM Control Delay (s)	8.7	-	-	57.3	29.6	10.1	28	19.2	8.4	-	-
HCM Lane LOS	A	-	-	F	D	B	D	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4.4	0.4	0.3	0	0.1	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	275	869	68	1119	110	119	99	70	161	166	402
v/c Ratio	0.74	0.54	0.51	0.77	0.12	0.67	0.54	0.19	0.55	0.55	0.70
Control Delay	76.6	31.9	101.5	23.6	3.3	83.1	74.3	3.8	64.7	64.4	40.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.6	31.9	101.5	23.6	3.3	83.1	74.3	3.8	64.7	64.4	40.0
Queue Length 50th (ft)	140	356	58	582	38	119	97	0	152	156	257
Queue Length 95th (ft)	193	428	m119	192	m15	188	160	17	251	257	417
Internal Link Dist (ft)		1315		334			509			538	
Turn Bay Length (ft)	250		130		200	250		125	215		
Base Capacity (vph)	412	1607	218	1486	922	222	232	465	301	311	581
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.54	0.31	0.75	0.12	0.54	0.43	0.15	0.53	0.53	0.69

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	262	794	40	10	56	1074	106	114	95	67	231
Future Volume (vph)	2	262	794	40	10	56	1074	106	114	95	67	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			0%				-1%			2%		
Total Lost time (s)		7.8	5.2			6.9	5.8	9.4	8.3	8.3	6.9	9.4
Lane Util. Factor		0.97	0.95			1.00	0.95	1.00	1.00	1.00	1.00	0.95
Frpb, ped/bikes		1.00	1.00			1.00	1.00	0.99	1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	1.00	0.85	1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (prot)		3400	3512			1814	3557	1570	1787	1862	1563	1715
Flt Permitted		0.95	1.00			0.95	1.00	1.00	0.95	1.00	1.00	0.95
Satd. Flow (perm)		3400	3512			1814	3557	1570	1787	1862	1563	1715
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2	273	827	42	10	58	1119	110	119	99	70	241
RTOR Reduction (vph)	0	0	2	0	0	0	0	37	0	0	58	0
Lane Group Flow (vph)	0	275	867	0	0	68	1119	73	119	99	12	161
Confl. Peds. (#/hr)				3				5	2		6	6
Heavy Vehicles (%)	0%	3%	2%	0%	0%	0%	2%	2%	0%	1%	0%	1%
Turn Type	Prot	Prot	NA		Prot	Prot	NA	pm+ov	Split	NA	custom	Split
Protected Phases	5	5	2		1	1	6	4	3	3		4
Permitted Phases								6			1 3	
Actuated Green, G (s)		16.5	68.6			11.1	61.7	87.3	14.9	14.9	26.0	25.6
Effective Green, g (s)		16.5	68.6			11.1	61.7	87.3	14.9	14.9	26.0	25.6
Actuated g/C Ratio		0.11	0.46			0.07	0.41	0.58	0.10	0.10	0.17	0.17
Clearance Time (s)		7.8	5.2			6.9	5.8	9.4	8.3	8.3		9.4
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		374	1606			134	1463	913	177	184	270	292
v/s Ratio Prot		0.08	c0.25			0.04	c0.31	0.01	c0.07	0.05		0.09
v/s Ratio Perm								0.03			0.01	
v/c Ratio		0.74	0.54			0.51	0.76	0.08	0.67	0.54	0.04	0.55
Uniform Delay, d1		64.6	29.3			66.8	37.9	13.7	65.2	64.3	51.7	56.9
Progression Factor		1.00	1.00			1.36	0.51	1.22	1.00	1.00	1.00	1.00
Incremental Delay, d2		7.3	1.3			2.6	3.3	0.0	9.6	3.0	0.1	2.2
Delay (s)		72.0	30.6			93.8	22.7	16.8	74.8	67.3	51.7	59.2
Level of Service		E	C			F	C	B	E	E	D	E
Approach Delay (s)			40.6				25.9			66.6		
Approach LOS			D				C			E		

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	31.3
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	83	386
Future Volume (vph)	83	386
Ideal Flow (vphpl)	1900	1900
Grade (%)	-2%	
Total Lost time (s)	9.4	9.4
Lane Util. Factor	0.95	1.00
Frpb, ped/bikes	1.00	0.99
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1772	1545
Flt Permitted	0.98	1.00
Satd. Flow (perm)	1772	1545
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	86	402
RTOR Reduction (vph)	0	60
Lane Group Flow (vph)	166	342
Confl. Peds. (#/hr)		2
Heavy Vehicles (%)	0%	4%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	25.6	51.5
Effective Green, g (s)	25.6	51.5
Actuated g/C Ratio	0.17	0.34
Clearance Time (s)	9.4	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	302	530
v/s Ratio Prot	0.09	
v/s Ratio Perm		c0.22
v/c Ratio	0.55	0.64
Uniform Delay, d1	56.9	41.5
Progression Factor	1.00	1.00
Incremental Delay, d2	2.0	2.7
Delay (s)	59.0	44.2
Level of Service	E	D
Approach Delay (s)	50.9	
Approach LOS	D	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

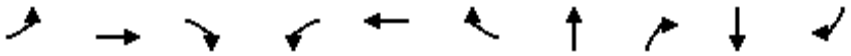
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱			↱			↱
Traffic Vol, veh/h	0	1019	83	0	1167	102	0	0	25	0	0	79
Future Vol, veh/h	0	1019	83	0	1167	102	0	0	25	0	0	79
Conflicting Peds, #/hr	0	0	0	0	0	4	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	-	-	110	-	-	300	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	3	-	-	3	-	-	-11	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	0	0	2	0	0	0	4	0	0	0
Mvmt Flow	0	1096	89	0	1255	110	0	0	27	0	0	85

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	548	-	-	632
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.28	-	-	5.8
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.34	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	454	0	0	519
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	454	-	-	517
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.4	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	454	-	-	-	-	517
HCM Lane V/C Ratio	0.059	-	-	-	-	0.164
HCM Control Delay (s)	13.4	-	-	-	-	13.3
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	147	949	2	68	1160	88	36	79	165	148
v/c Ratio	0.72	0.44	0.00	0.54	0.63	0.10	0.31	0.30	0.76	0.44
Control Delay	87.4	12.5	0.0	82.0	28.6	0.2	72.2	3.0	85.8	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.4	12.5	0.0	82.0	28.6	0.2	72.2	3.0	85.8	10.0
Queue Length 50th (ft)	157	212	0	68	427	0	36	0	164	0
Queue Length 95th (ft)	225	226	m0	123	610	0	73	0	249	53
Internal Link Dist (ft)		457			1504		131		565	
Turn Bay Length (ft)	240		330	150		150		60		
Base Capacity (vph)	260	2159	993	157	1853	907	202	327	250	363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.44	0.00	0.43	0.63	0.10	0.18	0.24	0.66	0.41

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	131	902	2	65	1102	84	17	17	75	139	18
Future Volume (vph)	9	131	902	2	65	1102	84	17	17	75	139	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-4%			2%			0%			-1%
Total Lost time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.97	1.00	1.00	0.98		1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (prot)		1807	3682	1602	1787	3504	1558		1854	1615		1813
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (perm)		1807	3682	1602	1787	3504	1558		1854	1615		1813
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	138	949	2	68	1160	88	18	18	79	146	19
RTOR Reduction (vph)	0	0	0	1	0	0	41	0	0	74	0	0
Lane Group Flow (vph)	0	147	949	1	68	1160	47	0	36	5	0	165
Confl. Peds. (#/hr)				2			2					
Heavy Vehicles (%)	0%	2%	0%	0%	0%	2%	1%	0%	0%	0%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	1	6		5	2		4	4		3	3
Permitted Phases				6			2			4		
Actuated Green, G (s)		17.1	86.7	86.7	9.3	79.4	79.4		9.5	9.5		17.9
Effective Green, g (s)		17.1	86.7	86.7	9.3	79.4	79.4		9.5	9.5		17.9
Actuated g/C Ratio		0.11	0.58	0.58	0.06	0.53	0.53		0.06	0.06		0.12
Clearance Time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		205	2128	925	110	1854	824		117	102		216
v/s Ratio Prot		c0.08	0.26		0.04	c0.33			c0.02			c0.09
v/s Ratio Perm				0.00			0.03			0.00		
v/c Ratio		0.72	0.45	0.00	0.62	0.63	0.06		0.31	0.05		0.76
Uniform Delay, d1		64.1	18.0	13.4	68.6	24.8	17.1		67.1	66.0		64.0
Progression Factor		1.10	0.61	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		10.2	0.6	0.0	9.9	1.6	0.1		1.5	0.2		14.8
Delay (s)		80.8	11.6	13.4	78.5	26.4	17.3		68.6	66.2		78.8
Level of Service		F	B	B	E	C	B		E	E		E
Approach Delay (s)			20.9			28.5			67.0			69.4
Approach LOS			C			C			E			E

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	141
Future Volume (vph)	141
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	7.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1607
Flt Permitted	1.00
Satd. Flow (perm)	1607
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	148
RTOR Reduction (vph)	130
Lane Group Flow (vph)	18
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	17.9
Effective Green, g (s)	17.9
Actuated g/C Ratio	0.12
Clearance Time (s)	7.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	191
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.09
Uniform Delay, d1	58.8
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	59.0
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	77	116	45	50	41	94	43	12	48	39	32
Future Vol, veh/h	17	77	116	45	50	41	94	43	12	48	39	32
Conflicting Peds, #/hr	0	0	14	14	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, %	-	-8	-	-	-2	-	-	1	-	-	-1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	2	5	0	2	0	0	3	0
Mvmt Flow	18	80	121	47	52	43	98	45	13	50	41	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	403	412	51	423	422	29	74	0	0	58	0	0
Stage 1	158	158	-	248	248	-	-	-	-	-	-	-
Stage 2	245	254	-	175	174	-	-	-	-	-	-	-
Critical Hdwy	5.9	4.9	6.14	7.1	6.14	6.8	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	4.9	3.9	-	6.1	5.14	-	-	-	-	-	-	-
Critical Hdwy Stg 2	4.9	3.9	-	6.1	5.14	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.32	3.5	4.02	3.35	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	642	640	1018	545	547	1031	1538	-	-	1559	-	-
Stage 1	895	827	-	760	720	-	-	-	-	-	-	-
Stage 2	828	784	-	832	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	524	577	1006	392	493	1031	1538	-	-	1559	-	-
Mov Cap-2 Maneuver	524	577	-	392	493	-	-	-	-	-	-	-
Stage 1	836	799	-	710	672	-	-	-	-	-	-	-
Stage 2	684	732	-	629	743	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	14.2	4.7	3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1538	-	-	747	531	1559	-	-
HCM Lane V/C Ratio	0.064	-	-	0.293	0.267	0.032	-	-
HCM Control Delay (s)	7.5	0	-	11.8	14.2	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	3	106	86	28	112	2	62	2	37	1	5	1
Future Vol, veh/h	3	106	86	28	112	2	62	2	37	1	5	1
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	2	-	-	-5	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	3	0	4	1	0	3	0	3	0	0	0
Mvmt Flow	3	119	97	31	126	2	70	2	42	1	6	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	216	0	0	367	368	170	391	415	131
Stage 1	-	-	-	-	-	-	174	174	-	193	193	-
Stage 2	-	-	-	-	-	-	193	194	-	198	222	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.53	6.9	6.43	6.1	5.5	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.9	-	5.1	4.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.9	-	5.1	4.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1466	-	-	1342	-	-	564	542	863	637	596	941
Stage 1	-	-	-	-	-	-	810	744	-	858	786	-
Stage 2	-	-	-	-	-	-	789	728	-	854	769	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1461	-	-	1342	-	-	548	526	862	589	578	938
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	526	-	589	578	-
Stage 1	-	-	-	-	-	-	808	743	-	854	764	-
Stage 2	-	-	-	-	-	-	763	708	-	807	767	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	11.4	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	547	862	1461	-	-	1342	-	-	613
HCM Lane V/C Ratio	0.131	0.048	0.002	-	-	0.023	-	-	0.013
HCM Control Delay (s)	12.6	9.4	7.5	0	-	7.7	0	-	10.9
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	128	160	14	67	52
Future Vol, veh/h	42	128	160	14	67	52
Conflicting Peds, #/hr	1	0	0	1	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	1	-	-5	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	49	151	188	16	79	61

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	205	0	-	0	448	197
Stage 1	-	-	-	-	197	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.12	-	-	-	5.4	5.72
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.218	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1366	-	-	-	648	868
Stage 1	-	-	-	-	888	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1365	-	-	-	621	867
Mov Cap-2 Maneuver	-	-	-	-	621	-
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1365	-	-	-	709
HCM Lane V/C Ratio	0.036	-	-	-	0.197
HCM Control Delay (s)	7.7	-	-	-	11.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	159	210	2	11	27
Future Vol, veh/h	5	159	210	2	11	27
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	3	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	3	2	0	0	0
Mvmt Flow	6	187	247	2	13	32

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	250	0	-	0	448	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	199	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1327	-	-	-	572	795
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1326	-	-	-	568	794
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1326	-	-	-	568	794
HCM Lane V/C Ratio	0.004	-	-	-	0.023	0.04
HCM Control Delay (s)	7.7	-	-	-	11.5	9.7
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	4	98	1	139	2	370	77	86	501	2
Future Vol, veh/h	2	1	4	98	1	139	2	370	77	86	501	2
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	0	90	-	130	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	2	-	-	3	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	0	2	0	3	4	1	4	0
Mvmt Flow	2	1	4	109	1	154	2	411	86	96	557	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	964	1256	284	887	1171	207	563	0	0	498	0	0
Stage 1	754	754	-	416	416	-	-	-	-	-	-	-
Stage 2	210	502	-	471	755	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.1	6.7	8.32	7.3	7.34	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.1	-	7.32	6.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.1	-	7.32	6.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4	3.32	2.2	-	-	2.21	-	-
Pot Cap-1 Maneuver	237	199	730	197	150	781	1019	-	-	1069	-	-
Stage 1	404	457	-	535	543	-	-	-	-	-	-	-
Stage 2	797	577	-	491	355	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	175	180	728	181	136	780	1016	-	-	1068	-	-
Mov Cap-2 Maneuver	175	180	-	181	136	-	-	-	-	-	-	-
Stage 1	402	414	-	533	541	-	-	-	-	-	-	-
Stage 2	637	575	-	443	322	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.9	28	0	1.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1016	-	-	311	180	780	1068	-	-
HCM Lane V/C Ratio	0.002	-	-	0.025	0.611	0.198	0.089	-	-
HCM Control Delay (s)	8.6	-	-	16.9	52.2	10.8	8.7	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	3.4	0.7	0.3	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	17	33	1	38	15	401	15	41	556	6
Future Vol, veh/h	10	1	17	33	1	38	15	401	15	41	556	6
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	135	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	3	-	-	4	-	-	-2	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	5	0	3	0	0	3	0
Mvmt Flow	11	1	19	37	1	42	17	446	17	46	618	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	977	1216	318	882	1202	223	630	0	0	463	0	0
Stage 1	719	719	-	480	480	-	-	-	-	-	-	-
Stage 2	258	497	-	402	722	-	-	-	-	-	-	-
Critical Hdwy	8.5	7.5	7.4	8.1	7.1	7.3	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.35	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	159	130	654	211	152	757	962	-	-	1109	-	-
Stage 1	320	357	-	499	515	-	-	-	-	-	-	-
Stage 2	679	477	-	562	385	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	142	122	651	194	143	757	958	-	-	1109	-	-
Mov Cap-2 Maneuver	142	122	-	194	143	-	-	-	-	-	-	-
Stage 1	313	341	-	490	506	-	-	-	-	-	-	-
Stage 2	628	468	-	521	368	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.3	18.5	0.3	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	958	-	-	267	194	682	1109	-	-
HCM Lane V/C Ratio	0.017	-	-	0.117	0.189	0.064	0.041	-	-
HCM Control Delay (s)	8.8	-	-	20.3	27.8	10.6	8.4	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.7	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	96	61	164	43	27	25	76	310	77	7	493	106
Future Vol, veh/h	96	61	164	43	27	25	76	310	77	7	493	106
Conflicting Peds, #/hr	6	0	0	0	0	6	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	100	-	230	0	-	-	160	-	175	160	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	3	-	-	-3	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	0	1	0	0	0	1	3	0	0	4	1
Mvmt Flow	105	67	180	47	30	27	84	341	85	8	542	116

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	918	1155	271	833	1186	180	658	0	0	429	0	0
Stage 1	558	558	-	512	512	-	-	-	-	-	-	-
Stage 2	360	597	-	321	674	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.92	7.5	6.5	6.9	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.31	3.5	4	3.3	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	227	199	730	265	190	838	932	-	-	1141	-	-
Stage 1	482	515	-	518	540	-	-	-	-	-	-	-
Stage 2	631	495	-	671	457	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	176	179	730	131	171	832	932	-	-	1138	-	-
Mov Cap-2 Maneuver	176	179	-	131	171	-	-	-	-	-	-	-
Stage 1	439	511	-	470	490	-	-	-	-	-	-	-
Stage 2	519	449	-	436	454	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.4	33	1.5	0.1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	932	-	-	176	179	730	131	277	1138	-	-
HCM Lane V/C Ratio	0.09	-	-	0.599	0.374	0.247	0.361	0.206	0.007	-	-
HCM Control Delay (s)	9.2	-	-	52.1	36.7	11.5	47.2	21.3	8.2	-	-
HCM Lane LOS	A	-	-	F	E	B	E	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.3	1.6	1	1.5	0.8	0	-	-

G. Background Development and Roadway Improvement Excerpts



TOWN OF WARRENTON
CAPITAL IMPROVEMENT PROGRAM

2023 - 2028

Adopted June 16, 2022

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Mission Statement

In Cooperation With, And For Our Citizens...

...The Mayor, Town Council and the Staff of Warrenton are dedicated to providing public safety, economic opportunity, and quality public services in an attractive, well-planned community with historic character for the benefit, enjoyment and accessibility of all.

Affirmed by Town Council
August 28, 2018

Vision and Value Statement

To Achieve Our Mission, We Strive To...

...

Provide high level services in a cost-effective manner; display honesty, respectfulness, and fairness in all relationships; support the health and economic well-being of our citizens and businesses; preserve our historic small-town character; encourage opportunities, services and infrastructure that allow people of all means to live, work and visit here; and address public concerns and opportunities promptly and effectively.

We recognize our Mission can be achieved only by the exchange of information and that through teamwork we can maintain an environment in which we can maximize our potential.

Affirmed by Town Council August 28, 2018

INTRODUCTION

The Capital Improvement Program (CIP) provides for an orderly implementation of short and long-range plans for construction of Capital Improvement Projects and Land Acquisition. It further provides for the scheduling of the associated expenditures over a period of many years. The first year of the program represents the proposed Capital Budget for the Fiscal Year. In addition, consideration is given to the project's relations to other improvements and plans, and the Town's current and anticipated financial capabilities. The CIP is updated annually, at which time the schedule and the projects reevaluated, new or deferred projects are added, and the time frame is extended by one additional fiscal year.

The Town of Warrenton continues to enhance the structure of the budget and provide a greater understanding of funding commitments. Projects are presented under topical categories to help the community understand the investments that are being proposed and the tie in to priorities of the Town. Next, a Capital Asset Replacement Program (CARP) includes projects that cover standard operating and maintenance items. Unlike items listed in the capital project and acquisition program, these are items necessary for the ongoing operations of the Town and its facilities. Finally, the Town created dedicated Utilities and Stormwater Funds. These modifications to the CIP help move it towards a clearer document that works in conjunction with the budget and stated needs of the community.

POLICY

The following policies guide the development of the CIP:

1. The CIP should be realistic relative to the projected source of revenue.
2. A reserve fund should be established, as required, to reduce the fiscal impact of major projects in a single year.
3. Projects undertaken in the Enterprise Fund and Stormwater Fund are to be considered separate from the general Fund.

BENEFITS

A carefully planned CIP will enable the Town to realize several benefits:

1. Major improvements can be anticipated in advance, rather than addressed at the time the need arises.
2. The implementation strategy of the Comprehensive Plan is used as a guide for future needs and investments.
3. The Town Council and Planning Commission are better able to evaluate the needs of the entire community, instead of special projects.
4. Projects can be scheduled when revenue is available and when the community's anticipated ability to finance is determined.
5. Capital programming improves the Town's ability to vitalize state and federal aid. Applications can be timed to fit the development schedule.

DEFINING CAPITAL IMPROVEMENT PROJECTS

A capital improvement is defined as a major expenditure, beyond maintenance and operating costs, for the acquisition or construction of a needed facility. Salaries, supplies and other overhead expenditures are considered maintenance and operating costs, not provided for the CIP. Capital improvements include such things as utility systems, public buildings, land acquisitions, streets and sidewalks. The improvements are items that will have a significant impact on the community and are too expensive to be financed in the annual operating budget. Cost and frequency are two criteria that will be used to distinguish between a capital expenditure and a capital asset.

1. COST - A capital improvement project shall be $10,000 or more.
2. FREQUENCY - Capital improvement projects should be non-recurring. An interval of three years between expenditures is recommended.

DEFINING CAPITAL ASSET REPLACEMENT PROGRAM (CARP)

Capital assets, which include property, plant, equipment, and infrastructure assets, are assets with an individual cost of more than $5,000 and a useful life of more than one year. Infrastructure assets capitalized have an original cost of $25,000 or more. Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend asset lives are not capitalized.

* *Development of planning and regulatory documents are typically captured in a budget's operating expense; however, Warrenton recognizes these types of documents here as they do not occur annually and can have a substantial impact on the budget.*

CATEGORIES

Starting the FY22, CIP projects are being classified around stated priorities of the Town. Projects are numbered under specific topical areas. The CIP further states how projects meet the Comprehensive Plan goals and objectives within the individual project sheets. Below is a general description of the categories.

The CIP programs are coded using the following information:

Economic Development and Tourism (E) – Economic development and tourism projects position Warrenton to leverage and promote the location of jobs, revenue-generating businesses, and attracting tourism through complementary place-based economic development that encourages local economic growth.

General Government (G) – General government projects relate to ensuring the efficiency and needs to run a government that meets the needs of its citizens in a responsive, safe, and transparent fashion.

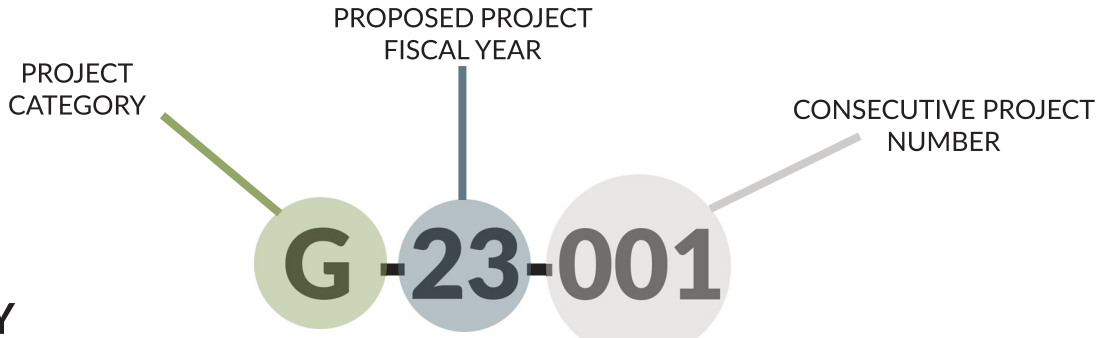
Public Safety (P) - Public safety projects relate to the Town of Warrenton's Police Department and Warrenton Volunteer Fire Company needs to ensure the ongoing safety and security of the community.

Recreation and Quality of Life (R) – Recreation and quality of life projects are recognized as opportunities for additional cultural, arts, and recreational activities in the Town. These type of investments are an important factor for long term economic sustainability.

Transportation and Walkability (T) – Transportation and walkability projects provide for improved multimodal safety by enacting access management strategies, incorporating pedestrian and bike friendly strategies, and deconflicting through-travel and local traffic movements.

Utilities and Stormwater (U) – Utilities and stormwater projects locate, maintain, and build community facilities to ensure the service needs of the Town and Federal and state mandates are met.

EXAMPLE PROJECT NUMBER



SUMMARY

The CIP is a planning and scheduling document. It does not represent authorization to expend Town funds. It does provide an orderly implementation of proposed short and long range plans for land acquisition and construction. Projects are authorized for implementation only after Town Council adopts and appropriates the Capital Budget. The impact of FY23 capital projects, for both improvement and asset projects, on the Town of Warrenton General Fund is $1,281,289. The impact of FY23 capital projects, for both improvement and asset projects, on the Town of Warrenton Water and Sewer Fund is $4,111,102. The impact of the FY23 capital projects on the Stormwater Utility Fund is $94,918. The Town is also using $976,500 in ARPA funds on projects in FY23. The CIP is an annual process and requires close review by both the Planning Commission and the Town Council.

CAPITAL IMPROVEMENT PROJECTS

PROJECT SHEETS

TRANSPORTATION & WALKABILITY

PROJECT NUMBER: T-28-003 **PROJECT TITLE:** Inters. Improv.: Broadview/W. Lee Hwy/Winchester

CATEGORY (check one):

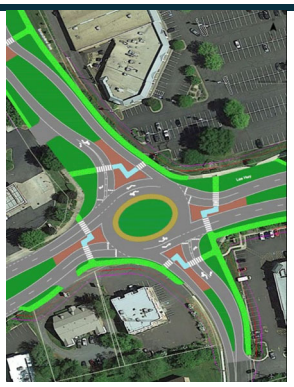
- ☐ Economic Development & Tourism (E)
- ☐ General Government (G)
- ☐ Public Safety (P)
- ☐ Recreation & Quality of Life (R)
- ☐ Stormwater & Utilities (U)
- ☑ Transportation & Walkability (T)

PROGRAM TYPE (check one):

- ☐ CARP
- ☑ CIP

PROGRAM DESCRIPTION

The Town of Warrenton is interested in creating an improvement plan for this important transportation connection between two key arterial corridors. It is also key to the economic development potential of the surrounding area. Therefore, the Town is working with VDOT on a "pipeline project" for the Lee Highway corridor. This project will be updated upon completion of the study in spring 2022.



GOAL ADDRESSED

Plan Warrenton 2040 Transportation and Circulation Near Turn Recommendations page 38.

ESTIMATED COSTS	FY23 2022-23	FY24 2023-24	FY25 2024-25	FY26 2025-26	FY27 2026-27	FY28 & Beyond	Total
Land Acquisition						$2,325,000	**$2,325,000**
Architecture/Engineering						$1,299,486	**$1,299,486**
Construction/Purchase						$3,641,809	**$3,641,809**
Other							**$0**
TOTAL	**$0**	**$0**	**$0**	**$0**	**$0**	**$7,266,295**	**$7,266,295**

FUNDING SOURCES							
General Fund						$7,266,295	**$7,266,295**
Water and Sewer Fund							**$0**
Stormwater Fund							**$0**
ARPA							**$0**
Grant- Federal							**$0**
Proffer							**$0**
Other							**$0**
TOTAL	**$0**	**$0**	**$0**	**$0**	**$0**	**$7,266,295**	**$7,266,295**

OPERATING IMPACT							
Ongoing maintenance							**$0**
Other							**$0**
TOTAL	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

PROJECT NUMBER: T-28-004 **PROJECT TITLE:** Route 17 (Broadview) Roebling Roundabout

CATEGORY (check one):

- ☐ Economic Development & Tourism (E)
- ☐ General Government (G)
- ☐ Public Safety (P)
- ☐ Recreation & Quality of Life (R)
- ☐ Stormwater & Utilities (U)
- ☑ Transportation & Walkability (T)

PROGRAM TYPE (check one):

- ☐ CARP
- ☑ CIP

PROGRAM DESCRIPTION

The intersection at Route 17 (Broadview Avenue) and Roebling Street is subjected to safety issues. As the area around it redevelops, the intersection will need improvements. In 2020 the Town applied for an unsuccessful VDOT Smartscale grant. This application included an assessment of costs associated with a roundabout included below. Therefore, the Town is working with VDOT on a "pipeline project" for the Lee Higway corridor. This project will be updated upon completion of the study in spring of 2022.

GOAL ADDRESSED

Plan Warrenton 2040 Transportation and Circulation Near Turn Recommendations page 38.



ESTIMATED COSTS	FY23 2022-23	FY24 2023-24	FY25 2024-25	FY26 2025-26	FY27 2026-27	FY28 & Beyond	Total
Land Acquisition						$1,987,500	**$1,987,500**
Architecture/Engineering						$1,291,020	**$1,291,020**
Construction/Purchase						$3,921,045	**$3,921,045**
Other							**$0**
TOTAL	**$0**	**$0**	**$0**	**$0**	**$0**	**$7,199,565**	**$7,199,565**

FUNDING SOURCES							
General Fund						$7,199,565	**$7,199,565**
Water and Sewer Fund							**$0**
Stormwater Fund							**$0**
ARPA							**$0**
Grant- Commonwealth							**$0**
Proffer							**$0**
Other							**$0**
TOTAL	**$0**	**$0**	**$0**	**$0**	**$0**	**$7,199,565**	**$7,199,565**

OPERATING IMPACT							
Ongoing maintenance							**$0**
Other							**$0**
TOTAL	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

PROJECT NUMBER: T-28-005 **PROJECT TITLE:** Bear Wallow Road/ Roebling Intersection

CATEGORY (check one):

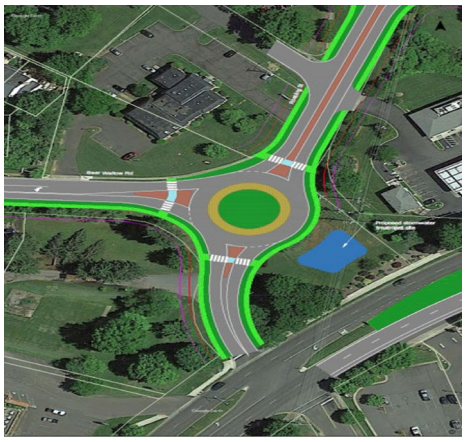
- ☐ Economic Development & Tourism (E)
- ☐ General Government (G)
- ☐ Public Safety (P)
- ☐ Recreation & Quality of Life (R)
- ☐ Stormwater & Utilities (U)
- ☑ Transportation & Walkability (T)

PROGRAM TYPE (check one):

- ☐ CARP
- ☑ CIP

PROGRAM DESCRIPTION

The intersection at Bear Wallow Road and Roebling Street is subjected to safety issues and an awkward configuration. As the area around it redevelops, the intersection will need improvements. In 2020 the Town applied for an unsuccessful VDOT Smartscale grant. This application included an assessment of costs associated with a roundabout included below.



GOAL ADDRESSED

Plan Warrenton 2040 Transportation and Circulation Near Turn Recommendations page 38.

ESTIMATED COSTS	FY23 2022-23	FY24 2023-24	FY25 2024-25	FY26 2025-26	FY27 2026-27	FY28 & Beyond	Total
Land Acquisition						$1,200,000	$1,200,000
Architecture/Engineering						$1,200,000	$1,200,000
Construction/Purchase						$3,600,000	$3,600,000
Other							$0
TOTAL	$0	$0	$0	$0	$0	$6,000,000	$6,000,000
FUNDING SOURCES							
General Fund						$6,000,000	$6,000,000
Water and Sewer Fund							$0
Stormwater Fund							$0
ARPA							$0
Grant- Commonwealth							$0
Proffer							$0
Other							$0
TOTAL	$0	$0	$0	$0	$0	$6,000,000	$6,000,000
OPERATING IMPACT							
Ongoing maintenance							$0
Other							$0
TOTAL	$0	$0	$0	$0	$0	$0	$0

https://www.fauquiernow.com/news/business/warrenton-town-council-greenlights-mixed-use-development-next-to-obriens-pub/article_5e6c8aca-611c-11ed-8421-2751bb1fb016.html

FEATURED

Warrenton Town Council greenlights mixed-use development next to O'Brien's Pub

James Jarvis, jjarvis@FauquierNow.com
Nov 10, 2022



Rendering of a proposed mixed-use development, dubbed Waterloo Junction, that would be built between Broadview Avenue and Bear Wallow Road.

Farrish Properties & Acquisitions LLC

The Warrenton Town Council voted unanimously Wednesday to approve the construction of a mixed-use development -- including 47 townhomes, six apartments, one retail building and a small park -- on the corner of Lee Highway and Broadview Avenue.

The 4.81-acre development, dubbed Waterloo Junction, will consist of 47 1,800-square-foot townhomes, 3,600 square feet of new retail space, six apartments, parking and a small park with a community play area and benches. One townhome and five apartments – 10% of the proposed units – will be designated as affordable housing for individuals or families whose gross annual income does not exceed 80% of the current Fauquier County area median family income.



Rendering of proposed 47 townhomes that could be built as part of the Waterloo Junction development. Each townhome would be 1,800 square-feet and 45 feet high.

Dan Ryan Builders

According to the application, the townhomes will not exceed the town's zoning ordinance of 45 feet. They'll be priced somewhere between $400,000 and $500,000.

For the project to move forward, the council had to approve a zoning map amendment, special-use permit and Comprehensive Plan amendment.

The Warrenton Planning Commission previously voted 5-1 recommending t council approve the project. Commissioner Ali Zarabi cast the only dissenting vote, noting concerns about traffic mitigation, among other issues.

During the council meeting, Ward 2 representative William Semple urged his colleagues to delay the project. Semple said that while he supported the creation of more affordable housing, he argued it may create a "precedent" in which other developers would be incentivized to propose similar projects along Broadview Avenue that do not align with the 2040 Comprehensive Plan guidelines which the council approved in April 2021.

"I think that we should consider those issues before we adopt this one, because this is going to be what I call the lead horse in a variety of potential development down the road," Semple said.

The Comprehensive Plan states the Experience Broadview District "will allow for mixed-use residential at lower density, but nodal development with mixed-use anchors and improved edges to adjacent single-family neighborhoods. Current commercial uses will be maintained."

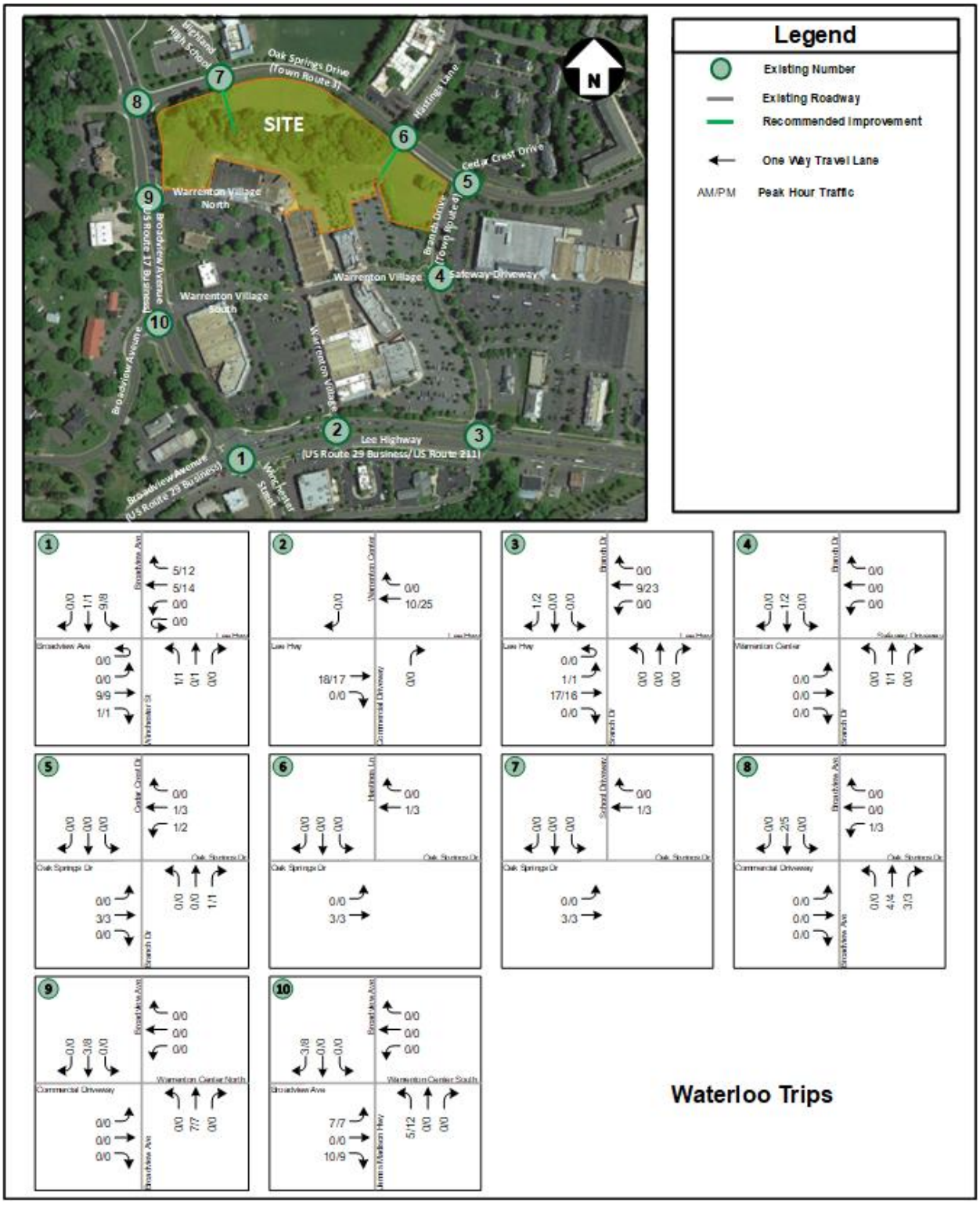
Semple moved to table the project, but it was rejected 6-1, with Semple casting the only supporting vote.

The rest of the council, including Mayor Carter Nevill, praised the project, saying it will be a positive addition to the town.

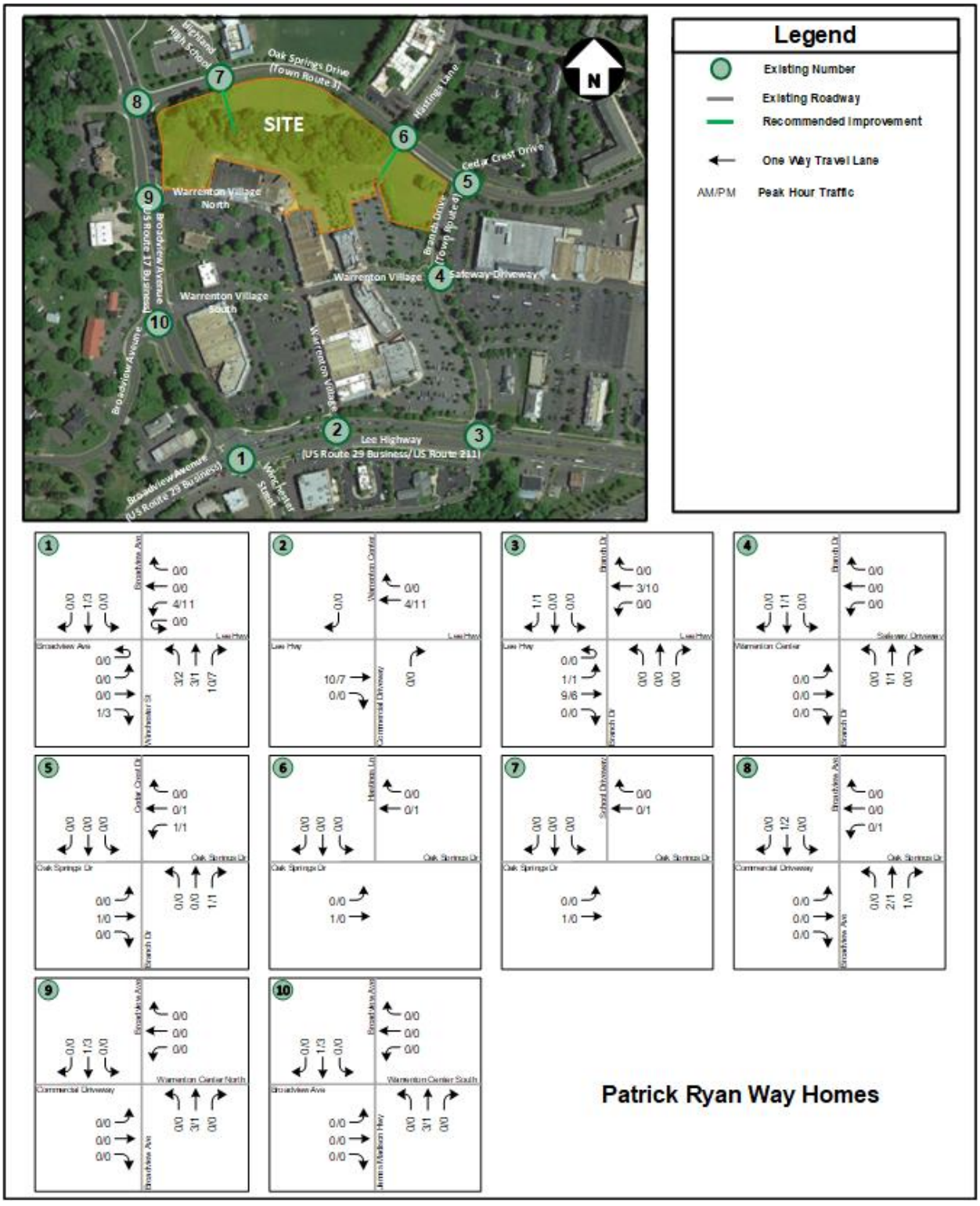
"I think this has been pointed out that the importance of ... bringing people into residential spaces that are close to commercial and entertainment spaces ... it recreates the same sense of community that you see in downtown, where you have people ... walking to restaurants, walking to shops, and I think the more we are able to bring that closer to our neighborhoods, the better we create our built environment to better serve the well-being of our residents," Nevill said.

The renovation of O'Brien's and the apartments above the restaurant – currently vacant – is estimated to take four months. The townhome construction could be completed within 18 months.

James Jarvis


Legend
Existing Number
Existing Roadway
Recommended Improvement
One Way Travel Lane
AM/PM Peak Hour Traffic
N
SITE
Oak Springs Drive (Town Route 1)
Hastings Lane
Cedar Crest Drive
Branch Drive (Town Route 6)
Warrenton Village North
Warrenton Village South
Warrenton Village
Safeway Driveway
Broadview Avenue
Broadview Avenue (US Route 29 Business)
Lee Highway (US Route 29 Business/ US Route 211)
Winchester Street
Warrenton Center
Waterloo Trips




Legend
Existing Number
Existing Roadway
Recommended Improvement
One Way Travel Lane
AM/PM Peak Hour Traffic
SITE
N
Oak Springs Drive (Town Route 3)
Hastings Lane
Cedar Crest Drive
Branch Drive (Town Route 4)
Warrenton Village North
Warrenton Village South
Warrenton Village
Safeway Driveway
Broadview Avenue (US Route 29 Business)
Broadview Avenue
Lee Highway (US Route 29 Business/ US Route 211)
Winchester Street
Warrenton Center
Patrick Ryan Way Homes

H. 2027 Future Conditions without Development – Capacity Analysis Worksheet

LANE LEVEL OF SERVICE

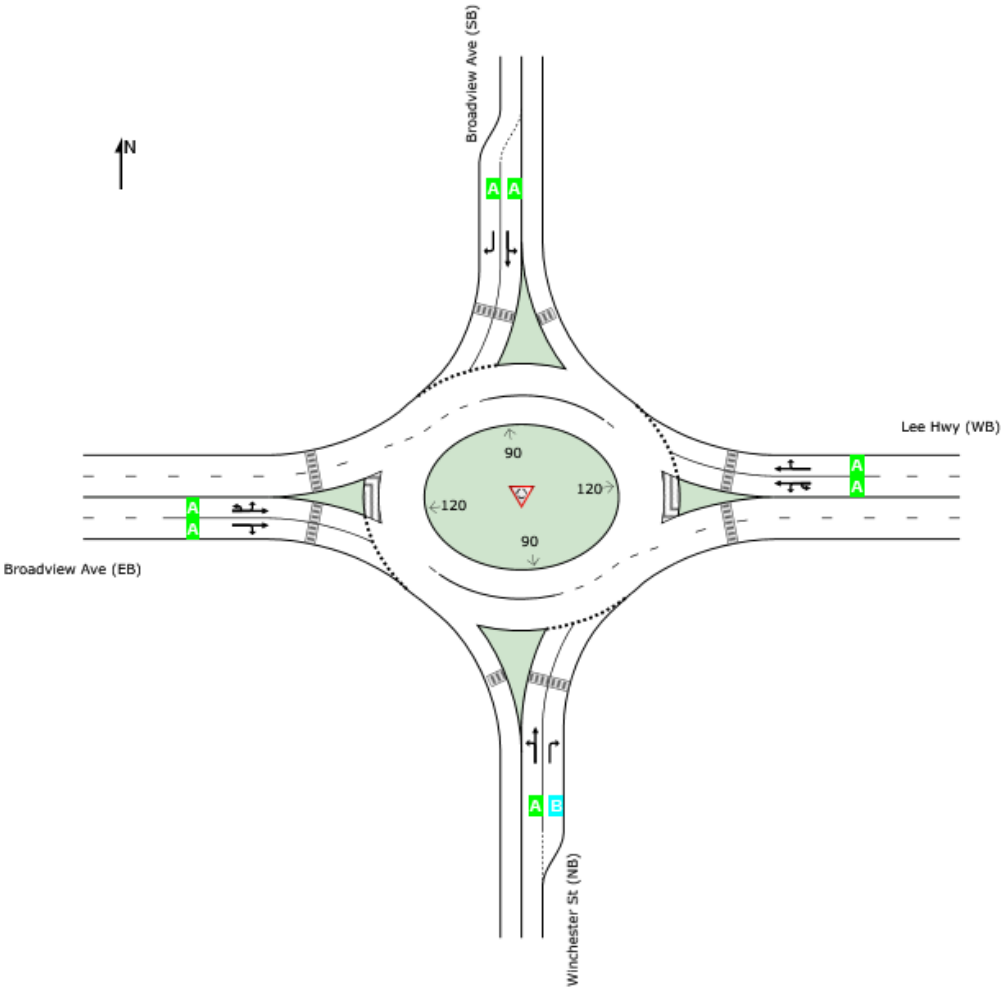
Lane Level of Service

Site: 101 [Broadview/Winchester/Lee - 2027 FB AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future Background Condtions
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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LANE SUMMARY

Site: 101 [Broadview/Winchester/Lee - 2027 FB AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future Background Condtions
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Winchester St (NB)															
Lane 1[d]	199	4.5	199	4.5	664	0.300	100	9.2	LOS A	1.4	35.5	Full	1600	0.0	0.0
Lane 2	87	4.0	87	4.0	475	0.183	100	10.2	LOS B	0.7	18.8	Short	250	0.0	NA
Approach	286	4.4	286	4.4		0.300		9.5	LOS A	1.4	35.5				
East: Lee Hwy (WB)															
Lane 1	430	7.2	430	7.2	1024	0.420	100	8.0	LOS A	3.0	78.4	Full	1600	0.0	0.0
Lane 2[d]	504	6.5	504	6.5	1201	0.420	100	7.2	LOS A	3.1	80.8	Full	1600	0.0	0.0
Approach	934	6.8	934	6.8		0.420		7.6	LOS A	3.1	80.8				
North: Broadview Ave (SB)															
Lane 1[d]	240	3.7	240	3.7	750	0.320	100	8.6	LOS A	1.5	39.3	Short	215	0.0	NA
Lane 2	234	3.0	234	3.0	682	0.343	100	9.7	LOS A	1.7	42.6	Full	1600	0.0	0.0
Approach	474	3.4	474	3.4		0.343		9.1	LOS A	1.7	42.6				
West: Broadview Ave (EB)															
Lane 1	448	4.1	448	4.1	1048	0.427	100	8.0	LOS A	3.1	79.7	Full	1600	0.0	0.0
Lane 2[d]	523	3.9	523	3.9	1224	0.427	100	7.2	LOS A	3.2	82.8	Full	1600	0.0	0.0
Approach	971	4.0	971	4.0		0.427		7.6	LOS A	3.2	82.8				
All Vehicles	2664	4.9	2664	4.9		0.427		8.1	LOS A	3.2	82.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Winchester St (NB)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	84	115	-	199	4.5		664	0.300	100	NA	NA
Lane 2	-	-	87	87	4.0		475	0.183	100	0.0	1
Approach	84	115	87	286	4.4			0.300			
East: Lee Hwy (WB)											
Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	3	38	389	-	430	7.2	1024	0.420	100	NA	NA
Lane 2	-	-	313	191	504	6.5	1201	0.420	100	NA	NA
Approach	3	38	701	191	934	6.8		0.420			
North: Broadview Ave (SB)											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	137	103	-	240	3.7		750	0.320	100	0.0	2
Lane 2	-	-	234	234	3.0		682	0.343	100	NA	NA
Approach	137	103	234	474	3.4			0.343			
West: Broadview Ave (EB)											
Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	5	62	380	-	448	4.1	1048	0.427	100	NA	NA
Lane 2	-	-	487	36	523	3.9	1224	0.427	100	NA	NA
Approach	5	62	867	36	971	4.0		0.427			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	2664	4.9	0.427

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Winchester St (NB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Lee Hwy (WB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Broadview Ave (SB)				
Lane 1	0.0	0.0	0.0	0.0

Lane 2	0.0	0.0	0.0	0.0
West: Broadview Ave (EB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

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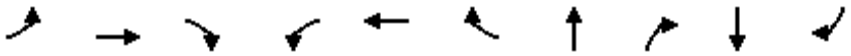
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱			↱			↱
Traffic Vol, veh/h	0	944	63	0	839	31	0	0	29	0	0	20
Future Vol, veh/h	0	944	63	0	839	31	0	0	29	0	0	20
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	-	-	110	-	-	300	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	3	-	-	3	-	-	-11	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	7	0	0	0	3	0	0	0
Mvmt Flow	0	1026	68	0	912	34	0	0	32	0	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	513	-	-	456
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.26	-	-	5.8
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.33	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	483	0	0	640
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	483	-	-	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	483	-	-	-	-	640
HCM Lane V/C Ratio	0.065	-	-	-	-	0.034
HCM Control Delay (s)	13	-	-	-	-	10.8
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	42	1015	1	48	871	55	23	41	46	57
v/c Ratio	0.37	0.43	0.00	0.41	0.39	0.05	0.15	0.16	0.40	0.29
Control Delay	71.3	17.3	0.0	72.4	16.0	0.1	57.5	1.4	71.9	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	17.3	0.0	72.4	16.0	0.1	57.5	1.4	71.9	3.6
Queue Length 50th (ft)	39	246	0	44	198	0	21	0	43	0
Queue Length 95th (ft)	80	485	0	88	400	0	44	0	86	0
Internal Link Dist (ft)		457			1504		131		565	
Turn Bay Length (ft)	240		330	150		150		60		
Base Capacity (vph)	199	2364	1143	227	2281	1124	279	352	185	248
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.43	0.00	0.21	0.38	0.05	0.08	0.12	0.25	0.23

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	31	934	1	44	801	51	10	11	38	34	8
Future Volume (vph)	7	31	934	1	44	801	51	10	11	38	34	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-4%			2%			0%			-1%
Total Lost time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.0	6.0		7.5
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (prot)		1793	3541	1647	1752	3372	1599		1856	1615		1792
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (perm)		1793	3541	1647	1752	3372	1599		1856	1615		1792
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	34	1015	1	48	871	55	11	12	41	37	9
RTOR Reduction (vph)	0	0	0	0	0	0	20	0	0	38	0	0
Lane Group Flow (vph)	0	42	1015	1	48	871	35	0	23	3	0	46
Heavy Vehicles (%)	14%	0%	4%	0%	2%	6%	0%	0%	0%	0%	3%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	1	6		5	2		4	4		3	3
Permitted Phases				6			2			4		
Actuated Green, G (s)		7.7	87.8	87.8	8.1	88.7	88.7		10.2	10.2		7.9
Effective Green, g (s)		7.7	87.8	87.8	8.1	88.7	88.7		10.2	10.2		7.9
Actuated g/C Ratio		0.06	0.63	0.63	0.06	0.63	0.63		0.07	0.07		0.06
Clearance Time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.0	6.0		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		98	2220	1032	101	2136	1013		135	117		101
v/s Ratio Prot		0.02	c0.29		c0.03	0.26			c0.01			c0.03
v/s Ratio Perm				0.00			0.02			0.00		
v/c Ratio		0.43	0.46	0.00	0.48	0.41	0.03		0.17	0.03		0.46
Uniform Delay, d1		64.0	13.6	9.7	63.9	12.7	9.6		60.9	60.3		64.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		3.0	0.7	0.0	3.5	0.6	0.1		0.6	0.1		3.2
Delay (s)		67.0	14.3	9.7	67.4	13.3	9.7		61.5	60.4		67.2
Level of Service		E	B	A	E	B	A		E	E		E
Approach Delay (s)			16.4			15.7			60.8			64.7
Approach LOS			B			B			E			E

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	52
Future Volume (vph)	52
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	7.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1375
Flt Permitted	1.00
Satd. Flow (perm)	1375
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	57
RTOR Reduction (vph)	54
Lane Group Flow (vph)	3
Heavy Vehicles (%)	18%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	7.9
Effective Green, g (s)	7.9
Actuated g/C Ratio	0.06
Clearance Time (s)	7.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	77
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.04
Uniform Delay, d1	62.5
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	62.7
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	6	15	38	14	11	14	23	67	7	18	69	5
Future Vol, veh/h	6	15	38	14	11	14	23	67	7	18	69	5
Conflicting Peds, #/hr	0	0	2	2	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, %	-	-8	-	-	-2	-	-	1	-	-	-1	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	9	0	0	0	0	0	13	0
Mvmt Flow	7	16	41	15	12	15	25	73	8	20	75	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	211	249	42	215	247	41	80	0	0	81	0	0
Stage 1	118	118	-	127	127	-	-	-	-	-	-	-
Stage 2	93	131	-	88	120	-	-	-	-	-	-	-
Critical Hdwy	5.9	4.9	6.1	7.1	6.28	6.7	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	4.9	3.9	-	6.1	5.28	-	-	-	-	-	-	-
Critical Hdwy Stg 2	4.9	3.9	-	6.1	5.28	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.09	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	805	734	1036	746	656	1030	1531	-	-	1529	-	-
Stage 1	927	845	-	882	785	-	-	-	-	-	-	-
Stage 2	948	839	-	925	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	763	711	1034	686	636	1030	1531	-	-	1529	-	-
Mov Cap-2 Maneuver	763	711	-	686	636	-	-	-	-	-	-	-
Stage 1	911	833	-	867	772	-	-	-	-	-	-	-
Stage 2	904	825	-	857	779	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10	1.8	1.4
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1531	-	-	898	760	1529	-	-
HCM Lane V/C Ratio	0.016	-	-	0.071	0.056	0.013	-	-
HCM Control Delay (s)	7.4	0	-	9.3	10	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.2	0	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	1	80	75	16	107	1	73	1	14	1	1	1
Future Vol, veh/h	1	80	75	16	107	1	73	1	14	1	1	1
Conflicting Peds, #/hr	4	0	1	1	0	4	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	2	-	-	-5	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	11	7	1	0	0	0	0	0	0	0
Mvmt Flow	1	87	82	17	116	1	79	1	15	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	170	0	0	283	286	131	295	327	121
Stage 1	-	-	-	-	-	-	131	131	-	155	155	-
Stage 2	-	-	-	-	-	-	152	155	-	140	172	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.5	6.9	6.4	6.1	5.5	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.9	-	5.1	4.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.9	-	5.1	4.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1479	-	-	1378	-	-	652	607	917	718	651	952
Stage 1	-	-	-	-	-	-	865	780	-	890	807	-
Stage 2	-	-	-	-	-	-	841	760	-	902	797	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1474	-	-	1377	-	-	643	596	915	694	639	949
Mov Cap-2 Maneuver	-	-	-	-	-	-	643	596	-	694	639	-
Stage 1	-	-	-	-	-	-	863	778	-	886	794	-
Stage 2	-	-	-	-	-	-	828	748	-	883	795	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	11	9.9
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	642	915	1474	-	-	1377	-	-	739
HCM Lane V/C Ratio	0.125	0.017	0.001	-	-	0.013	-	-	0.004
HCM Control Delay (s)	11.4	9	7.4	0	-	7.6	0	-	9.9
HCM Lane LOS	B	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.4	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	83	108	137	44	47	67
Future Vol, veh/h	83	108	137	44	47	67
Conflicting Peds, #/hr	1	0	0	1	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	1	-	-5	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	1	1	0	17	0
Mvmt Flow	90	117	149	48	51	73

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	198	0	-	0	471	176
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	297	-
Critical Hdwy	4.16	-	-	-	5.57	5.7
Critical Hdwy Stg 1	-	-	-	-	4.57	-
Critical Hdwy Stg 2	-	-	-	-	4.57	-
Follow-up Hdwy	2.254	-	-	-	3.653	3.3
Pot Cap-1 Maneuver	1351	-	-	-	598	894
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	783	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1350	-	-	-	554	892
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1350	-	-	-	713
HCM Lane V/C Ratio	0.067	-	-	-	0.174
HCM Control Delay (s)	7.9	-	-	-	11.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	160	153	51	31	19
Future Vol, veh/h	38	160	153	51	31	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	3	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	1	0	0	0
Mvmt Flow	41	174	166	55	34	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	221	0	-	0	450	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	256	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1360	-	-	-	571	853
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1360	-	-	-	554	853
Mov Cap-2 Maneuver	-	-	-	-	554	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1360	-	-	-	554	853
HCM Lane V/C Ratio	0.03	-	-	-	0.061	0.024
HCM Control Delay (s)	7.7	-	-	-	11.9	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	65	1	106	1	413	102	95	358	1
Future Vol, veh/h	1	1	1	65	1	106	1	413	102	95	358	1
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	-	-	-	100	-	0	90	-	130	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	2	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	6	1	5	5	0
Mvmt Flow	1	1	1	71	1	115	1	449	111	103	389	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	823	1158	195	852	1047	225	390	0	0	560	0	0
Stage 1	596	596	-	451	451	-	-	-	-	-	-	-
Stage 2	227	562	-	401	596	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.1	6.7	8.3	7.3	7.32	4.1	-	-	4.2	-	-
Critical Hdwy Stg 1	6.1	5.1	-	7.3	6.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.1	-	7.3	6.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.31	2.2	-	-	2.25	-	-
Pot Cap-1 Maneuver	295	225	829	212	182	762	1180	-	-	987	-	-
Stage 1	494	529	-	509	520	-	-	-	-	-	-	-
Stage 2	780	546	-	551	434	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	229	201	829	194	163	762	1180	-	-	987	-	-
Mov Cap-2 Maneuver	229	201	-	194	163	-	-	-	-	-	-	-
Stage 1	494	474	-	508	519	-	-	-	-	-	-	-
Stage 2	660	545	-	492	389	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.8	19.7	0	1.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1180	-	-	284	193	762	987	-	-
HCM Lane V/C Ratio	0.001	-	-	0.011	0.372	0.151	0.105	-	-
HCM Control Delay (s)	8.1	-	-	17.8	34.3	10.6	9.1	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.6	0.5	0.3	-	-

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	1	1	3	5	1	18	13	498	10	15	405	3
Future Vol, veh/h	1	1	3	5	1	18	13	498	10	15	405	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	135	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	3	-	-	4	-	-	-2	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	6	0	5	0	0	4	0
Mvmt Flow	1	1	3	5	1	20	14	541	11	16	440	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	773	1054	222	822	1044	271	443	0	0	552	0	0
Stage 1	474	474	-	569	569	-	-	-	-	-	-	-
Stage 2	299	580	-	253	475	-	-	-	-	-	-	-
Critical Hdwy	8.5	7.5	7.4	8.1	7.1	7.32	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.36	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	236	170	764	235	194	699	1128	-	-	1028	-	-
Stage 1	478	492	-	436	463	-	-	-	-	-	-	-
Stage 2	636	428	-	704	518	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	223	165	764	228	189	699	1128	-	-	1028	-	-
Mov Cap-2 Maneuver	223	165	-	228	189	-	-	-	-	-	-	-
Stage 1	472	484	-	431	457	-	-	-	-	-	-	-
Stage 2	609	423	-	689	510	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.6	13.2	0.2	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1128	-	-	346	228	612	1028	-	-
HCM Lane V/C Ratio	0.013	-	-	0.016	0.024	0.034	0.016	-	-
HCM Control Delay (s)	8.2	-	-	15.6	21.2	11.1	8.6	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	126	17	81	2	3	3	116	392	31	7	353	53
Future Vol, veh/h	126	17	81	2	3	3	116	392	31	7	353	53
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	100	-	230	0	-	-	160	-	175	160	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	3	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	0	3	0	0	33	1	5	0	0	3	8
Mvmt Flow	137	18	88	2	3	3	126	426	34	8	384	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	867	1112	192	895	1136	213	442	0	0	460	0	0
Stage 1	400	400	-	678	678	-	-	-	-	-	-	-
Stage 2	467	712	-	217	458	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.96	7.5	6.5	7.56	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.33	3.5	4	3.63	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	247	211	814	239	204	705	1122	-	-	1112	-	-
Stage 1	597	605	-	413	455	-	-	-	-	-	-	-
Stage 2	545	439	-	771	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	221	186	814	179	180	705	1122	-	-	1112	-	-
Mov Cap-2 Maneuver	221	186	-	179	180	-	-	-	-	-	-	-
Stage 1	530	601	-	367	404	-	-	-	-	-	-	-
Stage 2	478	390	-	662	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.7	19.7	1.9	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1122	-	-	221	186	814	179	287	1112	-	-
HCM Lane V/C Ratio	0.112	-	-	0.62	0.099	0.108	0.012	0.023	0.007	-	-
HCM Control Delay (s)	8.6	-	-	44.6	26.5	10	25.4	17.8	8.3	-	-
HCM Lane LOS	A	-	-	E	D	B	D	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.6	0.3	0.4	0	0.1	0	-	-

LANE SUMMARY

Site: 101 [Broadview/Winchester/Lee - 2027 FB PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future Background Conditions
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Winchester St (NB)															
Lane 1[d]	223	0.5	223	0.5	570	0.391	100	12.2	LOS B	2.2	55.7	Full	1600	0.0	0.0
Lane 2	77	0.0	77	0.0	376	0.205	100	13.0	LOS B	0.9	22.4	Short	250	0.0	NA
Approach	300	0.3	300	0.3		0.391		12.4	LOS B	2.2	55.7				
East: Lee Hwy (WB)															
Lane 1	625	1.7	625	1.7	888	0.703	100	16.2	LOS B	10.0	252.3	Full	1600	0.0	0.0
Lane 2[d]	758	2.0	758	2.0	1078	0.703	100	14.0	LOS B	10.5	267.5	Full	1600	0.0	0.0
Approach	1382	1.9	1382	1.9		0.703		15.0	LOS B	10.5	267.5				
North: Broadview Ave (SB)															
Lane 1	340	0.7	340	0.7	435	0.780	100	35.1	LOS D	6.4	161.1	Short	215	0.0	NA
Lane 2[d]	402	4.0	402	4.0	498	0.808	100	34.4	LOS C	7.4	190.7	Full	1600	0.0	0.0
Approach	742	2.5	742	2.5		0.808		34.7	LOS C	7.4	190.7				
West: Broadview Ave (EB)															
Lane 1	538	2.5	538	2.5	923	0.583	100	11.9	LOS B	6.2	158.2	Full	1600	0.0	0.0
Lane 2[d]	652	1.9	652	1.9	1118	0.583	100	10.4	LOS B	6.2	158.3	Full	1600	0.0	0.0
Approach	1191	2.1	1191	2.1		0.583		11.1	LOS B	6.2	158.3				
All Vehicles	3615	2.0	3615	2.0		0.808		17.6	LOS B	10.5	267.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Winchester St (NB)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	122	101	-	223	0.5		570	0.391	100	NA	NA
Lane 2	-	-	77	77	0.0		376	0.205	100	0.0	1
Approach	122	101	77	300	0.3			0.391			
East: Lee Hwy (WB)											
Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	70	544	-	625	1.7	888	0.703	100	NA	NA
Lane 2	-	-	635	123	758	2.0	1078	0.703	100	NA	NA
Approach	10	70	1179	123	1382	1.9		0.703			
North: Broadview Ave (SB)											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	249	91	-	340	0.7		435	0.780	100	0.0	2
Lane 2	-	-	402	402	4.0		498	0.808	100	NA	NA
Approach	249	91	402	742	2.5			0.808			
West: Broadview Ave (EB)											
Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	273	263	-	538	2.5	923	0.583	100	NA	NA
Lane 2	-	-	606	46	652	1.9	1118	0.583	100	NA	NA
Approach	2	273	870	46	1191	2.1		0.583			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3615	2.0	0.808

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Winchester St (NB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Lee Hwy (WB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Broadview Ave (SB)				
Lane 1	0.0	0.0	0.0	0.0

Lane 2	0.0	0.0	0.0	0.0
West: Broadview Ave (EB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

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LANE LEVEL OF SERVICE

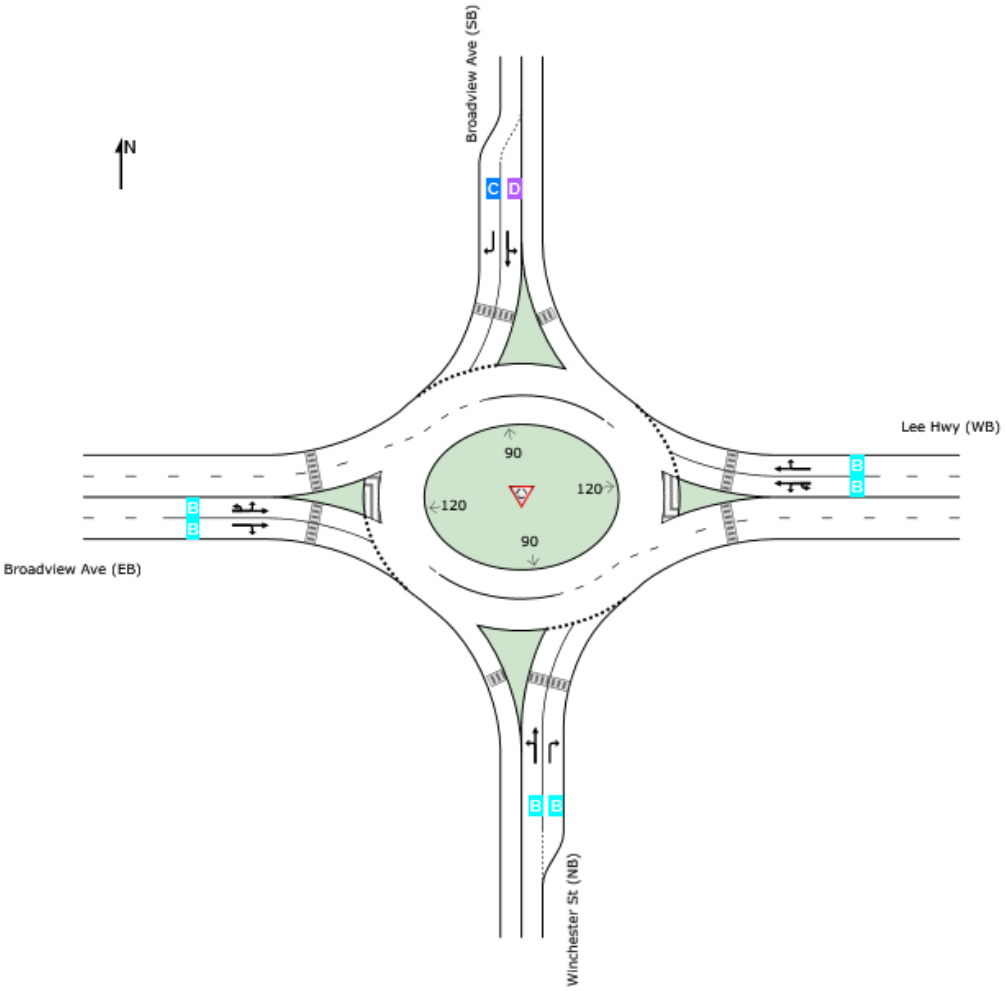
Lane Level of Service

Site: 101 [Broadview/Winchester/Lee - 2027 FB PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future Background Conditions
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	C	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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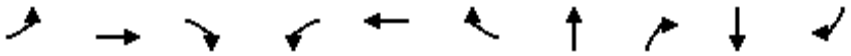
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱			↱			↱
Traffic Vol, veh/h	0	1075	83	0	1247	102	0	0	25	0	0	79
Future Vol, veh/h	0	1075	83	0	1247	102	0	0	25	0	0	79
Conflicting Peds, #/hr	0	0	0	0	0	4	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	-	-	110	-	-	300	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	3	-	-	3	-	-	-11	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	0	0	2	0	0	0	4	0	0	0
Mvmt Flow	0	1156	89	0	1341	110	0	0	27	0	0	85

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	578	-	-	675
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.28	-	-	5.8
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.34	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	433	0	0	493
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	433	-	-	491
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.9	13.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	433	-	-	-	-	491
HCM Lane V/C Ratio	0.062	-	-	-	-	0.173
HCM Control Delay (s)	13.9	-	-	-	-	13.9
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	149	1006	2	68	1241	88	36	79	165	152
v/c Ratio	0.72	0.47	0.00	0.54	0.67	0.10	0.31	0.30	0.76	0.45
Control Delay	82.8	20.6	0.0	82.0	30.0	0.2	72.2	3.0	85.8	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.8	20.6	0.0	82.0	30.0	0.2	72.2	3.0	85.8	10.8
Queue Length 50th (ft)	148	310	0	68	475	0	36	0	164	0
Queue Length 95th (ft)	224	441	0	123	675	0	73	0	249	58
Internal Link Dist (ft)		457			1504		131		565	
Turn Bay Length (ft)	240		330	150		150		60		
Base Capacity (vph)	260	2159	993	157	1850	906	202	327	250	363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.47	0.00	0.43	0.67	0.10	0.18	0.24	0.66	0.42

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	133	956	2	65	1179	84	17	17	75	139	18
Future Volume (vph)	9	133	956	2	65	1179	84	17	17	75	139	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-4%			2%			0%			-1%
Total Lost time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.97	1.00	1.00	0.98		1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (prot)		1807	3682	1602	1787	3504	1558		1854	1615		1813
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (perm)		1807	3682	1602	1787	3504	1558		1854	1615		1813
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	140	1006	2	68	1241	88	18	18	79	146	19
RTOR Reduction (vph)	0	0	0	1	0	0	41	0	0	74	0	0
Lane Group Flow (vph)	0	149	1006	1	68	1241	47	0	36	5	0	165
Confl. Peds. (#/hr)				2			2					
Heavy Vehicles (%)	0%	2%	0%	0%	0%	2%	1%	0%	0%	0%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	1	6		5	2		4	4		3	3
Permitted Phases				6			2			4		
Actuated Green, G (s)		17.2	86.7	86.7	9.3	79.3	79.3		9.5	9.5		17.9
Effective Green, g (s)		17.2	86.7	86.7	9.3	79.3	79.3		9.5	9.5		17.9
Actuated g/C Ratio		0.11	0.58	0.58	0.06	0.53	0.53		0.06	0.06		0.12
Clearance Time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		207	2128	925	110	1852	823		117	102		216
v/s Ratio Prot		c0.08	0.27		0.04	c0.35			c0.02			c0.09
v/s Ratio Perm				0.00			0.03			0.00		
v/c Ratio		0.72	0.47	0.00	0.62	0.67	0.06		0.31	0.05		0.76
Uniform Delay, d1		64.1	18.4	13.4	68.6	25.8	17.2		67.1	66.0		64.0
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		11.4	0.8	0.0	9.9	1.9	0.1		1.5	0.2		14.8
Delay (s)		75.4	19.1	13.4	78.5	27.8	17.3		68.6	66.2		78.8
Level of Service		E	B	B	E	C	B		E	E		E
Approach Delay (s)			26.4			29.6			67.0			69.3
Approach LOS			C			C			E			E

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	144
Future Volume (vph)	144
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	7.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1607
Flt Permitted	1.00
Satd. Flow (perm)	1607
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	152
RTOR Reduction (vph)	134
Lane Group Flow (vph)	18
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	17.9
Effective Green, g (s)	17.9
Actuated g/C Ratio	0.12
Clearance Time (s)	7.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	191
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.09
Uniform Delay, d1	58.8
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	59.1
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	8.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	77	116	45	50	41	94	45	12	48	42	32
Future Vol, veh/h	17	77	116	45	50	41	94	45	12	48	42	32
Conflicting Peds, #/hr	0	0	14	14	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, %	-	-8	-	-	-2	-	-	1	-	-	-1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	2	5	0	2	0	0	3	0
Mvmt Flow	18	80	121	47	52	43	98	47	13	50	44	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	407	417	53	426	427	30	77	0	0	60	0	0
Stage 1	161	161	-	250	250	-	-	-	-	-	-	-
Stage 2	246	256	-	176	177	-	-	-	-	-	-	-
Critical Hdwy	5.9	4.9	6.14	7.1	6.14	6.8	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	4.9	3.9	-	6.1	5.14	-	-	-	-	-	-	-
Critical Hdwy Stg 2	4.9	3.9	-	6.1	5.14	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.32	3.5	4.02	3.35	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	639	637	1015	542	544	1030	1535	-	-	1556	-	-
Stage 1	893	826	-	759	718	-	-	-	-	-	-	-
Stage 2	827	784	-	831	767	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	521	575	1003	390	491	1030	1535	-	-	1556	-	-
Mov Cap-2 Maneuver	521	575	-	390	491	-	-	-	-	-	-	-
Stage 1	834	798	-	709	671	-	-	-	-	-	-	-
Stage 2	683	732	-	628	741	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	14.3	4.7	2.9
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1535	-	-	744	529	1556	-	-
HCM Lane V/C Ratio	0.064	-	-	0.294	0.268	0.032	-	-
HCM Control Delay (s)	7.5	0	-	11.8	14.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.2	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	3	109	86	31	116	2	62	2	39	1	5	1
Future Vol, veh/h	3	109	86	31	116	2	62	2	39	1	5	1
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	2	-	-	-5	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	4	1	0	3	0	3	0	0	0
Mvmt Flow	3	118	93	34	126	2	67	2	42	1	5	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	211	0	0	369	371	167	394	416	131
Stage 1	-	-	-	-	-	-	171	171	-	199	199	-
Stage 2	-	-	-	-	-	-	198	200	-	195	217	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.53	6.9	6.43	6.1	5.5	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.9	-	5.1	4.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.9	-	5.1	4.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1466	-	-	1348	-	-	562	539	867	635	595	941
Stage 1	-	-	-	-	-	-	813	747	-	853	782	-
Stage 2	-	-	-	-	-	-	784	723	-	857	772	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1461	-	-	1348	-	-	545	522	866	585	576	938
Mov Cap-2 Maneuver	-	-	-	-	-	-	545	522	-	585	576	-
Stage 1	-	-	-	-	-	-	811	746	-	849	759	-
Stage 2	-	-	-	-	-	-	756	701	-	810	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.6	11.4	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	544	866	1461	-	-	1348	-	-	611
HCM Lane V/C Ratio	0.128	0.049	0.002	-	-	0.025	-	-	0.012
HCM Control Delay (s)	12.6	9.4	7.5	0	-	7.7	0	-	11
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0.2	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	131	164	14	67	52
Future Vol, veh/h	42	131	164	14	67	52
Conflicting Peds, #/hr	1	0	0	1	2	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	1	-	-5	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	46	142	178	15	73	57

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	194	0	-	0	423	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	236	-
Critical Hdwy	4.12	-	-	-	5.4	5.72
Critical Hdwy Stg 1	-	-	-	-	4.4	-
Critical Hdwy Stg 2	-	-	-	-	4.4	-
Follow-up Hdwy	2.218	-	-	-	3.5	3.318
Pot Cap-1 Maneuver	1379	-	-	-	665	878
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1378	-	-	-	640	877
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	862	-

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1378	-	-	-	726
HCM Lane V/C Ratio	0.033	-	-	-	0.178
HCM Control Delay (s)	7.7	-	-	-	11
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	162	214	2	11	27
Future Vol, veh/h	5	162	214	2	11	27
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	75	-	-	-	0	50
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-5	3	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	2	0	0	0
Mvmt Flow	5	176	233	2	12	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	236	0	-	0	421	235
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1343	-	-	-	593	809
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1342	-	-	-	589	808
Mov Cap-2 Maneuver	-	-	-	-	589	-
Stage 1	-	-	-	-	805	-
Stage 2	-	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1342	-	-	-	589	808
HCM Lane V/C Ratio	0.004	-	-	-	0.02	0.036
HCM Control Delay (s)	7.7	-	-	-	11.2	9.6
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	4	102	1	139	2	375	80	86	508	2
Future Vol, veh/h	2	1	4	102	1	139	2	375	80	86	508	2
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	0	90	-	130	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	2	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	1	0	2	0	3	4	1	4	0
Mvmt Flow	2	1	4	111	1	151	2	408	87	93	552	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	952	1243	281	876	1157	205	558	0	0	496	0	0
Stage 1	743	743	-	413	413	-	-	-	-	-	-	-
Stage 2	209	500	-	463	744	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.1	6.7	8.32	7.3	7.34	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.1	-	7.32	6.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.1	-	7.32	6.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4	3.32	2.2	-	-	2.21	-	-
Pot Cap-1 Maneuver	241	202	733	201	153	784	1023	-	-	1071	-	-
Stage 1	410	461	-	538	545	-	-	-	-	-	-	-
Stage 2	798	578	-	497	360	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	180	183	731	185	139	783	1020	-	-	1070	-	-
Mov Cap-2 Maneuver	180	183	-	185	139	-	-	-	-	-	-	-
Stage 1	408	420	-	536	543	-	-	-	-	-	-	-
Stage 2	641	576	-	450	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.6	27.9	0	1.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1020	-	-	317	184	783	1070	-	-
HCM Lane V/C Ratio	0.002	-	-	0.024	0.608	0.193	0.087	-	-
HCM Control Delay (s)	8.5	-	-	16.6	51	10.7	8.7	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	3.4	0.7	0.3	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	17	33	1	38	15	409	15	41	567	6
Future Vol, veh/h	10	1	17	33	1	38	15	409	15	41	567	6
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	135	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	3	-	-	4	-	-	-2	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	5	0	3	0	0	3	0
Mvmt Flow	11	1	18	36	1	41	16	445	16	45	616	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	970	1208	317	876	1195	223	628	0	0	461	0	0
Stage 1	715	715	-	477	477	-	-	-	-	-	-	-
Stage 2	255	493	-	399	718	-	-	-	-	-	-	-
Critical Hdwy	8.5	7.5	7.4	8.1	7.1	7.3	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.35	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	161	132	655	213	154	757	964	-	-	1111	-	-
Stage 1	322	359	-	502	517	-	-	-	-	-	-	-
Stage 2	683	480	-	565	387	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	144	124	652	197	145	757	960	-	-	1111	-	-
Mov Cap-2 Maneuver	144	124	-	197	145	-	-	-	-	-	-	-
Stage 1	315	343	-	493	508	-	-	-	-	-	-	-
Stage 2	634	472	-	525	370	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	18.3	0.3	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	960	-	-	270	197	683	1111	-	-
HCM Lane V/C Ratio	0.017	-	-	0.113	0.182	0.062	0.04	-	-
HCM Control Delay (s)	8.8	-	-	20	27.3	10.6	8.4	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.6	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	61	173	43	27	25	88	311	77	7	496	114
Future Vol, veh/h	103	61	173	43	27	25	88	311	77	7	496	114
Conflicting Peds, #/hr	6	0	0	0	0	6	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	100	-	230	0	-	-	160	-	175	160	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	3	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	0	1	0	0	0	1	3	0	0	4	1
Mvmt Flow	112	66	188	47	29	27	96	338	84	8	539	124

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	937	1172	270	852	1212	178	663	0	0	425	0	0
Stage 1	555	555	-	533	533	-	-	-	-	-	-	-
Stage 2	382	617	-	319	679	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.92	7.5	6.5	6.9	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.31	3.5	4	3.3	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	219	194	731	256	184	841	928	-	-	1145	-	-
Stage 1	484	516	-	503	528	-	-	-	-	-	-	-
Stage 2	612	484	-	673	454	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	167	172	731	122	164	835	928	-	-	1142	-	-
Mov Cap-2 Maneuver	167	172	-	122	164	-	-	-	-	-	-	-
Stage 1	434	512	-	450	473	-	-	-	-	-	-	-
Stage 2	495	433	-	432	451	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.9	35.5	1.7	0.1
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	928	-	-	167	172	731	122	267	1142	-	-
HCM Lane V/C Ratio	0.103	-	-	0.67	0.385	0.257	0.383	0.212	0.007	-	-
HCM Control Delay (s)	9.3	-	-	62	38.5	11.6	51.8	22.1	8.2	-	-
HCM Lane LOS	A	-	-	F	E	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	3.9	1.7	1	1.6	0.8	0	-	-

I. 2027 Future Conditions with Development – Capacity Analysis Worksheets

LANE SUMMARY

Site: 101 [Broadview/Winchester/Lee - 2027 TF AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future with Development
AM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Winchester St (NB)															
Lane 1[d]	203	4.5	203	4.5	569	0.357	100	11.5	LOS B	1.8	46.7	Full	1600	0.0	0.0
Lane 2	87	4.0	87	4.0	397	0.219	100	12.7	LOS B	0.9	22.9	Short	250	0.0	NA
Approach	290	4.3	290	4.3		0.357		11.9	LOS B	1.8	46.7				
East: Lee Hwy (WB)															
Lane 1	418	7.2	418	7.2	813	0.514	100	11.4	LOS B	4.4	115.6	Full	1600	0.0	0.0
Lane 2[d]	517	6.5	517	6.5	1005	0.514	100	9.8	LOS A	4.5	117.1	Full	1600	0.0	0.0
Approach	935	6.8	935	6.8		0.514		10.5	LOS B	4.5	117.1				
North: Broadview Ave (SB)															
Lane 1[d]	253	3.6	253	3.6	717	0.353	100	9.5	LOS A	1.8	47.0	Short	215	0.0	NA
Lane 2	251	3.0	251	3.0	653	0.385	100	10.8	LOS B	2.1	52.8	Full	1600	0.0	0.0
Approach	504	3.3	504	3.3		0.385		10.1	LOS B	2.1	52.8				
West: Broadview Ave (EB)															
Lane 1	549	4.5	549	4.5	1025	0.535	100	10.0	LOS A	4.3	111.1	Full	1600	0.0	0.0
Lane 2[d]	646	3.9	646	3.9	1207	0.535	100	8.9	LOS A	4.5	115.6	Full	1600	0.0	0.0
Approach	1195	4.2	1195	4.2		0.535		9.4	LOS A	4.5	115.6				
All Vehicles	2924	4.9	2924	4.9		0.535		10.1	LOS B	4.5	117.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Winchester St (NB)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	84	120	-	203	4.5		569	0.357	100	NA	NA
Lane 2	-	-	87	87	4.0		397	0.219	100	0.0	1
Approach	84	120	87	290	4.3			0.357			
East: Lee Hwy (WB)											
Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	3	38	377	-	418	7.2	813	0.514	100	NA	NA
Lane 2	-	-	326	191	517	6.5	1005	0.514	100	NA	NA
Approach	3	38	702	191	935	6.8		0.514			
North: Broadview Ave (SB)											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	137	116	-	253	3.6		717	0.353	100	0.0	2
Lane 2	-	-	251	251	3.0		653	0.385	100	NA	NA
Approach	137	116	251	504	3.3			0.385			
West: Broadview Ave (EB)											
Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	5	286	257	-	549	4.5	1025	0.535	100	NA	NA
Lane 2	-	-	610	36	646	3.9	1207	0.535	100	NA	NA
Approach	5	286	867	36	1195	4.2		0.535			
	Total	%HV	Deg.Satn (v/c)								
All Vehicles	2924	4.9	0.535								

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Winchester St (NB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Lee Hwy (WB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Broadview Ave (SB)				
Lane 1	0.0	0.0	0.0	0.0

Lane 2	0.0	0.0	0.0	0.0
West: Broadview Ave (EB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

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LANE LEVEL OF SERVICE

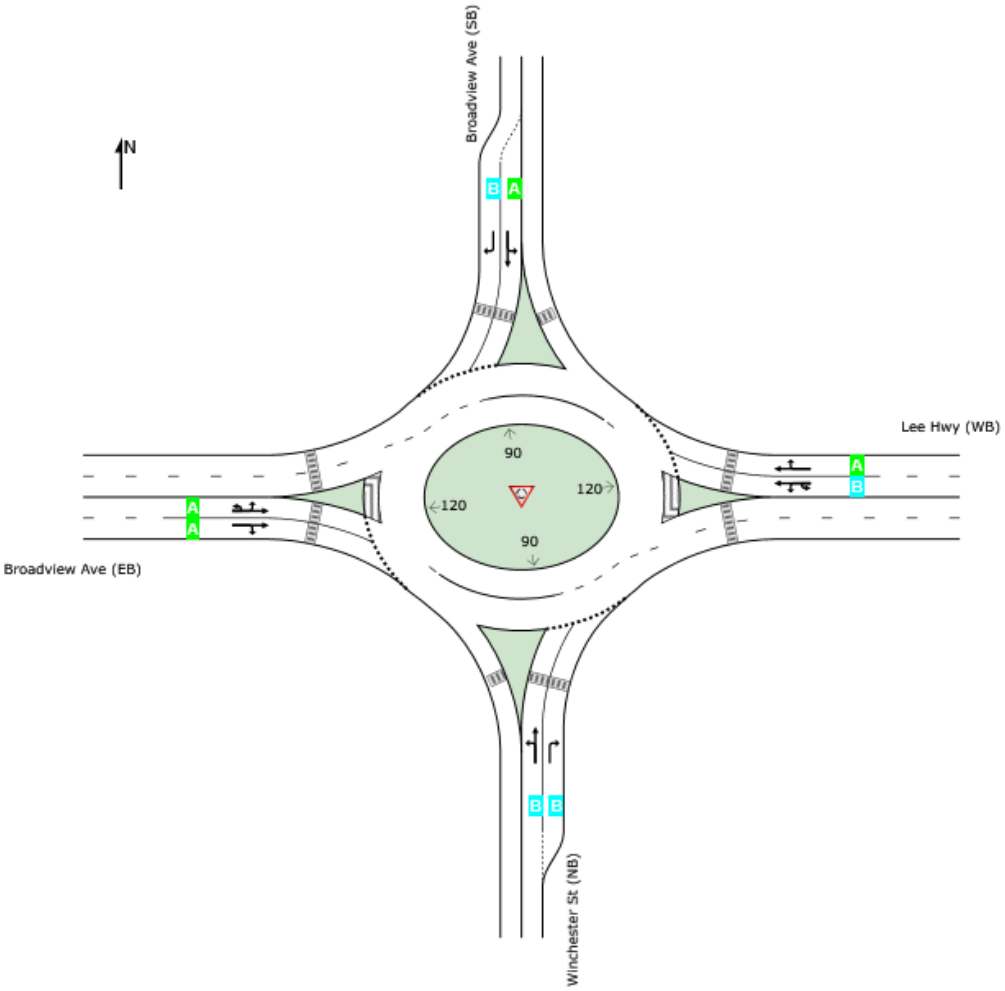
Lane Level of Service

Site: 101 [Broadview/Winchester/Lee - 2027 TF AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future with Development
AM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	B	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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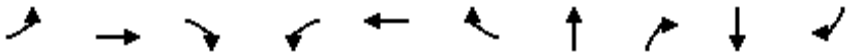
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱			↱			↱
Traffic Vol, veh/h	0	944	63	0	839	32	0	0	29	0	0	21
Future Vol, veh/h	0	944	63	0	839	32	0	0	29	0	0	21
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	-	-	110	-	-	300	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	3	-	-	3	-	-	-11	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	3	0	7	0	0	0	3	0	0	0
Mvmt Flow	0	1026	68	0	912	35	0	0	32	0	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	513	-	-	456
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.26	-	-	5.8
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.33	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	483	0	0	640
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	483	-	-	640
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	483	-	-	-	-	640
HCM Lane V/C Ratio	0.065	-	-	-	-	0.036
HCM Control Delay (s)	13	-	-	-	-	10.8
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	42	1015	1	48	872	75	23	41	110	57
v/c Ratio	0.37	0.47	0.00	0.41	0.42	0.07	0.17	0.17	0.62	0.23
Control Delay	71.3	19.4	0.0	72.4	18.1	0.1	60.7	1.6	74.9	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	19.4	0.0	72.4	18.1	0.1	60.7	1.6	74.9	2.2
Queue Length 50th (ft)	39	273	0	44	221	0	21	0	102	0
Queue Length 95th (ft)	80	485	0	88	400	0	47	0	163	0
Internal Link Dist (ft)		457			1504		131		565	
Turn Bay Length (ft)	240		330	150		150		60		
Base Capacity (vph)	199	2178	1063	227	2104	1047	261	338	200	259
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.47	0.00	0.21	0.41	0.07	0.09	0.12	0.55	0.22

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	7	31	934	1	44	802	69	10	11	38	93	8
Future Volume (vph)	7	31	934	1	44	802	69	10	11	38	93	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-4%			2%			0%			-1%
Total Lost time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.0	6.0		7.5
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (prot)		1793	3541	1647	1752	3372	1599		1856	1615		1777
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (perm)		1793	3541	1647	1752	3372	1599		1856	1615		1777
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	34	1015	1	48	872	75	11	12	41	101	9
RTOR Reduction (vph)	0	0	0	0	0	0	30	0	0	38	0	0
Lane Group Flow (vph)	0	42	1015	1	48	872	45	0	23	3	0	110
Heavy Vehicles (%)	14%	0%	4%	0%	2%	6%	0%	0%	0%	0%	3%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	1	6		5	2		4	4		3	3
Permitted Phases				6			2			4		
Actuated Green, G (s)		7.7	83.0	83.0	8.1	83.9	83.9		8.9	8.9		14.0
Effective Green, g (s)		7.7	83.0	83.0	8.1	83.9	83.9		8.9	8.9		14.0
Actuated g/C Ratio		0.06	0.59	0.59	0.06	0.60	0.60		0.06	0.06		0.10
Clearance Time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.0	6.0		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		98	2099	976	101	2020	958		117	102		177
v/s Ratio Prot		0.02	c0.29		c0.03	0.26			c0.01			c0.06
v/s Ratio Perm				0.00			0.03			0.00		
v/c Ratio		0.43	0.48	0.00	0.48	0.43	0.05		0.20	0.03		0.62
Uniform Delay, d1		64.0	16.3	11.6	63.9	15.2	11.6		62.2	61.5		60.5
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		3.0	0.8	0.0	3.5	0.7	0.1		0.8	0.1		6.6
Delay (s)		67.0	17.1	11.6	67.4	15.8	11.7		63.0	61.6		67.1
Level of Service		E	B	B	E	B	B		E	E		E
Approach Delay (s)			19.0			18.0			62.1			63.7
Approach LOS			B			B			E			E

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	26.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	52
Future Volume (vph)	52
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	7.5
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1375
Flt Permitted	1.00
Satd. Flow (perm)	1375
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	57
RTOR Reduction (vph)	51
Lane Group Flow (vph)	6
Heavy Vehicles (%)	18%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	14.0
Effective Green, g (s)	14.0
Actuated g/C Ratio	0.10
Clearance Time (s)	7.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	137
v/s Ratio Prot	
v/s Ratio Perm	0.00
v/c Ratio	0.04
Uniform Delay, d1	56.9
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	57.1
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	15	44	14	11	14	24	84	7	18	122	5
Future Vol, veh/h	6	15	44	14	11	14	24	84	7	18	122	5
Conflicting Peds, #/hr	0	0	2	2	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, %	-	-8	-	-	-2	-	-	1	-	-	-1	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	9	0	0	0	0	0	13	0
Mvmt Flow	7	16	48	15	12	15	26	91	8	20	133	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	280	327	71	264	325	50	138	0	0	99	0	0
Stage 1	176	176	-	147	147	-	-	-	-	-	-	-
Stage 2	104	151	-	117	178	-	-	-	-	-	-	-
Critical Hdwy	5.9	4.9	6.1	7.1	6.28	6.7	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	4.9	3.9	-	6.1	5.28	-	-	-	-	-	-	-
Critical Hdwy Stg 2	4.9	3.9	-	6.1	5.28	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4.09	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	743	688	999	693	597	1017	1458	-	-	1507	-	-
Stage 1	881	819	-	860	770	-	-	-	-	-	-	-
Stage 2	939	830	-	892	749	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	702	665	997	630	577	1017	1458	-	-	1507	-	-
Mov Cap-2 Maneuver	702	665	-	630	577	-	-	-	-	-	-	-
Stage 1	864	808	-	844	755	-	-	-	-	-	-	-
Stage 2	893	814	-	819	739	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	10.4	1.6	0.9
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1458	-	-	864	708	1507	-	-
HCM Lane V/C Ratio	0.018	-	-	0.082	0.06	0.013	-	-
HCM Control Delay (s)	7.5	0	-	9.5	10.4	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↗		↕	
Traffic Vol, veh/h	1	91	128	16	111	1	90	1	14	1	1	1
Future Vol, veh/h	1	91	128	16	111	1	90	1	14	1	1	1
Conflicting Peds, #/hr	4	0	1	1	0	4	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	2	-	-	-5	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	11	7	1	0	0	0	0	0	0	0
Mvmt Flow	1	99	139	17	121	1	98	1	15	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	126	0	0	239	0	0	329	332	172	341	401	126
Stage 1	-	-	-	-	-	-	172	172	-	160	160	-
Stage 2	-	-	-	-	-	-	157	160	-	181	241	-
Critical Hdwy	4.1	-	-	4.17	-	-	7.5	6.9	6.4	6.1	5.5	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.9	-	5.1	4.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.9	-	5.1	4.5	-
Follow-up Hdwy	2.2	-	-	2.263	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1473	-	-	1299	-	-	606	570	869	678	604	946
Stage 1	-	-	-	-	-	-	819	746	-	885	804	-
Stage 2	-	-	-	-	-	-	835	756	-	868	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1468	-	-	1298	-	-	597	559	867	654	593	943
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	559	-	654	593	-
Stage 1	-	-	-	-	-	-	817	745	-	881	790	-
Stage 2	-	-	-	-	-	-	821	743	-	849	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1	11.8	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	597	867	1468	-	-	1298	-	-	702
HCM Lane V/C Ratio	0.166	0.018	0.001	-	-	0.013	-	-	0.005
HCM Control Delay (s)	12.2	9.2	7.5	0	-	7.8	0	-	10.2
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	83	170	1	2	156	44	5	1	2	47	1	67
Future Vol, veh/h	83	170	1	2	156	44	5	1	2	47	1	67
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-3	-	-	1	-	-	0	-	-	-5	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	6	1	2	2	1	0	2	2	2	17	2	0
Mvmt Flow	90	185	1	2	170	48	5	1	2	51	1	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	219	0	0	186	0	0	603	589	186	566	565	197
Stage 1	-	-	-	-	-	-	366	366	-	199	199	-
Stage 2	-	-	-	-	-	-	237	223	-	367	366	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.12	6.52	6.22	6.27	5.52	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	5.27	4.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	5.27	4.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.518	4.018	3.318	3.653	4.018	3.3
Pot Cap-1 Maneuver	1327	-	-	1388	-	-	411	421	856	483	508	873
Stage 1	-	-	-	-	-	-	653	623	-	813	778	-
Stage 2	-	-	-	-	-	-	766	719	-	690	689	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1326	-	-	1388	-	-	353	388	856	452	468	871
Mov Cap-2 Maneuver	-	-	-	-	-	-	353	388	-	452	468	-
Stage 1	-	-	-	-	-	-	603	576	-	750	776	-
Stage 2	-	-	-	-	-	-	698	717	-	635	637	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.6	0.1	13.8	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	419	1326	-	-	1388	-	-	628
HCM Lane V/C Ratio	0.021	0.068	-	-	0.002	-	-	0.199
HCM Control Delay (s)	13.8	7.9	0	-	7.6	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	161	6	19	158	51	20	1	62	31	1	19
Future Vol, veh/h	38	161	6	19	158	51	20	1	62	31	1	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	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	75	-	-	-	-	-	-	-	-	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	2	1	0	2	2	2	0	2	0
Mvmt Flow	41	175	7	21	172	55	22	1	67	34	1	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	227	0	0	182	0	0	514	530	179	537	506	200
Stage 1	-	-	-	-	-	-	261	261	-	242	242	-
Stage 2	-	-	-	-	-	-	253	269	-	295	264	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1353	-	-	1393	-	-	471	455	864	458	469	846
Stage 1	-	-	-	-	-	-	744	692	-	766	705	-
Stage 2	-	-	-	-	-	-	751	687	-	718	690	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1353	-	-	1393	-	-	442	434	864	406	447	846
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	434	-	406	447	-
Stage 1	-	-	-	-	-	-	722	671	-	743	693	-
Stage 2	-	-	-	-	-	-	719	675	-	641	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.6	10.9	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	696	1353	-	-	1393	-	-	407	846
HCM Lane V/C Ratio	0.13	0.031	-	-	0.015	-	-	0.085	0.024
HCM Control Delay (s)	10.9	7.7	-	-	7.6	0	-	14.7	9.4
HCM Lane LOS	B	A	-	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	0.3	0.1

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	80	1	116	1	415	107	97	359	1
Future Vol, veh/h	1	1	1	80	1	116	1	415	107	97	359	1
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	-	-	-	100	-	0	90	-	130	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	2	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	1	0	6	1	5	5	0
Mvmt Flow	1	1	1	87	1	126	1	451	116	105	390	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	829	1170	196	859	1054	226	391	0	0	567	0	0
Stage 1	601	601	-	453	453	-	-	-	-	-	-	-
Stage 2	228	569	-	406	601	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.1	6.7	8.3	7.3	7.32	4.1	-	-	4.2	-	-
Critical Hdwy Stg 1	6.1	5.1	-	7.3	6.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.1	-	7.3	6.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.31	2.2	-	-	2.25	-	-
Pot Cap-1 Maneuver	292	222	828	209	180	761	1179	-	-	981	-	-
Stage 1	491	527	-	507	518	-	-	-	-	-	-	-
Stage 2	779	542	-	546	431	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	223	198	828	191	161	761	1179	-	-	981	-	-
Mov Cap-2 Maneuver	223	198	-	191	161	-	-	-	-	-	-	-
Stage 1	491	471	-	506	517	-	-	-	-	-	-	-
Stage 2	648	541	-	486	385	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.1	22.3	0	1.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1179	-	-	279	191	761	981	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.461	0.166	0.107	-	-
HCM Control Delay (s)	8.1	-	-	18.1	39	10.7	9.1	-	-
HCM Lane LOS	A	-	-	C	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	2.2	0.6	0.4	-	-

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	1	1	3	17	1	20	13	503	14	16	420	3
Future Vol, veh/h	1	1	3	17	1	20	13	503	14	16	420	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	135	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	3	-	-	4	-	-	-2	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	6	0	5	0	0	4	0
Mvmt Flow	1	1	3	18	1	22	14	547	15	17	457	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	795	1083	230	838	1069	274	460	0	0	562	0	0
Stage 1	493	493	-	575	575	-	-	-	-	-	-	-
Stage 2	302	590	-	263	494	-	-	-	-	-	-	-
Critical Hdwy	8.5	7.5	7.4	8.1	7.1	7.32	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.36	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	226	162	754	228	187	696	1112	-	-	1019	-	-
Stage 1	464	480	-	432	460	-	-	-	-	-	-	-
Stage 2	633	423	-	694	506	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	213	157	754	221	181	696	1112	-	-	1019	-	-
Mov Cap-2 Maneuver	213	157	-	221	181	-	-	-	-	-	-	-
Stage 1	458	472	-	426	454	-	-	-	-	-	-	-
Stage 2	604	418	-	678	497	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	16.3	0.2	0.3
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1112	-	-	332	221	613	1019	-	-
HCM Lane V/C Ratio	0.013	-	-	0.016	0.084	0.037	0.017	-	-
HCM Control Delay (s)	8.3	-	-	16	22.8	11.1	8.6	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	126	17	81	3	3	3	116	401	32	7	380	53
Future Vol, veh/h	126	17	81	3	3	3	116	401	32	7	380	53
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	100	-	230	0	-	-	160	-	175	160	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	3	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	0	3	0	0	33	1	5	0	0	3	8
Mvmt Flow	137	18	88	3	3	3	126	436	35	8	413	58

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	901	1152	207	920	1175	218	471	0	0	471	0	0
Stage 1	429	429	-	688	688	-	-	-	-	-	-	-
Stage 2	472	723	-	232	487	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.96	7.5	6.5	7.56	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.33	3.5	4	3.63	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	233	199	796	229	193	699	1094	-	-	1101	-	-
Stage 1	574	587	-	407	450	-	-	-	-	-	-	-
Stage 2	542	434	-	756	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	175	796	170	170	699	1094	-	-	1101	-	-
Mov Cap-2 Maneuver	207	175	-	170	170	-	-	-	-	-	-	-
Stage 1	508	583	-	360	398	-	-	-	-	-	-	-
Stage 2	473	384	-	646	550	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.5	21.2	1.8	0.1
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1094	-	-	207	175	796	170	273	1101	-	-
HCM Lane V/C Ratio	0.115	-	-	0.662	0.106	0.111	0.019	0.024	0.007	-	-
HCM Control Delay (s)	8.7	-	-	51	28	10.1	26.6	18.5	8.3	-	-
HCM Lane LOS	A	-	-	F	D	B	D	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4	0.3	0.4	0.1	0.1	0	-	-

LANE LEVEL OF SERVICE

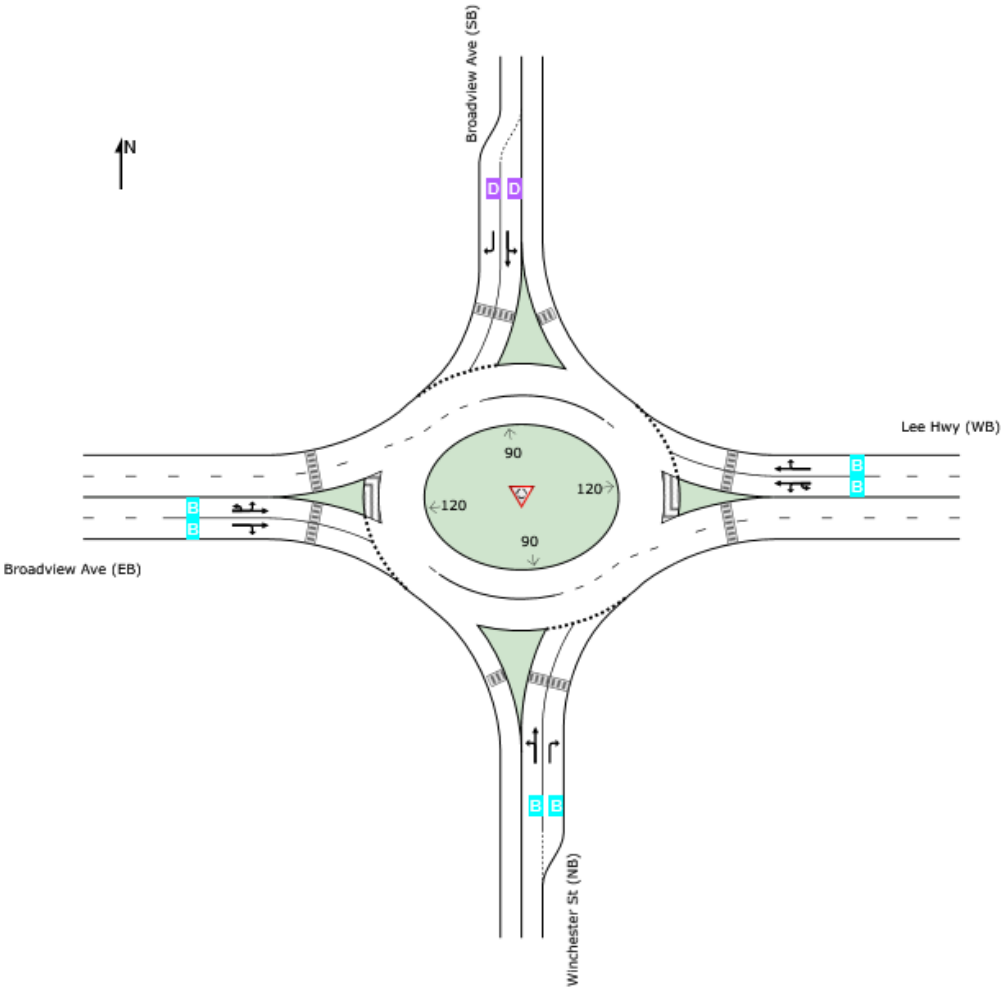
Lane Level of Service

Site: 101 [Broadview/Winchester/Lee - 2027 TF PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future with Development
PM Peak Hour
Site Category: (None)
Roundabout

	Approaches				Intersection
	South	East	North	West	
LOS	B	B	D	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).

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Project: U:\3243\001. Warrenton Village Center\Analysis\Sidra\2nd Submission\2027 TF.sip9

LANE SUMMARY

Site: 101 [Broadview/Winchester/Lee - 2027 TF PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Warrenton Village Center
2027 Future with Development
PM Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Winchester St (NB)															
Lane 1[d]	235	0.5	235	0.5	556	0.423	100	13.2	LOS B	2.5	62.1	Full	1600	0.0	0.0
Lane 2	77	0.0	77	0.0	361	0.214	100	13.7	LOS B	0.9	23.2	Short	250	0.0	NA
Approach	313	0.4	313	0.4		0.423		13.3	LOS B	2.5	62.1				
East: Lee Hwy (WB)															
Lane 1	623	1.7	623	1.7	857	0.726	100	17.7	LOS B	10.7	271.5	Full	1600	0.0	0.0
Lane 2[d]	761	2.0	761	2.0	1047	0.726	100	15.3	LOS B	11.5	291.4	Full	1600	0.0	0.0
Approach	1383	1.9	1383	1.9		0.726		16.3	LOS B	11.5	291.4				
North: Broadview Ave (SB)															
Lane 1	347	0.7	347	0.7	426	0.815	100	39.5	LOS D	7.1	177.8	Short	215	0.0	NA
Lane 2[d]	413	4.0	413	4.0	487	0.848	100	39.7	LOS D	8.4	216.0	Full	1600	0.0	0.0
Approach	759	2.5	759	2.5		0.848		39.6	LOS D	8.4	216.0				
West: Broadview Ave (EB)															
Lane 1	547	2.5	547	2.5	913	0.599	100	12.4	LOS B	6.7	169.7	Full	1600	0.0	0.0
Lane 2[d]	664	1.9	664	1.9	1108	0.599	100	10.8	LOS B	6.8	171.5	Full	1600	0.0	0.0
Approach	1210	2.2	1210	2.2		0.599		11.5	LOS B	6.8	171.5				
All Vehicles	3666	2.0	3666	2.0		0.848		19.3	LOS B	11.5	291.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA HCM.
Delay Model: HCM Delay Formula (Stopline Delay: Geometric Delay is not included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Winchester St (NB)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	122	114	-	235	0.5		556	0.423	100	NA	NA
Lane 2	-	-	77	77	0.0		361	0.214	100	0.0	1
Approach	122	114	77	313	0.4			0.423			
East: Lee Hwy (WB)											
Mov. From E To Exit:	U E	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	70	543	-	623	1.7	857	0.726	100	NA	NA
Lane 2	-	-	638	123	761	2.0	1047	0.726	100	NA	NA
Approach	10	70	1180	123	1383	1.9		0.726			
North: Broadview Ave (SB)											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	249	98	-	347	0.7		426	0.815	100	0.0	2
Lane 2	-	-	413	413	4.0		487	0.848	100	NA	NA
Approach	249	98	413	759	2.5			0.848			
West: Broadview Ave (EB)											
Mov. From W To Exit:	U W	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	2	293	252	-	547	2.5	913	0.599	100	NA	NA
Lane 2	-	-	618	46	664	1.9	1108	0.599	100	NA	NA
Approach	2	293	870	46	1210	2.2		0.599			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3666	2.0	0.848

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Winchester St (NB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
East: Lee Hwy (WB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Broadview Ave (SB)				
Lane 1	0.0	0.0	0.0	0.0

Lane 2	0.0	0.0	0.0	0.0
West: Broadview Ave (EB)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

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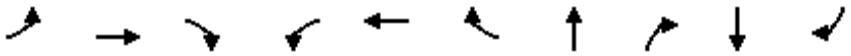
Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱			↱			↱
Traffic Vol, veh/h	0	1075	83	0	1247	104	0	0	25	0	0	80
Future Vol, veh/h	0	1075	83	0	1247	104	0	0	25	0	0	80
Conflicting Peds, #/hr	0	0	0	0	0	4	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	-	-	110	-	-	300	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	3	-	-	3	-	-	-11	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	2	0	0	2	0	0	0	4	0	0	0
Mvmt Flow	0	1156	89	0	1341	112	0	0	27	0	0	86

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	-	-	0	-	-	578	-	-	675
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.28	-	-	5.8
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.34	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	0	-	-	0	0	433	0	0	493
Stage 1	0	-	-	0	-	-	0	0	-	0	0	-
Stage 2	0	-	-	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	433	-	-	491
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	13.9	13.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	433	-	-	-	-	491
HCM Lane V/C Ratio	0.062	-	-	-	-	0.175
HCM Control Delay (s)	13.9	-	-	-	-	13.9
HCM Lane LOS	B	-	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	-	0.6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	149	1006	2	68	1243	151	36	79	204	152
v/c Ratio	0.72	0.48	0.00	0.54	0.70	0.17	0.31	0.30	0.80	0.41
Control Delay	82.8	22.5	0.0	82.0	32.7	2.3	72.2	3.0	83.9	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.8	22.5	0.0	82.0	32.7	2.3	72.2	3.0	83.9	9.8
Queue Length 50th (ft)	148	333	0	68	508	0	36	0	201	0
Queue Length 95th (ft)	224	441	0	123	675	28	73	0	#344	58
Internal Link Dist (ft)		457			1504		131		565	
Turn Bay Length (ft)	240		330	150		150		60		
Base Capacity (vph)	260	2078	960	157	1773	876	202	327	268	377
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.48	0.00	0.43	0.70	0.17	0.18	0.24	0.76	0.40

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	133	956	2	65	1181	143	17	17	75	176	18
Future Volume (vph)	9	133	956	2	65	1181	143	17	17	75	176	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)			-4%			2%			0%			-1%
Total Lost time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5
Lane Util. Factor		1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00
Frpb, ped/bikes		1.00	1.00	0.97	1.00	1.00	0.98		1.00	1.00		1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00
Flt Protected		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (prot)		1807	3682	1602	1787	3504	1558		1854	1615		1810
Flt Permitted		0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00		0.96
Satd. Flow (perm)		1807	3682	1602	1787	3504	1558		1854	1615		1810
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	9	140	1006	2	68	1243	151	18	18	79	185	19
RTOR Reduction (vph)	0	0	0	1	0	0	74	0	0	74	0	0
Lane Group Flow (vph)	0	149	1006	1	68	1243	77	0	36	5	0	204
Confl. Peds. (#/hr)				2			2					
Heavy Vehicles (%)	0%	2%	0%	0%	0%	2%	1%	0%	0%	0%	1%	0%
Turn Type	Prot	Prot	NA	Perm	Prot	NA	Perm	Split	NA	Perm	Split	NA
Protected Phases	1	1	6		5	2		4	4		3	3
Permitted Phases				6			2			4		
Actuated Green, G (s)		17.2	83.4	83.4	9.3	76.0	76.0		9.5	9.5		21.2
Effective Green, g (s)		17.2	83.4	83.4	9.3	76.0	76.0		9.5	9.5		21.2
Actuated g/C Ratio		0.11	0.56	0.56	0.06	0.51	0.51		0.06	0.06		0.14
Clearance Time (s)		6.4	5.7	5.7	6.8	5.6	5.6		6.6	6.6		7.5
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)		207	2047	890	110	1775	789		117	102		255
v/s Ratio Prot		c0.08	0.27		0.04	c0.35			c0.02			c0.11
v/s Ratio Perm				0.00			0.05			0.00		
v/c Ratio		0.72	0.49	0.00	0.62	0.70	0.10		0.31	0.05		0.80
Uniform Delay, d1		64.1	20.3	14.8	68.6	28.3	19.2		67.1	66.0		62.3
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00
Incremental Delay, d2		11.4	0.8	0.0	9.9	2.3	0.2		1.5	0.2		16.3
Delay (s)		75.4	21.2	14.8	78.5	30.6	19.4		68.6	66.2		78.6
Level of Service		E	C	B	E	C	B		E	E		E
Approach Delay (s)			28.2			31.7			67.0			69.1
Approach LOS			C			C			E			E

Intersection Summary			
HCM 2000 Control Delay	36.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	26.6
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBR
Lane Configurations	
Traffic Volume (vph)	144
Future Volume (vph)	144
Ideal Flow (vphpl)	1900
Grade (%)	
Total Lost time (s)	7.5
Lane Util. Factor	1.00
Frpb, ped/bikes	1.00
Flpb, ped/bikes	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1607
Flt Permitted	1.00
Satd. Flow (perm)	1607
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	152
RTOR Reduction (vph)	131
Lane Group Flow (vph)	21
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	3
Actuated Green, G (s)	21.2
Effective Green, g (s)	21.2
Actuated g/C Ratio	0.14
Clearance Time (s)	7.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	227
v/s Ratio Prot	
v/s Ratio Perm	0.01
v/c Ratio	0.09
Uniform Delay, d1	56.0
Progression Factor	1.00
Incremental Delay, d2	0.2
Delay (s)	56.2
Level of Service	E
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Edition methodology expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	77	120	45	50	41	97	101	12	48	75	32
Future Vol, veh/h	17	77	120	45	50	41	97	101	12	48	75	32
Conflicting Peds, #/hr	0	0	14	14	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, %	-	-8	-	-	-2	-	-	1	-	-	-1	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	2	5	0	2	0	0	3	0
Mvmt Flow	18	80	125	47	52	43	101	105	13	50	78	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	476	515	70	507	525	59	111	0	0	118	0	0
Stage 1	195	195	-	314	314	-	-	-	-	-	-	-
Stage 2	281	320	-	193	211	-	-	-	-	-	-	-
Critical Hdwy	5.9	4.9	6.14	7.1	6.14	6.8	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	4.9	3.9	-	6.1	5.14	-	-	-	-	-	-	-
Critical Hdwy Stg 2	4.9	3.9	-	6.1	5.14	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.32	3.5	4.02	3.35	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	589	586	994	479	483	988	1492	-	-	1483	-	-
Stage 1	866	810	-	701	678	-	-	-	-	-	-	-
Stage 2	802	756	-	813	744	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	471	524	982	336	432	988	1492	-	-	1483	-	-
Mov Cap-2 Maneuver	471	524	-	336	432	-	-	-	-	-	-	-
Stage 1	803	781	-	650	629	-	-	-	-	-	-	-
Stage 2	652	701	-	607	717	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	16	3.6	2.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1492	-	-	701	467	1483	-	-
HCM Lane V/C Ratio	0.068	-	-	0.318	0.303	0.034	-	-
HCM Control Delay (s)	7.6	0.1	-	12.5	16	7.5	0.1	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	1.4	1.3	0.1	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↰	↱		↕	
Traffic Vol, veh/h	3	116	119	31	128	2	118	2	39	1	5	1
Future Vol, veh/h	3	116	119	31	128	2	118	2	39	1	5	1
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	2	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	1	-	-	2	-	-	-5	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	4	1	0	3	0	3	0	0	0
Mvmt Flow	3	126	129	34	139	2	128	2	42	1	5	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	145	0	0	255	0	0	408	410	193	433	473	144
Stage 1	-	-	-	-	-	-	197	197	-	212	212	-
Stage 2	-	-	-	-	-	-	211	213	-	221	261	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.53	6.9	6.43	6.1	5.5	5.7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.9	-	5.1	4.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.9	-	5.1	4.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.527	4	3.327	3.5	4	3.3
Pot Cap-1 Maneuver	1450	-	-	1298	-	-	527	511	837	605	562	927
Stage 1	-	-	-	-	-	-	785	726	-	843	775	-
Stage 2	-	-	-	-	-	-	771	713	-	836	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1298	-	-	511	494	836	557	543	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	494	-	557	543	-
Stage 1	-	-	-	-	-	-	783	725	-	839	751	-
Stage 2	-	-	-	-	-	-	743	691	-	788	747	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	13.2	11.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	511	836	1445	-	-	1298	-	-	579
HCM Lane V/C Ratio	0.255	0.051	0.002	-	-	0.026	-	-	0.013
HCM Control Delay (s)	14.4	9.5	7.5	0	-	7.8	0	-	11.3
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1	0.2	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	170	5	6	226	14	3	1	1	67	1	52
Future Vol, veh/h	42	170	5	6	226	14	3	1	1	67	1	52
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	2	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-3	-	-	1	-	-	0	-	-	-5	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	0	2	2	2	0	2	2
Mvmt Flow	46	185	5	7	246	15	3	1	1	73	1	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	262	0	0	190	0	0	577	556	190	552	551	255
Stage 1	-	-	-	-	-	-	280	280	-	269	269	-
Stage 2	-	-	-	-	-	-	297	276	-	283	282	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	6.1	5.52	5.72
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	5.1	4.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	5.1	4.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.318
Pot Cap-1 Maneuver	1302	-	-	1384	-	-	428	439	852	522	515	812
Stage 1	-	-	-	-	-	-	727	679	-	799	740	-
Stage 2	-	-	-	-	-	-	712	682	-	788	733	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1384	-	-	383	418	851	501	491	811
Mov Cap-2 Maneuver	-	-	-	-	-	-	383	418	-	501	491	-
Stage 1	-	-	-	-	-	-	698	652	-	766	735	-
Stage 2	-	-	-	-	-	-	657	677	-	753	704	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.2	13.3	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	439	1301	-	-	1384	-	-	600
HCM Lane V/C Ratio	0.012	0.035	-	-	0.005	-	-	0.217
HCM Control Delay (s)	13.3	7.9	0	-	7.6	0	-	12.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.8

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	5	167	22	62	217	2	12	1	39	11	1	27
Future Vol, veh/h	5	167	22	62	217	2	12	1	39	11	1	27
Conflicting Peds, #/hr	1	0	0	0	0	1	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	75	-	-	-	-	-	-	-	-	-	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	3	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	2	2	2	0	2	2	2	0	2	0
Mvmt Flow	5	182	24	67	236	2	13	1	42	12	1	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	206	0	0	590	577	194	598	588	238
Stage 1	-	-	-	-	-	-	204	204	-	372	372	-
Stage 2	-	-	-	-	-	-	386	373	-	226	216	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.52	6.22	7.1	6.52	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.1	5.52	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4.018	3.318	3.5	4.018	3.3
Pot Cap-1 Maneuver	1340	-	-	1365	-	-	419	427	847	417	421	806
Stage 1	-	-	-	-	-	-	798	733	-	653	619	-
Stage 2	-	-	-	-	-	-	637	618	-	781	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1339	-	-	1365	-	-	384	401	847	377	395	805
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	401	-	377	395	-
Stage 1	-	-	-	-	-	-	795	730	-	650	583	-
Stage 2	-	-	-	-	-	-	578	582	-	738	721	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.7	11	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	652	1339	-	-	1365	-	-	378	805
HCM Lane V/C Ratio	0.087	0.004	-	-	0.049	-	-	0.035	0.036
HCM Control Delay (s)	11	7.7	-	-	7.8	0	-	14.9	9.6
HCM Lane LOS	B	A	-	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	4	111	1	145	2	376	96	97	510	2
Future Vol, veh/h	2	1	4	111	1	145	2	376	96	97	510	2
Conflicting Peds, #/hr	0	0	0	0	0	0	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	0	90	-	130	225	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	2	-	-	3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	1	0	2	0	3	4	1	4	0
Mvmt Flow	2	1	4	121	1	158	2	409	104	105	554	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	978	1287	282	902	1184	206	560	0	0	514	0	0
Stage 1	769	769	-	414	414	-	-	-	-	-	-	-
Stage 2	209	518	-	488	770	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.1	6.7	8.32	7.3	7.34	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.1	-	7.32	6.3	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.1	-	7.32	6.3	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.51	4	3.32	2.2	-	-	2.21	-	-
Pot Cap-1 Maneuver	232	191	732	192	147	782	1021	-	-	1055	-	-
Stage 1	397	450	-	537	544	-	-	-	-	-	-	-
Stage 2	798	568	-	478	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	169	171	730	175	132	781	1018	-	-	1054	-	-
Mov Cap-2 Maneuver	169	171	-	175	132	-	-	-	-	-	-	-
Stage 1	395	404	-	535	542	-	-	-	-	-	-	-
Stage 2	634	566	-	427	312	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	33.7	0	1.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1018	-	-	302	174	781	1054	-	-
HCM Lane V/C Ratio	0.002	-	-	0.025	0.7	0.202	0.1	-	-
HCM Control Delay (s)	8.5	-	-	17.2	63.4	10.8	8.8	-	-
HCM Lane LOS	A	-	-	C	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	4.2	0.8	0.3	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	1	17	40	1	39	15	425	28	43	576	6
Future Vol, veh/h	10	1	17	40	1	39	15	425	28	43	576	6
Conflicting Peds, #/hr	0	0	0	0	0	0	5	0	0	0	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	150	-	135	110	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	5	-	-	3	-	-	4	-	-	-2	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	5	0	3	0	0	3	0
Mvmt Flow	11	1	18	43	1	42	16	462	30	47	626	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	993	1253	322	902	1226	231	638	0	0	492	0	0
Stage 1	729	729	-	494	494	-	-	-	-	-	-	-
Stage 2	264	524	-	408	732	-	-	-	-	-	-	-
Critical Hdwy	8.5	7.5	7.4	8.1	7.1	7.3	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.5	6.5	-	7.1	6.1	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.35	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	154	123	650	203	147	748	956	-	-	1082	-	-
Stage 1	314	352	-	489	506	-	-	-	-	-	-	-
Stage 2	673	461	-	557	380	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	137	115	647	187	138	748	952	-	-	1082	-	-
Mov Cap-2 Maneuver	137	115	-	187	138	-	-	-	-	-	-	-
Stage 1	307	335	-	481	497	-	-	-	-	-	-	-
Stage 2	623	453	-	516	362	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.7	20.3	0.3	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	952	-	-	259	187	674	1082	-	-
HCM Lane V/C Ratio	0.017	-	-	0.118	0.233	0.065	0.043	-	-
HCM Control Delay (s)	8.8	-	-	20.7	30	10.7	8.5	-	-
HCM Lane LOS	A	-	-	C	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.9	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	10.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	103	61	173	44	27	25	88	340	79	7	512	114
Future Vol, veh/h	103	61	173	44	27	25	88	340	79	7	512	114
Conflicting Peds, #/hr	6	0	0	0	0	6	0	0	3	3	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	100	-	230	0	-	-	160	-	175	160	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	3	-	-	-3	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	0	1	0	0	0	1	3	0	0	4	1
Mvmt Flow	112	66	188	48	29	27	96	370	86	8	557	124

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	971	1224	279	893	1262	194	681	0	0	459	0	0
Stage 1	573	573	-	565	565	-	-	-	-	-	-	-
Stage 2	398	651	-	328	697	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.5	6.92	7.5	6.5	6.9	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4	3.31	3.5	4	3.3	2.21	-	-	2.2	-	-
Pot Cap-1 Maneuver	207	181	721	239	171	821	914	-	-	1113	-	-
Stage 1	472	507	-	482	511	-	-	-	-	-	-	-
Stage 2	599	468	-	664	446	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	161	721	110	152	815	914	-	-	1110	-	-
Mov Cap-2 Maneuver	155	161	-	110	152	-	-	-	-	-	-	-
Stage 1	422	503	-	430	456	-	-	-	-	-	-	-
Stage 2	482	418	-	423	443	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	35.9	40.7	1.6	0.1
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	914	-	-	155	161	721	110	250	1110	-	-
HCM Lane V/C Ratio	0.105	-	-	0.722	0.412	0.261	0.435	0.226	0.007	-	-
HCM Control Delay (s)	9.4	-	-	72.8	42.2	11.7	60.8	23.6	8.3	-	-
HCM Lane LOS	A	-	-	F	E	B	F	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	4.3	1.8	1	1.9	0.8	0	-	-

J. Turn Lane Warrant Tables and Charts

Left Turn Lane Warrant Assessment

Two-Lane Highways

Based on AASHTO / VDOT RDM Appendix F

Background:

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). The figures provide a graphical representation for determining the necessity of a left turn lane by comparing the advancing volumes of a given approach and the respective opposing volumes and are differentiated by design speed and percent left turning volume.

Project Information:

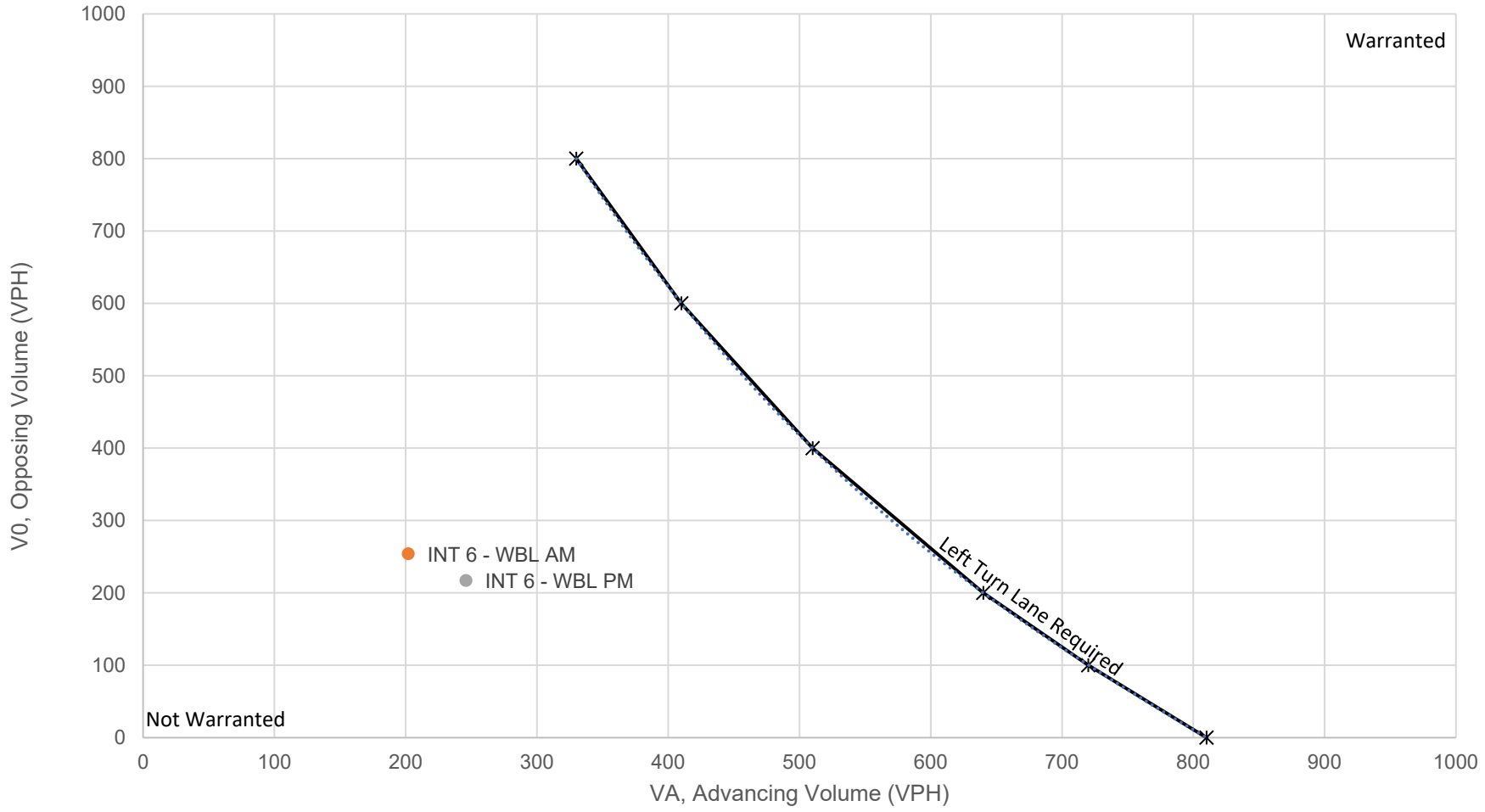
Project:	Warrenton Village
Project ID:	
Intersection(s) and Movement(s):	6 - Oak Springs Drive at Hastings Lane / Future Access (WB) 7 - Oak Springs Drive at High School Driveway / Future Garage Access (WB)
Scenario:	2027 Future Conditions with Development
Analysis:	Gorove Slade

Design Speed (mph):	**40**	**(40, 50, or 60?)**

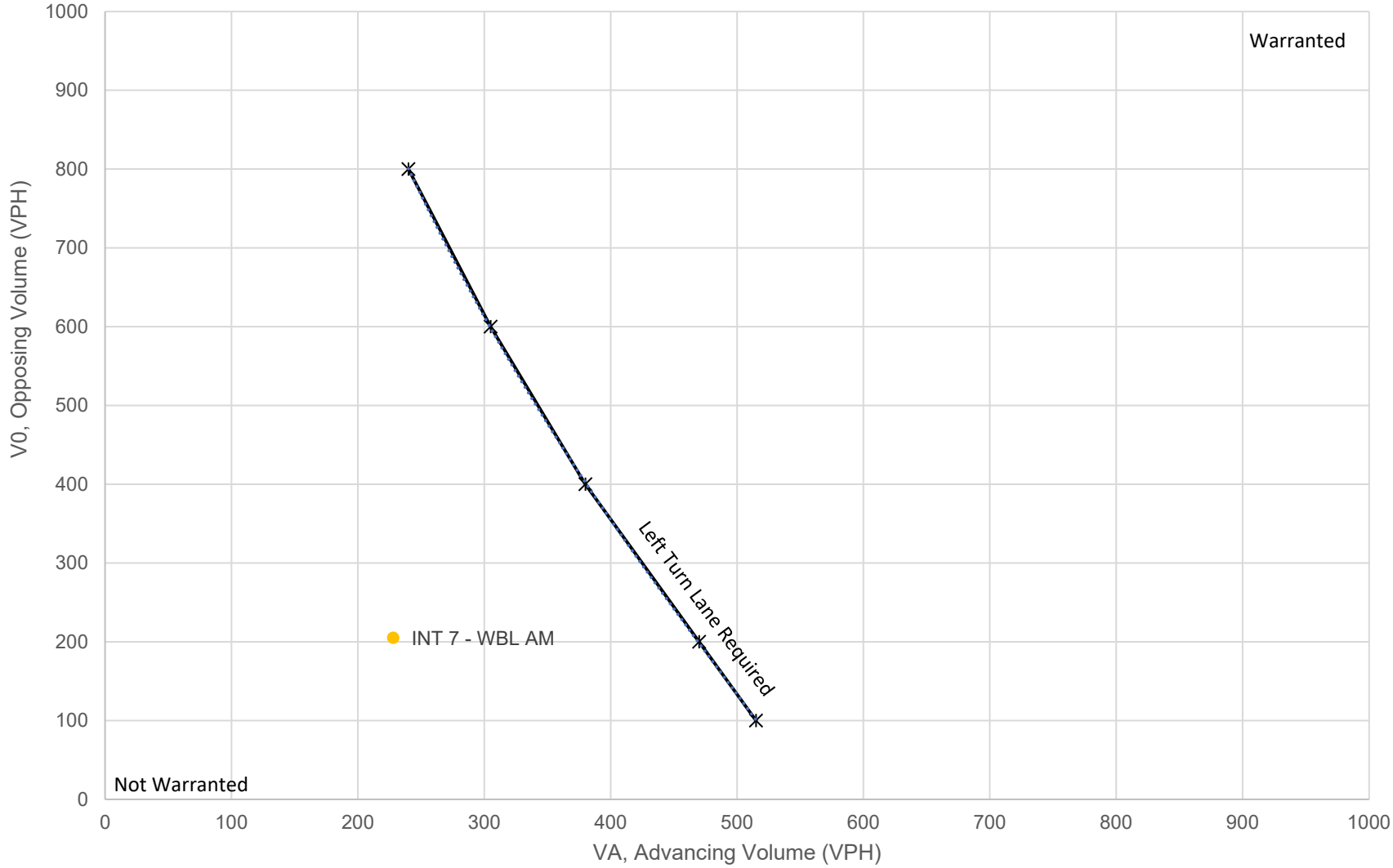
Assessment Summary:

Input				VDOT Calculated Thesholds			
Study Scenario	**Opposing Vol. (VPH)**	**Advancing Vol. (VPH)**	**Left Turn Vol. (VPH)**	**Left Turn %**	**Minimum Opposing Threshold (VPH)**	**VDOT RDM F Figure**	**Treatment**
INT 6 - WBL AM	254	202	2	0.99%	1,208	Fig. 3-4	Not Warranted
INT 6 - WBL PM	217	246	6	2.44%	1,054	Fig. 3-4	Not Warranted
INT 7 - WBL AM	205	228	19	8.33%	841	Fig. 3-5	Not Warranted
INT 7 - WBL PM	194	281	62	22.06%	274	Fig. 3-8	Not Warranted

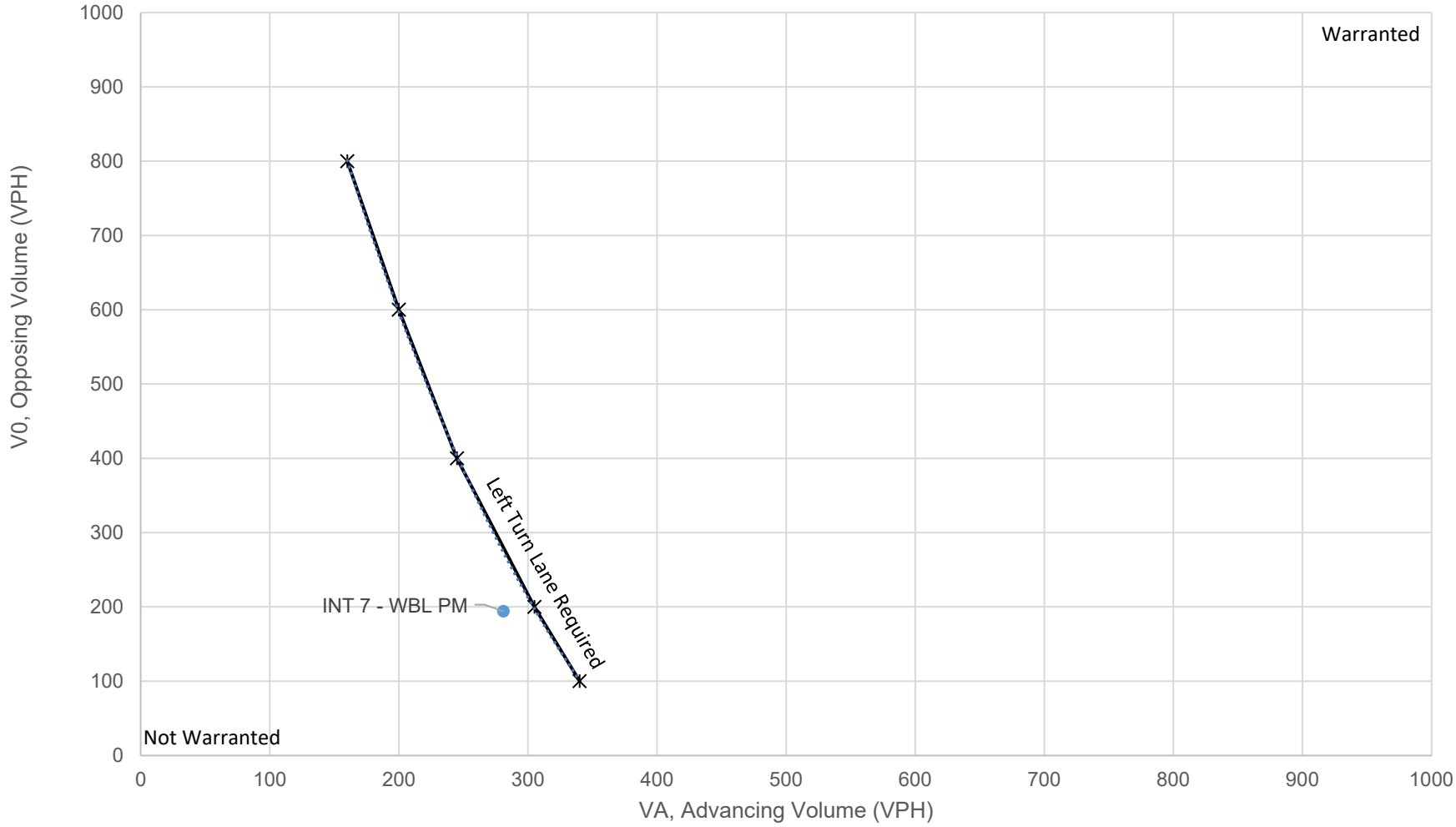
VDOT RDM-F Figure 3-4
Warrant for Left Turn Storage Lanes on 2-Lane Highways at 40-mph & 5% Left Turns



VDOT RDM-F Figure 3-5
Warrant for Left Turn Storage Lanes on 2-Lane Highways at 40-mph & 10% Left Turns



VDOT RDM-F Figure 3-8
Warrant for Left Turn Storage Lanes on 2-Lane Highways at 40-mph & 30% Left Turns



Left Turn Lane Warrant Assessment

Four-Lane Highways

Background:

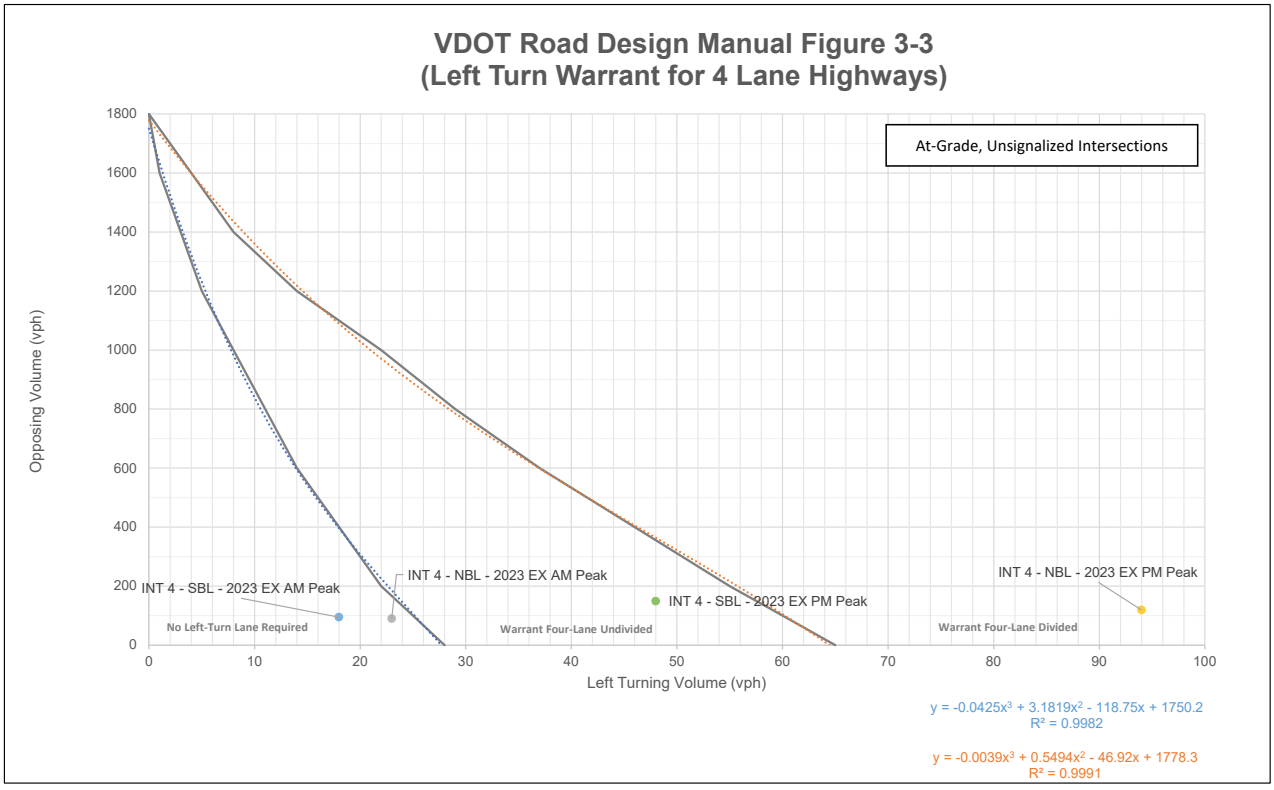
Warrants for left-turn storage lanes on four-lane highways at unsignalized intersections are based on Figure 3-3 in Appendix F of the Virginia Department of Transportation's (VDOT) ***Road Design Manual*** (RDM). The figure provides a graphical representation for determining the necessity of a left turn lane for divided and undivided roadway conditions by comparing the left turning volumes of a given approach and the respective opposing traffic volume.

Project Information:

Project:	
Project ID:	
Intersection(s) and Movement(s):	4 - Branch Drive at Warrenton Village Center Driveway / Safeway Driveway (NBL & SBL)
Scenario:	2023 Existing Conditions
Analysis:	Gorove Slade

Assessment Summary:

Input				Result	
Study Scenario	**Opposing Vol. (VPH)**	**Advancing Vol. (VPH)**	**Left Turning Vol. (VPH)**	**Left Turn %**	**Treatment**
INT 4 - NBL - 2023 EX AM Peak	90	95	23	24.2%	Not Warranted
INT 4 - NBL - 2023 EX PM Peak	119	149	94	63.1%	Full-width Turn Lane and Taper Warranted (for Undivided and Divided)
INT 4 - SBL - 2023 EX AM Peak	95	90	18	20.0%	Not Warranted
INT 4 - SBL - 2023 EX PM Peak	149	119	48	40.3%	Full-width Turn Lane and Taper Warranted (for Undivided)



Left Turn Lane Warrant Assessment

Four-Lane Highways

Background:

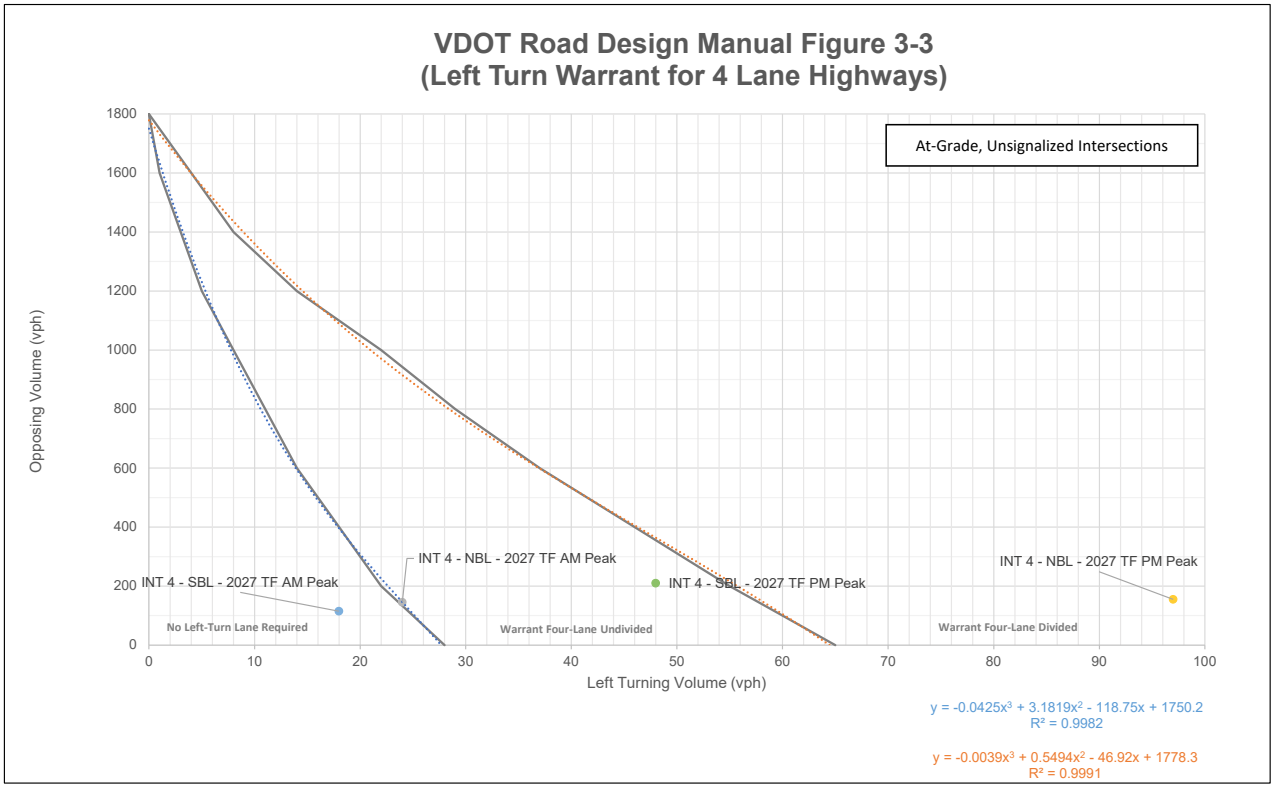
Warrants for left-turn storage lanes on four-lane highways at unsignalized intersections are based on Figure 3-3 in Appendix F of the Virginia Department of Transportation's (VDOT) ***Road Design Manual*** (RDM). The figure provides a graphical representation for determining the necessity of a left turn lane for divided and undivided roadway conditions by comparing the left turning volumes of a given approach and the respective opposing traffic volume.

Project Information:

Project:	Warrenton Village Center
Project ID:	
Intersection(s) and Movement(s):	4 - Branch Drive at Warrenton Village Center Driveway / Safeway Driveway (NBL & SBL)
Scenario:	2027 Future Conditions with Development
Analysis:	Gorove Slade

Assessment Summary:

Input				Result	
Study Scenario	**Opposing Vol. (VPH)**	**Advancing Vol. (VPH)**	**Left Turning Vol. (VPH)**	**Left Turn %**	**Treatment**
INT 4 - NBL - 2027 TF AM Peak	145	115	24	20.9%	Not Warranted
INT 4 - NBL - 2027 TF PM Peak	155	210	97	46.2%	Full-width Turn Lane and Taper Warranted (for Undivided and Divided)
INT 4 - SBL - 2027 TF AM Peak	115	145	18	12.4%	Not Warranted
INT 4 - SBL - 2027 TF PM Peak	210	155	48	31.0%	Full-width Turn Lane and Taper Warranted (for Undivided)



Right Turn Lane Warrant Assessment

Two-Lane Highways

Based on NCHRP Report 279 / VDOT RDM Appendix F
"Intersection Channelization Guide"

Background:

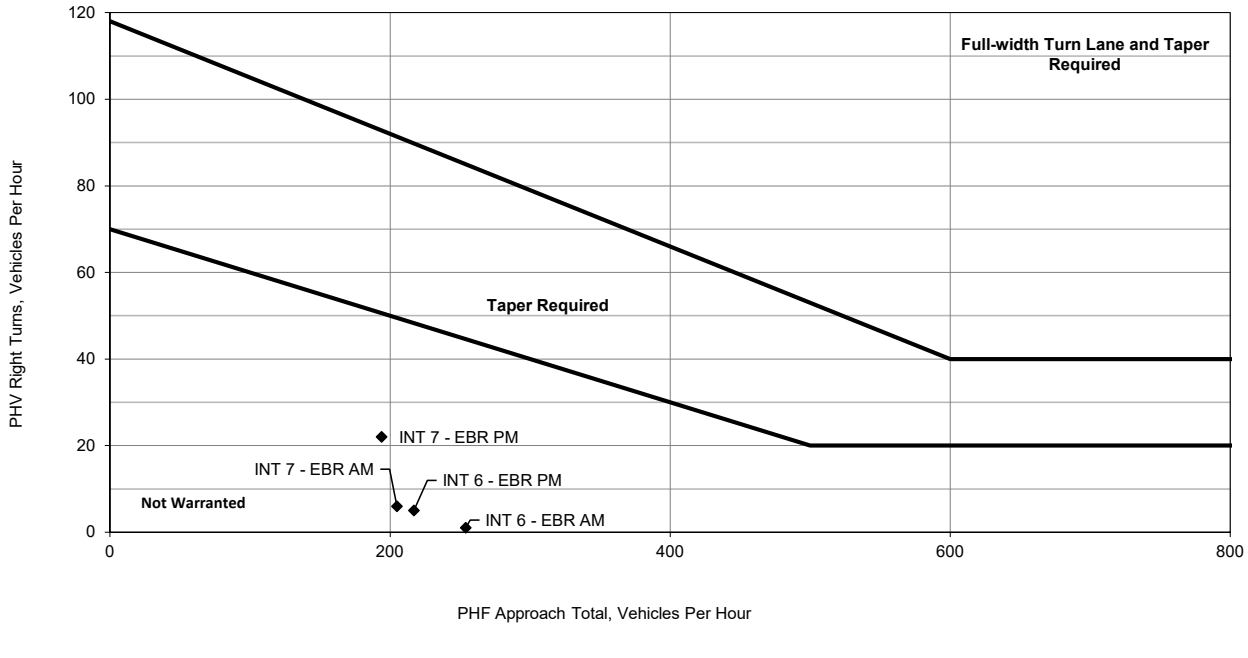
Warrants for right-turn storage lanes on two-lane highways at unsignalized intersections are based on Figure 3-26 in Appendix F of the Virginia Department of Transportation's (VDOT) ***Road Design Manual*** (RDM). This figure provides a graphical representation for determining the necessity of a right turn lane and / or taper by comparing the total volumes of a given approach with their respective right turn volumes.

Project Information:

Project:	Warrenton Village Center
Project ID:	
Intersection(s) and Movement(s):	6 - Oak Springs Drive at Hastings Lane / Future Access (EB)
	7 - Oak Springs Drive at High School Driveway / Future Garage Access (EB)
Scenario:	2027 Future Condtitions with Development
Analyst:	Gorove Slade

Study Scenario	Approach Volume	Right Turn Volume	Minimum Right Turn Taper Threshold	Minimum Right Turn Full Lane Threshold	Treatment
INT 6 - EBR AM	254	1	45	85	Not Warranted
INT 6 - EBR PM	217	5	48	90	Not Warranted
INT 7 - EBR AM	205	6	50	91	Not Warranted
INT 7 - EBR PM	194	22	51	93	Not Warranted

Right Turn Lane Warrant for 2-Lane Highways
(VDOT RDM Appendix F Figure 3-26)



Right Turn Lane Warrant Assessment

Four-Lane Highways

Based on NCHRP Report 279 / VDOT RDM Appendix F
"Intersection Channelization Guide"

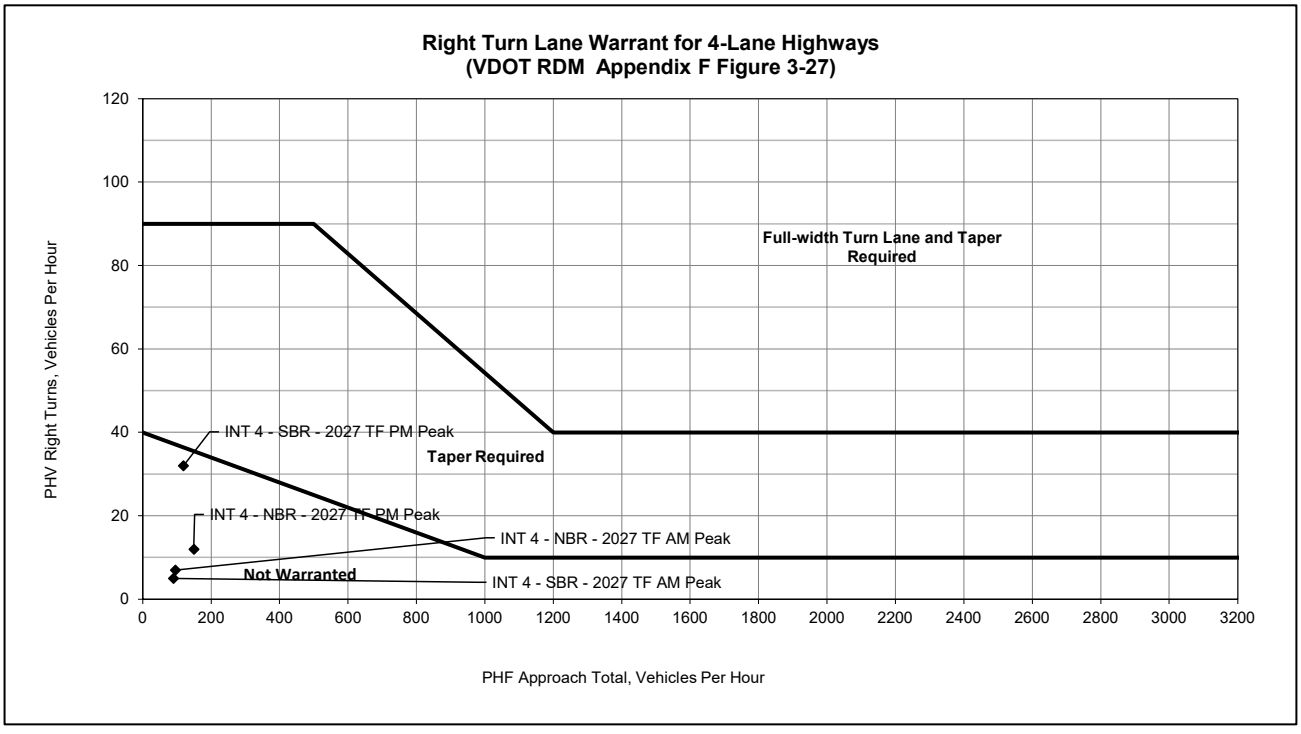
Background:

Warrants for right-turn storage lanes on four-lane highways at unsignalized intersections are based on Figure 3-27 in Appendix F of the Virginia Department of Transportation's (VDOT) ***Road Design Manual*** (RDM). This figure provides a graphical representation for determining the necessity of a right turn lane and / or taper by comparing the total volumes of a given approach with their respective right turn volumes.

Project Information:

Project:	
Project ID:	
Intersection(s) and Movement(s):	4 -Branch Drive at Warrenton Village Center Driveway / Safeway Driveway (NBR & SBR)
Scenario:	2027 Future Conditions with Development
Analyst:	Gorove Slade

Study Scenario	Approach Volume	Right Turn Volume	Minimum Right Turn Taper Threshold	Minimum Right Turn Full Lane Threshold	Treatment
INT 4 - NBR - 2027 TF AM Peak	95	7	37	90	Not Warranted
INT 4 - NBR - 2027 TF PM Peak	149	12	36	90	Not Warranted
INT 4 - SBR - 2027 TF AM Peak	90	5	37	90	Not Warranted
INT 4 - SBR - 2027 TF PM Peak	119	32	36	90	Not Warranted



K. MUTCD 4-Hour Warrant

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

Standard:

01 **An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.**

02 **The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:**

Warrant 1, Eight-Hour Vehicular Volume
Warrant 2, Four-Hour Vehicular Volume
Warrant 3, Peak Hour
Warrant 4, Pedestrian Volume
Warrant 5, School Crossing
Warrant 6, Coordinated Signal System
Warrant 7, Crash Experience
Warrant 8, Roadway Network
Warrant 9, Intersection Near a Grade Crossing

03 **The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.**

Support:

04 Sections 8C.09 and 8C.10 contain information regarding the use of traffic control signals instead of gates and/or flashing-light signals at highway-rail grade crossings and highway-light rail transit grade crossings, respectively.

Guidance:

05 *A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.*

06 *A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.*

07 *A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.*

08 *The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2.*

09 *Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.*

10 *Similar engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.*

11 *At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.*

12 *For signal warrant analysis, a location with a wide median, even if the median width is greater than 30 feet, should be considered as one intersection.*

Option:

13 At an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher of the major-street left-turn volumes as the "minor-street" volume and the corresponding single direction of opposing traffic on the major street as the "major-street" volume.

14 For signal warrants requiring conditions to be present for a certain number of hours in order to be satisfied, any four sequential 15-minute periods may be considered as 1 hour if the separate 1-hour periods used in the warrant analysis do not overlap each other and both the major-street volume and the minor-street volume are for the same specific one-hour periods.

15 For signal warrant analysis, bicyclists may be counted as either vehicles or pedestrians.

Support:

16 When performing a signal warrant analysis, bicyclists riding in the street with other vehicular traffic are usually counted as vehicles and bicyclists who are clearly using pedestrian facilities are usually counted as pedestrians.

Option:

17 Engineering study data may include the following:

A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.
B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which total traffic entering the intersection is greatest.
C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or visual disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.
D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.
E. The posted or statutory speed limit or the 85th-percentile speed on the uncontrolled approaches to the location.
F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions, pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to nearest traffic control signals, utility poles and fixtures, and adjacent land use.
G. A collision diagram showing crash experience by type, location, direction of movement, severity, weather, time of day, date, and day of week for at least 1 year.

18 The following data, which are desirable for a more precise understanding of the operation of the intersection, may be obtained during the periods described in Item B of Paragraph 17:

A. Vehicle-hours of stopped time delay determined separately for each approach.
B. The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.
C. The posted or statutory speed limit or the 85th-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.
D. Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.
E. Queue length on stop-controlled approaches.

Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume

Support:

01 The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

02 The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

Standard:

04 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Option:

05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:

06 *The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.*

Standard:

07 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and

B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Option:

08 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:

01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Section 4C.04 Warrant 3, Peak Hour

Support:

01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Standard:

02 **This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**

03 **The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Option:

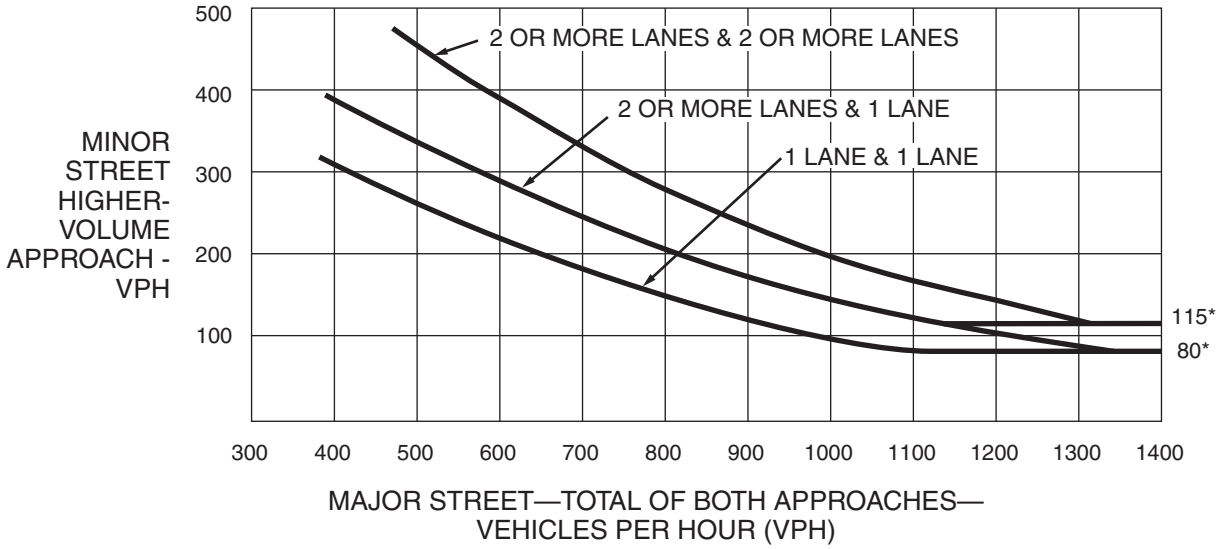
04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.

05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Guidance:

06 *If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.*

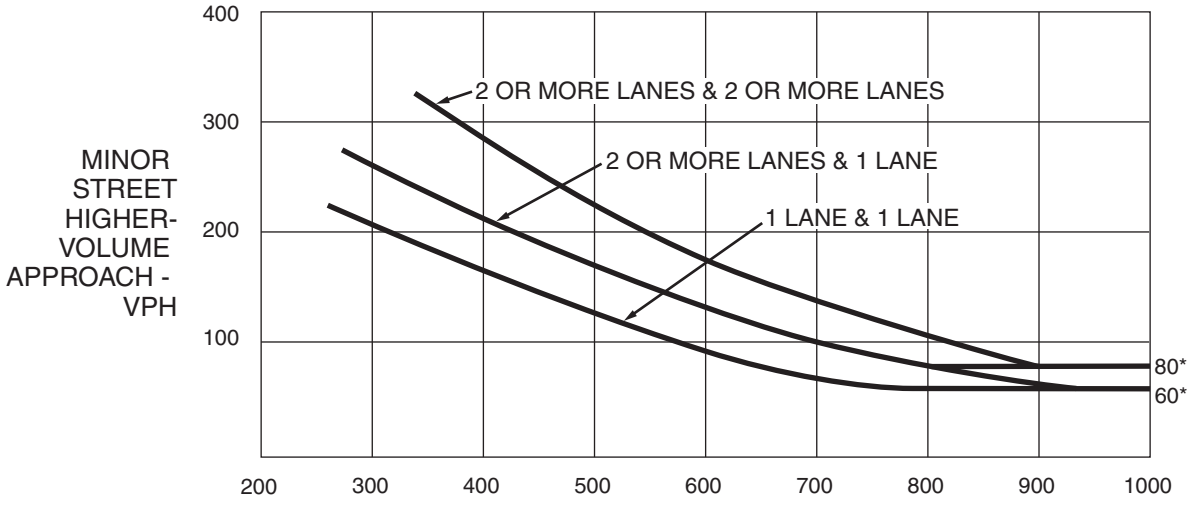
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Market and Fiscal Impacts Analyses
Warrenton Village
Town of Warrenton, Virginia

Prepared for:
Jess Achenbach
Castle Development Partners

June 2023

▪ S. PATZ & ASSOCIATES, INC ▪
▪ REAL ESTATE CONSULTANTS ▪

June 12, 2023

Jess Achenbach
Castle Development Partners
230 Court Square, Suite 202
Charlottesville, Virginia 22902

Jess:

Attached is our full-narrative market study and resulting Fiscal Impacts Analysis (FIA) for the proposed Warrenton Village proposal, to include 376 rental units. The proposal is for three residential components: a 320-unit elevator-served apartment building alongside 36 two-over-two and 20 townhome units. All rental units proposed for Warrenton Village will have market rents and no age restrictions.

The report is presented in three sections. The first is a description of the study site and development proposal. Detailed data describe the Warrenton Village site. The second section is a brief market analysis for the new rental units planned. The market study is not prepared in the same depth as a study for a lender package, as all building and unit designs are not yet set, but sufficient data are provided to determine market support for the proposed 376 rental units. The third section, based on market data, shows the net tax benefits to the Town of Warrenton from the development proposal. The analysis to follow shows full market support for the apartment units at the proposed rents.

The FIA, based on the result of the market analysis, shows a net benefit for the proposal to the Town of Warrenton at $46,100± annually, after build-out. Most of the revenue to the Town will be generated from off-site impacts, as the Town of Warrenton levies low real estate and personal property tax rates. This is reflected in the General Fund revenues. The following table presents the FIA conclusions at build-out.

Summary of On-Site and Off-Site Fiscal Impacts of Apartments, Warrenton Village at Build-Out, Warrenton, Virginia (Constant 2023 Dollars)			
Source of Fiscal Impacts on the Town	**Impacts On-Site in Warrenton**	**Impacts Off-Site in Warrenton**	**Total Fiscal Impacts**
Apartments (320 Units)			
Revenues to the Town	$117,560	$338,870	$456,430
Town Costs	-$280,280	-$145,920	-$426,200
Subtotal	*-$162,720*	*$192,950*	*$30,230*
Two-Over-Two (36 Units)			
Revenues to the Town	$14,550	$55,520	$70,070
Town Costs	-$42,740	-$23,490	-$66,230
Subtotal	*-$28,190*	*$32,030*	*$3,840*
Townhomes (20 Units)			
Revenues to the Town	$8,050	$41,150	$49,200
Town Costs	-$23,310	-$13,860	-$37,170
Subtotal	*-$15,260*	*$27,290*	*$12,030*
Total Residential (376 units)			
Revenues to the Town	$140,160	$435,540	$575,700
Town Costs	-$346,330	-$183,270	-$529,600
Net Fiscal Benefits	**-$206,170**	**$252,270**	**$46,100**
Source: Town of Warrenton, VA; S. Patz & Associates, Inc.			

All detailed market and economic data that support our findings and conclusions are presented in the attached report. Please call if additional data or clarification are needed.

Sincerely,

Ariel Goldring

Ariel Goldring
President

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Section I: Introduction

This will set forth our market and Fiscal Impacts Analysis (FIA) for the proposed Warrenton Village apartment community, planned for a well-located 6.46-acre site along the south side of Oak Springs Drive and just north of W. Lee Highway in the Town of Warrenton, Virginia. The vacant property benefits from its close proximity to several large shopping centers, including the Safeway-anchored Warrenton Village, Marshalls-anchored Warrenton Center, and Giant-anchored Oak Springs Plaza. The site is currently zoned C (Commercial). The sponsor is submitting for a Special Use Permit under the existing zoning.

The proposal is for an attractive 376-unit rental community consisting of 320 elevator-served apartment units, alongside 36 two-over-two and 20 townhome units. The complex will offer a wide range of amenities, including a clubhouse, fitness center and outdoor swimming pool. No such concept currently exists in the Town of Warrenton or elsewhere in Fauquier County, and once built, Warrenton Village will be a "step above" the existing apartment market in the Town and County. Construction is planned to begin in late-2024 with a late-2026 delivery.

The Special Use Permit requires a Fiscal Impacts Analysis (FIA), which calculates the net tax benefits that will accrue to the Town of Warrenton at project build-out. The FIA to follow includes net tax benefits from on-site development and off-site expenditures in the Town, as will be fully explained later in the report. The FIA is based on the ability of the site to be developed, as planned, which is described in the market analysis undertaken for this report.

The report to follow is presented in three sections. The first, the Introduction, is an analysis of the Warrenton Village site and a description of the development proposal. Also part of the description is an analysis of the local economy, which shows the level of job growth that supports the magnitude of new housing unit demand planned for the study site.

Section II is an overview analysis of the Warrenton area apartment market. This is not a full-narrative market analysis that would be acceptable by a lender or investor. Rather, it provides

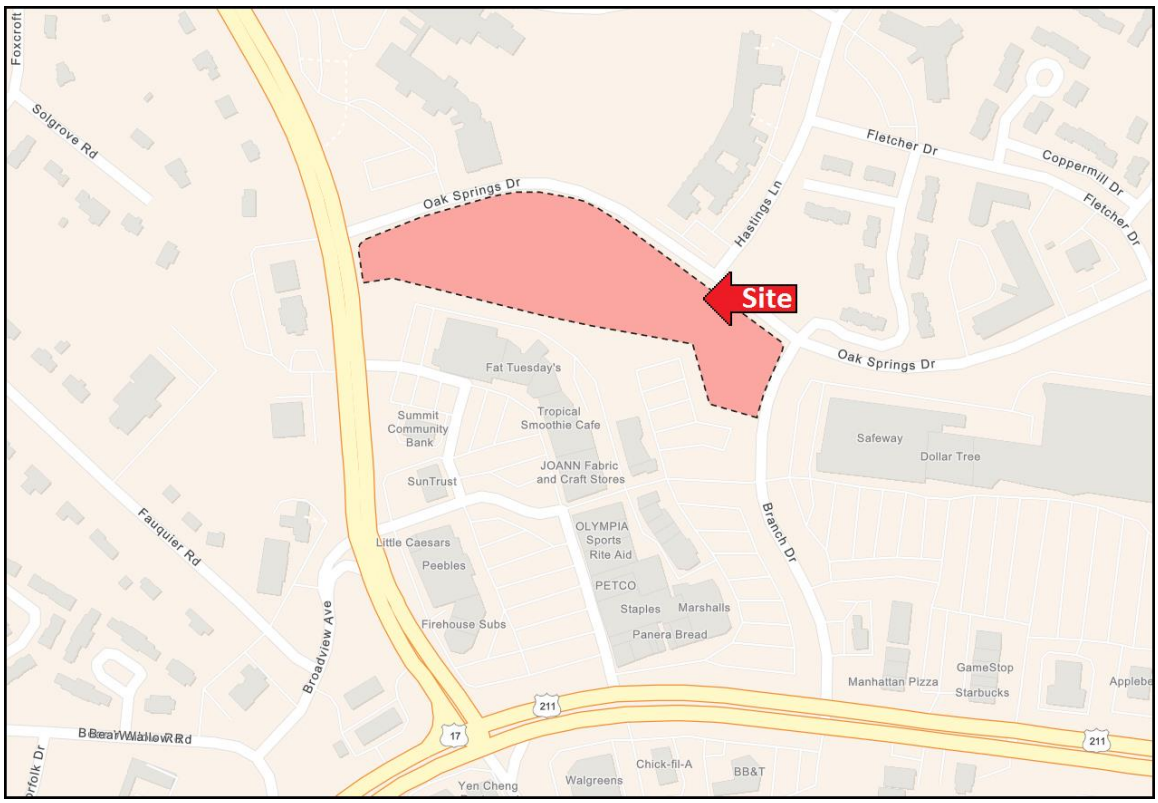
sufficient market data to support the development proposal, as planned. The Conclusions of the market analysis will be the base data for the preparation of the FIA.

Section III is the calculation of the full-narrative FIA that documents annual net tax revenue from the Warrenton Village proposal, based on on-site and off-site revenues from on-site expenditures. Town costs are subtracted from the revenue estimates to establish a net fiscal benefit. For this analysis, all tax revenue and cost data are presented in constant 2023 dollars.

Warrenton Village

Site Description

Map A shows the location of the study site along the southern side of Oak Springs Drive in the Town of Warrenton. The site is bounded to the west by Broadview Drive and to the east by Branch Drive. Its southern boundary is the Warrenton Village Shopping Center, with tenants including Petco, Staples and Marshalls. The study site is shown to be near W Lee Highway, which is a major arterial roadway in the Town that provides direct access to Fauquier Health in the south and U.S. Route 15 in the east.

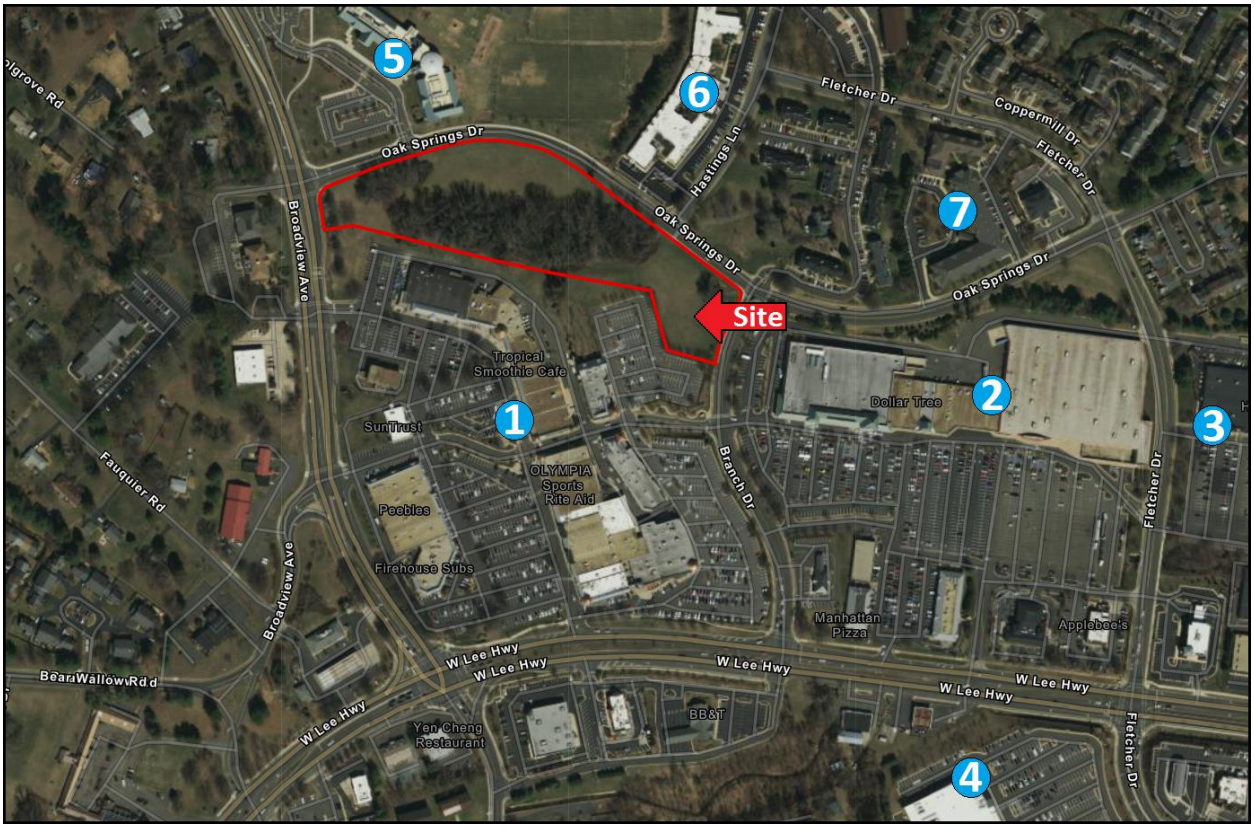


Map A – Site Location

Shown next is a northern aerial of the study site. The aerial shows the irregularly shaped site to be located within a mixed-use setting. Commercial uses generally flank W Lee Highway to the south. This includes the Marshalls-anchored Warrenton Center (Note 1), Safeway-anchored Warrenton Village (Note 2), Giant-anchored Oak Springs Plaza (Note 3) and Harris Teeter-anchored North Rock Shopping Center (Note 4). This is the largest commercial concentration in the Warrenton area. Many of the area restaurants and retailers are within walking distance of the Warrenton Village site.

To the north of the study site is a large private school with over 500 students called Highland School (Note 5) as well as the 130-bed Brookside Rehab & Nursing Center (Note 6). Residential areas are situated to the northeast of the study site and include The Oaks of Warrenton (Note 7), a 111-unit affordable, age-restricted apartment community that was built in two phases

in 1996 and 2001. Most of the other nearby homes are townhomes and condos that have generally sold in the $200,000s and $300,000s.



Northern Aerial

Overall, the study site is well-located and in close proximity to local arterial streets, an interchange with U.S. Route 15, nearby employment centers, and a host of big-box and small retailers that serve the existing residential market.

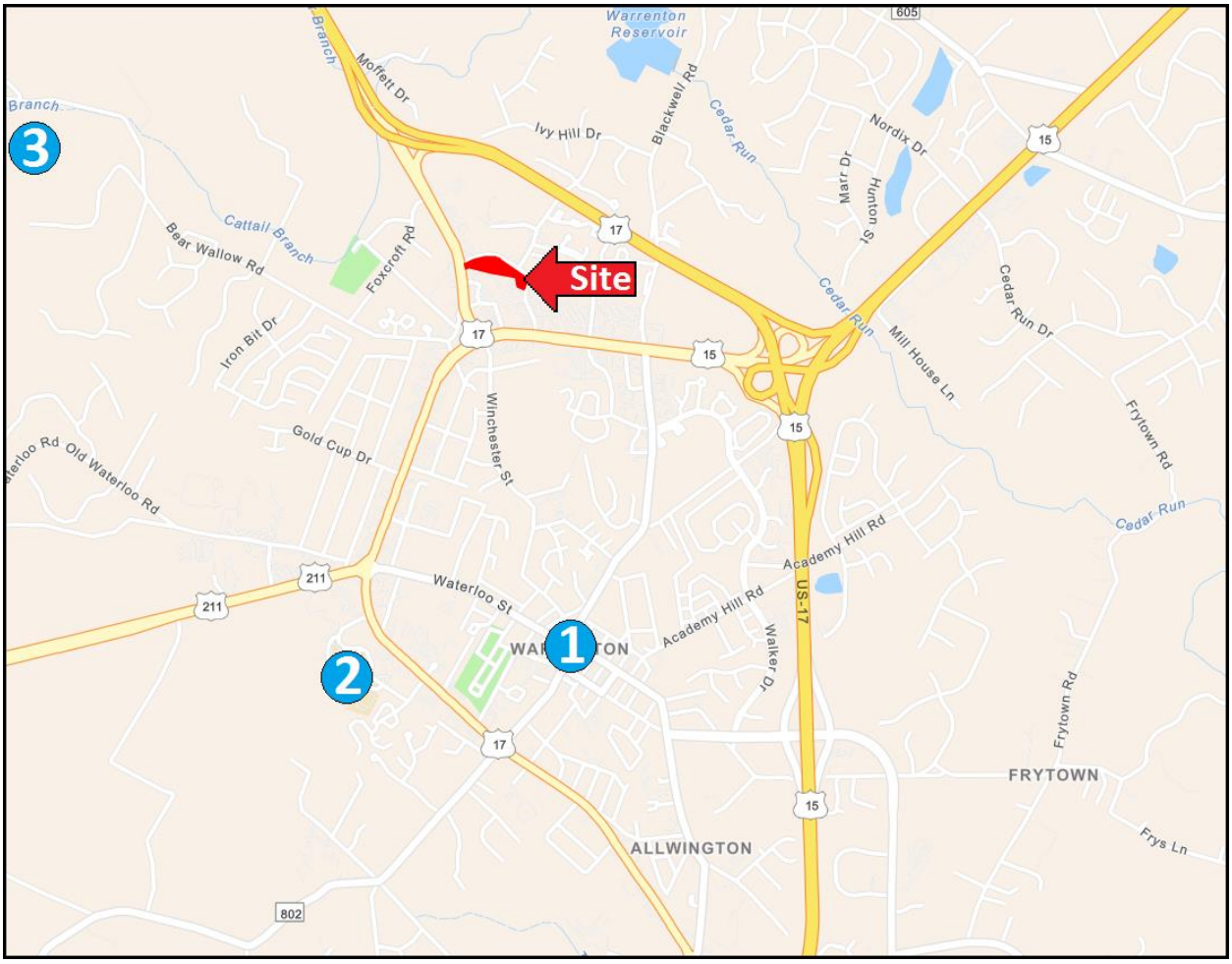
Map C, on page 10, depicts the site setting within the Town of Warrenton. As previously noted, the site is located near W Lee Highway, which accesses U.S. Route 15 less than a mile to the east. This roadway provides direct access to the greater Gainesville/ Haymarket area of western Prince William County, which is the nearest employment cluster outside of Fauquier County. Gainesville is an approximately 12-mile drive from the study site and is the location of

an interchange with I-66 that extends to other major employment centers elsewhere in Northern Virginia.

U.S. Route 17 is also shown to be located just north of the study site via Broadview Avenue. This roadway accesses the community of Marshall at the northern edge of Fauquier County, as well as Bealeton to the south. Both locations are primarily residential. In addition, Map C shows the site's close proximity to Downtown Warrenton, approximately 1.5 miles from the study site. This is the location of several restaurants, specialty retailers and professional office space.

Also shown to be located near the study site is Fauquier Hospital (Note 2), which is located at 500 Hospital Drive in Warrenton. This is a 97-bed, acute care hospital offering surgical services (including robotics), a 24-hour Emergency Department, extensive medical imaging capabilities and an Intensive Care Unit. Construction was recently completed in 2020 on the hospital's new 25,640± square foot Cancer Center. There is approximately 50,000 square feet of medical office space adjacent to Fauquier Hospital. North of the hospital is the large Fauquier Health Rehabilitation and Nursing Center and four office structures that are occupied by County officials.

Map C also shows the site to be located within close proximity of the Warrenton Training Center (Note 3), which is a 346-acre classified United States government communication complex. County staff estimate that the complex employs approximately 350 people.



Map C - Site Setting

Shown next are photos of the study site. The site is shown to be partially wooded and fully vacant.




Southern View of site from Oak Springs Drive

Development Program

The development program for Warrenton Village involves the development of a vacant 6.46-acre parcel with a mix of an elevator-served apartment building alongside two-over-two and townhomes for rent.

Table 1 provides a detailed description of the study proposal, with data on unit sizes, unit mix and proposed rents. The table shows a mix of 133 one-bedroom, 159 two-bedroom and 84 three-bedroom units. One-bedroom apartment units will be spacious and range in size between 642 and 950 square feet, or an average of 771 square feet. Two-bedroom units, each with two full bathrooms will also be large, ranging in size between 980 and 1,184 square feet, or an average of 1,103 square feet. The three-bedroom apartment units will range in size between 1,388 and 2,583 square feet. The three-bedroom two-over-two units will be 1,586 and 2,583 square feet. The three-bedroom townhome units will all measure 2,050 square feet. The three-bedroom units will have between 2.0 and 3.5 bathrooms.

Rents will exclude utilities but will include in-unit washers and dryers at no additional cost to the tenant. One-bedroom rents are proposed to range between $1,650 and $1,900, or an average of $1,750. The smaller two-bedroom apartment units will rent for $2,200 while the larger two-bedroom apartment units will rent for $2,350. The two-bedroom units will rent for an average of $2,250. The three-bedroom apartment units will rent for between $2,400 and $2,550. The three-

bedroom two-over-two units will rent for between $2,800 and $3,000. The three-bedroom townhome units will rent for between $3,100 and $3,200.

Table 1: Proposed Unit Characteristics, Warrenton Village, June 2022

	Unit Type	Bathrooms	Total Units	Unit Sizes (Sq. Ft.)	Proposed Rents 1/
One-Bedroom					
A1	Apartment	1.0	50	642	$1,650
A2	Apartment	1.0	28	725	$1,725
A3	Apartment	1.0	2	790	$1,750
A4	Apartment	1.0	22	768	$1,750
A5	Apartment	1.0	11	850	$1,800
A5A	Apartment	1.0	3	950	$1,900
A6	Apartment	1.0	6	750	$1,750
A7A	Apartment	1.0	4	724	$1,700
A7B	Apartment	1.0	4	738	$1,725
A8	Apartment	1.0	3	775	$1,750
Subtotal/ Average			*133*	*771*	*$1,750*
Two-Bedroom					
B1	Apartment	2.0	92	1,054	$2,200
B2	Apartment	2.0	45	1,167	$2,300
B3	Apartment	2.0	7	1,040	$2,200
B4	Apartment	2.0	4	1,130	$2,300
B5A	Apartment	2.0	3	1,184	$2,350
B5B	Apartment	2.0	4	1,164	$2,300
B6	Apartment	2.0	4	980	$2,100
Subtotal/ Average			*159*	*1,103*	*$2,250*
Three-Bedroom					
C1	Apartment	2.0	17	1,388	$2,400
C2	Apartment	2.0	4	1,425	$2,500
C3	Apartment	3.0	7	1,496	$2,550
D1	Two-Over Two	2.5	18	1,586	$2,800
D2	Two-Over Two	2.5	18	2,583	$3,000
E1	Townhome	2.5	10	2,050	$3,100
E2	Townhome	3.5	10	2,050	$3,200
Subtotal/ Average			*84*	*1,797*	*$2,793*
Total			**376**		

Notes: 1/ Excludes utilities. Includes washer/ dryers.

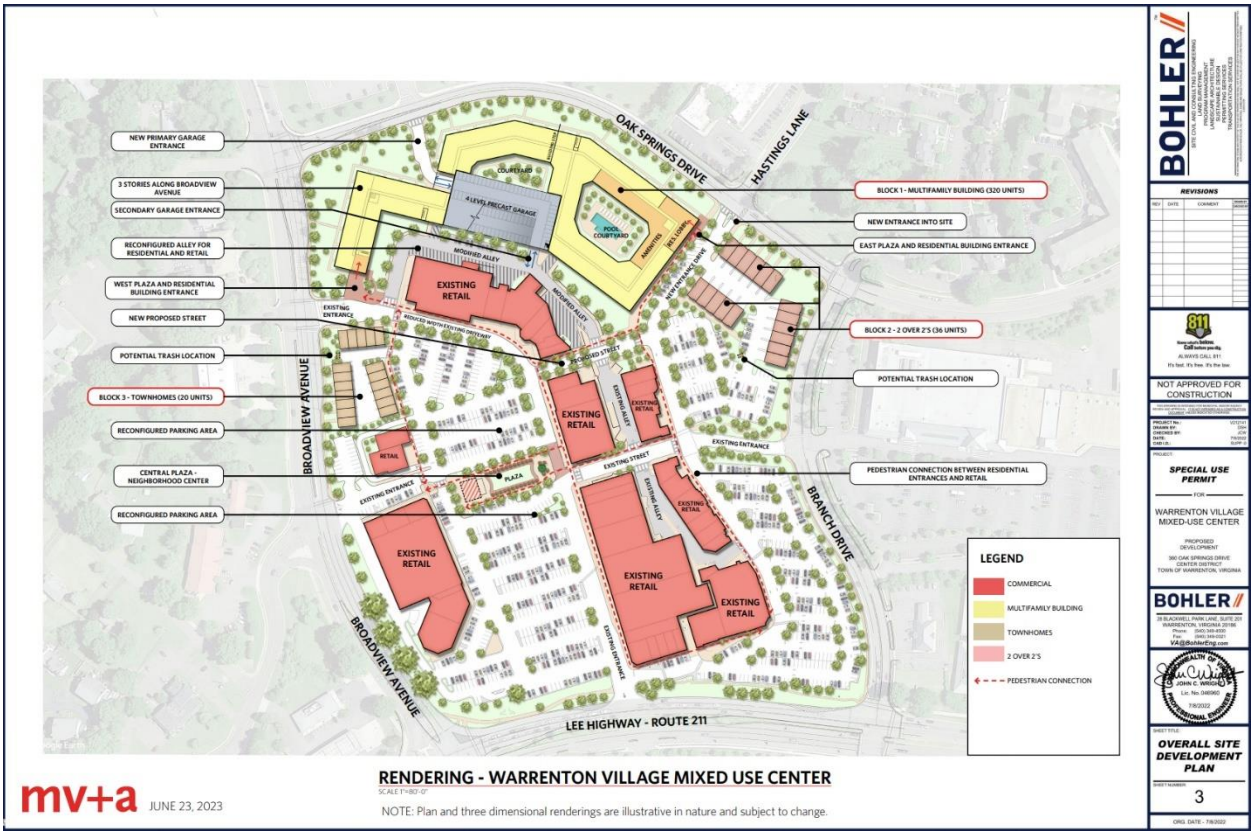
Source: Castle Development Partners

The Warrenton Village proposal will considerably exceed the quality, designs, finishes, and amenities at the market area's apartment properties. The rental units will be comparatively large and, unlike any other rental units in the market area, within walking distance of a host of area retailers and restaurants. Unit features will include granite countertops, stainless steel

appliances, LVT plank throughout (with exception of carpet in bedrooms), 9' ceilings, LED lights, and balconies in all apartment units.

Shown next is the proposed site plan for Warrenton Village. The site plan shows that the apartment community will be accessed from Oak Springs Drive in the north by a newly built roadway.

The community will consist of two development areas. To the west will be a large three- and four-story 320-unit, elevator apartment building. This building will contain 10,000± square feet of amenity space, including a leasing office, large clubroom, fitness center and business center. It will also contain two landscaped courtyards, one of which will include a large outdoor swimming pool. The building will also access a four-story, 445-space parking garage. The eastern side of the property will include the remaining rental units. There will be a total of 574 parking spaces. This equates to a parking ratio of 1.53 spaces per housing unit.



Warrenton Village Site Plan

A rendering of the proposed apartment community is presented next. The renderings show a contemporary and attractive flat roof design that is well above the competition in terms of curb appeal and design features. The building exteriors will contain a mix of masonry, wood siding and white cement panel. Overall, Warrenton Village will be an attractive, upscale community with no direct area competition.



Warrenton Village Rendering

Market Area Economic Overview

This part of Section I of the market analysis presents an economic overview of Fauquier County, with base data for all of Fauquier County, which includes the Town of Warrenton. Data from the U.S. Bureau of Labor Statistics do not provide employment data on the Town level. Three economic factors are presented and analyzed to show the economic stability of the County: (1) at-place job growth, (2) employment and labor force trends, and (3) an evaluation of active development plans that are expected to generate new job and employment growth. These are the primary factors that show the level of economic stability in the market area and the ability for new investments, particularly for new housing.

The three economic factors under study are analyzed in the paragraphs to follow. Key to this analysis is that job growth supports growth in population and households, and therefore,

housing unit demand, particularly of the type of housing under study. Thus, the establishment of the market area's economic stability is a key issue related to the demographic growth of the market area. The economic analysis is presented to support the demographic projections used to support future apartment unit demand.

At-Place Jobs

At-place employment refers to jobs physically based at employers in Fauquier County, whether the job is based in private sector or government offices, manufacturing facilities, schools, retail stores, restaurants, nursing home or other facilities. As of year-end 2019, and prior to the more recent pandemic-induced job losses, Fauquier County had 22,250± at-place jobs, which exceeds the 2008 total by over 850 jobs, or four percent.

The County faced heavy job losses between 2008 and 2010 due to the recession of that time and a period in which at-place employment declined by 1,250±. Net job growth began soon after in 2011, with at-place jobs exceeding the pre-recession peak in 2013. Most recently, employment expanded by 300± in 2018, but fell by 170± in 2019. The job losses in 2019 were not associated with any mass layoffs and were principally driven by the loss of 120± jobs in the Accommodations/ Food sector.

Public sector jobs account for the majority of employment in the County, with nearly 20 percent of jobs in Fauquier County associated with local, state of federal employment. Most of these public sector jobs are associated with local government and tied to the Fauquier County School Board. Much of the federal employment is related to the U.S. Department of Transportation, which operates a facility in Warrenton. Public sector employment has also been a source of modest job growth, with nearly 360 public sector jobs added since 2008.

The largest private employment sector in Fauquier County is the Retail Trade sector, which accounts for nearly 13 percent of County-wide employment. Much of this employment is clustered in and around Warrenton, and to a smaller extent the Bealeton area. Several of the

County's larger employers are in this sector, including Walmart, Food Lion and Home Depot. Employment in this sector has expanded by 160± since 2008.

The next largest private employment sector in the County is the Health Care sector, accounting for 2,550± jobs, or 11.5 percent of County employment. Much of this employment is associated with the Fauquier Health System, which is the largest private employment in the County with over 1,000 employees.

Several other employment sectors have recorded job growth during this period. These include Professional/ Technical Services (420± new jobs), Accommodations/ Food (230± new jobs), Administrative/ Waste Services (160± new jobs), Education (120± new jobs), Education (120± new jobs), Other Services (80± new jobs), Finance/ Insurance (70± new jobs), Manufacturing (60± new jobs) and Real Estate (40± new jobs).

Only four employment sectors have recorded a net loss of jobs since 2008. The heaviest job losses were concentrated in the Construction sector, which has 350 fewer jobs as of year-end 2019 compared to year-end 2018. Most of these losses, however, occurred in the years immediately following the Great Recession. Construction employment has grown every year since 2014, with over 500 jobs added since that time. Other sectors with job losses since 2008 include Wholesale Trade (240± jobs lost), Information (70± jobs lost) and Management of Companies (40± jobs lost).

Table 2: Trends in Average At-Place Employment, Fauquier County, Virginia, 2008-2019

Industry	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture	550	393	401	ND	ND	ND	396	396	392	ND	ND	ND
Mining	57	53	51	ND	ND	ND	54	56	64	ND	ND	ND
Utilities	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	116
Construction	2,880	2,316	2,248	2,112	2,066	2,023	2,117	2,210	2,292	2,350	2,459	2,530
Manufacturing	863	797	756	794	798	825	873	918	950	958	935	923
Wholesale Trade	727	615	546	563	481	448	420	434	448	507	490	485
Retail Trade	2,713	2,573	2,637	2,673	2,790	2,864	2,859	2,994	3,044	2,950	2,899	2,873
Transport./ Wareh.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	239
Information	246	197	162	147	160	101	113	128	133	140	137	181
Finance/Insurance	479	445	486	509	501	504	515	467	497	496	526	553
Real Estate	218	315	318	308	365	377	363	288	262	271	253	258
Prof./Tech.	1,307	1,339	1,352	1,632	1,662	1,658	1,654	1,716	1,761	1,690	1,792	1,727
Mgmt of Co.s	212	213	192	ND	242	175	174	181	178	176	167	169
Admin./Waste	487	432	413	ND	534	485	472	484	522	548	622	645
Education	365	350	319	322	339	338	342	421	448	482	524	484
Health Care	2,415	2,499	2,386	2,386	2,703	2,781	2,747	2,686	2,575	2,532	2,544	2,549
Arts/Enter./Rec.	442	414	467	444	417	411	359	346	334	328	303	306
Accom./Food	2,067	1,932	1,962	1,969	2,025	2,095	2,050	2,201	2,370	2,407	2,414	2,293
Other Services	998	943	972	972	1,081	1,009	1,060	1,110	1,119	1,154	1,192	1,080
Local Gov.	3,199	3,268	3,264	3,434	3,314	3,302	3,226	3,194	3,263	3,280	3,314	3,350
State Gov.	392	398	401	389	404	413	409	393	391	390	394	394
Federal Gov.	421	435	454	564	623	610	597	581	601	610	618	625
Total	**21,395**	**20,273**	**20,145**	**20,781**	**21,387**	**21,213**	**21,076**	**21,549**	**22,054**	**22,116**	**22,417**	**22,249**

Notes: ND = Data do not meet BLS or State agency disclosure standards.

Source: United States Department of Labor, Bureau of Labor Statistics

Table 3 shows the net change in at-place job totals since 2008. Very few sectors experienced job losses during this period. Job growth has been spread among a diverse set of sectors. The key figure shown in Table 3 is the 4.0 percent net growth in new jobs since 2008, for a net increase of 850± jobs.

Table 3: Change in Average At-Place Employment, Fauquier County, Virginia, 2008-2019

Industry	Net Change	Percent Change
Construction	-350	-12.2%
Manufacturing	60	7.0%
Wholesale Trade	-242	-33.3%
Retail Trade	160	5.9%
Information	-65	-26.4%
Finance/Insurance	74	15.4%
Real Estate	40	18.3%
Prof./Tech.	420	32.1%
Mgmt of Co.s	-43	-20.3%
Admin./Waste	158	32.4%
Education	119	32.6%
Health Care	134	5.5%
Arts/Enter./Rec.	-136	-30.8%
Accom./Food	226	10.9%
Other Services	82	8.2%
Local Gov.	151	4.7%
State Gov.	2	0.5%
Federal Gov.	204	48.5%
Total	**854**	**4.0%**

Notes: ND = Data do not meet BLS or State agency disclosure standards.
Source: United States Department of Labor, Bureau of Labor Statistics

Next shown, in Table 4, are the employment changes that occurred in 2020, which is an outlier year given the unusual impact of the COVID-19 pandemic. The data show a significant loss of jobs, with a reduction in employment of over 880, or by 4.0 percent.

These losses occurred across most employment sectors, with the heaviest job losses impacting the Accommodations/ Food services sector (370± jobs lost), Local Government sector (190± jobs lost) and Health Care sector (170± jobs lost). Although these losses are sizeable, many of these layoffs are expected to be temporary and will likely be recovered once 2021 employment data are released. The local housing market has not been negatively affected by these job losses.

Of note is that several employment sectors did add jobs in 2020, including the Professional/ Technical Services sector (130± new jobs), Retail Trade sector (50± new jobs) and the Transportation/ Warehousing sector (50± new jobs).

Data for 2021 show an increase of 440± jobs in Fauquier County, which signals a continued recovery. Several employment categories recorded net job growth. There are just over 430 fewer at-place jobs at year-end 2021 compared to the pre-pandemic peak.

Table 4: Change in Total At-Place Employment, Fauquier County, Virginia, 2019-2021

	2019	2020	2021	Net Change
Utilities	116	122	117	1
Construction	2,530	2,527	2,624	94
Manufacturing	923	841	960	37
Wholesale Trade	485	473	454	-31
Retail Trade	2,873	2,921	2,944	71
Transportation/Warehousing	239	286	311	72
Information	181	163	179	-2
Finance/Insurance	553	550	549	-4
Real Estate	258	260	268	10
Professional/Technical Services	1,727	1,859	1,871	144
Management of Companies	169	158	126	-43
Admin./Waste Services	645	593	622	-23
Educational Services	484	460	504	20
Health Care	2,549	2,379	2,269	-280
Arts/Entertainment/Recreation	306	235	241	-65
Accommodations/Food	2,293	1,926	2,058	-235
Other Services	1,080	955	1,061	-19
Local Government	3,350	3,161	3,209	-141
State Government	394	396	362	-32
Federal Government	625	652	659	34
Total	**22,249**	**21,370**	**21,813**	**-436**

Source: United States Department of Labor

The U.S. Bureau of Labor Statistics has not yet released year-end data for 2022. However, as of September 2022, the date for which the most recent data are available, Fauquier County totals nearly 22,400 at-place jobs, which is in line with pre-pandemic employment levels.

Employment and Labor Force

Employment differs from at-place jobs as it refers to the number of market area residents who are employed, no matter where the job is located. At-place jobs refer to where the job is located, i.e., within Fauquier County. Data are current to year-end 2021 for Employment and Labor Force.

Fauquier County realized a net increase in employment of 770± over the twelve-year period between 2008 and 2019. Like at-place job trends, employment grew early in the decade, up until 2008, when employment reached a pre-recession peak of 36,400± jobs.

Employment totals are larger than at-place job totals, which means net out-commuting occurs into neighboring jurisdictions. These trends are an indication of the market for housing in Fauquier County, with a high percentage of County labor force working across the Washington Region. However, they are selecting homes in Fauquier County.

Employment fell sharply in 2009 when 940± jobs were lost, pushing the unemployment rate from 3.6 percent to 5.6 percent in a single year. A slow recovery began soon after in 2011. Growth in employment occurred every year since, with total employment exceeding pre-recession levels in 2019. The labor force has also grown every year between 2015 and 2019, suggesting sustained confidence in the labor market. This has pushed the overall unemployment rate higher than it otherwise would be.

Recent years have been characterized by a steady increase in the pace of job growth. Employment grew by 350± in 2017, 1,010± in 2018 and 1,070± in 2019. This exceeds the level of growth of at-place jobs and denotes that part of the growth in the resident population of Fauquier County was driven by new jobs in neighboring communities.

Data in Table 5 show that the unemployment rate was a low 2.4 percent in 2019, down from 3.9 percent in 2015. The low unemployment rate means that new job growth will require new residents for the County.

Total employment declined by 2,110± in 2020, pushing the unemployment rate up from a low 2.4 percent in 2019 to 4.7 percent, the highest unemployment rate since 2013. Data for 2021 show some improvements, with employment expanding by 80±. The labor for declined by 560± in 2021, which contributed to the low unemployment rate of 3.0 percent.

Table 5: Trends in Employment and Unemployment, Fauquier County, Virginia, 2008-2021

	Labor Force	Employment	Unemployment	Percent Unemployed
2008	37,765	36,403	1,362	3.6%
2009	37,560	35,459	2,101	5.6%
2010	35,805	33,536	2,269	6.3%
2011	36,073	34,092	1,981	5.5%
2012	35,975	34,162	1,813	5.0%
2013	35,928	34,198	1,730	4.8%
2014	36,049	34,427	1,622	4.5%
2015	35,873	34,477	1,396	3.9%
2016	35,977	34,745	1,232	3.4%
2017	36,269	35,091	1,178	3.2%
2018	37,054	36,096	958	2.6%
2019	38,085	37,168	917	2.4%
2020	36,777	35,058	1,719	4.7%
2021	36,217	35,138	1,079	3.0%
Net Change	**-1,548**	**-1,265**	**-283**	**-0.6%**

Source: United States Department of Labor, Bureau of Labor Statistics

COVID-19 and Employment

Table 6 shows monthly employment data as of April 2023 in Fauquier County to illustrate the local employment impact of the COVID-19 pandemic. This is the date for which the most recent data are available. Trend data show that total employment has increased by nearly 1,400 since January 2020, with the number of unemployed shrinking by over 120. These data show considerable economic improvements.

The unemployment rate, as of April 2023, is a very low 2.1 percent, down from 9.1 percent in April 2020. The low unemployment rate reflects the difficulty that local employers report in hiring new staff and necessitates new residents to the County to fill vacant and future jobs.

Table 6: Trends in Employment and Unemployment, Fauquier County, Virginia, 2020-2023 YTD

	Labor Force	Employment	Unemployment	Percent Unemployed
January 2020	37,631	36,674	957	2.5%
February 2020	37,692	36,824	868	2.3%
March 2020	37,237	36,207	1,030	2.8%
April 2020	35,897	32,638	3,259	9.1%
May 2020	35,376	32,643	2,733	7.7%
June 2020	36,700	33,899	2,801	7.6%
July 2020	36,521	34,131	2,390	6.5%
August 2020	36,545	34,630	1,915	5.2%
September 2020	35,851	34,310	1,541	4.3%
October 2020	36,555	35,198	1,357	3.7%
November 2020	36,289	34,973	1,316	3.6%
December 2020	36,117	34,929	1,188	3.3%
January 2021	36,048	34,716	1,332	3.7%
February 2021	35,894	34,635	1,259	3.5%
March 2021	36,013	34,747	1,266	3.5%
April 2021	36,141	35,085	1,056	2.9%
May 2021	36,334	35,173	1,161	3.2%
June 2021	37,478	36,109	1,369	3.7%
July 2021	37,536	36,293	1,243	3.3%
August 2021	37,231	36,054	1,177	3.2%
September 2021	36,740	35,719	1,021	2.8%
October 2021	37,217	36,329	888	2.4%
November 2021	36,843	36,218	625	1.7%
December 2021	37,157	36,284	873	2.3%
January 2022	37,155	36,215	940	2.5%
February 2022	37,078	36,203	875	2.4%
March 2022	37,349	36,459	890	2.4%
April 2022	37,520	36,729	791	2.1%
May 2022	37,611	36,624	987	2.6%
June 2022	38,342	37,327	1,015	2.6%
July 2022	38,549	37,524	1,025	2.7%
August 2022	38,216	37,051	1,165	3.0%
September 2022	37,678	36,664	1,014	2.7%
October 2022	38,207	37,193	1,014	2.7%
November 2022	37,968	36,945	1,023	2.7%
December 2022	37,974	37,115	859	2.3%
January 2023	38,232	37,132	1,100	2.9%
February 2023	38,299	37,320	979	2.6%
March 2023	38,759	37,783	976	2.5%
April 2023	38,846	38,012	834	2.1%
Net Change	**1,215**	**1,338**	**-123**	**-0.4%**

Notes: 1/ Preliminary. Subject to change.

Source: U.S. Department of Labor, Bureau of Labor Statistics

Current Developments

Most businesses in Fauquier County are small, with over 90 percent having fewer than 20 employees. The largest employer in the County is the Fauquier County School Board, with over 1,900 employees. The second largest employer is the Fauquier Health System, which employs over 1,000 people. The next two largest employers are the U.S. Department of Transportation and Walmart. All of these employers are located within quick driving distance of the Warrenton Village site.

The agriculture and forestry industries directly employ over 500 people, with many more employed in related industries. Tourism represents a growing segment of the economic sector in Fauquier County with nearly 30 vineyards and wineries spread across the County. More recently, the County has also targeted defense and other government contractors as a vital sector, with over 100 firms operating in the County.

Recent job generating development activity in Fauquier County include:

- **E-Z Treat**, a manufacturer of residential and commercial wastewater treatment systems, announced in December 2022 that it would expand its Catlett operations with a new 33,000± square foot building that will generate 16 new engineering and manufacturing jobs.

- **Silver Branch Brewing**, a Maryland-based brewery, announced in June, 2023 that it would open a location in Fauquier County, adding 38 new jobs. The expansion will be the second location for the brewery. Silver Branch is taking over the Warrenton location of the former Wort Hog Brewing Co., which closed in early-2022. The brewery will have 18 to 24 rotating taps at each location. The Warrenton location will add between 750 to 1,000 barrels of capacity. The facility is expected to open in the fall of 2023.

- **Piedmont Urgent Care** announced in September 2021 that it would build a single-story, 7,540± square foot urgent care facility and pharmacy on the corner of Blackwell Road and Walker Drive in Warrenton. The facility has since opened.

- **Oak View National Bank** announced in May 2021 that it would build a 7,000± square foot building on a vacant lot on Waterloo Street, near its current headquarters on Broadview Avenue in Warrenton. The new Warrenton facility will feature a drive thru. Construction was completed in 2022.

- **Lord Fairfax Community College**. Construction was completed in June 2022 on a new science and technology building on the Fauquier campus of Lord Fairfax Community College to be called Eleanor C. and William A. Hazel Hall. The two-story, 40,000± square foot building houses a nursing skills lab, science labs, engineering and fabrication labs, classrooms, a board room, faculty offices, study spaces and a lounge and a conference center with banquet seating for 275 people. The college also has plans currently under review to construct a single-story, 8,130± square foot trades lab building. The new building will allow the college to offer trades classes for the first time on the Fauquier Campus, including a new carpentry program. Other programs planned for the new building include electrical, HVAC, plumbing and heavy equipment operator.

- **Catlett Data Center Park**. This is a proposal to construct two data centers of 1.4 million square feet at Route 28 and Gaskins Lane.

- **Royal Farms**. Construction was completed in 2022 on new Royal Farms at the southwest corner of Routes 17 and 29 at Opal. The development includes a 4,650± square foot convenience store and 14 fuel pumps. Future development of the remaining 2.1 acres calls for an unspecified 3,160± square foot fast-food restaurant, which would share the same entrance with Royal Farms.

- **Hilton Home2 Suites at Mintbrook**. This is proposed four-story, 90- to 100-room hotel planned for a site within the Mintbrook development in Bealeton. The proposal is currently under review.

- **Puller Veterans Care Center**. Construction was completed in March 2022 on this long-term care center at Vint Hill for military veterans at Vint Hill Road and MacIntosh Drive in eastern Fauquier. The 145,000± square foot, 128-bed facility has eight, 16-bed "houses" flanking the "community center." Each resident has a private room and bathroom. The center has a large dining area, but each house also has a kitchen for smaller meal gatherings, including those with family members. The facility employs approximately 220 people.

- **Lock-It-Up Self Storage**. Plans were submitted in mid-2022 to construct a self-service storage facility, to include storage units and an office, at 10526 Global Way in Bealeton. The facility will consist of six self-storage buildings, totaling 65,750± square feet. The individual storage buildings range from 4,400± square feet to 21,750± square feet. Approximately 1,050± square feet within one of the buildings will be dedicated for office space for the facility.

- **Wexford Village**. Plans were submitted in mid-2022 for commercial development on the west side of Marsh Road across from Village Center Drive in Bealeton. Plans call for a car wash as well as a total of 90,000± square feet of warehouse/self-storage facility use.

- **The Bank of Clarke County** opened a new branch at 530 Blackwell Road in Warrenton in July 2022.

- **17/66 Industrial Park Lot 8**. Plans were submitted in mid-2022 for the construction of a 104,700± square foot warehouse building along Whitting Road between the Norfolk Southern Railroad and Brampton Court. The proposal is still under review.

- **Vint Hill Independent /Assisted Living**. This is a proposal for a retirement community to be built near the intersection of Rogues Road and Farm Station Road in the Vint Hill area. The facility, which is currently under review, is proposed for 90 apartment units.

- **Amazon Web Services** announced in June 2022 that it would build a 220,200± square foot data center in Warrenton, at the intersection of Blackwell Road and Lee Highway. The Warrenton Town Council approved a special use permit for the project in February 2023. The facility is expected to employ approximately 52 people.

It is difficult to quantify the level of future job growth in Fauquier County, as many employers are small and therefore their expansion plans are not tracked by local or state economic development agencies. Economic development officials note that many local employers have vacant positions that they are struggling to fill, partially due to housing availability for prospective employees.

In addition is a significant level of future job growth in neighboring Prince William County. Data in Table 3 and Table 5 above show that Fauquier County is the location of a considerable number of commuters, and thus the local housing market is greatly impacted by job growth elsewhere in Northern Virginia.

Research from S. Patz & Associates has identified at least 3,500 new jobs that have been publicly announced over the next few years within neighboring Prince William County. This total likely undercounts the level of future job growth as many expansions are smaller in scale and not publicly reported. Many of these jobs are in the western portion of Prince William County and near Fauquier County. In addition are several million square feet within multiple data centers that are planned and under construction in this part of the county that will generate new, high-paid jobs.

Demographic Trends and Projections

Demographic trends for Fauquier County, which include the Town of Warrenton, as well as the adjacent areas of western Prince William County, are presented in Table 7. The Prince William County portion of the market area includes the community of Gainesville and the Town of Haymarket. This portion of Prince William County was included in the market area based on interviews with area apartment managers who note a very limited supply of upscale apartment units in Warrenton, with Warrenton likely to compete with the greater Gainesville/ Haymarket area for the upscale rental market.

The market area's population, as of 2022, is estimated to total 203,890±, based on calculations from the Weldon Cooper Center for Public Service and derived from the most recent 2020 U.S. Census count. For Fauquier County, the 2022 population total of 73,540± exceeds the 2010 census count by 8,340±, or an annual population growth rate of nearly 700. This means that population growth in the County for the 2010 decade is below the rate of the 2000 decade, when the population increased by an annual average of approximately 1,000 people. The Prince William County portion of the market area had a significant increase in population since 2010, with the population expanding by over 28,000. This was a slower pace of population growth compared to the 2000s.

The slower level population growth that has occurred in Fauquier County and western Prince William County since 2010 is due to a lack of new housing development and readily available land for the development of new homes. Modest employment growth in Fauquier County is a second factor. The analysis to follow shows only a limited number of new and proposed apartment communities in the market area at this time. Based on population trends, planned housing developments and some job growth, the market area population is projected to reach 219,280± by 2027.

The target market for the new apartment units at Warrenton Village is renter households earning incomes of $66,000 and above, when incomes are reported in constant 2023 dollars.

Households in this income category can afford net rents of $1,650 and above, based on 30 percent of income allocated toward net rents.

As of 2022, the market area has approximately 8,780 renter households in the target income category. This total is 2,640± more than in 2010, with much of this growth supported almost by renters in scattered rental units within for-sale subdivisions. As will be shown below, the market area has very few "upscale" apartment communities, and most are now mature. Trend data and future employment growth support a continued net increase in renters within this income category, with an expectation to reach 9,880± target renter households by 2027, the forecast date of this report. This represents an increase of 1,100± households.

Table 7: Trends and Projections of Population and Households, Warrenton Village Market Area, 1990-2027
(Constant 2023 dollars)

	1990	2000	2010	2022	2027
Market Area Population	69,950	93,140	166,960	203,890	219,280
Fauquier County	48,740	55,140	65,200	73,540	--
Prince William County Portion 3/	21,210	38,000	101,760	130,350	--
Group Quarters Population	1,470	770 1/	750	1,150	1,150
Household Population	68,480	92,370	166,210	202,740	218,130
Persons Per Household	2.84	2.74	2.91	2.90	2.89
Total Households	24,140	33,770	57,040	71,630	75,480
Renter Households	7,100	8,740	13,240	18,160	20,210
Percent Renter Households	29.4%	25.9%	23.2%	25.4%	26.7%
Target Market ($66,000+)					
Total Households	3,070	3,960	6,140	8,780	9,880
Percent of Renter Households	43.2%	45.3%	46.4%	48.3%	48.9%

Notes: 1/ Decline due to closure of Vint Hill Station in 1997, a U.S. Army and NSA signals intelligence and electronic warfare facility.
2/ Growth driven by opening of White Springs Senior Living, Poet's Walk Warrenton, The Villa at Suffield Meadows, and Puller Veterans Station.
3/ Includes the following U.S. Census tracts in Prince William County, VA: 9014.03, 9014.07, 9014.08, 9014.09, 9014.10, 9014.11, 9014.12, 9014.13, 9014.14, 9014.15, 9014.16, 9014.17, 9015.03, 9015.04, 9015.05, 9015.06, 9015.07, 9015.08, 9015.09, 9015.10 and 9015.11.

Source: U.S. Census Bureau; Weldon Cooper Center for Public Service; S. Patz & Associates, Inc.

It should be noted that the demographic trends and projections detailed in Table 7 include the Town of Warrenton. Demographic trends and projections are analyzed for the entire market area, which is comprised of Fauquier County (including Warrenton), as well as the adjacent areas of Gainesville and Haymarket in Prince William County. The market area is the geographic area from which the majority of future tenants at Warrenton Village are expected to originate from and where the competitive rental housing alternatives are located. An analysis of demographic trends and projections of only the Town of Warrenton would understate the market for future renters.

Data in Table 8 show the demographic trends and projections within the Town of Warrenton for comparison purposes. The projections shown are opportunity projections, as they rely on the ability of the Warrenton Village proposal to be built and occupied. Absent this proposal, the projected population in the Town would be reduced.

The data show modest growth among target income households prior to 2022, which is principally due to a lack of new apartment unit development targeting the upscale market. A comparison to the data in Table 7 shows that most target income households have resorted to renting outside of the Town of Warrenton.

Table 8: Trends and Projections of Population and Households, Town of Warrenton, Virginia, 1990-2027
(Constant 2023 dollars)

	1990	2000	2010	2022	2027
Town of Warrenton Population	4,830	6,670	9,610	10,200	10,850
Group Quarters Population	270	410	340	340	340
Household Population	4,560	6,260	9,270	9,860	10,510
Persons Per Household	2.34	2.34	2.48	2.48	2.47
Total Households	1,950	2,680	3,740	3,980	4,260
Renter Households	920	1,140	1,510	1,570	1,950
Percent Renter Households	47.1%	42.3%	40.3%	39.5%	45.8%
Target Market ($66,000+)					
Total Households	460	440	590	630	1,030
Percent of Renter Households	50.0%	38.6%	38.9%	40.1%	52.8%

Source: U.S. Census Bureau; S. Patz & Associates, Inc.

The key point in Table 8 is that the Town of Warrenton has historically had a small number of renter households, particularly in the targeted income range under study. This is a supply, rather than a demand issue, as the shortage of quality rental housing has pushed prospective renters outside of the Town and in many cases outside of Fauquier County. The construction of a new and attractive rental community, of the type proposed for Warrenton Village, provides an opportunity to reverse these past trends. Again, it should be noted that while Warrenton Village will clearly impact the Town of Warrenton the most, it is likely to attract renters from outside of the Town as well.

Section II: Apartment Market Analysis

This part of the report studies the depth of the greater Warrenton area "better" apartment market. The analysis is intended to determine market support for the apartment units proposed at Warrenton Village. As will be shown, there are no upscale, professionally managed market rate apartment properties in Fauquier County.

In addition to the analysis of the current apartment market, the last subsection of Section II studies the apartment unit pipeline in the market area. These apartment properties are studied for development status, project size and comparison with the Warrenton Village proposal.

Characteristics of the Current Apartment Market

Competitive Apartment Market

The existing professionally managed apartment market in the greater Warrenton area is small, with nearly all professionally managed apartment buildings having income- or age-restrictions in place. Thus, most apartment communities in the Warrenton area and elsewhere in Fauquier County serve a separate population compared to the Warrenton Village proposal. The small number of market rate apartment units in the area are mature, and not fully competitive with the upscale and fully-amenitized Warrenton Village proposal.

The existing market rate apartments in the greater Warrenton area include the 100-unit Aspen Apartments South, 24-unit Green Street Apartments and 24-unit Victoria Gardens Apartments. These are mature, modest rental properties that were built between the 1960s and 1980s and are routinely at full occupancy. They serve a more modest income market compared to the Warrenton Village proposal with lower, non-competitive rents. They therefore do not represent true competition for the Warrenton Village proposal.

The demographic analysis shown above in Table 7 identifies a considerable number of higher-income renter households in the market area, with over 40 percent of renters earning

annual incomes over $66,000. These renters almost entirely occupy scattered townhomes and single-family homes that were not initially built as rental properties, but are instead leased by private individuals, realtors and property management firms. Most are two- and three-bedroom units, with two-bedroom units renting between $1,600 and $2,100 and three-bedroom units primarily renting for over $2,000. Essentially all of these homes are occupied at this time. Data in Table 8 show that a small share of these households currently resides in the Town of Warrenton, with the small percentage due to the persistent limited supply of upscale rental housing.

The closest upscale apartment cluster to Warrenton is the greater Gainesville/ Haymarket area of western Prince William County, which is an approximately 20-minute drive from Warrenton. Management at apartment properties in this area note that they partially compete with the Warrenton market given the severely limited supply of "better" apartments there. There are only three "somewhat" upscale apartments in this part of western Prince William County, as detailed in Table 9 below.

All are now becoming somewhat mature, with two properties—Somerhill Farms and Marque Apartments—now 17 years old, and one property—Somerset Pointe—over 20 years old. Marque Apartments generates one-bedroom rents of between $2,205 and $2,215. Two-bedroom rents at Somerhill Farms and Marque Apartments exceed $2,200. Somerset Pointe has more modest rents as this is an older apartment property. These rents have been readily accepted by the market as all three properties are at or near full occupancy.

The one-bedroom rents at Warrenton Village are proposed to be below the one-bedroom rooms at Marque Apartments and Somerhill Farms. The two-bedroom rents proposed for Warrenton Village will be approximately $200 below the two-bedroom rents at Marque Apartments and Somerhill Farms, on average. The proposed three-bedroom rents of between $2,400 and $3,000 are similar to the rents being generated at area scattered three-bedroom units, most of which offer no on-site amenities and require tenants to cover the costs of landscaping and snow removal. Most are now at least a decade old and with lesser levels of unit finishes and

features compared to the Warrenton Village proposal. The proposed three-bedroom rents are above the rents at Somerset Pointe, which is now over two decades old.

Table 9: Characteristics of Better Apartment Communities, Gainesville/Haymarket, VA, June 2022

	Year Built	Total Units	Vacant Units	One-Bedroom	Two-Bedroom	Three-Bedroom
Residences at Somerhill Farms 1/	2006	140	1	$1,893-$1,967	$2,262-$2,924	$2,398
Marque Apartments	2006	200	7	$2,205-$2,215	$2,214-$2,466	$2,963-$2,998
Somerset Pointe	2001	173	3	$1,517	$1,815	$2,088
Proposed Rents				**$1,650-$1,900**	**$2,200-$2,350**	**$2,400-$3,000**

Notes: 1/ Rent data only provided for vacant and soon-to-be vacant units.
Source: Field and Telephone Survey by S. Patz and Associates, Inc.

Shown next are photos of the above apartment properties. All are multi-level buildings, but none have contemporary designs, and none are as attractive as the Warrenton Village proposal.



Somerhill Farms



Marque Apartments



Somerset Pointe

The key point is that the Town of Warrenton does not currently offer any upscale, professionally managed apartment units that would be fully competitive with Warrenton Village. The same is true for other locations in Fauquier County. Western Prince William County does have a small number of more upscale apartment units, but these are now becoming mature and do not offer the same level of amenities and features as other newly built apartment properties in Northern Virginia.

Despite the lack of inventory, the market area does have a considerable number of higher-income renter households, with nearly half of these renters earning annual incomes above $66,000. This denotes that most of these renters are leasing scattered, non-amenitized townhomes and single-family homes. Many of these households can afford "better" apartment units but have few available options. Most of the newer scattered rental units are renting at similar rents to those proposed for Warrenton Village. There is clearly a market for upscale rental housing that is not being adequately served at this time.

Apartment Pipeline

There is currently only one apartment community in active planning in Fauquier County, and none under construction. Vint Hill Lofts is proposed for 183 apartment units to be built at

the former Vint Hill Farm Station Barrack at 4221 Sigler Road and 4285 Bludau Drive. The community will contain a mix of 29 studio, 128 one-bedroom and 26 two-bedroom apartment units. Studio rents will start at $1,175, one-bedroom rents will start at $1,550 and two-bedroom rents will start at $2,050. Rents will include water, sewage, trash and basic high-speed internet. All units will be equipped with a washer and dryer. The developers, Echelon Resources, have not yet secured all County approvals.

Apartment Market Summary and Demand Analysis

At this time, the rental market under study is fully occupied and a sizable pent-up demand exists due to job growth in Warrenton, elsewhere in Fauquier County and neighboring jurisdictions in Northern Virginia. Coupled with this job growth is the longstanding lack of upscale apartment unit development in the area. Area employers, many of which are actively filling open positions, report challenges with attracting new employees, which is partially a function of a very limited supply of apartments in the greater Warrenton area.

The Town of Warrenton and Fauquier County have not been the location of new market rate apartment unit development in several decades. This is despite the fact that the number of higher income renters has steadily increased in the area since 2000, denoting that many of these households have resorted to renting scattered, non-amenitized rental units within for-sale subdivisions. Western Prince William County has also not been the location of new apartment unit development, with the newest apartments now 17 years old. This is partially due to a lack of property zoned land for apartment unit development. The better apartment properties in this portion of Prince William County are typically fully occupied or with very few vacant apartment units.

Many protentional renters who are employed locally have resorted to renting outside of the market area due to the limited apartment unit supply, a trend that could be reversed if a new attractive apartment community were to be built in Warrenton. Additionally, commuters who may want to select Warrenton as an attractive location to relocate have limited options. Some

renters have also resorted to leasing less desirable units due to the extremely limited rental housing supply.

The net demand analysis is shown below based on the projection of new apartment units less vacant and pipeline proposals. From the 1,100± total apartment unit demand projection is subtracted 183 pipeline apartment units proposed for Vint Hill Lofts and the 376-unit Warrenton Village proposal. There are essentially no vacancies in the market area for comparable upscale rental units. The net demand analysis shows an underserved market, resulting in a surplus demand of 540± apartment units.

The 1,100 figure is an extrapolation from the analysis of demographic trends and projections, which begins on Page 27. This number represents the total growth in demand for the competitive apartment market area, distinct from the County itself. The boundaries of the market area are detailed in Table 8, which includes small portions of Prince William County.

Our demand projection is likely to "be in the ballpark," but it is difficult to make projections within a marketplace that has not added new market rate apartment units in several years. Nevertheless, the demand analysis is defined as positive.

Net Demand Analysis
(2022-2027)

	Total Units
Demand	1,100
Less:	
Pipeline Units	183
Warrenton Village	376
(Subtotal)	*(559)*
Surplus Demand	**541**

We are aware that the Warrenton Village proposal is large, but the analysis above clearly indicates a pent-up demand for new, upscale apartment units. The proposal offers a diversity of unit types, including three-bedroom townhomes attractive to families, and elevator-served apartment units that will likely attract young professionals and active seniors. The contemporary

design, expansive amenity package and walkability to area retailers, grocery stores and restaurants will set Warrenton Village apart from all of the existing apartments in Fauquier County and the greater Gainesville area. If built as proposed, Warrenton Village should be successful in terms of lease up and at the rents proposed.

Section III: Fiscal Impacts Analysis

This section of the report outlines the methodology and findings of the Fiscal Impacts Analysis (FIA) for the proposed residential development comprising Warrenton Village in the Town of Warrenton at build-out. The FIA compares the tax revenues expected from the proposal, as previously described, with the tax-supported costs the Town of Warrenton will incur to serve the project once it is fully developed. The net fiscal benefits will be the difference between those revenues and the various costs to the Town associated with new development. As noted above, the development plan involves constructing 376 rental units.

On-site fiscal impacts from Warrenton Village pertain to development on the site itself. Fiscal impacts generated off-site, due to the spin-off effects of resident and employee expenditures within the Town of Warrenton, are examined separately. For off-site impacts, economic impact assessments are undertaken to demonstrate how consumer expenditures will stimulate new business within the Town, based on new business receipts, employment, and employee earnings resulting from those expenditures.

Summary of Fiscal Impacts

Table 10 presents a summary of the revenues, costs and net fiscal benefits (revenue surplus or deficit) for the proposed 320 apartment, 36 two-over-two and 20 rental townhome units that are proposed for the Warrenton Village site and for the economic activity that would be generated in the Town of Warrenton by residents off-site.

The data in Table 10 show negative on-site impacts, which is primarily due to two factors. For one, the Town of Warrenton levies a low real estate tax rate of only $0.0401 per $100 of value. Thus, while Warrenton Village will likely be assessed at over $100 million, the taxable amount to the Town of Warrenton for the property would be relatively modest. Second, the largest revenue sources for the General Fund Budget are other local taxes. These include nine different local taxes, most of which do not generate on-site revenues. The majority of local tax revenues, for instance,

are generated by the Meals Tax, BPOL and Local Sales Taxes. As a consequence of the above two factors, a large share of total fiscal impacts will be generated by off-site economic activity.

In total, and at build-out, the full development and occupancy of the new rental units at Warrenton Village will generate a positive annual fiscal benefit of approximately $46,100, reported in constant 2023 dollars.

Table 10: Summary of On-Site and Off-Site Fiscal Impacts of Apartments, Warrenton Village at Build-Out, Warrenton, Virginia
(Constant 2023 Dollars)

Source of Fiscal Impacts on the Town	Impacts On-Site in Warrenton	Impacts Off-Site in Warrenton	Total Fiscal Impacts
Apartments (320 Units)			
Revenues to the Town	$117,560	$338,870	$456,430
Town Costs	-$280,280	-$145,920	-$426,200
Subtotal	*-$162,720*	*$192,950*	*$30,230*
Two-Over-Two (36 Units)			
Revenues to the Town	$14,550	$55,520	$70,070
Town Costs	-$42,740	-$23,490	-$66,230
Subtotal	*-$28,190*	*$32,030*	*$3,840*
Townhomes (20 Units)			
Revenues to the Town	$8,050	$41,150	$49,200
Town Costs	-$23,310	-$13,860	-$37,170
Subtotal	*-$15,260*	*$27,290*	*$12,030*
Total Residential (376 units)			
Revenues to the Town	$140,160	$435,540	$575,700
Town Costs	-$346,330	-$183,270	-$529,600
Net Fiscal Benefits	**-$206,170**	**$252,270**	**$46,100**

Source: Town of Warrenton, VA; S. Patz & Associates, Inc.

In addition to the on-site fiscal impacts, the economic impacts off-site in the Town of Warrenton from new resident expenditures would generate additional tax revenue. Based on anticipated household incomes, resident expenditures could equal approximately $26.4 million annually at businesses in the Town, with another $52.3 million in business expenditures to be generated by the "ripple effect" of resident expenditures across the local economy. This would generate a total of over $78.6 million in business activity in the Town.

The off-site expenditures will generate new jobs. These would be added region-wide and not just in the Town of Warrenton. Annual earnings from these new jobs would provide additional fiscal impacts across the region. These calculations were reduced by 30 percent to account for consumer expenditures outside of the Town, particularly elsewhere in Fauquier County and in neighboring communities such as Prince William County. Thus, the off-site calculations capture expenditures only within Warrenton.

The following analysis presents the derivation of the fiscal impacts to be derived from the development at the Warrenton Village site. These impacts include the net fiscal benefits of the proposed rental units, being the difference between tax revenue generated for the Town of Warrenton and the costs of public services to serve residents of the new development. As stated above, economic impacts include new business revenue, employees, and employee earnings that would accrue in the Town as a result of resident expenditures in the Town annually.

On-Site Fiscal Impacts: From New Rental Units

The following analyses derive the revenues generated for the Town of Warrenton from Warrenton Village "on-site." "On-site" denotes revenues that are derived directly from real estate development and personal property taxes, while "off-site" impacts are generated from local business growth based on new resident expenditures. Off-site impacts will be treated separately as "economic impacts," although their fiscal benefits are also assessed. Data in the tables to follow are rounded off to the nearest ten dollars and represent annual amounts after build-out. All data are presented in constant 2023 dollars.

Table 11 summarizes the various revenues to accrue to the Town of Warrenton from the development and lease-up of the 376 rental units to be built at the study site. Real Estate taxes would account for nearly 38 percent of the revenue to be generated on-site. Personal Property and Consumer Utility taxes would account for the remainder of the $140,160 in on-site tax revenue.

Table 11: Summary of Annual On-Site Revenues, Warrenton Village at Build-Out, Warrenton, Virginia
(Constant 2023 Dollars)

	Amount	Percent of Total
Apartments		
Real Estate Tax	$44,060	37.5%
Personal Property Tax	$13,980	11.9%
Consumer Utility Tax	$59,520	50.6%
Subtotal	*$117,560*	*100.0%*
Two-Over-Two		
Real Estate Tax	$5,530	38.0%
Personal Property Tax	$2,300	15.8%
Consumer Utility Tax	$6,720	46.2%
Subtotal	*$14,550*	*100.0%*
Townhomes		
Real Estate Tax	$3,150	39.1%
Personal Property Tax	$1,250	15.5%
Consumer Utility Tax	$3,650	45.3%
Subtotal	*$8,050*	*100.0%*
Total		
Real Estate Tax	$52,740	37.6%
Personal Property Tax	$17,530	12.5%
Consumer Utility Tax	$69,890	49.9%
Total Revenue	**$140,160**	**100.0%**

Source: Town of Warrenton; S. Patz & Associates, Inc.

Each revenue source will be explained in the paragraphs to follow. A separate section of the report will address the costs of services and facilities that the Town of Warrenton must provide to serve the future development.

Real Estate Tax

Development costs for Warrenton Village are detailed in Table 12. Total development costs are expected to be approximately $343,277 per apartment unit, $383,277 per two-over-two and $393,277 per townhome unit, including site preparation and land acquisition costs. These costs are based on data provided by the sponsor and are consistent with developments costs for other new, upscale rental communities in this part of Virginia. The total property development cost is approximately $131.5 million. At the Town's real estate tax rate of $0.0401 per $100 of

assessed value, real estate taxes would total $52,740 each year after buildout, in constant 2023 dollars.

Table 12: Real Estate Tax, Warrenton Village at Build-Out, Warrenton, Virginia
(Constant 2023 dollars)

	Apartments	Two-Over-Two	Townhomes	Total
Cost/Price per Unit	$343,277	$383,277	$393,277	$349,852
Number of Units	320	36	20	376
Total Cost	$109,880,640	$13,797,972	$7,865,540	$131,544,152
Tax Rate	$0.0401/$100	$0.0401/$100	$0.0401/$100	$0.0401/$100
Real Estate Tax	**$44,060**	**$5,530**	**$3,150**	**$52,740**

Source: Town of Warrenton, VA; S. Patz & Associates, Inc.

Personal Property Tax

Personal property taxes for residences in Virginia are based on the depreciated values of vehicles used solely for residential purposes. Residents at Warrenton Village are projected to own approximately 575 vehicles, based on an estimated 1.53 vehicles per apartment unit and 2.00 per two-over two and townhome units at the community. This is in line with the average car ownership rate in the Town of Warrenton.

Residents of Warrenton are required to pay a flat fee of $25 per vehicle, as well as a personal property tax on vehicles at a rate of $1.00 per $100 in assessed value. The Town exempts the personal property tax on vehicles valued at less than $20,000 and exempts the tax on the first $20,000 of value for those that are worth more. To be conservative, only 15 percent of vehicles are estimated to be valued above $20,000. At this value, the total on-site personal property value for residents would come to approximately $298,000. At the tax rate of $1.00 per $100 of assessed value, on-site personal property taxes would be $2,980 annually in constant 2023 dollars. Added to this total is a flat fee of $25 per vehicle, which adds an additional revenue of $14,550 for a total revenue of $17,530. This is shown in Table 13.

Table 13: Personal Property Taxes, Warrenton Village at Build-Out, Warrenton, Virginia
(Constant 2023 Dollars)

	Apartments	Two-Over-Two	Townhomes	Total
Number of Units	320	36	20	376
Percent Occupied	97.0%	97.0%	97.0%	97.0%
Occupied Units	310	35	19	364
Vehicles per Unit	1.53	2.00	2.00	1.60
Number of Vehicles	474	70	38	582
Number of Vehicles above $20,000 (15%)	71	11	6	88
Depreciated Value Per Vehicle (Above $20,000)	$3,000	$5,000	$5,000	$3,350
Total Depreciated Value	$213,000	$55,000	$30,000	$298,000
Tax at $1.00/$100	**$2,130**	**$550**	**$300**	**$2,980**
+$25/Vehicle	**$11,850**	**$1,750**	**$950**	**$14,550**
Total Tax	**$13,980**	**$2,300**	**$1,250**	**$17,530**

Source: Town of Warrenton; S. Patz & Associates, Inc.

Consumer Utility Tax

Consumer utility taxes are taxes on expenditures on consumer utilities including electricity, natural gas and telephone utilities. These taxes are collected by the utility companies and remitted to the Town. While the tax rates for the different utilities vary, experience has shown that the average tax is about $4.00 per utility, per month. This analysis assumes an occupancy rate of 97 percent to allow for lease-up and normal turnover. At this rate, there would be 364 occupied rental units. For four utilities per household, averaging $4.00 per utility per month for 12 months, the total utility tax for Warrenton Village would be $69,890 annually. This is shown in Table 14.

Table 14: Consumer Utility Taxes, Warrenton Village at Build-Out, Warrenton, Virginia
(Constant 2023 Dollars)

	Apartments	Two-Over-Two	Townhomes	Total
Number of Units	320	36	20	376
Percent Occupied	97.0%	97.0%	97.0%	97.0%
Occupied Units	310	35	19	364
Utilities Per Unit	4	4	4	4
Each Utility Average	$4.00	$4.00	$4.00	$4.00
Number of Months	12	12	12	12
Total Utility Tax	**$59,520**	**$6,720**	**$3,650**	**$69,890**

Source: Town of Warrenton; S. Patz & Associates, Inc.

On-Site Fiscal Impacts: Town Costs to Serve Warrenton Village

The focus of the on-site fiscal impacts of costs to the Town of Warrenton from Warrenton Village is the General Fund Budget expenditures expressed on a per capita basis. Per capita expenditures are allocated (by type) to residents and businesses (in terms of numbers of employees) on a proportional basis according to utilization by each type of persons. These costs cover both other operations for services and capital improvements in the form of annual debt service to support the capital improvements programs of the Town. There are no impacts on schools, as public schools are funded by county, state and federal sources.

Budget expenditures will be discussed below, and per capita costs will be calculated based on current types of users. Applying these costs per capita to the residents of Warrenton Village produces an estimate of the annual costs to the Town for services to the proposed new apartment units.

For the Town's adopted FY 2023 budget, approximately 67.8 percent of all General Fund expenditures are supported by local taxes, the remainder being revenues from the state and federal governments. An examination of budgeted revenues for the year will demonstrate this proportion. The fiscal impact costs are based on General Fund expenditures supported by local taxes.

Table 15: General Fund Revenue by Type from Local Taxes, Town of Warrenton, Virginia

	Amount	Percent of Total
General Property Taxes	$1,449,235	8.8%
Other Local Taxes	$9,675,138	58.9%
Subtotal Local Taxes	*$11,124,373*	*67.8%*
Non-Tax Revenue	$5,288,712	32.2%
Total General Fund Revenue	**$16,413,085**	**100.0%**

Source: Adopted FY 2023 Budget for the Town of Warrenton

When the expenditures for each type of user are determined, and the tax-supported proportions are calculated, these costs are divided by the number of persons by type. The population of the Town of Warrenton is estimated to total 10,330± as of 2023, based on recent census data. Regarding jobs in the Town, data from the U.S. Bureau of Labor Statistics (BLS) only track the number of at-place jobs at the county-wide level and not the town level. This is the standard source of employment data for analyses of this type. Data from the Fauquier County Department of Economic Development show that approximately 14,000 people are employed within the Town limits. This is nearly 70 percent of total employment in Fauquier County.

When the expenditures for each type of user are determined, and the tax-supported proportions are calculated, these costs are divided by the number of persons by type. For residents, this is calculated at $558 per person, while it stands at $388 per employee for businesses. The disparity is due to approximately $2.61 million allocated to the Town's Parks and Recreation department.

The budget total for the Town for FY 2023, is $16.41 million, with 42.5 percent of that cost for the Town's population and 57.5 percent for employment, or persons with jobs in the Town.

Table 16: Allocation of General Fund Expenditures by Type for Residents (Population) and Businesses (Employees), Town of Warrenton, Virginia
(Constant 2023 dollars)

	Adopted FY 2023 Population	Adopted FY 2023 Employment	Adopted FY 2023 Total
General Gov't Admin.	$915,956	$1,241,372	$2,157,328
Public Safety	$1,806,918	$2,448,872	$4,255,790
Public Works	$1,939,681	$2,628,802	$4,568,483
Parks, Rec. & Culture	$2,608,455	$0	$2,608,455
Community Development	$571,657	$774,754	$1,346,411
Contributions	$29,022	$39,332	$68,354
Non-departmental	$149,726	$202,919	$352,645
Dept Service	$358,785	$492,341	$855,618
Transfer to Capital	$84,916	$115,084	$200,000
Total General Fund Expenditures	**$8,465,114**	**$7,943,477**	**$16,413,084**
Percent Tax Support	67.78%	67.78%	67.78%
Tax-supported Expenditures	$5,737,440	$5,383,888	$11,124,372
Number of Persons	10,330	14,000	24,330
Per Capita Tax Support	$555	$385	$457

Sources: FY 2023 Adopted Budget for Town of Warrenton, VA; U.S. Census Bureau, Fauquier County Department of Economic Development;

Tax-Supported Costs of Warrenton Village

As explained above, costs to the Town to serve Warrenton Village are derived by multiplying the per capita costs of residents and employees by the numbers of those persons. These are tax-supported costs, to be compared to the taxes generated by Warrenton Village. The costs will cover costs of facilities in terms of debt service for capital improvements.

There is expected to be about 624 residents at Warrenton Village at build out, at a ratio of 1.3 people for one-bedroom units, 1.8 people for two-bedroom units and 2.2 persons for three-bedroom units. These data are based on current demographic trends at the existing newly built apartment complexes in the market area. Data were derived from interviews with on-site property managers in the region.

It was shown above in Table 16 that the average tax-supported cost for residents in the Town is $555 per resident. For the residents of Warrenton Village, total tax-supported costs to the

Town of Warrenton would be approximately $346,330. This calculation is presented in Table 17 below.

Table 17: Tax Supported Costs for Residents, Warrenton Village, at Build-Out, Warrenton, Virginia
(Constant 2023 Dollars)

	Apartments	Two-Over-Two	Townhomes	Total
Number of Units	320	36	20	376
Percent Occupied	97.0%	97.0%	97.0%	97.0%
Occupied Units	310	35	19	364
Persons per Unit	1.63	2.20	2.20	1.71
Residents	505	77	42	624
Expenditure Per Capita	$555	$555	$555	$555
Population Expenditures	**$280,280**	**$42,740**	**$23,310**	**$346,330**

Source: Town of Warrenton; S. Patz & Associates, Inc.

On-Site Fiscal Impacts

Data in Table 18 below compares the calculated on-site tax revenues expected from Warrenton Village at build-out with the tax-supported costs required to serve the residents of the new rental units to be built. The annual net fiscal benefit will be a deficit of $206,170, in constant 2023 dollars.

Table 18: Net On-Site Fiscal Tax Benefit, Warrenton Village, at Build-Out, Warrenton, Virginia
(Constant 2023 dollars)

	Apartments	Two-Over-Two	Townhomes	Total
Total Tax Revenue	$117,560	$14,550	$8,050	$140,160
Population Expenditures	-$280,280	-$42,740	-$23,310	-$346,330
Net Fiscal Benefit	**-$162,720**	**-$28,190**	**-$15,260**	**-$206,170**

Source: Town of Warrenton; S. Patz & Associates, Inc.

Off-Site Impacts: Economic and Fiscal

In addition to the revenues and costs that accrue to the Town of Warrenton from the apartments "on-site" – that is, due to the apartments and residents themselves in their dwellings, there are also off-site impacts that occur, as residents spend part of their income in the Town for consumer goods, and as businesses re-spend the income from purchases by residents by the

purchase of goods and services from other vendors in the Town. Calculations to follow are reduced by 30 percent to account for expenditure that occurs to businesses outside of the Town. This ratio is based on the number of employees in the Town relative to the County. This is a conservative estimate.

The U.S. Bureau of Labor Statistics details average consumer expenditure by location and income levels. There is no direct budget information for Fauquier County or the Town of Warrenton. Instead, national data for a budget for household incomes, based on national averages, has been chosen for this calculation. Among the larger expenditures by consumers are over 20± percent for housing and over 25± percent for retail trade, including automobiles.

Consumer expenditures made off-site in Warrenton are translated into economic impacts in the Town using multiplier matrices provided for the local area by the U.S. Bureau of Economic Analysis, Department of Commerce. These multipliers capture the round-by-round flows of expenditures in the Town initiated by residents at the new homes. There are separate matrices for business receipts, employment and employee earnings. The items in the consumer budget are multiplied in turn by these expenditure-specific categories in each matrix and summed to give the "ripple effect" of circulation of money through the economy. The ripple effects, plus the original consumer expenditures, equal the total economic impacts of homes residents on the Town economy.

Business Receipts

Residents of Warrenton Village are anticipated to allocate approximately 78.9 percent of their total income towards non-housing expenditures. The residual income is predominantly apportioned towards taxes and personal savings. The income estimates of future tenants are deduced from the proposed rents outlined in Table 1, with an assumption that a typical household will have an income that is approximately 15.0 percent higher than the minimum required to qualify for residency in the community. This requirement stipulates that a minimum of 30 percent of income be allocated towards net rent. This income range is conservative and is

representative of the anticipated typical renter demographic within the community, as the majority are expected to earn above the established minimum threshold.

Overall, this equates to $26.4 million in annual consumer expenditures from the expected residents at full build-out. The ripple, or multiplier effect, will generate another $52.3 million in annual receipts among Town businesses, for a total business receipts impact of $78.6 million. These business receipts will form the basis for many tax receipts for the Town of Warrenton from the impacted businesses.

Source of Impact	Apartments	Two-Over-Two	Townhomes	Total
Direct Consumer Expenditures	$20,324,220	$3,268,300	$2,753,100	$26,345,620
Indirect Ripple Effect	$41,637,240	$6,695,610	$3,948,100	$52,280,950
Total Business Receipts	**$61,961,460**	**$9,963,910**	**$6,701,200**	**$78,626,570**

Employment and Earnings

Since there are only a few employees on-site for the apartment units, essentially all employment and employee earnings impacts come from the ripple or multiplier effects on businesses, i.e., employee earnings that support increased business receipts in the Town. There will be approximately 476 new full-time equivalent employment positions created from resident expenditures at Warrenton Village, over time, with total earnings for these employees of $21.5 million.

Spinoff Employment and Salaries			
	Employees	Average Salary	Total Earnings
Apartments	379	$45,185	$17,125,115
Two-Over-Two	61	$45,183	$2,756,163
Townhomes	36	$45,450	$1,636,200
Total/ Average	**476**	**$45,273**	**$21,517,478**

The new jobs to be created by the construction of Warrenton Village would not only enhance Warrenton's economic vitality but also diversify the employment base. The creation of these new jobs will span various sectors, reflecting the broad impact of the proposed

development. It is important to underscore that this job growth will have a multiplier effect, stimulating other sectors of the local economy indirectly. The new jobs, along with the associated attraction of new residents and increased patronage of local businesses, would significantly contribute to attracting further investment from potential employers.

Furthermore, the proposed development aligns with Warrenton's comprehensive plan which envisions the Town as a hub for culture, entertainment, and the arts. The design elements of the project are formulated to enrich the Town's cultural fabric, including providing a diversity of home types. As such, the merits of this development extend beyond immediate economic advantages and aim to cultivate a long-term vision for Warrenton.

Off-Site Fiscal Impact

Table 19 summarizes the revenues and costs to the Town of Warrenton from the off-site impacts of Warrenton Village. These impacts derive primarily from the $78.6 million in new business receipts in the Town, plus estimates of real property and business personal property for a typical commercial operation. It is proper to look at these impacts as long-term. That is, it is not likely that the projected 476 new employees will be immediate or lead to abrupt expansion of the property tax base, but this should happen over time as part of business expansion in the Town.

Other tax receipts should accrue as soon as consumers at Warrenton Village begin making expenditures, that is, as soon as the property is built out and stabilized occupancies are achieved. In the short run, revenues should start at approximately $65,330 rising to $435,540 as businesses expand physically. Costs are based on 476 new employees within the Town at a cost to the Town of $385 per employee, as derived above in Table 16. With costs of $183,270, the net fiscal benefits from off-site expenditures from Warrenton Village residents should be approximately $252,270.

Table 19: Off-Site Fiscal Impact of Consumer Expenditures by Type, Residents of Warrenton Village, at Build-Out, Warrenton, Virginia
(Constant 2023 dollars)

	Apartments	Two-Over-Two	Townhomes	Total
Annual Revenues for the Town:				
Real Estate Tax	$12,150	$1,950	$1,640	$15,740
Business Property Tax	$37,870	$6,090	$5,100	$49,060
Cigarette Tax	$2,190	$350	$210	$2,750
Machinery and Tools Tax	$34,820	$5,600	$4,720	$45,140
Retail Sales Tax	$38,890	$6,250	$5,270	$50,410
BPOL Tax	$37,910	$6,100	$5,130	$49,140
Transient Occupancy Tax	$24,880	$4,000	$3,370	$32,250
Utility Tax	$13,040	$2,130	$1,290	$16,460
Bank Franchise Tax	$10,950	$2,760	$1,640	$15,350
Meals Tax	$105,680	$16,990	$10,020	$132,690
Motor Vehicle Licenses	$10,650	$1,720	$1,430	$13,800
Personal Property Tax	$9,840	$1,580	$1,330	$12,750
Total Revenue	**$338,870**	**$55,520**	**$41,150**	**$435,540**
Less Costs to the Town	**-$145,920**	**-$23,490**	**-$13,860**	**-$183,270**
Net Fiscal Benefit to the Town	**$192,950**	**$32,030**	**$27,290**	**$252,270**

Source: RIMS II Modeling System; U.S. Bureau of Economic Analysis; S. Patz & Associates, Inc.

Warrenton Village Conclusions

Table 20 shows a summary of net tax benefits for the proposed rental units at Warrenton Village. On-site benefits will produce a deficit of $206,170 due to the Town's low real estate tax rates. The off-site benefits will total $252,270, and therefore fully offset any on-site losses. Combined, this will generate a fiscal surplus of $46,100 annually at build-out for the Town of Warrenton.

Table 20: Summary of On-Site and Off-Site Fiscal Impacts of Apartments, Warrenton Village at Build-Out, Warrenton, Virginia
(Constant 2023 Dollars)

Source of Fiscal Impacts on the Town	Impacts On-Site in Warrenton	Impacts Off-Site in Warrenton	Total Fiscal Impacts
Apartments (320 Units)			
Revenues to the Town	$117,560	$338,870	$456,430
Town Costs	-$280,280	-$145,920	-$426,200
Subtotal	*-$162,720*	*$192,950*	*$30,230*
Two-Over-Two (36 Units)			
Revenues to the Town	$14,550	$55,520	$70,070
Town Costs	-$42,740	-$23,490	-$66,230
Subtotal	*-$28,190*	*$32,030*	*$3,840*
Townhomes (20 Units)			
Revenues to the Town	$8,050	$41,150	$49,200
Town Costs	-$23,310	-$13,860	-$37,170
Subtotal	*-$15,260*	*$27,290*	*$12,030*
Total Residential (376 units)			
Revenues to the Town	$140,160	$435,540	$575,700
Town Costs	-$346,330	-$183,270	-$529,600
Net Fiscal Benefits	**-$206,170**	**$252,270**	**$46,100**

Source: Town of Warrenton, VA; S. Patz & Associates, Inc.

EXPERIENCE WARRENTON VIRGINIA EST. 1810

Planning Commission Work Session
SUP 2022-04 Warrenton Village Center Mixed Use
March 19, 2024

PC Decision Deadline June 27,2024 Unless Applicant Defers

Special Use Permit Application

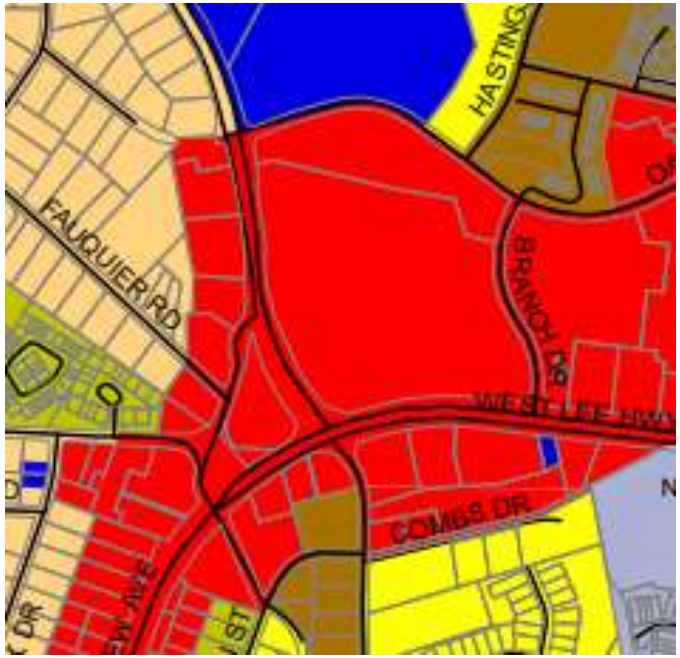
- **GPINs:** 6984-20-7247-000/6984-29-6753-000
- **Property Owner:** Warrenton Center LLC/Jefferson Associates LP
- **Representative:** Jess Achenbach, Castle Development Partners
- **Zoning: C** (Commercial)
- **Comprehensive Plan:** New Town Character District
- **SUP** to allow for mixed use development on approximately 29.05 Acres
- Maximum 386 Residential Dwellings
  - 320 Rental Apartments 1-3 BD
  - Approximately 36 2 over 2
  - Approximately 30 Townhomes
  - 10% Affordable Dwelling Unit

Location



Adjacent Land Uses

Zoning Map



Existing Commercial

Public/Semi Public School

Senior Care

Apartments

Zoning Districts

- R-15
- R-10
- R-6
- RT
- RMF
- RO
- PSP
- C

Future Land Use Map



Plan Warrenton 2040

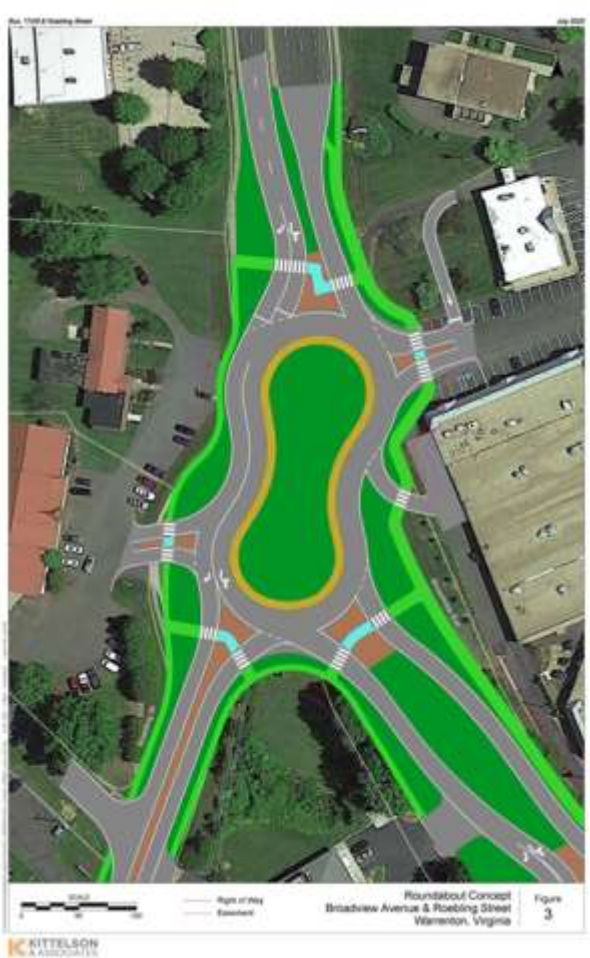
- Walkability Audit & Complete Streets
- 10 Guiding Principles
  - Discernible Center
  - Connected Sidewalks, Street Trees, Lighting
  - Buildings close to the street
  - Parking behind buildings
  - Variety of Dwelling Types
  - Park/Trail/Activity Center ½ mile radius
- Broadview = Gateway
- Lee Highway = Boulevard
- Oak Springs Drive/ Branch = Neighborhood



New Town Warrenton District

With large lots, direct access from Route 29, and high visibility, this district could be a location for a signature office/jobs center; with greater intensity of mixed use and strong live, work, and play options. A mix of uses could be organized around an internal street network and public amenities, such as civic spaces, parks, green space, and public gathering areas.

Smart Scale Projects







Proposal



Proposal Includes

- 320 Apartments 1-3 BD, 4 story parking garage
- 36 2 over 2 4 story, 1 car garage
- 30 Townhomes 3 Story, 2 car garage
- 10% Affordable Dwellings
- Central Plaza
- Dog Park
- Pedestrian Connectivity/Crosswalks
- Hastings Lane Extension

Elevations





Elevations





Agency Reviews

- Full site
- Transportation and Internal Circulation
- Parking
- Walkability/Bicycle/Grid Connections
- Landscaping/Signage
- Lighting
- VDOT Pipeline Study/Smart Scale
- Plan Warrenton 2040

Requested Modifications and Waivers

- Increase in maximum density
- Broadview Avenue Setbacks
- Side and Rear Yard Setbacks
- Decrease Buffers between Commercial and Residential Uses
- Building Heights; plus along Oak Springs and Broadview

NEWCASTLE
DEVELOPMENT GROUP

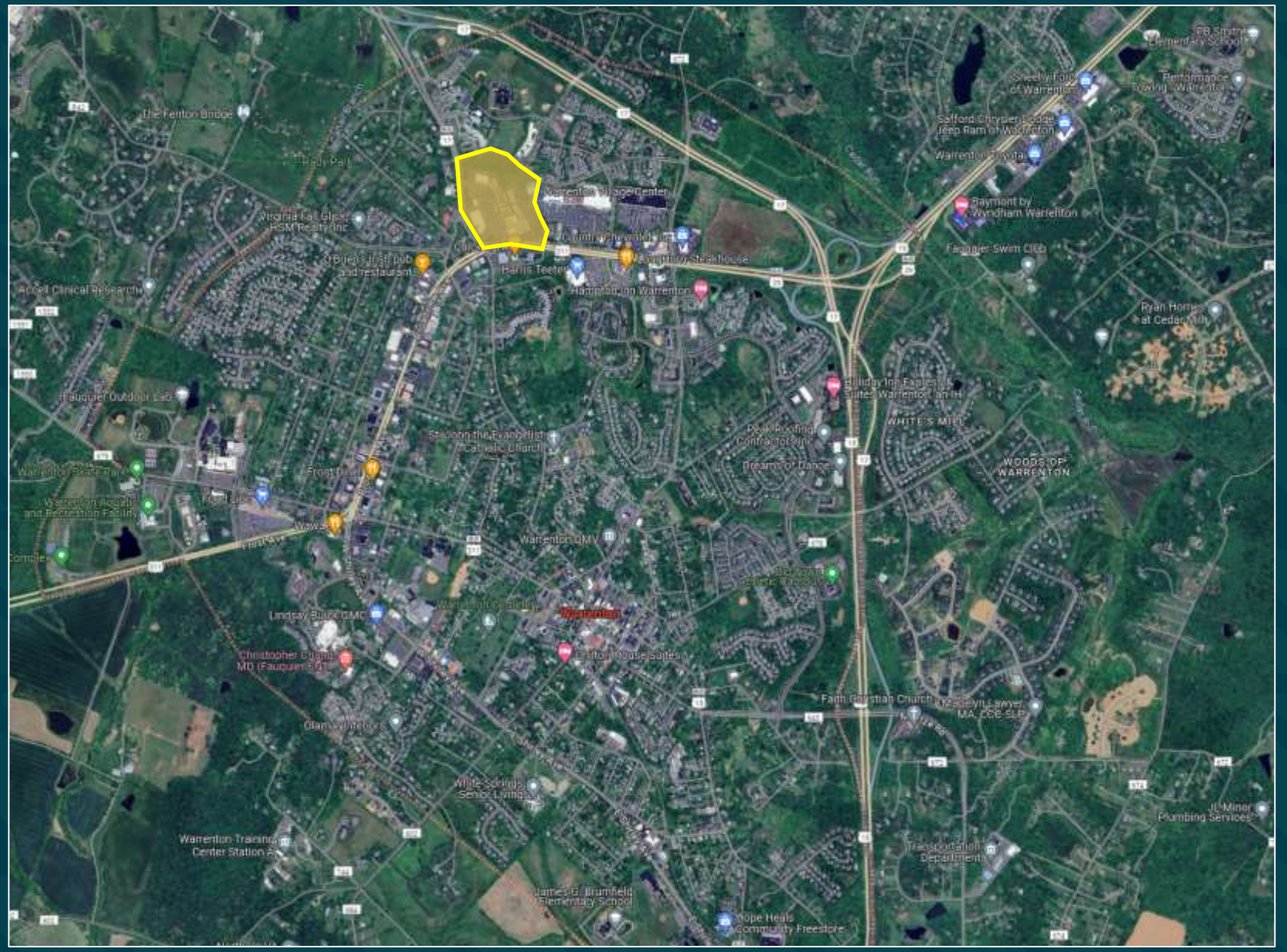
SPECIAL USE PERMIT #SUP 22-5

WARRENTON VILLAGE CENTER

PLANNING COMMISSION WORK SESSION
MARCH 19, 2024



LOCATION



Warrenton Village Center
Built in 1959

West Lee Hwy.
Warrenton, VA 20186

218,000 SF
Existing Commercial Space

~6.5 acres
Currently Vacant Land

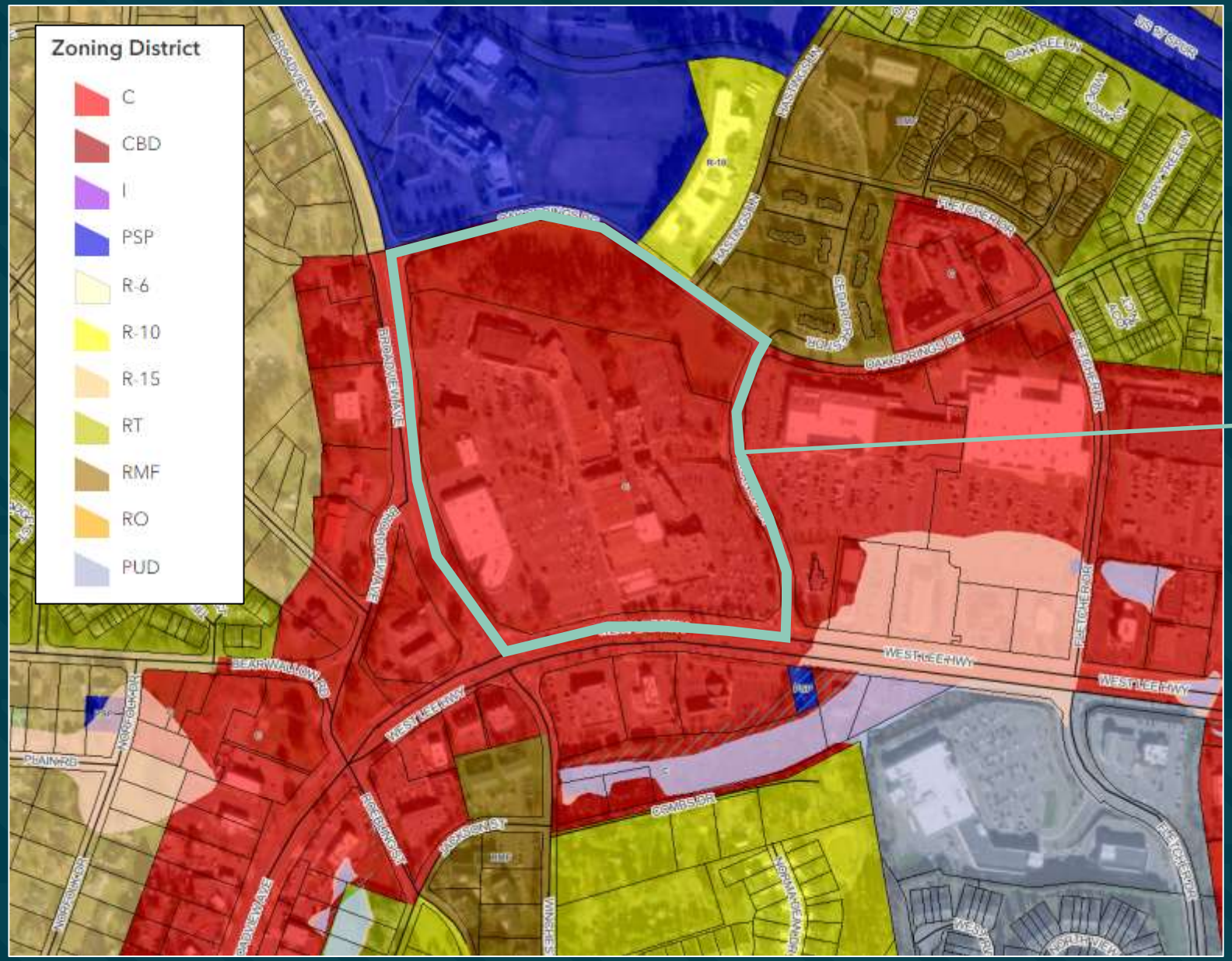
EXISTING CONDITIONS



Proposed Development Area

Existing Commercial Center

ZONING



Commercial (C)

COMPREHENSIVE PLAN

EXPERIENCE WARRENTON VIRGINIA

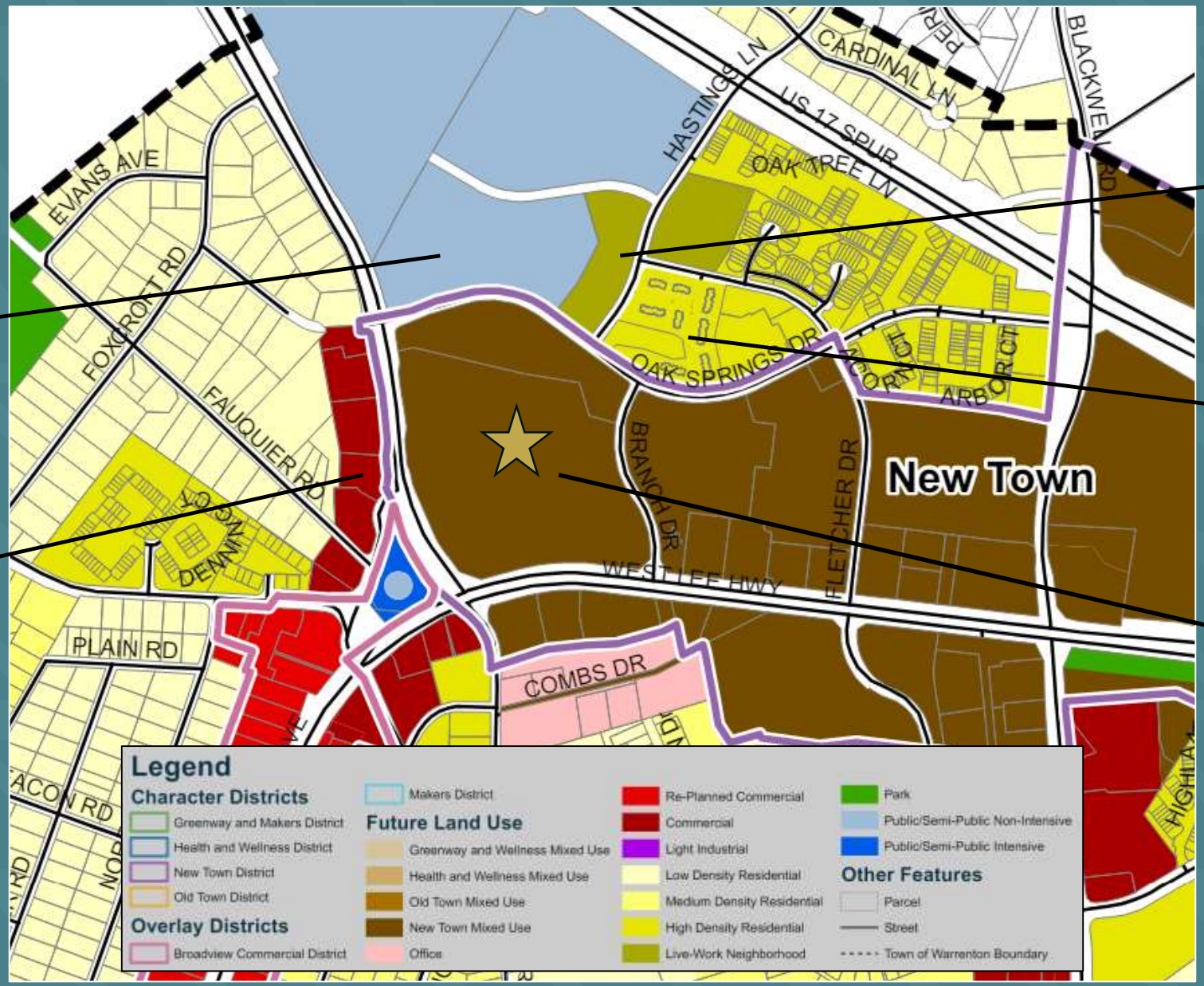
PLAN WARRENTON 2040



FUTURE LAND USE MAP

Public/Semi-Public Non-Intensive

Commercial



Live-Work Neighborhood

High Density Residential

New Town Mixed Use

CHARACTER DISTRICTS



New Town Warrenton District

With large lots, direct access from Route 29, and high visibility, this district could be a location for a signature office/jobs center; with greater intensity of mixed use and strong live, work, and play options. A mix of uses could be organized around an internal street network and public amenities, such as civic spaces, parks, green space, and public gathering areas.

THE TEN GUIDING PRINCIPLES FOR CHARACTER DISTRICTS

1. **A discernible center.** Every neighborhood should have a discernible center that is walkable within a quarter-mile radius. The center can accommodate programmed or spontaneous events, or simply be a place people relax or meet friends. The center is often a hardscaped plaza or a green or park space; sometimes it can even be a busy street corner or a main street.
2. **Connected sidewalks with a clear pedestrian path, street trees, and lighting.** Streets within the Character District form a connected network, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination. There is an interconnected street grid network that disperses traffic and eases walking.
3. **Buildings that are placed close to the street to create a sense of place.** All buildings are directly accessible with front doors from the street.
4. **Parking placed behind buildings and away from street frontages.** Interior access roads to services and parking are designed into the site plan.
5. **Complete streets create a balance between cars, pedestrians, and bicyclists.** Complete Streets have no singular design prescription. Each one is unique and responds to its community context; however, complete streets are designed to balance drivers, pedestrians, and bicyclists.
6. **Compact street blocks encourage walking.** Compact street blocks that are 200 to 400 feet wide and up to 600-feet deep provide a comfortable neighborhood scale that facilitates a fine-grain development pattern and walking experience. For blocks that exceed the maximum recommended length of 600 feet, a mid-block pedestrian path is recommended to allow for passage.
7. **A park, trail, or activity center is within a half mile walking radius.** Linkages to pedestrian amenities can be made with continuous sidewalks, street trees, and through-block pedestrian pathways.
8. **A variety of dwelling types accommodates a wide range of family sizes and income levels and commercial activity.** The variety provides synergy among uses and creates an immediate critical mass to sustain retail and commercial uses.
9. **Neighborhood identity connects district wayfinding and identification with a larger marketing effort to bring private investment to the neighborhood.** Neighborhood identity provides the brand and image of the area, and a basis for a marketing strategy to promote businesses, events, and future development opportunities.
10. **The neighborhood edge provides the means of transition from the Character District to adjoining properties.** The edge would transition to adjacent established neighborhoods and future land-use categories and exhibit compatibility in scale, massing, and setback with existing and planned developed on adjacent land.

COMPREHENSIVE PLAN

WHAT CAN NEW TOWN WARRENTON DISTRICT BE IN THE YEAR 2040?



Internal walkable streets and hardscaped plazas that can accommodate events and pedestrian activity.



Multi-purpose public areas can accommodate annual and regional events.



A mix of employment, residential, and commercial uses can be designed around public amenities.



The development along the neighborhood edge is compatible with adjoining neighborhoods.

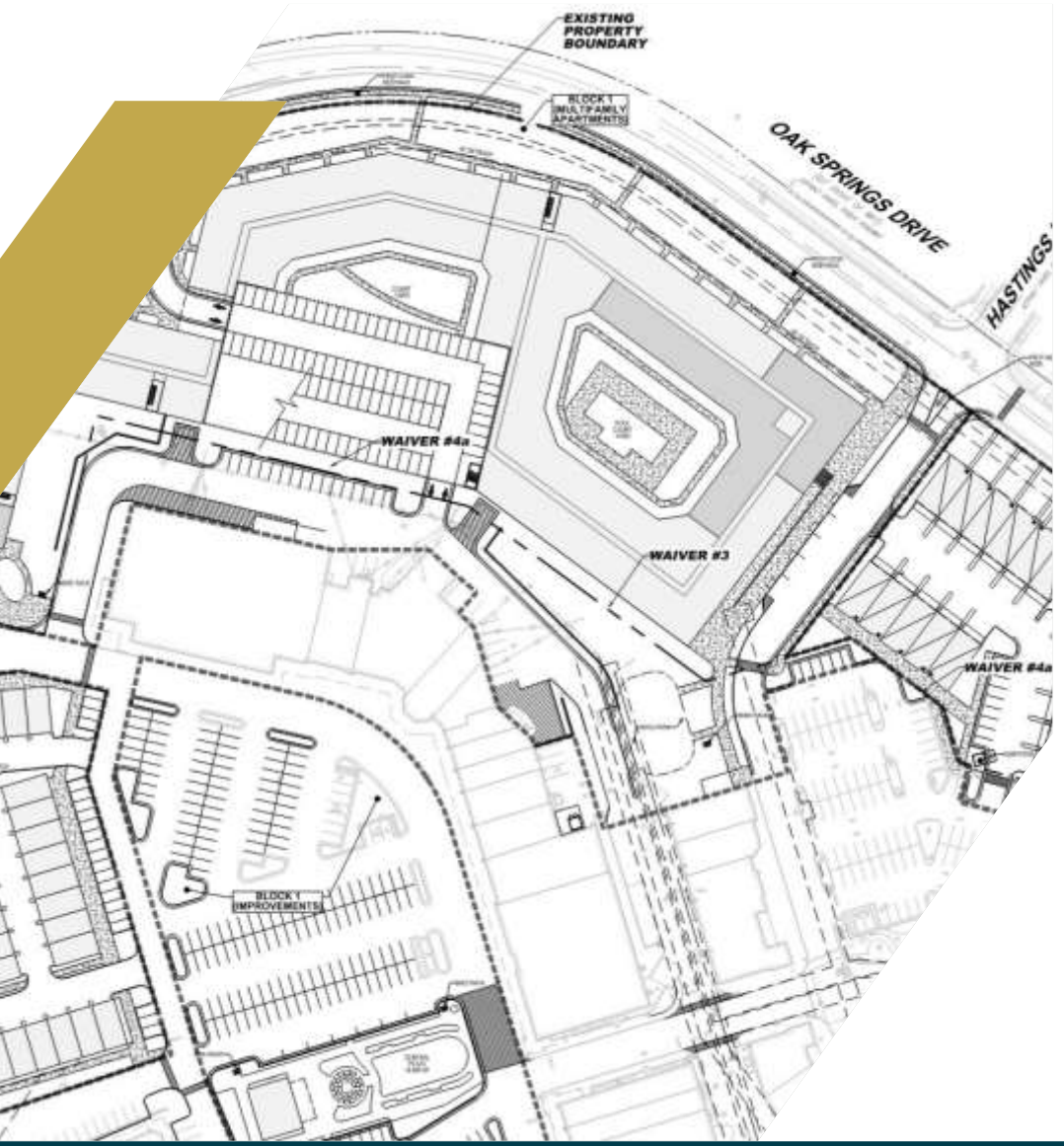


Daylighting flood plains (as a flood control project) provides an opportunity to create park with pedestrian amenities. Carroll Creek Park. Frederick, MD



Create residential communities with visual sight lines through the development, and where possible, with pedestrian pathways.

SUP MODIFICATION & WAIVERS



- **Waiver Request #1:** Increase density to 386 units or 13.28 per acre
- **Waiver Request #2:** Decrease minimum setback to 14′ along Broadview Avenue
- **Waiver Request #3:** Decrease side/rear yard setbacks to 0′
- **Waiver Request #4a:** Decrease buffer width between commercial and residential uses to 0′
- **Waiver Request #4b:** Decrease rear buffer width for residential uses from public ROW to 14′
- **Waiver Request #5:** Increase height limit for dwellings as follows:
  - 54′ max height for Block 1, Oak Springs Drive Frontage
  - 36′ max height for Block 1, Broadview Drive Frontage
  - 45′ max height for Block 2
  - 36′ max height for Block 3

BENEFITS OF PROPOSAL

PLAN 2040

Advances all goals of Plan 2040 Character Districts

HOUSING SUPPLY

Provides much needed additional housing supply near retail and other services/facilities via infill development and not urban sprawl

HOUSING TYPES

Provides much needed housing types unique to the Town, including "missing middle" townhomes, 2-over-2s and the first new multifamily community in decades

AFFORDABLE HOUSING

10% of units within each residential block will be dedicated as Affordable Dwelling Units, restricted to residents with household incomes below 80% AMI at restricted rental rates

PEDESTRIAN ACCESS

Provides new and improved, safe pedestrian access to and circulation within Warrenton Village Center for new residents and existing neighbors

PUBLIC SPACES

The Central Plaza will be the new centerpiece of the Center, featuring activity and eating areas and a splashpad; a new dog park and picnic area will also be open to for public use

INCREASED PATRONAGE

New resident supply will provide increased patronage to all of Warrenton's existing businesses

ECONOMIC IMPACT

$46,100 projected annual surplus for the Town of Warrenton

RESIDENTIAL BLOCK 1

Multi-Family Apartments

- Location: Vacant land on north side of the Center along Oak Springs Drive
- Units: Up to 320 total units
- Types: 1-, 2-, and 3-bedroom apartment units
- Parking: Internal 4-level parking garage
- Amenities:
  - 10,000 square foot leasing and amenity center
  - Central Plaza
  - East & West “Entrance” Plazas
  - Dog Park & Picnic Area
  - Pedestrian connectivity and circulation



RESIDENTIAL BLOCK 1



West facing elevation from Hastings Lane



East facing elevation from Broadview Ave

RESIDENTIAL BLOCK 1



South facing elevation from Oak Springs Drive (left side)



South facing elevation from Oak Springs Drive (right side)

RESIDENTIAL BLOCK 1

Leasing entrance at intersection of Oaks Springs Drive & Hastings Lane



RESIDENTIAL BLOCK 1

View from intersection of Oaks Springs Drive & Hasting Lane
**Block 1 (Apartment Bldg.) on right; Block 2 (2-Over-2s) on left*



RESIDENTIAL BLOCK 1

View from intersection of Oaks Springs Drive & Broadview Avenue



RESIDENTIAL BLOCK 1

View from Broadview Avenue entrance into Warrenton Village Center



RESIDENTIAL BLOCK 1

View from Hastings Lane out towards Oaks Springs Drive entrance
**Block 1 (Apartment Bldg.) on left; Block 2 (2-Over-2s) on right*



RESIDENTIAL BLOCK 1

View from within Center out towards Broadview Avenue entrance
**Block 1 (Apartment Bldg.) on right; Block 3 (Townhomes) on left*



RESIDENTIAL BLOCK 2

Multi-Family 2-Over-2

- Location: Vacant land at northeast corner of the Center at intersection of Oak Springs Drive and Branch Drive
- Units: Up to 36 total units
- Widths: Units currently proposed with 24' widths, yielding a plan count of 34 units. Proposal is up to 36 total units to account for width flexibility, which could impact total unit count.
- Types: 2-story, 3-bedroom "condo" units
- Parking: Each unit has one internal parking garage and one dedicated exterior surface space



508

RESIDENTIAL BLOCK 2



Front and side elevations

RESIDENTIAL BLOCK 2



View from Oak Springs Drive

RESIDENTIAL BLOCK 3

Multi-Family Townhomes

- Location: West side of the Center along Broadview Avenue, currently occupied by Summit Community bank and a vacant commercial bank building
- Units: Up to 30 total units
- Widths: Units currently proposed with 20’ widths, yielding a plan count of 29 units. Proposal is up to 30 total units to account for width flexibility, which could impact total unit count.
- Types: 3-story, 3-bedroom townhome units
- Parking: Each unit has two internal parking garages and two dedicated exterior surface spaces



RESIDENTIAL BLOCK 3



Front and side elevations

RESIDENTIAL BLOCK 3



View from Broadview Avenue

RESIDENTIAL BLOCK 3



View of townhomes from within the Center

PROJECT IMPROVEMENTS

CENTRAL PLAZA

A new vehicular and pedestrian hub that will function as the heart of the Center and is sized, programmed, and planned to allow for community activities as well as everyday use

EAST & WEST PLAZAS

Smaller public plazas are proposed at the Broadview Avenue entrance and the Hasting Lane entrance to serve as “doorways” into the Center and enhance walkability between uses

DOG PARK / PICNIC AREA

New off-leash, fenced dog park and picnic areas will be accessible to the public.

OAK SPRINGS CROSSWALKS

Two crosswalks are proposed on Oak Springs Drive—one at Hastings Lane and one at the Highland School entrance, which will provide safe access for neighbors to the north

SIDEWALK RING COMPLETION

Proposal will complete a full ring of sidewalk around the entire Center, including the addition of a missing section of sidewalk behind Galaxy Strike Bowling

HASTINGS LANE EXTENSION

New vehicular and pedestrian entrance into the Center is proposed at the Oak Springs Drive and Hastings Lane intersection

MODIFIED ALLEY

Will serve as a secondary vehicular ingress/egress into the garage, as well as provide both residential and commercial loading and trash pickup areas

PEDESTRIAN CIRCULATION

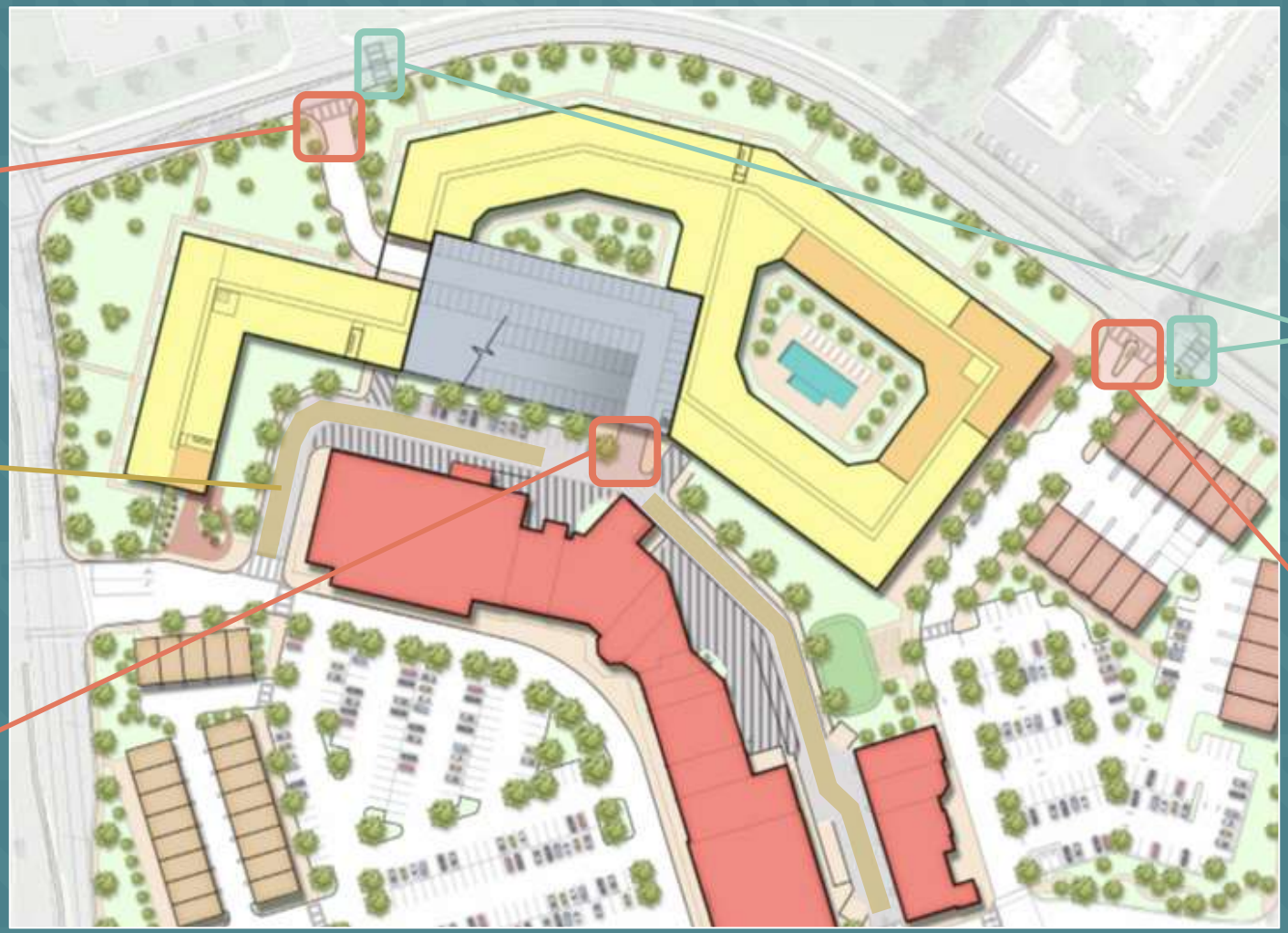
Proposal includes an enhanced system of sidewalks, crosswalks and wayfinding to improve the safety and ease of pedestrian access the Center’s businesses

PROJECT IMPROVEMENTS – TRAFFIC

Oak Springs Entrance

Modified Alley

Secondary Garage Entrance



Oak Springs Crosswalks

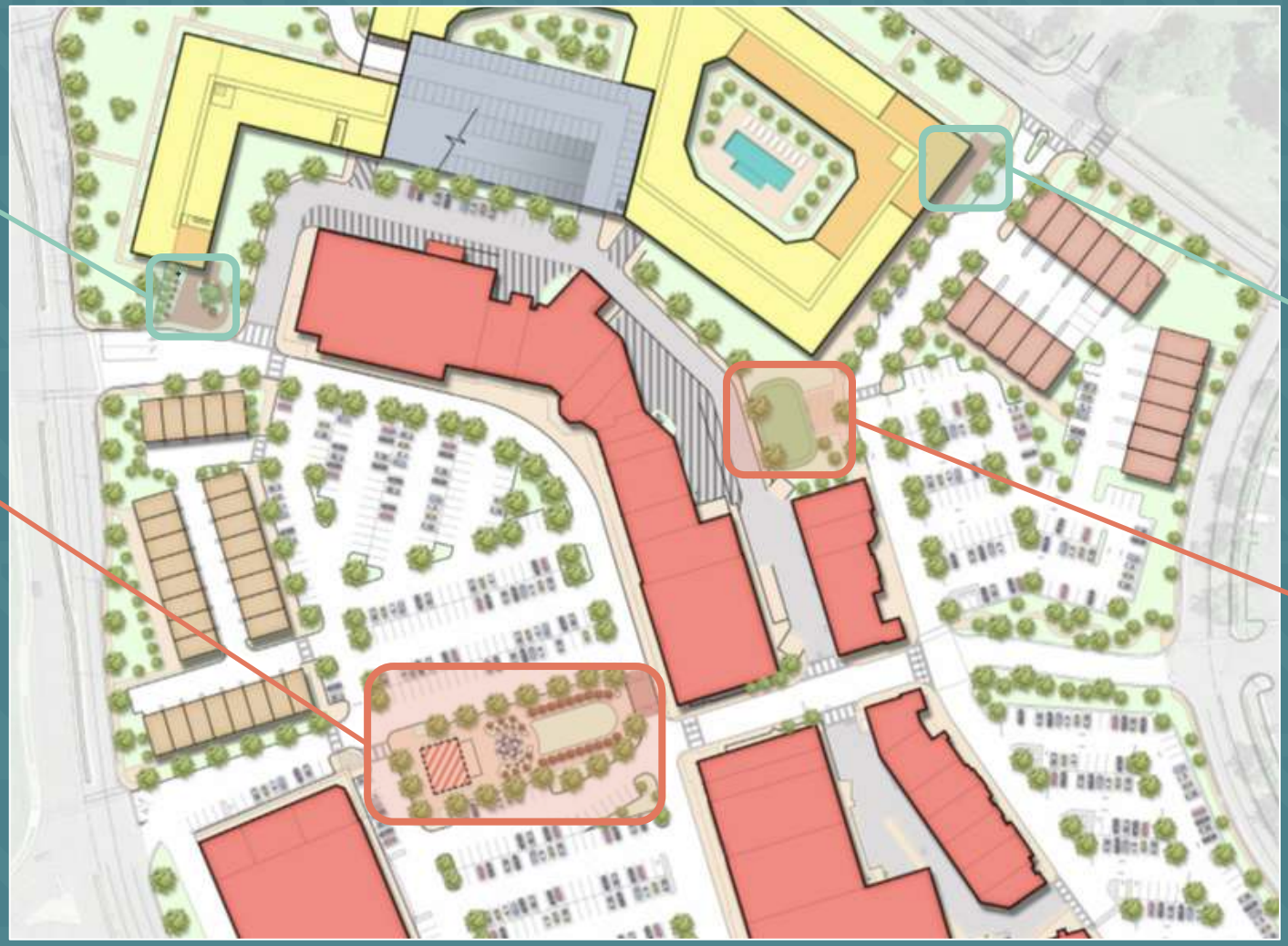
Hastings Lane Entrance

PROJECT IMPROVEMENTS – PUBLIC SPACE

West Plaza

Central Plaza

Pedestrian Circulation



East Plaza

Dog Park & Picnic Area

PROJECT IMPROVEMENTS



Bird's eye view of Central Plaza

PROJECT IMPROVEMENTS



Alternate bird's eye view of Central Plaza (Note Blocks 1 & 2 in background)

PROJECT IMPROVEMENTS



Ground level view of Central Plaza

PROJECT IMPROVEMENTS



Ground level view within Central Plaza (Note Blocks 1 & 3 in background)

PROJECT IMPROVEMENTS



Ground level view of pedestrian access to Central Plaza (Note Block 3 in background)

PROJECT IMPROVEMENTS



Ground level view of Central Plaza

PROJECT IMPROVEMENTS



Ground level view of West Plaza

PROJECT IMPROVEMENTS



Ground level view of East Plaza

NEWCASTLE
DEVELOPMENT GROUP

SPECIAL USE PERMIT #SUP 22-5

WARRENTON VILLAGE CENTER

PLANNING COMMISSION WORK SESSION
APRIL 16, 2024



AGENDAS

WORK SESSION #2 – APRIL 16TH, 2024

- A Product of Plan Warrenton 2040
- Warrenton Housing Market & Economic Impacts
- Architecture
- Public Improvements

WORK SESSION #3 – APRIL 23RD, 2024

- Modification/Waiver Requests
- Water/Sewer Impacts
- Transportation
- Schools

A PRODUCT OF PLAN WARRENTON 2040

WHY HERE, WHY NOW?

Warrenton Economic White Papers

- Plan Warrenton 2040 Economic Goals & Fiscal Sustainability
  - Emphasis on Mixed-Use Development, Infill Revitalization, Live/Work/Play
    - Creation of the New Town Character District
      - Warrenton Village Center SUP Proposal

WHITE PAPER FINDINGS – ECONOMIC BASE (RKG)

- Since the ‘08 Recession, the Regional economy has become more robust with more high-skilled, high paying occupations compared to Warrenton
- Three primary factors that have driven Regional economic growth, relative to Warrenton:
    1) Strong integration of services and entertainment venues with work locations
    2) Strong transportation connectivity between employment and residences
    3) Diversity in housing types and prices
- The strongest growth markets have created the strongest live-work-play environments
- These markets attract workers at all skill levels
- Warrenton does not offer the same amenities and housing options that draw a more diverse workforce and makes attracting companies more challenging given their respective options regionally

WHITE PAPER FINDINGS – FISCAL SUSTAINABILITY (RKG)

- An economic model was created to determine the impact of land use decisions and the resulting economic ramifications
- The model weighed the cost of the Town's desired capital projects against different growth scenarios:

Scenario	Intended Growth Strategy	New Housing Units (by 2039)	Annual Net Fiscal Impact
1	Minimal growth, i.e. 2010 – 2019 trends	Minimal	($508,808)
2	Become a stronger livable community	750+	($240,682)
3	Become a livable destination community	1,150+	$102,185
4	Become a regional live/work community	2,100+	$335,535

RKG Conclusion:

- To achieve the level of services and amenities desired by the citizens of Warrenton, the Town must increase its development activity
- Warrenton cannot "save its way" (i.e. cut back on spending) to fiscal sustainability
- Without residential development, "the Town does not have the demand to continue to increase retail services."

WHITE PAPER FINDINGS – FISCAL SUSTAINABILITY (RKG)

RKG summarizes,

"Balancing the uses between residential and nonresidential uses will be critical from both a market perspective and a fiscal one. Simply put, growth in commercial development (particularly retail and dining venues) will require greater consumer spending, which primarily comes from local households… Having a high quality, well-integrated live/work/recreate community is a fundamental need to attracting these workers (and as a result, their companies)."

PLAN WARRENTON 2040

- The White Paper recommendations, particularly with respect to the need for additional housing, heavily influenced the creation of the Warrenton 2040 Plan
- It is incorporated by reference into the Plan
- The ability to satisfy this housing need is addressed throughout the Plan: **Specifically, Character Districts are envisioned to contain a variety of attainable housing types**

> **H-2.2:** Increase opportunities for multi-family and mixed-use residential development by updating the commercial corridors in the Character Districts to allow for appropriate use and scale transitions into existing neighborhoods.

PLAN WARRENTON 2040



New Town Warrenton District

With large lots, direct access from Route 29, and high visibility, this district could be a location for a signature office/jobs center; with greater intensity of mixed use and strong live, work, and play options. A mix of uses could be organized around an internal street network and public amenities, such as civic spaces, parks, green space, and public gathering areas.

GOALS

H-1: Ensure equitable, attainable housing opportunities across residents of all ages, incomes, and abilities by catering to the needs of a diverse community, including young families, professionals early in their careers, essential workforce, and those entering retirement.

POLICIES & STRATEGIES

H-1.1: Encourage development of the "Missing Middle" housing types beyond traditional single-family homes, townhouses, and apartments by updating the Zoning Ordinance to create a beneficial mix.

H-2: Character Districts will accommodate a balance of available housing typologies that are compatible to existing neighborhoods in scale, character, and transition.

WHY HERE, WHY NOW?

The Warrenton Village Center SUP proposal is the desired result of a lengthy process of review, comparison analysis and decision making by the Town of Warrenton – from the White Papers through the Plan Warrenton 2040 drafting and adoption – and will serve as the building block upon which to create a highly desirable live/work/play community that is the goal of the Plan Warrenton 2040 New Town Character District

WARRENTON HOUSING MARKET & ECONOMIC IMPACTS

IMPACT OF THE WARRENTON HOUSING SUPPLY

- As forecast by the White Papers, the lack of housing supply and typology has had impacts that we can see on today's Warrenton housing market and overall economics:
  - Potential renters who are employed locally must often rent outside of Warrenton
  - Commuters to D.C. based jobs can't consider Warrenton when searching for relocation options
  - Area employers have challenges attracting new employees
- Due to the scarcity of rental units, potential renters do one of three things:
  - 1) pay above market rents for the few desirable units available
  - 2) resort to leasing less desirable units
  - 3) look elsewhere, outside of Warrenton
- These outcomes are all detrimental to the Warrenton economy and the existing community

CURRENT RENTAL ENVIRONMENT

1) APARTMENT COMMUNITIES

- There are six (6) apartment communities in the Warrenton area that are income and/or age restricted
- There is one (1) market rate apartment community in Warrenton
- Per a 4/4/24 search, there were zero (0) apartment units available for immediate occupancy in any of Warrenton's apartment communities

Apartment Communities	Year Built	Total Units	Available Units*	Age Restricted	Income Restricted
Moffett Manor	2007	98	0	Senior (55+)	50% & 60% AMI Programs
Steeplechase	2000	56	0	Senior (55+)	50% & 60% AMI Programs
The Oaks	1996	111	0	Senior (55+)	50% & 60% AMI Programs
Highland Commons	1994	96	0	No	50% & 60% AMI Programs
Warrenton Manor	1985	98	0	Senior (55+)	30%, 50%, 60% & 80% AMI Programs
Academy Hill	1983	31	0	No	USDA Section 515 Rental Program
Victoria Gardens	1979	24	0	None	None – Market Rate
Totals		514	0		

**Per Apartments.com results taken on 4/4/24*

CURRENT RENTAL ENVIRONMENT

2) SINGLE FAMILY OR CONDO RENTAL DWELLINGS

- Per a 4/4/24 search, there were eight (8) rental units available for immediate occupancy in single family rentals and condo buildings
- With the exception of a single unit built in 2006, all available units are 30+ years old

Unit Type	Condo Apartment	Townhomes	Houses	Total Units
1-Bedroom	2 Units $1,500 (1975) $1,665 (1949)			2
2-Bedroom		3 Units $1,600 (1993) $1,750 (1975) $1,750 (1980)		3
3-Bedroom			2 Units $1,695 (1978) $2,875 (1986)	2
4-Bedroom			1 Unit $3,500 (2006)	1
Totals				8 units

**Per Zillow.com results taken on 4/4/24*

RENTAL SUPPLY VERSUS DEMAND

RENTAL SUMMARY

- Assuming current growth trends (i.e. “status quo” with no increased growth plan), the Warrenton rental market area will have a rental housing demand of 1,100 units between 2022 and 2027*
- As of 4/4/24, there were eight (8) available rental dwelling units in all of Warrenton and only one pipeline apartment community in the market (Vint Hill Lofts, 183 units)
  - Demand: 1,100
  - New Units: 183
  - **Rental Shortage: 917** **This number will go up significantly if Warrenton continues to encourage live/work/play environments that will attract new companies and additional renters**

*Market and Fiscal Impacts Analysis, S. Patz & Associates

WHEN PEOPLE CAN'T FIND HOUSING IN WARRENTON…

- The new commercial amenities and services that are so desired by the existing community are not fiscally achievable without the economic improvement generated by an increase in residents
- Not only will new and improved retail not come to Warrenton, existing retail will continue to decline and deteriorate
- Consumer spending is trending down, commercial vacancy is trending up – these trends will continue
- Existing retailers will continue to see diminished business activity, leading to potential viability concerns
- New potential retailers will choose alternative destinations outside of Warrenton

WARRENTON POPULATION & EMPLOYMENT GROWTH

- Warrenton's population has remained relatively stagnant over the last 15 years
- An increased growth rate is not anticipated going forward
- Lack of growth is largely due to lack of available housing
- Warrenton's employment increased by 574 jobs between 2006-2019—a growth rate of 0.4% per year
- Over that same period of time, the Northern Virginia Region increased its jobs by 1.9% annually—**nearly five times the Town's growth rate**

Year	At-Place Jobs	# Change	% Change
1990	4,830		
2000	6,670	1,840	38.1%
2010	9,622	2,952	44.3%
2011	9,721	99	1.0%
2012	9,784	63	0.7%
2013	9,829	(28)	(0.3%)
2014	9,831	47	0.5%
2015	9,857	(34)	(0.3%)
2016	9,891	60	0.6%
2017	9,898	69	0.7%
2018	9,949	51	0.5%
2019	10,038	89	0.9%
2020	10,043	5	0.1%
2021	10,174	131	1.3%
2022	10,197	23	0.2%
2023	10,274	77	0.8%
2024	10,351	77	0.8%
2025	10,428	77	0.7%

**Source: Worldpopulationreview.com*

ECONOMIC IMPACTS

- The Market and Fiscal Impacts Analysis performed by S. Patz & Associates, Inc. concluded the following:
  - The project will have a Net Fiscal Benefit to the Town of Warrenton—meaning that the taxes generated by the project (both direct and indirect) will outweigh the capital expenditures connected with the project
  - At full buildout, residents will generate $26.4M in direct annual consumer expenditures (i.e. business activity)
  - The project, along with the increased business activity that it generates, will yield 476 new full-time jobs in the community

AFFORDABLE DWELLING UNITS

- In accordance with the Plan Warrenton 2040 guidelines, the proposal conditions that 10% of all units will be leased to households earning less than 80% of AMI and rents will be capped at 80% AMI rental rate limits
- 80% AMI income and rent limits are defined as the current Fauquier County Area Median Income published by the U.S. Department of Housing and Urban Development (HUD)
- 10% of the units within each individual residential block will be allocated as affordable dwelling units

ARCHITECTURE

WARRENTON VILLAGE CENTER

DESIGN STORY

WARRENTON, VIRGINIA | FEBRUARY 14, 2024









DESIGN OBJECTIVE

To transform the existing Warrenton Village retail center into a thriving, walkable, mixed-use, community destination with a sense of place that celebrates the character of Warrenton, while introducing a new, fresh, modern aesthetic.









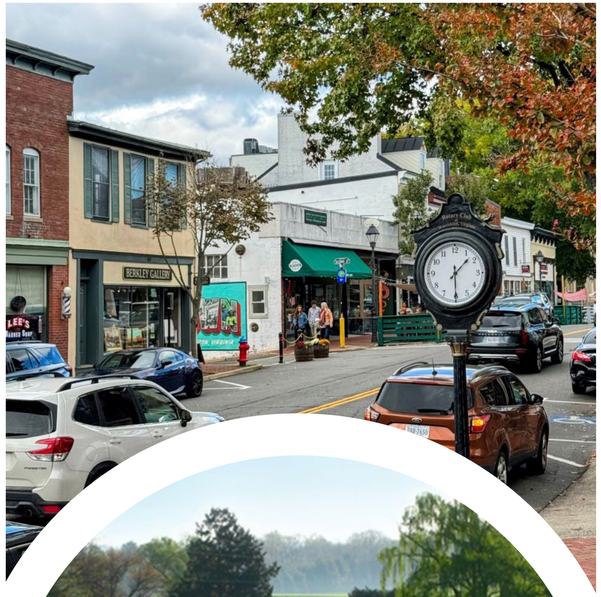
DESIGN IMPLEMENTATION

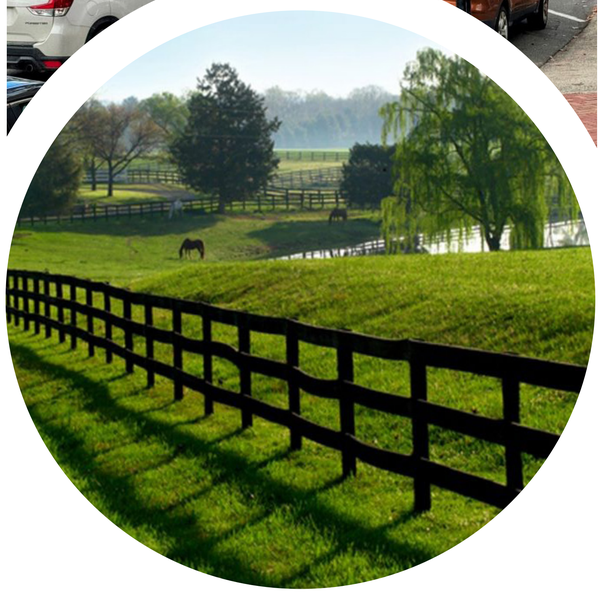
- Purposeful integration of new buildings to create a Live/Work/Play community in line with the goals of the 2040 Warrenton Plan.
- Revitalization of the existing retail with new public gathering spaces, pedestrian connectivity, reduced vehicles speeds, a new Central Plaza for village events, enhanced green spaces, and activated streetscapes.
- Fusion of a new contemporary aesthetic with the warmth of local and historical design influences.















WARRENTON CONTEXT

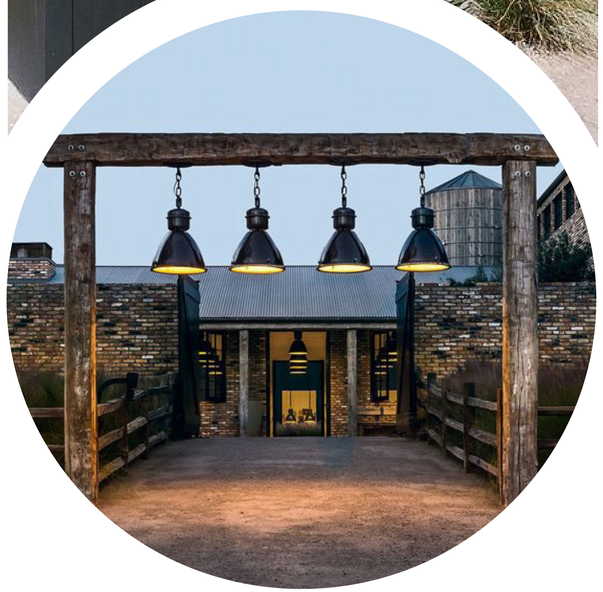
- Historical downtown Warrenton provides inspiration with its textures of brick and stone, dark metal accents and awnings, historical lighting fixtures, traditional lap siding, classic masonry banding and detailing, large windows with dark mullions, and pedestrian friendly streetscapes.
- The greater Warrenton area has deep equine and agricultural industry roots, featuring iconic horse farms and celebrated bucolic landscapes. Inspirations include classic equestrian design features, rich colors and textures, dark metal accents, warm woods, and farmhouse inspired lap siding and stone.





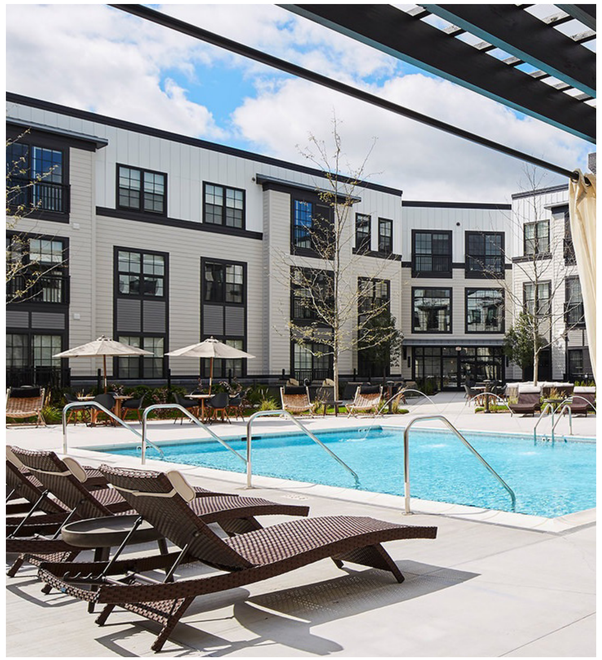












DESIGN APPLICATION

Warrenton's past becomes Warrenton's future. The rich palette of historic materials, textures, and architectural details are reclaimed with a fresh perspective and contemporary context.

RESIDENTIAL DESIGN

The three and four story massing of the residential development is designed to emulate the scale of a walkable town center. A clean, light modern aesthetic is grounded with rich masonry and architectural detailing. The street level is activated with resident access, generous sidewalks and rich landscaping. The articulated façade and generous fenestration break down the scale of the buildings and create visual interest for pedestrians.





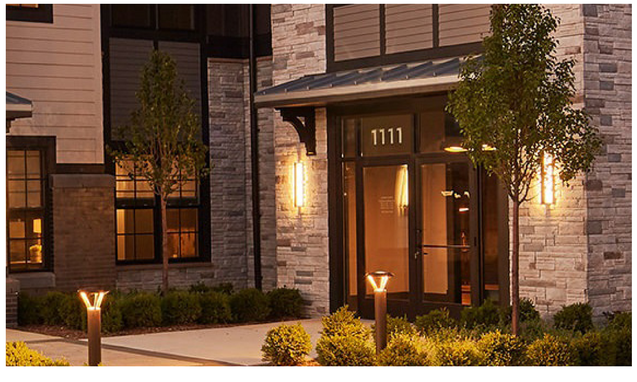




MATERIALS

- Stacked stone
- Masonry with banding and detailing
- Exterior reveal panel system
- Classic lap siding
- Brick masonry with contemporary color palette
- Wood tones to infuse warmth







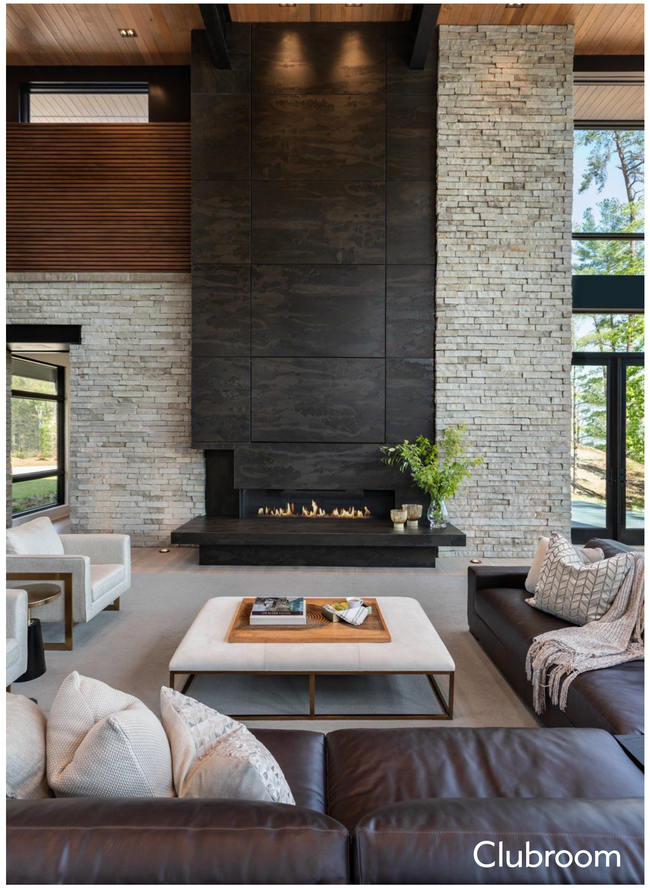


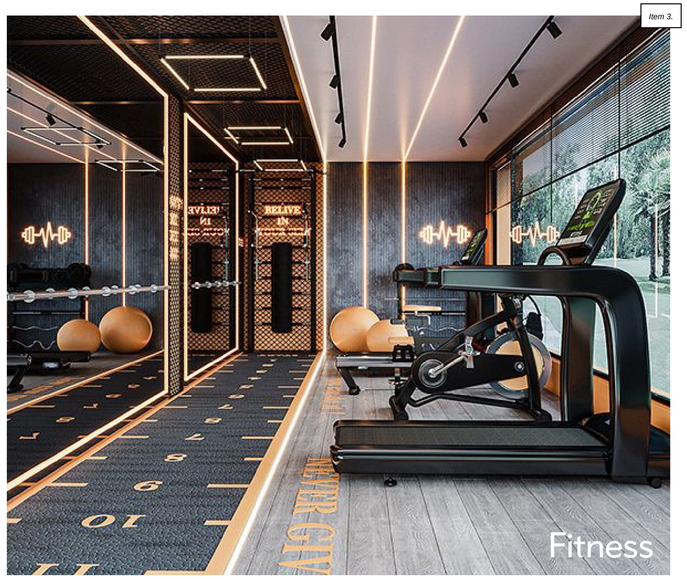
ACCENT FEATURES & STREETSCAPE

- Metal accents & awnings
- Equestrian inspired light fixtures
- Large windows with dark mullions and lintels
- Architectural detailing to provide visual interest at pedestrian level
- Residential street level entries activating the sidewalk
- Pedestrian Connectivity
- Walkable Environment

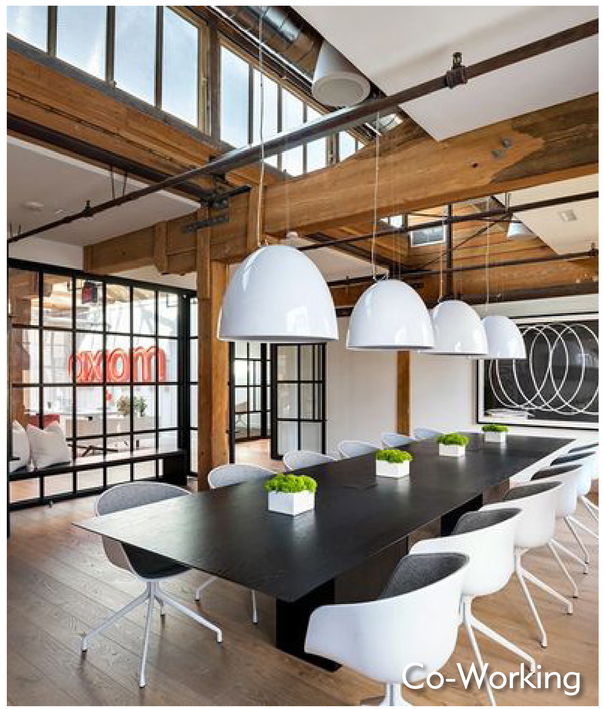


















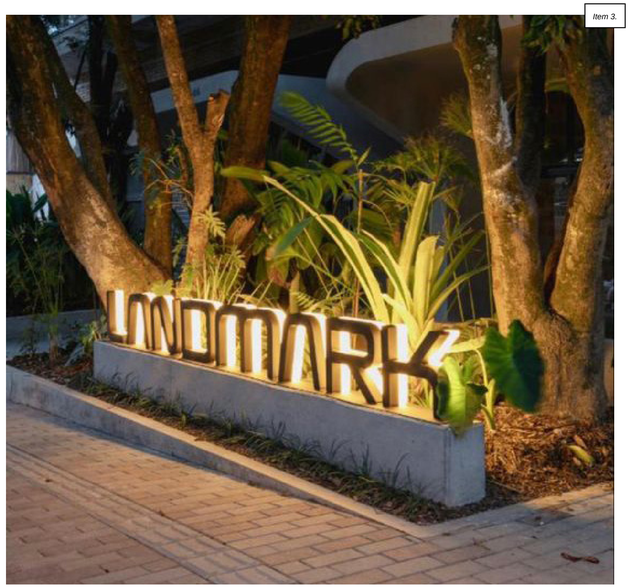
INTERIOR DESIGN CONCEPT

Urban Farmhouse aesthetic blends classic, timeless materials and natural textures with crisp, clean lines, neutral color palettes and light, open spaces. Old is blended with the new to provide spaces that are comfortable and approachable with a nod toward the trends of tomorrow.

















SIGNAGE

Signage and wayfinding are designed to combine key historical elements or notable community themes with clean, sophisticated materials, fonts and applications, bridging the old and the new.

RESIDENTIAL BLOCK 1

Leasing entrance at intersection of Oaks Springs Drive & Hastings Lane



RESIDENTIAL BLOCKS 1 & 2

View from intersection of Oaks Springs Drive & Hasting Lane
**Block 1 (Apartment Bldg.) on right; Block 2 (2-Over-2s) on left*



RESIDENTIAL BLOCK 1

View from intersection of Oaks Springs Drive & Broadview Avenue



RESIDENTIAL BLOCK 1

View from Broadview Avenue entrance into Warrenton Village Center



RESIDENTIAL BLOCKS 1 & 2

View from Hastings Lane out towards Oaks Springs Drive entrance
**Block 1 (Apartment Bldg.) on left; Block 2 (2-Over-2s) on right*



RESIDENTIAL BLOCK 1

View from within Center out towards Broadview Avenue entrance
**Block 1 (Apartment Bldg.) on right; Block 3 (Townhomes) on left*



RESIDENTIAL BLOCK 2



View from Oak Springs Drive

RESIDENTIAL BLOCK 3



View from Broadview Avenue

RESIDENTIAL BLOCK 3



View of townhomes from within the Center

PUBLIC IMPROVEMENTS

LIST OF IMPROVEMENTS FOR PUBLIC USE & BENEFIT

- Central Plaza
- East & West Plazas
- Dog Park and Picnic Area
- Oak Springs Drive Pedestrian Crosswalks
- Completion of outer sidewalk ring around Warrenton Village Center
- Internal pedestrian system – sidewalks, crosswalks, wayfinding, vehicle slowing measures
- Hastings Lane extension

CENTRAL PLAZA



Bird's eye view of Central Plaza

CENTRAL PLAZA



Alternate bird's eye view of Central Plaza (Note Blocks 1 & 2 in background)

CENTRAL PLAZA



View of splashpad at Central Plaza

CENTRAL PLAZA



Ground level view of Central Plaza

CENTRAL PLAZA



Ground level view within Central Plaza (Note Blocks 1 & 3 in background)

CENTRAL PLAZA



Ground level view of pedestrian access to Central Plaza (Note Block 3 in background)

CENTRAL PLAZA



Ground level view of Central Plaza

WEST PLAZA



Ground level view of West Plaza

EAST PLAZA



Ground level view of East Plaza

NEWCASTLE
DEVELOPMENT GROUP

SPECIAL USE PERMIT #SUP 22-5

WARRENTON VILLAGE CENTER

PLANNING COMMISSION WORK SESSION
APRIL 23, 2024



575

AGENDAS

WORK SESSION #2 – APRIL 16TH, 2024

- A Product of Plan Warrenton 2040
- Warrenton Housing Market & Economic Impacts
- Architecture
- Public Improvements

WORK SESSION #3 – APRIL 23RD, 2024

- Water/Sewer Impacts
- Transportation
- Schools
- Modification/Waiver Requests

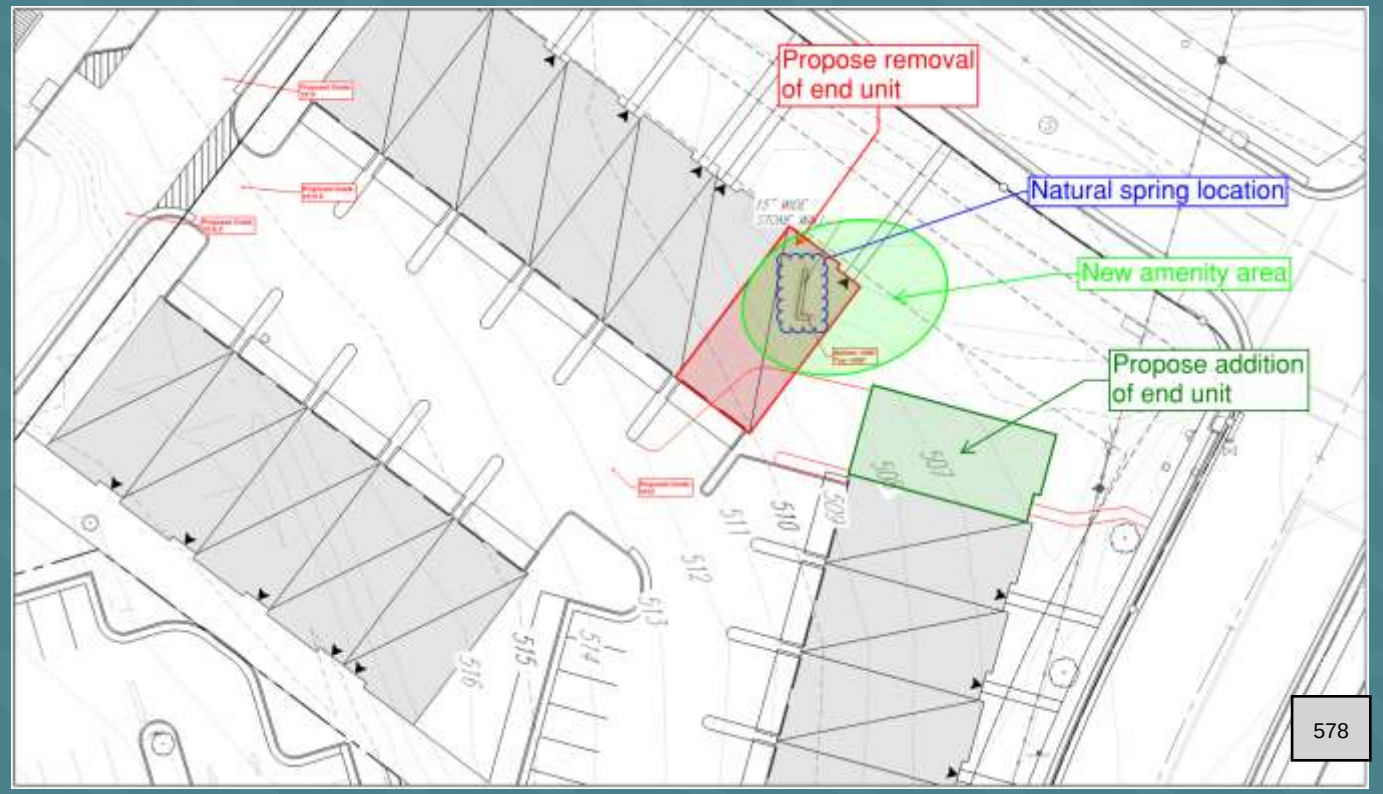
FOLLOW UP FROM WORK SESSION #2 (4/16/23)

OAK SPRING

- It has been requested that we explore the preservation and restoration of Oak Spring—located near the intersection of Oak Spring Drive and Branch Drive
- Restoration of this natural spring will preserve a unique piece of Warrenton history and character
- We are looking into a site plan revision that will allow the spring to be preserved and reconditioned into a public amenity







INCREASE SHADE AT SPLASHPAD

- Shade trees have been added to the Central Plaza to provided coverage for the surrounding seating areas



STORMWATER MANAGEMENT

Storm Water Management Plan is conceptual at this time and will be fully designed and approved during Site Development Plan.

Bohler Engineering is here tonight to answer general questions pertaining to the potential system; however, the scope and methodology of the system are yet to be determined.

ARCHITECTURE

- While the goal of our proposed aesthetic is to introduce a modern and fresh design to Warrenton, we recognize the request to incorporate more components that reflect the character of the community
- Renderings here show a revised color pallet, with incorporation of beige brick in lieu of white and softening of previously dark gray siding to a lighter brown
- Our team is currently studying additional design enhancements with the goal of implementing features that are more representative of the Town's character





WATER / SEWER IMPACTS

WATER / SEWER IMPACTS

- NewCastle's average daily water usage across its Virginia apartment community portfolio:

Community	Units	Total Usage (GAL)	Total Daily Usage (GAL)	Daily Usage Per Unit (GAL)
Community 1	250	3,295,006	9,027	36.1
Community 2	316	7,344,232	20,121	63.7
Community 3	212	5,543,803	15,188	71.6
Community 4	280	6,729,187	18,436	65.8
Community 5	242	5,181,400	14,196	58.7
Community 6	452	14,757,676	33,449	74.0
Avg. / Total **	1,752		20,278	67.0

*Data is from January ,1 2023 through December 31, 2023
**Community 1 was finishing lease up for the first half of 2023 so data does not represent a full calendar year of stabilized occupancy. Community 1 data has been excluded from average data presented and was excluded from usage analysis.

- Average daily community usage across Virginia portfolio is 20,278 gallons per day (GPD)
- Assuming the daily usage per unit of 67.0 GPD, we would project 25,862 GPD for Warrenton Village Center (386 units x 67.0 GPD)

WATER / SEWER IMPACTS

- Town of Warrenton uses their own daily usage amounts when making their capacity determination:
  - For 386 residential units, the Town assumes 116,000 gallons per day
- This is significantly higher than the data collected across NewCastle's Virginia communities – 25,862 GPD vs. 116,000 GPD

- **Even with the assumed usage of 116,000 GPD, the Public Works Department has determined that there is adequate capacity for this project**

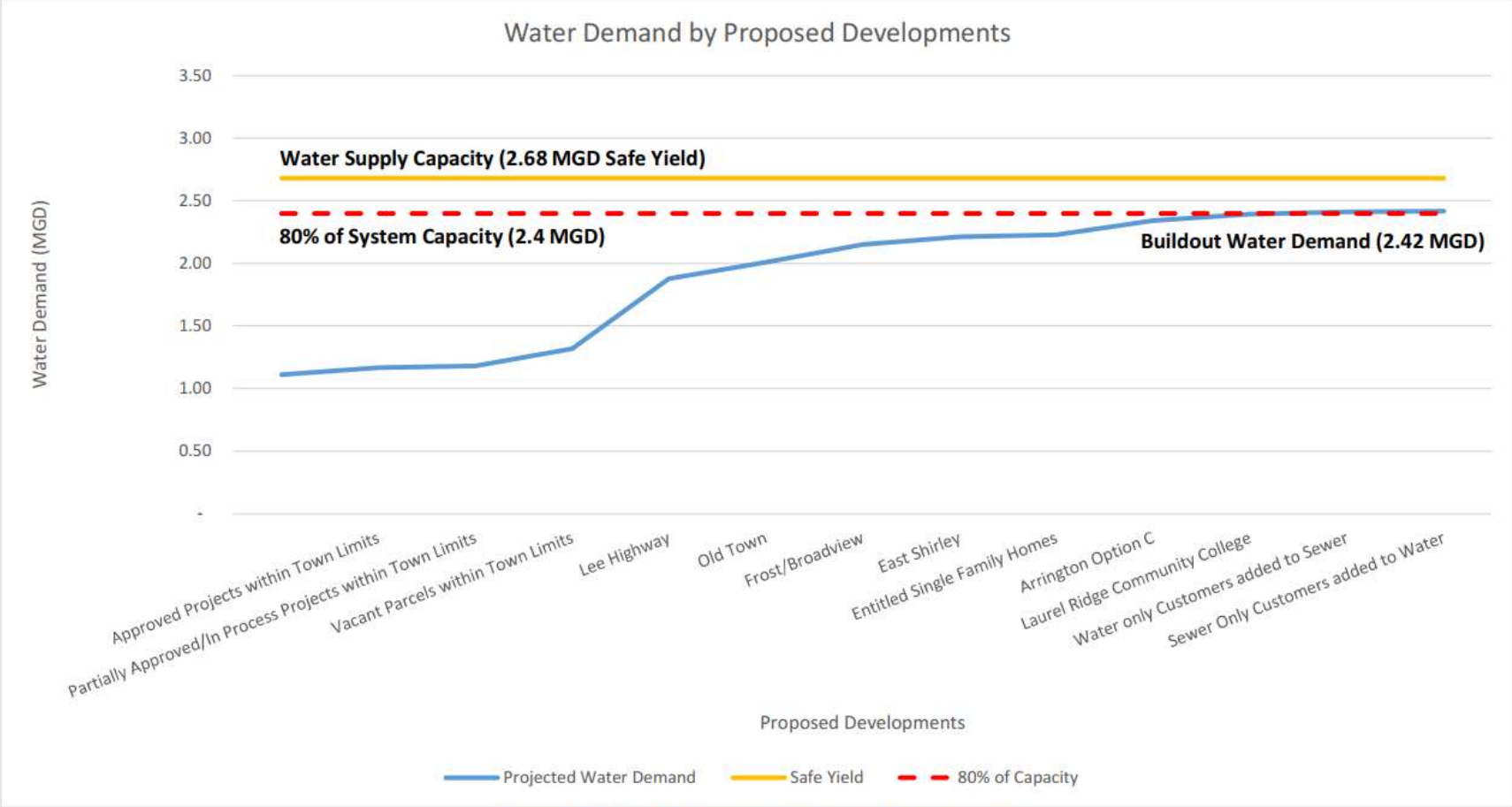


Figure 5.1: Water Demand by Proposed Developments

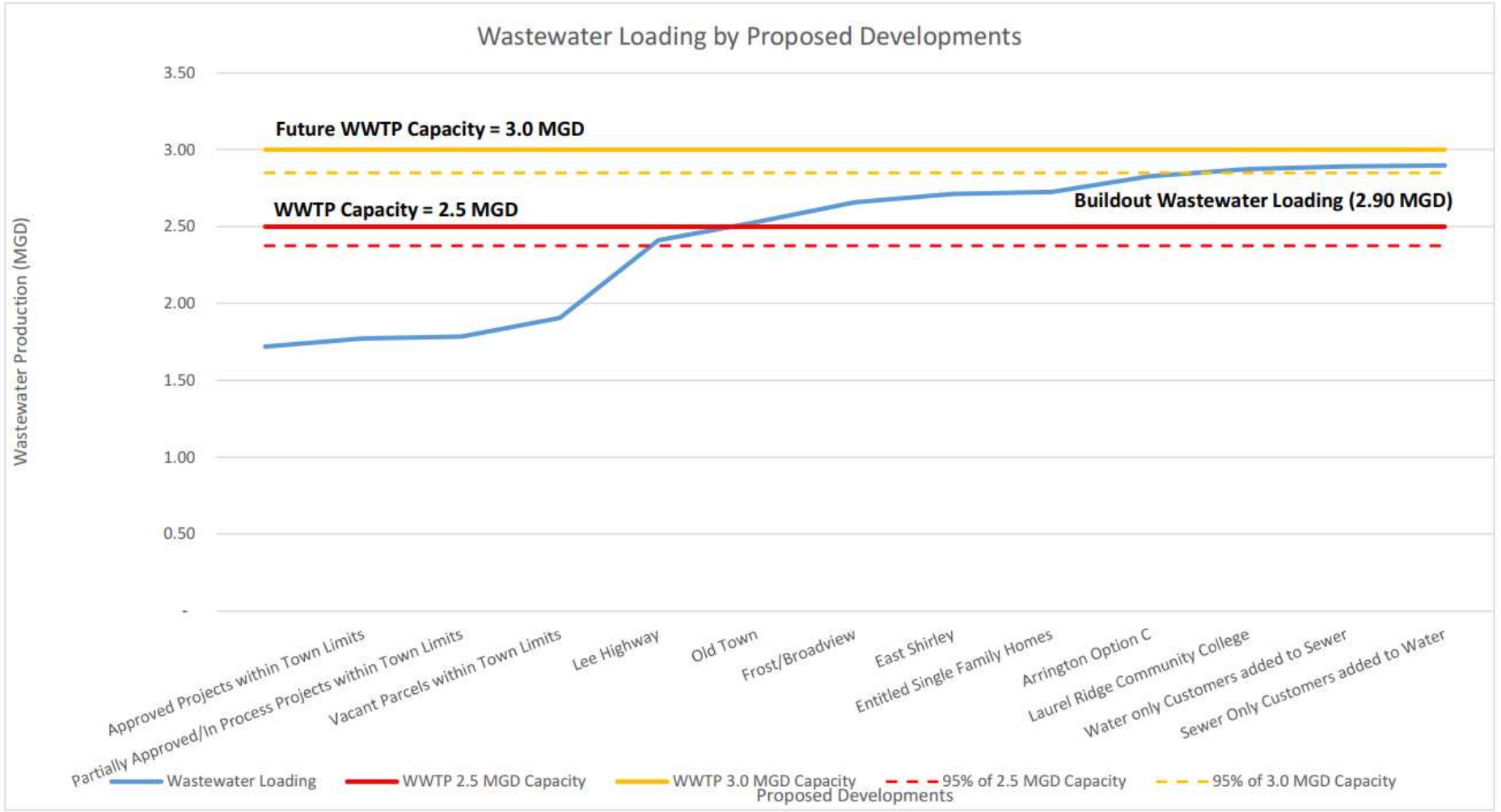


Figure 6.1: Wastewater Loading by Proposed Developments

TRANSPORTATION

SITE PLAN OVERVIEW

Primary vehicular access:

- Full-movement entry on Oak Springs Dr, forming 4th leg of Highland School Driveway intersection
- Full-movement driveway on Oak Springs Dr, forming 4th leg of Hastings Ln intersection
- Access also provided via existing shopping center connections to the south
- A total of 6 access points to the surrounding streets



SITE PLAN OVERVIEW

Pedestrian Connectivity:

- Extensive sidewalk network proposed along all streets and within site to promote walkability
- Connects to and augments pedestrian network within existing center
- Crosswalks will be added on Oak Spring Dr at Hastings Ln and Highland School to promote safe pedestrian access from the north
- Retain crosswalks on Broadview Ave and Branch Dr



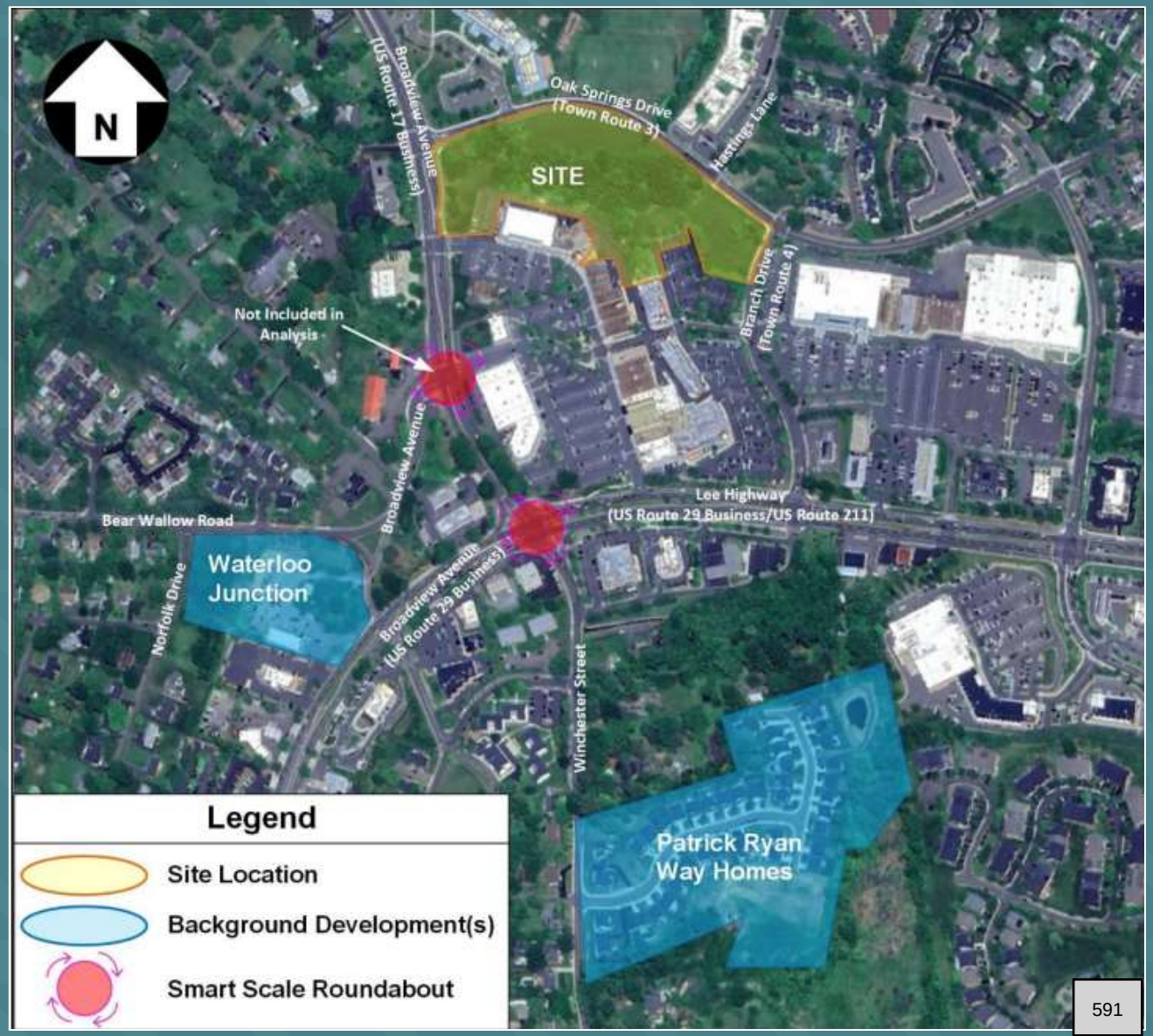
TRAFFIC STUDY AREA



FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT

Assumptions:

- Accounted for 1% annual regional growth on Lee Hwy mainline
- Other approved developments in the area will add some traffic, including 47 new townhomes and 40 new single-family homes
- Roundabout at Broadview Avenue, Broadview Avenue, and shopping center entrance not funded through SMARTScale



FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT

Assumptions (cont.):

- Planned Roundabout at Rt 29/211 and Broadview Ave Intersection:
  - Separate VDOT project, not triggered by this development
  - $29M in SMARTScale funding awarded for this and Blackwell Road roundabout
  - Expected to improve traffic operations and safety
  - Includes accommodations for pedestrians

DRPT | Office of Intermodal Planning and Investment | VDOT

PROJECT PIPELINE

Roundabout: reconfigures the intersection to a multi-lane hybrid roundabout. The roundabout can improve operations by 60%, reduce crashes up to 60%, and improve the safety of pedestrian crossings.

Figure 17. Broadview Avenue Roundabout Concept



FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT

Traffic Operations:

- Overall, the road network assuming the "future without development" condition is expected to continue operating similar to the existing conditions
- Some minor increases in delays are projected for some movements at unsignalized intersections, but signalized intersections and the new roundabout would operate efficiently
- The maximum "future without development" increase in delay at any study intersection is 7 seconds, as compared to existing conditions
- The planned infrastructure improvements, like the roundabout, will improve traffic flow compared to existing conditions

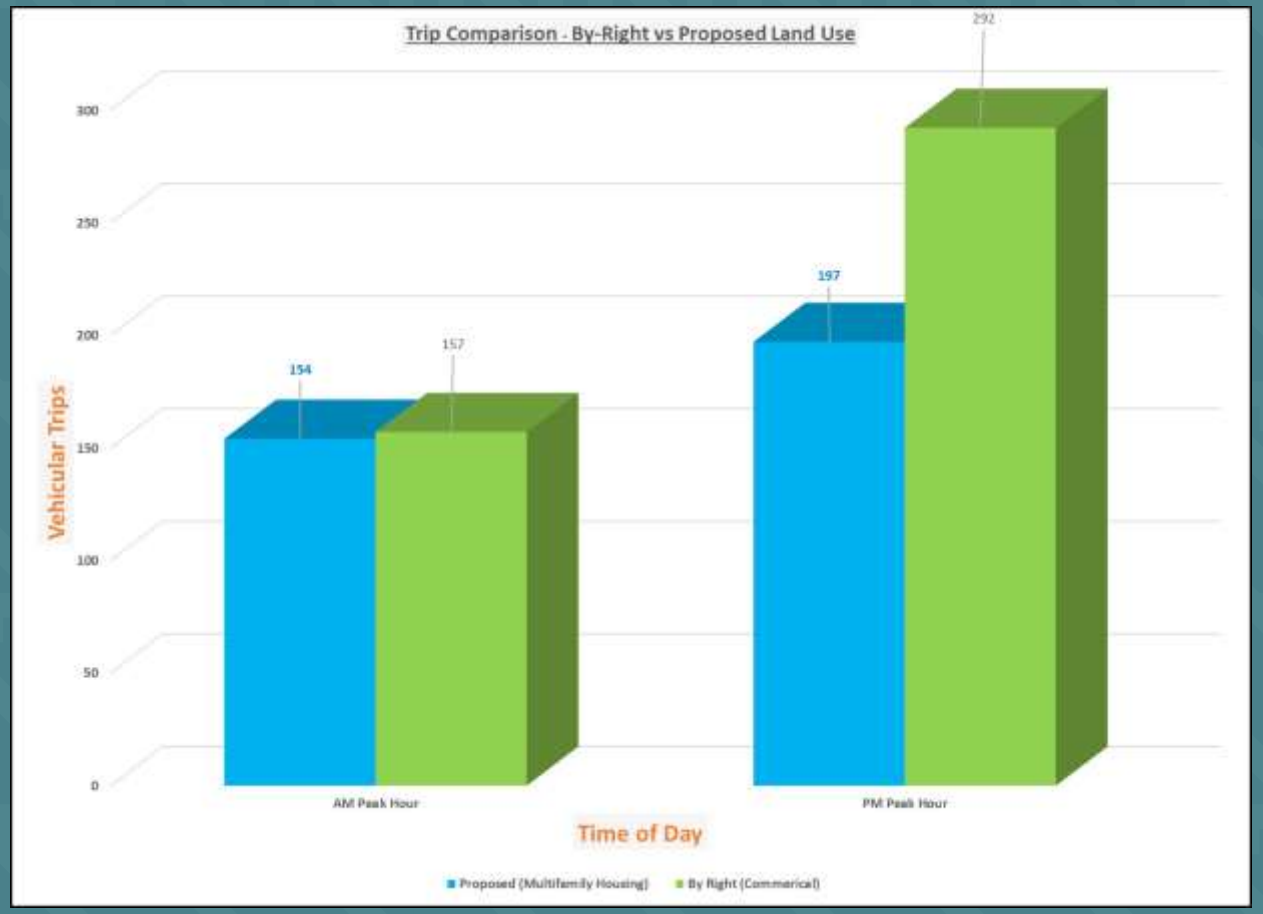
SITE TRIP GENERATION

New Trips Generated by the Development:

- The proposed 386 new residential units are expected to generate around 154 new vehicle trips during the morning commute hour and 197 new vehicle trips during the evening commute hour
- These are distributed across the internal connections and 6 access points, reducing impact at any single location

Less Than By-Right Commercial Development:

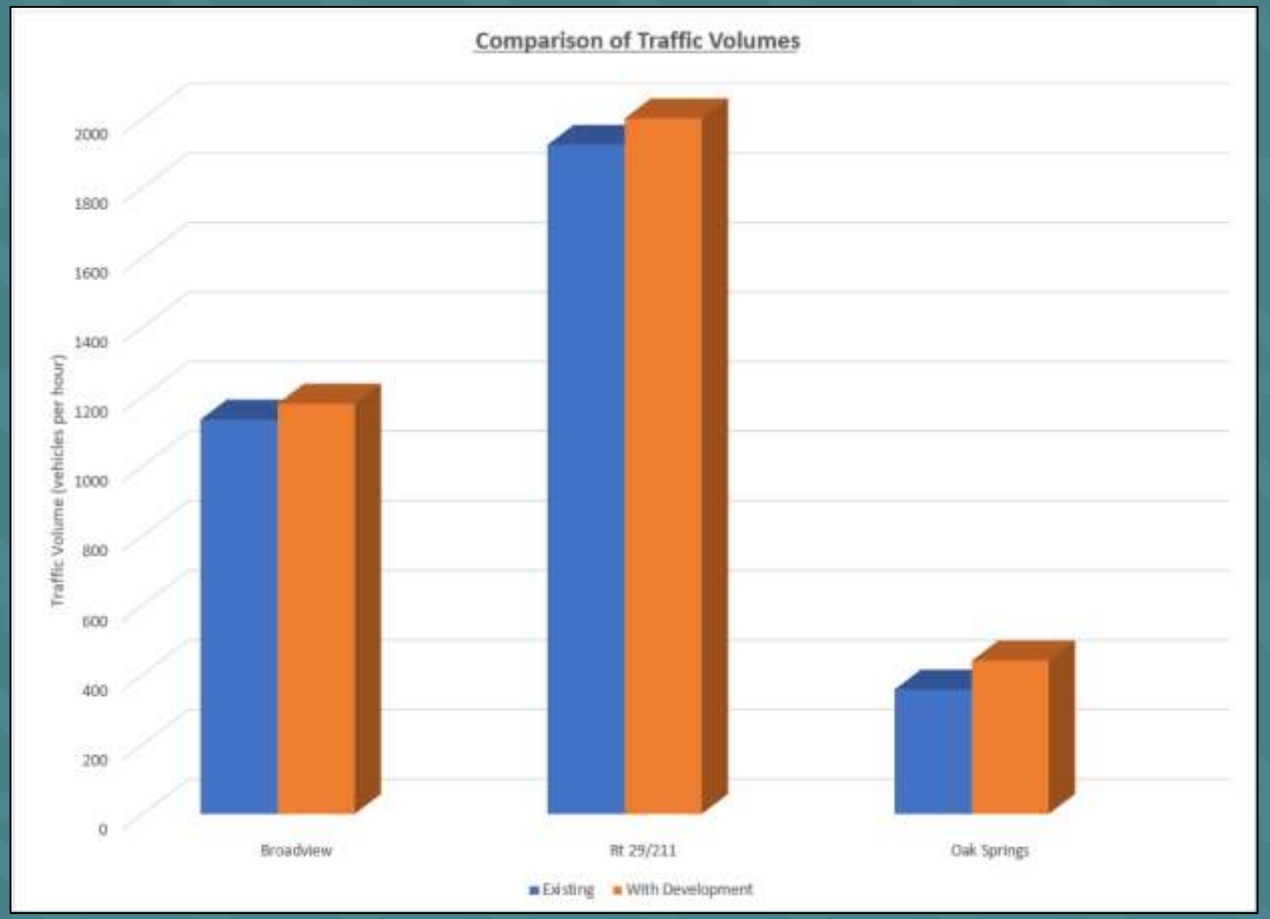
- The residential traffic volumes are lower than what would be seen if the site was developed by right with 40,000 sf of retail instead



SITE TRIP IMPACTS

Minimal Traffic Impact:

- Site-generated traffic represents a small percentage of the existing volumes:
  - 3 - 4% on Broadview Avenue
  - 0.1 - 4% on Rt 29/211
  - Greater proportion on Oak Spring Dr and Branch Dr, where current volumes are lower
- Capacity analysis confirms these modest additions can be accommodated by the surrounding road network without degrading operations



INTERSECTION CAPACITY ANALYSIS - 2027 WITH DEVELOPMENT

Minimal Impact on Intersection Operations:

- The addition of site-generated traffic does not significantly increase delays when compared to the future conditions without the development

Maintaining Efficient Traffic Flow:

- Signalized intersections and the new planned roundabout will continue operating efficiently, demonstrating the surrounding network can accommodate the new trips

Manageable Impacts at Unsignalized Intersections:

- The unsignalized intersection of Warrenton Village South Driveway and Broadview Avenue is anticipated to operate with higher delays, but the site-generated traffic only constitutes approximately 3.5% of the total volume at this location
- At all other unsignalized study intersections, the minor increases in delay represent conditions no worse than what is projected to occur without the development

Accommodating Site Traffic:

- Queues can still be fully accommodated within the available storage at all intersections, similar to the existing and future no-build conditions

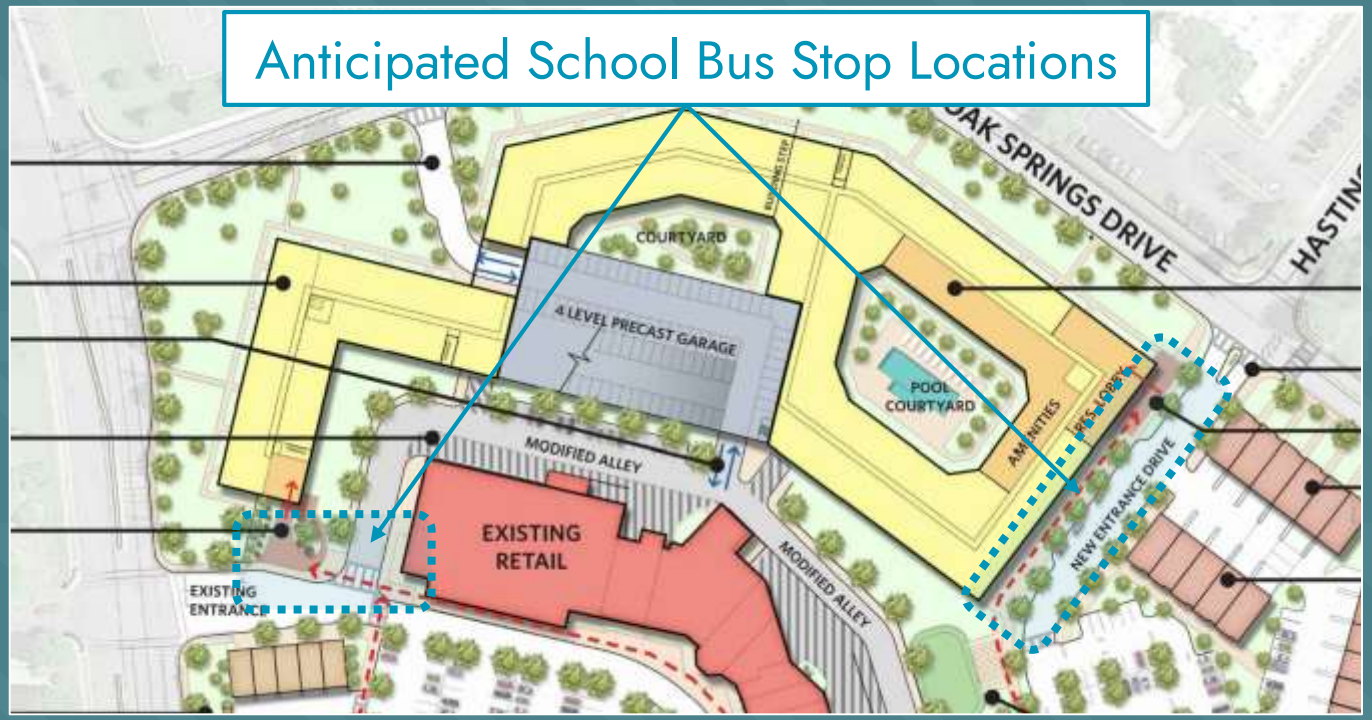
SCHOOL BUS ACCOMMODATIONS

School Bus Stops:

- The developer will work with County schools on exact locations of school bus stops
- Expected to be near the residential lobbies

Impact on Traffic:

- Anticipated that buses will stop on internal streets, rather than adjacent public roads
- Maintain the flow of through traffic on the surrounding streets during peak school travel times



HIGHLAND SCHOOL TRAFFIC

Balancing Access and Minimizing Disruption:

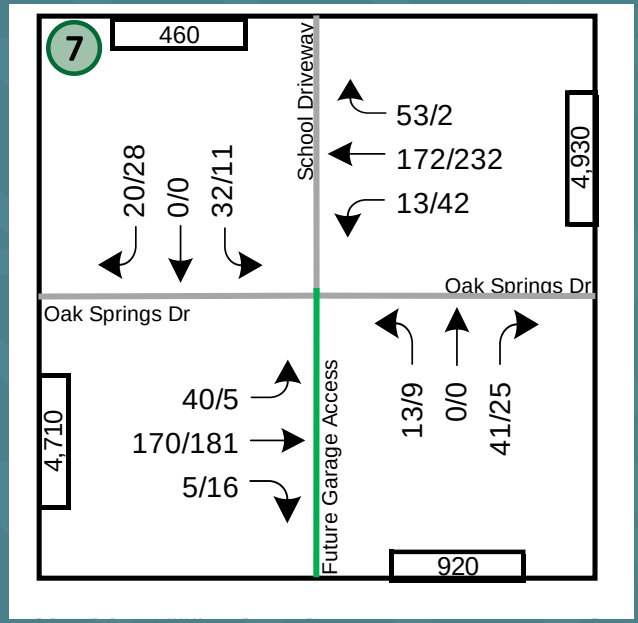
- The proposed parking deck entry is positioned across from the Highland School driveway to balance access needs while minimizing disruption to the existing intersection

Minimizing Conflicts with School Peak Hours:

- Analysis found Highland School and residential AM peak hours have a 15-minute overlap, during which conflicts are expected to be minimal
- Analysis found no overlap in PM peak hours
- It is anticipated that residents will use secondary garage entrance during AM peak hours, which will further reduce conflicts

Accommodating School Operations:

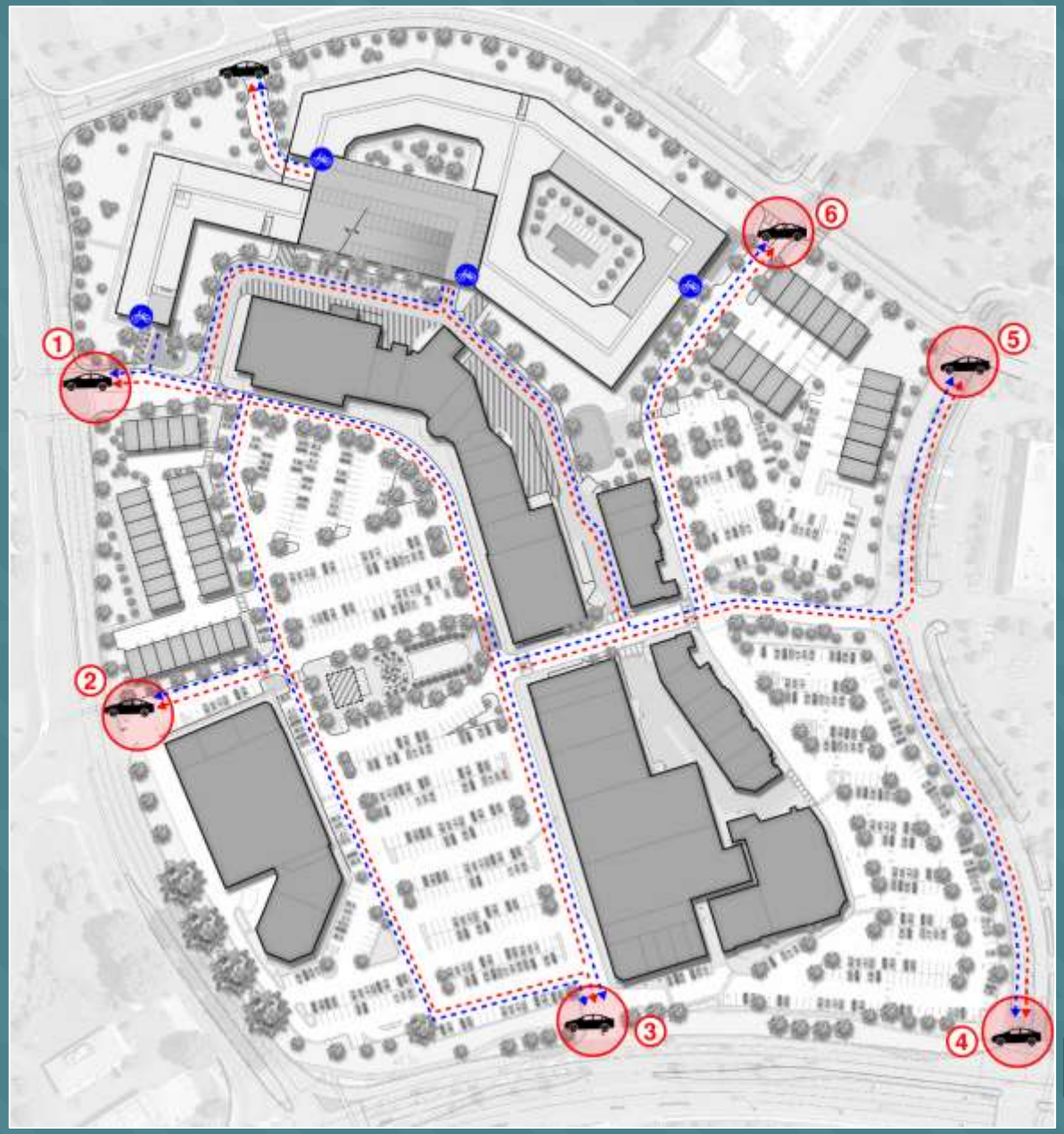
- Observations showed limited queuing of vehicles along Oak Springs Dr at the existing Highland School access point, even during peak times
- The school has multiple pickup/drop-off locations and two entrances, which helps distribute the traffic



Overall, the traffic impacts from the proposed development are not anticipated to significantly disrupt or impede the normal operations of Highland School

HIGHLAND SCHOOL TRAFFIC

- Residents of Warrenton Village Center will want to avoid traffic as much as those dropping off/picking up students at Highlands School
- The site provides 6 alternative points of ingress/egress for vehicles and bicycles that will be the preferable route of travel during peak traffic hours to avoid congestion on Oak Springs Drive
- These alternative points of ingress/egress will further reduce what the Traffic Impact Analysis has determined to be minimal conflicts to the Highland School traffic



ROAD IMPROVEMENTS

Turn Lane Warrant Analysis:

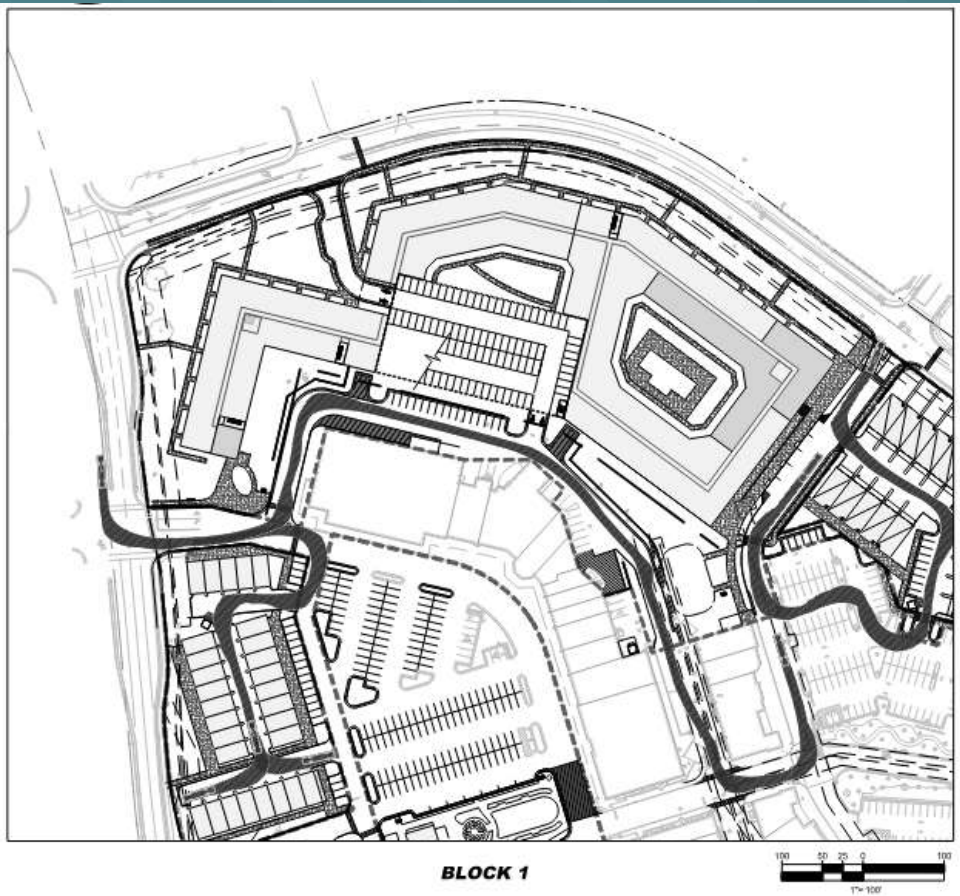
- No new turn lanes warranted at proposed site access points per VDOT standards
- No new turn lanes recommended to be constructed by the development

Signal Warrant Analysis:

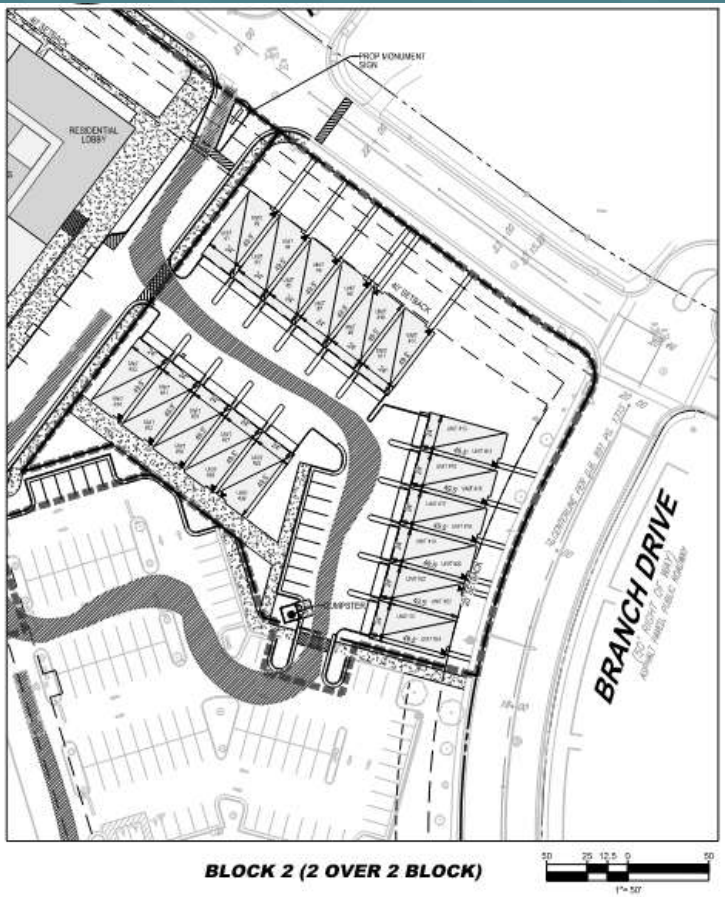
- Signal warrant analysis performed for Broadview Ave/Oak Springs Rd intersection
- Traffic volumes do not meet MUTCD signal warrants, so signalization is not recommended
- Unsignalized operations projected to function acceptably at LOS C or better

The Warrenton Village Center development does not necessitate any additional roadway improvements beyond what is already planned by VDOT and the Town

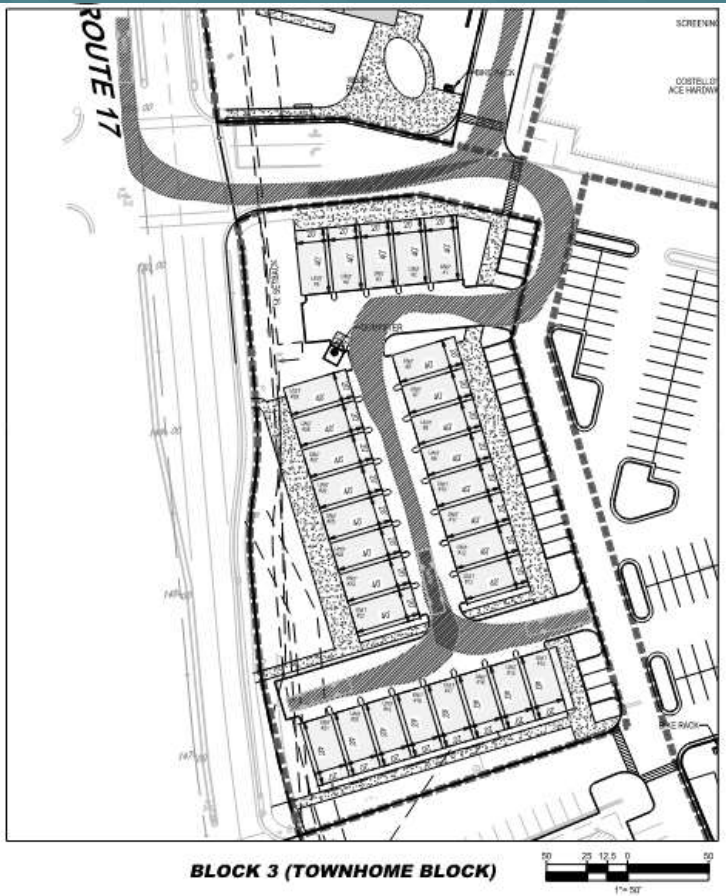
EMERGENCY & DELIVERY VEHICLE MOVEMENTS



BLOCK 1

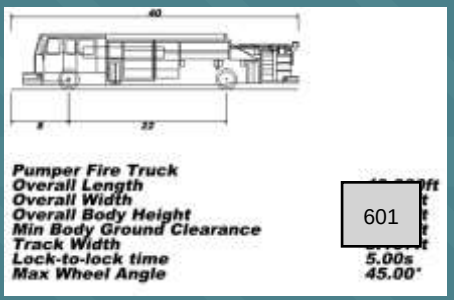


BLOCK 2 (2 OVER 2 BLOCK)



BLOCK 3 (TOWNHOME BLOCK)

- Vehicle turning analysis has confirmed maneuverability throughout all blocks
- Mountable curbs can be included at desired locations during site plan



SUMMARY OF IMPACTS

Additional Traffic:

- The proposed 386 residential units will generate 154 new trips in the AM peak and 197 in the PM peak hour
- This equates to about 4% of the current traffic on most surrounding roadways

Dispersed Access Points:

- Multiple entry/exit locations directly to Oak Springs Dr and through shopping center driveways
- Distributes new trips across the road network, avoiding concentration at a single point

SUMMARY OF IMPACTS

Leveraging Existing and Planned Infrastructure:

- The mixed-use nature of the development will help reduce external trips generated, as some trips can be captured internally
- Surrounding street grid offers multiple route choices, dispersing trips
- Planned roundabout will improve operation at Rt 29/211 and Broadview Ave
- Capacity analysis confirms surrounding intersections and roads can accommodate the new traffic with minimal impact

Outcome:

- The Warrenton Village Center development would improve walkability, vibrancy, and housing choices, with a marginal increase in traffic that does not warrant new road improvements

SCHOOLS

PROJECTED STUDENTS

Fauquier County Student Generation Calculation:

- 0.72 students per single family detached dwelling
- 0.45 students per single family attached dwelling
- 0.20 students per apartment dwelling

- Allocation per school type assumption is:
  - 52% elementary school
  - 22% middle school
  - 26% high school

PROJECTED STUDENTS

Warrenton Village Center Projection at Full Buildout and Occupancy:

- Block 1: 320 apartments x 0.20 = 64 students
- Block 2: 36 attached dwellings x 0.45 = 16
- Block 3: 30 attached dwellings x 0.45 = 14
- Total proposed students = 94

- Allocation per school:
  - Bradley (52%) = 49
  - Taylor (22%) = 21
  - FHS (26%) = 24

FAUQUIER COUNTY ENROLLMENT PROJECTIONS

Enrollment Projection

This is an 5-year analysis of program capacity based on projected enrollment. This analysis is a cohort progression model, looking at birth rates and considers a growth factor. Areas of concern are:

- Elementary (South and Central)
- Middle School Growth
- Liberty HS

	Program Capacity	95% Cap	Actual Enrollment 2019-20	2020-21	2021-22	2022-23	2023-24	% Cap	Projected Enrollment 2024-25	2025-26	2026-27	2027-28	2028-29
ES South													
Miller	580	551	493	476	484	489	506	87.2%	503	492	504	505	522
Pearson	532	505	385	347	365	367	381	71.6%	397	394	407	422	433
Pierce	560	532	550	487	514	531	533	95.2%	537	548	554	543	551
Walter	568	559	410	363	412	399	396	67.3%	409	430	451	452	474
Subtotal South	**2,260**	**2,147**	**1,838**	**1,673**	**1,775**	**1,786**	**1,816**	**80.4%**	**1,846**	**1,864**	**1,916**	**1,922**	**1,980**
ES Central													
Bradley	588	559	369	332	339	356	349	59.4%	341	354	355	363	360
Brumfield	716	680	495	458	482	492	508	70.9%	530	560	580	608	644
Greenville	604	574	531	437	479	495	494	81.8%	506	506	498	468	471
Ritchie	548	521	483	416	478	491	522	95.3%	532	529	543	547	563
Smith	572	543	414	356	414	418	393	68.7%	418	443	465	505	524
Subtotal Central	**3,028**	**2,877**	**2,292**	**1,999**	**2,192**	**2,252**	**2,266**	**74.8%**	**2,327**	**2,394**	**2,441**	**2,491**	**2,562**
ES North													
Coleman	520	494	347	276	311	332	315	60.6%	312	302	280	270	266
Thompson	368	350	254	224	257	256	262	71.2%	267	280	310	327	344
Subtotal North	**888**	**844**	**601**	**500**	**568**	**588**	**577**	**65.0%**	**579**	**582**	**590**	**597**	**610**
TOTAL ELEMENTARY	**6,176**	**5,867**	**4,731**	**4,172**	**4,535**	**4,626**	**4,659**	**75.4%**	**4,752**	**4,840**	**4,947**	**5,010**	**5,152**
Available Capacity			**1,445**	**2,004**	**1,641**	**1,550**	**1,517**	**24.6%**	**1,424**	**1,336**	**1,229**	**1,166**	**1,024**
Middle Schools													
Auburn	622	591	568	513	575	552	578	92.9%	588	590	613	647	668
Cedar Lee	900	855	650	622	613	596	837	93.0%	877	864	805	851	859
Marshall	654	621	466	445	419	408	405	61.9%	396	391	391	413	414
Taylor	618	587	470	422	435	424	607	98.2%	607	601	569	601	606
Warrenton	-	-	432	368	366	392	-		-	-	-	-	-
TOTAL MIDDLE	**2,794**	**2,654**	**2,586**	**2,370**	**2,408**	**2,372**	**2,427**	**86.9%**	**2,468**	**2,445**	**2,379**	**2,512**	**2,547**
Available Capacity			**208**	**424**	**386**	**422**	**367**	**13.1%**	**326**	**349**	**415**	**282**	**247**
High Schools													
Fauquier	1,612	1,531	1,254	1,217	1,170	1,134	1,122	69.6%	1,089	1,111	1,153	1,147	1,170
Kettle Run	1,360	1,292	1,184	1,147	1,112	1,172	1,164	85.6%	1,165	1,214	1,233	1,241	1,267
Liberty	1,370	1,302	1,250	1,252	1,259	1,324	1,300	94.9%	1,261	1,283	1,328	1,341	1,368
TOTAL HIGH	**4,342**	**4,125**	**3,688**	**3,616**	**3,541**	**3,630**	**3,586**	**82.6%**	**3,515**	**3,608**	**3,714**	**3,729**	**3,805**
Available Capacity			**654**	**726**	**801**	**712**	**756**	**17.4%**	**827**	**734**	**628**	**613**	**537**
District Total	13,312	12,646	11,005	10,158	10,484	10,628	10,672	80.2%	10,735	10,893	11,040	11,251	11,504

*Data provided by Fauquier County Public Schools

NEW STUDENTS VS. AVAILABLE CAPACITY

- Bradley
  - New students = 49
  - Available Capacity (min.) = 225
- Taylor/Warrenton Middle
  - New students = 21
  - Available Capacity (min.) = 243
- FHS
  - New students = 24
  - Available Capacity (min.) = 464

		Actuals	*% of Capacity*	*Projections*				
Bradley Elementary School								
Max Capacity	588							
		2023-24		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		349	59.4%	341	354	355	363	360
Available Capacity		239		247	234	233	225	228
Taylor/Warrenton Middle School								
Max Capacity	850	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		607	71.4%	607	601	569	601	606
Available Capacity		243		243	249	281	249	244
Fauquier High School								
Max Capacity	1,634	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		1,122	68.7%	1,089	1,111	1,153	1,147	1,170
Available Capacity		512		545	523	481	487	464
COMBINED								
Max Capacity	3,072	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		2,078	67.6%	2,037	2,066	2,077	2,111	2,136
Available Capacity		994		1,035	1,006	995	961	936

MODIFICATIONS & WAIVERS

ZONING ORDINANCE 9-25: MIXED-USE DEVELOPMENT OPTIC

The mixed-use development option is created within the Commercial District to allow a mixture of uses when consistent with the Comprehensive Plan. The mixed-use option is intended to encourage development in a creative and integrated manner that encourages pedestrian walkability, shared open spaces and an alternative form of housing within the Town.

Section J. – Modifications:

Modifications from the standards set forth in Section 9-25 may be approved by Town Council in conjunction with the Special Use Permit upon a determination that the intent of the Comprehensive Plan is being met.

SUP MODIFICATION & WAIVERS – WAIVER REQUEST #1



- Section 3-4.10.3 of the Zoning Ordinance provides that density in a mixed-use development within a Commercial zone may be calculated pursuant to Sec. 9-25 of the Zoning Ordinance
- Sec. 9-25 allows for calculation of density in a mixed-use development to be up to 1 dwelling unit per 500 square feet of non-residential space. This section also provides that density above 5 units per acre must be approved by the Town Council.
- While this is a modification of Sec. 3-4.10.3, the requested density is fully consistent with the provisions of Sec. 9-25 for a mixed-use development, and less than what could be achieved
- This modification will allow for realization of the concentrated increased density that is a primary objective of the New Town Character District
- **Waiver Request #1:** Increase density above 5 units per acre to 13.28 units per acre, which will yield 386 units

DENSITY CALCULATIONS

By-Right Density Calculation:

- 5 dwelling units per acre
- 5 x 29.05 acres = 145 units

By-Right Density Calculation, with affordable housing bonus:

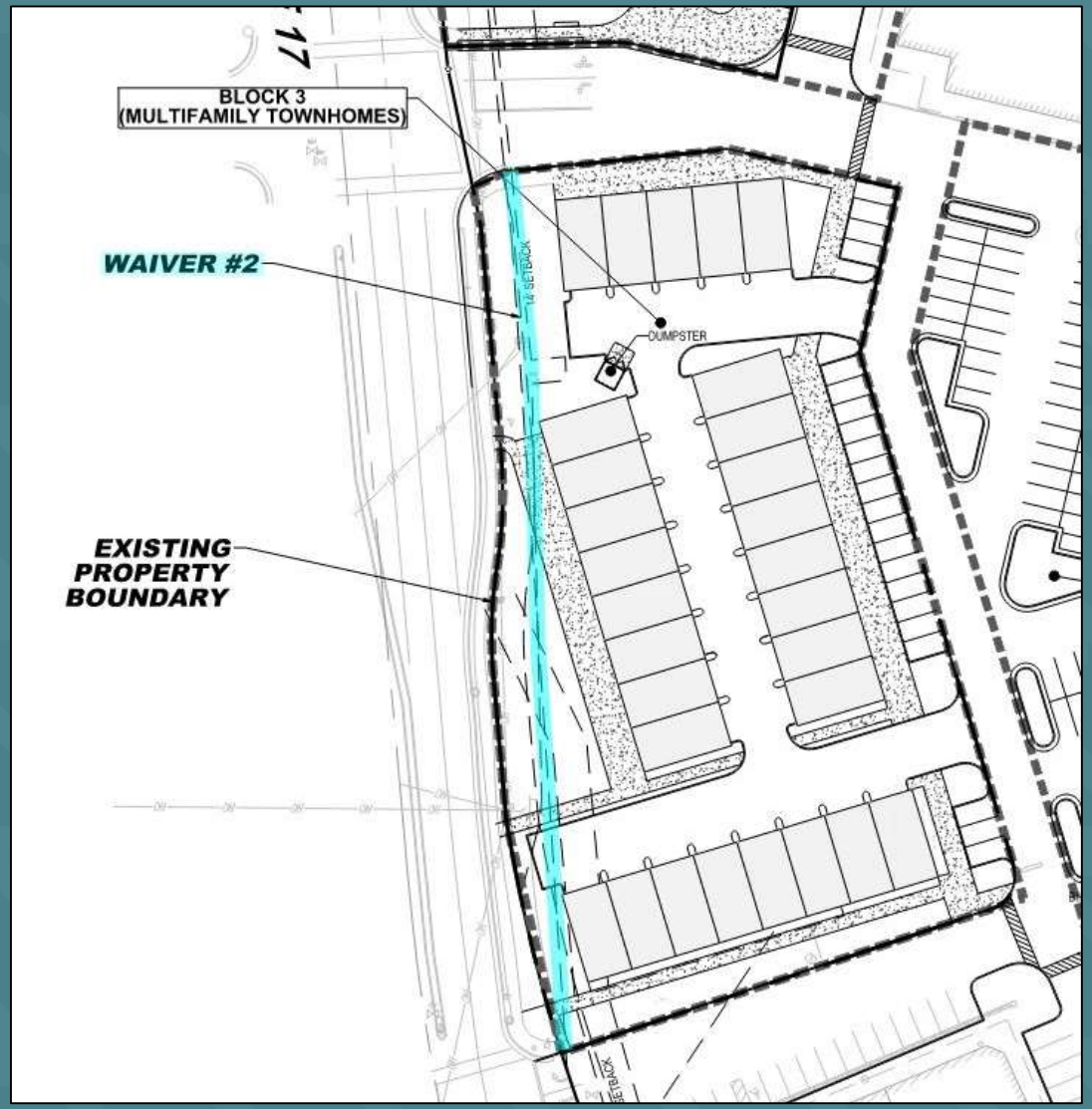
- 10 dwelling units per acre
- 10 x 29.05 acres = 290 units

Mixed-Use Density Calculation (with SUP approval):

- 1 dwelling unit per 500 GSF of non-residential floor space
- 218,142 GSF / 500 = 436 units (15 units per acre)

- Requested Density = 386 (13.28 units per acre)

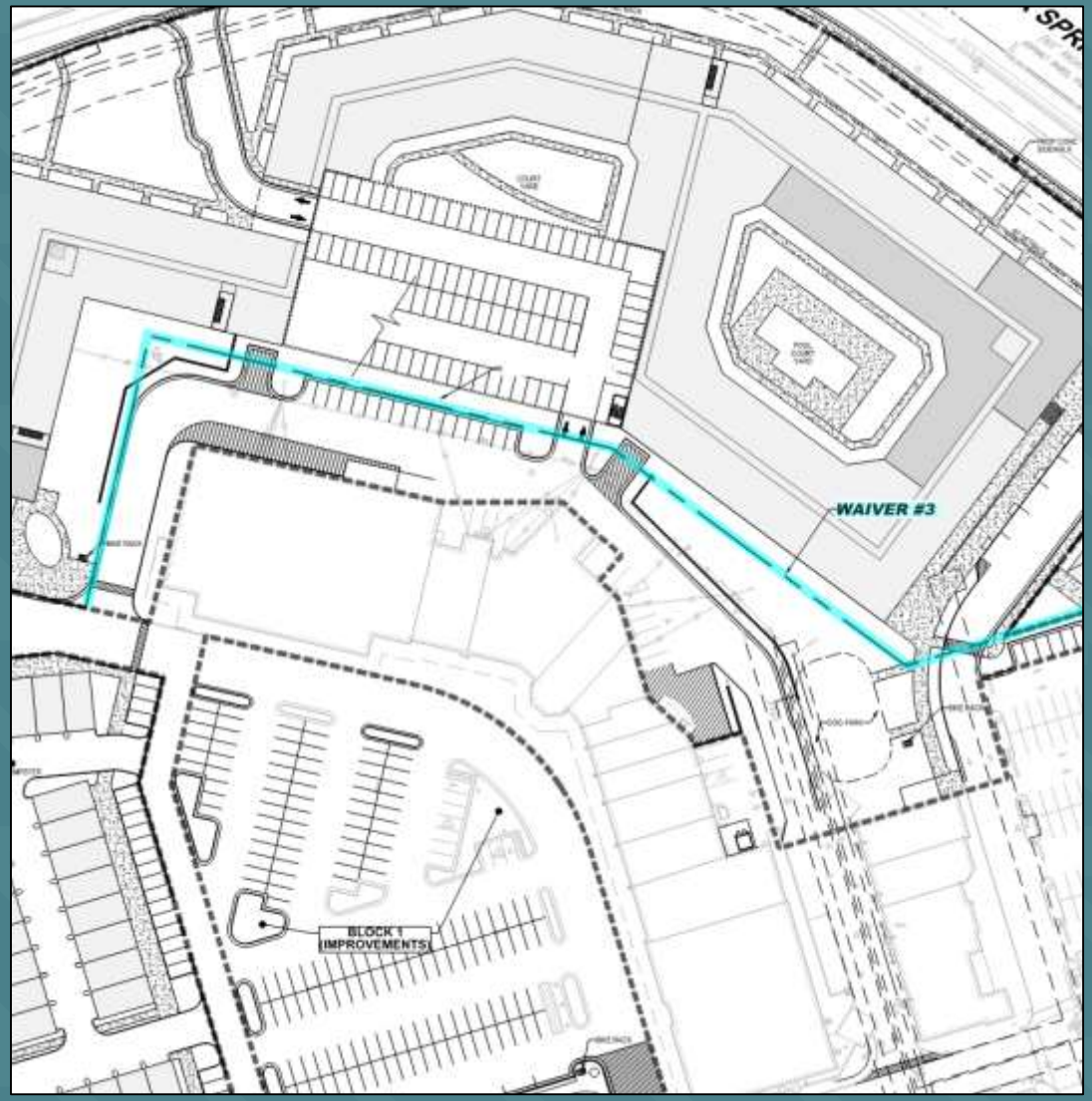
SUP MODIFICATION & WAIVERS – WAIVER REQUEST #2



- Article 3-4.10.4: Required front yard setback from ROW greater than 50' is 40' minimum, if no parking or loading is proposed.
- This modification will allow the units to be closer to the street, creating a more consistent edge that is representative of the New Town Character district
- **Waiver Request #2**: Decrease minimum setback to 14' along Broadview Avenue

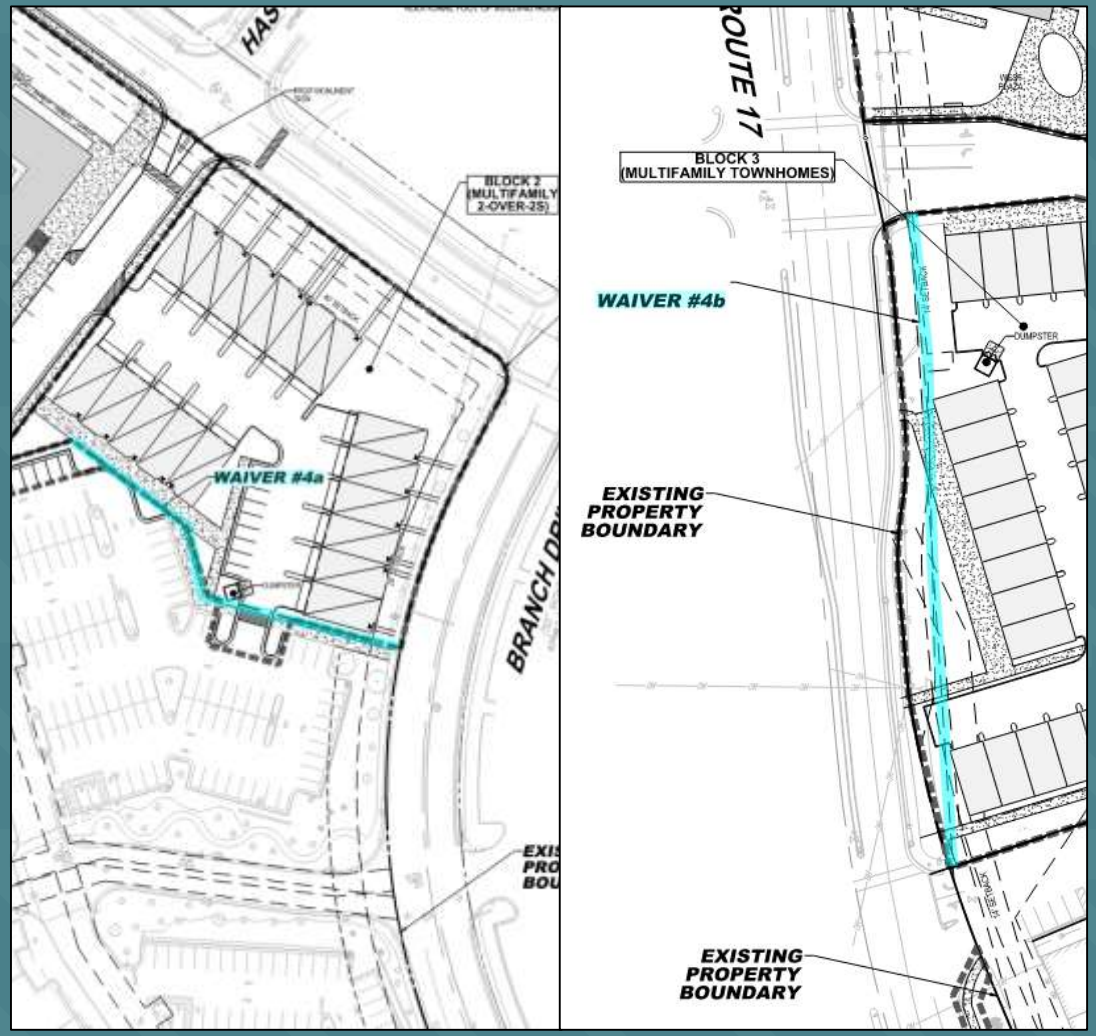


SUP MODIFICATION & WAIVERS – WAIVER REQUEST #3



- Article 3-4.10.4: Required side/rear yard setbacks is 5' minimum.
- This modification will allow the overall development to function as a true mixed-use development that will not be segmented by internal separations.
- **Waiver Request #3:** Decrease side/rear yard setbacks along internal proposed and existing property lines to 0'

SUP MODIFICATION & WAIVERS – WAIVER REQUEST #4



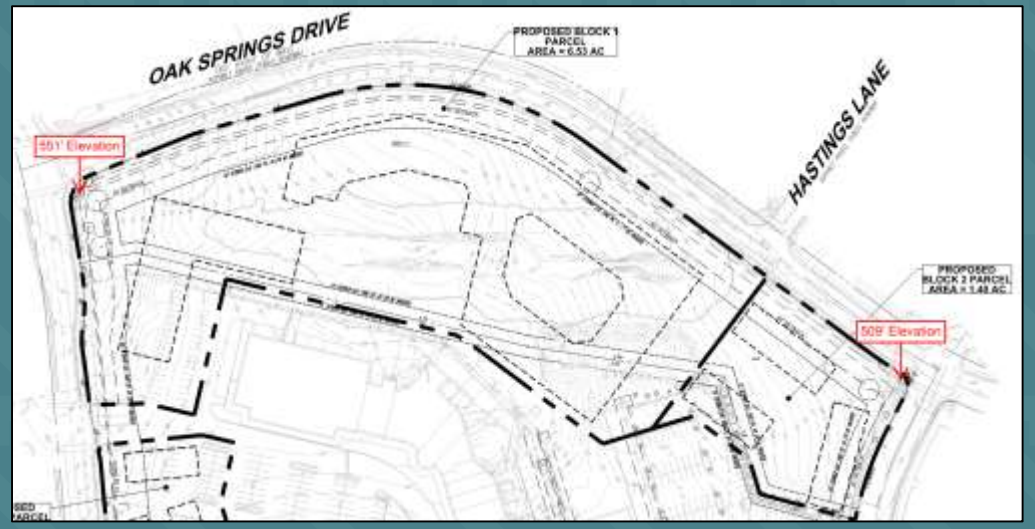
- Article 8-8.5: Minimum buffer width for commercial uses adjacent to residential uses is 25', plus 1' for each foot of building height over 35'. Minimum buffer width for rear boundaries of residential uses from public ROW is 25'.
- This modification will allow the overall development to function as a true mixed-use development that will not be segmented by internal separations
- This modification will allow the units to be closer to the street, creating a more consistent edge that is representative of the New Town Character district
- **Waiver Request #4a:** Decrease buffer width between commercial and residential uses to 0'
- **Waiver Request #4b:** Decrease rear buffer width for residential uses from public ROW to 14'

SUP MODIFICATION & WAIVERS – WAIVER REQUEST #5

- Article 2-20: Height limit for dwellings may be increased up to 45' and up to three stories provided that front, side and rear setbacks increase 1' for each additional foot of building height over 35'.
- **Waiver Request #5**: Increase height limit for dwellings as follows:
  - 54' max height for Block 1, Oak Springs Drive Frontage
  - 36' max height for Block 1, Broadview Drive Frontage
  - 45' max height for Block 2
  - 36' max height for Block 3

WHY ADDITIONAL HEIGHT IS NEEDED

- Site drops 42’ from Broadview Avenue to Branch Drive
- The building starts as 3-stories on the west side at the higher elevation and increases to 4-stories on the east side as the elevation drops
- Increasing height as a building moves down a hill is a technique to keep consistency in scale across a building’s elevation, as well as a way to conceal retaining walls within the building’s foundation, as opposed to creating unsightly external walls

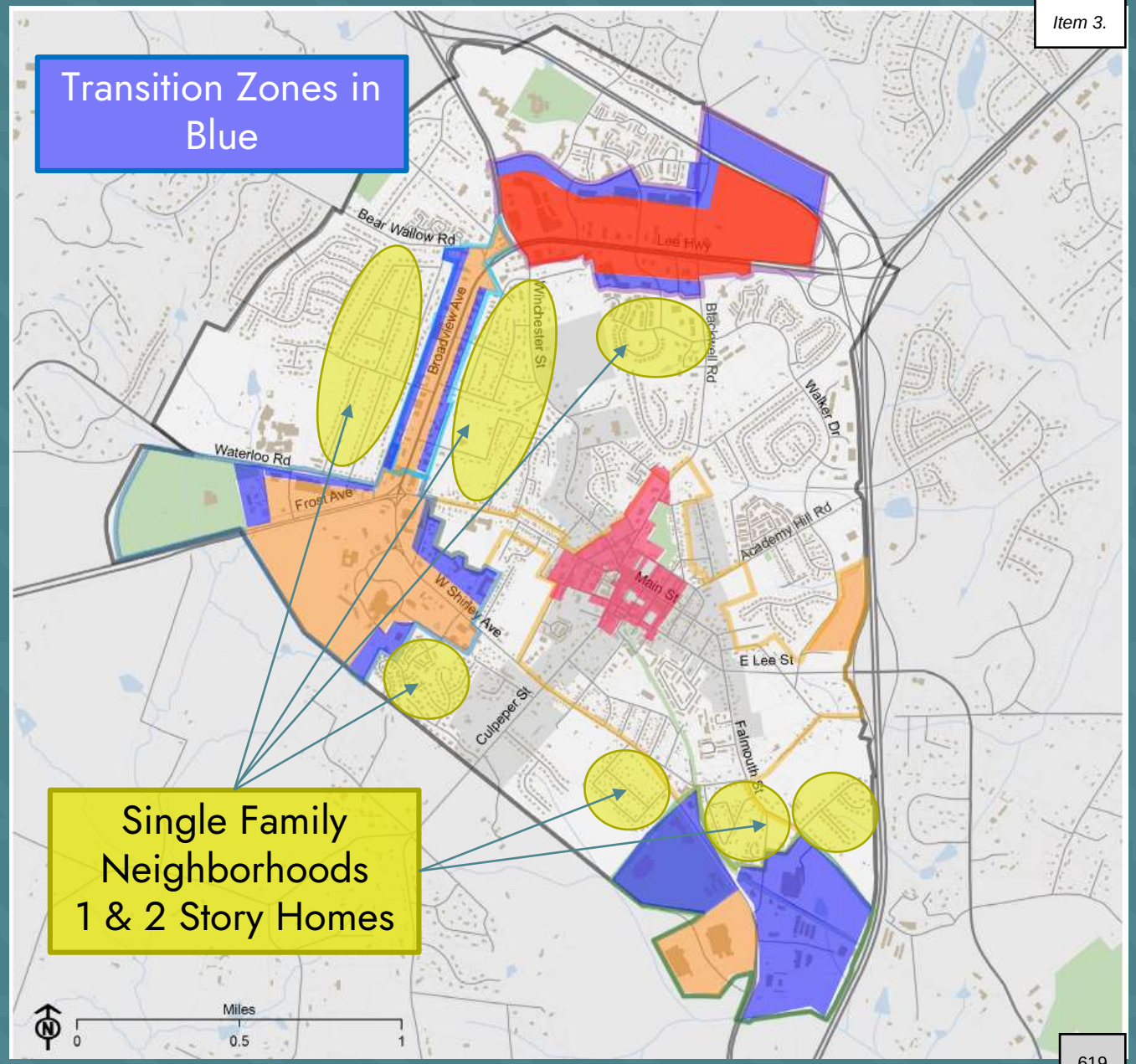


WHY ADDITIONAL HEIGHT IS NEEDED

- The New Town Character District has been established in Plan Warrenton 2040 as a designated area of high density—3-story residential does not allow for the concentrated density desired in the District
- The New Town Character District calls for "greater intensity of mixed-use and strong live, work, and play options" and notes that this district has "high visibility," due to its proximity to Route 29. The requested modifications to increase density and height support the need for greater intensities and higher visibility in this Character District.
- 4-stories allows for the internal parking garage to be hidden from the exterior of the building

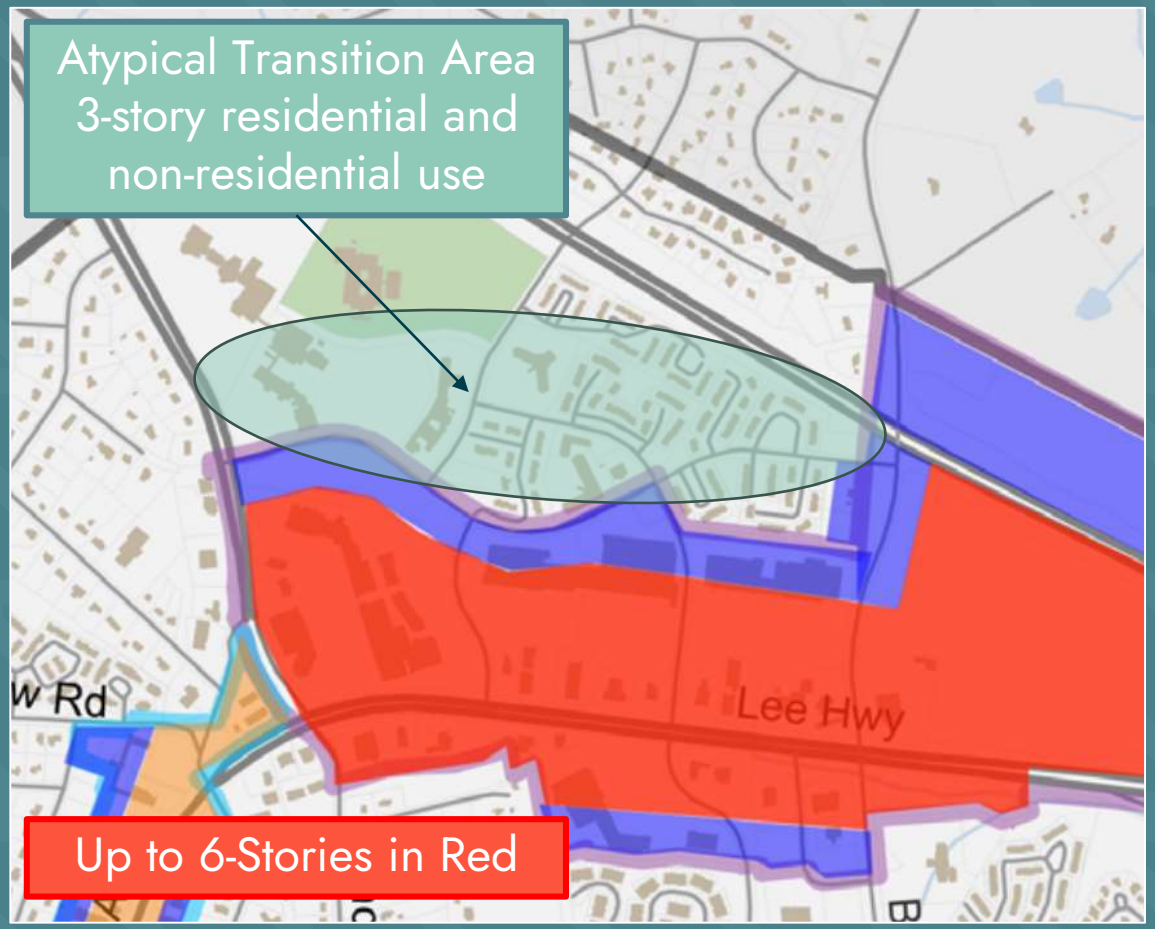
TRANSITION ZONES

- The area along the south side of Oak Springs Drive is located within in a “Transition Zone” as defined by Plan Warrenton 2040
- Transition Zones are “specifically defined as adjoining neighborhoods to articulate a step down in the number of stories for greater compatibility to adjoining single-family neighborhoods”
- These areas are intended to be a max of 3-stories to provide a step down to the adjacent 1- and 2-story single family neighborhoods
- Transition Zones have been placed in accordance with this definition across the Future Land Use map



TRANSITION ZONES

- With the exception of the Transition Zone placed along Oak Springs Drive
- The uses on the north side of Oak Springs Drive are not 1- & 2-story single family neighborhoods
- This area is occupied with 3- & 4-story apartments, 3-story townhomes, Brookside Rehab & Nursing Center and Highland School
- Because of this, increasing building heights to 4-stories at Warrenton Village Center still provides the intended step-down affect, given that the uses on the north side are atypical, 3-story and non-residential uses and the uses along Lee Hwy may go up to 6-stories



SURROUNDING BUILDING HEIGHTS



NOTABLE WARRENTON BUILDING HEIGHTS

- Warrenton Manor Apartments
  - Stories: 4
  - Location: Hastings Lane
  - Zoning: Residential Multi-Family
  - Future Use: Live-Work Neighborhood



- 98 Alexandria Pike Office Building
  - Stories: 5
  - Location: North of Old Town
  - Zoning: Central Business District
  - Future Use: Old Town Mixed Use



NOTABLE WARRENTON BUILDING HEIGHTS

- 28 Blackwell Park Lane Office Building
  - Stories: 3
  - Location: Blackwell Business Park
  - Zoning: Commercial
  - Future Use: Commercial



- Hampton Inn
  - Stories: 5
  - Location: Blackwell Road
  - Zoning: Commercial
  - Future Use: Commercial



NOTABLE WARRENTON BUILDING HEIGHTS

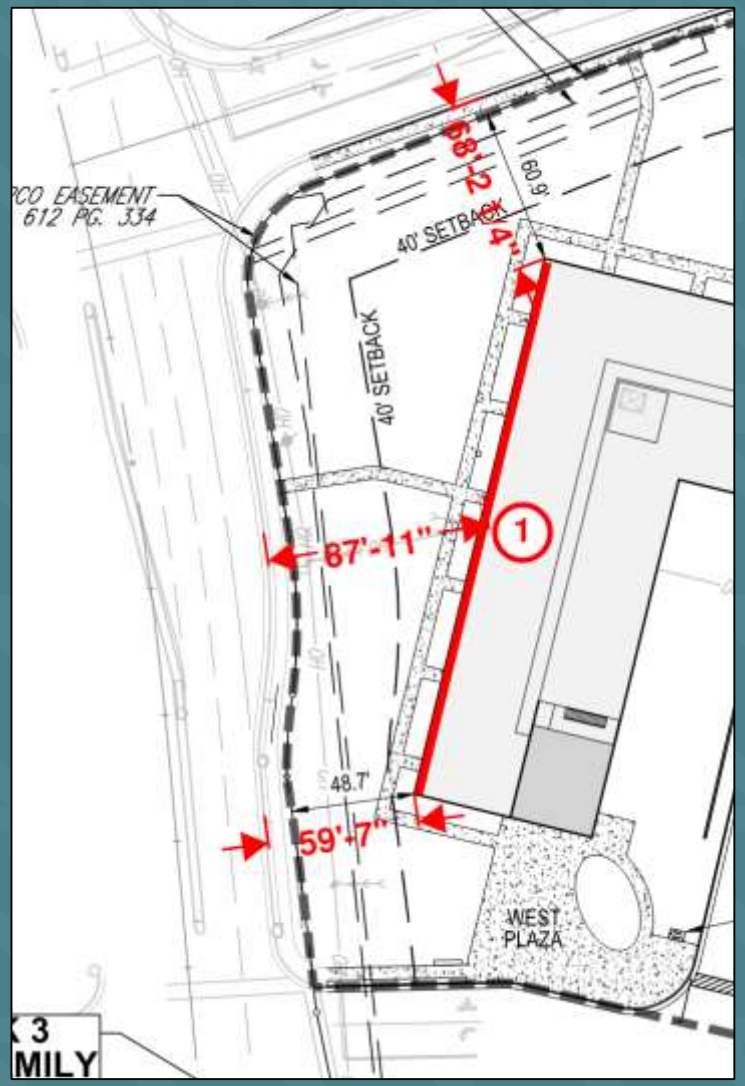
- Fauquier County High School
  - Stories: 4
  - Location: 705 Waterloo Road
  - Zoning: Public-Semi-Institutional
  - Future Use: Public/Semi-Public Non-Intensive



- Fauquier Health
  - Stories: 5
  - Location: 500 Hospital Drive
  - Zoning: Public-Semi-Institutional
  - Future Use: Public/Semi-Public Intensive



BUILDING HEIGHTS & SETBACKS – FROM BROADVIEW



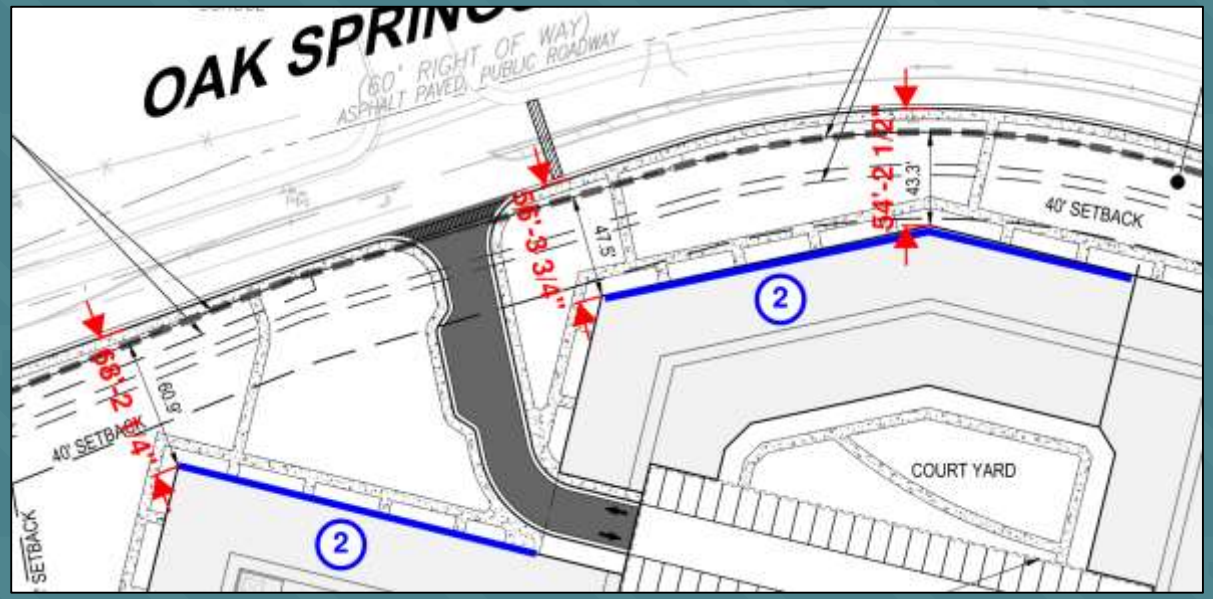


Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
3	32′-11″	36′-0″	59′-7″

- Setback to Height Ratio = 1.7 : 1

BUILDING HEIGHTS & SETBACKS – FROM OAK SPRINGS



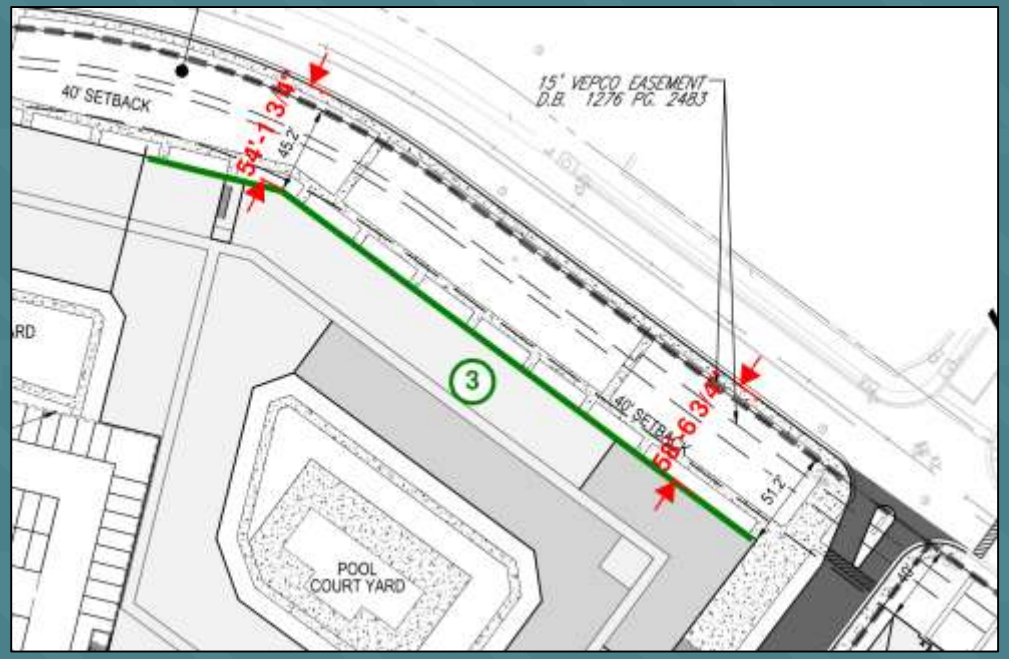


Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
4	42′-11″	54′-0″	54′-2″

- Setback to Height Ratio = 1 : 1

BUILDING HEIGHTS & SETBACKS – FROM OAK SPRINGS





Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
4	45′-0″	54′-0″	54′-2″

- Setback to Height Ratio = 1 : 1

BUILDING HEIGHTS & SETBACKS – FROM OAK SPRINGS

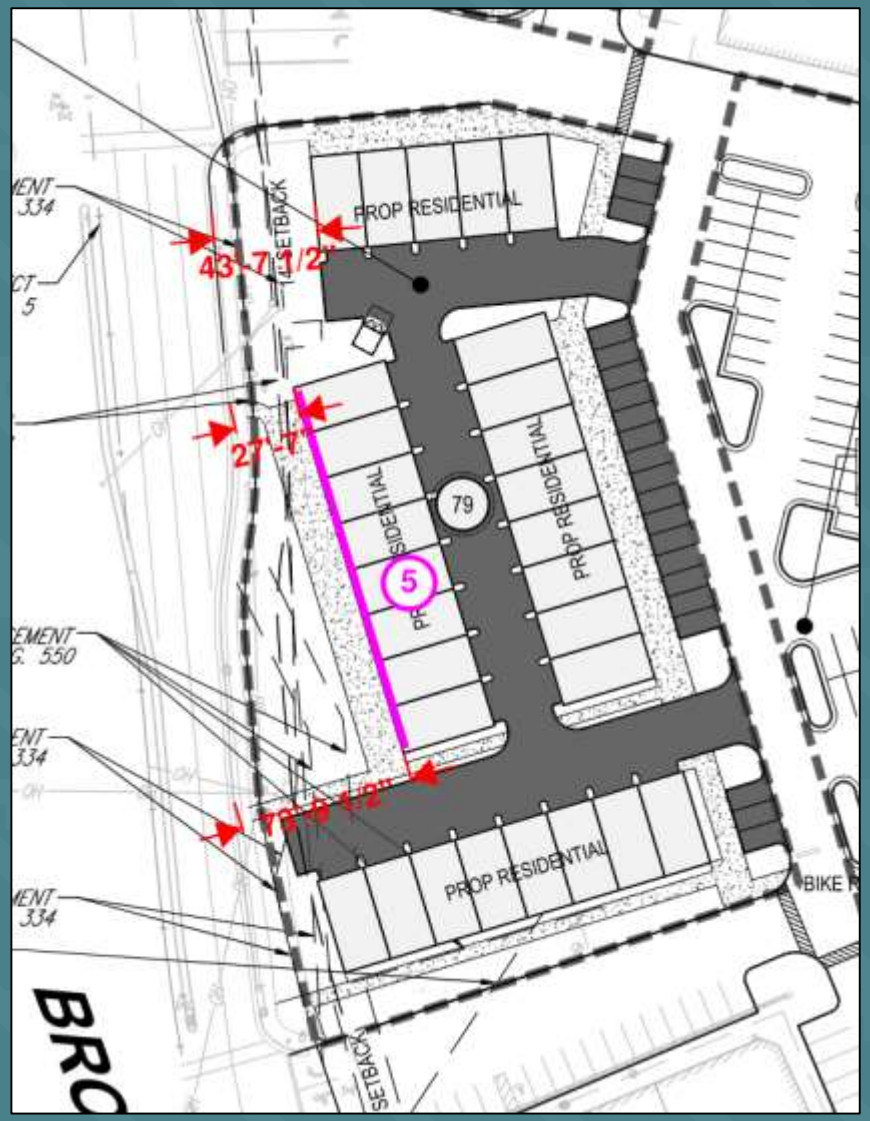




Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb (Oak Springs Dr.)	Minimum Setback from Curb (Branch Dr.)
4	43′-6″	45′-0″	46′-11″	21′-6″

- Setback to Height Ratio = ~1 : 1 on Oak Springs Dr
- Setback to Height Ratio = ~0.5 : 1 on Branch Dr

BUILDING HEIGHTS & SETBACKS – FROM BROADVIEW

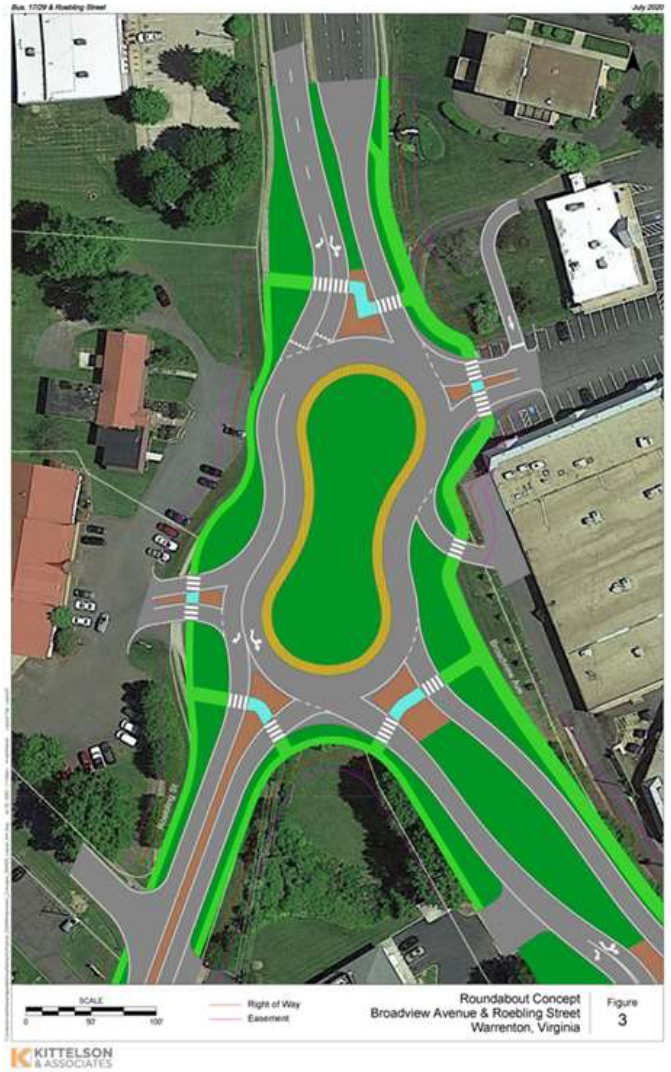


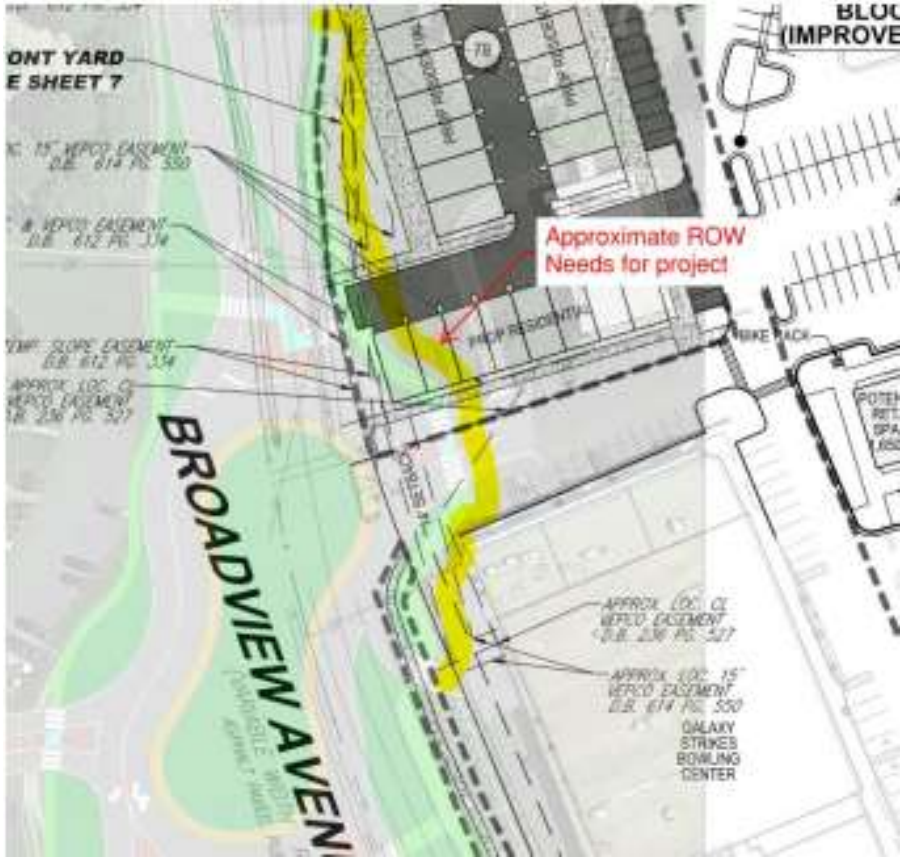


Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
3	32′-11″	36′-0″	27′-7″

- Setback to Height Ratio = 0.8 : 1

TOWN OF WARRENTON SMART SCALE ROUND 6 – DRAFT CONCEPT





630

In Town

Planning Commission Public Hearing Citizen Comments

As of Noon

June 18, 2024

Matthew Cute

From: noreply@civicplus.com
Sent: Sunday, May 12, 2024 6:31 AM
To: citizencomment
Subject: Online Form Submittal: Public Comment

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Public Comment

Name	Joyce Lisbeth
Address	[redacted]
City	Warrenton
State	VA
Zip Code	20186
Email Address	[redacted]
Phone Number	[redacted]
Committee, Board, or Commission Type	Town Council
Agenda Item	Warrenton Village Shopping Center High-Density
Comment	No no no! We live in Warrington to escape this nonsense. Are you going to build new schools first? Do we really need the traffic of northern Virginia every day in our little town? Whoever proposed to the traffic circles around here and the 4 way stops when people don't understand driving laws hence how to use them is bad enough. And another increase in the water and sugar bills? Almost a 50% hike in those costs in 1 year is absolutely ridiculous. People are having trouble providing food for their families with this inflation and you're going to make water and sewer another stress?

Email not displaying correctly? View it in your browser.

Matthew Cute

From: noreply@civicplus.com
Sent: Wednesday, May 8, 2024 7:13 AM
To: citizencomment
Subject: Online Form Submittal: Public Comment

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Public Comment

Name	Benjamin Maas
Address	[redacted]
City	Warrenton
State	VA
Zip Code	20186
Email Address	[redacted]
Phone Number	[redacted]
Committee, Board, or Commission Type	Town Council
Agenda Item	High density housing
Comment	I enthusiastically support the planned housing development. Our community lacks the kind of housing that will draw our children back to Warrenton as adults. We also lack an adequate inventory of "affordable" housing for those who educate our children, care for our infirm, and protect our community. This is but a start and this is a far far cry from plunging off a cliff into becoming (pick your overgrown northern Virginia community). This is smart and necessary growth.

Email not displaying correctly? View it in your browser.

Matthew Cute

From: noreply@civicplus.com
Sent: Tuesday, April 30, 2024 12:18 PM
To: citizencomment
Subject: Online Form Submittal: Public Comment

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Public Comment

Name	Carol C Colins
Address	[redacted]
City	Warrenton
State	va
Zip Code	20186
Email Address	[redacted]
Phone Number	[redacted]
Committee, Board, or Commission Type	*Field not completed.*
Agenda Item	Warrenton Village Center
Comment	If this kind of high-density is within the town plan, I believe we need a revision to that plan. While the proposed project is attractive, the density is overwhelming to a modest-sized town such as ours. We are already concerned about capacity of water and sewer services; and already have increased traffic, thanks to development in our neighboring county of Culpeper. If you can keep this from going forward that would be in our best interest. A similar development--of a much smaller size--would be more appropriate.

Email not displaying correctly? View it in your browser.

Matthew Cute

From: William Goodrich [redacted]
Sent: Tuesday, April 16, 2024 4:15 PM
To: Planning Department
Subject: Warrenton Village Center Project

Some people who received this message don't often get email from williamgoodrich@hotmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I live in Warrenton on Broadview and I do not want a project that big going up just across the street from me. The reason I moved her is to avoid this kind of living. People move to Warrenton to escape Northern Virginia. Keep that crap out of here. Thank you

Matthew Cute

From: Michele Burwitz [redacted]
Sent: Monday, April 15, 2024 5:20 PM
To: Planning Department
Subject: Proposed Warrenton Village Center

Some people who received this message don't often get email from mlburwitz@yahoo.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello. I live in the town of Warrenton in the Bear Wallow Knolls townhomes. I want to share my thoughts on the proposed Warrenton Village Center, and I hope you will consider my views in your decision making.

I am against this proposed project for a couple of reasons. I was born and raised in this area, and Warrenton has always been my home for the last 52 years. I love living here, because it still feels like a small town, despite its recent growth. While I believe there are already too many people in this town, it is still relatively quiet and has maintained its quaint appeal. I believe what you are proposing will completely change the atmosphere for the worse. The last thing I want to see when I walk my dog or look across my back yard is a four-story apartment building, including a hideous parking garage as well as three-story townhouses crowding and towering above the beautiful landscape that is Warrenton. Also, the traffic has gotten worse and is already congested. This proposed population increase would only further congest Warrenton and make the traffic unbearable. There is plenty of land on the outskirts of town and out of town limits for all these buildings to go.

I realize that it is always nice to add income to the town, but not at the expense of those of us already living here. I live in Warrenton, because it isn't Gainesville or Manassas. Look what all the growth has done to those cities. I do not want it here.

Please consider my views when you are planning for the future of this town. I am a lifetime Warrenton resident, and it is my future too.

Thank you,

Michele Burwitz
[redacted]

Matthew Cute

From: joanne nistico [redacted]
Sent: Monday, April 15, 2024 4:18 PM
To: Planning Department
Subject: High - density housing project

Some people who received this message don't often get email from joannenistico@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Planning Commission, **I am expressing my strong opposition to the proposed high-density housing project.**

This development does not align with our community's existing character and housing mix and poses significant safety concerns for the children who attend school near the complex.

Please represent our interests in opposing this project and working towards restoring Warrenton's planning and zoning to a more sensible approach that remains in line with our community's values.

Sincerely,

Joanne Nistico

[redacted]

--

Joanne Nistico CTA, CWE
[redacted]

Matthew Cute

From: Denise Harris
Sent: Monday, April 8, 2024 9:01 AM
To: Jess Achenbach
Subject: FW: Historic Preservation Opportunity with Warrenton Village Center Development
Attachments: IMG_2326.jpeg; IMG_2328.jpeg; IMG_2327.jpeg

FYI

From: Steven and Ann Rose Wojcik [redacted]
Sent: Monday, April 8, 2024 8:57 AM
To: Planning Department <Planning@warrentonva.gov>; Carter Nevill <cnevill@warrentonva.gov>; Paul Mooney <pmooney@warrentonva.gov>; David McGuire <dmcguire@warrentonva.gov>; Eric Gagnon <egagnon@warrentonva.gov>; Heather Sutphin <hsutphin@warrentonva.gov>; Brett Hamby <bhamby@warrentonva.gov>; James Hartman <jhartman@warrentonva.gov>; William Semple <wsemple@warrentonva.gov>
Cc: Rob Walton <rwalton@warrentonva.gov>; Denise Harris <dharris@warrentonva.gov>; Casey Squyres <csquyres@warrentonva.gov>
Subject: Historic Preservation Opportunity with Warrenton Village Center Development

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Mr. Mayor, members of the Planning Commission, and members of the Town Council:

While there are many issues you are considering as you weigh the SUP for the Warrenton Village Center development, there is also an opportunity for restoration and reviving of a historic natural resource on the property in consideration, which, if taken, would emphasize the unique history and character of Warrenton. I hope it will be part of this project if it is approved. I appreciate the opportunity for you and the developer to consider it. It would be an amenity for the whole community that would not require altering the current plans of the developer and I believe would not add much to the developer's costs.

At the northwest tip of the property along the corners of Oak Springs Drive and Branch Drive amidst overgrown vegetation and fallen tree limbs lies Oak Spring, the natural spring with its stone fortifications that gave its name to the colonial era estate that once existed on this and the surrounding land. The spring gave its name to Oak Spring Manor, which still exists across the street from the spring. The spring, the house, and part of the family cemetery a few blocks further, are all that remain of the estate of the Edmonds Blackwell family, early settlers of the area during the colonial period, one of whose members was an officer in the Revolutionary War.

It would be an asset to the community to restore the stonework, clear the deadwood and vegetative overgrowth around the spring, plant a few oaks, add a few benches and a walkway, and install a plaque with historic information about Oak Spring Manor on this corner. Upon examining the developer's plans presented to the town, approximately a half acre of green space is planned on this

spot in residence block #2 of the proposal. So it appears that adding the enhancements suggested above to the plans would not affect the rest of the project. It would also be an amenity to the new residences as well as something the broader community could enjoy. As a natural spring exists there, I do not believe that any structure could be built there anyway. I know of at least one other property in town with continuous problems since a parking lot sits on top of a spring.

Restoring and enhancing this historic, natural component would ground the development in its surroundings and history. It would also connect the development to the surrounding Oak Springs neighborhood and help preserve this part of Warrenton's sense of place. Thirdly, it would be an additional green space for residents of Warrenton to enjoy nature and perhaps learn about this part of the town's history. As the developer stated at the planning commission work session, the proposed development "aims to honor the town's unique history." Restoring the spring's stonework and creating a green space around it for townspeople to enjoy would be a fitting, meaningful, ideal way to do this. In my view, it's a win-win for both townspeople and the developer.

I am attaching photos of the current state of the spring as well as a video history of the spring and Oak Spring Manor. Tho local historian talks about the spring starting at 2 minutes 20 seconds into the video and ends around the 3 minute mark. Link to video: https://www.youtube.com/watch?v=22A-UD7uy2s

Thank you for consideration of this small, but important proposal as you consider the SUP. It is an opportunity to add to the historic and natural amenities of the town.

Best regards,

Steve Wojcik
621 Old Meetze Rd
Warrenton, VA 20186
540 878-2009

Out of Town

Planning Commission Public Hearing Citizen Comments

As of Noon

June 18, 2024

Matthew Cute

From: noreply@civicplus.com
Sent: Wednesday, June 12, 2024 11:30 AM
To: citizencomment
Subject: Online Form Submittal: Public Comment

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Public Comment

Name	Kaitlyn Worley
Address	[redacted]
City	Warrenton
State	VA
Zip Code	20187
Email Address	[redacted]
Phone Number	[redacted]
Committee, Board, or Commission Type	Planning Commission
Agenda Item	SUP 2022-05 Warrenton Village Center
Comment	*Revised with proper Agenda Item name and details.*

Hello,

I would like to share my support for the Warrenton Village Center development project. I believe this form of mixed use development would be a wonderful addition to the Warrenton housing supply and business community. I believe that the proposed location seems very appropriate for this sort of development. I believe the addition of smaller housing units, placed on top of business units is a responsible use of space and has the opportunity to provide housing for a variety of individuals and families, including but not limited to those in need or in search of affordable housing and walkable

amenities. I hope that the developer allows for a variety of income levels to have the opportunity to reside in this community.

My family includes two young boys who attend or will attend Highland School. I would ask that all plans for development ensure the fullest, most robust possible pedestrian safety measures not only for residents, business owners, and visitors who drive to the Warrenton Village Center, but also for those of us who will walk from the surrounding residential communities, other businesses along Broadview Avenue, or schools (Highland School and CM Bradley Elementary School) to visit the development. Pedestrian safety should be a critical design measure along Oak Springs Drive, Business 17, and Business 29. Speed reductions along these routes should be considered to allow for the safest possible pedestrian experience within and surrounding this mixed-use community.

Safety should also be highly considered with parking and pedestrian interactions within the development itself - Ideally, people and car interactions should be limited as much as possible to allow for a fully walkable experience. This would also provide more opportunities for safe, relatively quiet outdoor dining and/or recreation spaces. Eating a meal and engaging in conversation while sitting close to moving traffic isn't such an enjoyable experience.

Thank you,
Kaitlyn

Email not displaying correctly? View it in your browser.

Matthew Cute

From: Barbara [redacted]
Sent: Tuesday, April 16, 2024 4:45 PM
To: Planning Department
Subject: High-Density Housing at Warrenton Village Shopping Center

Some people who received this message don't often get email from bcominsky@aol.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

We are county residents and have lived in Fauquier County since 1989 where we started our business, raised our family and enjoyed the life of residential Virginia with its small-town atmosphere. We have enjoyed the quiet, peaceful small-town/county life until recent pushes to make us into "Northern Virginia". Let this pass from us and go to another county who would welcome the hustle/bustle, increased traffic, crime, residential growth creating stress on roads, schools, water/sewer, and just life in general. I understand the tax revenues look enticing, but life in the country doesn't need all the whistles and bells to be a rewarding/well-lived community, as we have experienced since 1989!

We already have bumper to bumper traffic coming into Warrenton now with the new homes off 211. The water/sewer system is beyond what it can handle now and in desperate need of a rebuild - building it to accommodate what is being proposed will be beyond belief. The school system struggles now to accommodate Warrenton's young people - not to mention trying to recruit teachers/staff at the low salaries being offered in Fauquier County. The electric grid will struggle to keep up with the staggering usage of all these proposed townhouses, homes, condos, etc.... Not to mention the horrendous traffic that will be coming into the town/county especially within Warrenton proper.

My husband and I strongly urged this proposal be voted DOWN to allow Warrenton to remain the beautiful, country community it is known for.

Ken & Barbara Cominsky
[redacted]

Matthew Cute

From: noreply@civicplus.com
Sent: Friday, April 5, 2024 9:32 AM
To: citizencomment
Subject: Online Form Submittal: Public Comment

You don't often get email from noreply@civicplus.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Public Comment

Name	MICHAEL Allen MAYS
Address	[redacted]
City	Warrenton, VA 20187
State	VA
Zip Code	20187
Email Address	[redacted]
Phone Number	[redacted]
Committee, Board, or Commission Type	Town Council
Agenda Item	Proposed development on Oak Springs Drive
Comment	My wife and I strongly object to the proposed development on Oak Springs Road which is an extension of the Warrenton Village Center. We live in the Ivy Hill Subdivision, less than a mile from the proposed development. Hastings Lane, which intersects with Oak Springs Drive, comes directly into Ivy Hill. Now, many non-residents use Oak Springs Drive and Hastings Lane to come through Ivy Hill to avoid lights on Rt 29 and to make a short cut from Oak Springs Drive to Ivy Hill Drive. If this development is approved and built, we foresee a significant increase in the amount of vehicle traffic on Oak Springs Drive and Hastings Lane. This will significantly reduce the quality of life in our neighborhood and could reduce our home values as well. We object.

Organizations

Planning Commission Public Hearing Citizen Comments

As of Noon

June 18, 2024

Matthew Cute

From: Jody Warfield [redacted]
Sent: Monday, April 22, 2024 3:13 PM
To: Planning Department; Denise Harris
Subject: Highland School information for 4-23-24 work session on Warrenton Village Center SUP
Attachments: Highland School letter to Warrenton Planning Commission for 4-23-24 work session on WVC.pdf

Some people who received this message don't often get email from jwarfield@highlandschool.org. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

As a preliminary matter, Highland School understands that this proposal is still in the Staff/Applicant work session phase. We also respect that public comment is not generally accepted during the work session phase. However, we note that all the substantive waiver requests by the Applicant with regard to the impacts on traffic, transportation and schools – among other areas – will be discussed on April 23. We believe that this summary of serious concerns should be forwarded now in order to assure a next meaningful work session.

Please see the attached, which contains contact information for representatives for Highland School during this phase of your review and work.

Sincerely,
Jody Warfield, Chair
Highland School Board of Trustees

HIGHLAND SCHOOL

To: Warrenton Planning Commission
From: Highland School and Highland School Educational Foundation
Re: SUP 2022-03 Warrenton Village Center
Date: April 23, 2024

Introduction

As a preliminary matter, Highland School understands that this proposal is still in the Staff/Applicant work session phase. We also respect that public comment is not generally accepted during the work session phase. However, we note that all the substantive waiver requests by the Applicant with regard to the impacts on traffic, transportation and schools – among other areas – will be discussed on April 23. We believe that this summary of serious concerns should be forwarded now in order to assure a next meaningful work session.

To provide additional context, the entrance to Highland School's Lower School is located directly across Oak Springs Drive from the entrance to Block 1of 320 units and parking garage as currently sought. Of course, we value good neighbor relationships and being a good Town citizen. That said, we believe that noting those areas where it appears the Applicant and its experts were not aware of certain important factors that impact one of its closest and largest neighbors as well as ready access to the Applicant's parking garage serves all parties at this stage. Accordingly, we note certain assertions made by the Applicant and additional relevant facts not apparent in its Application below.

Of course, we are happy to host a site visit to the Highland School grounds to review and illustrate the facts discussed here, as well as other impact areas pertinent to your deliberations on the applicant's proposed waivers vs the goals and particular zoning requirements of Plan Warrenton 2040.

Highland School will be making further comments on the Applicant's proposal and waiver requests during the public comment phase, but to make the most efficient use of your time, this document focuses on only the issues the Chair indicated will be discussed in the April 23 work session.

Peak Traffic Hours

Applicant's Current Position: Applicant's Traffic Impact Analysis, and all waiver requests impacting traffic, assert that Highland School has only 1 peak time in the morning and 1 in the afternoon. Applicant's documents also refer to the School as "Highland High School".

Additional Facts:

1) Highland School is a pre-K2 through grade 12 school. The division of Highland School located along Oak Springs Drive is our preschool and lower school – accommodating grades PK-2 through 4, with children from ages 2 to 10. These are the students most vulnerable to negative impacts of high density traffic.

2) Highland's preschool and lower school have two morning drop off times – 7:30-8:00 and 8:30-9:00. The 8:30-9:00 peak traffic time is actually the larger of the two, but the Applicant's SUP and Traffic Impact Study do not appear to capture these 2 different peak times.

3) Highland's preschool and lower school have three afternoon pick up times – 11:45-12:15, 12:45-1:15 and 2:45-3:30. None of these times are included as peak traffic hours in the Applicant's materials.

4) At all of the peak times listed above, cars are waiting in both the westbound and eastbound lanes of Oak Springs Drive to turn into the School. Highland takes every measure possible to move cars through the pickup and dropoff process promptly, but even the minimal traffic on Oak Springs Drive with its current density causes 3 significant backups: i) on Oak Springs at the School entrance; ii) at the Oak Springs Drive intersection with Broadview Avenue (especially for those turning left); iii) and in the left turn lane for Oak Springs Drive from Broadview Avenue southbound.

Construction Impacts

Applicant's Current Position: The Statement of Justification with regard to Construction Impacts states that its Traffic Impact Analysis concludes "turn lanes are not warranted on Oak Springs Drive".

Additional Facts:

1) The existing left turn lane on Oak Springs Drive eastbound at the Highland School driveway accommodates only 4-5 vehicles. At all 5 peak times for Highland School ingress and egress, that turn lane is at capacity, thus often causing longer wait times and backups in the existing turn lanes from Broadview Avenue southbound and northbound at the intersection with Oak Springs Drive.

2) The lack of a right turn lane on Oak Springs Drive westbound at the Highland School driveway results in a line of waiting cars – from 2 to 10 – at all 5 peak times for the School.

3) The current traffic load consists almost exclusively of personal automobiles. The additional impact of construction vehicles and building supply delivery vehicles will significantly increase the per-vehicle impact on Oak Springs Drive and Broadview Avenue, and the residents of both.

4) The placement of the driveway to the WVC parking garage – the primary ingress and egress for both the garage and the delivery area alley for the retail shops, according to applicant's documents – directly across from Highland's driveway places the highest impact of traffic at the exact site of the highest level of current traffic and peak time usage.

Traffic Impacts

Applicant's Current Position: Applicant's Traffic Impact Study states that the WVC, with its requested density of 386 dwelling units, will generate only "154 new trips during AM peak hours and 197 new trips during the PM peak hours."

Additional Facts:

1) With 386 units designed primarily as workforce, or "missing middle", housing, even if there were only 1 resident per unit, these numbers are significantly understated. Plan Warrenton 2040 envisions the New Town Character District's mixed-use developments as serving the population of working singles and young families for whom affordable rental housing currently does not exist. Presumably, at least one resident in most of the 386 dwelling units will be leaving home to go to work each weekday, and the vast majority (320 of the 386 units) of those "new trips" outbound will occur from the parking garage exit directly across from the Highland driveway during the School's AM peak hours.

2) The bottleneck at the intersection of the Highland School's driveway and the WVC parking garage driveway will make left turns out of the WVC virtually impossible, thus forcing more of the traffic load eastbound on Oak Springs Drive, causing a significant increase in traffic past the residential areas – which include a nursing/rehab facility, the entrance road to Bradley Elementary School, the senior living complex of The Oaks, and the family-oriented townhouses at the east end of Oak Springs.

Applicant's Current Position: Applicant touts the crosswalks it will construct across Oak Springs Drive at the intersection of the parking garage and the Highland School driveway, and at the existing and proposed extension of Hastings Lane.

Additional Facts: The exponential increase in traffic from the proposed 386 dwelling units – 320 of them served by the parking garage that will exit directly onto Oak Springs Drive at the Highland School driveway – will make safe pedestrian crossings impossible. This is true

especially if they are parents walking their young children to either Highland School or Bradley Elementary School, or senior citizens walking to the retail establishments from the Brookside Rehab facility or The Oaks residential complex.

Schools Impact

Applicant's Current Position: Applicant states the 386 new dwelling units will produce only 26 school-age children for the Fauquier County Public Schools. Applicant also claims the FCPS are currently under capacity by 477 students.

Additional Facts: While Highland School cannot speak to the argument that Fauquier County Public Schools are under capacity by 477 students, it is highly unlikely that one of the two target demographics for the dwelling units – people in the 25-35 age group – would produce only 26 school-age children, based on the age range of parents of Highland's current student body. Highland School would not be a likely recipient of these children, as our independent school tuition can be a barrier for families who are seeking rental housing in the affordable, "missing middle" category.

Design Plans vs Plan Warrenton 2040 Goals

Applicant's Current Position: "The overall aesthetic of the new WVC brand and identity will be a contemporary design that thoughtfully incorporates Warrenton's rich history, focusing on equestrian inspired materials and character." (page 30 of the Statement of Justification dated 2-14-24 – hereinafter "SOJ 2-14-24)

Additional Facts: The modern, industrial flat-roofed design conflicts directly and substantively with the gabled roofs and standing-seam roof materials of the existing Warrenton Center buildings and the neighboring Highland School, and which are prominent throughout the homes and farms of the Warrenton area.

Applicant's Current Position: "The buildings are designed to scale appropriately with the adjacent current and future uses ...". (page 31 of SOJ 2-14-24)

Additional Facts: The waiver request for 4-story buildings along the entire expanse of Oak Spring Drive to Hastings Lane would tower over the Highland School buildings, which are two stories, with a peaked roof creating a 3-story height, but start from a level substantially below the grade of the proposed development. The combination of the modern/industrial design and the substantial height difference create a jarring, rather than appropriate, transition.

Applicant's Current Position: "Noise & Exhaust: The proposed development will not produce any noticeable increase in noise or odor." (page 26 of SOJ 2-14-24)

Additional Facts: 386 residential units, with even just one car per unit, and the trash generated by this density, cannot possibly produce no increase in noise and odor.

Applicant's Current Position: "Open Space, Parks & Environmental Goals: Goals P-3 and P-3.1 focus on providing residents with access to green and public spaces. The Proposal meets this goal by providing significant open space in close proximity to new residential housing, most notably, at the newly proposed Central, East and West plazas." (page 27 of SOJ 2-14-24)

Additional Facts: "Central Plaza" in the 2-14-24 Statement of Justification was later identified in the applicant's 4-16-24 presentation as the "dog park". It cannot be both, and its small size cannot possibly accommodate all the residents of the 386 new units PLUS "all residents of Warrenton" – either as a site for "community activities" or as a "dog park". Further, the East and West "plazas" are simply slightly expanded concrete sidewalk areas, with no green space included.

.....

In conclusion, we are happy to answer any questions the Planning Commission or Staff may have on these issues. Please contact either of the following representatives of Highland School:

Jody Warfield, Chair, Highland School Board of Trustees
(jwarfield@highlandschool.org).

Donna Tomlinson, Assistant Head for Institutional Advancement
(DTomlinson@Highland School.org).

Jeremy B. Root, Partner
Blankingship & Keith, PC
(jroot@bklawva.com)

Wells+Associates
6.14.2024

Peak Period Traffic Summary Data
Highland (Lower) School – Oaks Spring Drive Entrance

- AM Peak Hour: (8:37-9:12 AM)
  - 26 EBL + 29 WBR= 55 total inbound vehicles
  - 9 NBL + 6 NBR= 15 total outbound vehicles
  - 70 Total AM peak hour trips

- Mid-Day Peak Hour: (11:42-11:51 AM)
  - 8 EBL + 4 WBR= 12 total inbound vehicles
  - 3 NBL + 1 NBR= 4 total outbound vehicles
  - 16 Total Mid-Day peak hour trips

- PM Peak Hour: (2:56-3:30 PM)
  - 26 EBL + 43 WBR= 69 total inbound vehicles
  - 23 NBL + 14 NBR= 37 total outbound vehicles
  - 106 Total PM peak hour trips

- 70/16/106 (AM/MD/PM) Total Peak Hour Volumes

Matthew Cute

From: NAACP7059 Housing [redacted]
Sent: Monday, April 22, 2024 10:07 PM
To: Carter Nevill; Brett Hamby; David McGuire; Eric Gagnon; Heather Sutphin; James Hartman; Planning Department; Paul Mooney; William Semple
Cc: DEBRA COPELAND; connie630@fastmail.fm; Denise Harris; naacpfauquiercounty@gmail.com; townmanager
Subject: Concerns regarding recent flyers and fair process

Some people who received this message don't often get email from naacpfauquierco.housing@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

To Town council members, Planning commission members, Mayor and staff,

It has come to our attention that council-member Eric Gagnon of Ward 5, on copy, has distributed flyers to his constituents in opposition to the proposed mixed use development at Warrenton Village Center. (See attached)

In reviewing the flyers, they appear to violate the Town's Code of Ethics. The inflammatory language and grotesque cartoon play into xenophobic stereotypes and communicate that only a certain type of person is welcome in Warrenton. The NAACP has been fighting these types of inflammatory images, veiled language and dog whistles since 1909.

These flyers serve to sow division in our community and sully the process to fairly evaluate these proposals.

We want to emphasize the importance of making decisions on this proposal and future proposals based on their merits as described in the ethics code.

We understand that you have new council and commission members and suggest you revisit the code of ethics, comprehensive plan, and also reach out to the PD9 staff to get an update on the state of the housing needs in our county and the town of Warrenton.

Providing affordable housing to our community is a multifaceted effort. It's not just one project, one policy or one zoning update. It can include developments like Heroes Bridge, adding Accessory Dwelling Units, adding more market rate apartment buildings/townhouses with an affordable component, fully income restricted development, missing middle and more.

Now is the time for all of us to FAIRLY evaluate affordable housing options for our community. Our friends, our neighbors, and our loved ones can't afford to stay here and people who serve our communities, who work in our stores, teach our children, respond to our emergencies can't afford to live here.

We are hosting a fair housing webinar on June 18, 2024 at 7PM with Housing Opportunities Made Eq
(HOME) whose mission is to ensure equal access to housing for all people. We'll be sure to send along that invite.

Thank you all for your service to our community.

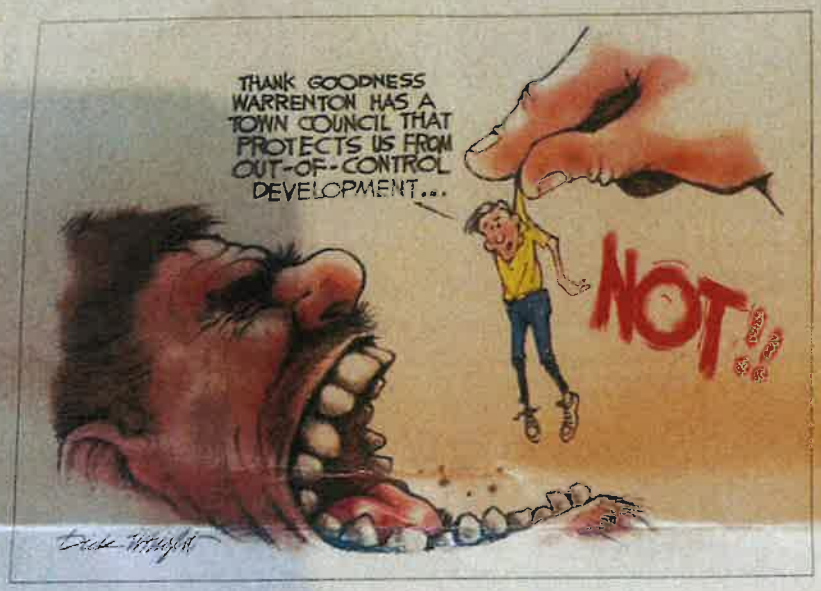
Thank you,

Conway Porter, Branch President
Miggy Strano, Housing Committee Chair
Fauquier NAACP Branch 7059

Take Action Now—Here's What You Can Do:

The Warrenton Village Center project is currently being reviewed by the Warrenton Planning Commission. If you are against this project, they need to hear from you:

Best Option: **Show up and speak out at the upcoming Planning Commission meeting, April 16th, 7:00 P.M. at Town Hall, 21 Main Street.** Speaking out in person makes a big difference—the more citizens they hear from, the better;



Send e-mail to the Planning Commission at:
planning@warrentonva.gov

Contact me directly, at
(540) 645-6156, or at
egagnon@warrentonva.gov

Your Voice Matters—Now Is the Time to Speak Out If You Are Against This Proposed Development

As your Town Council Representative, my job is to represent your interests in Warrenton, and to serve and protect your public health, safety, and welfare.

All too often, we don't hear about these development projects until it's too late to do anything about them, and I'm determined to change this.

So, if you are against this project, it's not to late to stop it. Make your voice heard and let me know what you think, and I will represent your interests when this project comes to a final vote on the Town Council.

As always, contact me if you have any questions about this or any other issue that's important to you and your life here in Warrenton.

Best Wishes,

ERIC

Eric Gagnon
Town Council • Ward 5
Cell: (540) 645-6156
egagnon@warrentonva.gov

Attention Neighbors On: Fauquier Road • Foxcroft Road • Broadview Avenue • Solgrove Road • Denning, Forest, and Tiffany Courts • Bear Wallow Road

Proposed High-Density Housing Development Near You At The Warrenton Village Shopping Center



An artist's rendering of the proposed mixed-use development at Warrenton Village Center.
Courtesy of MV+A Architects



Dear Neighbor:

As your Town Council representative, I want to alert you to a new development that is proposed to be built across from your neighborhood at the Warrenton Village Shopping Center, between the Ace Hardware Store and the Highland School on Broadview Avenue (see map above).

This proposed development, called the Warrenton Village Center, would be a high-density housing project with a proposed multi-story, 450-space parking garage, a four-story apartment building with 386 units, 30 stacked, three-story townhouses and 36 two-story townhouses, estimated by the developer to add over 700 new residents—a 7% population increase for our Town.

In my view, the high-density design of this project will bring unwanted Manassas- and Reston-style development to Warrenton that is grossly out of character with the conventional mix of housing in our community. Additionally, there are legitimate concerns about the significant increase in traffic on Broadview Avenue and surrounding roadways, as well as serious concern about the strain of this development on our Town's water and sewer systems.

As a nearby homeowner, you will be negatively impacted by this project if it is built: Higher traffic and potential congestion, four-story apartment and parking garage buildings nearby, in a high-density project that looks more like it belongs in Manassas, Reston, or Arlington.

This and other proposed housing projects threaten to destroy the small-town character of the Warrenton we all know and love.

Turn Over for Action Steps You Can Take To Make Your Voice Heard . . .

Take Action Now—Here's What You Can Do:

The Warrenton Village Center project is currently being reviewed by the Warrenton Planning Commission. If you are against this project, they need to hear from you:

Best Option: Show up and speak out at the upcoming Planning Commission meeting, April 16th, 7:00 P.M. at Town Hall, 21 Main Street. Speaking out in person makes a big difference—the more citizens they hear from, the better;

Send e-mail to the Planning Commission at: **planning@warrentonva.gov**

Contact me directly, at (540) 645-6156, or at **egagnon@warrentonva.gov**

Scan this code below with your phone to cast your "vote" in my online survey on this issue:

Your Voice Matters—Now Is the Time to Speak Out If You Are Against This Proposed Development

As your Town Council Representative, my job is to represent your interests in Warrenton, and to serve and protect your public health, safety, and welfare.

All too often, we don't hear about these development projects until it's too late to do anything about them, and I'm determined to change this.

So, if you are against this project, it's not to late to stop it. Make your voice heard and let me know what you think, and I will represent your interests when this project comes to a final vote on the Town Council.

As always, contact me if you have any questions about this or any other issue that's important to you and your life here in Warrenton.

Best Wishes,

ERIC

Eric Gagnon
Town Council • Ward 5
Cell: (540) 645-6156
egagnon@warrentonva.gov

Unknown Address

Planning Commission Public Hearing Citizen Comments

As of Noon

June 18, 2024

Matthew Cute

From: M RGR [redacted]
Sent: Sunday, May 12, 2024 8:25 AM
To: Planning Department
Subject: Housing Proposal near Warrenton Village

Some people who received this message don't often get email from mbr.19552019@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Members of the Planning Commission-
As residents of the Town of Warrenton, we are **highly concerned and also AGAINST** this big housing proposal. Aside from the strain on all the Town services, (water /sewer) we are already at the brink with the increased traffic in the Town Limits. We understand the need for revenue, but it should not be accomplished at the expense of the existing community. Another important issue, as a long-time teacher in FCPS, will be the increase in the school population, especially at Taylor Middle, where #s are already an issue and will remain so until the new school is built.
Solutions:

- Build a bi-pass that will take care of the traffic headed towards 211 and from 211 to areas past Warrenton,
- Design the "new housing plan" along that route- outside our Town Limits.
- Just as families do, year to year, look at the budget and examine where all our tax dollars are being spent. Is there over/ wasteful spending?

Bottom line, we do not want to become Manassass.

Most Sincerely-
Ken and Magaly Reder

Matthew Cute

From: Jim [redacted]
Sent: Sunday, May 5, 2024 11:50 AM
To: Planning Department
Subject: Warrenton Village Center project

Some people who received this message don't often get email from jim415680@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Good afternoon,

I strongly object to the proposed project. This kind of development will bring too much traffic and congestion to that area. In addition, it is not the kind of residential development the town needs. The town already has too much traffic through Broadview Avenue. Leave these kinds of creations to other areas like Gainesville and Fairfax. We don't need parking garages. The water and sewer plant is already falling apart. This will not help the situation at all. Thank you for your consideration.

Matthew Cute

From: Mary Judkins [redacted]
Sent: Friday, April 26, 2024 4:03 PM
To: Planning Department
Subject: Proposed high density development at Warrington Village

Some people who received this message don't often get email from maryjdkns@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

I am vehemently opposed to this, in particular due to the size.

Mary Judkins
Warrenton

Matthew Cute

From: Tammy Lake [redacted]
Sent: Monday, April 15, 2024 8:16 AM
To: Planning Department
Subject: Opposition to Proposed Warrenton Village Center Project

[Some people who received this message don't often get email from tammy.lake@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Planning Commission Members:

I am OPPOSED to the proposed Warrenton Village Center project.

Matthew Cute

From: Bridget Hinchman [redacted]
Sent: Thursday, March 28, 2024 9:47 AM
To: citizencomment
Subject: Future Development

You don't often get email from blhinchman@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Dear Sir or Madam,

I read an article online about Warrenton's desire to build apartments behind the shopping center off Lee Highway.

I was talking with my son the other day because he was walking along Lee Highway to get a drink from Starbucks. He walked right by the Rip Van Winkle Hotel and Red Roof Inn.

I told him not to walk by there in the future as that area is dangerous due to the transient clients that these businesses attract. Surely, the City of Warrenton has considered development on that part of Lee Highway?

I would think the goal of adding more apartments for our community would also include eliminating businesses that would present safety concerns. This is especially true as many apartment renters are families getting started in life. Also, this area is right next to the fast food businesses, which kids from high school go to when out with their friends.

I would greatly appreciate it if this particular section of town was considered for redevelopment.

Respectfully,
Bridget Hinchman

Matthew Cute

From: Alexander Hazelworth [redacted]
Sent: Monday, March 25, 2024 6:41 PM
To: citizencomment
Subject: Public Comment on SUP 2022-03 GPINs 6985-20-7247 and 6984-29-6753
Attachments: Alternative3.jpeg; Alternative1.jpg; Alternative2.jpg

You don't often get email from hazelworth.alexander@gmail.com. Learn why this is important

[EXTERNAL EMAIL] DO NOT CLICK links or attachments unless you recognize the sender and know the content is safe.

Hello,

This is a comment pertaining to SUP 2022-03, GPINs 6985-20-7247 and 6984-29-6753. I support the direction this plan takes Warrenton. I greatly do not support this shoebox style of architecture. I have attached some alternative renders with their proposal and what is more beautiful and cohesive. They could have greenish roofs like their current Safeway building to stay consistent. If this is approved with the proposed architecture style then it sets a low bar for future Warrenton projects.

Thank you,
-Alexander


WARRENTON







WARRENTON VILLAGE / NEW CASTLE DEVELOPMENT "NO" FOR SO MANY REASONS

DENSITY & HEIGHT

Warrenton Village's non-conforming height and over-concentrated density is *in the wrong place*...just as Amazon's hulking, walled-off data center will be allowed *in the wrong place*.

This project alone could swell Town population 10%. The Prince William Times called New Castle's Development's proposal "radical" - meaning *extreme* change. Warrenton Planning Commissioner James Lawrence adeptly cautioned: *"I think all of us are concerned; can the town handle this traffic, infrastructure, etc.? How badly does the town need this?"*

A special-use permit exception to increase the 3-story limit on Oak Springs drive would also be *in the wrong place*. Why should these 3 too-condensed in-town complexes *tower over* the rooftops of two 1-story shopping centers, buildings across Rte 17, two adjacent 1-story schools, a 1-story nursing home, two elderly apartment complexes, and every other of the neighboring residential units? Why did everyone else agree to conform to the 3-story limit except New Castle? A 4-story apartment complex and a 4-story garage is an aesthetic affront to all those unfortunate to live around Warrenton Village, and to all town residents.

"AFFORDABLE" HOUSING

New Castle Development Group *knows* the term "*affordable*" is chump bait. Our Council would be shamefully gullible to bite that hook. Of the 320 apartments and 66 townhomes only 10% may be "low-income." That's only 38 units, whereas 333 units, 90% will NOT be low-income, NOT be so affordable. And Developers have not been transparent on just how "affordable" their cheapest *initial* rental rate will be for their most undesirable units.

There's also snake oil in Warrenton Village hawking RENTALS, because that is an ever-escalating income stream. New Castle are not altruists; they seek hand-over-fist rental profits. Rentals return far more than sales. HUD reports: *last year alone*, rental rates soared 12.6% to home sales' 8.3%. The Town's support would subjugate these renters to recurrent landlord profiteering increases - most egregiously for the 10% of affordable's.

And 20% of all renters fall behind on payments. So, would Council approval of Warrenton Village create the region's 'eviction central' for those 76, or more rent-delinquent families?

PARKING GARAGE

Warrenton's 2040 comprehensive plan calls for "*creating a sense of place.*" A 4-story garage would be antithetical in every way and definition – destroying our small Town's not out-of-scale, not out-of-portion, bucolic, and Historic and Landmarks Register *character.*

Mixed retail-residential Gainesville does not have a parking garage. Culpeper does not have a garage. Neither Haymarket, or Marshall has a garage, nor New Baltimore, Vint Hill, Bealton, or Catlett. If an elevated concrete garage is incongruous for *every one* of our neighboring communities, who is our Town Council wanting us to be, *Fairfax*?

Our Eastern gateway will be degraded by Amazon's fenced, behemoth concrete data-bunker. On our Southern gateway, Arrington Developers' splay of 217 homes will rival

Please, Deny Warrenton Village

We beg you, *please* shoulder the responsibility *to your own community residents* and DO NOT sell-out to the Warrenton Village / New Castle Developers.

Their hulking apartments-townhouses-garage complex will NOT benefit our Town; rather it is *entirely contrary* to our Warrenton lifestyle. An indefensible approval would be a subjugation to, and gifted windfall income-stream for the private-equity group - *at our expense. Please,* don't play 'Santa' to New Castle to our detriment.

Warrenton Village is masquerading under a guise of "low-income" housing. A *mere* 38 "low-income" rentals are NOT a justifiable, equitable trade-off for *three* 4-story towers of **333** NOT low-income units, and a **4**-story **450** car parking garage. Such over-scaled monstrosities would irreparably destroy the character of our bucolic, historic small Town. Towers and a Parking Deck are antithetical to what our motto means "Experience Warrenton." *Please,* don't *cram-in* hi-rise towers here *like Fairfax.*

4-stories that would front, and desecrate our Town's northern gateway are unconscionable *in a 1-story setting* of a nursing home, two senior residences, two schools, and family homes. *None of them were exempted* from the 3-story height limit. It is the wrong setting for *towers*...the wrong setting for *unprecedented density.*

There is no comparable obesely-dense concentration of residences on such a small parcel here. And there is no capacity for, nor betterment when 450 garaged cars choke Oak Springs Drive to Broadview Avenue at its busiest bend-in-the-road every day of every year.

4 developers (New Castle, Arrington, Farish Properties, Heroes Bridge) purport *at-minimum* an avalanche of 1,500 added residents that would swell our Town's population well over 10%. If not untenable, that size of influx *will* inarguably, radically overwhelm us, our traffic lights and roads, all our services, and all the aesthetic, in-proportion good balance-and-scaling we have striven to achieve. *Please,* don't *adulterate* and vote-away our small town's soul.

Warrenton *does not* have the infrastructure, and certainly does *not* have the *homeowner* tax base to carry the increased costs for 4 new developments' added needs. Renters will not contribute to our tax base. And no New Castle token proffer will ameliorate those deficiencies. You will condemn Warrenton *homeowners* to the quicksand of ever-ballooning costs by your approval. Culpeper can substantiate that their town's expansion of residential housing has failed to offset all of the increased costs incurred for community services. *Please,* heed that 'red flag.'

Warrenton Village's colossus structures and Amazon's foreboding data center would be *only .4 of a mile apart!* WHY must just this one area pay the punishing full-price for *all* of our town's growth? Quaint, quiet Oak Springs Drive would become Warrenton's '*street from hell.*' By allowing these two affronts to Oak Springs neighborhood residents, the Planning Commission will diminish their homes' marketable values by concentrating there the *worst* two environments in all of Warrenton.

Please, do not do uncalculatable harm. Deny approval to New Castle Developers.

June 18, 2024
Planning Commission
Regular Meeting

RESOLUTION TO RECOMMEND APPROVAL SPECIAL USE PERMIT 22-05 WARRENTON VILLAGE CENTER MIXED USE PURSUANT TO SECTION 11-3.10 OF THE ZONING ORDINANCE OF THE TOWN OF WARRENTON (GPINS 6985-20-7247 and 6984-29-6753)

WHEREAS, Warrenton, VA (Hereinafter "the Town") is a municipal corporation located within the County of Fauquier; and

WHEREAS, Warrenton Village Center, and the owners, Jefferson Associates LP and Warrenton Center, LLC, with the Applicant, NewCastle Development Group ("the Applicant"), are the requesting a Special Use Permit approval on a parcel of land containing approximately 29.05 acres, identified as GPINs 6985-20-7247 and 6984-29-6753, located at the existing Warrenton Village shopping center bordered by Oak Springs Drive, Branch Drive, Lee Highway, and Broadview Avenue in the Town of Warrenton and hereinafter referred to as the "Property"; and

WHEREAS, the Applicant has applied for a Special Use Permit pursuant to §3-4.10 and §9-25 of the Zoning Ordinance for approval to create a mixed-use development in the existing shopping center to include up to 320 apartments, up to 34 2-over-2s, and up to 32 townhomes with the addition of a central plaza, enhanced internal road network, and pedestrian infrastructure to promote walkability, hereinafter the "Special Use Permit"; and

WHEREAS, the Applicant requested waivers and modifications to the Zoning Ordinance for Article 2-6.1 to allow for density increase to 386 units at approximately 13.28 units/per acre; Article 3-4.10.4 to allow for 14' setbacks from Public Right of Way on the east side of Broadview Avenue and 0' setbacks along internal parcel lines within Warrenton Village Center; Article 8-8.5 to allow for 0' buffer width between commercial and residential uses within Warrenton Village Center and 14' buffer width between Public Right of Way and residential uses along the east side of Broadview Avenue; Article 2-20 to allow for maximum building heights of 54' along Oak Springs Drive (Block 1), 36' along Broadview Avenue (Block 1), 36' within Block 2, and 45' within Block 3; Article 3-4.4.5.3 to allow for seven multifamily townhome and/or 2-over-2 units to be grouped contiguously, and Article 2-19 to allow retaining walls in excess of six feet on Oak Springs Drive and Hastings Lane; and

WHEREAS, the Planning Commission held three public work sessions on SUP 2022-05 on March 19, 2024; April 16, 2024; April 23, 2024; and

WHEREAS, pursuant to §11-3 of the Zoning Ordinance upon petition of the Applicant for approval of the Special Use Permit, the Planning Commission upon advertisement and notice properly given pursuant to §15.2-2204 of the Virginia Code held a Public Hearing on June 18, 2024; and

WHEREAS, the Planning Commission considered for approval of the Special Use Permit based on Conditions of Approval and Virginia State Code Section 15.2-2286.A.3; and

WHEREAS, the Planning Commission finds that the Application meets the criteria for approval found in Section 11-3.10.3 in the Town of Warrenton Zoning Ordinance; and

WHEREAS, the Planning Commission, in consideration of all of the foregoing, is of the opinion that the application for the Special Use Permit is to be recommended for approval to the Town Council subject to certain conditions;

NOW, THEREFORE, BE IT RESOLVED that the Warrenton Planning Commission on this 18th day of June 2024, that SUP 22-05 be, and is hereby, recommended for approval to Town Council, subject to the Conditions of Approval and Special Use Permit Plans dated June 30, 2023 and revised through May 31, 2024 by Bohler (Sheets 1-36).

Votes:
Ayes:
Nays:
Absent from Vote:
Absent from Meeting:

ATTEST: _____
Darine Barbour, Planning Commission Secretary

June 18, 2024
Planning Commission
Regular Meeting

RESOLUTION TO RECOMMEND DENIAL SPECIAL USE PERMIT 22-05 WARRENTON VILLAGE CENTER MIXED USE PURSUANT TO SECTION 11-3.10 OF THE ZONING ORDINANCE OF THE TOWN OF WARRENTON (GPINS 6985-20-7247 and 6984-29-6753)

WHEREAS, Warrenton, VA (Hereinafter "the Town") is a municipal corporation located within the County of Fauquier; and

WHEREAS, Warrenton Village Center, and the owners, Jefferson Associates LP and Warrenton Center, LLC, with the Applicant, NewCastle Development Group ("the Applicant"), are the requesting a Special Use Permit approval on a parcel of land containing approximately 29.05 acres, identified as GPINs 6985-20-7247 and 6984-29-6753, located at the existing Warrenton Village shopping center bordered by Oak Springs Drive, Branch Drive, Lee Highway, and Broadview Avenue in the Town of Warrenton and hereinafter referred to as the "Property"; and

WHEREAS, the Applicant has applied for a Special Use Permit pursuant to §3-4.10 and §9-25 of the Zoning Ordinance for approval to create a mixed-use development in the existing shopping center to include up to 320 apartments, up to 34 2-over-2s, and up to 32 townhomes with the addition of a central plaza, enhanced internal road network, and pedestrian infrastructure to promote walkability, hereinafter the "Special Use Permit"; and

WHEREAS, the Applicant requested waivers and modifications to the Zoning Ordinance for Article 2-6.1 to allow for density increase to 386 units at approximately 13.28 units/per acre; Article 3-4.10.4 to allow for 14' setbacks from Public Right of Way on the east side of Broadview Avenue and 0' setbacks along internal parcel lines within Warrenton Village Center; Article 8-8.5 to allow for 0' buffer width between commercial and residential uses within Warrenton Village Center and 14' buffer width between Public Right of Way and residential uses along the east side of Broadview Avenue; Article 2-20 to allow for maximum building heights of 54' along Oak Springs Drive (Block 1), 36' along Broadview Avenue (Block 1), 36' within Block 2, and 45' within Block 3; Article 3-4.4.5.3 to allow for seven multifamily townhome and/or 2-over-2 units to be grouped contiguously, and Article 2-19 to allow retaining walls in excess of six feet on Oak Springs Drive and Hastings Lane; and

WHEREAS, the Planning Commission held three public work sessions on SUP 2022-05 on March 19, 2024; April 16, 2024; April 23, 2024; and

WHEREAS, pursuant to §11-3 of the Zoning Ordinance upon petition of the Applicant for approval of the Special Use Permit, the Planning Commission upon advertisement and notice properly given pursuant to §15.2-2204 of the Virginia Code held a Public Hearing on June 18, 2024; and

WHEREAS, the Planning Commission considered the Special Use Permit based on draft Conditions of Approval and Virginia State Code Section 15.2-2286.A.3; and

WHEREAS, the Planning Commission finds that the Application does not meet the criteria for approval found in Section 11-3.10.3 in the Town of Warrenton Zoning Ordinance based on

1. XXX

; and

NOW, THEREFORE, BE IT RESOLVED that the Warrenton Planning Commission on this 18th day of June 2024, that SUP 22-05 be, and is hereby, recommended for denial to Town Council.

Votes:
Ayes:
Nays:
Absent from Vote:
Absent from Meeting:

ATTEST: _____
Darine Barbour, Planning Commission Secretary

SPECIAL USE PERMIT CONDITIONS

Applicant: NewCastle Development Group, LLC ("The Applicant")
Owners: Jefferson Associates LP; Warrenton Center LLC
SUP 2022-05, Warrenton Village Mixed Use Center
GPINs 6985-20-7247-000; 6984-29-6753-000 (the "Property")
Special Use Permit Area: ± 29.05 acres
Zoning: Commercial (C)
Date: June 18, 2024

In approving a Special Use Permit, the Town Council may impose such conditions, safeguards, and restrictions as may be necessary to avoid, minimize, or mitigate any potentially adverse or injurious effect of such special uses upon other properties in the neighborhood, and to carry out the general purpose and intent of this Ordinance. The Council may require a guarantee or bond to ensure that compliance with the imposed conditions. All required conditions shall be set out in the documentation approving the Special Use Permit (SUP).

1. General: The property shall be developed in substantial conformance with these conditions and the plans titled "Special Use Permit for Warrenton Village Center, REVISION 3 – 5/31/2024", and prepared by Bohler Engineering. Minor changes and adjustments may be made to the road and street alignments, entrances, parking, dimensions and location of SWM/BMP facilities, the exact configuration and location of building footprints, and other similar features as shown on the SUP Plan, provided they meet the intent of these Conditions and are approved by the Director of Community Development or the Zoning Administrator.

2. Use Parameters: The Special Use Permit shall apply to the entire +/- 29.05 acre property. The property may be constructed with not more than 320 apartments, 32 townhomes, and 34 two over twos. The Zoning Ordinance 9-25 requires that residential uses shall not exceed 1 dwelling unit per 500 gross square feet of non-residential floor space within the mixed use development unless approved by Town Council through a Special Use Permit.

3. Phasing: The Applicant has the flexibility to develop Blocks 1-3 in any order. Mixed Use development approval includes the provision for construction of public amenities. To ensure that site improvements are completed in a timely manner along with the residential buildings, Applicant agrees that the Town of Warrenton will withhold Certificates of Occupancy (COs) in accordance with the following schedule:

   A. Block 1: Prior to issuance of the 1st CO within Block 1, all required infrastructure improvements for Block 1 and the following amenities shall be constructed and open for public use:

- Central Plaza
- Dog Park and Picnic Area
- West Plaza

- East Plaza
- Reconfiguration of commercial parking
- Preservation and reconditioning of Oak Spring (natural spring)
- Crosswalk across Oaks Springs Drive at Highland School entrance and Hastings Lane

B. Block 2: Prior to issuance of the 17th CO within Block 2, all required infrastructure improvements for Block 2 and the following amenities shall be constructed and open for public use:

- Central Plaza
- Reconfiguration of commercial parking
- Crosswalk across Oaks Springs Drive at Hastings Lane

C. Block 3: Prior to issuance of the 26th CO within Block 3, all required infrastructure improvements for Block 3 and the following amenities shall be constructed and open for public use:

- Central Plaza
- Reconfiguration of commercial parking
- Crosswalk across Oaks Springs Drive at Hastings Lane
- New sidewalk section on east side of Broadview Ave (behind Galaxy Strike Bowling Center building)

4. Architecture:

A. The final design of the buildings to be constructed shall generally conform to the elevations and materials included with the Special Use Permit application (hereinafter, the "Elevations"). The Elevations may be subject to minor modification approved by the Zoning Administrator in connection with Site Development Plan review. Additional changes to the design and materials may be made provided that any such changes are approved by the Zoning Administrator prior to the issuance of a building permit. Such approval shall be based on a determination that the changes result in equal to or better than the quality shown on the Building Elevations developed by Dynamik dated February 14, 2024 and/or May 30, 2024

B. The following materials are prohibited from use: vinyl siding, EIFS, corrugated metal siding, and plastic panels.

C. All residential buildings shall be designed and certified to a National Green Building Standard (NGBS), Level Bronze or higher. If NGBS is not available for this project, an equivalent certification from an alternative third-party green building rating system will be acceptable.

D. The structured parking garage in Block 1 shall include a nonreflective screening on the façade on its south facing side.

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5. Waivers and Modifications:

A. Article 2-6.1: The maximum density specified in the zoning ordinance for a given zoning district shall not be exceeded. The maximum density is 5 units per acre or 10 units per acre with inclusion of 10% affordable dwelling units.
• Waiver #1: Increase density to 386 units or 13.28 per acre.

B. Article 3-4.10.4: Required front yard setback from ROW greater than 50' is 40' minimum, if no parking or loading is proposed.
• Waiver #2: Decrease minimum setback to 14' along Broadview Avenue.

C. Article 3-4.10.4: Required side/rear yard setbacks is 5' minimum.
• Waiver #3: Decrease side/rear yard setbacks to 0'.

D. Article 8-8.5: Minimum buffer width for commercial uses adjacent to residential uses is 25', plus 1' for each foot of building height over 35'. Minimum buffer width for rear boundaries of residential uses from public ROW is 25'.
• Waiver #4a: Decrease buffer width between commercial and residential uses to 0'.
• Waiver #4b: Decrease rear buffer width for residential uses from public ROW to 14'.

E. Article 2-20: Height limit for dwellings may be increased up to 45' and up to three stories provided that front, side and year setbacks increase 1' for each additional foot of building height over 35'.
• Waiver #5: Increase height limit for dwellings as follows:
• 54' max height for Block 1, Oak Springs Drive Frontage
• 36' max height for Block 1, Broadview Avenue Frontage
• 36' max height for Block 2
• 45' max height for Block 3

F. Article 3-4.4.5.3: No more than six townhouse units shall be grouped contiguously to each other.
• Waiver #6: Increase maximum grouping of townhouse units from six to seven

G. Article 2-19: Fences and walls may be erected up to a height of six (6) feet in all zoning districts, except for fences or walls that extend within the required front setback.
• Waiver #7: Allow retaining walls in excess of six feet on Oak Springs Drive and Hastings Lane; and around refuse and dumpster enclosures as approved by the Zoning Administrator.

6. Signage: All signage shall comply with the applicable provisions of Article 6 of the Town of Warrenton Zoning Ordinance.

7. Site Maintenance and Refuse Collection: The Applicant shall maintain the site in a clean and orderly manner and shall arrange for the pickup of trash, litter, and debris. Any refuse storage areas shall be screened with a solid enclosure constructed of materials that are compatible with the buildings on the property. Private refuse collection will be provided by the Homeowners' Association and non-residential businesses. The Association documents shall ensure that pickup times for refuse

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from both residential and the non-residential follow Town Code. Deliveries and refuse collection shall follow Town Code Section 11-19(9).

8. Transportation:

A. Access - Access to the site shall be provided as shown on the SUP Plan, subject to changes as may be approved at Site Development Plan review.

B. Loading/Unloading – All loading and unloading of vehicles shall take place on the Subject Property during regular hours of operation and outside of peak travel hours, to the greatest extent possible, in the Loading Area depicted on the Special Use Permit Plan.

C. Obstruction of Travel Ways – No vehicles associated with the use shall obstruct the travel ways, fire lanes, adjoining road network or encroach upon landscaped areas as shown on the Special Use Permit Plan. No vehicles shall be located within site entranceways or otherwise impede ingress, egress, and internal circulation.

D. Parking – The Subject Parcel shall meet all parking requirements as outlined in Article 7. Should it be desired to expand the use in any of the buildings located on the Subject Property, the new proposed use shall be required to apply for approvals that meet Zoning Ordinance and additional parking requirements.

E. Sidewalks - The Applicant shall install sidewalks as shown on the SUP Plan, through these Conditions of Approval, and required by the Town of Warrenton regulations. All sidewalks will be a minimum of five feet (5') in width. The Applicant will install a new section of sidewalk along the east side of Winchester Street, between Lee Highway and Broadview Avenue (behind the
Galaxy Strike Bowling Center building) as part of Block 3 improvements.

F. Oak Springs Drive Crosswalk(s) – new crosswalks will be installed on Oak Springs Drive at Hasting Lane and at the entrance to Highland School as provided for in the Phasing condition. Inclusion of these crosswalks will be contingent upon and subject to Town of Warrenton at time of Site Development Plan approval.

9. Water & Public Sewer Connection: The Property shall connect to public water and public sewer. A pre and post closed-circuit TV inspection will be required with inspection prior to residential occupancy permits.

10. Stormwater Management: The site is to be planned and designed as a redeveloped site under the State's Runoff Reduction requirements for Stormwater Management (SWM) and in compliance with the Town of Warrenton's SWM Ordinance at time of construction.

11. Affordable Dwelling Units:

A. The Applicant shall provide the following minimum number of Affordable Dwelling Units (ADUs):

- 10% of total dwelling units within each of the three blocks (Block 1,

Block 2 and Block 3) will be reserved as 80% AMI ADUs;
• Ten (10) additional dwelling units in Block 1 will be reserved as 70% AMI ADUs;
• Five (5) additional dwelling units in Block 1 will be reserved as 60% AMI ADUs

B. The Applicant shall maintain the ADU program on all rental units for a period of twenty-five (25) years from the issuance of the Special Use Permit (the "Affordability Period").

C. Within Block 1, allocation of the ADUs between 1-, 2- and 3-bedroom units will be at the discretion of the Applicant, so long as the minimum number of units defined above are maintained as ADUs. Within Block 2 and Block 3, wherein all units are 3-bedrooms, all ADUs will be 3-bedrooms. The ADUs shall be similar to the market rate units in architectural design, fixture/appliance selections and unit size. ADUs will be distributed so that no more than three (3) are adjacent in Block 1 and none shall be adjacent in Blocks 2 and 3. The ADUs shall be architecturally similar to the market rate units. The size of these units shall be similar to the market rate units.

D. "Qualified Parties" and "Rent Limits" for ADUs, are defined as:
• For the purposes of qualifying for the lease of an affordable rental ADU a Qualified Party shall be an individual or a family whose gross annual household income does not exceed 60%, 70%, or 80% (dependent on the specific ADU) of the current Multifamily Tax Subsidy Program (MTSP) Income Limits for Fauquier County as published by the Virginia Housing (formerly known as VHDA), at the time the rental application is opened for such Qualified Party ("AMI"). If Viginia Housing has not published the Income Limits used under this Condition 11 for a period of more than 365 days, the Zoning Administrator shall notify the property owner at the record address given in the Fauquier County tax records of a new comparable Income Limits program to be used based on the available information about income in the Warrenton or Fauquier County housing markets.
• For the purposes of determining the Rent Limits for all ADUs, monthly rental rate limits shall be equal to those published by Virginia Housing for 0-, 1-, 2-, and 3-bedroom units and corresponding 60%, 70% and 80% AMIs, with no utility allowances.
• For the purposes of qualifying for the purchase of an ADU in Block 2 or Block 3, a Qualified Party shall be an individual or a family whose gross annual household income does not exceed 80% of the current Multifamily Tax Subsidy Program (MTSP) Income Limits for a 4-person household in Fauquier County as published by Virginia Housing, at the time the purchase contract is executed for such Qualified Party.
• For purposes of determining the purchase price of any for-sale ADU, that price will not exceed the amount at which the monthly mortgage payment for such unit exceeds the monthly rent limits for 3-bedroom units and 80% AMI income, as published by Virginia Housing. Qualifying Parties must provide a market rate loan commitment prior to closing in order to calculate the proposed mortgage payment.

E. ADU status shall be set forth in a deed of restrictive covenants recorded against the Property and shall continue to bind the minimum ADU requirement within each block to the Property for a period of twenty five years from the issuance of this Special Use Permit; provided, however, that for rental units, the Applicant may recalculate the rental

rates for new leases or renewals in accordance with the then current rates published by Virginia Housing.

F. The Applicant shall establish in a deed of restrictive covenants a program for the administration of this ADU program according to the requirements of these conditions.

G. The Applicant shall designate on the Construction Drawings submitted for building permit approval which units will be the initial ADUs; however, the units that are selected as the initial rental ADU units are not required to remain as the designated rental ADUs for the entirety of the Affordability Period. The Applicant will have the authority to re-designate the rental ADUs from time to time based on leases and vacancies. The Applicant will maintain a building plan set at the leasing office located in the Block 1 at all times that shows which units are currently designated as rental ADUs, a copy of which shall be made available to the Zoning Administrator upon request.

H. The documents creating the ADU program shall be reviewed and approved by the Town Attorney prior to their recordation in the Land Records.

I. ADUs will first be made available to the following persons with preference to the first three bulleted items below:
- Those residing or working in the Town of Warrenton or Fauquier County
- Town of Warrenton or Fauquier County teachers
- Town of Warrenton or Fauquier County first responders
- Veterans and enlisted members of the United States Armed Forces

J. The Applicant shall contact the appropriate local Social Service and/or Housing Authority offices for help to identify ~~identification~~ and place~~ment~~ of local residents.

K. The community's Property Management Team shall make annual reports to the Zoning Administrator as to the number, type and location of units hereunder that shall have been rented as ADUs and shall verify that they have been rented to Qualified Parties.

L. Separate entrances for ADU apartment entrances are not permitted.

M. All ADU occupants shall have the same rights and privileges to amenities as market rate unit residents, except for as provided under the condo sale provision.

N. ~~All ADUs shall be ADA accessible.~~ All ADUs shall meet the US Department of Housing and Urban Development Accessibility Requirements for Multifamily Buildings under the Fair Housing Act.

12. Site Surface: All outdoor areas used for open spaces, amenities, facilities, parking, storage, loading, display and driveways shall be constructed and maintained in good repair, free of cracks or damage to the surface.

13. Electric Vehicle Charging Stations: a minimum of 2% of the total spaces included within the Block 1 parking garage will include electric charging stations for tenant use. EV stations shall be reserved for electric vehicles only and enforcement will be monitored by the Property Management team.

14. Landscaping: All Zoning Ordinance requirements must be met for landscaping, except as provided for in approved waivers and/or modifications. The Owner shall be responsible for the maintenance and replacement of all plantings on site. Any diseased or dead landscaping shall be replaced within one season of dormancy.

15. Emergency Services:

A. All future Site Development Plans shall illustrate adequate access to the site for Emergency Service vehicles, subject to approval by the Community Development Director or Zoning Administrator. Nothing shall be placed or constructed on the site that would prohibit or restrict Emergency Service vehicles from mounting curbs or accessing structures. There shall be no parking of any vehicles in the travel ways. Mountable curbs will be required at new and/or modified entrances.

B. Fire hydrants shall be installed in locations acceptable to the Town of Warrenton.

C. Buildings shall have supra boxes installed on them with a fire alarm panel inside the front and rear entrances of the structures.

16. Lighting:

A. All outdoor lighting shall be in conformance with the Zoning Ordinance.
B. The Applicant shall prepare and submit a photometric plan in connection with Site Development Plan review.
C. All site lighting, to include both new fixtures within the new development areas as well as any non-residential area that is modified as a part of site development, must consist of fully-shielded, full cut-off fixtures to meet the requirements of Article 9, Section 9-8.
D. Color temperature of exterior light fixtures will be 3,000 degrees kelvin or lower.
E. Average horizontal illumination level of exterior light fixtures will be 3.0 footcandles or less.

17. Open Space: each residential block/parcel and the residual retail parcel will individually meet the 10% usable open space requirement. The Applicant will construct and maintain all open spaces in general conformance with the improvements noted and shown in SUP "Open Space Plan." Benches, bicycle racks, and other amenities shall be provided as shown on the SUP "Open Space Plan.".

18. Modified Alley: The Applicant will build and maintain the Modified Alley in general conformance with the improvements shown in this area on the Plan.

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19. Three Bedroom Unit Maximum: A maximum of 10% of the units located in Block 1 will be 3-bedroom units.

20. Condo Sale of Block 2 and Block 3: Applicant will maintain the ability to sell the entirety of Block 2 (Multi-Family Townhomes) and/or the entirety of Block 3 (Multi-Family 2-Over-2 and Townhomes) as Condos. The Applicant agrees to sell all or none of the units within Block 2 or Block 3, so as to prohibit a mix of for rent and for sale units in the same block.

All conditions of the SUP will continue to be enforced in a block sale scenario through the Declarations of Restrictive Covenants that the Applicant will record and encumber the Block 2 and/or Block 3 parcels.

In a block sale scenario, Homeowner Associations will be established to maintain all conditions of the SUP and will own the block parcel, while individual condo owners will own the condo dwelling units.

In a sale scenario, residents/owners of the condos will not be tenants of the apartment community and will not have access to the rental amenities located within Block 1. In a block sale scenario, 10% of the units within the sold block will be required to be sold as ADUs, in accordance with the language outlined in Affordable Dwelling Units of this Conditions of Approval.

21. Block 1 Amenities: All amenities located within Block 1 will be available for use by tenants of residential rental units owned by the Owner in all three blocks (Block 1, 2 and 3). If residential units within Block 2 and/or Block 3 are sold by the Owner in a condo sale, the fee simple owners of the residential condos will not have access to the Block 1 amenities contained within the apartment complex. All public amenities shall continue to be open to Block 2 and 3 residents.

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NEWCASTLE
DEVELOPMENT GROUP

SPECIAL USE PERMIT #SUP 22-5

WARRENTON VILLAGE CENTER

PLANNING COMMISSION PUBLIC HEARING
JUNE 18, 2024



682

REQUESTS/PROCESS

- Recommendation of approval of Special Use Permit in accordance with Sec. 11-3.10
- Permitted under Sec. 9-25 as Mixed-Use Development, which permits waivers of standards
- Project Timeline:



SUPPORTED BY POLICY DOCUMENTS

- Town commissioned study calls for growth as only way to avoid budget shortfalls.
- Comprehensive Plan calls for achieving this growth through Character Districts, and this location is designated as part of the New Town Character District.
- Zoning Ordinance amendments allow for development in accordance with the Plan.

WHITE PAPER FINDINGS – FISCAL SUSTAINABILITY (RKG)

- An economic model was created to determine the impact of land use decisions and the resulting economic ramifications
- The model weighed the cost of the Town's desired capital projects against different growth scenarios:

Scenario	Intended Growth Strategy	New Housing Units (by 2039)	Annual Net Fiscal Impact
1	Minimal growth, i.e. 2010 – 2019 trends	Minimal	($508,808)
2	Become a stronger livable community	750+	($240,682)
3	Become a livable destination community	1,150+	$102,185
4	Become a regional live/work community	2,100+	$335,535

RKG Conclusion:

- To achieve the level of services and amenities desired by the citizens of Warrenton, the Town must increase its development activity
- Warrenton cannot "save its way" (i.e. cut back on spending) to fiscal sustainability
- Without residential development, "the Town does not have the demand to continue to increase retail services."

PLAN WARRENTON 2040



New Town Warrenton District

With large lots, direct access from Route 29, and high visibility, this district could be a location for a signature office/jobs center; with greater intensity of mixed use and strong live, work, and play options. A mix of uses could be organized around an internal street network and public amenities, such as civic spaces, parks, green space, and public gathering areas.

GOALS

H-1: Ensure equitable, attainable housing opportunities across residents of all ages, incomes, and abilities by catering to the needs of a diverse community, including young families, professionals early in their careers, essential workforce, and those entering retirement.

POLICIES & STRATEGIES

H-1.1: Encourage development of the "Missing Middle" housing types beyond traditional single-family homes, townhouses, and apartments by updating the Zoning Ordinance to create a beneficial mix.

H-2: Character Districts will accommodate a balance of available housing typologies that are compatible to existing neighborhoods in scale, character, and transition.

WATER / SEWER IMPACTS

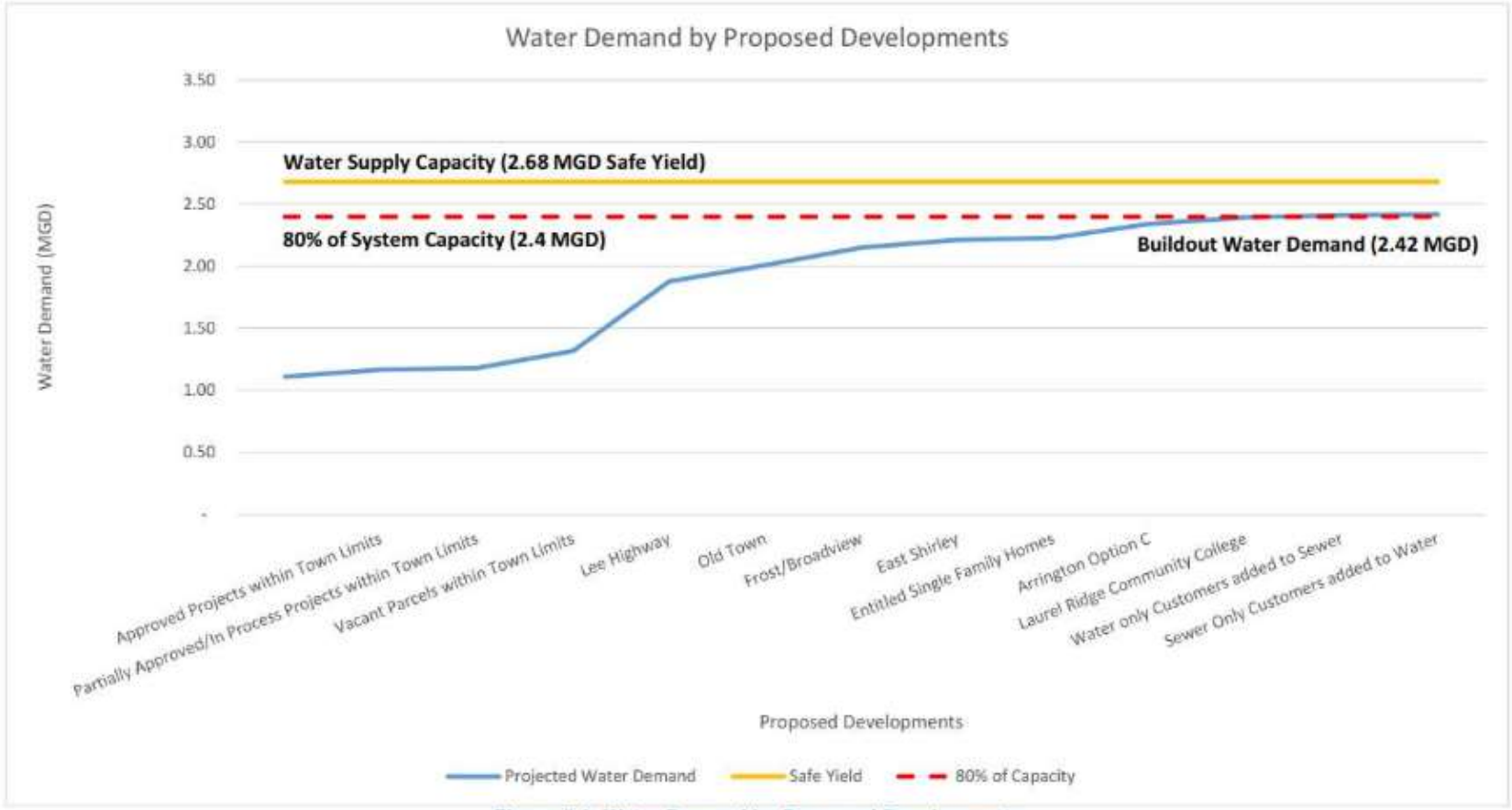


Figure 5.1: Water Demand by Proposed Developments

WATER / SEWER IMPACTS

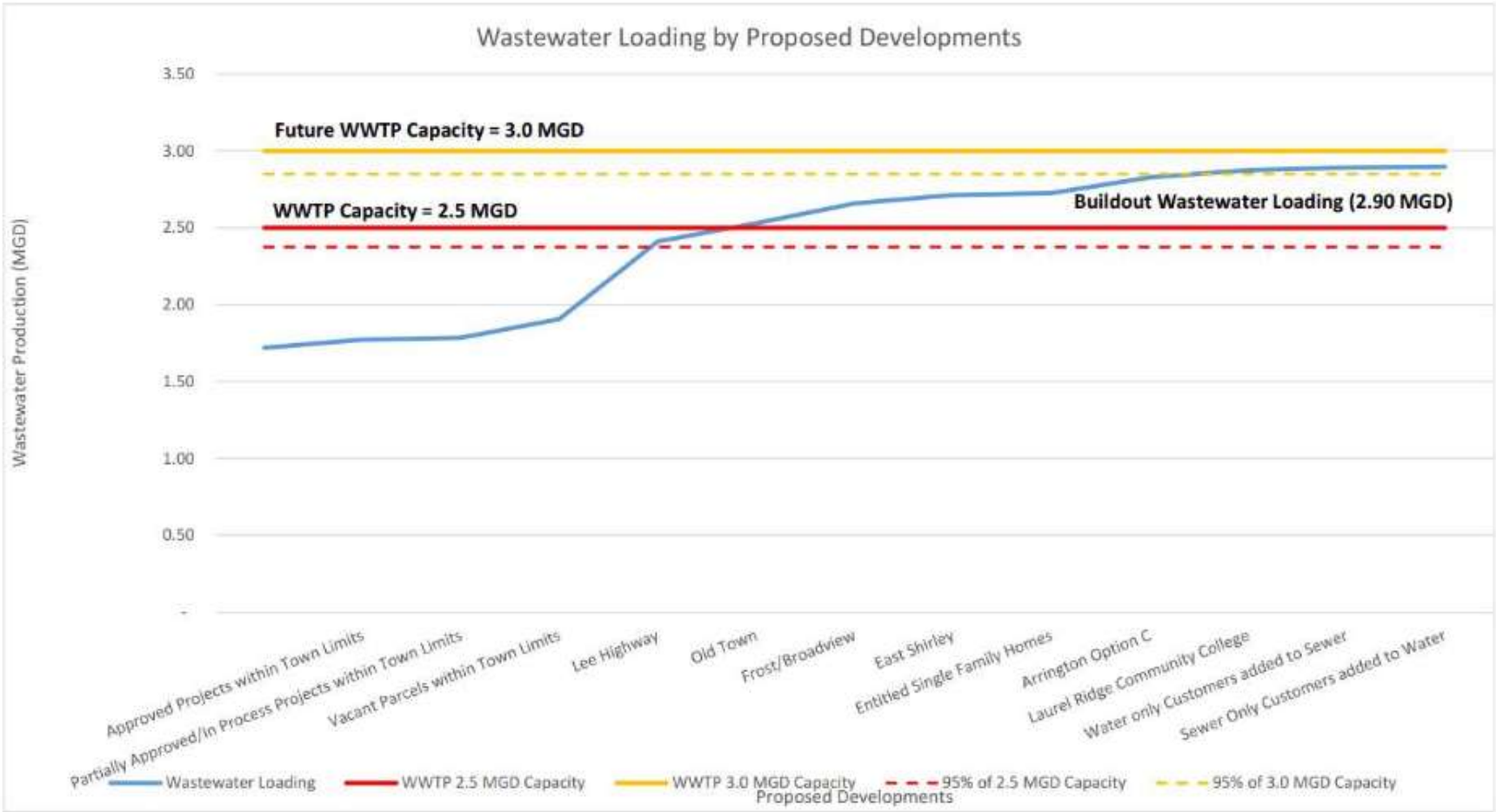


Figure 6.1: Wastewater Loading by Proposed Developments

INTERSECTION CAPACITY ANALYSIS - 2027 WITH DEVELOPMENT

Minimal Impact on Intersection Operations:

- The addition of site-generated traffic does not significantly increase delays when compared to the future conditions without the development

Maintaining Efficient Traffic Flow:

- Signalized intersections and the new planned roundabout will continue operating efficiently, demonstrating the surrounding network can accommodate the new trips

Manageable Impacts at Unsignalized Intersections:

- The unsignalized intersection of Warrenton Village South Driveway and Broadview Avenue is anticipated to operate with higher delays, but the site-generated traffic only constitutes approximately 3.5% of the total volume at this location
- At all other unsignalized study intersections, the minor increases in delay represent conditions no worse than what is projected to occur without the development

Accommodating Site Traffic:

- Queues can still be fully accommodated within the available storage at all intersections, similar to the existing and future no-build conditions

NEW STUDENTS VS. AVAILABLE CAPACITY

- Bradley
  - New students = 49
  - Available Capacity (min.) = 225
- Taylor/Warrenton Middle
  - New students = 21
  - Available Capacity (min.) = 243
- FHS
  - New students = 24
  - Available Capacity (min.) = 464

		Actuals	*% of Capacity*	*Projections*				
Bradley Elementary School								
Max Capacity	588							
		2023-24		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		349	59.4%	341	354	355	363	360
Available Capacity		239		247	234	233	225	228
Taylor/Warrenton Middle School								
Max Capacity	850	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		607	71.4%	607	601	569	601	606
Available Capacity		243		243	249	281	249	244
Fauquier High School								
Max Capacity	1,634	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		1,122	68.7%	1,089	1,111	1,153	1,147	1,170
Available Capacity		512		545	523	481	487	464
COMBINED								
Max Capacity	3,072	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		2,078	67.6%	2,037	2,066	2,077	2,111	2,136
Available Capacity		994		1,035	1,006	995	961	936

WHY HERE, WHY NOW?

The Warrenton Village Center SUP proposal is the desired result of a lengthy process of review, comparison analysis and decision making by the Town of Warrenton – from the White Papers through the Plan Warrenton 2040 drafting and adoption – and will serve as the building block upon which to create a highly desirable live/work/play community that is the goal of the Plan Warrenton 2040 New Town Character District

WHAT WE HAVE HEARD

- As shown above, this proposal has gone through significant public review, both through public work sessions with the PC and individual meetings with stakeholders
- Topics of discussion included:
  - Affordable Housing
  - Architecture
  - Traffic
  - Oak Springs Impacts
- We have taken this feedback into account and made changes to the proposal to address these issues

AFFORDABLE DWELLING UNITS

- ADU Unit Counts:
  - 80% AMI ADUs: 39 units
  - 70% AMI ADUs: 10 units
  - 60% AMI ADUs: 5 units
  - TOTAL ADUs: 54 units (14% of total proposed units)
- Income and rent limits will be in accordance with the current Multifamily Tax Subsidy Program (MTSP) Income and Rent Limits for Fauquier County as published by the Virginia Housing (formerly VHDA).

EXISTING CONDITIONS



Proposed Development Area

Existing Commercial Center

RESIDENTIAL BLOCK 1

Multi-Family Apartments

- Location: Vacant land on north side of the Center along Oak Springs Drive
- Units: Up to 320 total units
- Types: 1-, 2-, and 3-bedroom apartment units
- Parking: Internal 4-level parking garage
- Amenities:
  - 10,000 square foot leasing and amenity center
  - Central Plaza
  - East & West “Entrance” Plazas
  - Dog Park & Picnic Area
  - Pedestrian connectivity and circulation



RESIDENTIAL BLOCK 2

Multi-Family Townhomes

- Location: Vacant land at northeast corner of the Center at intersection of Oak Springs Drive and Branch Drive
- Units: Up to 26 townhome units
- Widths: Units currently proposed with 20' widths, yielding a plan count of 26 units. Proposal is up to 26 total units to account for width flexibility, which could impact total unit count.
- Types: 3-story, 3-bedroom townhome units
- Parking: Each unit has two internal parking garages



RESIDENTIAL BLOCK 3

Multi-Family 2-Over-2s

- Location: West side of the Center along Broadview Avenue, currently occupied by Summit Community bank and a vacant commercial bank building
- Units: Up to 40 total units
- Widths: Units currently proposed with 24′ and 20′ widths, yielding a plan count of 40 units. Proposal is up to 40 total units to account for width flexibility, which could impact total unit count.
- Types: 2-story, 3-bedroom 2-over-2 “condo” units
  3-story, 3-bedroom townhome units
- Parking: Each unit has one internal parking garage and one dedicated exterior surface space



PROJECT AMENITY IMPROVEMENTS

CENTRAL PLAZA

A new vehicular and pedestrian hub that will function as the heart of the Center and is sized, programmed, and planned to allow for community activities as well as everyday use

EAST & WEST PLAZAS

Smaller public plazas are proposed at the Broadview Avenue entrance and the Hasting Lane entrance to serve as “doorways” into the Center and enhance walkability between uses

DOG PARK / PICNIC AREA

New off-leash, fenced dog park and picnic areas will be accessible to the public.

OAK SPRINGS CROSSWALKS

Two crosswalks are proposed on Oak Springs Drive—one at Hastings Lane and one at the Highland School entrance, which will provide safe access for neighbors to the north

SIDEWALK RING COMPLETION

Proposal will complete a full ring of sidewalk around the entire Center, including the addition of a missing section of sidewalk behind Galaxy Strike Bowling

HASTINGS LANE EXTENSION

New vehicular and pedestrian entrance into the Center is proposed at the Oak Springs Drive and Hastings Lane intersection

MODIFIED ALLEY

Will serve as a secondary vehicular ingress/egress into the garage, as well as provide both residential and commercial loading and trash pickup areas

PEDESTRIAN CIRCULATION

Proposal includes an enhanced system of sidewalks, crosswalks and wayfinding to improve the safety and ease of pedestrian access the Center’s businesses

SITE PLAN OVERVIEW

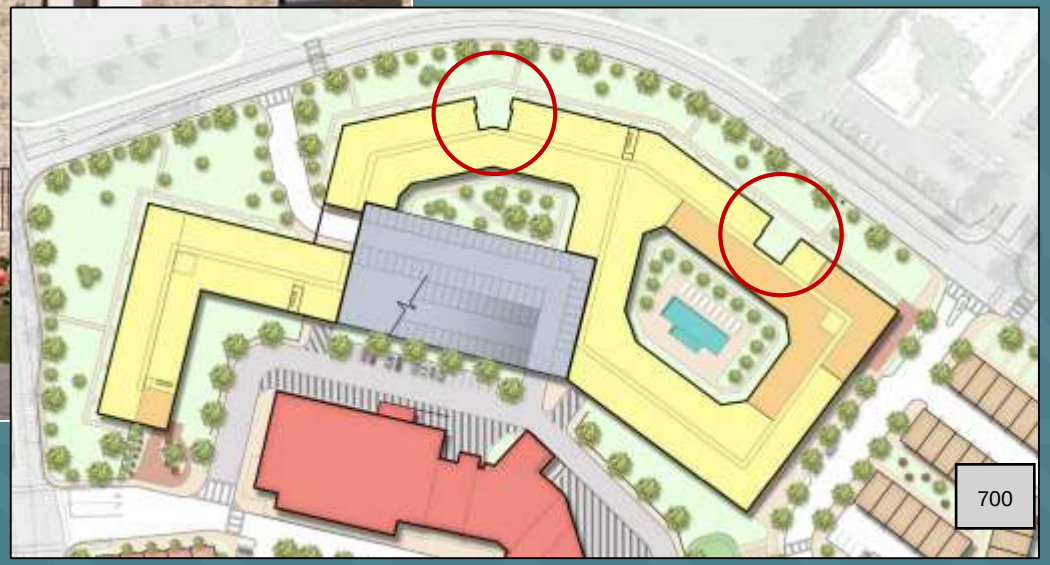
Primary vehicular access:

- Full-movement entry on Oak Springs Dr, forming 4th leg of Highland School Driveway intersection
- Full-movement driveway on Oak Springs Dr, forming 4th leg of Hastings Ln intersection
- Access also provided via existing shopping center connections to the south
- A total of 6 access points to the surrounding streets
- Agree to install traffic mitigation measures at Oak Springs Drive garage exit during Highland School “peak” hours – access gate, signage, lighting, etc.



BLOCK 1 BUILDING “INSETS”





RESIDENTIAL BLOCK 1 – *WEST FACING ELEVATION FROM HASTINGS LANE*





RESIDENTIAL BLOCK 1 – *EAST FACING ELEVATION FROM BROADVIEW AVE*





RESIDENTIAL BLOCK 1 – *SOUTH FACING ELEVATION FROM OAK SPRINGS DRIV*





RESIDENTIAL BLOCK 1 – *SOUTH FACING ELEVATION FROM OAK SPRINGS D*





RESIDENTIAL BLOCK 2





RESIDENTIAL BLOCK 3





ARCHITECTURAL OPTION 1

Leasing entrance at intersection of Oaks Springs Drive & Hastings Lane



ARCHITECTURAL OPTION 2

Leasing entrance at intersection of Oaks Springs Drive & Hastings Lane



ARCHITECTURAL OPTION 1

View from intersection of Oaks Springs Drive & Hasting Lane
**Block 1 (Apartment Bldg.) on right; Block 2 (2-Over-2s) on left*



ARCHITECTURAL OPTION 2

View from intersection of Oaks Springs Drive & Hasting Lane
**Block 1 (Apartment Bldg.) on right; Block 2 (2-Over-2s) on left*



ARCHITECTURAL OPTION 1

View from intersection of Oaks Springs Drive & Broadview Avenue



ARCHITECTURAL OPTION 2

View from intersection of Oaks Springs Drive & Broadview Avenue



ARCHITECTURAL OPTION 1

View from Broadview Avenue entrance into Warrenton Village Center



ARCHITECTURAL OPTION 2

View from Broadview Avenue entrance into Warrenton Village Center



ARCHITECTURAL OPTION 1

View from Hastings Lane out towards Oaks Springs Drive entrance
**Block 1 (Apartment Bldg.) on left; Block 2 (Townhomes) on right*



ARCHITECTURAL OPTION 2

View from Hastings Lane out towards Oaks Springs Drive entrance
**Block 1 (Apartment Bldg.) on left; Block 2 (Townhomes) on right*



ARCHITECTURAL OPTION 1

View from within Center out towards Broadview Avenue entrance
**Block 1 (Apartment Bldg.) on right; Block 3 (Townhomes) on left*



ARCHITECTURAL OPTION 2

View from within Center out towards Broadview Avenue entrance
**Block 1 (Apartment Bldg.) on right; Block 3 (Townhomes) on left*



ARCHITECTURAL OPTION 1



View from Oak Springs Drive

ARCHITECTURAL OPTION 2



View from Oak Springs Drive

ARCHITECTURAL OPTION 1



View from Broadview Avenue

ARCHITECTURAL OPTION 2



View from Broadview Avenue

NEWCASTLE
DEVELOPMENT GROUP

SPECIAL USE PERMIT #SUP 22-5

WARRENTON VILLAGE CENTER

PLANNING COMMISSION WORK SESSION
APRIL 23, 2024



AGENDAS

WORK SESSION #2 – APRIL 16TH, 2024

- A Product of Plan Warrenton 2040
- Warrenton Housing Market & Economic Impacts
- Architecture
- Public Improvements

WORK SESSION #3 – APRIL 23RD, 2024

- Water/Sewer Impacts
- Transportation
- Schools
- Modification/Waiver Requests

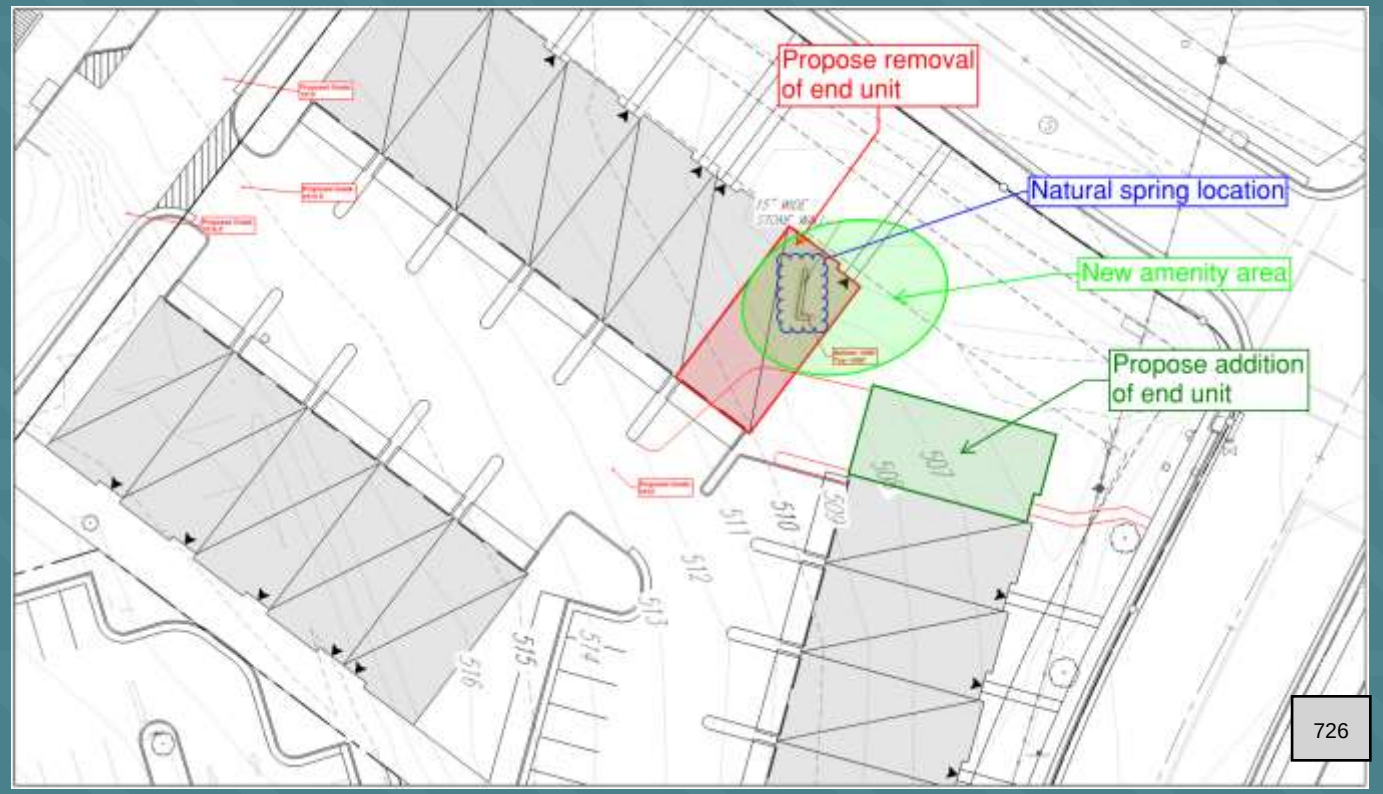
FOLLOW UP FROM WORK SESSION #2 (4/16/23)

OAK SPRING

- It has been requested that we explore the preservation and restoration of Oak Spring—located near the intersection of Oak Spring Drive and Branch Drive
- Restoration of this natural spring will preserve a unique piece of Warrenton history and character
- We are looking into a site plan revision that will allow the spring to be preserved and reconditioned into a public amenity







INCREASE SHADE AT SPLASHPAD

- Shade trees have been added to the Central Plaza to provided coverage for the surrounding seating areas



STORMWATER MANAGEMENT

Storm Water Management Plan is conceptual at this time and will be fully designed and approved during Site Development Plan.

Bohler Engineering is here tonight to answer general questions pertaining to the potential system; however, the scope and methodology of the system are yet to be determined.

ARCHITECTURE

- While the goal of our proposed aesthetic is to introduce a modern and fresh design to Warrenton, we recognize the request to incorporate more components that reflect the character of the community
- Renderings here show a revised color pallet, with incorporation of beige brick in lieu of white and softening of previously dark gray siding to a lighter brown
- Our team is currently studying additional design enhancements with the goal of implementing features that are more representative of the Town's character





WATER / SEWER IMPACTS

WATER / SEWER IMPACTS

- NewCastle's average daily water usage across its Virginia apartment community portfolio:

Community	Units	Total Usage (GAL)	Total Daily Usage (GAL)	Daily Usage Per Unit (GAL)
Community 1	250	3,295,006	9,027	36.1
Community 2	316	7,344,232	20,121	63.7
Community 3	212	5,543,803	15,188	71.6
Community 4	280	6,729,187	18,436	65.8
Community 5	242	5,181,400	14,196	58.7
Community 6	452	14,757,676	33,449	74.0
Avg. / Total **	1,752		20,278	67.0

*Data is from January ,1 2023 through December 31, 2023
**Community 1 was finishing lease up for the first half of 2023 so data does not represent a full calendar year of stabilized occupancy. Community 1 data has been excluded from average data presented and was excluded from usage analysis.

- Average daily community usage across Virginia portfolio is 20,278 gallons per day (GPD)
- Assuming the daily usage per unit of 67.0 GPD, we would project 25,862 GPD for Warrenton Village Center (386 units x 67.0 GPD)

WATER / SEWER IMPACTS

- Town of Warrenton uses their own daily usage amounts when making their capacity determination:
  - For 386 residential units, the Town assumes 116,000 gallons per day
- This is significantly higher than the data collected across NewCastle's Virginia communities – 25,862 GPD vs. 116,000 GPD

- **Even with the assumed usage of 116,000 GPD, the Public Works Department has determined that there is adequate capacity for this project**

TRANSPORTATION

SITE PLAN OVERVIEW

Primary vehicular access:

- Full-movement entry on Oak Springs Dr, forming 4th leg of Highland School Driveway intersection
- Full-movement driveway on Oak Springs Dr, forming 4th leg of Hastings Ln intersection
- Access also provided via existing shopping center connections to the south
- A total of 6 access points to the surrounding streets



SITE PLAN OVERVIEW

Pedestrian Connectivity:

- Extensive sidewalk network proposed along all streets and within site to promote walkability
- Connects to and augments pedestrian network within existing center
- Crosswalks will be added on Oak Spring Dr at Hastings Ln and Highland School to promote safe pedestrian access from the north
- Retain crosswalks on Broadview Ave and Branch Dr



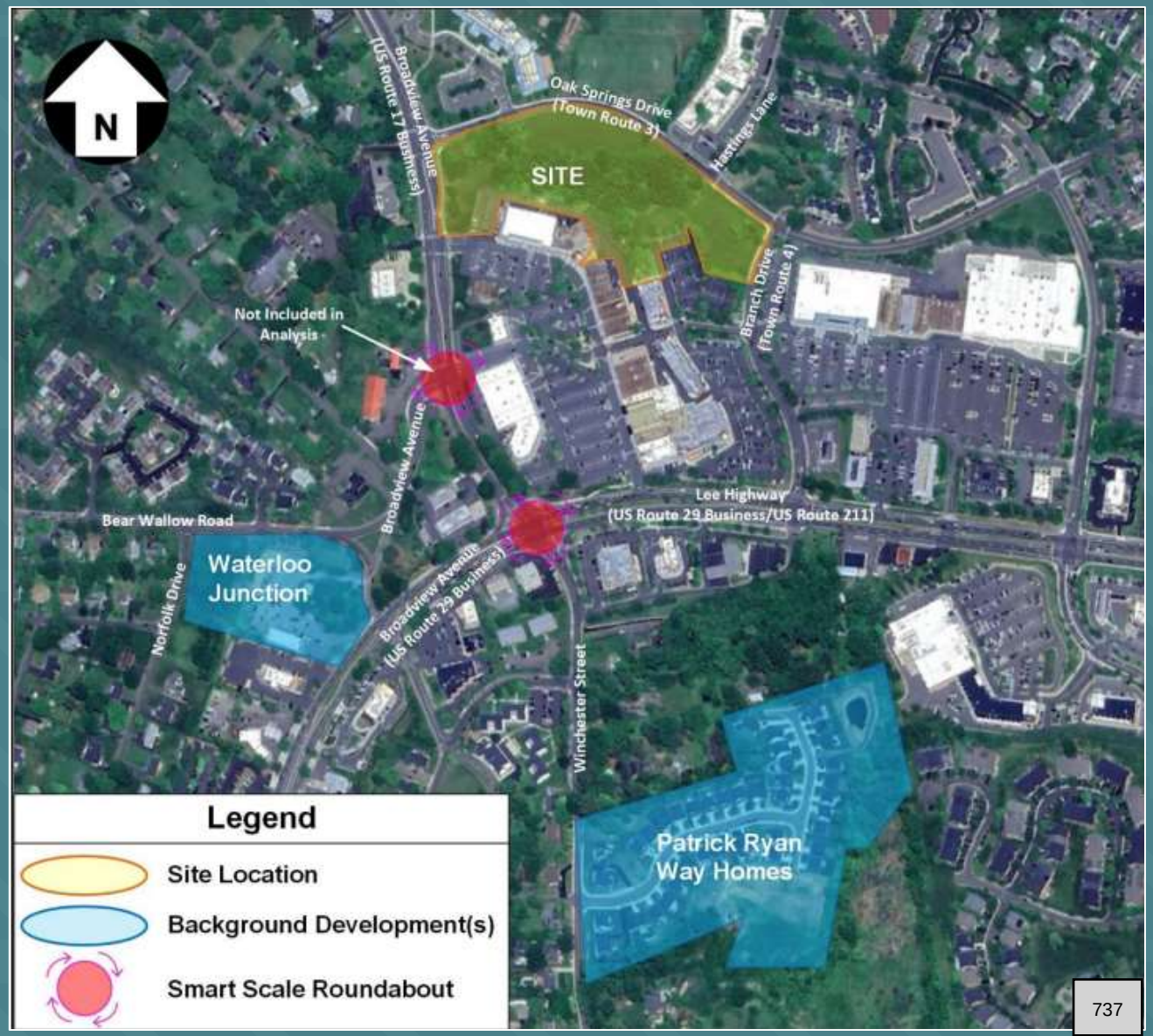
TRAFFIC STUDY AREA



FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT

Assumptions:

- Accounted for 1% annual regional growth on Lee Hwy mainline
- Other approved developments in the area will add some traffic, including 47 new townhomes and 40 new single-family homes
- Roundabout at Broadview Avenue, Broadview Avenue, and shopping center entrance not funded through SMARTScale



FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT

Assumptions (cont.):

- Planned Roundabout at Rt 29/211 and Broadview Ave Intersection:
  - Separate VDOT project, not triggered by this development
  - $29M in SMARTScale funding awarded for this and Blackwell Road roundabout
  - Expected to improve traffic operations and safety
  - Includes accommodations for pedestrians

DRPT | Office of Intermodal Planning and Investment | VDOT

PROJECT PIPELINE

Roundabout: reconfigures the intersection to a multi-lane hybrid roundabout. The roundabout can improve operations by 60%, reduce crashes up to 60%, and improve the safety of pedestrian crossings.

Figure 17. Broadview Avenue Roundabout Concept



FUTURE CONDITIONS WITHOUT PROPOSED DEVELOPMENT

Traffic Operations:

- Overall, the road network assuming the "future without development" condition is expected to continue operating similar to the existing conditions
- Some minor increases in delays are projected for some movements at unsignalized intersections, but signalized intersections and the new roundabout would operate efficiently
- The maximum "future without development" increase in delay at any study intersection is 7 seconds, as compared to existing conditions
- The planned infrastructure improvements, like the roundabout, will improve traffic flow compared to existing conditions

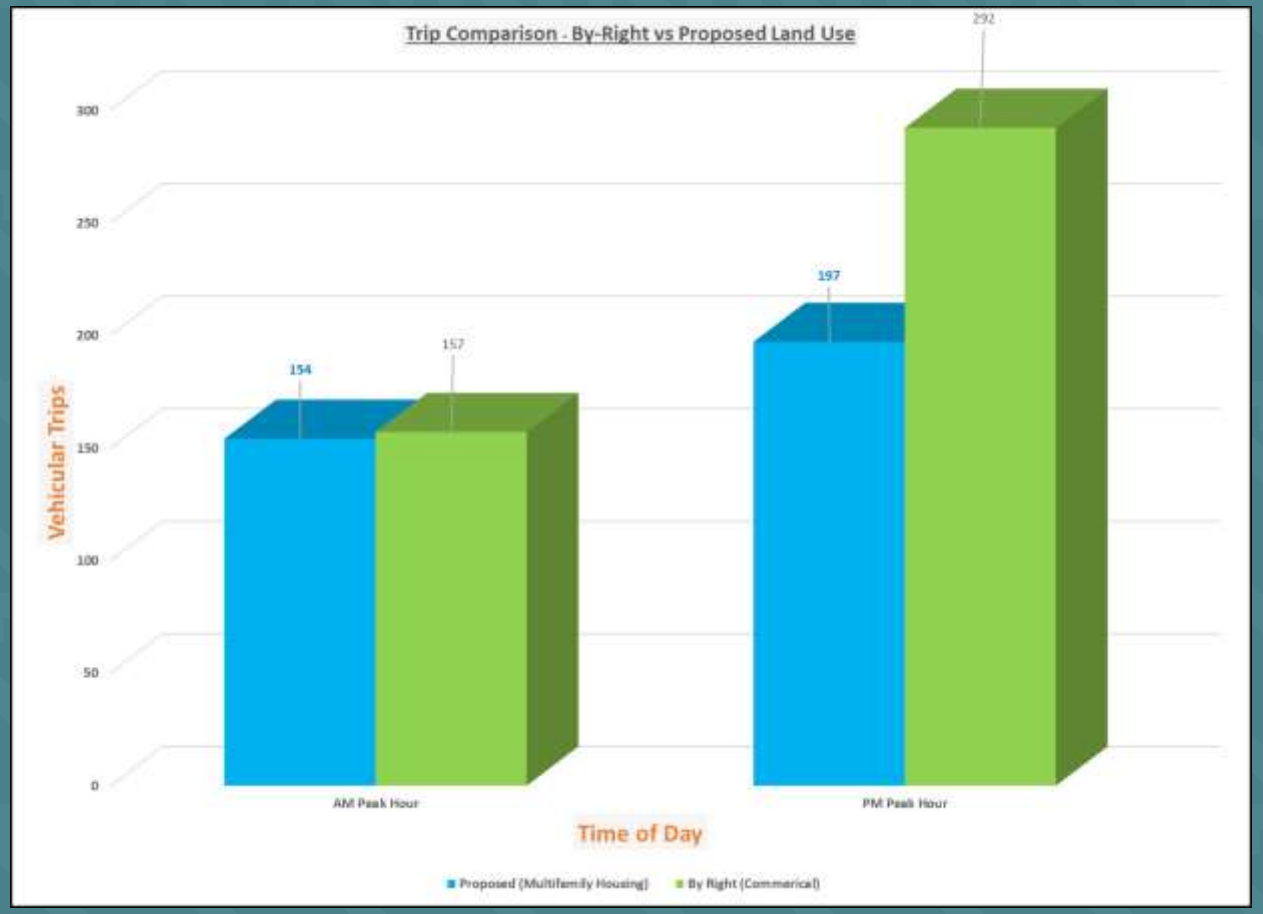
SITE TRIP GENERATION

New Trips Generated by the Development:

- The proposed 386 new residential units are expected to generate around 154 new vehicle trips during the morning commute hour and 197 new vehicle trips during the evening commute hour
- These are distributed across the internal connections and 6 access points, reducing impact at any single location

Less Than By-Right Commercial Development:

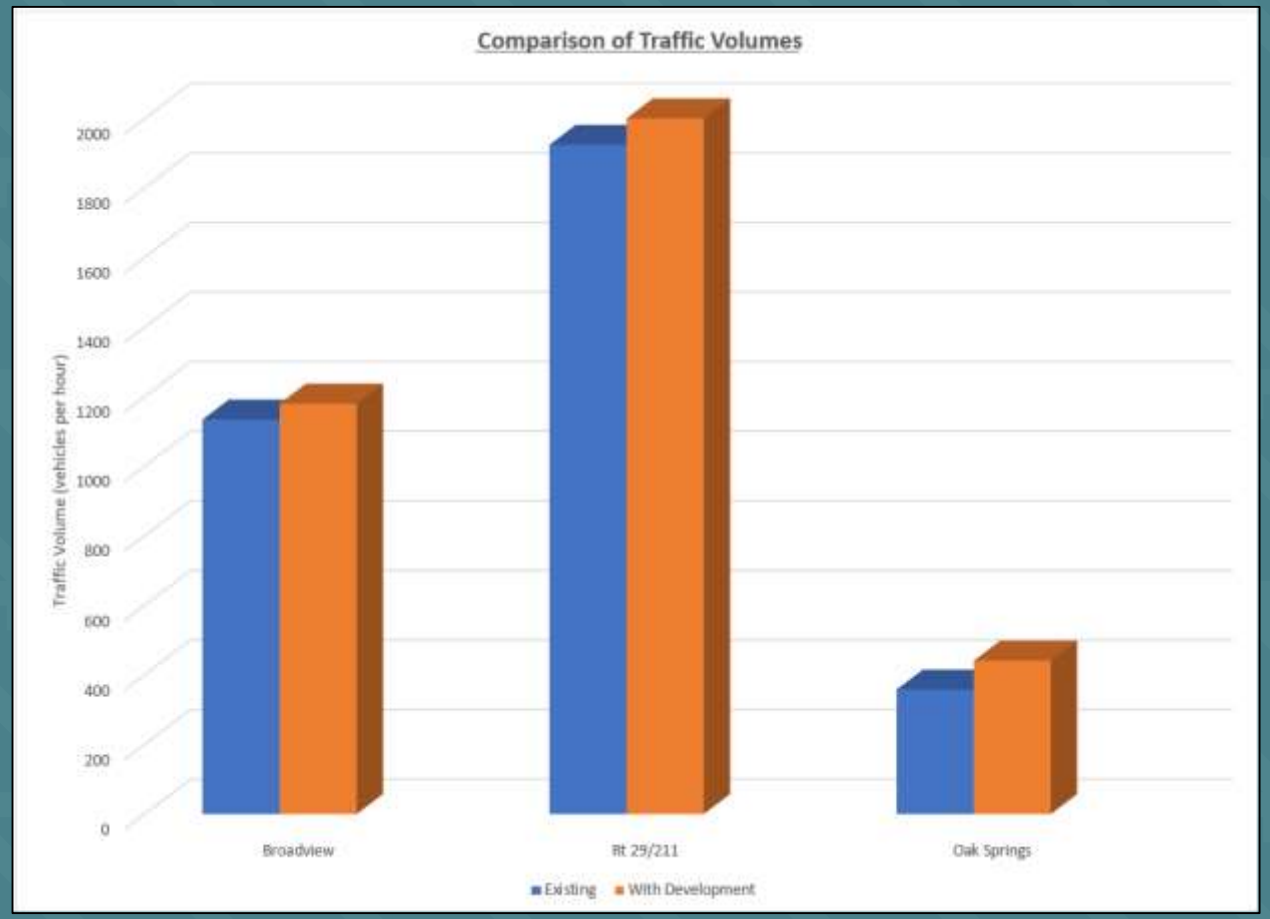
- The residential traffic volumes are lower than what would be seen if the site was developed by right with 40,000 sf of retail instead



SITE TRIP IMPACTS

Minimal Traffic Impact:

- Site-generated traffic represents a small percentage of the existing volumes:
  - 3 - 4% on Broadview Avenue
  - 0.1 - 4% on Rt 29/211
  - Greater proportion on Oak Spring Dr and Branch Dr, where current volumes are lower
- Capacity analysis confirms these modest additions can be accommodated by the surrounding road network without degrading operations



INTERSECTION CAPACITY ANALYSIS - 2027 WITH DEVELOPMENT

Minimal Impact on Intersection Operations:

- The addition of site-generated traffic does not significantly increase delays when compared to the future conditions without the development

Maintaining Efficient Traffic Flow:

- Signalized intersections and the new planned roundabout will continue operating efficiently, demonstrating the surrounding network can accommodate the new trips

Manageable Impacts at Unsignalized Intersections:

- The unsignalized intersection of Warrenton Village South Driveway and Broadview Avenue is anticipated to operate with higher delays, but the site-generated traffic only constitutes approximately 3.5% of the total volume at this location
- At all other unsignalized study intersections, the minor increases in delay represent conditions no worse than what is projected to occur without the development

Accommodating Site Traffic:

- Queues can still be fully accommodated within the available storage at all intersections, similar to the existing and future no-build conditions

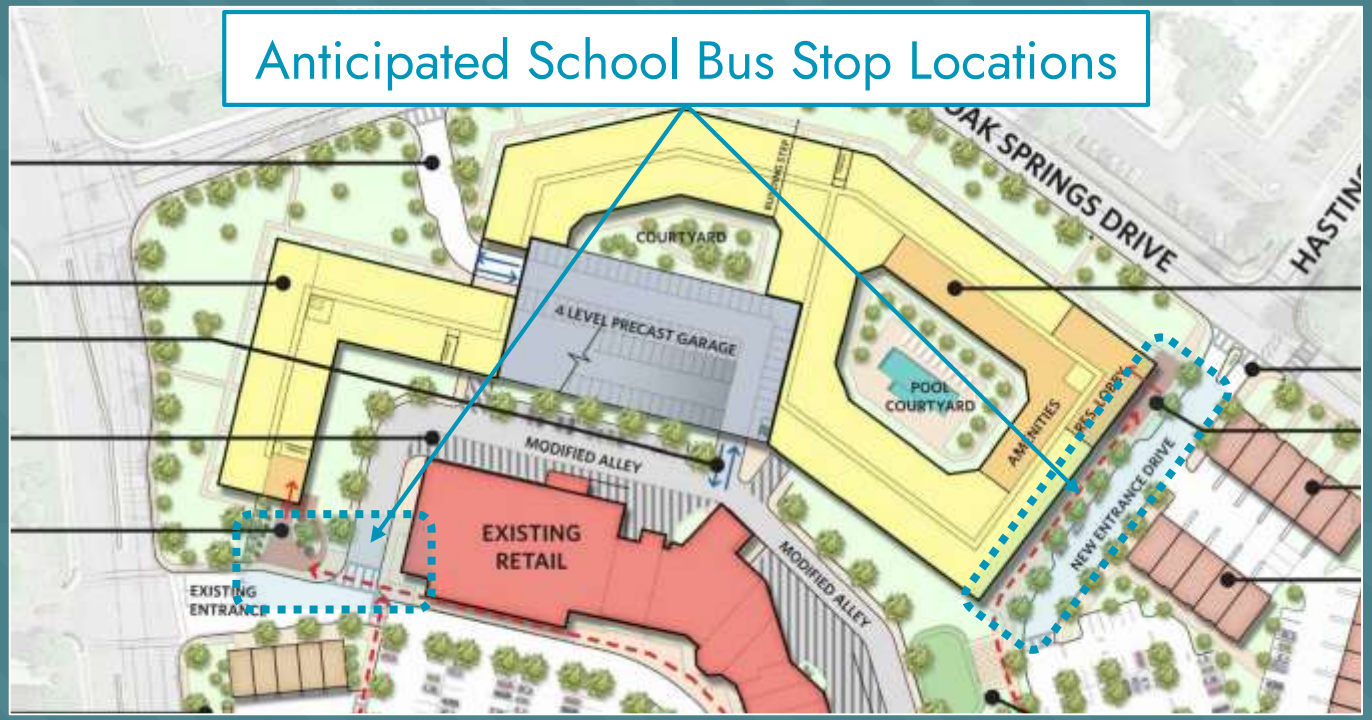
SCHOOL BUS ACCOMMODATIONS

School Bus Stops:

- The developer will work with County schools on exact locations of school bus stops
- Expected to be near the residential lobbies

Impact on Traffic:

- Anticipated that buses will stop on internal streets, rather than adjacent public roads
- Maintain the flow of through traffic on the surrounding streets during peak school travel times



HIGHLAND SCHOOL TRAFFIC

Balancing Access and Minimizing Disruption:

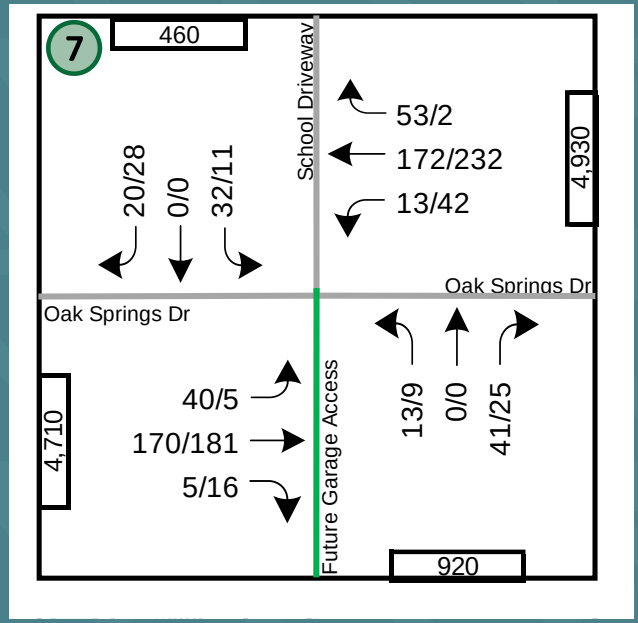
- The proposed parking deck entry is positioned across from the Highland School driveway to balance access needs while minimizing disruption to the existing intersection

Minimizing Conflicts with School Peak Hours:

- Analysis found Highland School and residential AM peak hours have a 15-minute overlap, during which conflicts are expected to be minimal
- Analysis found no overlap in PM peak hours
- It is anticipated that residents will use secondary garage entrance during AM peak hours, which will further reduce conflicts

Accommodating School Operations:

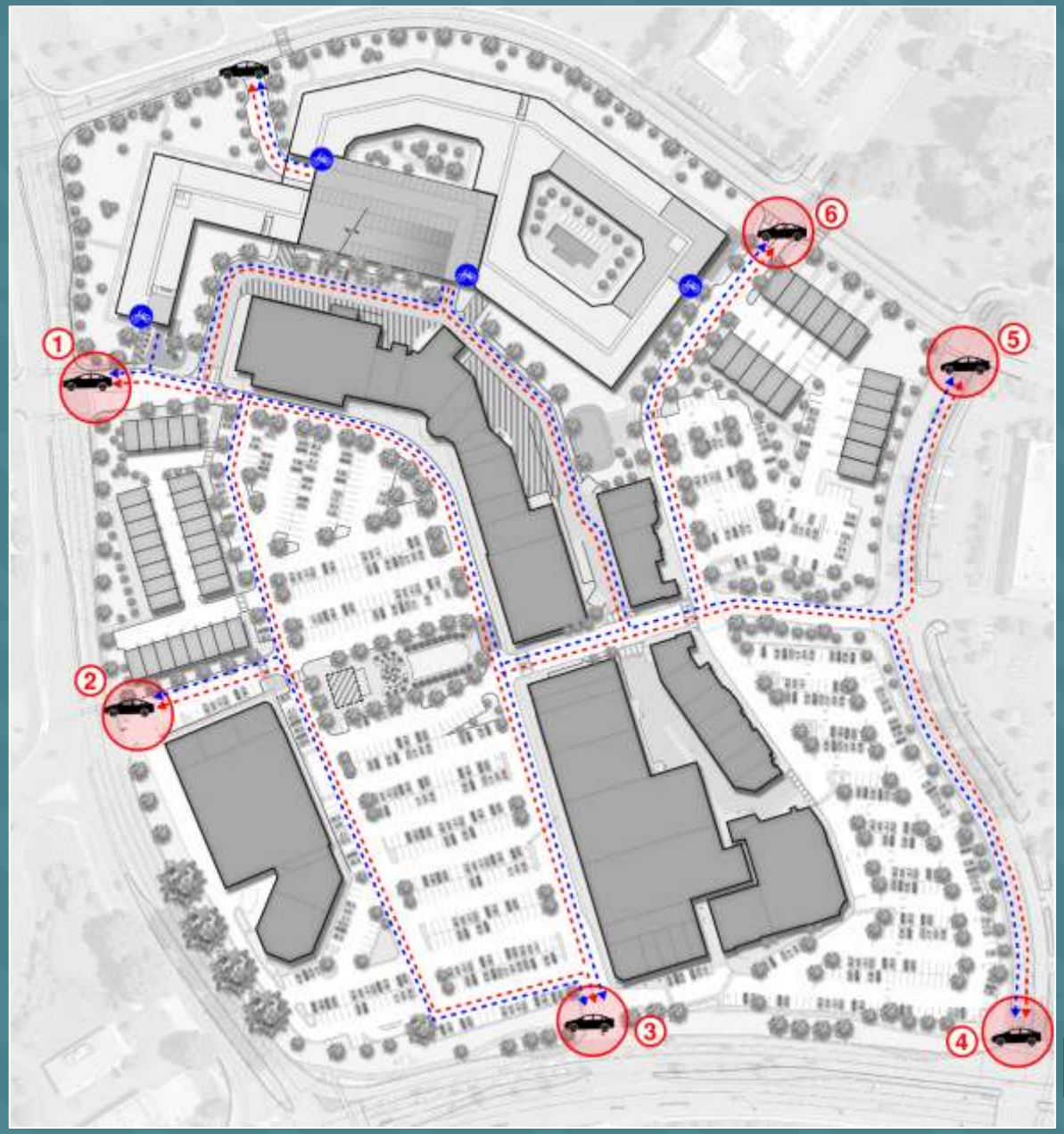
- Observations showed limited queuing of vehicles along Oak Springs Dr at the existing Highland School access point, even during peak times
- The school has multiple pickup/drop-off locations and two entrances, which helps distribute the traffic



Overall, the traffic impacts from the proposed development are not anticipated to significantly disrupt or impede the normal operations of Highland School

HIGHLAND SCHOOL TRAFFIC

- Residents of Warrenton Village Center will want to avoid traffic as much as those dropping off/picking up students at Highlands School
- The site provides 6 alternative points of ingress/egress for vehicles and bicycles that will be the preferable route of travel during peak traffic hours to avoid congestion on Oak Springs Drive
- These alternative points of ingress/egress will further reduce what the Traffic Impact Analysis has determined to be minimal conflicts to the Highland School traffic



ROAD IMPROVEMENTS

Turn Lane Warrant Analysis:

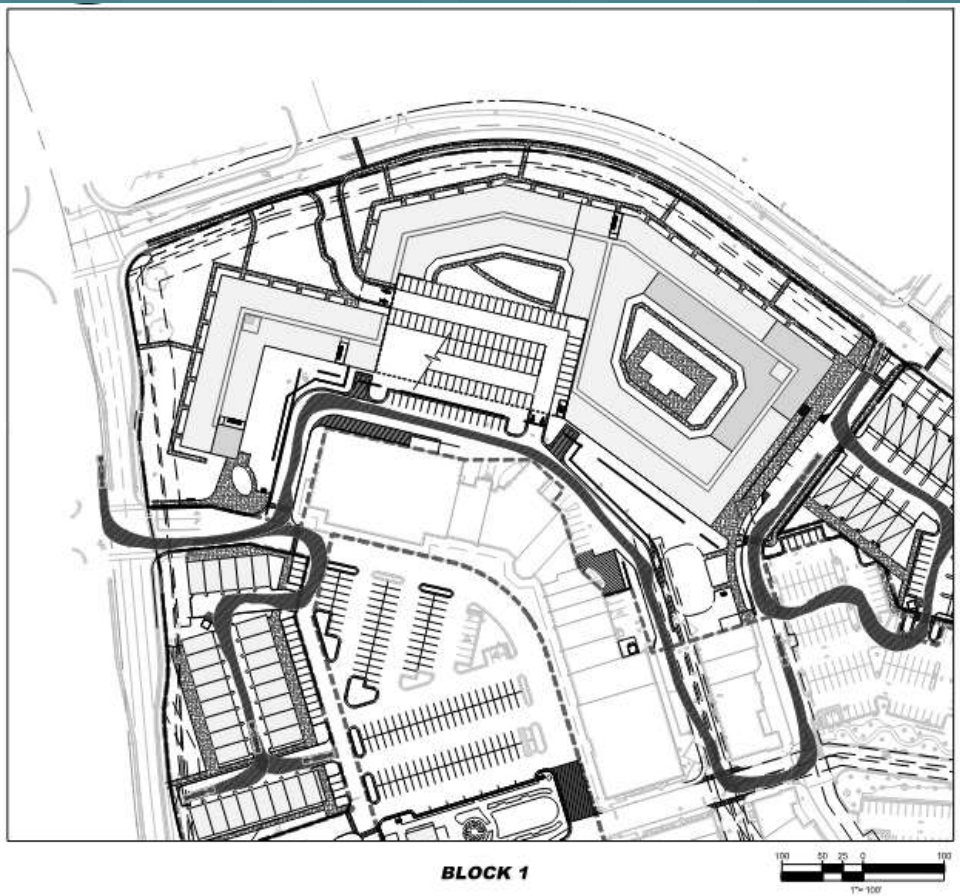
- No new turn lanes warranted at proposed site access points per VDOT standards
- No new turn lanes recommended to be constructed by the development

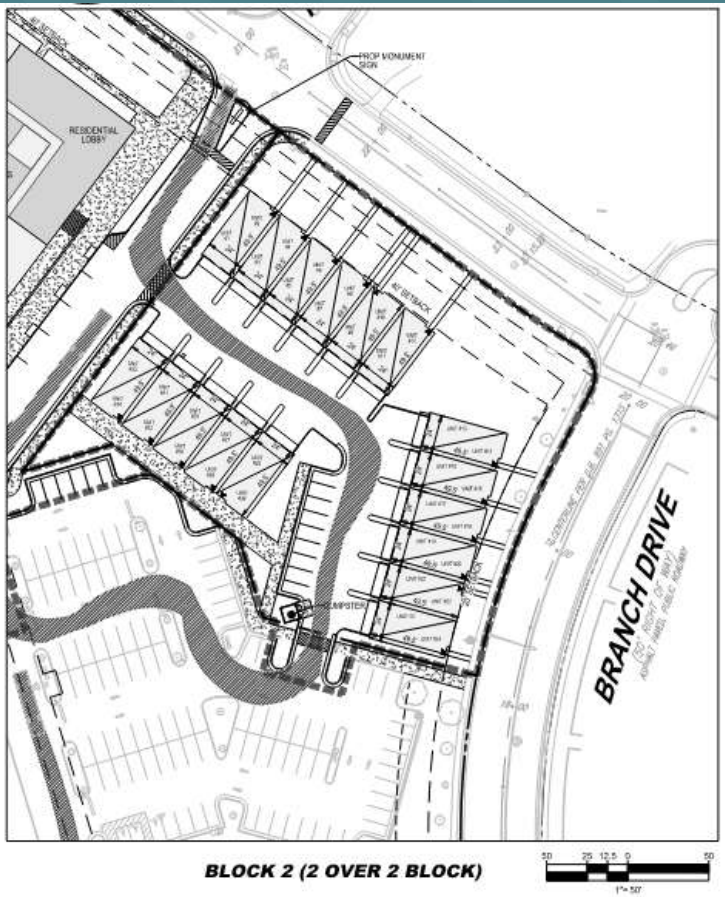
Signal Warrant Analysis:

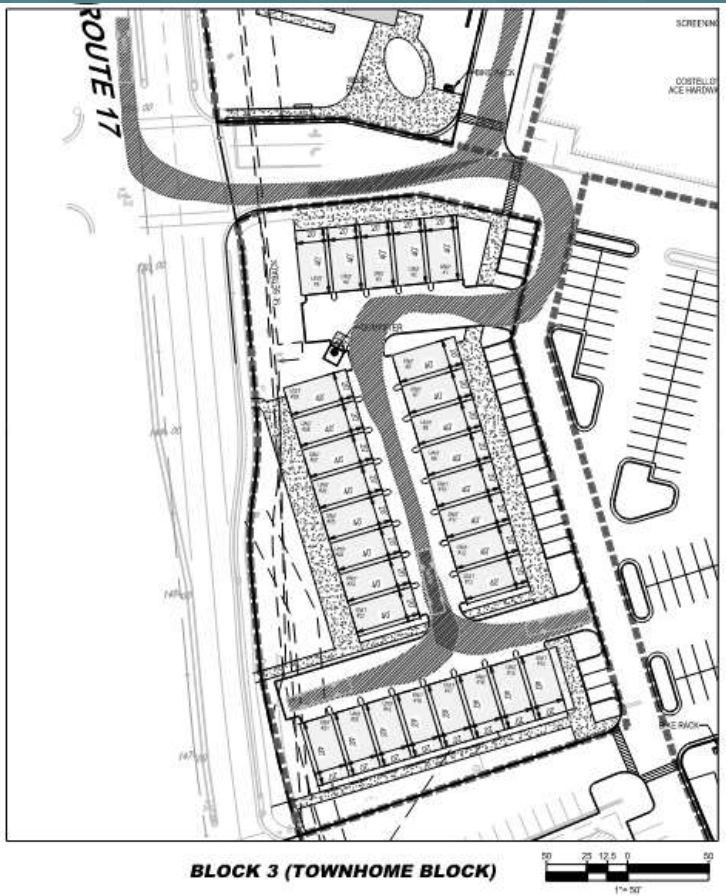
- Signal warrant analysis performed for Broadview Ave/Oak Springs Rd intersection
- Traffic volumes do not meet MUTCD signal warrants, so signalization is not recommended
- Unsignalized operations projected to function acceptably at LOS C or better

The Warrenton Village Center development does not necessitate any additional roadway improvements beyond what is already planned by VDOT and the Town

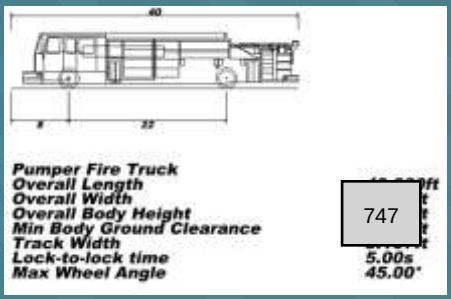
EMERGENCY & DELIVERY VEHICLE MOVEMENTS







- Vehicle turning analysis has confirmed maneuverability throughout all blocks
- Mountable curbs can be included at desired locations during site plan



SUMMARY OF IMPACTS

Additional Traffic:

- The proposed 386 residential units will generate 154 new trips in the AM peak and 197 in the PM peak hour
- This equates to about 4% of the current traffic on most surrounding roadways

Dispersed Access Points:

- Multiple entry/exit locations directly to Oak Springs Dr and through shopping center driveways
- Distributes new trips across the road network, avoiding concentration at a single point

SUMMARY OF IMPACTS

Leveraging Existing and Planned Infrastructure:

- The mixed-use nature of the development will help reduce external trips generated, as some trips can be captured internally
- Surrounding street grid offers multiple route choices, dispersing trips
- Planned roundabout will improve operation at Rt 29/211 and Broadview Ave
- Capacity analysis confirms surrounding intersections and roads can accommodate the new traffic with minimal impact

Outcome:

- The Warrenton Village Center development would improve walkability, vibrancy, and housing choices, with a marginal increase in traffic that does not warrant new road improvements

SCHOOLS

PROJECTED STUDENTS

Fauquier County Student Generation Calculation:

- 0.72 students per single family detached dwelling
- 0.45 students per single family attached dwelling
- 0.20 students per apartment dwelling

- Allocation per school type assumption is:
  - 52% elementary school
  - 22% middle school
  - 26% high school

PROJECTED STUDENTS

Warrenton Village Center Projection at Full Buildout and Occupancy:

- Block 1: 320 apartments x 0.20 = 64 students
- Block 2: 36 attached dwellings x 0.45 = 16
- Block 3: 30 attached dwellings x 0.45 = 14
- Total proposed students = 94

- Allocation per school:
  - Bradley (52%) = 49
  - Taylor (22%) = 21
  - FHS (26%) = 24

FAUQUIER COUNTY ENROLLMENT PROJECTIONS

Enrollment Projection

This is an 5-year analysis of program capacity based on projected enrollment. This analysis is a cohort progression model, looking at birth rates and considers a growth factor. Areas of concern are:

- Elementary (South and Central)
- Middle School Growth
- Liberty HS

	Program Capacity	95% Cap	Actual Enrollment 2019-20	2020-21	2021-22	2022-23	2023-24	% Cap	Projected Enrollment 2024-25	2025-26	2026-27	2027-28	2028-29
ES South													
Miller	580	551	493	476	484	489	506	87.2%	503	492	504	505	522
Pearson	532	505	385	347	365	367	381	71.6%	397	394	407	422	433
Pierce	560	532	550	487	514	531	533	95.2%	537	548	554	543	551
Walter	568	559	410	363	412	399	396	67.3%	409	430	451	452	474
Subtotal South	**2,260**	**2,147**	**1,838**	**1,673**	**1,775**	**1,786**	**1,816**	**80.4%**	**1,846**	**1,864**	**1,916**	**1,922**	**1,980**
ES Central													
Bradley	588	559	369	332	339	356	349	59.4%	341	354	355	363	360
Brumfield	716	680	495	458	482	492	508	70.9%	530	560	580	608	644
Greenville	604	574	531	437	479	495	494	81.8%	506	506	498	468	471
Ritchie	548	521	483	416	478	491	522	95.3%	532	529	543	547	563
Smith	572	543	414	356	414	418	393	68.7%	418	443	465	505	524
Subtotal Central	**3,028**	**2,877**	**2,292**	**1,999**	**2,192**	**2,252**	**2,266**	**74.8%**	**2,327**	**2,394**	**2,441**	**2,491**	**2,562**
ES North													
Coleman	520	494	347	276	311	332	315	60.6%	312	302	280	270	266
Thompson	368	350	254	224	257	256	262	71.2%	267	280	310	327	344
Subtotal North	**888**	**844**	**601**	**500**	**568**	**588**	**577**	**65.0%**	**579**	**582**	**590**	**597**	**610**
TOTAL ELEMENTARY	**6,176**	**5,867**	**4,731**	**4,172**	**4,535**	**4,626**	**4,659**	**75.4%**	**4,752**	**4,840**	**4,947**	**5,010**	**5,152**
Available Capacity			**1,445**	**2,004**	**1,641**	**1,550**	**1,517**	**24.6%**	**1,424**	**1,336**	**1,229**	**1,166**	**1,024**
Middle Schools													
Auburn	622	591	568	513	575	552	578	92.9%	588	590	613	647	668
Cedar Lee	900	855	650	622	613	596	837	93.0%	877	864	805	851	859
Marshall	654	621	466	445	419	408	405	61.9%	396	391	391	413	414
Taylor	618	587	470	422	435	424	607	98.2%	607	601	569	601	606
Warrenton	-	-	432	368	366	392	-		-	-	-	-	-
TOTAL MIDDLE	**2,794**	**2,654**	**2,586**	**2,370**	**2,408**	**2,372**	**2,427**	**86.9%**	**2,468**	**2,445**	**2,379**	**2,512**	**2,547**
Available Capacity			**208**	**424**	**386**	**422**	**367**	**13.1%**	**326**	**349**	**415**	**282**	**247**
High Schools													
Fauquier	1,612	1,531	1,254	1,217	1,170	1,134	1,122	69.6%	1,089	1,111	1,153	1,147	1,170
Kettle Run	1,360	1,292	1,184	1,147	1,112	1,172	1,164	85.6%	1,165	1,214	1,233	1,241	1,267
Liberty	1,370	1,302	1,250	1,252	1,259	1,324	1,300	94.9%	1,261	1,283	1,328	1,341	1,368
TOTAL HIGH	**4,342**	**4,125**	**3,688**	**3,616**	**3,541**	**3,630**	**3,586**	**82.6%**	**3,515**	**3,608**	**3,714**	**3,729**	**3,805**
Available Capacity			**654**	**726**	**801**	**712**	**756**	**17.4%**	**827**	**734**	**628**	**613**	**537**
District Total	13,312	12,646	11,005	10,158	10,484	10,628	10,672	80.2%	10,735	10,893	11,040	11,251	11,504

*Data provided by Fauquier County Public Schools

NEW STUDENTS VS. AVAILABLE CAPACITY

- Bradley
  - New students = 49
  - Available Capacity (min.) = 225
- Taylor/Warrenton Middle
  - New students = 21
  - Available Capacity (min.) = 243
- FHS
  - New students = 24
  - Available Capacity (min.) = 464

		Actuals	*% of Capacity*	*Projections*				
Bradley Elementary School								
Max Capacity	588							
		2023-24		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		349	59.4%	341	354	355	363	360
Available Capacity		239		247	234	233	225	228
Taylor/Warrenton Middle School								
Max Capacity	850	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		607	71.4%	607	601	569	601	606
Available Capacity		243		243	249	281	249	244
Fauquier High School								
Max Capacity	1,634	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		1,122	68.7%	1,089	1,111	1,153	1,147	1,170
Available Capacity		512		545	523	481	487	464
COMBINED								
Max Capacity	3,072	*School Year 2023-24*		*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*
Enrollment		2,078	67.6%	2,037	2,066	2,077	2,111	2,136
Available Capacity		994		1,035	1,006	995	961	936

MODIFICATIONS & WAIVERS

ZONING ORDINANCE 9-25: MIXED-USE DEVELOPMENT OPTIC

The mixed-use development option is created within the Commercial District to allow a mixture of uses when consistent with the Comprehensive Plan. The mixed-use option is intended to encourage development in a creative and integrated manner that encourages pedestrian walkability, shared open spaces and an alternative form of housing within the Town.

Section J. – Modifications:

Modifications from the standards set forth in Section 9-25 may be approved by Town Council in conjunction with the Special Use Permit upon a determination that the intent of the Comprehensive Plan is being met.

SUP MODIFICATION & WAIVERS – WAIVER REQUEST #1



- Section 3-4.10.3 of the Zoning Ordinance provides that density in a mixed-use development within a Commercial zone may be calculated pursuant to Sec. 9-25 of the Zoning Ordinance
- Sec. 9-25 allows for calculation of density in a mixed-use development to be up to 1 dwelling unit per 500 square feet of non-residential space. This section also provides that density above 5 units per acre must be approved by the Town Council.
- While this is a modification of Sec. 3-4.10.3, the requested density is fully consistent with the provisions of Sec. 9-25 for a mixed-use development, and less than what could be achieved
- This modification will allow for realization of the concentrated increased density that is a primary objective of the New Town Character District
- **Waiver Request #1:** Increase density above 5 units per acre to 13.28 units per acre, which will yield 386 units

DENSITY CALCULATIONS

By-Right Density Calculation:

- 5 dwelling units per acre
- 5 x 29.05 acres = 145 units

By-Right Density Calculation, with affordable housing bonus:

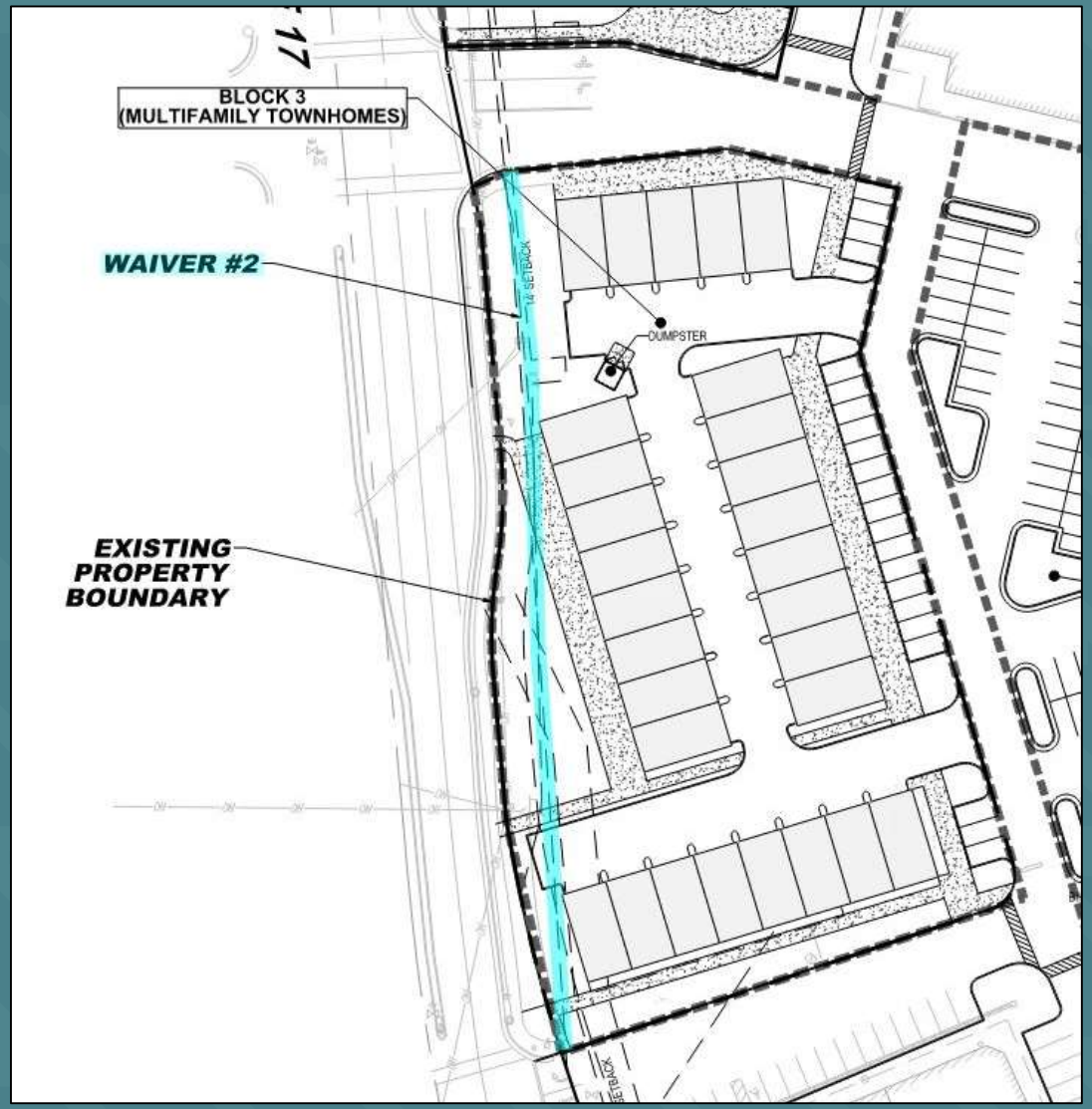
- 10 dwelling units per acre
- 10 x 29.05 acres = 290 units

Mixed-Use Density Calculation (with SUP approval):

- 1 dwelling unit per 500 GSF of non-residential floor space
- 218,142 GSF / 500 = 436 units (15 units per acre)

- Requested Density = 386 (13.28 units per acre)

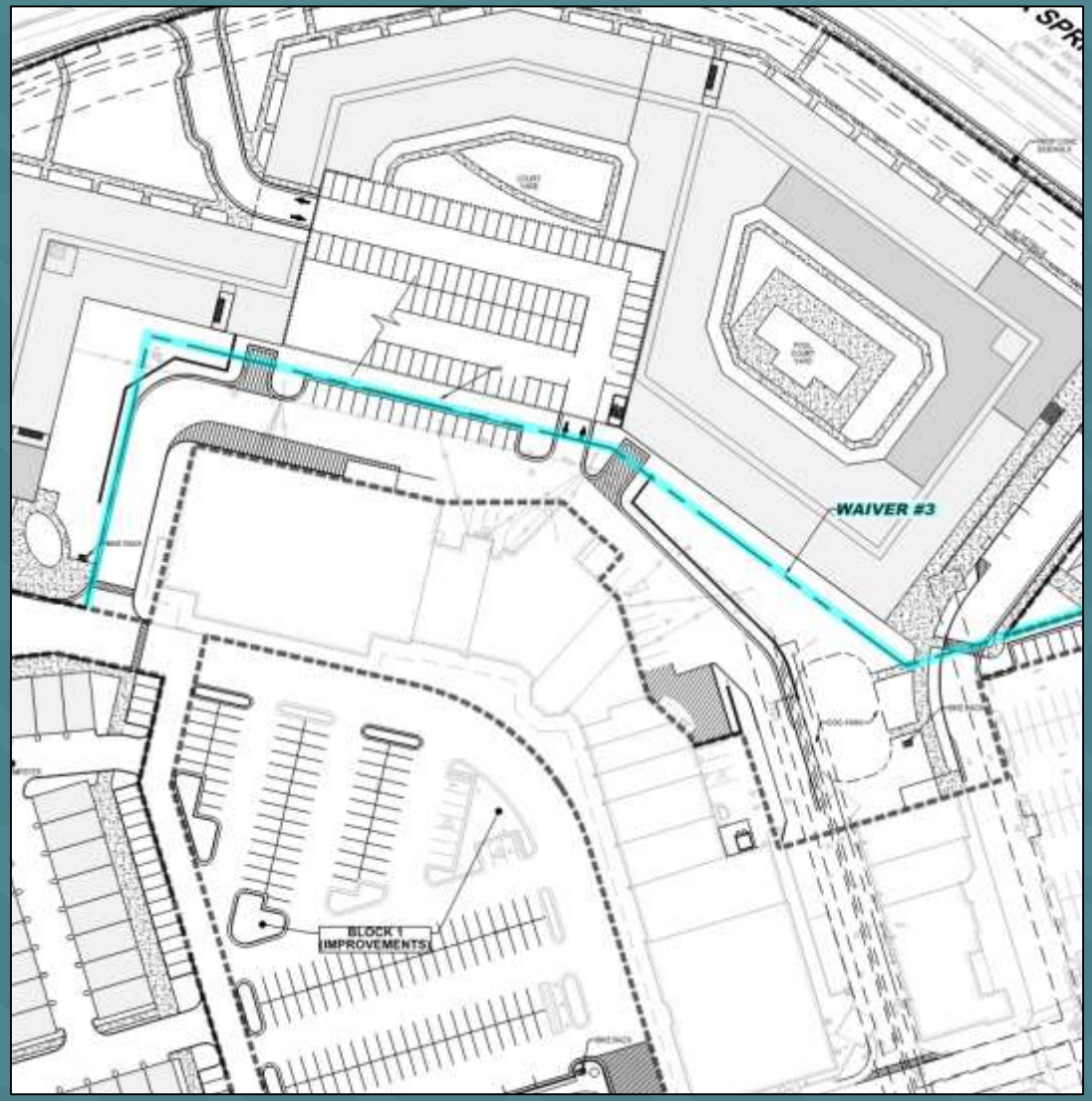
SUP MODIFICATION & WAIVERS – WAIVER REQUEST #2



- Article 3-4.10.4: Required front yard setback from ROW greater than 50' is 40' minimum, if no parking or loading is proposed.
- This modification will allow the units to be closer to the street, creating a more consistent edge that is representative of the New Town Character district
- **Waiver Request #2**: Decrease minimum setback to 14' along Broadview Avenue

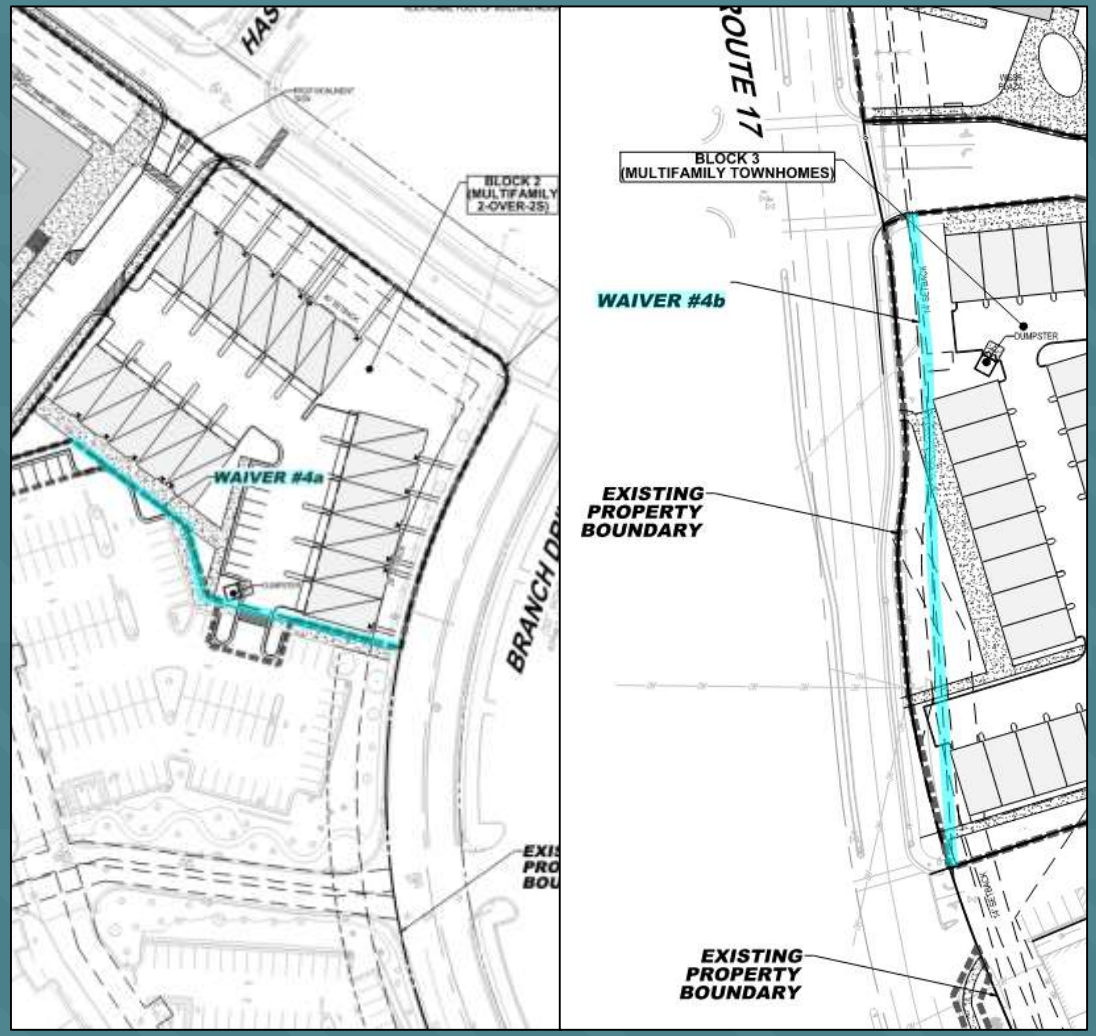


SUP MODIFICATION & WAIVERS – WAIVER REQUEST #3



- Article 3-4.10.4: Required side/rear yard setbacks is 5' minimum.
- This modification will allow the overall development to function as a true mixed-use development that will not be segmented by internal separations.
- **Waiver Request #3:** Decrease side/rear yard setbacks along internal proposed and existing property lines to 0'

SUP MODIFICATION & WAIVERS – WAIVER REQUEST #4



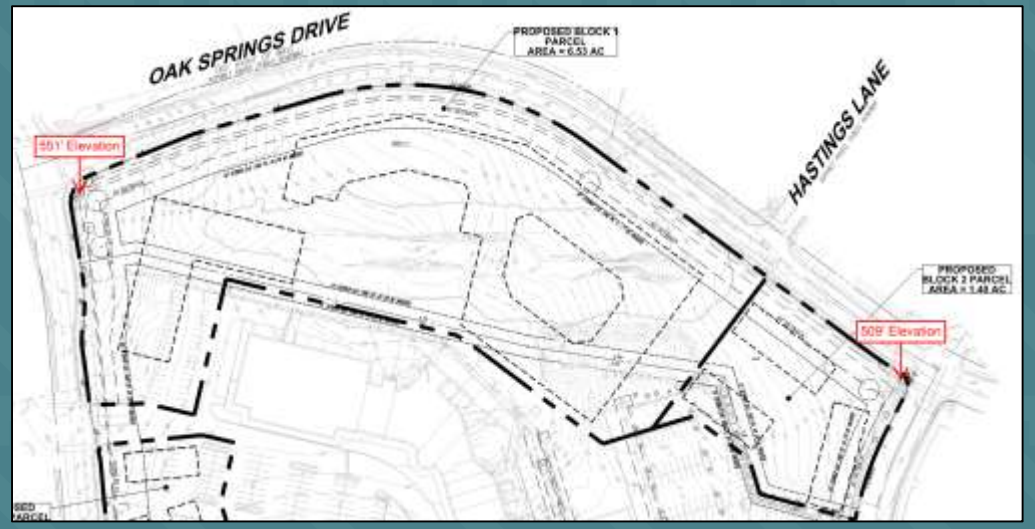
- Article 8-8.5: Minimum buffer width for commercial uses adjacent to residential uses is 25', plus 1' for each foot of building height over 35'. Minimum buffer width for rear boundaries of residential uses from public ROW is 25'.
- This modification will allow the overall development to function as a true mixed-use development that will not be segmented by internal separations
- This modification will allow the units to be closer to the street, creating a more consistent edge that is representative of the New Town Character district
- **Waiver Request #4a:** Decrease buffer width between commercial and residential uses to 0'
- **Waiver Request #4b:** Decrease rear buffer width for residential uses from public ROW to 14'

SUP MODIFICATION & WAIVERS – WAIVER REQUEST #5

- Article 2-20: Height limit for dwellings may be increased up to 45' and up to three stories provided that front, side and rear setbacks increase 1' for each additional foot of building height over 35'.
- **Waiver Request #5**: Increase height limit for dwellings as follows:
  - 54' max height for Block 1, Oak Springs Drive Frontage
  - 36' max height for Block 1, Broadview Drive Frontage
  - 45' max height for Block 2
  - 36' max height for Block 3

WHY ADDITIONAL HEIGHT IS NEEDED

- Site drops 42’ from Broadview Avenue to Branch Drive
- The building starts as 3-stories on the west side at the higher elevation and increases to 4-stories on the east side as the elevation drops
- Increasing height as a building moves down a hill is a technique to keep consistency in scale across a building’s elevation, as well as a way to conceal retaining walls within the building’s foundation, as opposed to creating unsightly external walls

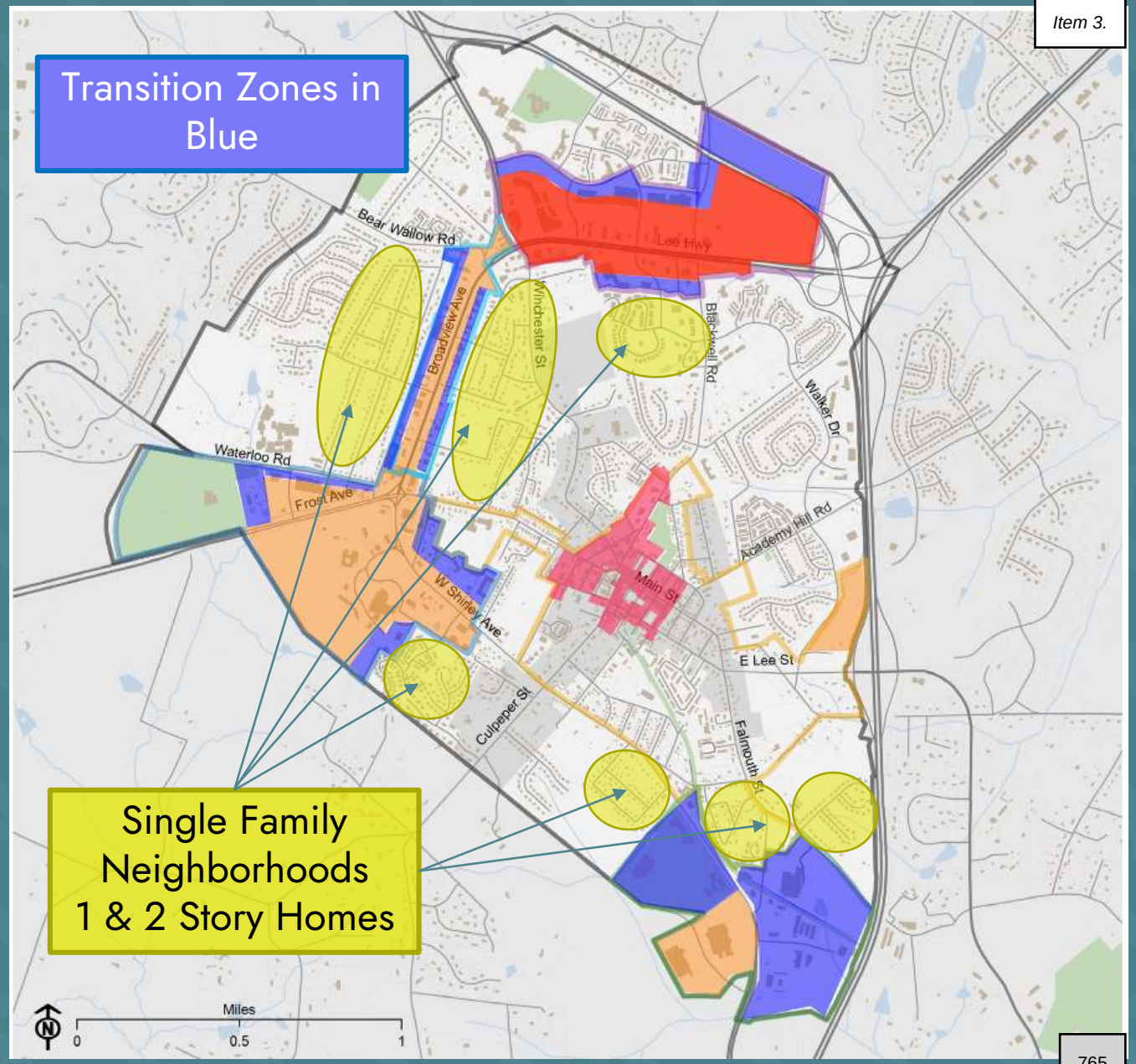


WHY ADDITIONAL HEIGHT IS NEEDED

- The New Town Character District has been established in Plan Warrenton 2040 as a designated area of high density—3-story residential does not allow for the concentrated density desired in the District
- The New Town Character District calls for "greater intensity of mixed-use and strong live, work, and play options" and notes that this district has "high visibility," due to its proximity to Route 29. The requested modifications to increase density and height support the need for greater intensities and higher visibility in this Character District.
- 4-stories allows for the internal parking garage to be hidden from the exterior of the building

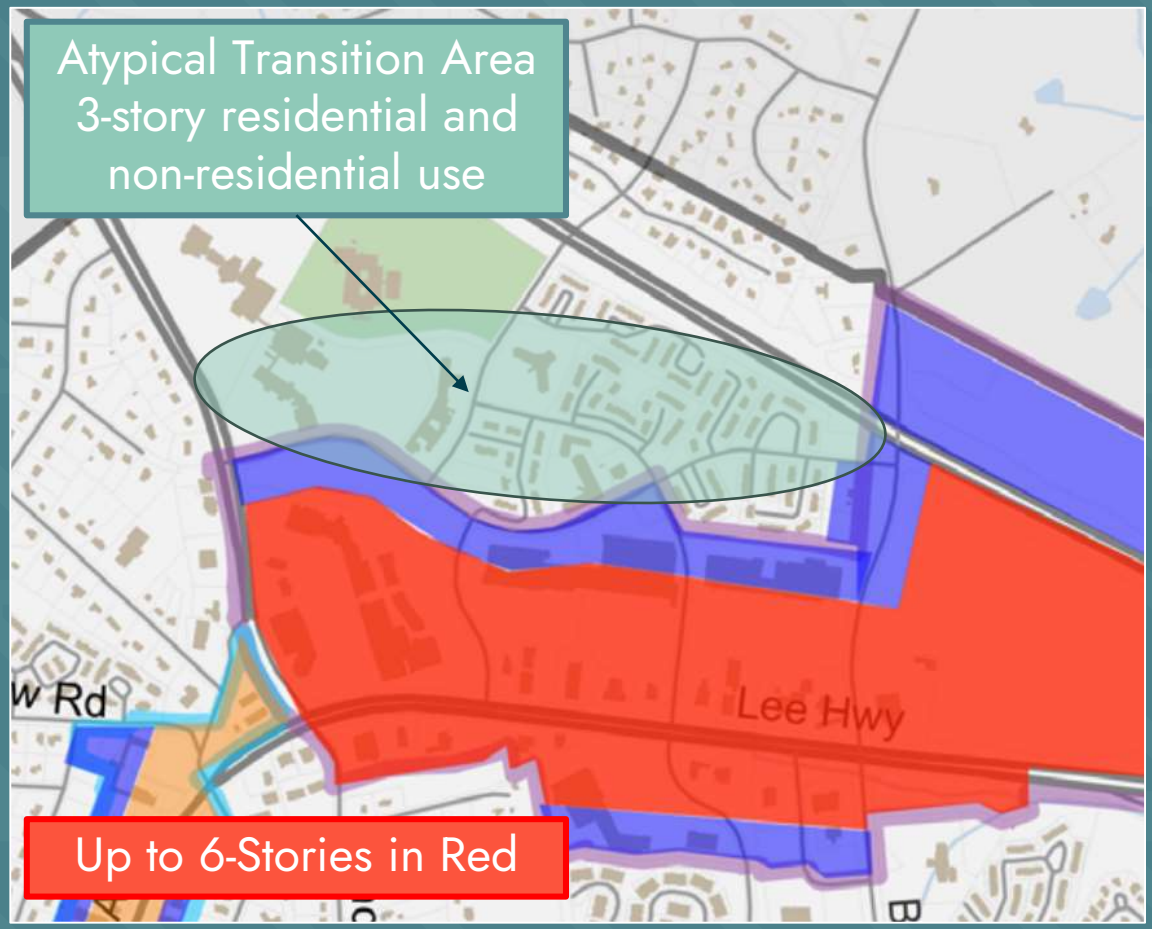
TRANSITION ZONES

- The area along the south side of Oak Springs Drive is located within in a “Transition Zone” as defined by Plan Warrenton 2040
- Transition Zones are “specifically defined as adjoining neighborhoods to articulate a step down in the number of stories for greater compatibility to adjoining single-family neighborhoods”
- These areas are intended to be a max of 3-stories to provide a step down to the adjacent 1- and 2-story single family neighborhoods
- Transition Zones have been placed in accordance with this definition across the Future Land Use map



TRANSITION ZONES

- With the exception of the Transition Zone placed along Oak Springs Drive
- The uses on the north side of Oak Springs Drive are not 1- & 2-story single family neighborhoods
- This area is occupied with 3- & 4-story apartments, 3-story townhomes, Brookside Rehab & Nursing Center and Highland School
- Because of this, increasing building heights to 4-stories at Warrenton Village Center still provides the intended step-down affect, given that the uses on the north side are atypical, 3-story and non-residential uses and the uses along Lee Hwy may go up to 6-stories



SURROUNDING BUILDING HEIGHTS



NOTABLE WARRENTON BUILDING HEIGHTS

- Warrenton Manor Apartments
  - Stories: 4
  - Location: Hastings Lane
  - Zoning: Residential Multi-Family
  - Future Use: Live-Work Neighborhood



- 98 Alexandria Pike Office Building
  - Stories: 5
  - Location: North of Old Town
  - Zoning: Central Business District
  - Future Use: Old Town Mixed Use



NOTABLE WARRENTON BUILDING HEIGHTS

- 28 Blackwell Park Lane Office Building
  - Stories: 3
  - Location: Blackwell Business Park
  - Zoning: Commercial
  - Future Use: Commercial



- Hampton Inn
  - Stories: 5
  - Location: Blackwell Road
  - Zoning: Commercial
  - Future Use: Commercial



NOTABLE WARRENTON BUILDING HEIGHTS

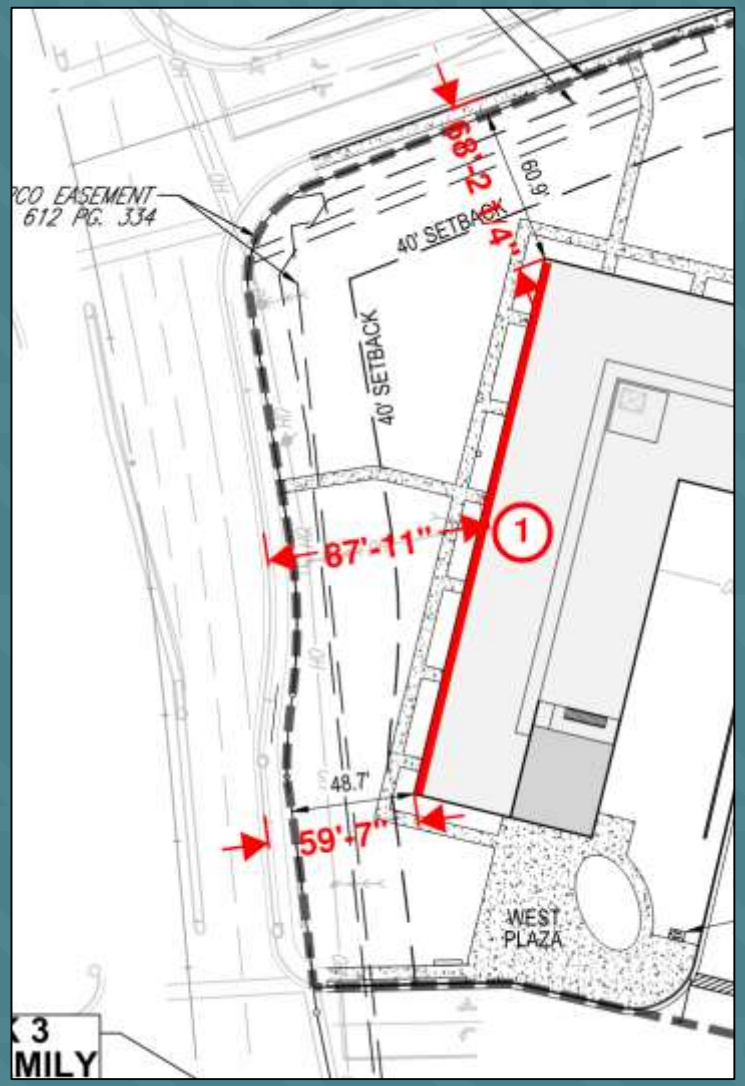
- Fauquier County High School
  - Stories: 4
  - Location: 705 Waterloo Road
  - Zoning: Public-Semi-Institutional
  - Future Use: Public/Semi-Public Non-Intensive



- Fauquier Health
  - Stories: 5
  - Location: 500 Hospital Drive
  - Zoning: Public-Semi-Institutional
  - Future Use: Public/Semi-Public Intensive



BUILDING HEIGHTS & SETBACKS – FROM BROADVIEW



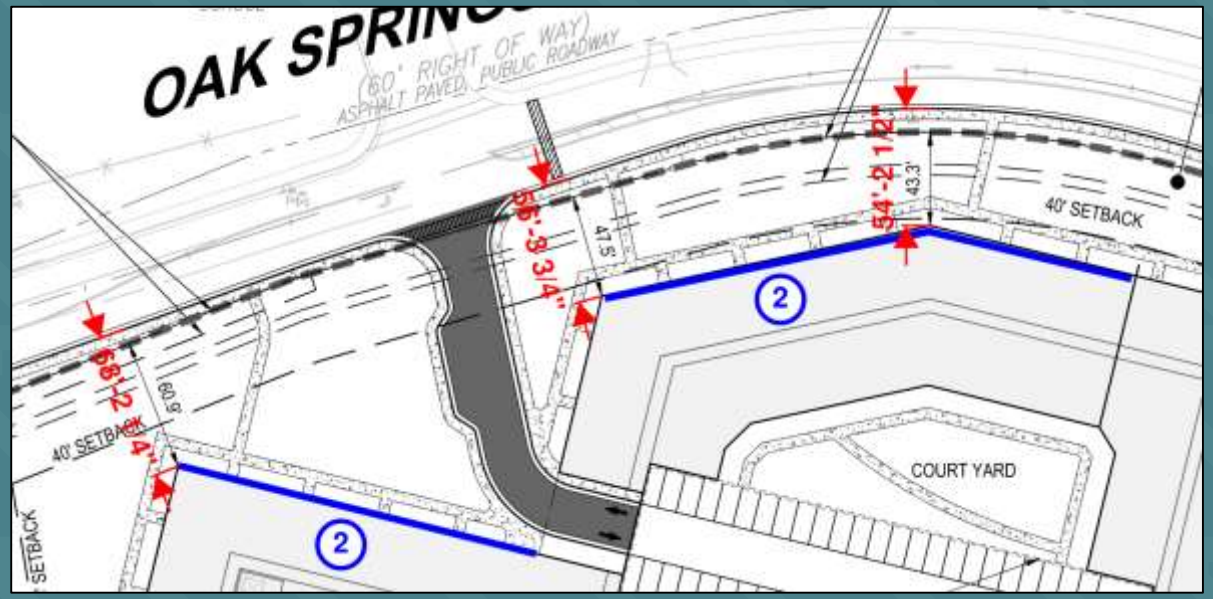


Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
3	32′-11″	36′-0″	59′-7″

- Setback to Height Ratio = 1.7 : 1

BUILDING HEIGHTS & SETBACKS – FROM OAK SPRINGS



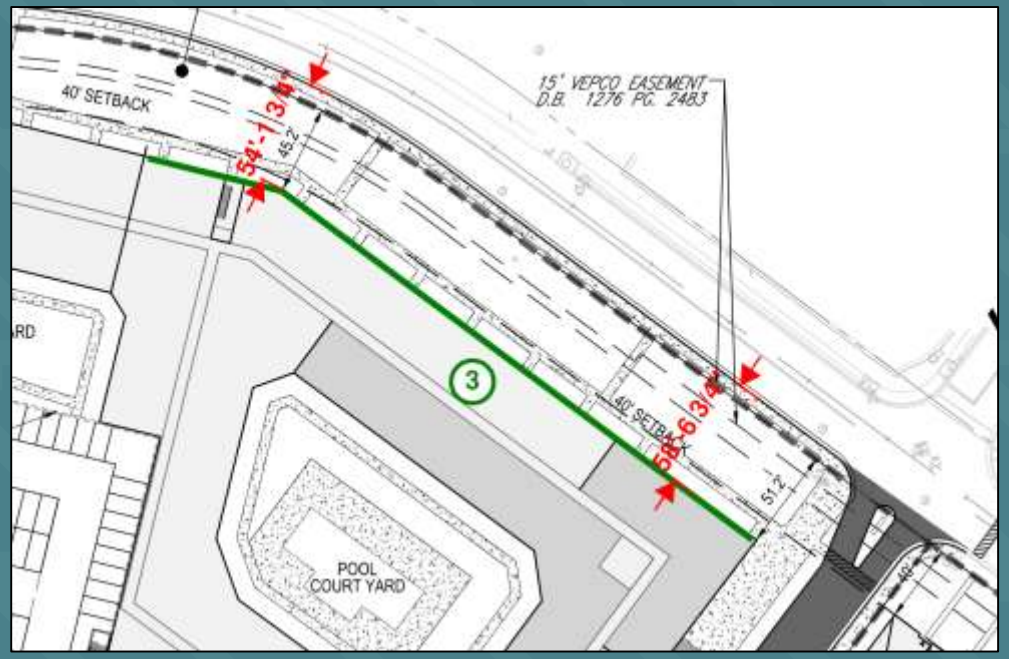


Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
4	42′-11′′	54′-0′′	54′-2′′

- Setback to Height Ratio = 1 : 1

BUILDING HEIGHTS & SETBACKS – FROM OAK SPRINGS





Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
4	45′-0″	54′-0″	54′-2″

- Setback to Height Ratio = 1 : 1

BUILDING HEIGHTS & SETBACKS – FROM OAK SPRINGS

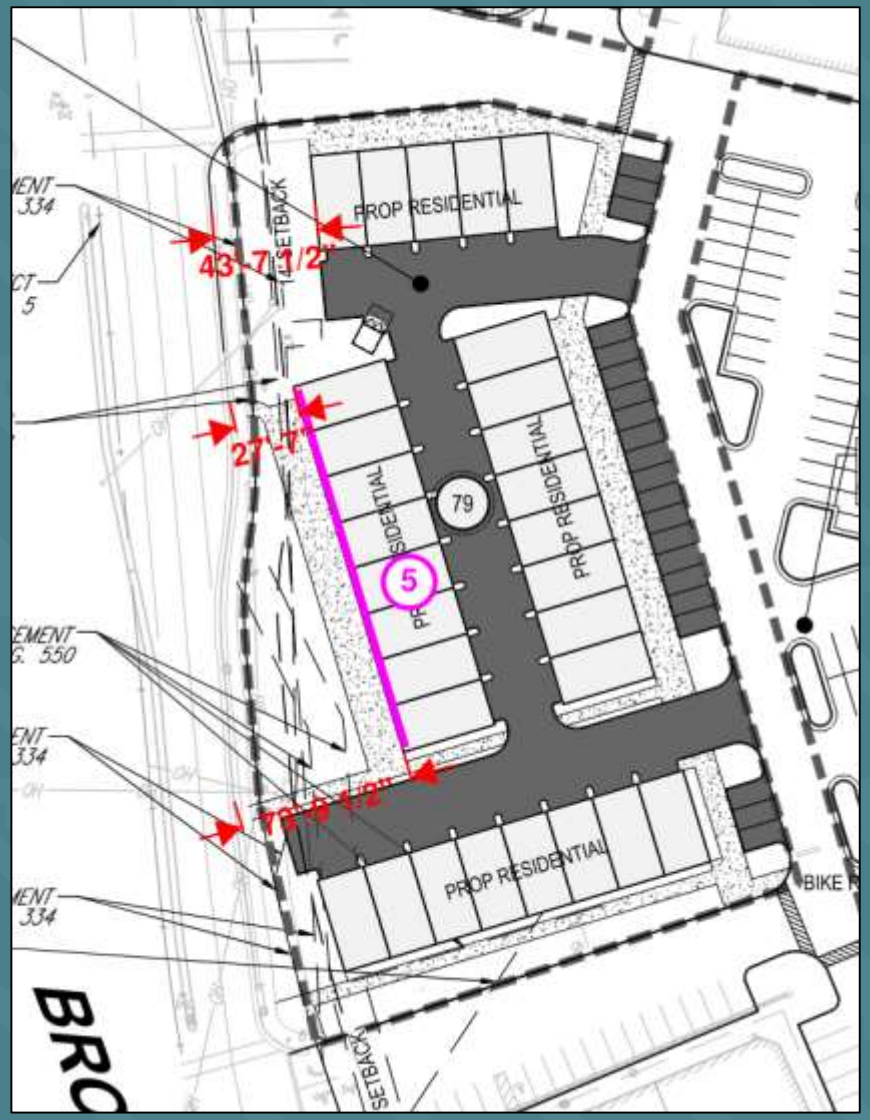




Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb (Oak Springs Dr.)	Minimum Setback from Curb (Branch Dr.)
4	43′-6″	45′-0″	46′-11″	21′-6″

- Setback to Height Ratio = ~1 : 1 on Oak Springs Dr
- Setback to Height Ratio = ~0.5 : 1 on Branch Dr

BUILDING HEIGHTS & SETBACKS – FROM BROADVIEW





Number of Stories	Average Building Height	Max Building Height Per Waiver	Minimum Setback from Curb
3	32′-11″	36′-0″	27′-7″

- Setback to Height Ratio = 0.8 : 1

Office of the Town Manager
Frank Cassidy

STAFF REPORT

Warrenton Town Council
Carter Nevill, Mayor
Heather Sutphin, Ward 1
William Semple, Ward 2
Brett Hamby, Ward 3
James Hartman, Ward 4 Vice Mayor
Eric Gagnon, Ward 5
Paul Mooney, At Large
David McGuire, At Large

Council Meeting Date:	June 11th, 2024
Agenda Title:	Erosion and Stormwater Management Ordinance
Requested Action:	Adoption of the Erosion and Stormwater Management Ordinance
Department / Agency Lead:	Public Utilities
Staff Lead:	Steven Friend, Director of Public Utilities / Kerry Wharton, Stormwater Administrator

EXECUTIVE SUMMARY

The Virginia Erosion and Stormwater Management Regulation (9VAC25-875) updates included consolidation requirements of the Erosion and Sediment Control Regulation (9VAC25-840); Erosion and Sediment Control and Stormwater Certification Regulation (9VAC25-850); and Virginia Stormwater Management Program Regulation (9VAC25-870) into one chapter of the Virginia Administrative Code. To align with these requirements, the Town has combined existing erosion and sediment control and stormwater regulations into a new chapter of the Town Code named the "Erosion and Stormwater Management Ordinance". This ordinance will be effective July 1, 2024.

BACKGROUND

Stormwater management is the collection and use of stormwater to protect the environment by preventing unregulated and potentially harmful pollutants from entering the Town's waterways. Pollutants include silt, dirt, trash, and other contaminants. Stormwater Management also reduces the nutrient loading in the streams which can disrupt the natural ecology of the waterways and could harm aquatic plant life and animal life.

The Town's current Erosion and Sediment Control and Stormwater regulations are included in the Town's Zoning Ordinance as Articles 4 & 5. The "Consolidation Bill" requires the combination of existing regulations to clarify program requirements, eliminate redundancies, and correct inconsistencies between the stormwater management and erosion control regulations.

Our current ordinance administers the Virginia Erosion and Sediment Control Program and the Virginia Stormwater Management Program separately within the Town's Zoning Ordinance. A new erosion and stormwater management ordinance has been created to address the new combined Erosion and Stormwater Management Regulations as required per state code.

The newly created Erosion and Stormwater Management Ordinance will be effective July 1, 2024.

STAFF RECOMMENDATION

Staff recommends the adoption of the standalone chapter to address Erosion and Stormwater Management. A separate initiation will strike the language from the Town of Warrenton's Zoning Ordinance.

Service Level/Collaborative Impact

Adoption of the ordinance will bolster the vision of Plan Warrenton 2040 by helping to preserve the visual aesthetics and protect environmentally sensitive areas from unregulated / unmonitored runoff related to new and existing construction, and to maintain state code requirements. This will have a collaborative impact on the Public Utilities Department, Community Development Department, and Public Works departments.

Policy Direction/Warrenton Plan 2040

Plan Warrenton 2040 seeks to preserve, enhance, and protect the environmental, scenic, and natural quality of the Town. The proposed Erosion and Stormwater Management Ordinance ensures all construction activities are properly regulated and maintained and limit pollution and enhance water quality through proper Stormwater Management practices. It directly relates to Community Facilities Goal of:

CF-4: Ensure healthy, safe, adequate water and wastewater services.

Fiscal Impact

None identified at this time.

Legal Impact

None identified at this time.

ATTACHMENTS

1. Ordinance 2024-13: An Ordinance Creating Chapter 21 "Erosion and Stormwater Management", of the Code of the Town of Warrenton, Effective July 1, 2024

Table of Contents

Chapter 21, Erosion and Stormwater Management

Sec. 21-1 Title, Purpose, and Authority
Sec. 21-2 Definitions
Sec. 21-3 Erosion and Stormwater Management Program Established
Sec. 21-4 Conflicting Contents with other Codes and Ordinances
Sec. 21- 5 Regulated Land Disturbing Activities
Sec. 21-6 Review and Approval of Plans; Prohibitions
Sec. 21-7 Review of a Soil Erosion Control and Stormwater Management Plan (ESM Plan)
Sec. 21-8 Stormwater Permit Requirements: Exemptions
Sec. 21-9 Stormwater Pollution Prevention Plan; Contents of Plans
Sec. 21-10 Stormwater Pollution Prevention Plan; MS4
Sect. 21-11 Stormwater Management Plan; Contents of Plan
Sec. 21-12 Pollution Prevention Plan; Contents of Plans
Sec. 21-13 Erosion and Sediment Control Plan; Contents of Plans
Sec. 21-14 Technical Criteria for Regulated Land Disturbing Activities
Sec. 21-15 Long Term Maintenance of Permanent Stormwater Facilities
Sec. 21-16 Monitoring and Inspections
Sect 21-17 Performance Bonds
Sec. 21-18 Hearings
Sec. 21-19 Appeals
Sect. 21-20 Right of Entry
Sec. 21-21 Enforcement
Sec. 21-22 Fees

CHAPTER 21 – EROSION AND STORMWATER MANAGEMENT ORDINANCE

Section 21-1 Title, Purpose, Authority.

A. The purpose of this Chapter is to ensure the general health, safety, and welfare of the citizens of the Town to protect the quality and quantity of state waters from the potential harm of unmanaged stormwater and soil erosion, including protection from a land disturbing activity causing unreasonable degradation of properties, water quality, stream channels, and other natural resources, and to establish procedures whereby stormwater requirements related to water quality and quantity shall be administered and enforced. The chapter establishes a local erosion and stormwater program that shall be administered in conjunction with the Town's Municipal Separate Storm Sewer System (MS4) Program.

B. This Chapter is authorized by § 62.1-44.15:27 of the Code of Virginia. Pursuant to that statute, this Chapter is adopted as part of an initiative to integrate the Town's stormwater management requirements with the Town's erosion and sediment control, flood plain management, and Chesapeake Bay Preservation Act requirements into a consolidated erosion and stormwater management program. The erosion and stormwater management program is intended to facilitate the submission and approval of plans, issuance of Permits, payment of fees, and coordination of inspection and enforcement activities for land-disturbing activities into a more convenient and efficient manner for both the Town and those responsible for compliance with these programs.

C. All references to provisions of the Code of Virginia, Acts of the General Assembly, or state regulations in this Chapter shall be interpreted to include future amendments to the provisions of the Code, acts of the General Assembly or state regulations.

Section 21-2 Definitions.

The following words and terms, when used in this Chapter, shall have the following meanings, unless the context clearly indicates otherwise.

"Adequate channel" means a channel that will convey the designated frequency storm event without overtopping the channel bank nor causing erosive damage to the channel bed or banks.

"Administrator" means the person appointed by the Town Manager to administer this Chapter and any designee or agent appointed by the Administrator for inspections, administration, enforcement, or other action under any provision of this Chapter.

"Agreement in lieu of a plan" means a contract between the Town and the owner or Permittee that specifies methods that shall be implemented to comply with the requirements of the VESMA and this Chapter for the construction of a (i) single-family detached residential structure or (ii) farm building or structure on a parcel of land with a total impervious cover percentage, including the impervious cover from the farm building or structure to be constructed, of less than five

percent; such contract may be executed by the Town in lieu of a soil erosion control and stormwater management plan.

"Applicant" means person submitting a soil erosion control and stormwater management plan to a VESMP authority for approval in order to obtain authorization to commence a land-disturbing activity.

"Best management practice" or "BMP" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices, including both structural and nonstructural practices, to prevent or reduce the pollution of surface waters and groundwater systems.

1. "Nonproprietary best management practice" means both structural and nonstructural practices to prevent or reduce the pollution of surface waters and groundwater systems that are in the public domain and are not protected by trademark or patent or copyright.
2. "Proprietary best management practice" means both structural and nonstructural practices to prevent or reduce the pollution of surface waters and groundwater systems that are privately owned and controlled and may be protected by trademark or patent or copyright.

"Board" means the State Water Control Board.

"Causeway" means a temporary structural span constructed across a flowing watercourse or wetland to allow construction traffic to access the area without causing erosion damage.

"Channel" means a natural stream or manmade waterway.

"Chesapeake Bay Preservation Act" means Article 2.5 (§ 62.1-44.15:67 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia.

"Chesapeake Bay Preservation Area" means any land designated by a local government pursuant to Part III (9VAC25-830-70 et seq.) of the Chesapeake Bay Preservation Area Designation and Management Regulations and § 62.1-44.15:74 of the Code of Virginia. A Chesapeake Bay Preservation Area shall consist of a Resource Protection Area and a Resource Management Area as defined in the Chesapeake Bay Preservation Area Designation and Management Regulations (9VAC25-830).

"Clean Water Act" or "CWA" means the federal Clean Water Act (33 USC § 1251 et seq.).

“Clearing” means any activity that removes vegetative ground cover, including but not limited to the removal of vegetation, root mat removal, and/or topsoil removal. This definition does not include the selective removal of non-native tree and shrub species when the soil is left relatively undisturbed; removal of dead trees and shrubs; or normal mowing operations.

“Cofferdam” means a watertight temporary structure in a river, lake, etc., for keeping the water from an enclosed area that has been pumped dry so that bridge foundations, dams, etc., may be constructed.

“Common plan of development or sale” means a contiguous area where separate and distinct construction activities may be taking place at different times on different schedules.

“Comprehensive stormwater management plan” means a plan, which may be integrated with other land use plans or regulations that specifies how the water quality components, quantity components, or both of stormwater are to be managed on the basis of an entire watershed or a portion thereof. The plan may also provide for the remediation of erosion, flooding, and water quality and quantity problems caused by prior development.

“Construction activity” means any clearing, grading, or excavation associated with large construction activity or associated with small construction activity.

“Control measure” means any BMP, stormwater facility, or other method used to minimize the discharge of pollutants to state waters.

“CWA and regulations” means the Clean Water Act and applicable regulations published in the Code of Federal Regulations promulgated thereunder. For the purposes of this Chapter, it includes state program requirements.

“Dam” means a barrier to confine or raise water for storage or diversion, to create a hydraulic head, to prevent gully erosion, or to retain soil, rock, or other debris.

“Denuded” means a term applied to land that has been physically disturbed and no longer supports vegetative cover.

“Department” means the Virginia Department of Environmental Quality.

“Development” means land disturbance and the resulting landform associated with the construction of residential, commercial, industrial, institutional, recreation, transportation, or utility facilities or structures or the clearing of land for nonagricultural or nonsilvicultural purposes. The regulation of discharges from development, for purposes of stormwater management, does not include the exclusions found in 9VAC25-875-860.

“Dike” means an earthen embankment constructed to confine or control water, especially one built along the banks of a river to prevent overflow of lowlands; synonymous with “levee.”

"Discharge" when used without qualification, means the discharge of a pollutant.

"Discharge of a pollutant" means:

1. Any addition of any pollutant or combination of pollutants to state waters from any point source; or
2. Any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into surface waters from: surface runoff that is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any indirect discharger.

"District" or "soil and water conservation district" means a political subdivision of the Commonwealth organized in accordance with the provisions of Article 3 (§ 10.1-506 et seq.) of Chapter 5 of Title 10.1 of the Code of Virginia.

"Diversion" means a channel with a supporting ridge on the lower side constructed across or at the bottom of a slope for the purpose of intercepting surface runoff.

"Dormant" means denuded land that is not actively being brought to a desired grade or condition.

"Drainage area" means a land area, water area, or both from which runoff flows to a common point.

“Drainage easement” means a legal right granted by a landowner to a grantee allowing the use of private land for drainage and stormwater management purposes.

"Energy dissipator" means a nonerodible structure which reduces the velocity of concentrated flow to reduce its erosive effects.

"Environmental Protection Agency" or "EPA" means the United States Environmental Protection Agency.

"Erosion and sediment control plan" means a document containing material for the conservation of soil and water resources of a unit or group of units of land. It may include appropriate maps, an appropriate soil and water plan inventory and management information with needed interpretations, and a record of decisions contributing to conservation treatment. The plan shall contain all major conservation decisions to ensure that the entire unit or units of land will be so treated to achieve the conservation objectives.

"Erosion impact area" means an area of land that is not associated with a current land-disturbing activity but is subject to persistent soil erosion resulting in the delivery of sediment onto neighboring properties or into state waters. This definition shall not apply to any lot or parcel of land of 10,000 square feet or less used for residential purposes or to shorelines where the erosion results from wave action or other coastal processes.

"ESC" means erosion and sediment control.

“ESM plan” means a soil erosion control and stormwater management plan, commonly referred to as the erosion control and stormwater management plan.

“Excavating” means any digging, scooping, or other method of removing earth materials.

"Farm building or structure" means the same as that term is defined in § 36-97 of the Code of Virginia and also includes any building or structure used for agritourism activity, as defined in § 3.2-6400 of the Code of Virginia, and any related impervious services including roads, driveways, and parking areas.

“Filling” means any depositing or stockpiling of earth materials.

"Flood fringe" means the portion of the floodplain outside the floodway that is usually covered with water from the 100-year flood or storm event. This includes the flood or floodway fringe designated by the Federal Emergency Management Agency.

"Flooding" means a volume of water that is too great to be confined within the banks or walls of the stream, water body, or conveyance system and that overflows onto adjacent lands, thereby causing or threatening damage.

"Floodplain" means the area adjacent to a channel, river, stream, or other water body that is susceptible to being inundated by water normally associated with the 100-year flood or storm event. This includes the floodplain designated by the Federal Emergency Management Agency.

"Flood-prone area" means the component of a natural or restored stormwater conveyance system that is outside the main channel. Flood-prone areas may include the floodplain, floodway, the flood fringe, wetlands, riparian buffers, or other areas adjacent to the main channel.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas, usually associated with flowing water, that must be reserved in order to discharge the 100-year flood or storm event without cumulatively increasing the water surface elevation more than one foot. This includes the floodway designated by the Federal Emergency Management Agency.

"Flume" means a constructed device lined with erosion-resistant materials intended to convey water on steep grades.

"General Permit" means a Permit authorizing a category of discharges under the CWA and the VESMA within a geographical area.

"Hundred-year storm" or “100-year storm” means a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in 100 years. It may also be expressed as an exceedance probability with a 1% chance of being equaled or exceeded in any given year.

"Hydrologic Unit Code" or "HUC" means a watershed unit established in the most recent version of Virginia's 6th Order National Watershed Boundary Dataset unless specifically identified as another order.

“Illicit discharge” or “ Unauthorized Discharge” means any discharge to the storm drainage (storm sewer) system that is not composed of entirely of stormwater, except discharges pursuant to either a Virginia Pollutant Discharge Elimination System (VPDES) permit or discharges resulting from firefighting activities. This definition shall not include discharges listed in Town Code, section 17-218 (a) unless the town identifies such discharges as sources of pollutants to state water.

"Impervious cover" means a surface composed of material that significantly impedes or prevents natural infiltration of water into soil.

"Incorporated place" means a city or town that is incorporated under the Code of Virginia.

"Inspection" means an on-site review of the project's compliance with any applicable design criteria, or an on-site review to obtain information or conduct surveys or investigations necessary in the implementation or enforcement of the VESMA and applicable regulations.

"Karst area" means any land area predominantly underlain at the surface or shallow subsurface by limestone, dolomite, or other soluble bedrock regardless of any obvious surface karst features.

"Karst features" means sinkholes, sinking and losing streams, caves, large flow springs, and other such landscape features found in karst areas.

"Land disturbance" or “land-disturbing activity” means a manmade change to the land surface that may result in soil erosion or has the potential to change its runoff characteristics, including construction activity such as the clearing, grading, excavating, or filling of land, or the conversion of land from permeable to impermeable surfaces.

"Land-disturbance approval" means an approval allowing a land-disturbing activity to commence issued by the VESMP authority after the requirements of § 62.1-44.15:34 of the Code of Virginia have been met.

"Large construction activity" means construction activity including clearing, grading, and excavation, except operations that result in the disturbance of less than five acres of total land area. Large construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more. Large construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

"Linear development project" means a land-disturbing activity that is linear in nature such as, but not limited to, (i) the construction of electric and telephone utility lines, and natural gas pipelines; (ii) construction of tracks, rights-of-way, bridges, communication facilities and other related structures of a railroad company; (iii) highway construction projects; (iv) construction of stormwater channels and stream restoration activities; and (v) water and sewer lines. Private subdivision roads or streets shall not be considered linear development projects.

"Live watercourse" means a definite channel with bed and banks within which concentrated water flows continuously.

"Locality" means any county, city, or town.

"Localized flooding" means smaller scale flooding that may occur outside of a stormwater conveyance system. This may include high water, ponding, or standing water from stormwater runoff, which is likely to cause property damage or unsafe conditions.

"Main channel" means the portion of the stormwater conveyance system that contains the base flow and small frequent storm events.

"Manmade" means constructed by human beings.

"Minimize" means to reduce or eliminate the discharge of pollutants to the extent achievable using stormwater controls that are technologically available and economically practicable.

"Minor modification" means modifications and amendments not requiring extensive review and evaluation including changes in EPA promulgated test protocols, increasing monitoring frequency requirements, changes in sampling locations, and changes to compliance dates within the overall compliance schedules. A minor Permit modification or amendment does not substantially alter Permit conditions, substantially increase, or decrease the amount of surface water impacts, increase the size of the operation, or reduce the capacity of the facility to protect human health or the environment.

“MS4” or “Municipal separate storm sewer system” means a municipal separate storm sewer system as defined in Virginia law.

“MS4 service area” means: (i) for Phase I MS4 permittees, the service area delineated in accordance with the permit issued pursuant to 9VAC25-870-380 A3; and (ii) for Phase II MS4 permittees, the term as described in 9VAC25-890.

"Natural channel design concepts" means the utilization of engineering analysis and fluvial geomorphic processes to create, rehabilitate, restore, or stabilize an open conveyance system for the purpose of creating or recreating a stream that conveys its bankfull storm event within its banks and allows larger flows to access its bankfull bench and its floodplain.

"Natural stream" means a tidal or nontidal watercourse that is part of the natural topography. It usually maintains a continuous or seasonal flow during the year and is characterized as being irregular in cross-section with a meandering course. Constructed channels such as drainage ditches or swales shall not be considered natural streams; however, channels designed utilizing natural channel design concepts may be considered natural streams.

"Nonerodible" means a material such as riprap, concrete, or plastic that will not experience surface wear due to natural forces.

"Nonpoint source pollution" means pollution such as sediment, nitrogen, phosphorus, hydrocarbons, heavy metals, and toxics whose sources cannot be pinpointed but rather are washed from the land surface in a diffuse manner by stormwater.

"Operator" means the owner or operator of any facility or activity subject to the VESMA and this Chapter. In the context of stormwater associated with a large or small construction activity, operator means any person associated with a construction project that meets either of the following two criteria: (i) the person has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or (ii) the person has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other Permit or VESMP authority Permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the stormwater pollution prevention plan or comply with other Permit conditions).

"Owner" means the same as that term is defined in § 62.1-44.3 of the Code of Virginia. For a regulated land-disturbing activity that does not require a Permit, "owner" also means the owner or owners of the freehold of the premises or lesser estate therein, mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee, lessee, or other person, firm, or corporation in control of a property.

"Peak flow rate" means the maximum instantaneous flow from a prescribed design storm at a particular location.

"Percent impervious" means the impervious area within the site divided by the area of the site multiplied by 100.

"Permit" means a VPDES permit issued by the department pursuant to § 62.1-44.15 of the Code of Virginia for stormwater discharges from a land-disturbing activity.

"Permittee" means the person to whom the Permit is issued.

"Person" means any individual, partnership, firm, association, joint venture, public or private corporation, trust, estate, commission, board, public or private institution, utility, cooperative, county, city, town, or other political subdivision of the Commonwealth, governmental body, including a federal or state entity as applicable, any interstate body, or any other legal entity.

"Point of discharge" means a location at which concentrated stormwater runoff is released.

"Point source" means any discernible, confined, and discrete conveyance including any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant discharge" means the average amount of a particular pollutant measured in pounds per year or other standard reportable unit as appropriate, delivered by stormwater runoff.

"Pollution" means such alteration of the physical, chemical, or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety, or welfare, or to the health of animals, fish or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters, or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution, but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state waters; and (iii) contributing to the contravention of standards of water quality duly established by the State Water Control Board, are "pollution" for the terms and purposes of this Chapter.

"Post-development" refers to conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land.

"Predevelopment" refers to the conditions that exist at the time that plans for the land-disturbing activity are submitted to the VESMP authority. Where phased development or plan approval occurs (such as preliminary grading, demolition of existing structures, roads, and utilities), the existing conditions at the time prior to the commencement of land-disturbing activity shall establish predevelopment conditions.

"Prior developed lands" means land that has been previously utilized for residential, commercial, industrial, institutional, recreation, transportation, or utility facilities or structures, and that will have the impervious areas associated with those uses altered during a land-disturbing activity.

"Qualified personnel" means a person knowledgeable in the principles and practices of erosion and sediment and stormwater management controls who possesses the skills to assess conditions at the construction site for the operator that could impact stormwater quality and quantity and to assess the effectiveness of any sediment and erosion control measures or stormwater management facilities selected to control the quality and quantity of stormwater discharges from the construction activity.

“Redevelopment” means the process of developing land that is or has been previously developed by the construction of residential, commercial, industrial, institutional, recreational, transportation or utility facilities or structures.

The “Regulation” means the Virginia Erosion and Stormwater Management Regulation, Chapter 875 of 9 VAC 25.

"Responsible land disturber" or "RLD" means an individual holding a certificate issued by the department who is responsible for carrying out the land-disturbing activity in accordance with the approved erosion and sediment control plan or ESM plan. The RLD may be the owner, applicant, Permittee, designer, superintendent, project manager, contractor, or any other project or development team member. The RLD must be designated on the erosion and sediment control plan, ESM plan, or Permit as defined in this Chapter as a prerequisite for engaging in land disturbance.

"Runoff" or "stormwater runoff" means that portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

"Runoff characteristics" includes maximum velocity, peak flow rate, volume, and flow duration.

"Runoff volume" means the volume of water that runs off the land development project from a prescribed storm event.

"Sediment basin" means a temporary impoundment built to retain sediment and debris with a controlled stormwater release structure.

"Sediment trap" means a temporary impoundment built to retain sediment and debris which is formed by constructing an earthen embankment with a stone outlet.

"Sheet flow" (also called overland flow) means shallow, unconcentrated and irregular flow down a slope. The length of strip for overland flow usually does not exceed 200 feet under natural conditions.

"Shoreline erosion control project" means an erosion control project approved by local wetlands boards, the Virginia Marine Resources Commission, the department, or the United States Army Corps of Engineers and located on tidal waters and within nonvegetated or vegetated wetlands as defined in Title 28.2 of the Code of Virginia.

"Site" means the land or water area where any facility or land-disturbing activity is physically located or conducted, including adjacent land used or preserved in connection with the facility or land-disturbing activity. Areas channelward of mean low water in tidal Virginia shall not be considered part of a site.

"Site hydrology" means the movement of water on, across, through, and off the site as determined by parameters including soil types, soil permeability, vegetative cover, seasonal water tables, slopes, land cover, and impervious cover.

"Slope drain" means tubing or conduit made of nonerodible material extending from the top to the bottom of a cut or fill slope with an energy dissipator at the outlet end.

"Small construction activity" means:

1. Construction activities including clearing, grading, and excavating that results in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The department may waive the otherwise applicable requirements in a general Permit for a stormwater discharge from construction activities that disturb less than five acres where stormwater controls are not needed based on an approved TMDL that addresses the pollutants of concern or, for nonimpaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutants of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. For the purpose of this Chapter, the pollutants of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity, or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator shall certify to the department that the construction activity will take place, and stormwater discharges will occur, within the drainage area addressed by the TMDL or provide an equivalent analysis. As of the start date in Table 1 of 9VAC25-31-1020, all certifications submitted in support of the waiver shall be submitted electronically by the owner or operator to the department in compliance with this Chapter and 40 CFR Part 3 (including, in all cases, 40 CFR Part 3 Subpart D), 9VAC25-875-940, and Part XI (9VAC25-31-950 et seq.) of the Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation. Part XI of 9VAC25-31 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part XI of 9VAC25-31, Permittees may be required to report electronically if specified by a particular Permit.

2. Any other construction activity designated by either the department or the EPA regional administrator, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to surface waters.

"Soil erosion" means the movement of soil by wind or water into state waters or onto lands in the Commonwealth.

"Soil erosion control and stormwater management plan," commonly referred to as the erosion control and stormwater management plan, or "ESM plan" means a document describing methods for controlling soil erosion and managing stormwater in accordance with the requirements adopted pursuant to the VESMA. The ESM plan may consist of aspects of the erosion and sediment control plan and the stormwater management plan as each is described in this Chapter.

"Stabilized" means land that has been treated to withstand normal exposure to natural forces without incurring erosion damage.

"State" means the Commonwealth of Virginia.

"State application" or "application" means the standard form or forms, including any additions, revisions, or modifications to the forms, approved by the Administrator and the department for applying for a Permit.

"State Water Control Law" means Chapter 3.1 (§ 62.1-44.2 et seq.) of Title 62.1 of the Code of Virginia.

"State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

"Storm sewer inlet" means a structure through which stormwater is introduced into an underground conveyance system.

"Stormwater," for the purposes of the VESMA, means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater conveyance system" means a combination of drainage components that are used to convey stormwater discharge, either within or downstream of the land-disturbing activity. This includes:

1. "Manmade stormwater conveyance system" means a pipe, ditch, vegetated swale, or other stormwater conveyance system constructed by man except for restored stormwater conveyance systems;
2. "Natural stormwater conveyance system" means the main channel of a natural stream and the flood-prone area adjacent to the main channel; or
3. "Restored stormwater conveyance system" means a stormwater conveyance system that has been designed and constructed using natural channel design concepts. Restored stormwater conveyance systems include the main channel and the flood-prone area adjacent to the main channel.

"Stormwater detention" means the process of temporarily impounding runoff and discharging it through a hydraulic outlet structure to a downstream conveyance system.

"Stormwater management facility" means a control measure that controls stormwater runoff and changes the characteristics of that runoff including the quantity and quality, the period of release or the velocity of flow.

"Stormwater management plan" means a document containing material describing methods for complying with the requirements of the VESMP.

"Stormwater Pollution Prevention Plan" or "SWPPP" means a document that is prepared in accordance with good engineering practices and that identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges. A SWPPP required under the VESMP for construction activities shall identify and require the implementation of control measures and shall include or incorporate by reference an approved erosion and sediment control plan, an approved stormwater management plan, and a pollution prevention plan.

"Subdivision Plat" has the meaning given for the term “Plat” in Article 5 of the Town’s Subdivision Ordinance.

"Surface waters" means:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
    a. That are or could be used by interstate or foreign travelers for recreational or other purposes;
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. That are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as surface waters under this definition;
5. Tributaries of waters identified in subdivisions 1 through 4 of this definition;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subdivisions 1 through 6 of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA and the law, are not surface waters. Surface waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other agency, for the purposes of the CWA, the final authority regarding the CWA jurisdiction remains with the EPA.

"SWM" means stormwater management.

"Temporary vehicular stream crossing" means a temporary nonerodible structural span installed across a flowing watercourse for use by construction traffic. Structures may include bridges, round pipes or pipe arches constructed on or through nonerodible material.

"Ten-year storm" means a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in 10 years. It may also be expressed as an exceedance probability with a 10% chance of being equaled or exceeded in any given year.

"Total maximum daily load" or "TMDL" means the sum of the individual wasteload allocations for point sources, load allocations (LAs) for nonpoint sources, natural background loading, and a margin of safety. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. The TMDL process provides for point versus nonpoint source trade-offs.

"Town" means the Town of Warrenton.

"Two-year storm" means a storm that is capable of producing rainfall expected to be equaled or exceeded on the average of once in two years. It may also be expressed as an exceedance probability with a 50% chance of being equaled or exceeded in any given year.

"Virginia Erosion and Stormwater Management Act" or "VESMA" means Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1, State Water Control Law, of Title 62.1 of the Code of Virginia.

"Virginia Erosion and Stormwater Management Program" or "VESMP" means a program established by the VESMP authority for the effective control of soil erosion and sediment deposition and the management of the quality and quantity of runoff resulting from land-disturbing activities to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources. The program shall include such items as local ordinances, rules, requirements for Permits and land-disturbance approvals, policies and guidelines, technical materials, and requirements for plan review, inspection, and enforcement consistent with the requirements of the VESMA.

"Virginia Erosion and Stormwater Management Program authority" or "VESMP authority" means the Town, acting through the Administrator.

"Virginia Pollutant Discharge Elimination System (VPDES) Permit" or "VPDES Permit" means a document issued by the department pursuant to the State Water Control Law authorizing, under prescribed conditions, the potential or actual discharge of pollutants from a point source to surface waters.

"Virginia Stormwater BMP Clearinghouse" means a collection that contains detailed design standards and specifications for control measures that may be used in Virginia to comply with the requirements of the VESMA and associated regulations.

"Virginia Stormwater Management Handbook" means a collection of pertinent information that provides general guidance for compliance with the VESMA and associated regulations and is developed by the department with advice from a stakeholder advisory committee.

"Wasteload allocation" or "wasteload" means the portion of a receiving surface water's loading or assimilative capacity allocated to one of its existing or future point sources of pollution. Wasteload allocations are a type of water quality-based effluent limitation.

"Water quality technical criteria" means standards set forth in regulations adopted pursuant to the VESMA that establish minimum design criteria for measures to control nonpoint source pollution.

"Water quantity technical criteria" means standards set forth in regulations adopted pursuant to the VESMA that establish minimum design criteria for measures to control localized flooding and stream channel erosion.

"Watershed" means a defined land area drained by a river or stream, karst system, or system of connecting rivers or streams such that all surface water within the area flows through a single outlet. In karst areas, the karst feature to which water drains may be considered the single outlet for the watershed.

"Wetlands" means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Section 21-3 Erosion and Stormwater Management Program Established.

Pursuant to § 62.1-44.15:27 of the Code of Virginia, the Town hereby establishes a Virginia Erosion and Stormwater Management Program for land-disturbing activities and adopts the Virginia Erosion and Stormwater Management Regulation that specify standards and specifications for VESMPs promulgated by the State Water Control Board for the purposes set out in Section 21 of this Chapter.

Section 21-4 Conflicting Content with other Codes and Ordinances.

Whenever any provisions of any Commonwealth or Federal statue or other provisions of Town Code impose a greater requirement, or higher standard, than is required by these regulations, those provisions shall govern.

Section 21-5 Regulated Land Disturbing Activities.

A. Land-disturbing activities that meet one of the criteria below are regulated as follows:

1. Land-disturbing activity that (i) disturbs 2,000 square feet or more but less than one acre, (ii) is not in a Chesapeake Bay Preservation Area, and (iii) is not part of a common plan of development or sale, is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) of Part V of the Virginia Erosion and Stormwater Management Regulation. However:
   a. Construction of a (i) single-family detached residential structure or (ii) farm building or structure on a parcel of land with a total impervious cover percentage, including the impervious cover from the farm building or structure to be constructed, of less than five percent, requires an Agreement in Lieu of a Plan and does not require a soil erosion control or stormwater management plan; and
   b. Land disturbing activity exceeding 10,000 sq. ft, requires a stormwater management plan, subject to criteria defined in Article 3 (9VAC25-875-570 et seq.) of Part V.

2. Land-disturbing activity that (i) disturbs 2,000 square feet or more but less than one acre and (ii) is part of an overall larger common plan of development or sale that disturbs one acre or more, is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) and Article 3 (9VAC25-875-570 et seq.) of Part V unless Article 4 (9VAC25-875-670 et seq) of Part V of the Regulation is applicable, as determined in accordance with 9VAC25-875-480 and 9VAC25-875-490.

3. Land-disturbing activity that disturbs one acre or more, or which is in a Chesapeake Bay Preservation Area, is subject to criteria defined in Article 2 (9VAC25-875-540 et seq.) and Article 3 (9VAC25-875-570 et seq.) of Part V unless Article 4 (9VAC25-875-670 et seq.) of Part V is applicable, as determined in accordance with 9VAC25-875-480 and 9VAC25-875-490.

B. Land-disturbing activities exempt per 9VAC25-875-90 are not required to comply with the requirements of the VESMA unless otherwise required by federal law.

Section 21-6 Review and Approval of Plans (§ 62.1-44.15:34 of the Code of Virginia); Prohibitions.

A. The Administrator shall review and approve soil erosion control and stormwater management (ESM) plans, except for activities not required to comply with the requirements of the Virginia Erosion and Stormwater Management Act (VESMA), pursuant to § 62.1-44.15:34 of the Code of Virginia. Activities not required to comply with VESMA are defined in 9VAC25-875-90.

B. Except as expressly allowed elsewhere in this Chapter, a person shall not conduct any land-disturbing activity in the Town of Warrenton until all of the following steps have been completed:

1. An application that includes a land disturbance Permit application, if applicable, a state Permit registration statement, Stormwater Pollution Prevention Plan, an erosion control and stormwater management plan or an executed agreement in lieu of a plan, if required, has been submitted to the Stormwater Administrator; and

2. The name of the individual who will be assisting the owner in carrying out the activity and holds a Responsible Land Disturber certificate pursuant to § 62.1-44.15:30 of the Code of Virginia is submitted to the Administrator. Failure to provide the name of an individual holding a Responsible Land Disturber certificate prior to engaging in land-disturbing activities may result in revocation of the land-disturbance approval and shall subject the owner to the penalties provided by the VESMA; and

3. All required documentation, including proof of purchase of off-site nutrients and wetland credits, copies of wetland permits, and all easements, plats, bonds, or surety contracts have been submitted and approved as applicable; and

4. The Administrator has issued its land-disturbance approval. The land disturbance Permit will be issued by the Administrator once all applicable criteria noted above and the site development plan is approved in its entirety in accordance with Town of Warrenton Zoning Ordinance, Town of Warrenton Subdivision Ordinance, and the Regulation.

C. The Administrator may require changes to an approved ESM plan in the following cases:

1. Where inspection has revealed that the plan is inadequate to satisfy applicable regulations or ordinances; or

2. Where the owner finds that because of changed circumstances or for other reasons the plan cannot be effectively carried out, and proposed amendments to the plan,

consistent with the requirements of the Act, are agreed to by the VESMP authority and the owner.

D. In order to prevent further erosion, the Administrator may require approval of an erosion and sediment control plan and a stormwater management plan for any land it identifies as an erosion impact area. (§ 62.1-44.15:34)

E. Prior to issuance of any land-disturbance approval, the Administrator may also require an applicant, excluding state agencies and federal entities, to submit a reasonable performance bond with surety, cash escrow, letter of credit, any combination thereof, or such other legal arrangement it finds acceptable, to ensure that it can take measures at the applicant's expense should he fail, after proper notice, within the time specified to comply with the conditions it imposes as a result of his land-disturbing activity. If the Administrator takes such action upon such failure by the applicant, it may collect from the applicant the difference should the amount of the reasonable cost of such action exceed the amount of the security held. Within 60 days of the completion of the Administrator's conditions, such bond, cash escrow, letter of credit, or other legal arrangement, or the unexpended or unobligated portion thereof, shall be refunded to the applicant or terminated.

F. The Town may enter into an agreement with an adjacent VESMP authority regarding the administration of multijurisdictional projects, specifying who shall be responsible for all or part of the administrative procedures. Should adjacent VESMP authorities fail to reach such an agreement, each shall be responsible for administering the area of the multijurisdictional project that lies within its jurisdiction.

G. No exception to, or waiver of, post-development nonpoint nutrient runoff compliance requirements shall be granted unless offsite options have been considered and found not available in accordance with subsection D of § 62.1-44.15:35 of the Code of Virginia.

H. The Town is authorized to cooperate and enter into agreements with any federal or state agency in connection with the requirements for land-disturbing activities in accordance with § 62.1-44.15:50 of the Code of Virginia.

Section 21-7 Review of a Soil Erosion Control and Stormwater Management Plan (ESM Plan).

A. The Administrator shall approve or disapprove an ESM plan according to the following:

1. The Administrator shall determine the completeness of any application within 15 days after receipt and shall act on any application within 60 days after it has been determined by the to be complete.

2. The Administrator shall issue either land-disturbance approval or denial and provide written rationale for any denial.

3. Prior to issuing a land-disturbance approval, the Administrator shall be required to obtain evidence of Permit coverage when such coverage is required.

4. The Administrator also shall determine whether any resubmittal of a previously disapproved application is complete within 15 days after receipt and shall act on the resubmitted application within 45 days after receipt.

Section 21-8 Stormwater Permit Requirement; Exemptions.

A. Except as provided herein, no person may engage in any land-disturbing activity until a Permit has been issued by the Administrator in accordance with the provisions of this Chapter and the Regulation.

B. Notwithstanding any other provisions of this Chapter, the following activities are not required to comply with the requirements of this Chapter unless otherwise required by federal law:

1. Minor land-disturbing activities, including home gardens and individual home landscaping, repairs, and maintenance work;

2. Installation, maintenance, or repair of any individual service connection;

3. Installation, maintenance, or repair of any underground utility line when such activity occurs on an existing hard surfaced road, street, or sidewalk, provided the land-disturbing activity is confined to the area of the road, street, or sidewalk that is hard surfaced;

4. Installation, maintenance, or repair of any septic tank line or drainage field unless included in an overall plan for land-disturbing activity relating to construction of the building to be served by the septic tank system;

5. Permitted surface or deep mining operations and projects, or oil and gas operations and projects conducted pursuant to Title 45.2 of the Code of Virginia;

6. Clearing of lands specifically for bona fide agricultural purposes; the management, tilling, planting, or harvesting of agricultural, horticultural, or forest crops; livestock feedlot operations; agricultural engineering operations, including construction of terraces, terrace outlets, check dams, desilting basins, dikes, ponds, ditches, strip cropping, lister furrowing, contour cultivating, contour furrowing, land drainage, and land irrigation; or as additionally set forth by the Board in regulations. However, this exception shall not apply to harvesting of forest crops unless the area on which harvesting occurs is reforested artificially or naturally in accordance with the provisions of Chapter 11 (§ 10.1-1100 et seq. of the Code of Virginia) or is converted to bona fide agricultural or improved pasture use as described in subsection B of § 10.1-1163 of the Code of Virginia;

7. Installation of fence and sign posts or telephone and electric poles and other kinds of posts or poles;

8. Shoreline erosion control projects on tidal waters when all of the land-disturbing activities are within the regulatory authority of and approved by local wetlands boards, the Marine Resources Commission, or the United States Army Corps of Engineers; however, any associated land that is disturbed outside of this exempted area shall remain subject to the VESMA and the regulations adopted pursuant thereto;

9. Repair or rebuilding of the tracks, rights-of-way, bridges, communication facilities, and other related structures and facilities of a railroad company;

10. Land-disturbing activities in response to a public emergency where the related work requires immediate authorization to avoid imminent endangerment to human health or the environment. In such situations, the Administrator shall be advised of the disturbance within seven days of commencing the land-disturbing activity, and compliance with the administrative requirements of subsection A is required within 30 days of commencing the land-disturbing activity; and

11. Discharges to a sanitary sewer or a combined sewer system that are not from a land-disturbing activity.

C. Notwithstanding this Chapter and in accordance with the Virginia Erosion and Stormwater Management Act, Article 2.3 (§ 62.1-44.15:24 et seq.) of Chapter 3.1 of Title 62.1 of the Code of Virginia, the following activities are required to comply with the soil erosion control requirements but are not required to comply with the water quantity and water quality technical criteria, unless otherwise required by federal law:

1. Activities under a state or federal reclamation program to return an abandoned property to an agricultural or open land use;

2. Routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original construction of the project. The paving of an existing road with a compacted or impervious surface and reestablishment of existing associated ditches and shoulders shall be deemed routine maintenance if performed in accordance with this subsection; and

3. Discharges from a land-disturbing activity to a sanitary sewer or a combined sewer system.

Section 21-9 Stormwater Pollution Prevention Plan; Contents of Plans. (9VAC25-875-500)

A. A stormwater pollution prevention plan shall include, but not be limited to, an approved erosion and sediment control plan, an approved stormwater management plan, a pollution prevention plan for regulated land-disturbing activities, and a description of any

additional control measures necessary to address a TMDL pursuant to subsection D of this section.

B. A soil erosion control and stormwater management (ESM) plan consistent with the requirements of the Virginia Erosion and Stormwater Management Act (VESMA) and regulations must be designed and implemented during construction activities. Prior to land disturbance, this plan must be approved by the Administrator in accordance with the VESMA, this Chapter, and attendant regulations.

C. A pollution prevention plan that identifies potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site and describe control measures that will be used to minimize pollutants in stormwater discharges from the construction site must be developed before land disturbance commences.

D. In addition to the requirements of subsections A through C of this section, if a specific wasteload allocation for a pollutant has been established in an approved TMDL and is assigned to stormwater discharges from a construction activity, additional control measures must be identified and implemented by the operator so that discharges are consistent with the assumptions and requirements of the wasteload allocation.

E. The stormwater pollution prevention plan must address the following requirements as specified in 40 CFR 450.21, to the extent otherwise required by state law or regulations and any applicable requirements of a state permit:

1. Control stormwater volume and velocity within the site to minimize soil erosion;

2. Control stormwater discharges, including both peak flow rates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and stream bank erosion;

3. Minimize the amount of soil exposed during construction activity;

4. Minimize the disturbance of steep slopes;

5. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

6. Provide and maintain natural buffers around surface waters, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration, unless infeasible;

7. Minimize soil compaction and, unless infeasible, preserve topsoil;

8. Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating, or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. Stabilization must be completed within a period of time determined by the VESMP authority. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the VESMP authority; and

9. Utilize outlet structures that withdraw water from the surface, unless infeasible, when discharging from basins and impoundments.

F. The SWPPP shall be amended whenever there is a change in design, construction, operation, or maintenance that has a significant effect on the discharge of pollutants to state waters and that has not been previously addressed in the SWPPP. The SWPPP must be maintained at a central location onsite. If an onsite location is unavailable, notice of the SWPPP's location must be posted near the main entrance at the construction site.

Section 21-10 Stormwater Pollution Prevention Plan; MS4.

A. A Pollution Prevention Plan, when required by the Regulation, shall be developed, implemented, and updated as necessary and must detail the design, installation, implementation, and maintenance of effective pollution prevention measures to prevent the discharge of pollutants to the Town of Warrenton MS4 according to the requirements of the Town's MS4 Permit. The following non-stormwater discharges are authorized by Town's MS4 permit, unless the State Water Control Board or the Town determines the discharge to be a significant source of pollutants to surface waters:

1. Water line flushing; landscape irrigation; diverted stream flows; rising ground waters;

2. Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)); uncontaminated pumped ground water;

3. Discharges from potable water sources; foundation drains; air conditioning condensation; irrigation water; springs; water from crawl space pumps; footing drains;

4. Lawn watering; individual residential car washing;

5. Flows from riparian habitats and wetlands;

6. Dechlorinated swimming pool discharges;

7. Discharges or flows from firefighting;

8. Other activities generating discharges identified by the Department as not requiring Virginia Pollutant Discharge Elimination System ("VDPES") authorization.

Section 21-11 Stormwater Management Plan; Contents of Plan (9VAC25-875-510).

A. Land development requires approval of a site plan pursuant to the Town's Zoning ordinance or a construction/infrastructure plan pursuant of the Town's subdivision ordinance. The erosion control and stormwater management plan shall be submitted as part of the site plan or construction/infrastructure plan application and shall be processed as part of such site plan or construction/infrastructure plan.

B. A stormwater management plan shall be developed and submitted to the Administrator. The stormwater management plan shall be implemented as approved or modified by the Administrator and shall be developed in accordance with the following:

1. A stormwater management plan for a land-disturbing activity shall apply the stormwater management technical criteria set forth in this Chapter and Article 4 (9VAC25-875-670 et seq) of Part V of the Regulation to the entire land-disturbing activity. Individual lots in new residential, commercial, or industrial developments, including those developed under subsequent owners, shall not be considered separate land-disturbing activities.

2. A stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff.

C. A complete stormwater management plan shall include the following elements:

1. Information on the type of and location of stormwater discharges, information on the features to which stormwater is being discharged including surface waters or karst features if present, and predevelopment and post-development drainage areas;

2. Contact information including the name, address, telephone number, and email address of the owner and the tax reference number and parcel number of the property or properties affected;

3. A narrative that includes a description of current site conditions and final site conditions or if allowed by the VESMP authority, the information provided and documented during the review process that addresses the current and final site conditions;

4. A general description of the proposed stormwater management facilities and the mechanism through which the facilities will be operated and maintained after construction is complete;

5. Information on the proposed stormwater management facilities, including (i) detailed narrative on the conversion to a long-term stormwater management facility if the facility was used as a temporary ESC measure; (ii) the type of facilities; (iii) location, including geographic coordinates; (iv) acres treated; and (v) the surface waters or karst features into which the facility will discharge;

6. Hydrologic and hydraulic computations to accommodate the maximum expected flow of surface waters for a given watershed, or portion thereof, for the duration of intensity of rainfall , including runoff characteristics;

7. Documentation and calculations verifying compliance with the water quality and quantity requirements of these regulations;

8. A map of the site that depicts the topography of the site and includes:

   i. All contributing drainage areas;

   ii. Existing streams, ponds, culverts, ditches, wetlands, other water bodies, and floodplains;

   iii. Soil types, geologic formations if karst features are present in the area, forest cover, and other vegetative areas;

   iv. Current land use including existing structures, roads, and locations of known utilities and easements;

   v. Sufficient information on adjoining parcels to assess the impacts of stormwater from the site on these parcels;

   vi. The limits of clearing and grading, and the proposed drainage patterns on the site;

   vii. Proposed buildings, roads, parking areas, utilities, and stormwater management facilities; and

   viii. Proposed land use with tabulation of the percentage of surface area to be adapted to various uses, including planned locations of utilities, roads, and easements;

D. If an operator intends to meet the requirements established in 9VAC25-875-580 or 9VAC25-875-600 through the use of off-site compliance options, where applicable, then a letter of availability from the off-site provider must be included; and if the Town requires payment of a fee with the stormwater management plan submission, the fee, and the required fee form in accordance with Section 21-22 of this Chapter must be submitted.

E. In cases where the drainage plans of a proposed development do not satisfy the minimum requirements because necessary offsite facilities or improvements are lacking, the Applicant shall delay development until the necessary offsite facilities or improvements are constructed or other arrangements are made which are satisfactory to the Administrator. In such an event, the plats, or plans, otherwise satisfactory, will be approved when the requirements of this Section are satisfied. Alternatively, the

Applicant may choose to supply the offsite facilities that are necessary for adequate drainage.

F. If the discharge conditions are not met and the discharge may aggravate an existing drainage concern or contribute to a drainage problem, the Applicant must provide a drainage system satisfactory to Administrator. These improvements will be contained within a suitable drainage easement.

G. All final plan elements, specifications, or calculations of the stormwater management plans whose preparation requires a license under Chapter 4 (§ 54.1-400 et seq.) or 22 (§ 54.1- 2200 et seq.) of Title 54.1 of the Code of Virginia shall be appropriately signed and sealed by a professional who is licensed to engage in practice in the Commonwealth of Virginia. Nothing in this subsection shall authorize any person to engage in practice outside his area of professional competence.

Section 21-12 Pollution Prevention Plan; Contents of Plans. (9VAC25-875-520)

A. A plan for implementing pollution prevention measures during construction activities shall be developed, implemented, and updated as necessary. The pollution prevention plan shall detail the design, installation, implementation, and maintenance of effective pollution prevention measures as specified in 40 CFR 450.21(d) to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented, and maintained to:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

2. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, and other materials present on the site to precipitation and to stormwater; and

3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

B. The pollution prevention plan shall include effective best management practices to prohibit the following discharges in accordance with 40 CFR 450.21(e):

1. Wastewater from washout of concrete, unless managed by an appropriate control;

2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and

4. Soaps or solvents used in vehicle and equipment washing.

C. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls in accordance with 40 CFR 450.21(c).

Section 21-13 Erosion and Sediment Control Plan; Contents of Plans (9VAC25-875-550)

A. An erosion and sediment control plan, which is a component of the ESM plan, shall be filed for development and the buildings constructed within, regardless of the phasing of construction. The erosion and sediment control plan shall contain all major conservation decisions to ensure that the entire unit or units of land will be so treated to achieve the conservation objectives in 9VAC25-875-560. The erosion and sediment control plan shall include:

1. Appropriate maps;

2. An appropriate soil and water plan inventory and management information with needed interpretations; and

3. A record of decisions contributing to conservation treatment to include the following:

   a. Project description briefly describing the nature and the purpose of the land disturbing activities and acreage to be disturbed;

   b. Existing site conditions description of existing topography, land use, cover, and drainage patterns at the site;

   c. Adjacent area description of neighboring on-site or offsite areas such as streams, lakes, property, roads, etc. and potential impacts due to concentrated flow or runoff from land disturbing activities;

   d. Offsite disturbed areas description of proposed borrow sites, waste, surplus areas, utility extension and erosion controls to be implemented;

   e. Soils description briefly summarizing site, disturbed area, and soils including name, unit, hydrologic soils group (HSG) classification, surface runoff potential, erodibility, permeability, depth, texture, structure, erosion hazards, shrink-swell potential, limitations for use and anticipated depths to bedrock and the seasonal water table as applicable;

   f. Critical areas on the site which many have potentially serious erosion and sediment controls problems, and special considerations required (such as steep slopes, hydric soils, channels, springs, sinkholes, water supply reservoirs, or groundwater recharge).

   g. Proposed erosion and sediment control measures inclusive to the specific erosion and sediment control plan as proposed for the land disturbing activity. Measures must be

consistent with the proposed onsite drawings and address general use, installation, limitations, sequencing and maintenance requirements for each control measure;

h. Stabilization measures required for the site, either temporary or permanent, and during and following construction including temporary and permanent seeding, mulching, paving, stone, soil stabilization blankets and matting, sodding, landscaping, or special stabilization techniques to be utilized at the site; and

i. Stormwater management considerations for the site, either of temporary or permanent nature, and strategies, sequences, and measures required for control.

B. The Owner or Operator shall provide the name of an RLD to the Administrator.

C. If individual lots or sections in a residential development are being developed by different property owners, all land-disturbing activities related to the building construction shall be covered by an erosion and sediment control plan or an "Agreement in Lieu of a Plan" signed by the property owner.

D. Land-disturbing activity of less than 10,000 square feet on individual lots in a residential development shall not be considered exempt from the provisions of the VESMA if the total land-disturbing activity in the development is equal to or greater than 10,000 square feet.

Section 21-14 Technical Criteria for Regulated Land Disturbing Activities.

A. To protect the quality and quantity of state water from the potential harm of unmanaged stormwater runoff resulting from land-disturbing activities, the Town hereby adopts the technical criteria for regulated land-disturbing activities set forth in Part V of 9VAC25-875 expressly to include 9VAC25-875-580 [water quality design criteria requirements]; 9VAC25-875-590 [water quality compliance]; 9VAC25-875-600 [water quantity]; 9VAC25-875-610 [offsite compliance options]; 9VAC25-875-620 [design storms and hydrologic methods]; 9VAC25-875-630 [stormwater harvesting]; 9VAC25-875-640 [linear development project]; and, 9VAC25-875-650 [stormwater management impoundment structures or facilities], which shall apply to all land-disturbing activities regulated pursuant to this Chapter, except as expressly set forth in Subsection B of this Section.

B. Any land-disturbing activity shall be considered grandfathered and shall be subject to Article 4 (9VAC25-875-670 et seq) of Part V of the Regulation provided:

1. A proffered or conditional zoning plan, zoning with a plan of development, preliminary or final subdivision plat, preliminary or final site plan, or any document determined by the Town to be equivalent thereto (i) was approved by the Town prior to July 1, 2012, (ii) provided a layout as defined in 9VAC25-875-670, (iii) will comply with the technical criteria of Article 4 of Part V of 9VAC25-875, and (iv) has not been subsequently modified or amended in a manner resulting in an increase in the amount of phosphorus leaving each point of discharge, and such that there is no increase in the volume or rate of runoff; and

2. A Permit has not been issued prior to July 1, 2014; and

3. Land disturbance did not commence prior to July 1, 2014.

C. Locality, state, and federal projects shall be considered grandfathered by the Town and shall be subject to the technical criteria of Article 4 of Part V of 9VAC25-875 provided:

1. There has been an obligation of locality, state, or federal funding, in whole or in part, prior to July 1, 2012, or the department has approved a stormwater management plan prior to July 1, 2012; and

2. A permit has not been issued prior to July 1, 2014; and

3. Land disturbance did not commence prior to July 1, 2014.

D. Land disturbing activities grandfathered under subsections A and B of this section shall remain subject to the technical criteria of Article 4 of Part V of 9VAC25-875 for one additional Permit cycle. After such time, portions of the project not under construction shall become subject to any new technical criteria adopted by the board.

E. In cases where governmental bonding or public debt financing has been issued for a project prior to July 1, 2012, such project shall be subject to the technical criteria of Article 4 of Part V of 9VAC25-875.

F. Nothing in this section shall preclude an operator from constructing to a more stringent standard at his discretion.

Section 21-15 Long-Term Maintenance of Permanent Stormwater Facilities.

A. The Operator shall submit a construction record drawing for permanent stormwater management facilities to the Stormwater Administrator in accordance with 9VAC25-875-535. The record drawing shall contain a statement signed by a professional registered in the Commonwealth of Virginia pursuant to Chapter 4 of Title 54.1 of the Code of Virginia, stating that to the best of their knowledge, the construction record drawing shows all adjustments and revisions to the Stormwater Management Plan made during construction and serve as a permanent record of the actual location of all constructed elements.

B. The Administrator shall require the provision of long-term responsibility for, and maintenance of stormwater management facilities and other techniques specified to manage the quality and quantity of runoff. Such requirements shall be set forth in an instrument recorded in the local land records prior to general Permit termination or earlier as required by the Town and shall at a minimum:

1. Be submitted to the Administrator for review and approval prior to the approval of

the stormwater management plan;

2. Be stated to run with the land;

3. Provide for all necessary access to the property for purposes of maintenance and regulatory inspections;

4. Provide for inspections and maintenance and the submission of inspection and maintenance reports to the Administrator; and

5. Be enforceable by all appropriate governmental parties.

C. At the discretion of the Administrator, such recorded instruments need not be required for stormwater management facilities designed to treat stormwater runoff primarily from an individual residential lot on which they are located, provided it is demonstrated to the satisfaction of the Stormwater Administrator that future maintenance for those facilities will be addressed through an enforceable mechanism at the discretion of Stormwater Administrator.

D. If a recorded instrument is not required pursuant to Subsection C., the Administrator shall develop a strategy for addressing maintenance of stormwater management facilities designed to treat stormwater runoff primarily from an individual residential lot on which they are located. Such a strategy may include periodic inspections, homeowner outreach and education, or other methods targeted at promoting the long-term maintenance of such facilities. Such facilities shall not be subject to the requirement for an inspection to be conducted by the Administrator or its duly authorized agent.

Section 21-16 Monitoring and Inspections.

A. The Administrator shall inspect the land-disturbing activity during construction for:

1. Compliance with the approved erosion and sediment control plan;

2. Compliance with the approved stormwater management plan;

3. Development, updating, and implementation of a pollution prevention plan; and

4. Development and implementation of any additional control measures necessary to address a TMDL.

B. The Administrator shall conduct periodic inspections on all projects during construction. The Administrator shall conduct periodic monitoring inspections on all projects during construction:

1. Pre-construction meeting is required prior to commencement of construction;

2. An initial site inspection shall be made prior to the start of construction to assure that all required initial erosion control measures are installed and functioning per the approved plan to protect waterways and adjacent properties from sediment deposition. Written notice will be provided to the owner, owner's representative, and RLD granting or denying permission to commence construction.

3. Conduct inspections during or immediately following initial inspection of erosion controls, at least once in every two-week period, within 48 hours following any runoff producing storm event, and at the completion of the project prior to the release of any performance bonds;

C. Post-construction inspections of stormwater management facilities require by the provisions of this Chapter shall be conducted by the Administrator pursuant to the Town's adopted and State Board approved inspection program, at least once every (5) years.

1. The Administrator may utilize the inspection reports of the owner of a stormwater management facility as part of an inspection program established, if the inspection is conducted by a person who is licensed as a professional engineer, architect, landscape architect, or land surveyor pursuant to the Code of Virginia; a person who works under the direction and oversight of the licensed professional engineer, architect, landscape architect, or land surveyor; or a person who holds an appropriate certificate of competence from the Department.

2. As part of the established inspection program, BMP inspection reports are required annually by the owner in accordance with their Stormwater Maintenance Agreement.

D. If a recorded instrument is not required pursuant to 9VAC25-875-130, the Administrator shall develop a strategy for addressing maintenance of stormwater management facilities designed to treat stormwater runoff primarily from an individual residential lot on which they are located. Such a strategy may include periodic inspections, homeowner outreach and education, or other methods targeted at promoting the long-term maintenance of such facilities. Such facilities shall not be subject to the requirement for an inspection to be conducted by the Administrator ..

E. The Owner shall always have an RLD assigned to the plan or Permit and shall immediately notify the Town if an RLD ceases to serve in that role. Failure to assign an RLD within five days of an RLD ceasing to serve in the role shall require the Owner to cease land-disturbing activities until the Owner assigns a new RLD and notifies the Town of the new RLD's identity and contact information.

Section 21-17 Performance Bond (§ 62.1-44.15:34 of the Code of Virginia)

A. Prior to issuance of any Permit, the Applicant shall submit a performance bond with surety, cash escrow, letter of credit, any combination thereof, or such other legal arrangement acceptable to the Town's Attorney, to ensure that measures could be taken

by the Town of Warrenton at the Applicant's expense should he fail, after proper notice, within the time specified to initiate or maintain appropriate actions which may be required of him by the Permit conditions as a result of his land disturbing activity. If the Town takes such action upon such failure by the Applicant, the Town may collect from the Applicant the difference should the amount of the reasonable cost of such action exceed the amount of the security held, if any.

B. Within 60 days of the completion of the requirements of the Permit conditions, such bond, cash escrow, letter of credit or other legal arrangement, or the unexpended or unobligated portion thereof, shall be released. The release of the bond will not occur until such time as all temporary erosion and sediment control measures have been replaced with permanent conservation measures, and the entity responsible for the long-term maintenance, spelled out in the maintenance agreement, has reviewed, accepted the facility, and demonstrated to the Administrator that the facility functions as specified.

Section 21-18 Hearings.

A. Any Applicant or Permittee, or person subject to the requirements of this Chapter, aggrieved by any action of the Administrator taken without a formal hearing, or by the Administrator's decision not to take action, may demand in writing a formal hearing by the Town Manager, provided a petition requesting such hearing is filed with the Administrator within 30 days after notice of such action or decision not to act is given by the Administrator.

B. The hearings held under this Section shall be conducted by the Town Manager or designee after reasonable notice to the Administrator and petitioner of the time and place of the hearing. The burden shall be on the petitioner to show (a) that it is subject to the requirements of this Chapter and (b) that the Administrator erred.

C. A verbatim record of the proceedings of such hearings shall be taken and filed with the Town Manager. Depositions may be taken and read as in actions at law.

D. The Town Manager shall have power to issue subpoenas and subpoenas duces tecum, and at the request of any party shall issue such subpoenas. The failure of a witness without legal excuse to appear or to testify or to produce documents shall be acted upon by the Town Manager, whose action may include the procurement of an order of enforcement from the circuit court. Witnesses who are subpoenaed shall receive the same fees and reimbursement for mileage as in civil actions.

E. Admission of evidence in any hearing under this section shall be governed by Virginia Code § 62.1-44.27.

Section 21-19 Appeals.

A. Pursuant to 9VAC25-875-160, any Applicant, Permittee, or person subject to the requirements of this chapter aggrieved by the decision of the Town Manager, may within

(30) days of such decision or action, as applicable, appeal the decision to the Circuit Court.

B. The circuit court shall conduct such review in accordance with the standards established in § 2.2-4027 of the Code of Virginia, and the decisions of the circuit court shall be subject to review by the Court of Appeals.

Section 21-20 Right of Entry.

A. The Administrator may, at reasonable times and under reasonable circumstances, enter any establishment or upon any property, public or private, for the purpose of obtaining information or conducting surveys or investigations necessary in the enforcement of the provisions of this Chapter.

B. In accordance with a performance bond with surety, cash escrow, letter of credit, any combination thereof, or other legal arrangement, the Administrator may also enter any establishment or upon any property, public or private, for the purpose of initiating or maintaining appropriate actions that are required by conditions imposed by the Administrator on a land-disturbing activity when an owner, after proper notice, has failed to take acceptable action within the time specified.

Section 21-21 Enforcement.

A. If the Administrator determines that there is a failure to comply with the Permit conditions or determines there is an unauthorized discharge, notice shall be served upon the Permittee or person responsible for carrying out the Permit conditions by any of the following: verbal warnings and inspection reports, notices of corrective action, consent special orders, and notices to comply. Written notices shall be served by registered or certified mail to the address specified in the Permit application, by delivery at the site of the development activities to the agent or employee supervising such activities, or by any electronic communication means used by the Permittee in communication with the Administrator.

1. The notice shall specify the measures needed to comply with the Permit conditions and shall specify the time within which such measures shall be completed. Upon failure to comply within the time specified, a stop work order may be issued in accordance with § 62.1-44.15:37 of the Code of Virginia or the Permit may be revoked by the Administrator.

2. If a Permittee fails to comply with a notice issued in accordance with this Section within the time specified, the Stormwater Administrator may issue an order requiring the owner, Permittee, RLD, person responsible for carrying out an approved plan, or the person conducting the land-disturbing activities without an approved plan or required Permit to cease all land-disturbing activities until the violation of the Permit has ceased, or an approved plan and required Permits are obtained, and specified corrective measures have been completed.

Such orders shall become effective upon service on the person by certified mail, return receipt requested, sent to his address specified in the land records of the locality, or by personal service. However, if the Administrator finds that any such violation is grossly affecting or presents an imminent and substantial danger of causing harmful erosion of lands or sediment deposition in waters within the watersheds of the Commonwealth or otherwise substantially impacting water quality, it may issue, without advance notice or hearing, an emergency order directing such person to cease immediately all land-disturbing activities on the site and shall provide an opportunity for a hearing, after reasonable notice as to the time and place thereof, to such person, to affirm, modify, amend, or cancel such emergency order. If a person who has been issued an order is not complying with the terms thereof, the Administrator may institute a proceeding for an injunction, mandamus, or other appropriate remedy in accordance with § 62.1-44.15:48 of the Code of Virginia.

B. In addition to any other remedy provided by this Chapter, if the Administrator **or** his designee determines that there is a failure to comply with the provisions of this Chapter, they may initiate such informal and/or formal administrative enforcement procedures in a manner that is consistent with State Code, Erosion and Stormwater Regulations, and the local inspection and enforcement policy.

C. Any person violating or failing, neglecting, or refusing to obey any rule, regulation, ordinance, order, approved standard or specification, or any Permit condition issued by the Administrator may be compelled in a proceeding instituted in Fauquier County by the Town to obey same and to comply therewith by injunction, mandamus or other appropriate remedy.

1. Violations for which a penalty may be imposed under this Subsection shall include but not be limited to the following:

   i. No state permit registration;

   ii. No SWPPP;

   iii. Incomplete SWPPP;

   iv. SWPPP not available for review;

   v. No approved erosion and sediment control plan;

   vi. Failure to install stormwater BMPs or erosion and sediment controls;

   vii. Stormwater BMPs or erosion and sediment controls improperly installed or maintained;

   viii. Operational deficiencies;

ix. Failure to conduct required inspections;

x. Incomplete, improper, or missed inspections;

xi. Failure to maintain and provide contact information for an RLD; and

xii. Discharges not in compliance with the requirements of 9VAC25-880-70.

2. The Administrator may issue a summons for collection of the civil penalty and the action may be prosecuted in the appropriate court.

3. In imposing a civil penalty pursuant to this Subsection, the court may consider the degree of harm caused by the violation and also the economic benefit to the violator from noncompliance.

4. Any civil penalties assessed by a court as a result of a summons issued by the Town shall be paid into the treasury of the Town to be used for the purpose of minimizing, preventing, managing, or mitigating pollution of the waters of the Town and abating environmental pollution therein in such manner as the court may, by order, direct.

D. Notwithstanding any other civil or equitable remedy provided by this Chapter or by law, any person who willfully or negligently violates any provision of this Chapter, any order of the Administrator, any condition of a Permit, or any order of a court shall be guilty of a misdemeanor punishable by confinement in jail for not more than 12 months or a fine of not less than $2,500 nor more than $32,500, or both.

Section 21-22. Fees.

A. Fees to cover costs associated with implementation of a VESMP related to land disturbing activities and issuance of general Permit coverage and VESMP authority Permits shall be imposed in accordance with Table 1. When a site or sites has been purchased for development within a previously permitted common plan of development or sale, the applicant shall be subject to fees ("total fee to be paid by applicant" column) in accordance with the disturbed acreage of their site or sites according to Table 1.

Table 1: Fees for Permit issuance

Fee type	Total fee to be paid by applicant (includes both VESMP authority and department portions where applicable)	Department portion of "total fee to be paid by applicant" (based on 28% of total fee paid*)
Chesapeake Bay Preservation Act Land-Disturbing Activity (not subject to General Permit coverage; sites within designated areas of Chesapeake Bay Act localities with land-disturbance acreage equal to or greater than 2,500 square feet and less than 1 acre)	$290	$0
General / Stormwater Management - Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land disturbance acreage less than 1 acre.)	$290	$81
General / Stormwater Management - Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 1 acre and less than 5 Acres)	$2,700	$756
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 5 acres and less than 10 acres)	$3,400	$952
General / Stormwater Management – Large Construction Activity/Land Clearing [Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 10 acres and less than 50 acres]	$4,500	$1,260
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 50 acres and less than 100 acres)	$6,100	$1,708
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 100 acres)	$9,600	$2,688

* If the project is completely administered by the Department such as may be the case for a state or federal project or projects covered by individual Permits, the entire applicant fee shall be paid to the Department.

B. Fees for the modification or transfer of registration statements from the general Permit issued by the department shall be imposed in accordance with Table 2. If the general Permit modifications result in changes to stormwater management plans that require additional review by the Town of Warrenton, such reviews shall be subject to the fees set out in Table 2. The fee assessed shall be based on the total disturbed acreage of the site. In addition to the general Permit modification fee, modifications resulting in an increase in total disturbed acreage shall pay the difference in the initial Permit fee paid and the Permit fee that would have applied for the total disturbed acreage in Table 1.

Table 2: Fees for the modification or transfer of registration statements for the General Permit for Discharges of Stormwater from Construction Activities

Type of Permit	Fee Amount
General / Stormwater Management – Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land disturbance acreage less than 1 acre)	$20
General / Stormwater Management – Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 1 and less than 5 acres)	$200
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 5 acres and less than 10 acres)	$250
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 10 acres and less than 50 acres)	$300
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 50 acres and less than 100 acres)	$450
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 100 acres)	$700

C. The following annual Permit maintenance shall be imposed in accordance with Table 3, including fees imposed on expired Permits that have been administratively continued. With respect to the general Permit, these fees shall apply until the Permit coverage is terminated. Fees specified in this Subsection go to the Town.

Table 3: Permit Maintenance Fees

Type of Permit	Fee Amount
Chesapeake Bay Preservation Act Land-Disturbing Activity (not subject to General Permit coverage; sites within designated areas of Chesapeake Bay Act localities with land-disturbance acreage equal to or greater than 2,500 square feet and less than 1 acre)	$50
General / Stormwater Management – Small Construction Activity/Land Clearing (Areas within common plans of development or sale with land disturbance acreage less than 1 acre)	$50
General / Stormwater Management – Small Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance equal to or greater than 1 acre and less than 5 acres)	$400
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 5 acres and less than 10 acres)	$500
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 10 acres and less than 50 acres)	$650
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater than 50 acres and less than 100 acres)	$900
General / Stormwater Management – Large Construction Activity/Land Clearing (Sites or areas within common plans of development or sale with land disturbance acreage equal to or greater 100 acres)	$1,400

*General Permit coverage maintenance fees shall be paid annually to the Town, by the anniversary date of general Permit coverage. No Permit will be reissued or automatically continued without payment of the required fee. General Permit coverage maintenance fees shall be applied until a Notice of Termination is effective.

D. The fees set forth in Subsections A through C of this section, shall apply to:

1. All persons seeking coverage under the general Permit.

2. All Permittees who request modifications to or transfers of their existing registration statement for coverage under a general Permit.

3. Persons whose coverage under the general Permit has been revoked shall apply to the department for an Individual Permit for Discharges of Stormwater from Construction Activities.

E. Permit and Permit coverage maintenance fees outlined under Section 21-22 may apply to each general Permit holder.

F. No general Permit application fees will be assessed to:

1. Permittees who request minor modifications to general Permits as defined in Section 1.2 of this Chapter. Permit modifications at the request of the Permittee resulting in changes to stormwater management plans that require additional review by the Administrator shall not be exempt pursuant to this Section.

2. Permittees whose general Permits are modified or amended at the initiative of the Department, excluding errors in the registration statement identified by the Administrator or errors related to the acreage of the site.

G. All incomplete payments will be deemed as nonpayments, and the Applicant shall be notified of any incomplete payments. Interest may be charged for late payments at the underpayment rate set forth in §58.1-15 of the Code of Virginia and is calculated on a monthly basis at the applicable periodic rate. A 10% late payment fee shall be charged to any delinquent (over 90 days past due) account. The Town shall be entitled to all remedies available under the Code of Virginia in collecting any past due amount.