AGENDA
JAMES CITY COUNTY PLANNING COMMISSION
REGULAR MEETING
COUNTY GOVERNMENT CENTER BOARD ROOM
101 MOUNTS BAY ROAD, WILLIAMSBURG, VA 23185
May 1, 2024
6:00 PM

A. CALL TO ORDER

B. ROLL CALL

C. PUBLIC COMMENT

D. REPORTS OF THE COMMISSION

E. CONSENT AGENDA

1. Minutes of the April 3, 2024 Regular Meeting

F. PUBLIC HEARING(S)

1. Z-24-0005. Clark Talley Residential Rezoning

2. Z-24-0002/SUP-24-0002. Bright Beginnings Pre-K Center at Clara Byrd Baker Elementary School

3. Z-24-0003/SUP-24-0003. Bright Beginnings Pre-K Center at Norge Elementary School

G. PLANNING COMMISSION CONSIDERATIONS

H. PLANNING DIRECTOR'S REPORT

1. Planning Director's Report May 2024

I. PLANNING COMMISSION DISCUSSION AND REQUESTS

J. ADJOURNMENT

MINUTES
JAMES CITY COUNTY PLANNING COMMISSION
REGULAR MEETING
COUNTY GOVERNMENT CENTER BOARD ROOM
101 MOUNTS BAY ROAD, WILLIAMSBURG, VA 23185
April 3, 2024
6:00 PM

A. CALL TO ORDER

Mr. O'Connor called the meeting to order at 6 p.m.

B. ROLL CALL

Planning Commissioners Present:
Tim O'Connor
Jack Haldeman
Frank Polster
Stephen Rodgers
Jay Everson
Scott Maye
Kira Allmann

Staff Present:
Susan Istenes, Director of Planning
Liz Parman, Deputy County Attorney
Josh Crump, Principal Planner
Terry Costello, Senior Planner
Roberta Sulouff, Planner I
Tess Lynch, Planner II
Mike Woolson, Chief, Stormwater and Resource Protection Division
Toni Small, Director of Stormwater and Resource Protection Division
Amanda Frazier, Community Development Assistant
Will Albiston, Community Development Assistant

C. PUBLIC COMMENT

Mr. O'Connor opened Public Comment.

As no one wished to speak, Mr. O'Connor closed Public Comment.

D. REPORTS OF THE COMMISSION

Mr. Rodgers stated that the Development Review Committee (DRC) met on April 3, 2024.

Mr. Rodgers stated that due to a lack of a quorum on Wednesday, March 27, the DRC was unable to take action for a new business item at its scheduled meeting.

Mr. Rodgers stated that a special DRC meeting was then called by the Planning Commission Chair in accordance with the Planning Commission's Bylaws and that meeting took place today, Wednesday, April 3 at 5:30 p.m.

Mr. Rodgers stated that the new business item was a request from the Parks & Recreation Department to construct an outdoor fitness court at the Warhill Sports Complex. Mr. Rodgers stated that the court would be constructed in an area directly adjacent to the existing basketball courts and a parking lot previously identified on the Master Plan for the development of athletic courts and parking. Mr. Rodgers stated that the applicant also proposes future additions of several recreational amenities, which include a skate park, a 50-meter outdoor pool, and pickleball courts. Mr. Rodgers stated that the applicant requested that the DRC find these additional amenities, as well as the outdoor fitness court, to be consistent with the adopted Master Plan. Mr. Rodgers stated that the DRC had a brief discussion about the park's Master Plan and the proposed recreational amenities.

Mr. Rodgers stated that he made a motion to find the proposals consistent with the Master Plan and the DRC recommended approval to the Planning Commission. Mr. Rodgers stated that the motion was passed 3-0.

E. CONSENT AGENDA

1. Minutes of the March 6, 2024, Regular Meeting

2. Minutes of the March 18, 2024, Organizational Meeting

3. SP-24-0012. Warhill Sport Complex - Fitness Court Amendment and Master Plan Consistency

   Mr. Haldeman requested to discuss SP-24-0012. Warhill Sports Complex - Fitness Court Amendment and Master Plan Consistency.

   Mr. O'Connor called for a vote on the remaining items on the Consent Agenda. On a voice vote, the Commission voted to approve the Minutes of the March 6, 2024, Regular Meeting and the Minutes of the March 18, 2024, Organizational Meeting. (7-0)

   Mr. Haldeman stated his desire for the Parks and Recreation Department to expand its services in the southeastern portion of the County.

   Dr. Allman expressed her appreciation for Mr. Haldeman's comments.

   Mr. Haldeman made a motion to approve SP-24-0012. Warhill Sports Complex - Fitness Court Amendment and Master Plan Consistency.

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

F. PUBLIC HEARINGS

1. SUP-24-0001. 7146 Little Creek Road Rental of Rooms

Ms. Terry Costello, Senior Planner, stated that Ms. Ana Martinez and Mr. Kenneth Fletcher have applied for a Special Use Permit (SUP) to allow for the short-term rental of up to three rooms in a four-bedroom single-family home at 7146 Little Creek Dam Road. Ms. Costello stated that the property is zoned A-1, General Agricultural, is designated Rural Lands on the Comprehensive Plan Land Use Map, and is located outside the Primary Service Area (PSA). Ms. Costello further stated that the property is served by private well and septic. Ms. Costello stated that, if granted, the SUP would allow for short-term rentals throughout the year. Ms. Costello stated that no changes to the footprint of the home were proposed.

Ms. Costello stated that staff finds some favorable factors for this application, such as the presence of adequate off-street parking and that the owner would live on-site. Ms. Costello further stated that staff finds the proposed use would not negatively impact Levels of Service for roads and other public services. Ms. Costello stated that while staff believes the location is generally considered appropriate for this use, staff finds that the proposal is not fully consistent with the adopted 2045 Comprehensive Plan recommendations for short-term rentals. Ms. Costello stated that staff is unable to recommend approval of this application.

Ms. Costello stated that, after the Agenda Packet was published, staff did receive a comment from a citizen who resides in the Little Creek Subdivision. Ms. Costello stated that copies of the emails were placed at the dais. Ms. Costello stated that staff has included proposed conditions for consideration, should the Commission approve this application.

Mr. Everson requested clarification regarding the Comprehensive Plan criteria for short-term rentals.

Ms. Costello provided clarification about the Comprehensive Plan criteria.

Mr. O'Connor opened the Public Hearing.

Mr. Kenneth Fletcher, 7146 Little Creek Dam Road, applicant, gave a brief presentation to the Commission.

Mr. O'Connor asked if the applicant's property extended to the reservoir.

Mr. Fletcher explained that Newport News Waterworks owns a buffer between his property and the reservoir. Mr. Fletcher stated that, as an adjacent property owner, he is granted access to the reservoir. Mr. Fletcher further stated that Newport News Waterworks has requested that guests not be permitted on its property. Mr. Fletcher stated they would comply with that request.

Discussion ensued.

As no one further wished to speak, Mr. O'Connor closed the Public Hearing.

Mr. Polster asked staff to define the differences between tourist homes and short-term rentals.

Staff provided clarification.

Mr. Polster made a motion to recommend approval of the application.

Mr. O'Connor requested the motion be amended to include the condition that guests not be permitted to access the reservoir from the applicant's property.

Mr. Fletcher accepted the condition.

Mr. Polster amended the motion to include the condition.

On a roll call vote, the Commission voted to recommend approval of SUP-24-0001. 7146 Little Creek Dam Road Rental of Rooms with conditions. (4-3)

2. MP-24-0001/Z-24-0004. Ford's Colony Master Plan and Proffer Amendment

Ms. Roberta Sulouff, Planner 1, stated that Ms. Susan Tarley, of Tarley Robinson, PLC, has applied on behalf of the Ford's Colony Homeowners Association (HOA) to amend the adopted Ford's Colony Master Plan and proffers. Ms. Sulouff stated that the amendment is in reference to the use of 6.76 acres of land located at 125 Firestone. Ms. Sulouff further stated that the subject property is located inside the PSA, zoned R-4, Residential Planned Community, and is designated Low Density Residential on the 2045 Comprehensive Plan.

Ms. Sulouff stated that the proffers and Master Plan for the Ford's Colony development had been amended several times since the subdivision's inception in the mid-1980s. Ms. Sulouff stated that the Planning Commission had reviewed amendment requests pertaining to the Ford's Village continuing care retirement community, and prior to that, for a general cleanup and revisiting of outstanding proffers - many of which were deemed satisfied or no longer applicable as the community is very near build-out after almost 40 years of growth. Ms. Sulouff further stated that the current proposal deals with a proffer from one of the earliest of such proffer amendments.

Ms. Sulouff stated that the current request would change the Master Plan designation of 6.76 acres from a Public Service Area for dedication to the County to a similar, non-residential service use designation, serving the HOA instead. Ms. Sulouff stated that the 6.76 acres were proffered for dedication in 1987. Ms. Sulouff stated that factors such as changing Resource Protection Area delineations, community build-out, and the selection of other sites

around the County for the originally imagined public uses for 125 Firestone, and also based on feedback received from other reviewing agencies, staff finds the proposed categorization more appropriate in scale and applicability to the site.

Ms. Sulouff stated that staff finds the proposal compatible with surrounding zoning and development and generally consistent with the 2045 Comprehensive Plan and Zoning Ordinance and recommends that the Planning Commission recommend approval of the amended proffers and Master Plan to the Board of Supervisors.

Mr. Haldeman asked for clarification on the site map that was provided in the Agenda Packet.

Mr. Haldeman asked if staff was satisfied that the County had no further use for this lot.

Ms. Sulouff stated that no feedback indicating interest in the lot had been received.

Mr. Haldeman asked if the proffer amendment would preclude the construction of any houses on the lot.

Ms. Sulouff stated that the Ford's Colony HOA would need to amend the Master Plan and proffers again if it wished to use the lot for housing.

Mr. O'Connor opened the Public Hearing.

Mr. Drew Mulhare, Ford's Colony HOA, 124 Henry Tyler Drive, gave a brief presentation to the Planning Commission.

As no one further wished to speak, Mr. O'Connor closed the Public Hearing.

Mr. O'Connor opened the floor for discussion by the Commission.

Mr. Everson raised a question about the usage of proffers which set aside public lands interior to a development.

Ms. Liz Parman, Deputy County Attorney, stated that proffers with public land designations are still accepted by the County.

Mr. Everson raised concern about public lands not being utilized by the County.

Discussion ensued.

Mr. Everson made a motion to recommend approval of the application.

On a roll call vote, the Commission voted to recommend approval of MP-24-0001/Z-24-0004. Ford's Colony Master Plan and Proffer Amendment. (7-0)

3. SUP-23-0030. St. Olaf Catholic Church Campus Expansion

Ms. Tess Lynch, Planner II, stated that Mr. Jason Grimes submitted an amendment to an SUP, SUP-0007-2015, to allow for an additional 25,000-square-foot expansion to the existing St. Olaf Church campus, including but not limited to, space for outreach ministry programs, administration space, counseling areas, religious education space, multipurpose space, and an expanded Parish Hall, as well as additional parking areas. Ms. Lynch stated that the subject property is located at 104 Norge Lane, zoned R-8, Rural Residential and A-1, General Agricultural, classified as Low Density Residential on the 2045 Comprehensive Plan, and is located inside the PSA. Ms. Lynch stated that this SUP shall replace and supersede SUP-0007-2015 and its conditions. Ms. Lynch further stated that several proposed conditions have been carried forward including lighting, which states that any new lighting shall meet the previous lighting condition to match current fixtures and pole height.

Ms. Lynch stated that staff finds that this proposal is compatible with surrounding zoning and development and is generally consistent with the 2045 Comprehensive Plan and Zoning Ordinance. Ms. Lynch stated that staff also finds that the proposed conditions will mitigate impacts to surrounding properties and development. Ms. Lynch stated that staff recommends that the Planning Commission recommend approval of this application to the Board of Supervisors, subject to the proposed conditions. Ms. Lynch stated that after the conditions were submitted, staff was informed that contrary to the note on the Master Plan indicating the removal of the playground, it may in fact not be removed. Ms. Lynch stated that the Master Plan would be edited, as would the condition addressing the playground, to reflect this.

Ms. Lynch stated that after the Agenda Packet was published, staff did receive a comment from a citizen that owns property across the train tracks. Ms. Lynch stated that copies of the emails were placed at the dais.

Mr. Rodgers requested clarification on some of the language used in the project description, regarding renovations or demolition of the site.

Ms. Lynch stated that the language in question was provided by the applicant. Ms. Lynch stated that, at this time, definitive plans have not been provided as to whether some structures would be renovated or demolished at the time of expansion. Ms. Lynch deferred further questions regarding the plans for expansion to the applicant.

Discussion ensued.

Mr. O'Connor opened the Public Hearing.

Mr. Graham Corson, AES Consulting Engineers, 5248 Olde Towne Road, representing the applicant, addressed the Commission in support of the application.

Mr. Mark Rinaldi, 4029 Ironbound Road, made a presentation to the Commission and clarified previous questions about the language regarding renovation or demolition on the site.

Mr. Rodgers asked Mr. Corson to comment on the citizen's concerns regarding stormwater drainage received by staff.

Mr. Corson presented construction plans to mitigate stormwater drainage to adjacent properties.

Mr. Steve Martin, 3301 Derby Lane, addressed the Commission regarding his concerns, which were provided by staff. Mr. Martin provided additional comment regarding stormwater drainage on properties adjacent to St. Olaf Church.

Mr. Haldeman made a motion to recommend approval of the application.

On a roll call vote, the Commission voted to recommend approval of SUP-23-0030. St. Olaf Catholic Church Campus Expansion with the attached condition. (7-0)

G. PLANNING COMMISSION CONSIDERATIONS

1. Diascund Watershed Management Plan Update

Mr. Mike Woolson, Chief, Stormwater and Resource Protection Division, stated that the County has undergone watershed management plans for the various watersheds within the County. Mr. Woolson stated that the Powhatan and Yarmouth Watershed Plans were updated in 2023, and the County is currently in the process of developing a plan for the Diascund Creek Watershed. Mr. Woolson stated that the 30-day public comment period had not yet concluded, and Stormwater and Resource Protection Division intends to go before the Board of Supervisors at its Regular Meeting in May.

Mr. Daniel Proctor and Mr. Coleman Goad, Stantec, presented their watershed assessment to the Commission.

Mr. Haldeman requested additional information about the criteria used in determining future conditions and potentially degrading conditions in certain areas within the watershed.

Mr. Porter stated the future conditions included in the presentation were based on the zoning of each lot within the watershed. These results demonstrated the

potential pollutant loading for the area at maximum build-out that the Zoning Ordinance and Comprehensive Plan might allow.

Mr. O'Connor asked if these models were based on residential or agricultural uses.

Mr. Porter stated that both uses were considered, as well as potential septic system failures.

Mr. Polster raised concerns about the lack of stormwater treatment within older developments found within the Diascund Watershed.

Discussion ensued regarding consistent findings across all three Watershed Plans currently under development and recommendations for pollutant mitigation.

Mr. O'Connor asked if the County is considered a stakeholder with Newport News Waterworks and if the County participates in their Emergency Planning sessions.

Mr. Woolson stated that the County is considered a stakeholder and the County's Emergency Management team is included in surrounding locality planning and training sessions.

H. PLANNING DIRECTOR'S REPORT

1. Planning Director's Report - April 2024

   Ms. Istenes stated that the Board of Supervisors approved Z-23-0010. Luck Stone Toano Proffer Amendment. Ms. Istenes also provided staffing updates to the Commission.

I. PLANNING COMMISSION DISCUSSION AND REQUESTS

Mr. O'Connor appointed Mr. Rodgers as the Chair of the DRC. Mr. O'Connor also appointed Mr. Maye, Mr. Polster, and himself to the DRC. Mr. O'Connor appointed Mr. Haldeman as the Chair of the Policy Committee. Mr. O'Connor also appointed Mr. Polster, Dr. Allman, and Mr. Everson to the Policy Committee.

J. ADJOURNMENT

Mr. Haldeman made a motion to adjourn.

The meeting was adjourned at approximately 7:22 p.m.

_____ _____

Susan Istenes, Secretary Tim O'Connor, Chair

SUMMARY FACTS

Applicant:	Mr. Vaughn Poller, James City County Neighborhood Development Administrator
Landowners:	James City County Blakely K. Weddington Angela M. Weddington William David Talley, Trustee of The Lillian F. Talley Trust
Proposal:	Rezoning of approximately 15.82 acres from R-2, General Residential to R-3, Residential Redevelopment with Proffers, to allow for up to 47 residential dwellings consisting of 27 single-family detached units and 20 single-family attached units, resulting in a density of 3.02 units per acre.
Locations:	186 Clark Lane, 6197 Old Mooretown Road, 6195 Old Mooretown Road, 179 Clark Lane, 191 Clark Lane, 215 Curry Drive, 110 Catalpa Drive, 106 Catalpa Drive, 6171 Old Mooretown Road
Tax Map/Parcel Nos.:	3220100037, 3220100038, 3220100039, 3220100040, 3220100113, 3221400004, 3220100040A, 3220100040B, and 3220100040D
Current Zoning:	R-2, General Residential
Proposed Zoning:	R-3, Residential Redevelopment with Proffers
Project Acreage:	+/- 15.82 acres
Comprehensive Plan:	Low Density Residential
Primary Service Area: (PSA)	Inside
Staff Contact:	Thomas Wysong, Principal Planner

PUBLIC HEARING DATES

Planning Commission:	May 1, 2024, 6:00 p.m.
Board of Supervisors:	June 11, 2024, 5:00 p.m. (Tentative)

FACTORS FAVORABLE

1. Staff finds the proposed primary use for this rezoning aligns with the recommended primary uses for the Low Density Designation in the adopted 2045 Comprehensive Plan.
2. Staff finds the proffering of 100% of the proposed units to be affordable is a significant public benefit. As such the proposed density of 2.97 units per acre is consistent with the Low Density Residential Land Use Designation, which recommends up to four units per acre if benefits are provided.
3. Staff finds the proposed provision of workforce and affordable housing to be consistent with the Housing Chapter of the Comprehensive Plan and the Low Density Residential Land Use Designation within the Land Use Chapter of the Comprehensive Plan.
4. The proposal is consistent with the County's Residential Redevelopment Policy.
5. The applicant has proffered design guidelines that are generally consistent with the County's Character Design Guidelines.
6. The proposal passes the Adequate Public Schools Facilities Test.
7. See Impact Analysis on Pages 5-6.

FACTORS UNFAVORABLE

1. The application is not fully consistent with the Comprehensive Plan, given the fiscal impacts are not fully mitigated.

2. The application does not fully comply with the Parks & Recreation Proffer Guidelines.

3. See Impact Analysis on Pages 5-6.

SUMMARY STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the proposed rezoning, subject to the submitted proffers.

PROJECT DESCRIPTION

Mr. Vaughn Poller, on behalf of the James City County Neighborhood Development division, has applied to rezone approximately 15.82 of an assemblage of parcels from R-2, General Residential to R-3, Residential Redevelopment with Proffers.

- The proposal is for 47 residential dwellings, with 27 single-family detached units and 20 single-family attached units (duplexes). On average, the units are anticipated to be three bedrooms, two baths with a square footage between 1,100 and 1,400 square feet.

- For the purpose of calculating density, 100% of the parcel acreage is considered developable.

- This project proposes a density of up to 2.97 acres per unit.

- Per the attached proffers (Attachment No. 1), 100% of the dwelling units permitted on the property shall be offered for sale at affordable prices.

- The applicant is proposing internal pedestrian connections as part of the proposed roadway right-of-way. In accordance with the Pedestrian Accommodation Master Plan, the project will have a multiuse path along the frontage on Richmond Road.

- Perimeter buffering is proposed to ensure the preservation of Community Character and existing natural features, in accordance with the requirements of the R-3, Residential Redevelopment District.

- The proposal includes some recreational amenities as suggested from the Parks and Recreation Master Plan guidelines providing one playground and 0.43 acres of park/recreational land.

Residential Density Bonuses

The Residential Redevelopment District allows for increased density within a development, provided that certain benefits are provided. In order to achieve a density of 2.97 units per acre, the applicant is required to have at least 10% of the property preserved as open space and three density bonus points.

The Master Plan shows that 5.42 acres, which is 34% of the total site, is set aside as open space. The applicant is proposing to achieve the three density bonus points through the items detailed below:

- Bonus Point Option A: For every 15% of the total units that meet the definition of affordable and workforce housing (starting above the threshold set forth in the Residential Redevelopment Policy, as amended). (Bonus Points 4)

  The Residential Redevelopment Policy requires that at least 50% of all proposed housing units be targeted to families earning 30-120% of Area Median Income (AMI), with a minimum of 25% of all proposed housing units targeted to families earning 30-80% of AMI. The applicant has proffered that 100% of the housing

units be targeted to families earning 30-120% of AMI, with a minimum of 25% of all proposed housing units targeted to families earning 30-80% of AMI.

No density bonus is allowed for improvement, design, or actions that are otherwise required by County, State, or Federal Law.

Housing Affordability Analysis

The 2045 Comprehensive Plan encourages inclusion of affordable and workforce units within new residential development. Per the Comprehensive Plan recommendations, at least 20% of the development's proposed new dwellings should be offered for sale at prices that are targeted at workers with incomes up to 80% of AMI level as determined by the U.S. Department of Housing and Urban Development. The applicant has proffered that 100% of the 47 dwelling units shall be offered for sale at prices that are targeted to families earning 30-120% of AMI, with a minimum of 25% of all proposed housing units targeted to families earning 30-80% of AMI.

The table below provides the sales prices affordable at distinct percentages of AMI, which is currently $100,700.

Affordable Sales Price by AMI %

% AMI	Upper limit of the sales price affordable to this AMI level (2023 Prices)
30%	$108,250
60%	$213,900
80%	$284,250
100%	$354,800
120%	$425,250

Public Transportation: Vehicular

The scale of this proposal did not require the submittal of a Transportation Impact Analysis (TIA). This development is expected to yield less than 50 PM Peak trips per day. The impacts associated with the rezoning are within the operating limits of the surrounding roadway network and therefore will not impose time increases for turning motions that could result in failing turning motions or needs for off-site roadway improvements.

The Virginia Department of Transportation (VDOT) did not raise any concerns regarding this proposal or recommend any off-site improvements. For this Master Plan concept to be implemented, the requisite right-of-way for Catalpa Drive will need to be vacated by the County Board of Supervisors.

Schools

The County adopted the Adequate Public Schools Facilities Test by resolution on June 23, 1998. A proposed rezoning or Special Use Permit (SUP) application for residential development is required to show that the schools which would serve the future development currently have adequate design capacity to accommodate the existing student population plus the additional schoolchildren generated by the development. The schools shall be deemed adequate if the projected student population does not exceed 100% of the design capacity.

However, if the affected public schools currently exceed design capacity, but the schools' student population will be brought under design capacity within three years of the time of the application's review through either physical improvements programmed in the Capital Improvements Program, and/or through a redistricting plan that was approved by the School prior to application, then the application will be deemed to have passed the test.

The proposed development is anticipated to generate an additional 16 students. As illustrated in the following table, the 16 students projected from the development would not cause the enrollment levels for Norge Elementary, Toano Middle or Warhill High Schools to exceed effective capacity. Thus, this proposal passes the Adequate Public Schools Facilities Test.

Student Enrollment and School Capacity, Williamsburg-James City County Schools 2023

School	*Effective Capacity*	*Enrollment 2023-2024*	*Projected Students Generated*	*Enrollment + Projected Students*
Norge Elementary School	695	575	+7	682
Toano Middle School	790	700	+4	704
Warhill High School	1,441	1,298	+5	1,303

Parks and Recreation

This proposal includes up to 47 residential units. The applicant will provide some recreational amenities as recommended by the James City County Parks & Recreation Development Guidelines. These amenities include a playground and 0.43 acres of parkland. While amenities like biking/jogging trails, a sports court, pool, or multiuse field are not included in this proposal, Parks & Recreation Department staff considers the proposed amenities adequate for a development of this size.

James City County Parks & Recreation Development Guidelines Comparison

Minimum Requirement (units)	*Minimum Required*	*Proffered or Shown on Master Plan*
Parkland Acreage	0.3 acres	0.43 acres
Biking/Jogging Trails	248.16 square feet	0
Playground	1	1
Sport Court or Pool	1	0
Multiuse Field	1	0

PLANNING AND ZONING HISTORY

The current zoning for the property, R-2, General Residential, has been in place since the 1980s. There have been no legislative cases associated with this property.

SURROUNDING ZONING AND DEVELOPMENT

	Zoning Designation	Existing Land Use	Future Land Use Designation
NORTH	R-2 General Residential District	Single-Family Residential	Low Density Residential
SOUTH	R-2 General Residential District	Single-Family Residential Railroad Right-of-Way	Low Density Residential
EAST	R-2 General Residential District	Single-Family Residential	Low Density Residential
WEST	R-2 General Residential District	Single-Family Residential	Low Density Residential

IMPACT ANALYSIS

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Public Transportation: Vehicular	No Mitigation Required	• The vehicle trips generated by this proposal do not require the submittal of a TIA.
Public Transportation: Pedestrian/Bicycle	No Mitigation Required	• The County's *Pedestrian Accommodation Master Plan* requires no improvements along this portion of Mooretown Road. The *Regional Bikeways Map* requires no improvements.
Public Safety	No Mitigation Required	• Fire Station No. 4 on Olde Towne Road serves this area of the County and is approximately 3 miles from this property. • The proposal does not generate impacts that require mitigation to the County's emergency services or facilities.
Public Schools	No Mitigation Required	• This proposal passes the Adequate Public Schools Facilities Test.
Public Parks and Recreation	Not Fully Mitigated	• This proposal contains some of the recommendations of the Parks & Recreation Development Guidelines, but does not provide biking/jogging trails, a sports court, pool, or multiuse field. • The Parks & Recreation Development Guidelines state that the Board of Supervisors may approve alternatives to the recommended amenities.
Public Libraries and Cultural Centers	No Mitigation Required	• The proposal does not generate impacts that require mitigation to public libraries or cultural centers.
Groundwater and Drinking Water Resources	Mitigated	• The James City Service Authority has reviewed and approved this conceptual proposal on the Master Plan, as well as the projected water and sewer flows within the CIS. • The applicant has proffered water conservation standards for this development.
Watersheds, Streams, and Reservoirs	Mitigated	• The Master Plan shows a conceptual layout for Stormwater Management Facilities, which includes Best Management Plans.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Please note the information in the Status column indicated below does not include information from the Financial Impacts of Residential Units section of this staff report.		
Cultural/Historic	No Mitigation Required	• Per the County's Geographic Information System, this property is identified as a Moderate sensitive area on the James City County archaeological assessment, meaning no archaeological study is required for this application as part of the legislative submittal. Per Section 19-27 of the Subdivision Ordinance, an archaeological study and natural resource inventory will be required at the development plan stage.
Nearby and Surrounding Properties	Mitigated	• This parcel is surrounded by residential lands. • Per the Master Plan, there will be a perimeter buffer to preserve mature woodland and mitigate impacts to surrounding neighborhoods. • Staff finds this proposal compatible with the character of the existing surrounding development. **Proffers** Proffer No. 3 guarantees development will be consistent with the submitted design guidelines, which includes standards regarding house orientation, placement, and feature designs that will protect neighborhood character.
Community Character	Mitigated	• These properties are not located within a Community Character Area, nor do they front directly on a Community Character Corridor. **Proffers** • Proffer No. 2 guarantees sidewalk implementation will be phased adequately to ensure character maintenance and connectivity. • Proffer No. 3 guarantees development will be consistent with the submitted design guidelines, which includes standards regarding house orientation, placement, and feature designs that will protect neighborhood character. The design guidelines are consistent with the Comprehensive Plan, the established County Character Design Guidelines, and the surrounding neighborhoods.

NATURAL AND CULTURAL ASSETS

The site is identified as having no natural and cultural assets on the Natural & Cultural Assets Plan maps (and/or other supplemental resources such as Virginia Lands and Energy Navigator (VaLENS).

2045 COMPREHENSIVE PLAN

The property is designated Low Density Residential on the adopted 2045 Comprehensive Plan Land Use Map and is adjacent to properties designated as such. The following general guidance is stated for the Low Density Residential Designation:

- Land designated Low Density Residential are "located in the PSA where public services and utilities exist or are expected to be expanded to serve the sites over the next 20 years. The lands have natural characteristics such as terrain and soils suitable for residential development." Principle uses included single-family and multi-family units, cluster or cottage homes, and recreation areas. Recommended density from one unit per acre up to four units per acre if particular public benefits are provided. These include mixed-cost housing, affordable and workforce housing, enhanced environmental protection, or development that adheres to the principles of open space design.

  Staff finds that the proposed primary use is consistent with the recommendations for this designation. The applicant has proffered 100% of the units to be affordable.

The Comprehensive Plan's Land Use Development Standards are to be used in conjunction with the land use descriptions when considering any new development. The following residential development standards are applicable for Low Density Residential:

- Permit new development where such developments are compatible with the character of adjoining uses and where the impacts can be adequately addressed.

  The proposed development is adjacent to existing residential neighborhoods. The design guidelines proposed are consistent with the County Character Design Guidelines and are expected to be complementary to existing developments.

- Locate residential uses immediately adjacent to non-residential, major roads, agricultural and forestal uses, and other conflicting uses only where the conflicts are adequately addressed.

  The development includes perimeter buffering that is anticipated to reduce conflicts between the proposed units and established neighborhoods.

- The timing and density of development will depend on the availability of and adequacy of public services, utilities, and facilities, and the maintenance of an acceptable LOS of roads and other public services.

  The impacts to public services, utilities, and facilities have been mitigated by the Master Plan and proposed proffers.

- The need for public services and facilities generated by a development should be met or mitigated by that development.

  The impacts to public services, utilities, and facilities have been mitigated by the Master Plan and proposed proffers.

- Developing the site in accordance with open space design standards.

  The layout of the development is of a compact design with pedestrian access located within the proposed roadway. The development will have a mixture of multifamily and single-family detached units with a variety of lot sizes and a perimeter buffer preserving existing trees and vegetation.

- In addition to the open space design standards, the proposal should provide enhanced environmental protection.

  The applicant has proposed a perimeter buffer, as well as open space preservation and the proposed potential use of an existing Stormwater Best Management Practice.

- Minimize the impact of development proposals on overall mobility and traffic safety.

  VDOT has approved the proposed Master Plan. Per the submitted proffers, a sidewalk shall be included within the proposed road for the development.

- Affordable workforce housing should be provided in accordance with the Comprehensive Plan, Zoning Ordinance, and any other adopted policies and regulations.

  New residential development as stated in the Housing Chapter of the Comprehensive Plan, encourages housing at a range of income levels with at least 20% be targeted to workers with incomes up to 80% of AMI. The applicant has proffered all units to be affordable, with the proposed split being analyzed on Page 3 of this report.

Financial Impacts of Residential Units

The 2045 Comprehensive Plan includes Goals, Strategies and Actions (GSA) LU5, which states "continue land use planning and perform development review consistent with the capacity of existing and planned public facilities and services and the County's ability to provide such facilities and services." Land Use GSA 5.3 provides guidance for the County to ensure that developments subject to rezoning or special use permit review mitigate their impacts. Information on impacts and the mitigation provided by this application are included:

In alignment with the Comprehensive Plan, on February 28, 2023, the Board of Supervisors adopted a resolution directing staff to use the County's Fiscal Impact Model to assess the following for proposed developments:

- The fiscal impact to the County (both operating and capital budget) for the residential and nonresidential components of the project; and
- The incremental capital costs for public facilities for the residential component of the project.

Overall Impact (Capital and Operating)
Per the Fiscal Impact Model, the development is projected to result in a net fiscal impact to the County through the year 2045 that is negative $242,768.

Capital Costs
Per the Fiscal Impact Model, the following are projected public facility impacts attributable to the proposed residential component of the project through 2045.

Table 1-Per Unit Fiscal Residential Impacts Information

Category	Residential Impact	Mitigation through Current Application
Roadways	SFD $48.09 SFA $36.72	See Note 1
Parks & Recreation	SFD $3,012.69 SFA $1,988.13	See Note 1
Fire and Emergency Services	SFD $926.29 SFA $611.27	See Note 1
Police	SFD $13.52 SFA $8.92	See Note 1
Library	SFD $461.75 SFA $304.72	See Note 1
General Government	SFD $55.01 SFA $36.31	See Note 1
General Services	SFD $73.55 SFA $48.81	See Note 1
Courts	SFD $1,047.89 SFA $691.52	See Note 1
Schools	SFD $6,746.12 SFA $3,544.31	See Note 1
TOTAL	SFD $12,384.72 SFA $7,270.31	See Note 1

SFD - Single-Family Detached
SFA - Single-Family Attached

Note 1: The applicants have not proffered cash contributions for community impacts to the County from the physical development and operation of the Property.

Goals, Strategies and Actions

Staff reviewed the application to determine if the proposal aligns with the Comprehensive Plan's GSAs. The analysis is as follows.

Land Use

- GSA LU4 - Direct growth into designated growth areas in an efficient and low-impact manner by:

- GSA LU4.2 - Provide for low density and moderate density residential development in appropriate locations inside the PSA and prohibit such development on rural lands outside the PSA.

  The proposed development is within the PSA and designated Low Density Residential.

- GSA LU2 - Promote pedestrian, bicycle, and automotive linkages between adjacent land uses where practical.

  The proposed development will have a sidewalk located in the interior of the proposed roadway and will increase vehicular connectivity to Curry Drive.

- GSA LU5.3 - Ensure that developments are subject to zoning or special use permit review to mitigate their impacts through the following means:

- GSA LU5.2.3 - Permit higher densities and more intensive development in accordance with the Future Land Use Map where existing public facilities and services are adequately provided.

  Staff finds that the proposed density of 2.97 units per acre will have its impacts mitigated via proffers and the Master Plan and will not detract from existing public facilities and services.

Transportation

- GSA T1.2 - Expect new developments to follow recommended densities, intensities, and development patterns that will maintain an acceptable level of service.

  No TIA is required for this proposed development. VDOT has raised no concerns regarding the proposed development.

- GSA T1.2.2 - Provide a high degree of interconnectivity within new developments.

  The proposed Master Plan includes multiple points of connection to VDOT roadways, including Old Mooretown Road and Curry Drive.

Housing

- GSA H2.1 - Guide new developments to incorporate high housing quality and design.

  This development provides a range of home types, including open space, recreational amenities, connections between residential developments, and sidewalks. The proffered guidelines are generally consistent with the County's Character Design Guidelines.

- H 2.1.2 - Require adequate street lighting, safe and convenient pedestrian circulation, and appropriate interconnections between residential developments.

  This proposed development provides each of these items, as shown on the submitted Master Plan and detailed within the design guidelines.

- H 2.1.5 - Promote a scale and density of residential development that is contextually compatible with adjacent and surrounding land uses, supporting infrastructure, and environmental conditions.

  This proposed development is of a scale and density that complements surrounding development, as shown on the submitted Master Plan and detailed within the design guidelines.

Community Character

- GSA CC1 - Preserve and enhance entrance corridors and roads that promote the rural, natural, or historic character of the County.

  This proposal provides perimeter buffers for the proposed development that will preserve natural growth and the character of the area.

- GSA CC3 - Preserve and enhance neighborhood and community appearance.

  This proposal has design guidelines that have been reviewed and approved by the Director of Planning. The applicant will install streetscapes in accordance with the County's Streetscape Guidelines policy.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of the proposed rezoning, subject to the submitted proffers.

TW/ap
RZ24-5_ClrkTlly

Attachments:
1. Proposed Proffers
2. Location Map
3. Proposed Master Plan
4. Proposed Design Guidelines
5. Community Impact Statement
6. Fiscal Impact Analysis
7. Residential Redevelopment Policy

CLARK SUBDIVISION - PROFFERS

THESE PROFFERS are made this 24th day of April 2024 by the COUNTY OF JAMES CITY, a political subdivision of the Commonwealth of Virginia (the 'County') and BLAKLEY K. WEDDINGTON, also known as BLAKELY K. WEDDINGTON and ANGELA M. WEDDINGTON, husband and wife, (the 'Weddingtons') (collectively the 'Owners').

RECITALS

R-1. The County owns seven (7) parcels of land located in James City County, described in Exhibit A.

R-2 The Weddingtons own one (1) parcel of land located in James City County, described in Exhibit B.

R-4 The County and Weddingtons have applied to rezone the properties on the attached Exhibits A and B (together the 'Property') from R-2 to R-3 with proffers.

R-5 The County submitted a master plan entitled 'Clark Talley Residential Rezoning Master Plan prepared by Timmons Group dated February 19, 2024' (the 'Master Plan') for the Property in accordance with the James City County Zoning Ordinance.

R-6 Owners desire to offer the County certain conditions on the development of the Property not generally applicable to land zoned R-3.

NOW, THEREFORE, in consideration of the approval of the requested rezoning and pursuant to Section 15.2-2303 of the Code of Virginia, 1950, as amended, and the County Zoning Ordinance, the Owners agree that they shall meet and comply with all of the following conditions in developing the Property. If the Board of Supervisors for the County of James City does not grant the requested rezoning, these Proffers shall be null and void.

PROFFERS

1. **Affordable Housing.** One hundred percent of all housing units shall be initially sold to families earning 30-120 percent of Area Median Income (AMI), and at least 25 percent of all housing units shall be initially sold to families earning 30-80 percent of AMI.
2. **Sidewalks**: Sidewalks shall be incorporated along one side of each new road within the development as shown on the Master Plan. The sidewalks may be installed in phases as the residential units are constructed.
3. **Design.** The Property shall be developed generally in accordance with the Master Plan and Clark Subdivision Design Guidelines, dated April 23, 2024 (to include, without limitation, the design submittal, review, and approval process contained therein) and with only changes thereto that the County or its duly authorized designee determines do not alter the basic concept or character of the development in accordance with Section 24-23(a)(2)(f) of the Zoning Ordinance in effect on the date hereof; provided, however, such development shall be expressly subject to such changes in configuration, composition and location as required

by all other governmental authorities having jurisdiction over such development.

4. **Water Conservation**. Water conservation standards for the Property shall be developed and submitted to and approved by the James City Service Authority ('JCSA') for general consistency with the terms of this Proffer prior to the final site plan or subdivision approval for development of the Property. The standards shall address such customary and reasonable water conservation measures as limitations on the use of irrigation systems and irrigation wells, the use of approved landscaping materials and the use of water-conserving fixtures and appliances to promote water conservation and minimize the use of public water resources. Design features, including the use of drought-tolerant grasses and plantings, a water conservation plan, and a drought management plan shall be implemented to accomplish the limitation on the use of public water and groundwater.
5. **Severability.** If any clause, provision, covenant, or condition of these Proffers, or the application thereof to any person, place, or circumstance, shall be judged to be invalid, unenforceable, or void, the remainder of these Proffers shall remain in full force and effect.

WITNESS the following signatures:

THE COUNTY OF JAMES CITY, VIRGINIA

BY: _____
Scott A. Stevens, County Administrator

COMMONWEALTH OF VIRGINIA
COUNTY OF JAMES CITY, to-wit:

The foregoing Proffers were acknowledged before me this _____ day of April 2024 by Scott A. Stevens

_____
Notary Public

My Commission expires: _____

Registration No. _____

Approved as to Form:

BY: _____
County Attorney

_____
Blakely K. Weddington

COMMONWEALTH OF VIRGINIA
COUNTY OF JAMES CITY

The foregoing Proffers were acknowledged before me this _____ day of April 2024 by Blakely K. Weddington

_____
Notary Public

My Commission expires: _____

Registration No. _____

_____
Angela M. Weddington

COMMONWEALTH OF VIRGINIA
COUNTY OF JAMES CITY, to-wit:

The foregoing Proffers were acknowledged before me this _____ day of April 2024 by Angela M. Weddington.

_____
Notary Public

My Commission expires: _____

Registration No. _____

EXHIBIT A – JAMES CITY COUNTY PROPERTIES

Parcel I - (Parcel ID#: 220100039) 6195 Old Mooretown Road

ALL that certain lot, piece or parcel of land, with improvements thereon and thereto, situate, lying and being in James City County, Virginia, known and designated as Lot #2 on a certain plat entitled, 'Nellie W. Turner and Charles Wallace Plat of Division – Lot #l containing 1.36 acres and Lot #2 containing 1.39 acres, James City County, Virginia,' made by R.B. Cartwright C.L.S., West Point, Virginia, dated July 11, 1962 and recorded in the Clerk's Office of the Circuit Court for the County of James City, Virginia, in Deed Book 87, page 42[1], to which plat reference is hereby made for a more particular description of the real estate hereby conveyed.

LESS AND EXCEPT that certain parcel of land conveyed to James City County, Virginia, by Certificate of Deposit No. MRP-1 recorded in the aforementioned Clerk's Office on January 24, 1995, in Deed Book 723, page 668.

Parcel II - (Parcel ID#: 3220100040) 179 Clark Lane

ALL those certain lots, pieces or parcels of land, situate, lying and being in James City County, Virginia, containing in the aggregate 6.54 +/- acres, shown and designated as RESIDUAL PARCEL 'A' and RESIDUAL PARCEL 'B' on a plat made by Terradon Corporation, Land Surveying, dated January 15, 2008, entitled 'Physical Survey of Parcels 1, 3, 4 & Residual Parcel 'Subdivision of Part of the Property of Mary Alice Taylor,' Powhatan Magisterial District, James City County, Virginia,' a copy of which plat is attached to the Deed dated January 17, 2008, from William R. Bland, Special Commissioner to River City Developers, Inc., which is recorded in the Clerk's Office of the Circuit Court for the County of James City, Virginia as Instrument No. 080002389, reference to which Plat is hereby made for a more particular description of the real estate hereby conveyed.

Parcel III - (Parcel ID#: 3220100040A) 110 Catalpa Drive

ALL that certain lot, piece or parcel of land, situate, lying and being in James City County, Virginia, containing 0.70 +/- acres, shown and designated as PARCEL 4 on a plat made by Terradon Corporation, Land Surveying, dated January 15, 2008, entitled 'Physical Survey of Parcels 1, 3, 4 & Residual Parcel 'Subdivision of Part of the Property of Mary Alice Taylor' Powhatan Magisterial District, James City County, Virginia,' a copy of which plat is attached to the Deed dated January 17, 2008, from William R. Bland, Special Commissioner, to River City Developers, Inc., which is recorded in the Clerk's Office of the Circuit Court for the County of James City, Virginia, as Instrument No. 080002389, reference to which Plat is hereby made for a more particular description of the real estate hereby conveyed.

Parcel IV - (Parcel ID#: 3220| 00040B) 106 Catalpa Drive

ALL that certain lot, piece or parcel of land, situate, lying and being in James City County, Virginia, containing 0.72 +/- acres, shown and designated as PARCEL 3 on a plat made by Terradon Corporation, Land Surveying, dated January 15, 2008, entitled, 'Physical Survey of Parcels 1, 3, 4 & Residual Parcel 'Subdivision of Part of the Property of Mary Alice Taylor' Powhatan Magisterial District, James City County, Virginia,' a copy of which plat

is attached the Deed dated January 17, 2008, from William R. Bland, Special Commissioner, to River City Developers, Inc., which is recorded in the Clerk's Office of the Circuit Court for the County of James City, Virginia, as Instrument No. 080002389, reference to which Plat is hereby made for a more particular description of the real estate hereby conveyed.

TOGETHER WITH an easement for ingress and egress as described in an Easement Agreement dated January 17, 2008, recorded in the aforementioned Clerk's Office as Instrument No. 080002390.

Parcel V - (Parcel ID#: 3220100040D) 6171 Old Mooretown Road

ALL that certain lot, piece or parcel of land, situated, lying and being in James City County, Virginia, containing 0.68 +/- acres, shown and designated as PARCEL 1 on a plat made by Terradon Corporation, Land Surveying, dated January 15, 2008, entitled, 'Physical Survey of Parcels 1, 3, 4 & Residual Parcel 'Subdivision of Part of the Property of Mary Alice Taylor' Powhatan Magisterial District, James City County, Virginia,' a copy of which plat is attached to the Deed dated January 17, 2008, from William R. Bland, Special Commissioner, to River City Developers, Inc., which is recorded in the Clerk's Office of the Circuit Court for the County of James City, Virginia, as Instrument No. 080002389, reference to which Plat is hereby made for a more particular description of the real estate hereby conveyed.

PARCEL VI – Parcel ID# 3220100037 – 186 Clark Lane

All that 3.30 acres of land, more or less, but sold in gross and not by the acre, with all improvements thereon, located in James City County, Virginia, adjacent to the C&O Railway Co., right-of-way, with which it has a common boundary of 114.67 feet, and lying between the railway property and Mooretown Road, which the land does not lie adjacent to. A general description is:

Beginning at a metal stop at the westernmost and of common border with C&O Railway, proceeding thence clockwise around the property N. 40 degrees 45' E 758.0 feet in a straight line along property now or formerly of Mary Lightfoot to a metal stop; thence S 60 degrees 00' E 303 feet in a straight line along [the] border of lots owned, now or formerly, by FrazierWalace Frazier, to a metal stop; thence along the boundary of land owned now or formerly by Charles Wallace, S 28 degrees 15' W. 91.25 feet in a straight line to a twin red oak; thence in a straight line S. 56 degrees 30' W 466 00 feet to a pine tree; thence S 47 degrees 45' W. 390.0 feet to a metal slob on the corner of the C&O Railway Co., right-of-way, thence N 37 degrees 30' W 114.67 feet along the C&O Railway Co., right-of-way to the point of beginning.

LESS AND EXCEPT that portion of the property conveyed to James City County, a political subdivision of the Commonwealth of Virginia, by deed from Hezekiah B. Frazier, Jr, divorced, dated October 20, 1994, recorded in the Clerk's Office of the Circuit Court for the County of James City, Virginia, in Deed Book 711, page 358.

FURTHER LESS AND EXCEPT that portion of the property conveyed to Charlene D Dickens, by Deed of Git from Hezekiah S Frazier, Jr., single, dated March 16, 2001, recorded in the aforementioned Clerk's Office as Instrument Number 0100004619.

Exhibit A continued

QUITCLAIM DESCRIPTION·

All that certain lot, piece or parcel of land, situate, lying and being in James City County, Virginia, containing 2.656+/-acres, shown and designated as ‘‘Residue’ on that certain plat entitled ‘Subdivision of the Properties of Lillian F Talley, Trustee and Charlene D. Dickens Inst 180017356 and Inst 010004619 PIO 3220100037 and PIO 3220100037X James City County, Virginia’, dated April 28, 2020, made by Gardy & Associates PC, and recorded in the Clerk’s Office of the Circuit Court for the City of Williamsburg and County of James City, Virginia as Instrument No. 200011836.

PARCEL VII – Parcel ID# 3220100025 – 6197 Old Mooretown Road

All that certain lot, piece or parcel of land, situate, lying and being in James City County, Virginia, known and designated as Lot #1 on a certain plat entitled ‘Nellie W. Turner and Charles Wallace Plat of Division - Lot#1 containing 1.36 acres and Lot # 2 containing 1.39 acres, James City County, Virginia’, made by R B Cartwright C.LS., West Point Virginia, dated July 11, 1962, said plat being recorded in the Clerk’s Office of the Circuit Court for the County of James City, Virginia, with Deed in Deed Book 87, page 421. and Is bounded and described as follows:

Beginning at an iron pipe in the north corner of Lot #1, the lot hereby conveyed, thence S 46 degrees 15’ W the distance of 1,281.34 feet to an iron pipe: thence S. 31 degrees 34’ E the distance of 47.04 feet to an iron pipe; thence N 48 degrees 15’ the distance of 1,302.14 feet to an iron pipe: and thence N 57 degrees 40’ W the distance of 47.25 feet to the point of beginning. Said property is bounded on the northwest by the land now or formerly of Frazier and Richardson, on the southwest by the C&O Railway, on the southeast by Lot #2 and on the northeast by State Route # 603.

LESS AND EXCEPT that certain strip of land conveyed to James City County, Virginia, by Certificate of Deposit recorded in the aforementioned Clerk’s Office in Deed Book 738, page 194.

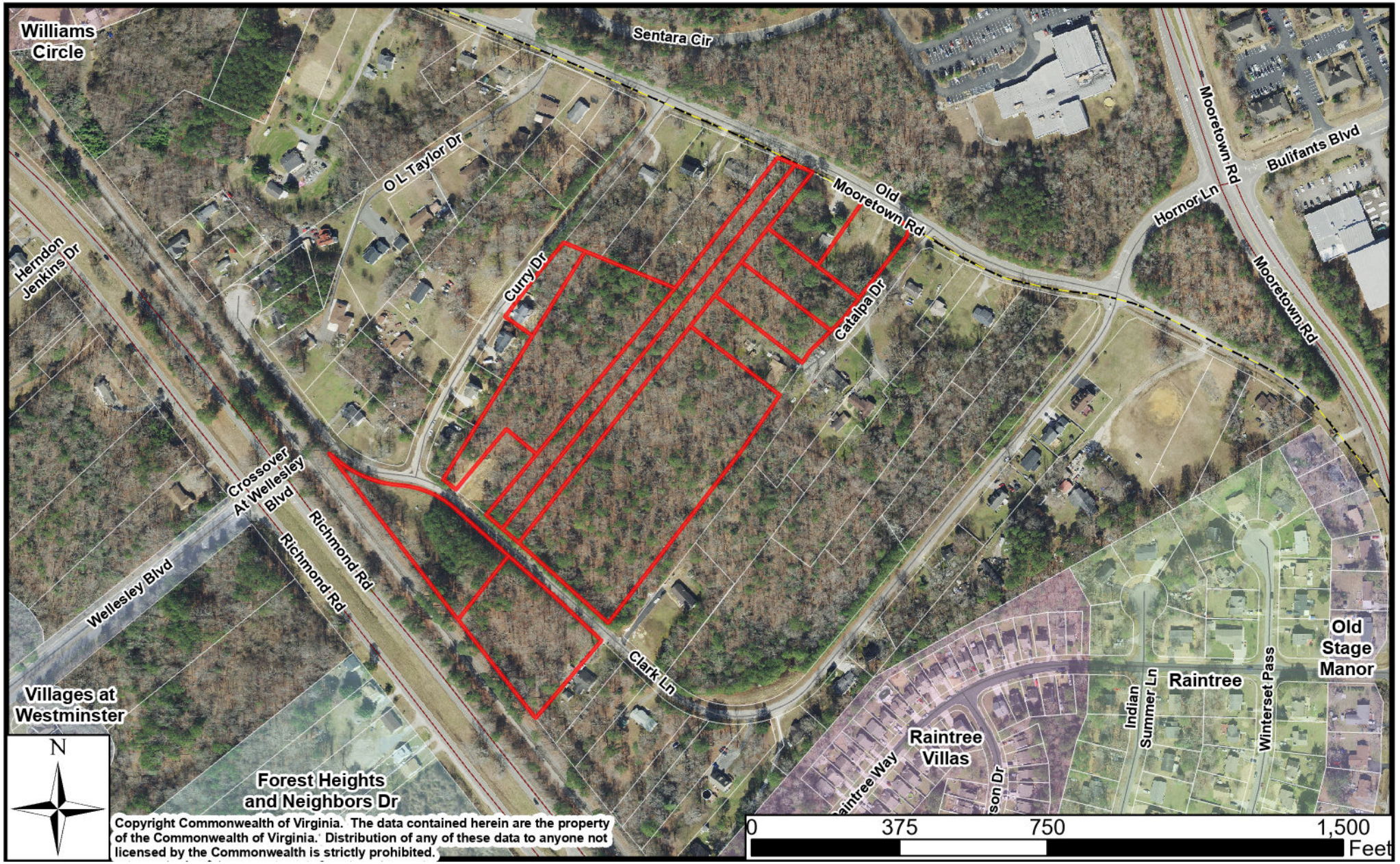
Being a portion of the property conveyed to William David Talley, Trustee of the Lillian Jean Talley Family Trust under the Lillian Jean F.Talley Revocable Trust dated February 10, 2014 by Deed of Distribution dated December 1, 2022, from William David Talley, Trustee of the Lillian F. Talley, Revocable Trust which Deed of Distribution is recorded in the aforementioned Clerk’s Office as Instrument No. 202216919.

EXHIBIT B – WEDDINGTON PROPERTY

All that certain lot, piece or parcel of land situate, lying and being in James City County, Jamestown District of Virginia, known and designated as Lot 4 as shown on that certain plat entitled, 'SUBDIVISION PLAT OF PROPERTY STANDING IN THE NAME OF CLARENCE. F. CURRY REVOCABLE TRUST BEING 1.215 +/- ACRES, PART OF 'TAPLERS' SITUATED IN POWHATAN DISTRICT, JAMES CITY COUNTY, VIRGINIA,' dated July 14, 2005, and duly recorded in the Clerk's Office of the Circuit Court of James City County, Virginia, as Instrument #060025206.

It being the same property conveyed unto the Grantor by instrument dated July 15, 2020, and recorded in the Clerk's Office aforesaid as Instrument No. 200011028, to which deed reference is here made.

JCC-Z-24-0005
Clark Talley Residential Rezoning



CLARK TALLEY RESIDENTIAL REZONING MASTER PLAN

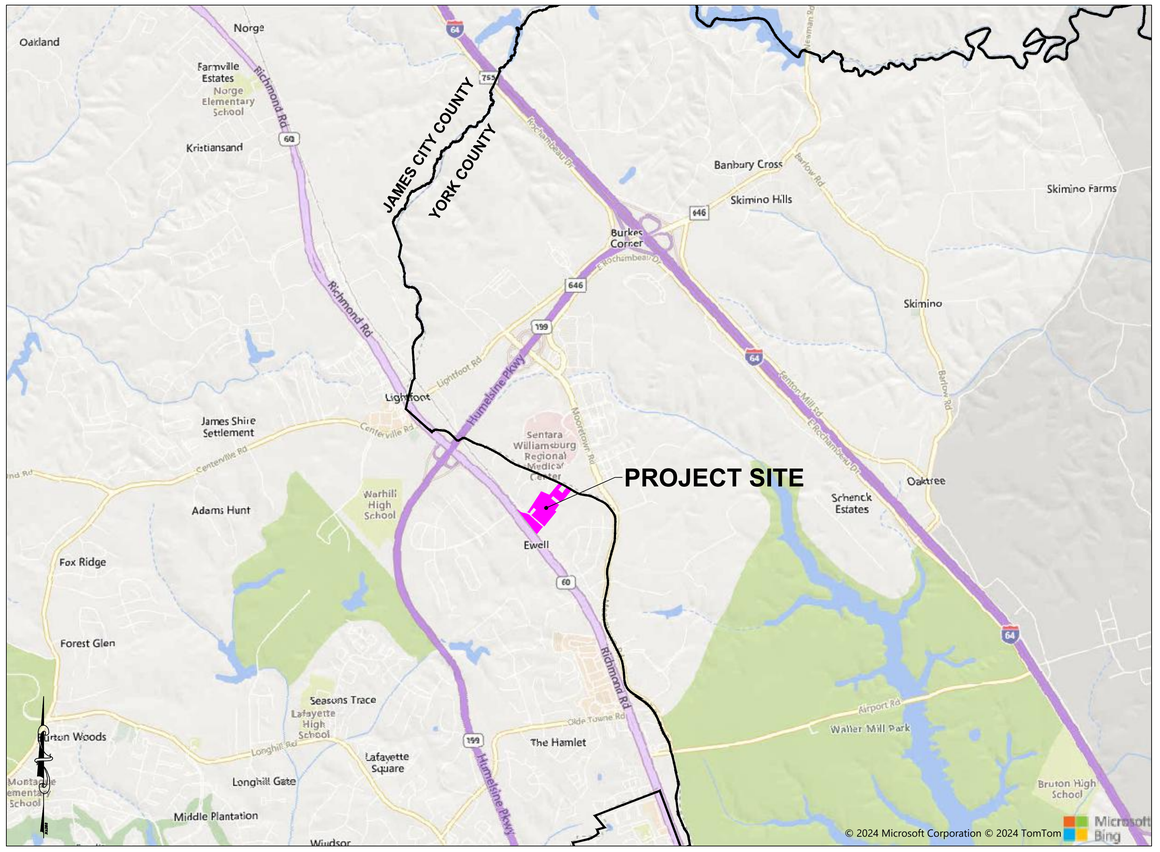
JAMES CITY COUNTY, VA

SITE DATA

OWNERS: JAMES CITY COUNTY, TALLEY WILLIAM DAVID TRUSTEE, BLAKLEY K WEDDINGTON, & ANGELA M. WEDDINGTON
GPINS: 3220100037,3220100038, 3220100039, 3220100040, 3220100040A, 3220100040B, 3220100040D, 3220100113, 3221400004
EXISTING ZONING: R-2
PROPOSED ZONING: R-3
SITE AREA: 15.57 AC ±

GENERAL NOTES

1. THE PROPOSED DEVELOPMENT IS NOT EXPECTED TO GENERATE MORE THAN 100 WEEKDAY PEAK HOUR TRIPS TO AND FROM THE SITE.
2. THE ANTICIPATED AVERAGE DAILY FLOW OF WATER AND SEWER VOLUME IS 14,880 GPD.
3. THIS PROJECT IS LOCATED IN THE POWHATAN CREEK WATERSHED.
4. ACCORDING TO THE NATIONAL WETLANDS INVENTORY AND NATIONAL HYDROLOGY DATASET, THERE ARE NO ENVIRONMENTAL FEATURES ON SITE.
5. JAMES CITY COUNTY GIS SHOWS NO RESOURCE PROTECTION AREAS OR CONSERVATION EASEMENTS ON SITE.
6. THE SITE IS LOCATED IN FLOOD ZONE X.



VICINITY MAP

SCALE: 1" = 2,000'

Sheet List Table

Sheet Number	Sheet Title
C0.0	COVER SHEET
C1.0	MASTER PLAN
C2.0	ILLUSTRATIVE MASTER PLAN

COMMONWEALTH OF VIRGINIA
DAVID S. ANDERSON
Lic. No. 023849
PROFESSIONAL ENGINEER

THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP

REVISION DESCRIPTION

#	DESCRIPTION	DATE
1		
2		
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4		
5		
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10		

DATE: 4/23/2024
DRAWN BY: T. PARKER
DESIGNED BY: D. ANDERSON
CHECKED BY: D. ANDERSON
SCALE: N/A

CLARK TALLEY RESIDENTIAL REZONING
JAMES CITY COUNTY, VA
COVER SHEET

JOB NO. 46163.008
SHEET NO. C0.0

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SUMMARY OF RESIDENTIAL DEVELOPMENT			
	AC (+/-)	*UNITS*	*PERCENTAGE OF TOTAL UNITS*
SF DETACHED (A) TYPE 1	3.41	18	38%
SF DETACHED (A) TYPE 2	1.23	9	19%
MF UP TO 4 UNITS (B) TYPE 1	0.94	8	17%
MF UP TO 4 UNITS (B) TYPE 2	1.68	12	26%
TOTAL	**7.26**	**47**	**100%**

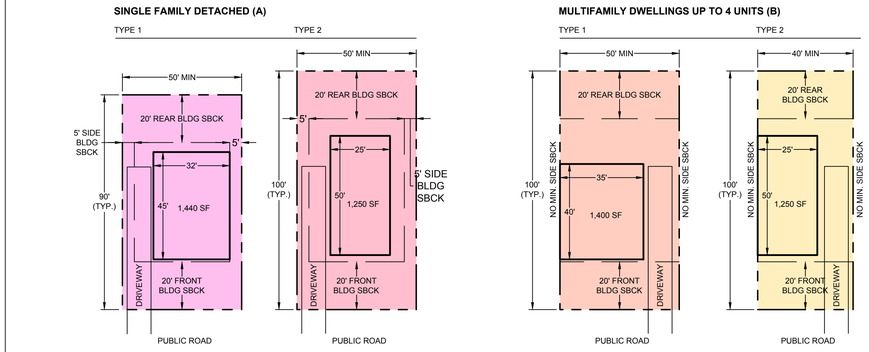
SUMMARY OF OPEN SPACE		
	AC (+/-)	*PERCENTAGE OF OPEN SPACE*
BUFFER AREAS	2.62	51%
SWM/OPEN SPACE	0.62	12%
PLAYGROUND	0.18	3%
OPEN SPACE RECREATION AREA	0.25	5%
REMAINDER OPEN SPACE	1.41	27%
ACCESS EASEMENT	0.09	2%
TOTAL	**5.17**	**100%**

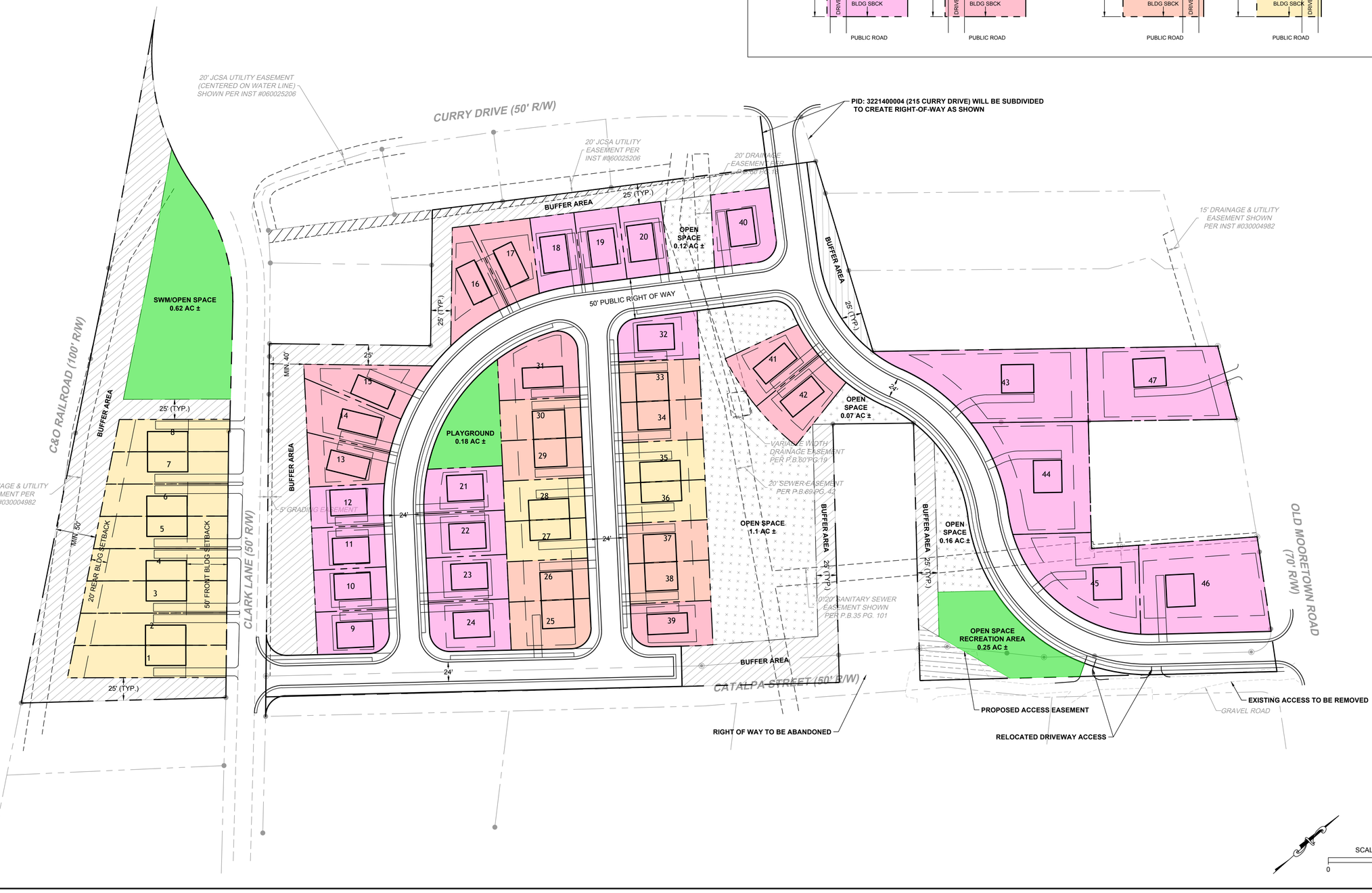
DEVELOPMENT SUMMARY		
	AC (+/-)	*PERCENTAGE OF TOTAL SITE*
NON-DEVELOPABLE AREA	0.00	0%
RESIDENTIAL	7.26	47%
OPEN SPACE	5.17	33%
RIGHT OF WAY	3.13	20%
TOTAL	**15.57**	**100%**
UNITS PER ACRE	**3.02**	

NOTES:

1. PER SEC. 24-273.7 A MAXIMUM OF 4 UNITS PER ACRE ARE PERMITTED VIA BONUS POINT OPTIONS "A", "B", "K", AND "M" FOR A TOTAL OF 5 POINTS.
2. EXISTING CONDITIONS AND PROPERTY BOUNDARY SHOWN PER "BOUNDARY SURVEY OF PROPERTY STANDING IN THE NAME OF WILLIAM DAVID TALLEY", DATED 7/14/2023 AND "SUBDIVISION OF PART OF THE PROPERTY OF MARY ALICE TAYLOR", DATED JUNE 1979.
3. THE PROPOSED LAYOUT OF THIS DEVELOPMENT INCLUDES LOT FRONTAGE AND LOCATION THAT WILL REQUIRE ISSUANCE OF AN EXCEPTION REQUEST BY THE DEVELOPMENT REVIEW COMMITTEE (DRC)."

HOUSING TYPOLOGIES





COMMONWEALTH OF VIRGINIA
DAVID S. ANDERSON
Lic. No. 023849
PROFESSIONAL ENGINEER

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TEL 804.200.6500 FAX 804.560.1016 www.timmons.com

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REVISION DESCRIPTION

#	DATE
#	#
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#	#
#	#
#	#

DATE: 4/23/2024
DRAWN BY: T. PARKER
DESIGNED BY: D. ANDERSON
CHECKED BY: D. ANDERSON
SCALE: 1" = 60'

TIMMONS GROUP

CLARK TALLEY RESIDENTIAL REZONING
JAMES CITY COUNTY, VA
MASTER PLAN

JOB NO. 46163.008
SHEET NO. C1.0

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TIMMONS GROUP

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COMMONWEALTH OF VIRGINIA
CRAIG S. ANDERSON
LIC. No. 023589
PROFESSIONAL ENGINEER

DATE	REVISION DESCRIPTION
#	##########
#	#
#	#
#	#
#	#

CLARK TALLEY RESIDENTIAL REZONING
JAMES CITY COUNTY, VA
ILLUSTRATIVE MASTER PLAN

JOB NO.	46163.008
SHEET NO.	C2.0
SCALE	1" = 60'
CHECKED BY	D. ANDERSON
DESIGNED BY	D. ANDERSON
DRAWN BY	T. PARKER
DATE	4/23/2024

CLARK SUBDIVISION DESIGN GUIDELINES

JCC Case No. Z-24-0005

April 23, 2024

James City County Neighborhood Development

Contents

James City County Neighborhood Development 1
Introduction 2
Site Layout and Building Form 3
Street and Open Space Design 4
Applicability and Enforcement 4

Introduction

The Clark Subdivision will be a uniquely situated infill development seated in a central crossroads of retail, industrial, healthcare, and office uses. Located within walking distance to Sentara Hospital and several York County commercial developments, the Old Mooretown Road area, including Clark Lane, is an area deeply beloved by its residents, many of whose roots go back generations on the land. As we have developed our plan for Clark Lane, we have taken great efforts to engage current residents, and we hope to reflect their wishes in the proposed vision for the area.

Several design elements included in the Clark Subdivision Design Guidelines mirror those in the James City County Character Design Guidelines, adopted by the Board of Supervisors with the 2045 Comprehensive Plan. This area is designated low-density residential by the Comprehensive Plan. We have found that the vision reflected by residents during the planning process closely matches the guidelines found in the Character Design Guidelines for low-density developments.

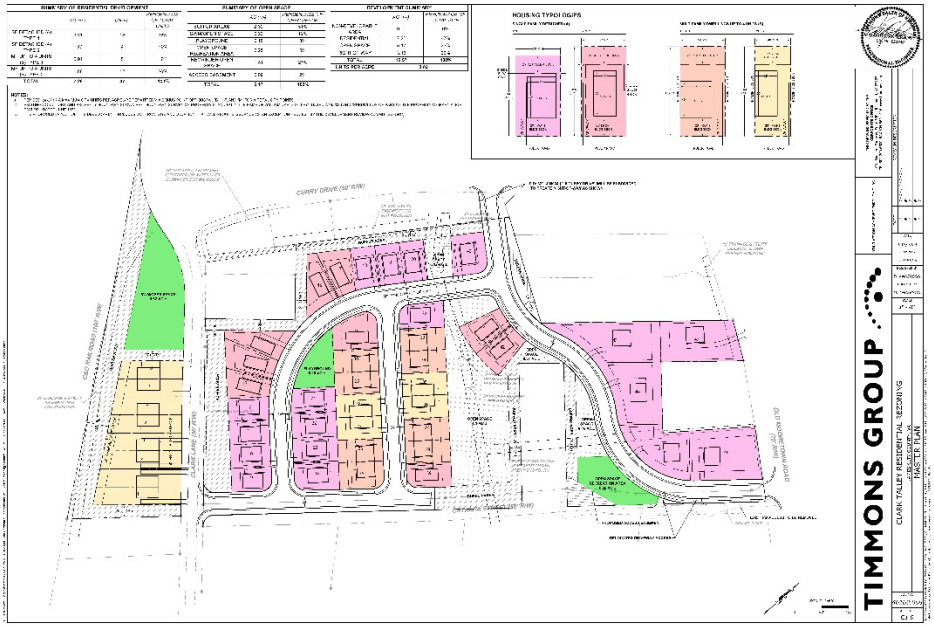
These design guidelines aim to ensure that the development of the Clark Subdivision aligns with the objectives of affordability, functionality, and aesthetic appeal while promoting community cohesion and sustainable environmental practices. The design and layout of the proposed subdivision were arrived at after extensive outreach and involvement with the community and surrounding residents and landowners.

Site Layout and Building Form

Survey data regarding low-density residential development on small lots from the Comprehensive Plan indicated that most County residents prefer smaller houses set behind consistent yards, as well as a desire for preserving natural surroundings and allowing for the preservation of mature trees where possible. Similarly, current Clark Lane residents indicated a desire for new homes to reflect lot layout, including setbacks and the use of natural vegetation and mature trees where possible. Designs will follow suburban trends similar to those in previous Neighborhood Development subdivisions—such as the Forest Heights neighborhood. However, design should strive to incorporate diverse architectural elements and styles while promoting a cohesive yet visually appealing streetscape. As such, the development of the Clark Subdivision should adhere to the following design standards:

I. ***Site Layout:***
   a. Utilize small lots with reduced setbacks to optimize land use and bring affordable dwelling units to the market.
   b. Vary building setbacks along the street: The layout will be respectful of neighboring buildings and use similar setbacks, but they may vary up to five feet in the placement of the main façade.
   c. Corner lots shall address both streets with a public-facing yard. The prevailing pattern of neighboring lots should guide the building façade orientation.

II. Street-facing garages on corner lots should be located to the side or rear of buildings. Street-facing garages on interior lots should be located at least two feet behind the front façade plane of the structure served.



LOT LAYOUT

III. *Building Elevation and Design*

a. Vary buildings massing along streets, avoiding monolithic features to enhance visual variety and interest.
b. Roofs shall be pitched with a minimum slope of 1:3.
c. Roof materials shall be specified as asphalt three-tab shingles at a minimum. Other roofing types, such as architectural, slate, or metal, are encouraged.
d. Front porches with usable depths are encouraged to foster community interaction and cohesion. Porches must be a minimum of 6 feet deep and 10 feet wide. Single-story porches are preferred.
e. Stoops must be a minimum of 5 feet deep and 6 feet wide.

Ex.

Street and Open Space/Landscape Design

We envision that this development will serve residents employed at the many nearby employment centers. In some cases, the nearby proximity is conducive to pedestrian transportation, as such, pedestrian and vehicular infrastructure is mindful of connectivity and walkability. Furthermore, WATA has plans to develop a regional transfer depot less than a quarter mile from the Clark Subdivision, which offers connectivity to the greater Williamsburg Area. Likewise, open space and street design shall focus on cultivating a sense of connectivity and cohesiveness within the development and with surrounding development as well. As such, the development of streets and open space within the Clark Subdivision should adhere to the following design standards:

I. *Streetscapes*

a. Sidewalks shall be incorporated along one side of the development on both proposed streets.

b. Pedestrian infrastructure shall be integrated with existing conveyances and future developments, ensuring connectivity and accessibility.
c. Multimodal and sidewalk design shall comply with, at a minimum, design standards per APPENDIX A(1) VDOT Complete Streets: Bicycle and Pedestrian Facility Guidelines, Bus Stop Design, and Parking Guidelines (or the applicable successor document per the Virginia Department of Transportation).
d. Front-loading driveways shall be the primary means of vehicular access on private parcels, contributing to a pedestrian-friendly environment and enhancing safety.
e. Street lighting should be pedestrian in scale along sidewalks and pedestrian spaces. It shall use appropriate light levels to enable the retention of the rural “dark sky,” including downward-directing light, cut-off, and glare-reducing features.
f. Tree Spacing: spacing of 25-30 feet apart along the street is generally appropriate, though may be altered slightly to suit lighting and other surrounding conditions.
g. Street trees shall be native species that are easy to maintain.
h. Street trees shall be installed so as to maintain a canopy that allows pedestrian clearance below the understory and reaches a height sufficient to cast shade over the street.
i. Street Tree Height: fully grown street tree height should be as tall as its distance from the street centerline.

II. Open Space/Landscape Design

a. The development will include landscaping to frame entrances and connect shared outdoor spaces.
b. Natural vegetation shall be preferred over planted and shall be preserved where possible.

c. Where possible and applicable, low-impact development principles shall be applied to reduce run-off and improve water quality.
d. Developers should use landscape materials that allow natural infiltration in pedestrian and activated spaces where it does not impede accessibility needs, allowing spaces to serve dual purposes.

Applicability and Enforcement

These guidelines are binding. Streetscape, landscape, open space, site layout and the proposed dwelling units will all be reviewed and approved by the Director of Planning or their designee per these guidelines prior to approval of the development plan(s) or building permits for the property. It is recognized by the Owner that these guidelines are written with an intent of establishing a standard of quality and consistency in the architecture and site development for the property that is consistent with the County's Character Design Guidelines. It is further understood that real estate market trends, best practices of land planning, and transportation requirements may require certain revisions to these proposed guidelines to achieve the goal of providing affordable housing. As such these guidelines may be re-visited in the future and appropriately amended to reflect such changes at the discretion of the developer, property owner or property owners' association, with the review and approval of the James City County Director of Planning.

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I. INTORDUCTION

The James City County Board of Supervisors has long acknowledged the need for more housing affordable to the County's workforce. Seeking to find solutions to this condition, the Board accepted the recommendations of the Workforce Housing Task Force (WHTF) in February of 2019. One of the recommendations, B-1 Housing Production, supported utilizing zoning such as R-3 for production of moderate density developments within the Primary Service Area (PSA).

The WHTF defined "Workforce" to mean that housing that can be obtained by a household earning less than 100% of the Area Median Income. In support of the WHTF recommendations the Division of Neighborhood Development acquired 15.57 acres of vacant wooded property off of Clark Lane and proposes to rezone it from R-2 Low Density Residential to R-3 Moderate Density Residential. The site acquired would be subdivided into 47 parcels with a density of 3.02 units per acre. The majority being developed as Workforce Housing for households working or living in the County. The housing will be developed in phases. The first phase would be constructing four duplex units on eight lots fronting Clark Lane.

The site is located in the Powhatan Creek watershed, in the Old Mooretown Road section of the County off of Clark Lane. It is currently zoned R-2 and sits among exiting residential houses. It is comprised of seven properties acquired from the William David Talley estate. A variable width JCSA easement bisects the property from a Northwesterly to Southeasterly direction. As an infill development the proposed development provides buffering and open space internal to the new subdivision. In addition to affordable housing, the subdivision would include sidewalks on one side of the new streets.

Waivers are sought to allow the initial construction to front on Clark Lane, an existing street. These lots back up to the CSX railroad right of way, there will be ample buffer separating these units from the railroad. The neighborhood contains two BMP ponds constructed using Community Development Block Grant funding (CDBG).

This site is uniquely situated within walking distance to Williamsburg Sentra Hospital, a vital regional employer. This housing could serve the Hospital's workforce by providing nearby housing affordable to service and line workers. The proximity allows workers to consider alternative conveyances to work, reducing impacts to local roadways.

The Williamsburg Area Transit Authority (WATA) has planned a transfer station within line of sight of this development's intersection of Catalpa Drive and Old Mooretown Road. This is a convenient distance for residents to travel to board buses.

II. THE PROJECT TEAM

The following organizations participated in the preparation of the information provided.

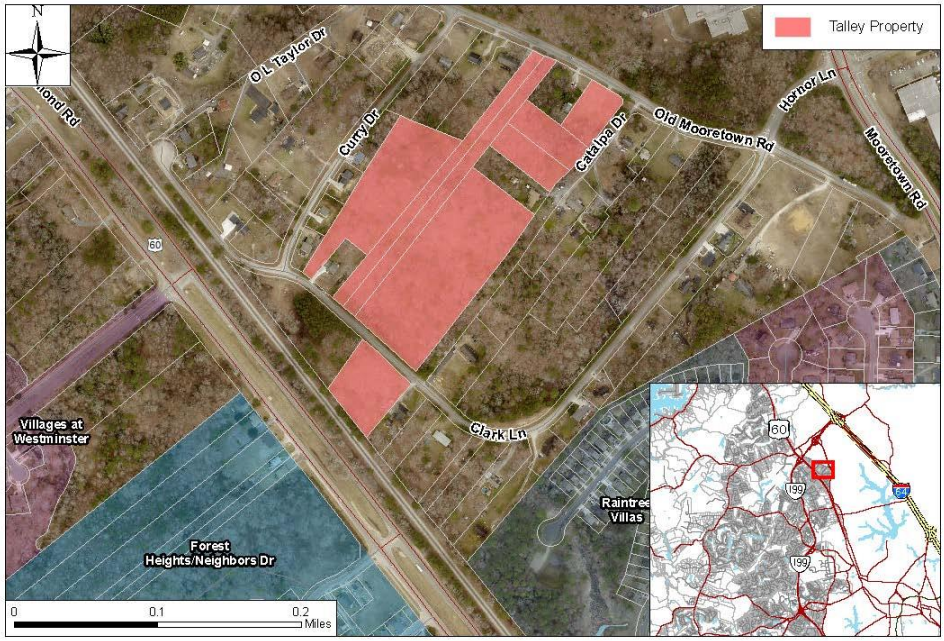
· Developer - James City County Neighborhood Development
· Civil Engineering - Timmons Engineering

III. EXISTING CONDITIONS

More details of the site can be observed on the Master Plan submitted with this application.

Buffers:	2.82 acres
Existing Easements	0.09 acres

Talley Property



IV. PROJECT DESCRIPTION

The Clark subdivision is an infill development. The site is comprised of seven lots totaling 15.57 acres, once subdivided it will consist of 47 lots. The residential housing units constructed will include 27 Single Family detached units and 20 Duplex Multifamily units. Two new streets meeting the VDOT Subdivision standards will be constructed, and one paper street will be brought up to the standards so it may be taken into the VDOT Maintenance system. The development will provide improvements to the existing stormwater management facilities in the area.

V. PLANNING CONSIDERATIONS

A. LAND USE

The requested R-3 zoning will complement the surrounding residential area. Existing residential structures in the area are clustered similar to the proposed development. The underlying land use for the area is Low Density residential and this proposal conforms to that use. In addition to allowing favorable infill utilization, R-3 Zoning will allow duplex residential construction. This unit type provides a higher number of residential units in a smaller footprint, thereby preserving surrounding land area and reducing impervious surface.

B. ENVIRONMENTAL

The site resides within the Powhatan watershed. According to the National Wetlands Inventory and National Hydrology Dataset, there are no Environmental Features on site. The site is located in Flood Zone - X

C. HOUSING AFFORDABILITY

All of the units constructed in this project will be affordable as defined in the 2045 Comprehensive Plan “Charting Our Course”. Furthermore, utilizing a partnership with Habitat for the Peninsula and Greater Williamsburg will allow for deep affordability, that is households earning at or near 50% of the Area Median income.

D. PARKS AND RECREATION

The proposed plan includes 0.18 acres of Playground and 0.25 acres of Amenity Area.

VI. ANALYSIS OF IMPACTS TO PUBLIC FACILITIES AND SERVICES

A. PUBLIC WATER FACILITIES

The proposed subdivision site is located within the Primary Service Area. JCSA provides water and sanitation services to the existing residents in the area and their infrastructure transits the site. Development on the site may offer the ability to provide loops in the existing system. Development on the western side of Clark Lane will require the extension of water and sewer laterals to the new units, this may necessitate increasing the diameter of the existing supply line.

B. PUBLIC SEWER FACILITIES

JCSA sanitary sewer is present at the site. The nearest lift station is LS 6-2 situated .38 miles away.

Type of Development	No. of Units	Flow (GPD/Unit)	Average Daily Flow (GPD)	Duration (hrs)	Avg. Flow (GPM)	Peak Flow (GPM)
RESIDENTIAL						
Single-family	48	310	14,880	24	10.33	25.83
Total (to LS 6-2)			**14,880**		**10.33**	**25.83**

C. FIRE PROTECTION AND EMERGENCY SERVIES

There are currently five fire stations providing fire protection and Emergency Medical Services (EMS) to James City County. The closest James City County fire station to the subject site is Station #4 at 5312 Olde Towne Road, approximately 3.54 miles east of this project. From this station, an estimated response time will be less than 7 minutes. Due to the location of this proposed subdivision, Station #7 located at 5684 Mooretown Road in York County is 1.46 miles from the site and would be available for assistance through Mutual Aid agreements between the localities. These stations should provide a more than adequate response time to potential emergencies.

D. SOLID WASTE DISPOSAL

The proposed development on the subject property will generate solid wastes that will require collection and disposal to promote a safe and healthy environment. Reputable, private contractors, hired by the residents to handle the collection of solid waste. Both trash and recyclable material will be removed from this site to a licensed legitimate solid waste disposal facility.

E. UTILITY SERVICE PROVIDERS

Dominion Virginia Power, and Cox Communications provide, respectively, electricity, cable TV service, and landline telephone service to this area. The current policy of these utility service providers is to extend service to the development at no cost to the developer when positive revenue is identified; plus, with new land development, these utility service providers are required to place all new utility service underground.

F. SCHOOLS

Clark subdivision is located within the Norge Elementary School, Toano Middle School, and Warhill High School districts. The number of school age children as determined by James City County modeling software will be 16; 7 elementary, 4 middle and 5 high school students. We currently understand that there is sufficient capacity for these students in the associated schools based on the information provided to us.

VII. ANALYSIS OF ENVIRONMENTAL IMPACTS

A. PRELIMINARY WETLAND DETERMINATION

There are no wetland areas on the property. No steep slopes are identified on the property.

B. RESOURCE PROTECTION AREAS

The property contains no Resource Protection Areas (RPA) or associated buffers.

C. SOILS

The Soil Survey of James City and York Counties and the City of Williamsburg, Virginia (USDA 2022) shows several soil types within the property boundary. This property is predominantly situated on the following soil types; Slagle Fine Sandy Loam, Craven-Uchee Complex, and Kempsville – Emporia Fine Sandy Loam.

VII. ANALYSIS OF STORMWATER MANAGEMENT

The Clark Lane property, located within the Powhatan Creek Watershed, is subject to James City County's stringent policy recommendations for watershed management. These guidelines are designed to safeguard the vital natural resources within the watershed and, crucially, to prevent any further deterioration of its water quality. To this end, we have embraced the principles of Special Stormwater Criteria (SSC), a set of

measures that elevate the quality of stormwater runoff from our development site. This

VIII. ANALYSIS OF IMPACTS TO TRAFFIC

This development is expected to yield less than 50 PM Peak Trips per day. The impacts associated with the rezoning are within the operating limits of the surrounding roadway network and therefore will not impose time increases for turning motions that could result in failing turning motions or needs for offsite roadway improvements.

IX. FISCAL IMPACT STUDY

A fiscal impact analysis will be completed by Staff utilizing the James City County analysis software. The analysis indicates that the project will generate a negative net fiscal impact of $242,768, given this project does not include a commercial component and all houses are intended to be affordable.

X. CONCLUSIONS

The Clark Lane development goals and priorities are aligned with the recommendations of the Workforce Housing Task Force. The proposed development will provide 47 units of housing affordable to the Workforce. It is uniquely situated, adjacent to a significant employer vital to the region. The Community Impact Statement for the rezoning and subsequent development of *Clark Lane* highlights the following:

- The is an infill development in agreement with the goals of the Comprehensive Plan.
- The rezoning is consistent with the surrounding land uses designated on the current Comprehensive Plan for this area.
- Enhanced buffers are utilized to reduce impacts to and from the surrounding developments.
- The existing roadways where the project would tie into have adequate capacity and can safely accommodate the additional proposed traffic.
- Analysis shows that public services (water and sewer, fire) and utility services (gas, electricity, cable television, and telephone) have sufficient capacity to serve the new development.
- This development will conform to the new Stormwater criteria, including adherence to the County's Special Stormwater Criteria for Powhatan creek watershed.
- Affordable housing proffered component will help provide much needed housing for lower income families.
- The project provides a crucial benefit that meets the County's needs.

Fiscal Impact Analysis Comment

In alignment with the 2045 Comprehensive Plan, on February 28, 2023, the Board of Supervisors adopted a resolution directing staff to use the County's Fiscal Impact Model to assess proposed developments. To that end, staff has taken the information provided by the applicant and used the County's model to analyze fiscal impacts.

1. Overall fiscal impact (capital and operating costs). The fiscal model output information is below – this includes the model default (standard) assessed unit values based on average data for the applicable fiscal analysis zone within the County (Attachment A).
2. Capital Expenditures. This amount represents impacts to County facilities and services attributable to this proposed development. This amount is shown in Attachment A and is further broken out below by type of capital expenditure and by unit type (Attachment B).

Attachment A

NET FISCAL IMPACT	Clark Lane Default Scenario	%
PROJECTED REVENUES		
General Property Taxes	$3,739,140	84%
Other Local Taxes	$397,760	9%
Licenses, Permits & Fees	$42,540	1%
Fines & Forfeitures	$5,582	0%
Use of Money & Prop	$0	0%
Commonwealth	$0	0%
Federal Government	$0	0%
Charges for Services	$241,721	5%
Miscellaneous	$0	0%
Total General Fund Revenues	$4,426,743	100%
Schools Revenues (Non-County	$2,233,077	
GRAND TOTAL REVENUES	**$6,659,819**	
PROJECTED EXPENDITURES		
Operating Expenditures		
General Adminstration	$17,460	0%
Court Services	$17,258	0%
Public Safety	$482,053	8%
Financial Administration	$16,198	0%
Info Resources Management	$3,754	0%
Community Development	$4,376	0%
General Services	$120,846	2%
Parks & Recreation	$22,472	0%
Other Contributions And Transfe	$484,161	8%
Total General Fund Expenditures	$1,168,577	18%
School Operating Expenditures	$5,185,341	82%
GRAND TOTAL OPERATING I	**$6,353,919**	**100%**
Capital Expenditures		
Non-Schools Capital	$249,713	46%
Schools Capital	$298,955	54%
GRAND TOTAL OPERATING I	**$548,669**	**100%**
GRAND TOTAL EXPENDITURES	**$6,902,587**	
CUMULATIVE NET FISCAL IMPACT	**($242,768)**	
Average Annual Net Fiscal Impact	*($9,711)*	

Attachment B

CAPITAL IMPACTS PER UNIT	Clark Lane Default
Transportation	
Single Family Detached	$48.09
Single Family Attached	$36.72
Parks and Recreation	
Single Family Detached	$3,012.69
Single Family Attached	$1,988.13
Fire and Emergency Services	
Single Family Detached	$926.29
Single Family Attached	$611.27
Police	
Single Family Detached	$13.52
Single Family Attached	$8.92
Library	
Single Family Detached	$461.75
Single Family Attached	$304.72
General Government	
Single Family Detached	$55.01
Single Family Attached	$36.31
General Services	
Single Family Detached	$73.35
Single Family Attached	$48.41
Courts	
Single Family Detached	$1,047.89
Single Family Attached	$691.52
Schools	
Single Family Detached	$6,746.12
Single Family Attached	$3,544.31
TOTAL	
Single Family Detached	**$12,384.72**
Single Family Attached	**$7,270.31**

RESOLUTION

RESIDENTIAL REDEVELOPMENT POLICY

WHEREAS, the task of creating the Residential Redevelopment District, R-3, was included as a part of the adopted methodology for the zoning ordinance update adopted by the Board of Supervisors in May 2010; and

WHEREAS, the 2009 Comprehensive Plan referenced the importance of supporting efforts to improve the condition and variety of the County's housing stock; and

WHEREAS, after receiving feedback from the Policy Committee, the Planning Commission, and the Board of Supervisors, the following policy is recommended for all Residential Redevelopment projects.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, does hereby endorse the following:

Projects seeking rezoning to the R-3, Residential Redevelopment District, should meet or exceed the following expectations:

1. Be located inside the Primary Service Area;
2. Bring existing non-conforming parcels into conformance with the requirements of this district;
3. Provide or improve public infrastructure (including but not necessarily limited to public streets, water and/or sewer service, and stormwater facilities); and
4. Provide affordable and workforce housing units, where at least 50 percent of all proposed housing units are targeted to families earning 30-120 percent of Area Median Income (AMI), with a minimum of 25 percent of all proposed housing units targeted to families earning 30-80 percent of AMI.

John J. McGlennon
Chairman, Board of Supervisors

ATTEST:

Robert C. Middaugh
Clerk to the Board

	VOTES		
	AYE	NAY	ABSTAIN
MCGLENNON	X	____	____
JONES	X	____	____
KENNEDY	X	____	____
ICENHOUR	X	____	____
KALE	X	____	____

Adopted by the Board of Supervisors of James City County, Virginia, this 27th day of November, 2012.

Zo-07-09-10_res1

SUMMARY FACTS

Applicant:	Ms. Holly Adams, Alpha Corporation
Landowners:	Williamsburg-James City County (WJCC) School Board James City County
Proposal:	Rezoning of 3175 Ironbound Road from R-8, Rural Residential to PL, Public Lands, and a Special Use Permit (SUP) to allow a 41,326-square-foot Pre-K Center.
Locations:	3175 Ironbound Road 3131 Ironbound Road
Tax Map/Parcel Nos.:	4710100057 4710100058
Project Acreage:	± 25.38 acres
Current Zoning:	R-8, Rural Residential (4710100057) PL, Public Lands (4710100058)
Proposed Zoning:	PL, Public Lands
Comprehensive Plan:	Low Density Residential (4710100057) Federal, State, or County Land (4710100058)
Primary Service Area: (PSA)	Inside
Staff Contact:	Ben Loppacker, Planner

PUBLIC HEARING DATES

Planning Commission:	May 1, 2024, 6:00 p.m.
Board of Supervisors:	June 11, 2024, 5:00 p.m. (Tentative)

FACTORS FAVORABLE

1. The proposal is consistent with *Our County, Our Shared Future: James City County 2045 Comprehensive Plan*.
2. With the proposed conditions, the proposal is compatible with surrounding zoning and development.
3. The proposal passes the Traffic Impact Analysis (TIA) Submittal Requirements Policy Test.
4. The proposal is consistent with the Primary Principles for the Five Forks Area.
5. Impacts: Please see Impact Analysis on Pages 4-6.

FACTORS UNFAVORABLE

1. With the proposed conditions, staff finds that there are no unfavorable factors.

SUMMARY STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of this Rezoning and SUP applications to the Board of Supervisors, subject to the proposed conditions.

PROJECT DESCRIPTION

Ms. Holly Adams of Alpha Corporation, on behalf of WJCC Public Schools, has submitted a request to rezone approximately 1.98 acres located at 3175 Ironbound Road from R-8, Rural Residential to PL, Public Lands. Ms. Adams has also applied for a corresponding SUP to allow the use of schools, libraries, museums, and similar institutions, in an approximately 41,326-square-foot standalone Pre-K school at 3131 and 3175 Ironbound Road. The school would provide a new 252-student center for ages 2-5, including classrooms, meeting rooms, offices, multipurpose space, indoor and outdoor play areas, and administrative space.

PUBLIC IMPACTS

The scale of this proposal requires the submittal of a TIA. The TIA examines the existing conditions of vehicular traffic, including Level of Service (LOS), with a focus on the roads and intersections serving and impacted by the proposed development.

Per the TIA Submittal Requirements Policy, all Rezoning and SUP applications are subject to the adequate transportation facilities test. A proposed Rezoning or SUP application will pass the test if:

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

The TIA (Attachment No. 6) analyzed the AM peak hour traffic estimating that the new Pre-K Center will generate 313 total vehicles trips per day. There is an estimated 155 peak hour AM trips entering the site and 158 peak hour AM trips exiting the site. This represents a net increase of 54 peak hour AM trips entering the site and 55 peak hour AM trips exiting the site. The following intersections were studied:

John Tyler Highway at Ironbound Road

The John Tyler Highway and Ironbound Road intersection currently operates at an overall LOS D. With the proposed development, the LOS overall would improve to LOS C, which is still considered to be an acceptable LOS.

Ironbound Road at Harris Teeter Driveway/Proposed School Driveway

The intersection along Ironbound Road at the proposed Pre-K Center egress driveway and Harris Teeter parking ingress/egress after build-out under the redistricting scenario has all individual turning movements operating at LOS C or above. Under a build-out no redistricting scenario, the LOS for left-turning movements would operate at a LOS D but all other turning movements would be at LOS C or above.

Ironbound Road at Service Driveway/School Driveway

The intersection along Ironbound Road at the existing school and the Harris Teeter rear delivery service ingress/egress currently has all individual turning movements operating at LOS C or above. After build-out with or without redistricting, the LOS would operate at a LOS D or higher for all individual movements.

Based on the results of the TIA, the study concluded that all studied intersections will operate with acceptable queueing and delay with the with the recommended improvement of constructing the proposed one-lane egress driveway at the intersection adjacent to the Harris Teeter parking ingress/egress.

Staff finds that the impacts stated in the TIA are mitigated for the proposed development and all intersections will operate at an acceptable LOS, subject to proposed SUP conditions and Master Plan showing the recommended improvement of one egress lane. VDOT has reviewed and approved the traffic study subject to the proposed SUP conditions and Master Plan with the Pre-K Center egress driveway, as warranted in the TIA as well as approved by the Planning Director.

Ironbound Road Corridor Signalized Intersection LOS - AM Peak Hour	2023 Existing Conditions	Projected 2025 ("No-Build")	Projected 2025 with Bright Beginnings ("Build with Redistricting")	Projected 2025 with Bright Beginnings ("Build with No Redistricting")
	LOS	LOS	LOS	LOS
John Tyler Highway	D	C	C	C
Harris Teeter Driveway	C	C	C	D
School Driveway	C	C	D	D

PLANNING AND ZONING HISTORY

- Clara Byrd Baker Elementary School did not require an SUP when it was opened in 1989; however, when the property was rezoned to Public Lands in 2007, it required SUPs for schools and similar institutions.
- In 2015, SUP-0005-2015 was approved for additions and improved parking on the site, as well as bringing the existing school use into conformance with the Zoning Ordinance.
- SUPs for additional classrooms in trailers and learning cottages were approved on the Clara Byrd Baker Elementary School property in 1990, 1991, 1995, 2000, 2002, 2003, 2004, 2005, 2006, 2007, and 2021.

SURROUNDING ZONING AND DEVELOPMENT

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

	ZONING DESIGNATION	EXISTING LAND USE	FUTURE LAND USE DESIGNATION
NORTH	MU, Mixed Use District	Commercial	Mixed Use and Moderate Density Residential
SOUTH	R-8, Rural Residential District	Single-family Residential	Low Density Residential
EAST	B-1, General Business District, LB, Limited Business District, and R-2, General Residential District	Single-family Residential and Commercial	Low Density Residential and Mixed Use
WEST	R-8, Rural Residential District	James City Service Authority (JCSA) Desalination Treatment Plant	Federal, State, or County Land

Impacts/Potentially Unfavorable Conditions	Status *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
Public Transportation: Vehicular	Mitigated	- The new development would take access from Ironbound Road via a shared intersection with the adjacent Clara Byrd Baker Elementary School. - Condition No. 4 requires the improvement identified in the TIA to be bonded prior to final site plan approval and installed prior to the issuance of a Certificate of Occupancy. The proposed improvement includes a one-lane egress from the proposed Bright Beginnings bus drop-off driveway onto Ironbound Road. - The application passes the County's TIA Submittal Requirements Policy Test. - VDOT has reviewed and approved the traffic study.
Public Transportation: Bicycle/Pedestrian	Mitigated	- Per the Pedestrian Accommodation's Master Plan, a sidewalk is required along the west side of Ironbound Road. The adopted Regional Bikeways Master Plan specifies bike lanes along Ironbound Road. The site is located within the Five Forks Community Character Area (CCA) Sidewalk Inclusion Zone and sidewalks shall be constructed on the north or east side of internal roads. The existing sidewalk along the west side of Ironbound Road will be maintained and improved as shown on the Master Plan. All improvements are required to be constructed at the construction plan stage.
Public Safety	No Mitigation Required	- Fire Station 3 on John Tyler Highway serves this area of the County, approximately 1.7 miles from the proposed development. - Staff finds this project does not generate impacts that require mitigation to the County's Fire Department facilities or services.
Public Schools	Mitigated	- The proposal would accommodate existing and future Bright Beginnings students in a dedicated building. Currently, the Bright Beginnings program is split amongst multiple elementary schools across the County. This proposal would consolidate the Bright Beginnings program, opening classroom space at existing elementary schools.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Public Parks and Recreation	No Mitigation Required	- The proposal does not generate impacts that require mitigation to the County's parks and recreation services or facilities.
Public Libraries and Cultural Centers	No Mitigation Required	- Staff finds this project does not generate impacts that require mitigation.
Groundwater and Drinking Water Resources	No Mitigation Required	- The property is served by public water and sewer. - JCSA has reviewed the proposal and noted items that will need to be addressed at the development stage.
Watersheds, Streams, and Reservoirs Project is located in the Powhatan Creek Watershed.	Mitigated	- This project will need to demonstrate full compliance with environmental regulations at the development plan stage and evidence that the development will not negatively affect the existing off-site facilities. - Stormwater and Resource Protection Division reviewed and approved the application with proposed SUP Condition Nos. 7, and 8 regarding the use of Special Stormwater Criteria, and wet and dry pond fencing.
Cultural/Historic	No Mitigation Required	- A Phase 1 Archaeological Study was completed for the site in 1987 and found no archaeological sites located in the area of the proposed Pre-K Center. The Pre-K Center is also located in a moderate sensitivity area, which does not require a Phase 1A Archaeological Study per Section 24-23 of the Zoning Ordinance.
Nearby and Surrounding Properties	Mitigated	- Staff finds that this proposal is generally consistent with the character of the existing surrounding development, which is generally commercial in nature. - Proposed SUP Condition No. 6 addresses the requirement for proper screening of dumpsters and roof and ground-mounted HVAC and mechanical units from adjacent properties and right-of-way.
Community Character The project is located along the Ironbound Road Community Character Corridor (CCC).	Mitigated	- The Comprehensive Plan designates Ironbound Road as a CCC. Ironbound Road is characterized as an "Urban and Suburban" CCC. Urban and Suburban CCCs have high to moderate traffic, commercial, and some residential uses. The predominant visual character of these areas should be the built environment

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
		and the natural landscape, with parking and other auto-related areas as a secondary component. - This parcel also falls within the Five Forks CCA and the Sidewalk Inclusion Zone. - The Master Plan incorporates the required 50-foot CCC landscape buffer along Ironbound Road and has included additional architectural features on the east elevation of the proposed structure, which faces Ironbound Road.
Covenants and Restrictions	No Mitigation Required	- The applicant has verified that she is not aware of any covenants or restrictions on the property that prohibit the proposed use.

COMPREHENSIVE PLAN

3131 Ironbound Road is designated Federal, State, or County Land on the 2045 Comprehensive Plan Land Use Map.

- Lands designated Federal, State, or County Land are publicly owned lands, such as Eastern State Hospital, military installations, County offices and facilities, and larger utility sites such as the Hampton Roads Sanitation District treatment plant. Development in these areas should follow applicable development standards listed in the charts.

  Staff finds this project consistent with the 2045 Comprehensive Plan, which lists County offices and facilities as a recommended use in areas designated Federal, State, or County Land.

3175 Ironbound Road is designated Low Density Residential on the 2045 Comprehensive Plan Land Use Map.

- Lands designated Low Density Residential are located in the PSA where public services and utilities exist or are expected to be expanded to serve the sites over the next 20 years. Sites shall have natural characteristics such as terrain and soils suitable for residential development.

- The primary uses include single-family and multifamily units, accessory units, cluster or cottage homes on small lots, recreation areas, schools, places of public assembly, very limited commercial, community-oriented facilities, timeshares, and retirement and care facilities and communities.

- Uses in Groups 2 and 3 should only be approved in these designations when the following standards are met:

  - Maintain the residential character of the area;
  - Have traffic, noise, lighting and other impacts similar to surrounding residential uses;
  - Generally be located on collector or arterial roads at intersections;
  - Act as a transitional use between residential and commercial areas or, if located within a residential community, be integrated with the residential character of the area rather than altering its nature;
  - Provide adequate screening and buffering to protect the character of nearby residential areas; and
  - Generally intended to support the residential area in which they are located (for Group 2 Uses only).

  Staff finds this project consistent with the 2045 Comprehensive Plan, which lists schools as a Group 2 recommended use in areas designated Low Density Residential. The proposal appears to meet the standards required for Group 2 and 3 uses for areas designated Low Density Residential through maintaining the 50-foot Community Character buffering and the conditioning of design elevations for the structure. The structure also has adequate buffering from nearby residential uses and acts as a transitional use between residential uses to the south and more commercial uses surrounding the John Tyler Highway and Ironbound Road intersection.

The property is located along the Ironbound Road CCC, an Urban/Suburban CCC.

- Characterized as having high to moderate traffic, commercial uses, and some residential uses.

- Predominant visual character should be the built environment and natural landscape.

- Buffer treatments should incorporate existing and new vegetation, berms, and other desirable design features to complement and enhance the visual quality of the corridor.

- Vehicle-related activities such as parking lots, deliveries, and outdoor operations should be screened.

  Staff finds this proposal satisfies the requirements in the 2045 Comprehensive Plan for Urban/Suburban CCCs through preservation of existing buffering and screening of vehicle-related activities from adjacent properties and right-of-way.

The property is also located within the Five Forks CCA.

- Development at the intersection of John Tyler Highway (Route 5) and Ironbound Road primarily serves nearby residential neighborhoods. The principal suggested uses are community-scale and neighborhood commercial and office uses. Moderate density residential development is encouraged as a secondary use. Development should tie into the larger Five Forks Area with complementary building types and connections to surrounding commercial and residential development.

  Staff finds that the proposed Pre-K Center will serve the surrounding residential neighborhoods, with the conditioned elevations complimenting existing development surrounding the school.

PRIMARY PRINCIPLES FOR THE FIVE FORKS AREA

The Board of Supervisors adopted Primary Principles for the Five Forks Area of James City County in 2004. These Principles act as a guide for future development. Staff finds this proposal to be consistent with the Principles as follows:

Transportation Principles:

- While not one of the specific recommended actions, staff finds that the roadway improvements shown on the Master Plan "Capitalize on and Enhance the Existing Roadway Network" with the proposed addition of one egress lane for the Bright Beginnings bus drop-off. Staff also finds that the Pedestrian and Bicycle facilities that will be provided during the construction plan stage "Promote pedestrian and bicycle facility interconnectivity within Five Forks Area" with the improvement of the existing sidewalk and the construction of a bike lane along Ironbound Road.

Environmental Principles:

- This proposal attempts to maintain and improve water quality and reduce flooding risk in the Mill Creek and Powhatan Creek Watersheds and treating existing and additional stormwater runoff by minimizing impervious cover where possible and implementing permeable pavers in parking areas as mentioned in the Community Impact Statement.

Land Use Principles:

- This proposal identifies and utilizes the vacant property at 3175 Ironbound Road that was formerly occupied by a single-family residence. The proposal also promotes mixed use, pedestrian-friendly land-use patterns through contributing to a healthy mix of uses.

  Overall staff finds this application to be generally consistent with the Primary Principles for the Five Forks Area.

FINDING OF CONSISTENCY

Section 15.2-2232 of the Code of Virginia states, in part, that no public facility be allowed unless the Planning Commission finds the location of the Pre-K Center "substantially" consistent with the adopted Comprehensive Plan. As previously stated, in the *Our County, Our Shared Future: James City County 2045 Comprehensive Plan* Land Use Map, Bright Beginnings Pre-K Center at Clara Byrd Baker Elementary School is designated as Low Density Residential. Schools are considered a Group 2 recommended use in in the 2045 Comprehensive Plan. Also, staff finds this proposal consistent with the Comprehensive Plan since schools are a recommended use in land designated Low Density Residential and the Bright Beginnings Pre-K Center at Clara Byrd Baker Elementary School will serve County students and because it is a public facility.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of these applications to the Board of Supervisors, subject to the proposed SUP conditions. Staff also recommends that the Planning Commission find this application consistent with Section 15.2-2232 of the Code of Virginia.

BL/md
RZ-SUP24-2BrtBgCBB

Attachments:
1. Proposed Conditions
2. Location Map
3. Master Plan
4. Building Elevations
5. Community Impact Statement
6. Traffic Impact Analysis Resolution
7. Resolution for Consistency with the Adopted Comprehensive Plan

PROPOSED CONDITIONS FOR CASE NO. RZ-24-0002/SUP-24-0002. BRIGHT BEGINNINGS

PRE-K CENTER AT CLARA BYRD BAKER ELEMENTARY SCHOOL REZONING

AND SPECIAL USE PERMIT

1. *Master Plan.* This Special Use Permit ("SUP") shall apply to property consisting of parcels located at 3175 Ironbound Road and 3131 Ironbound Road and further identified as James City County Real Estate Tax Map Parcel Nos. 4710100057 and 4710100058, respectively (together, the "Property"). The SUP shall be valid for the operation of an approximately 41,326-square-foot Pre-K Center (the "Project"). All final development plans for the Project shall be consistent with the Master Plan entitled, "Bright Beginnings Pre-K Center Clara Byrd Baker Elementary School Conceptual Master Plan Update" prepared by Alpha Corporation and dated March 2024 (the "Master Plan"), with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance, as amended.

2. *Subdivision*. Prior to final site plan approval for the Project, a plat of subdivision shall be recorded for the Property to allow the Project to be on one parcel of property.

3. *Architectural Review*. The design and materials of the Project shall be consistent with the elevations, titled "Pre-K Center at CBB ES Exterior Elevations," dated April 1, 2024 (the "Elevations"), and submitted with Z-24-0002/SUP-24-0002, as determined by the Director of Planning. Prior to final site plan approval, all architectural elevations, building materials, colors, signage, site lighting, and hardscapes shall be submitted to the Director of Planning for the Director of Planning's approval for consistency with the Elevations.

4. *Traffic Improvements*. Prior to final site plan approval, the recommended improvement and mitigation measures listed within the Traffic Impact Analysis titled "Traffic Impact Analysis Bright Beginnings at Clara Byrd Baker Elementary School" prepared by Gorove Slade, sealed April 2024, shall be guaranteed in a manner acceptable to the County Attorney. The recommended improvement shall be installed prior to the issuance of any Certificate of Occupancy for the Project.

5. *Lighting.* All new exterior light fixtures on the Property, including new building lighting, shall have recessed fixtures with no lens, bulb, or globe extending below the casing. All new light poles shall not exceed 20 feet in height from finished grade. No light trespass, defined as 0.1 foot-candle or higher shall extend across any property line. A lighting plan shall be approved by the Director of Planning or designee prior to final site plan approval.

6. *Screening of Site Features.* All dumpsters and roof and ground-mounted HVAC and mechanical units located on the Property shall be screened by an enclosure composed of masonry, closed-cell PVC, prefinished metal, or cementitious panels, in detail and colors to blend with adjacent building materials. Such features and enclosures shall be shown on the site plan and shall be reviewed and approved by the Director of Planning or designee for consistency with this condition prior to final site plan approval.

7. *Special Stormwater Criteria.*
   a. The application of Special Stormwater Criteria ("SSC") practices are required for the Project and shall be shown on the site plan. The number of practices required shall be per Table SSC-1 of the Stormwater

Resource Protection Division's form entitled, "Stormwater-Special Criteria SSC in James City County, Virginia". Practices to be used for the Project shall be approved by the Director of Stormwater and Resource Protection Division.

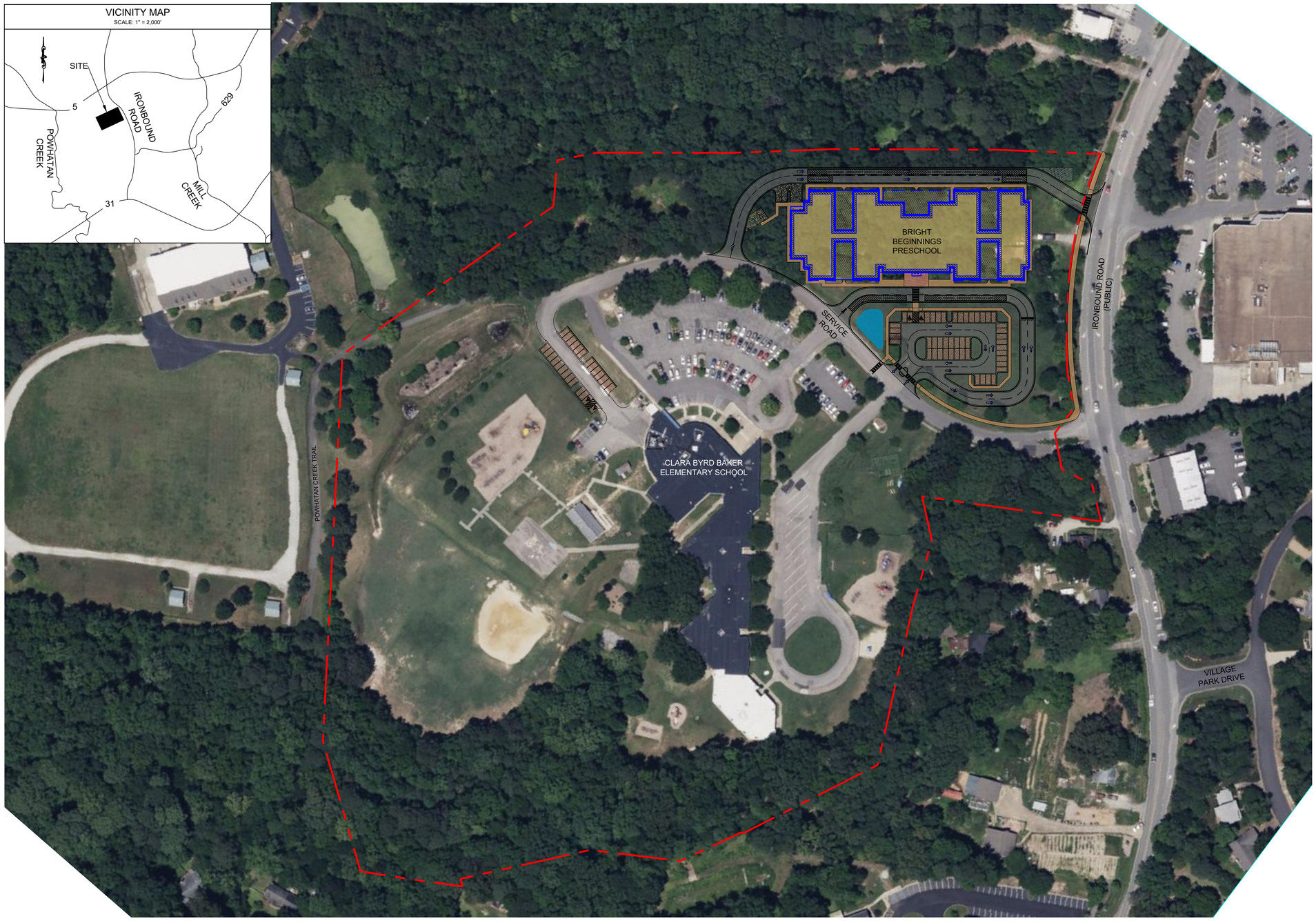
b. If permeable pavement is used on the Project, it must be counted toward needed SSC credit and not as part of a Virginia Runoff Reduction Method treatment train. Permeable pavement, if used, may only be applied to parking stalls.

8. *Pond Fencing*. Any wet or extended detention dry ponds included on the site plan will be completely surrounded by a fence that shall be black or of a neutral color and shall be between four feet and five feet in height with adequate gated width for vehicular access to the pond for maintenance. The fencing must be of such a material and installed in such a manner as to prevent unauthorized entry into the pond area. If chain-link fencing is used, it shall be black in color.

9. *Commencement for Construction*. If construction has not commenced on the Project within 36 months from the issuance of the SUP, the SUP shall become void. Construction shall be defined as (i) obtaining permits for building construction, and (ii) installation of footings and/or foundations.

10. *Severance Clause*. This SUP is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

JCC SUP-24-0002/Z-24-0002
Bright Beginnings Pre-K Center at Clara Byrd Baker



SITE DATA

LEGAL REFERENCE	
OWNER	WILLIAMSBURG JCC PUBLIC SCHOOLS
TAX PARCEL	4710100058
ADDRESS	3131 IRONBOUND RD. WILLIAMSBURG, VA 23185
PARCEL AREA	1,120,364 SF / 25.72 AC
ZONING	
EXISTING	PUBLIC LANDS SUP
PROPOSED	PUBLIC LANDS SUP
CORRIDORS	IROUNDBOUND RD COMMUNITY CHARACTER FIVE FORKS COMMUNITY CHARACTER
USE	
EXISTING	PUBLIC SCHOOL
PROPOSED	PUBLIC SCHOOL
SETBACKS	
FRONT	50 FT
SIDE	15 FT
REAR	15 FT
BUILDING	15 FT FROM PERIMETER BUFFER
LAND USE SUMMARY	
EXISTING IMPERVIOUS AREA	
BUILDING	52,800 SF / 1.21 AC / 4.71%
SF RESIDENCE	3,472 SF / 0.08 AC / 0.31%
OTHER	130,391 SF / 2.99 AC / 11.64%
TOTAL	186,663 SF / 4.29 AC / 16.66%
PROPOSED IMPERVIOUS AREA	
BUILDING	94,800 / 2.18 AC / 8.46%
ENCLOSED PLAY YARD	11,472 SF / 0.26 AC / 1.02%
OTHER	203,587 SF / 4.67 AC / 18.17%
TOTAL	309,859 SF / 7.11 AC / 27.666%
OPEN SPACE AREA	
EXISTING	933,701 SF / 21.43 AC / 83.34%
PROPOSED	810,505 SF / 18.61 AC / 72.34%
UTILITIES	
WATER	PUBLIC
SEWER	PUBLIC
SCHOOL CAMPUS SUMMARY	
EXISTING STUDENTS	551 (K-5 = 473, PRE-K = 78)
PROPOSED STUDENTS	725 (K-5 = 473, PRE-K = 252)
PARKING SUMMARY	
EXISTING	
PARKING	152, INCLUDING 6 ACCESSIBLE
BUS	15
PROPOSED	
PARKING	219, INCLUDING 9 ACCESSIBLE
BUS	21

GENERAL NOTES

1. THE PURPOSE OF THIS REQUEST IS TO PROVIDE A NEW 252-STUDENT PRESCHOOL CENTER AT THE EXISTING SCHOOL SITE.
2. THIS CONCEPTUAL PLAN IS A GRAPHIC REPRESENTATION SHOWING APPROXIMATE BUILDING SIZES, ROADWAYS, PARKING, AND OTHER KEY SITE DESIGN ELEMENTS TO SHOW THE INTENT OF THIS PROJECT.
3. HATCHING SHOWN IS FOR GENERAL INFORMATIONAL PURPOSES.
4. BUILDING FOOTPRINTS SHOWN ARE WITH RESPECT TO OUTER WALL LINES.
5. DIMENSIONS SHOWN ARE FROM FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF STRUCTURE UNLESS OTHERWISE NOTED.
6. ALL BUILDING ENTRANCES, SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT ADAA AND ABAA GUIDELINES AS THEY PERTAIN TO THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS, AND SIGNAGE.
7. ALL ROADWAY AND PARKING STRIPING AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD.
8. ALL NEW ELECTRICAL, COMMUNICATIONS, AND GAS ALIGNMENTS, INCLUDING LOCATIONS FOR ACCESS/MANHOLES, SHALL BE COORDINATED WITH ALL FRANCHISE UTILITY PROVIDERS.
9. STORMWATER MANAGEMENT, INCLUDING LOW IMPACT DEVELOPMENT (LID) FEATURES SUCH AS BIORETENTION AND PERMEABLE PAVERS, WILL BE IMPLEMENTED AS FEASIBLE TO ENSURE THE REQUIREMENTS OF THE VIRGINIA NPDES STORMWATER PROGRAM AND ALL OTHER LOCAL AND STATE REGULATIONS ARE MET.
10. WHERE EXISTING SOILS DO NOT MEET MINIMUM INFILTRATION RATES FOR THE USE OF SELECTED INFILTRATION FEATURES, SOIL MATERIAL IS EXPECTED TO BE REMOVED AND REPLACED WITH SUITABLE MATERIAL TO SUPPORT THE MINIMUM DESIGN INFILTRATION RATES IN CONJUNCTION WITH UNDERDRAIN SYSTEMS WHERE NECESSASRY.
11. STORMWATER DETENTION SYSTEMS UNDER ROADWAYS AND PARKING LOTS ARE ANTICIPATED.

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www.alphacorporation.com

BRIGHT BEGINNINGS PRE-K CENTER

CLARA BYRD BAKER ELEMENTARY SCHOOL

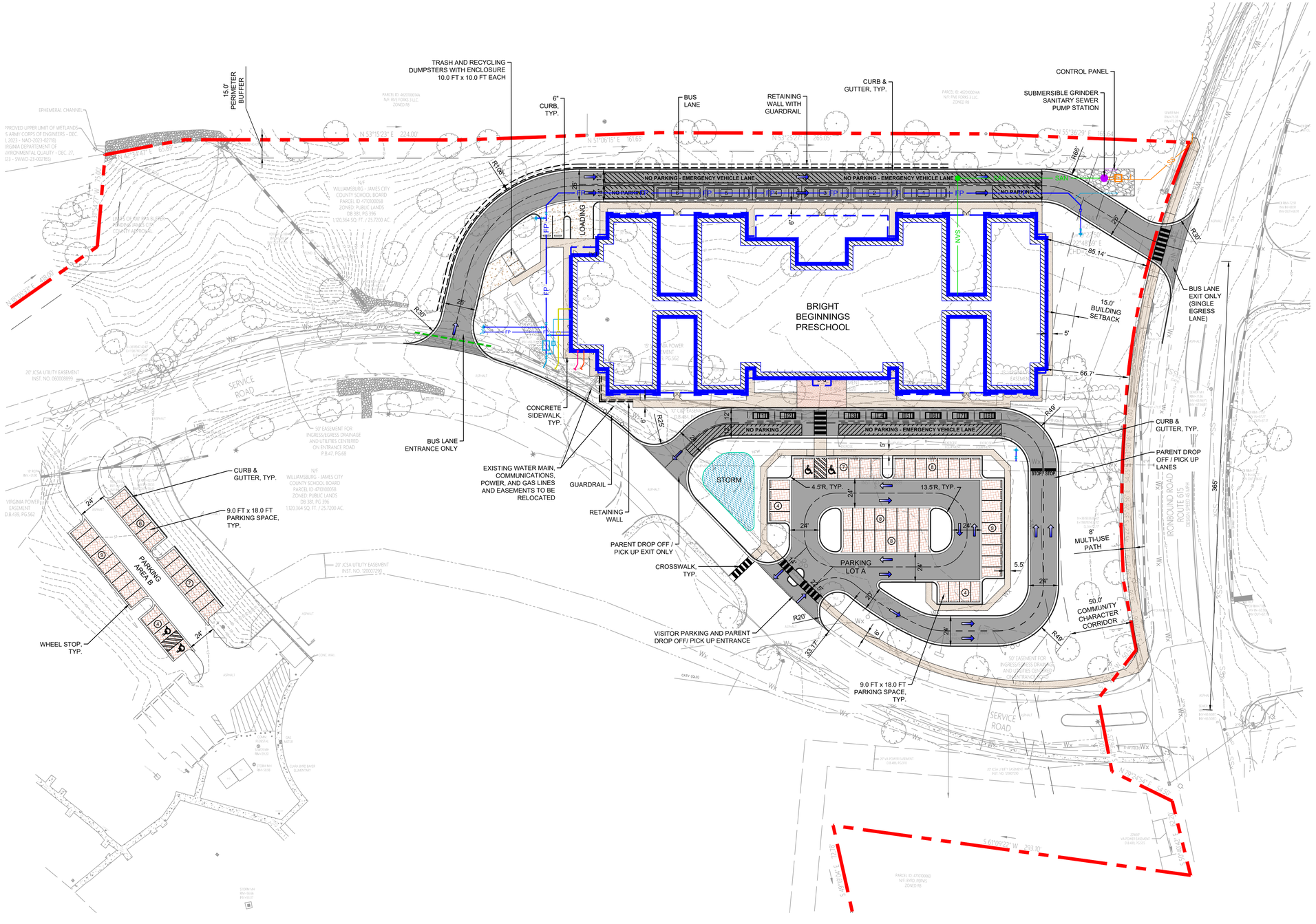
WILLIAMSBURG JAMES CITY COUNTY

CONCEPTUAL MASTER PLAN UPDATE

REV. MARCH 2024

0 80 160 240

GRAPHIC SCALE IN FEET



PROJECT INFORMATION

LEGAL REFERENCE	
TAX PARCEL	4710100058
ADDRESS	3131 IRONBOUND RD. WILLIAMSBURG, VA 23185
PROJECT AREA SUMMARY	
DISTURBED AREA	
WETLANDS	0.00 AC
SURFACE WATERS	0.00 AC
UPLAND AREA	5.00 AC +/-
TOTAL	5.00 AC +/-
FIRM MAP	51095C0182D, 12/16/15
FLOOD ZONE(S)	X
FLOOD ELEVATION	N/A
WATERSHED	POWHATAN CREEK
STORMWATER MANAGEMENT	LOW IMPACT DEVELOPMENT (LID)
BUILDING SUMMARY	
NO. STORIES	1
MAX. HEIGHT	25' - 7 3/8"
CONSTRUCTION TYPE	II-B
FOOTPRINT	42,000 SF
F.F.E.	75.50 +/-
DESCRIPTION	PUBLIC PRESCHOOL
PARKING SUMMARY	
STAFF PARKING	19, INCLUDING 1 ACCESS. & 7 EX. RELOCATED
VISITOR PARKING	48, INCLUDING 2 ACCESSIBLE
TOTAL PARKING	67, INCLUDING 3 ACCESSIBLE
BUS LOOP QUEUE	375 LF
PARENT DROP OFF QUEUE	640 LF

LEGEND

- PROPERTY LINE
- PERIMETER BUFFER
- CENTERLINE ROAD/ AISLE
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- DECORATIVE CONCRETE
- PERMEABLE PAVERS
- STORMWATER MANAGEMENT
- WTR — DOMESTIC WATER
- FP — FIRE SERVICE
- SAN — GRAVITY SANITARY SEWER
- SS — SANITARY SEWER FORCE MAIN
- G — GAS
- E — ELECTRIC
- COMM — COMMUNICATIONS
- STORM

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BRIGHT BEGINNINGS PRE-K CENTER

CLARA BYRD BAKER ELEMENTARY SCHOOL

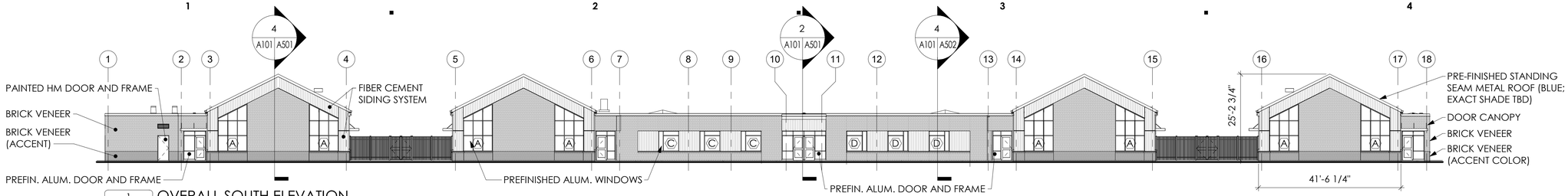
WILLIAMSBURG JAMES CITY COUNTY

CONCEPTUAL PRESCHOOL ADDITION

REV. MARCH 2024

0 40 80 120

GRAPHIC SCALE IN FEET



1 A101 A401 OVERALL SOUTH ELEVATION
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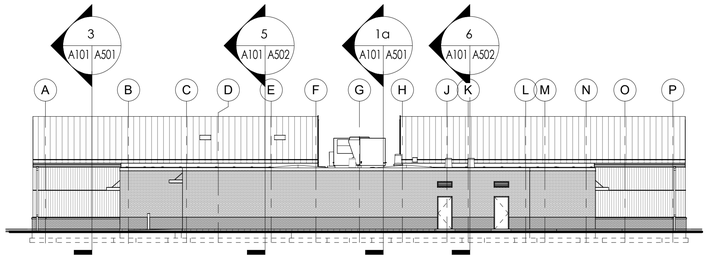

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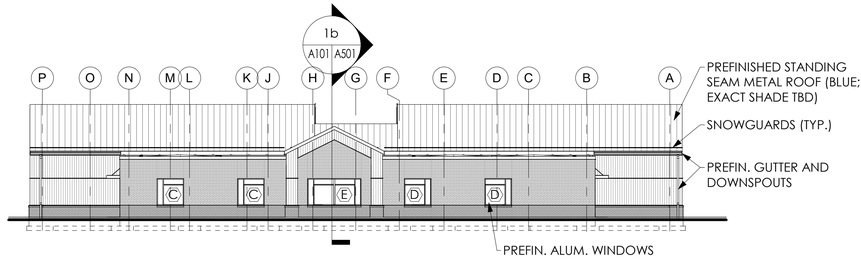

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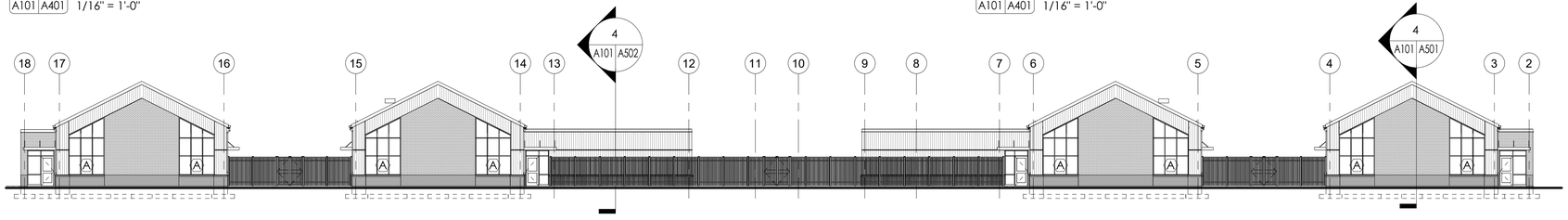

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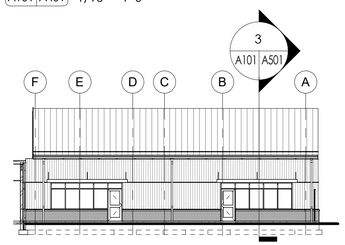

5 A101 A401 PARTIAL EAST ELEVATION - PLAY AREA A1
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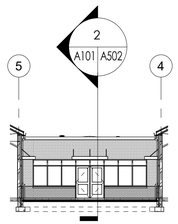

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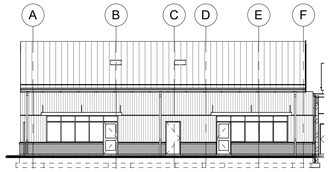

7 A101 A401 PARTIAL WEST ELEVATION - PLAY AREA A1
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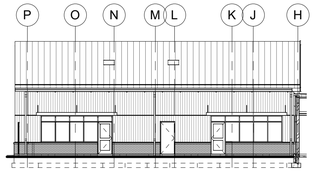

8 A101 A401 PARTIAL EAST ELEVATION - PLAY AREA A2
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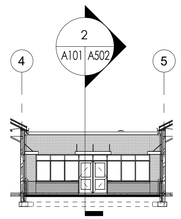

9 A101 A401 PARTIAL SOUTH ELEVATION - PLAY AREA A2
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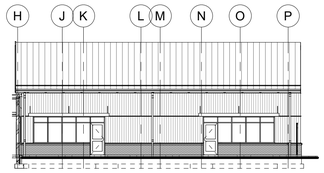

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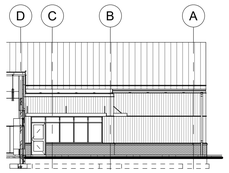

11 A101 A401 PARTIAL EAST ELEVATION - PLAY AREA B1
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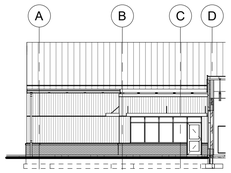

12 A101 A401 PARTIAL WEST ELEVATION - PLAY AREA B1
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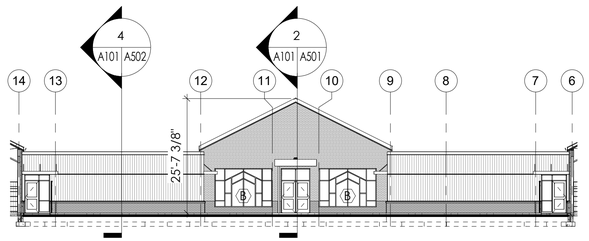

13 A101 A401 PARTIAL NORTH ELEVATION - PLAY AREA B1
1/16" = 1'-0"

NOTE: FENCING NOT SHOWN, FOR CLARITY.

GRAPHIC SCALE 0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

DISCLAIMER: GRAPHIC INFORMATION IN DRAWING MAY NOT NECESSARILY BE TO SCALE. USE DIMENSIONAL TEXT FOR ACCURACY. DO NOT SCALE.

WILLIAMSBURG JAMES CITY COUNTY PUBLIC SCHOOLS

Williamsburg James City County Public Schools

Pre-K Center at CBB ES

Clara Byrd Baker ES
3131 Ironbound Road
Williamsburg, VA 23185

Architect of Record
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7814 Carousel Lane
Suite 200
Richmond, VA 23294
T: 804-270-7222

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Key Information

No:	Revision	Date

Sheet Title:
EXTERIOR ELEVATIONS

Drawn By:	Author
Issue Date:	April 1, 2024
Scale:	As Noted
BJUA Project No.:	23002.00
SDE No.:	131-04-00-100
Sheet No.:	A401

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ALPHA CORPORATION

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Virginia Beach, VA 23452
Phone: 757.533.9368
Fax: 757.533.9432

March 20, 2024

Bright Beginnings Pre-K Center
Clara Byrd Baker Elementary School
Civil Design Narrative – Special Use Permit Application
Williamsburg James City County, Virginia

1.0 Project Summary

The intent of this narrative is to identify key civil engineering design standards that will be used throughout the project design process. The information presented in this narrative is preliminary and based on the Special Use Permit Design Documents. This narrative will be refined as the project design progresses.

1.1 Project Description

The purpose of this project is to provide a new 252-student preschool center at the existing Clara Byrd Baker Elementary School site. The project site is located at 3131 Ironbound Road, Williamsburg, Virginia.

The one-story stand-alone building will be approximately 42,000 sf and includes classrooms, restrooms, meeting rooms, offices, multipurpose space, indoor and outdoor play areas, and administrative space for students ages 2-5. Supporting facilities include site development, visitor parking lot, parent drop off/pick up lanes, staff parking area, bus lanes, retaining walls, sidewalks, utilities, lighting, landscaping, green spaces, storm drainage, and stormwater management.

Approximately 5.0 acres will be disturbed for this work.

1.2 Site Layout

The preschool building is situated at the entrance to the existing elementary school site and fronts Ironbound Road. The building has been placed as placed as far north as possible on the undeveloped portion of the site while maintaining perimeter buffers and the community character corridor while providing emergency access along the rear of the building as coordinated with the fire department.

The site supports 252 preschool students along with 78 staff. Separate entrances have been provided to separate parents and visitors from buses and staff. It is the intention for staff of the preschool to use spaces in the existing parking lot across the existing school service road and construct additional staff parking for the elementary school near the elementary school service entrance.

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Convenient and safe pedestrian access will be provided throughout the project site to facilitate pedestrian access and accessibility between buildings, bus lanes, parent drop off lanes, and parking areas. The existing sidewalk along Ironbound Road is to be removed and replaced with a wider sidewalk to promote walkability. Crosswalks will be provided where possible to promote designated pedestrian paths to make pedestrians more visible to motorists and increase driver recognition when crossing lanes of traffic.

All building entrances, sidewalks, curb ramps, ramps, and accessible parking spaces will be constructed in accordance with the current ADAA and ABAA guidelines as they pertain to the required grades, construction materials, specifications, and signage.

2.0 Existing Site Conditions

A topographic survey has been provided by Vanasse Hangen Brustlin, Inc. (VHB), sealed January 18, 2024.

The existing topography varies throughout the project area. The area to the south and southeast is mostly open turf grass with minor development including fitness equipment, landscaping, fiber hut with gravel drive, and other miscellaneous items. Elevations range from 68.0 to 76.0. The area to the northeast was a single-family residential structure that has since been demolished. Remnants of the development, including driveway, remain. The area to the north and west is heavily wooded and contains steep elevations ranging from 44.0 to 76.0. A RMA buffer is located along the western edge. This area also contains an unpermitted stormwater pond. Utilities and utility easements run throughout the site in the area of the project.

3.0 Grading and Drainage Impact Statement

The site will be graded to promote positive drainage away from the proposed building and the proposed grade surrounding the building is to slope away from the finished floor. The grade elevations immediately adjacent to the building in areas without patios or walkways will be a minimum of 6.0 to 8.0-inches below the finished floor elevations and slope away from the building at a minimum of 5.0% over ten (10.0) feet.

Slopes across the parking lots are expected to vary from 1.0%-3.0%, except at ADA accessible parking areas and crosswalks which will not exceed 2.0% slopes. Areas of permeable pavers will also not exceed 2.0% slopes to promote infiltration.

Significant fill will be required for the Clara Byrd Baker building foundation due to significant differences in elevation under the building footprint, which will extend into the adjacent bus/fire lanes and will require a structurally designed retaining wall between the roadway and the perimeter buffer that could exceed 10.0 feet in height total. A lower retaining wall will also be required at the southwest corner of the building due to the proximity of the building to the existing service road.

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On-site stormwater drainage collection systems will be designed to convey runoff from the design storm event to stormwater management facilities that will maintain, to the maximum extent technically feasible, the predevelopment hydrology of the project areas.

4.0 Stormwater Management Impact Statement

Stormwater management facilities will be selected based upon the subsurface conditions, permeability of soils, and groundwater elevations found while considering topographic conditions and existing stormwater management facilities. Stormwater management, including low impact development (LID) features, such as bio-retention and permeable pavers, will be implemented as feasible to ensure the requirements of the Virginia NPDES Stormwater Program and all other local and state regulations are met.

Permeable pavers are anticipated to be used in parking areas and will be the primary treatment for proposed parking lots. Roadways, including bus lanes, and building roof drainage are anticipated to be treated by infiltration methods, such as bio-retention and underground storage systems used to detain the volume of runoff prior to release. Stormwater detention systems under the proposed roadways and parking areas is anticipated. The stormwater runoff will be collected, retained, treated, and infiltrated as required and conveyed to the northwest corner of the project site where it will discharge to the existing ephemeral channel.

Geotechnical results show Hydrologic Soil Group Class D soils at the Clara Byrd Baker project site. Class A, B, and some Class C soils are suitable for infiltration. Class D soils are not considered suitable. Where existing site soils do not meet minimum infiltration rates for the use of selected infiltration features, soil material is expected to be removed and replaced with suitable material to support the minimum design infiltration rates in conjunction with underdrain systems where necessary.

Rails or fencing will surround any stormwater management facility with standing surface water.

5.0 Water and Sewer Impact Statement

5.1 Water Supply - Domestic and Fire Protection

The proposed water system improvements for the new sprinklered preschool building will be designed to provide both domestic water and fire protection services extending from the existing 16” ductile iron water main currently running through the project site. Based on the October 2023 fire hydrant flow test results, the 16” main has adequate pressure and flow to support the proposed development. Results show a static pressure of 70 psi and a residual pressure of 60 psi at fire hydrant FHL120032 with a flow of 1,893 gpm at fire hydrants FHL120036 and FHL120037 off of Ironbound Road in the area of the project.

The existing 16” water main running through the project site is anticipated to be relocated to the perimeter of the project with a new 20.0-foot JCSA easement and the existing easement through the site will be vacated. Alpha will work with JCSA during the site plan design phase on the relocated alignment to ensure that it meets all JCSA standards.

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Fire hydrants will be provided throughout the preschool site as required to meet manual fire protection requirements. A fire department connection (FDC) is to be located a minimum of 40 feet from the building and within 50 feet of a fire hydrant.

Separate domestic and fire meters will serve the new preschool building. Domestic and fire backflows are anticipated to be installed within the buildings.

The Total Fixture Units projected for the preschool = 430.

TYPE	QTY
Water Closet	26
Lavatory	30
Sink	22
Mop sink	4
Shower	2
Drinking Fountains	5

Additionally, the building will have 12 hose bibs/ wall hydrants. Water meter sizing calculations will be provided during the Site Plan design stage.

Approximately 280 gpm is the estimated fire sprinkler demand for the building.

JCSA staff has verified that the proposed project can tie to the public water system.

5.2 Sanitary Sewer

Flows are estimated at 10 gpd/ student with a total of 252 students and 10 gpd/ faculty with a total of 78 staff.

Based on the proximity of the new preschool to the nearest point of connection, the wastewater discharge at Clara Byrd Baker is anticipated to be collected by gravity sanitary sewer lines to an onsite submersible grinder pump station that will pump to an existing 8" gravity sanitary sewer main that is part of the sewer distribution system in Ironbound Road. The building generator for the new preschool will also supply backup power for the pump station.

All sanitary sewer service laterals from the proposed buildings will be a minimum of 6-inches with a minimum slope of 1.04%.

JCSA staff has verified that there is adequate capacity available in the gravity sanitary sewer mains and receiving pump station. As excess capacity is available, a capacity analysis of the system is not provided.

All water and sanitary sewerage facilities to be dedicated to JCSA will be designed in accordance with HRPDC Regional Standards, dated June 2016, and the JCSA Design and Acceptance Criteria for Water Distribution and Sanitary Systems dated September 2023.

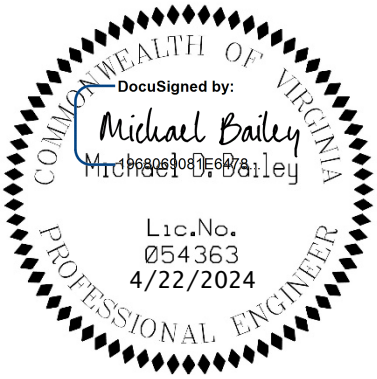
Traffic Impact Analysis

Bright Beginnings at Clara Byrd Baker Elementary School

James City County, Virginia

April 2024

Prepared for:
Mr. Daniel Hayes
Alpha Corporation
21000 Atlantic Boulevard
Dulles, Virginia



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Appendix A – VDOT TIA Scope Form
Appendix B – Turning Movement Count Data and Signal Timing Plans
Appendix C – Synchro Output – Existing 2023 Conditions
Appendix D – Synchro Output – No-Build 2025 Conditions
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Appendix F – Synchro Output – Build 2025 Conditions – without Redistricting

Executive Summary

This report summarizes the findings of the Traffic Impact Analysis (TIA) that was performed for the proposed Bright Beginnings pre-school on the northwest corner of the Ironbound Road at Clara Byrd Baker Elementary School driveway in James City County, Virginia. The development plan includes a pre-school with 252 students. The access plan includes constructing one exit-only driveway on Ironbound Road, directly across from the Harris Teeter shopping center driveway, and making two connections to the existing elementary school driveway. If approved, the pre-school is expected to be complete in 2025.

In addition to the proposed pre-school, Williamsburg-James City County Public Schools (WJCCPS) is in the process of redistricting, and they are planning to increase the enrollment of Clara Byrd Baker Elementary School by approximately 120 students. This study accounts for all anticipated increases in enrollment, including those resulting from the proposed pre-school and the planned redistricting. The proposed exit-only driveway would serve school buses only, seeking to segregate bus traffic from passenger cars driven by teachers and parents. The additional access will help to alleviate any added internal congestion from the proposed pre-school, while also providing safer conditions for students and drivers by separating bus traffic.

This study was performed based on the TIA scope meeting with the Virginia Department of Transportation (VDOT) on November 17.

Site Location and Study Area

The site is located on the west side of Ironbound Road, adjacent to the existing Clara Byrd Baker Elementary School. Based on discussion with the County and VDOT, the following scenarios were analyzed:

- Existing 2023 conditions
- No-Build 2025 conditions
- Build 2025 conditions

The weekday AM peak hour was studied for the following intersections:

1. John Tyler Highway at Ironbound Road
2. Ironbound Road at Harris Teeter Driveway / Proposed School Driveway
3. Ironbound Road at Service Driveway / School Driveway

Recommendations

Based on the results of the analysis, all study intersections will operate with acceptable queueing and delay with the following improvement:

<u>Ironbound Road at Proposed Site Driveway:</u>

- Construct the site driveway with one egress lane

Introduction

This report summarizes the findings of the Traffic Impact Analysis (TIA) that was performed for the proposed Bright Beginnings pre-school on the northwest corner of the Ironbound Road at Clara Byrd Baker Elementary School driveway in James City County, Virginia. The development plan includes a pre-school with 252 students. The access plan includes constructing one exit-only driveway on Ironbound Road, directly across from the Harris Teeter shopping center driveway, and making two connections to the existing elementary school driveway. If approved, the pre-school is expected to be complete in 2025.

In addition to the proposed pre-school, Williamsburg-James City County Public Schools (WJCCPS) is in the process of redistricting, and they are planning to increase the enrollment of Clara Byrd Baker Elementary School by approximately 120 students. This study accounts for all anticipated increases in enrollment, including those resulting from the proposed pre-school and the planned redistricting. The proposed exit-only driveway would serve school buses only, seeking to segregate bus traffic from passenger cars driven by teachers and parents. The additional access will help to alleviate any added internal congestion from the proposed pre-school, while also providing safer conditions for students and drivers by separating bus traffic.

This study was performed based on the TIA scope meeting with the Virginia Department of Transportation (VDOT) on November 17.

Scope of the Traffic Study

Based on discussions with the County and VDOT, the following intersections were analyzed:

1. John Tyler Highway at Ironbound Road
2. Ironbound Road at Harris Teeter Driveway / Proposed School Driveway
3. Ironbound Road at Service Driveway / School Driveway

Figure 1 shows the site location and study intersections and Figure 2 shows the preliminary site plan.

Figure 1: Site Location and Study Intersections

Figure 2: Preliminary Site Plan

Existing Conditions

Existing Roadway Network

Existing lane configurations and turn lane storage lengths were collected in the field by Gorove Slade and signal timing information was provided by VDOT. A description of the major roadways within the study area is presented below in Table 1. The existing lane configuration is shown in Figure 3.

Table 1: Existing Roadway Network

Roadway	RTE #	VDOT Classification	Legal/Design Speed Limit (mph)	AADT (vpd)
Ironbound Road	615	Major Collector	45	5900*
John Tyler Memorial Highway	5	Minor Arterial	35	7200*
* VDOT 2021 ADT Traffic Data				

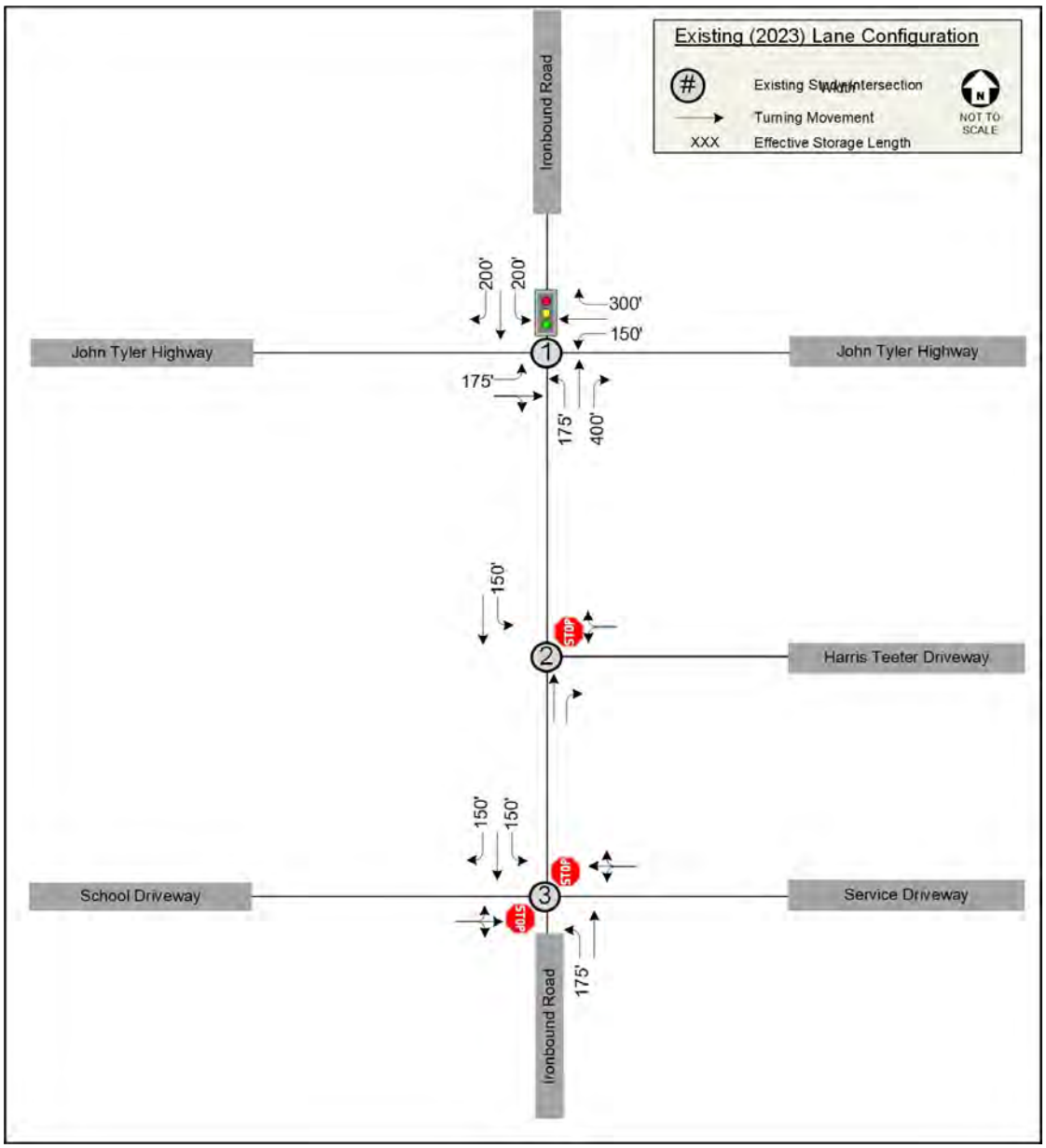

Figure 3: Existing (2023) Lane Configuration

Existing Traffic Volumes

Clara Byrd Baker Elementary is open from 8:55 AM – 3:25 PM, so the intake / dismissal of students does not align with standard AM peak hour (7:00 – 9:00) and PM peak hour (4:00 – 6:00) times of the adjacent roadway network. To properly capture the peak hour traffic volumes related to the school, the weekday AM peak hour (8:30 to 10:30 AM) was collected. It should also be noted that the PM peak hour was not analyzed because staff leave the school over a longer period of time which is less impactful to the surrounding roadway.

Turning movement counts were conducted by Burns Service Inc. (BSI) during the week of November 15 at the following intersections:

1. John Tyler Highway at Ironbound Road
2. Ironbound Road at Harris Teeter Driveway / Proposed School Driveway
3. Ironbound Road at Harris Teeter Driveway / School Driveway

The existing peak hour traffic volumes are shown in Figure 4, and the turning movement count data is included in the Appendix.

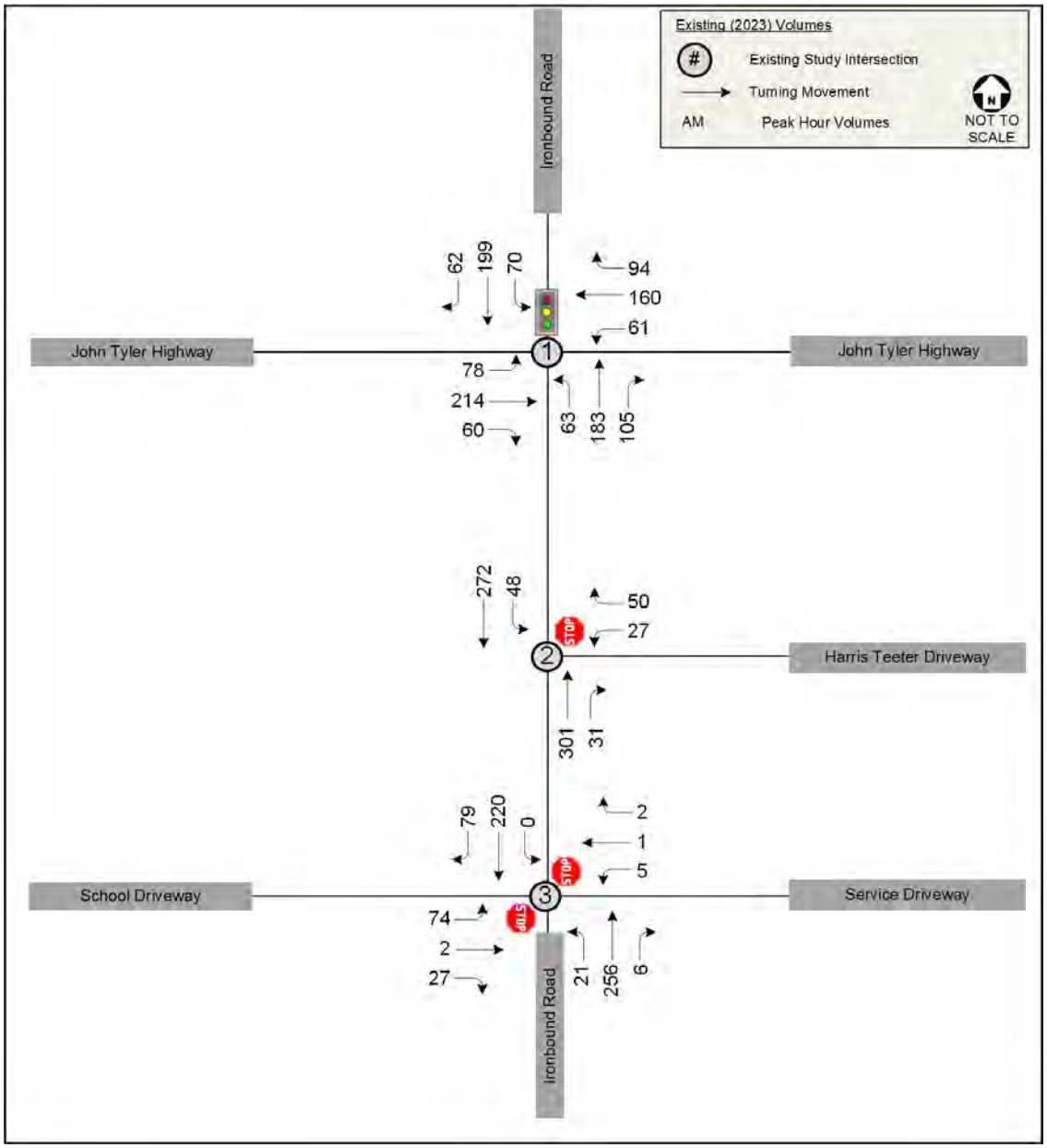

Figure 4: Existing (2023) Peak Hour Traffic Volumes

No-Build Conditions

In order to determine the traffic impact of the proposed pre-school, a comparison of the future conditions of the study intersections must be made. This is achieved by analyzing the horizon year (2025) with the traffic generated by the proposed pre-school. The future year condition without construction of the pre-school is called the no-build condition, and it is determined by projecting the existing traffic to the build-out year using an annualized growth rate and adding it to the traffic from approved (but not yet built) developments in the study area. One approved development was identified during the scope meeting to be included in this study.

Background Traffic Growth

As discussed in scope meeting, an annual traffic growth rate of 1.0% was applied to the 2023 traffic count volumes for two years to estimate the background traffic growth.

The Governors Grove Self-Storage Facility was the only approved development identified in the scope meeting to be included in the analysis. The approved development trips were obtained from Exhibit 14a (found on page 35) of the Traffic Analysis for Proposed Governors Grove Section 3 TIA, which was performed by DRW Consultants, LLC in May of 2023. The exhibit is included in the appendix.

The approved development trips are (shown in Figure 5) were added to the background traffic growth to estimate the No-Build 2025 traffic volumes, which are shown in Figure 6.

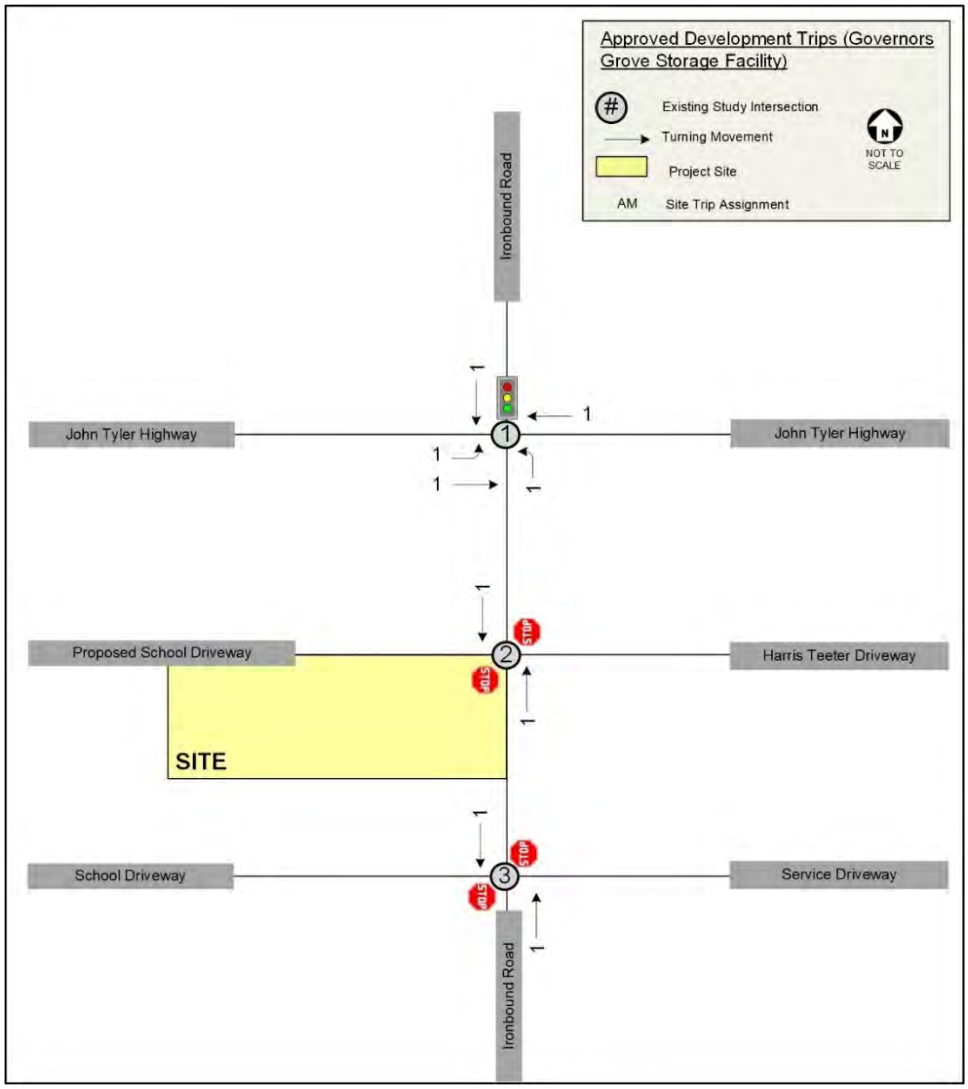

Figure 5: Approved Development Trips

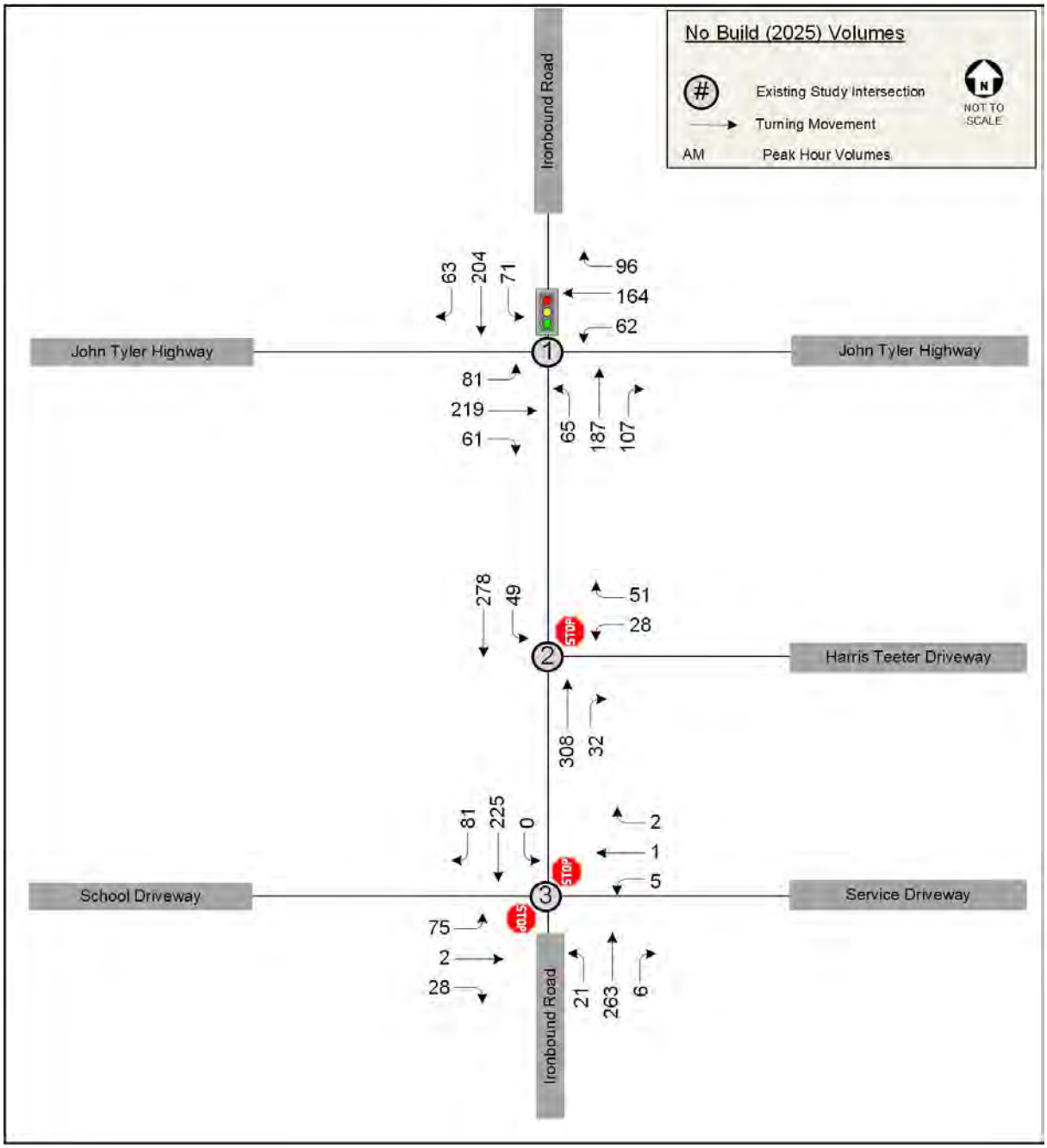

Figure 6: No-Build (2025) Peak Hour Traffic Volumes

Build Conditions

Site Trip Generation

Table 2 shows the anticipated trip generation potential of the proposed pre-school during the weekday AM peak hour based on the current traffic count data, current school enrollment, and the projected increase in school enrollment.

Table 2: Elementary Pre-School – Trip Generation

Land Use	Size	AM Peak Hour	
		Enter	Exit
Current Enrollment[1]	551 students	101	103
Parents and Staff[2] = 78		85	87
Buses[2] = 16		16	16
Future Enrollment	845 students	155	158
Parents and Staff[3] = 120		130	133
Buses[3] = 25		25	25
Net Difference		54	55
Net Staff / Parent Trips		45	46
Net Bus Trips		9	9

[1]Site trip generation based on traffic count volume data
[2]Site trip data provided by WJCC PS
[3]Buses and staff were scaled proportionally to accommodate future enrollment

The existing traffic count data was used to determine the entering and exiting trips (Current Enrollment) for Clara Byrd Baker Elementary School during the AM peak hour. In conjunction with construction of the proposed Bright Beginnings pre-school, WJCCPS is in the process of redistricting, which is projected to increase the overall number of students at Clara Byrd Baker Elementary School. The Future Enrollment trip generation accounts for all projected increases in school trips, including those generated by the pre-school, and these numbers were determined by proportionally increasing the number of trips based on the projected increase in student enrollment. Total trips are further separated into staff / parent and bus trips. It is assumed that 100% of the buses will arrive / leave during the peak hour.

Of the 551 current students enrolled at Clara Byrd Baker Elementary, 78 students will be relocated to the proposed Bright Beginnings school addition. The redistricting is anticipated to add an additional 120 new students to the current enrollment. The total future school population will be 845 students (551 existing + 252 new Bright Beginnings + 120 from redistricting – 78 existing students to be relocated to the proposed school addition).

Site Trip Distribution

The site trip distribution was determined based on discussion with VDOT, a review of existing traffic patterns, surrounding land uses, and engineering judgement. The following primary site trip distribution was applied:

- 15% to / from the north on Ironbound Road
- 15% to / from the east on John Tyler Highway
- 10% to / from the west on John Tyler Highway
- 60% to / from the south on Ironbound Road

Figure 7 shows the trip distribution for staff and parents, while Figure 9 shows the distribution for buses only. The trip assignment for staff and parents is shown in Figure 11 and assignment for buses is shown in Figure 13. Total site trips, combining parent and staff trips with bus trips, is shown in Figure 15.

Additionally, when redistricting is not taken into consideration, following primary site trip distribution is applied to match the existing count:

- 75% to / from the north on Ironbound Road
- 25% to / from the south on Ironbound Road

Figure 8 and Figure 10 show the trip distributions with no redistricting for parents and staffs, and bus respectively. Figure 12 and Figure 14 show the trip assignment with no redistricting for parents and staffs, and bus respectively. Total site trip combining parent and staff trips with bus trips with no redistricting is shown in Figure 16.

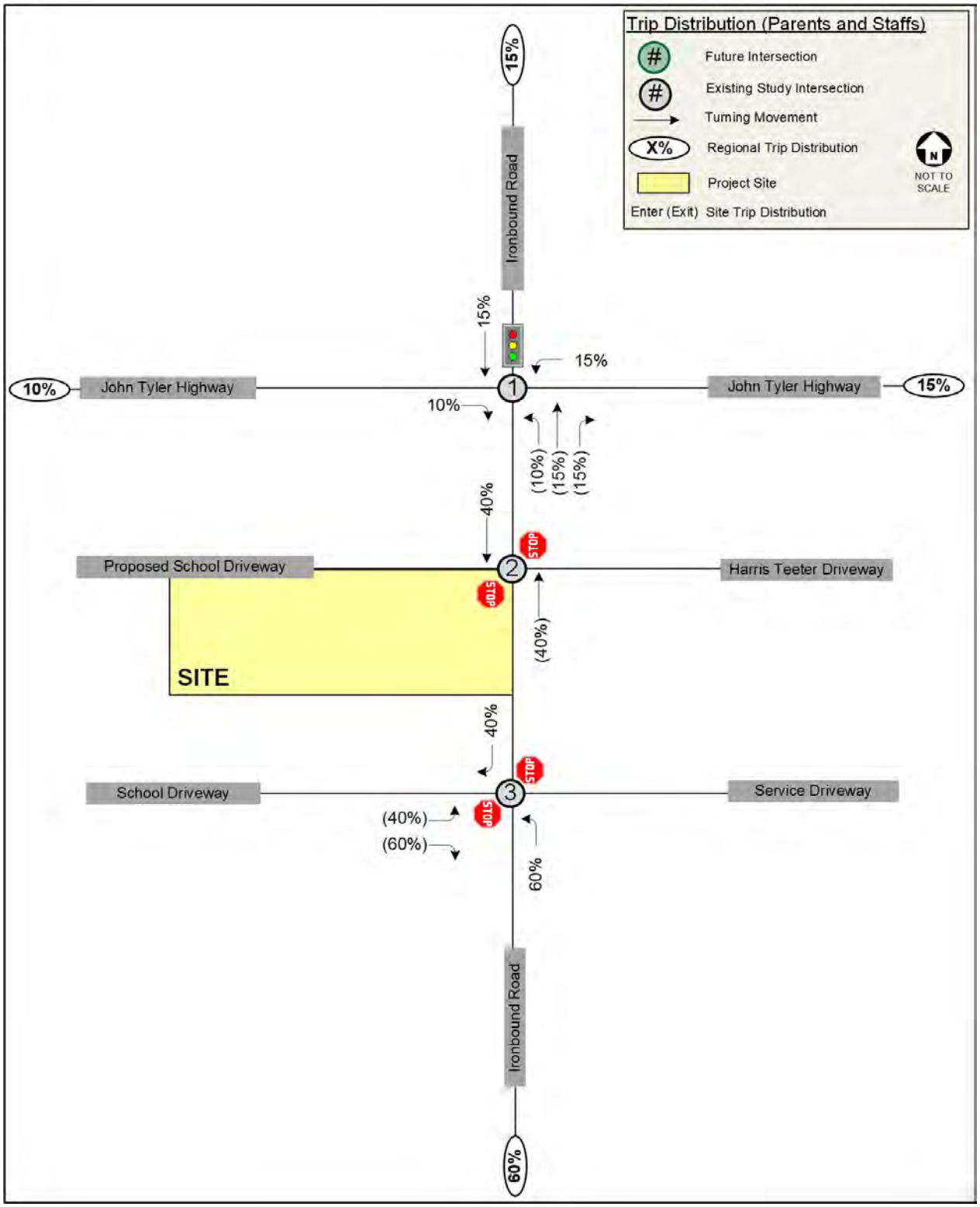

Figure 7: Trip Distribution (Parents and Staffs)

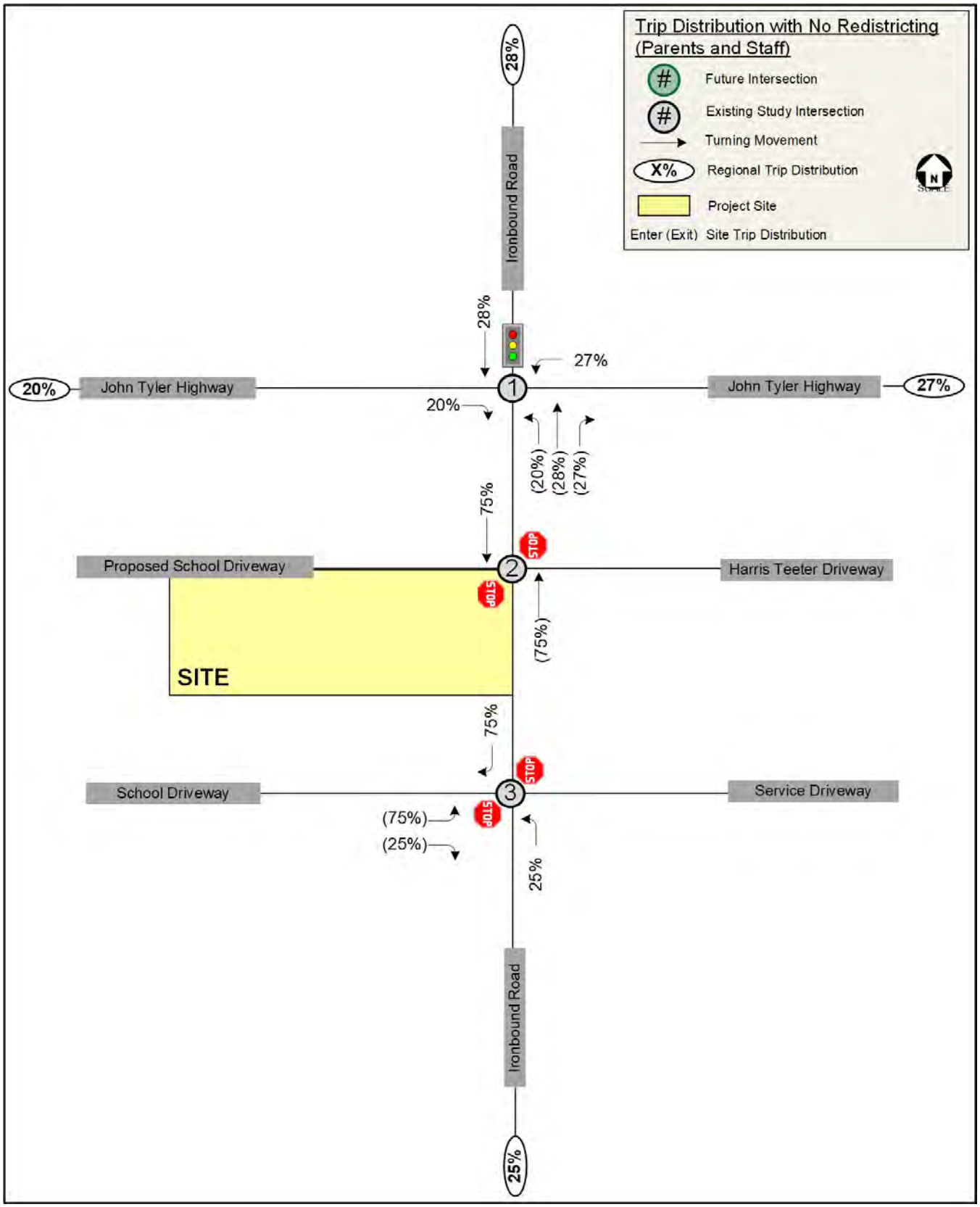

Figure 8: Trip Distribution with No Redistricting (Parents and Staffs)

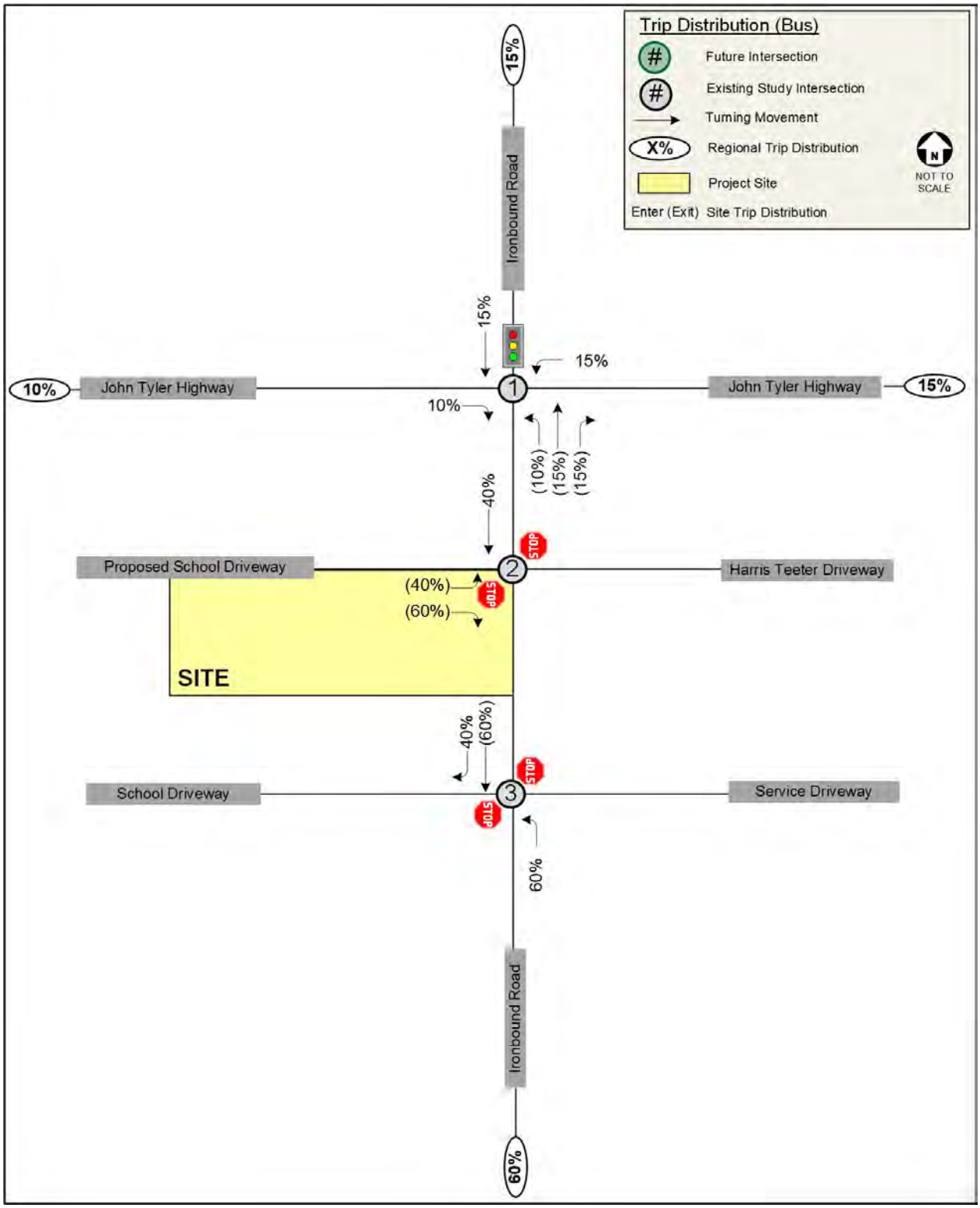

Figure 9: Trip Distribution (Bus)

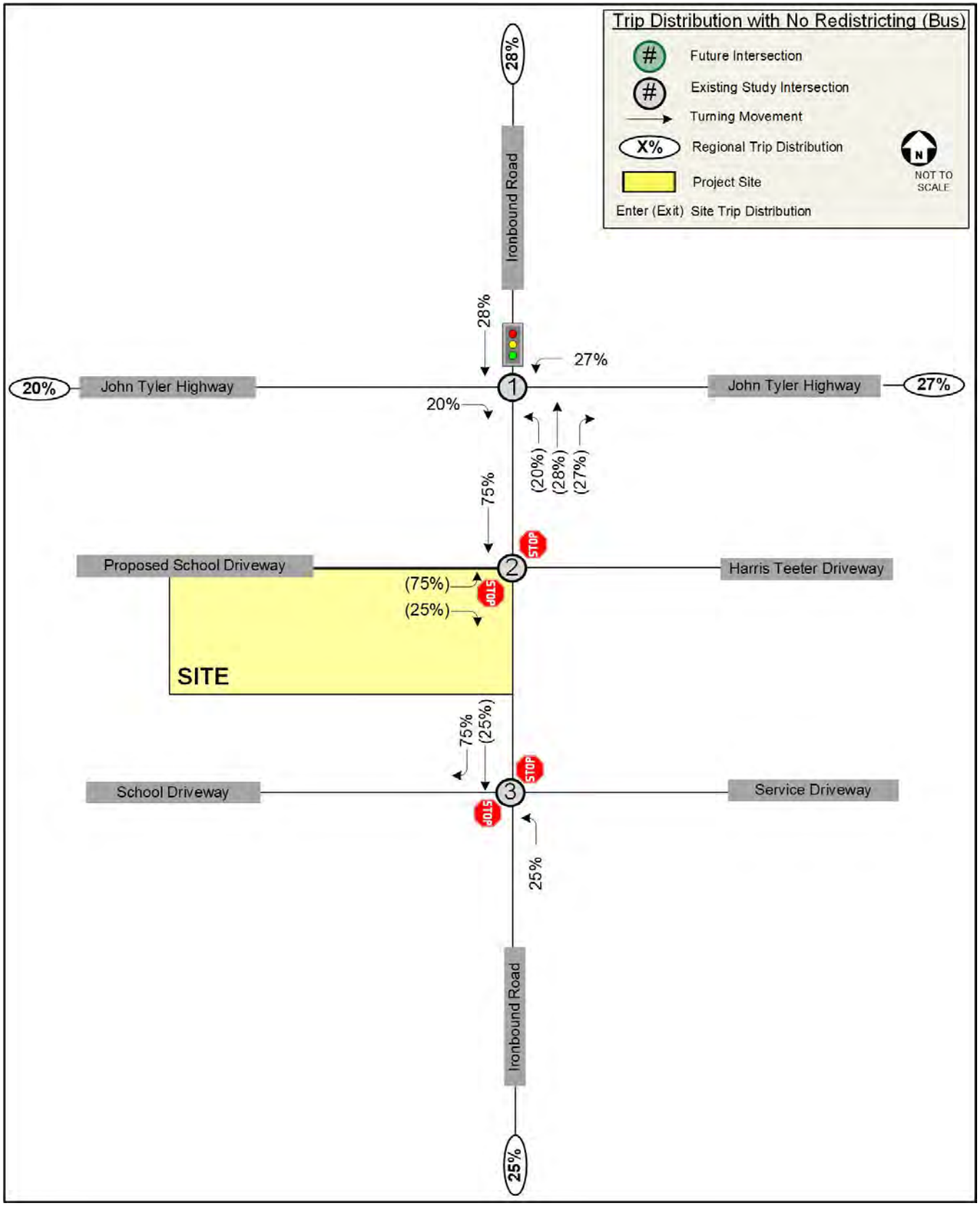

Figure 10: Bus Distribution with No Redistricting

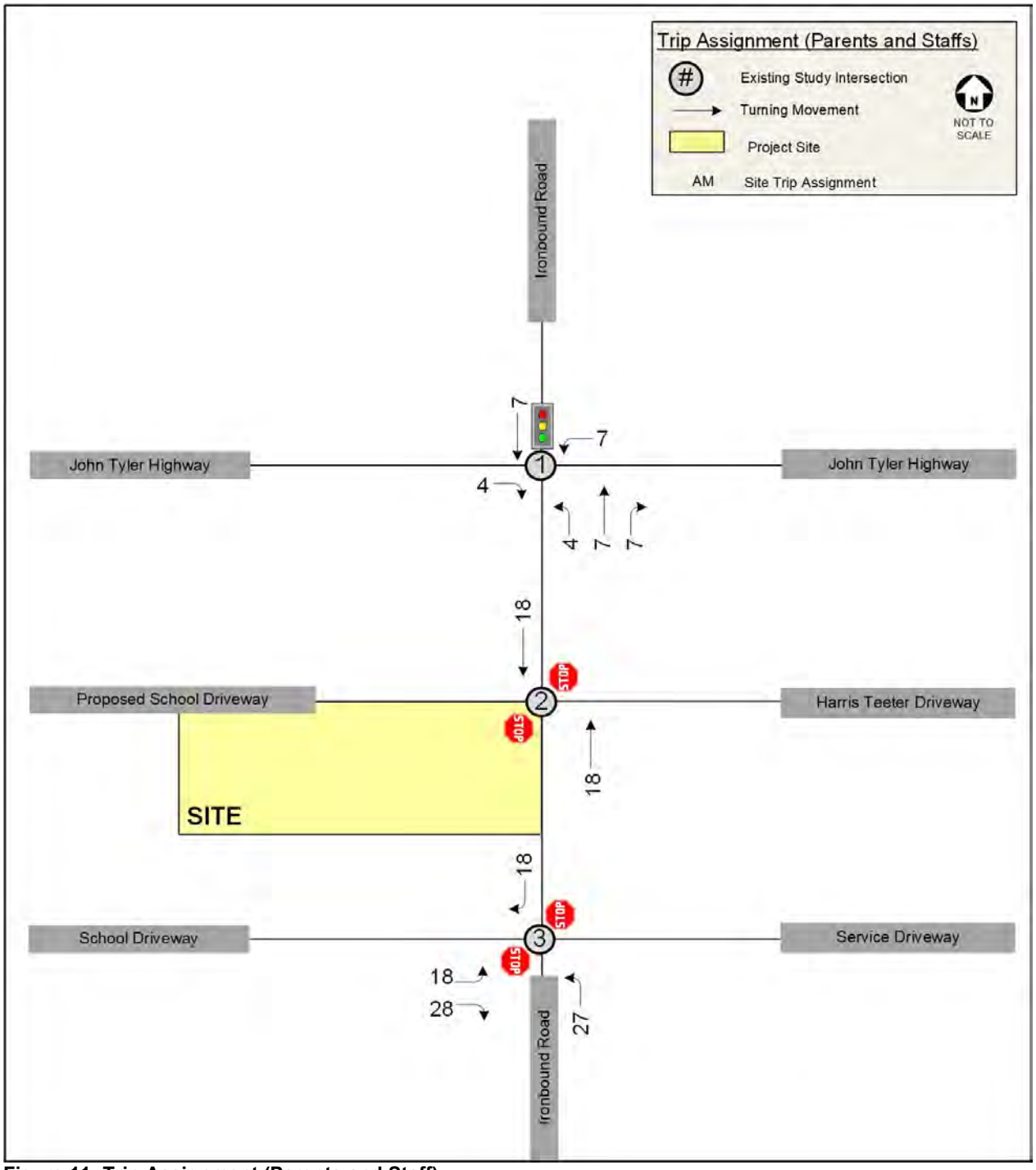

Figure 11: Trip Assignment (Parents and Staff)

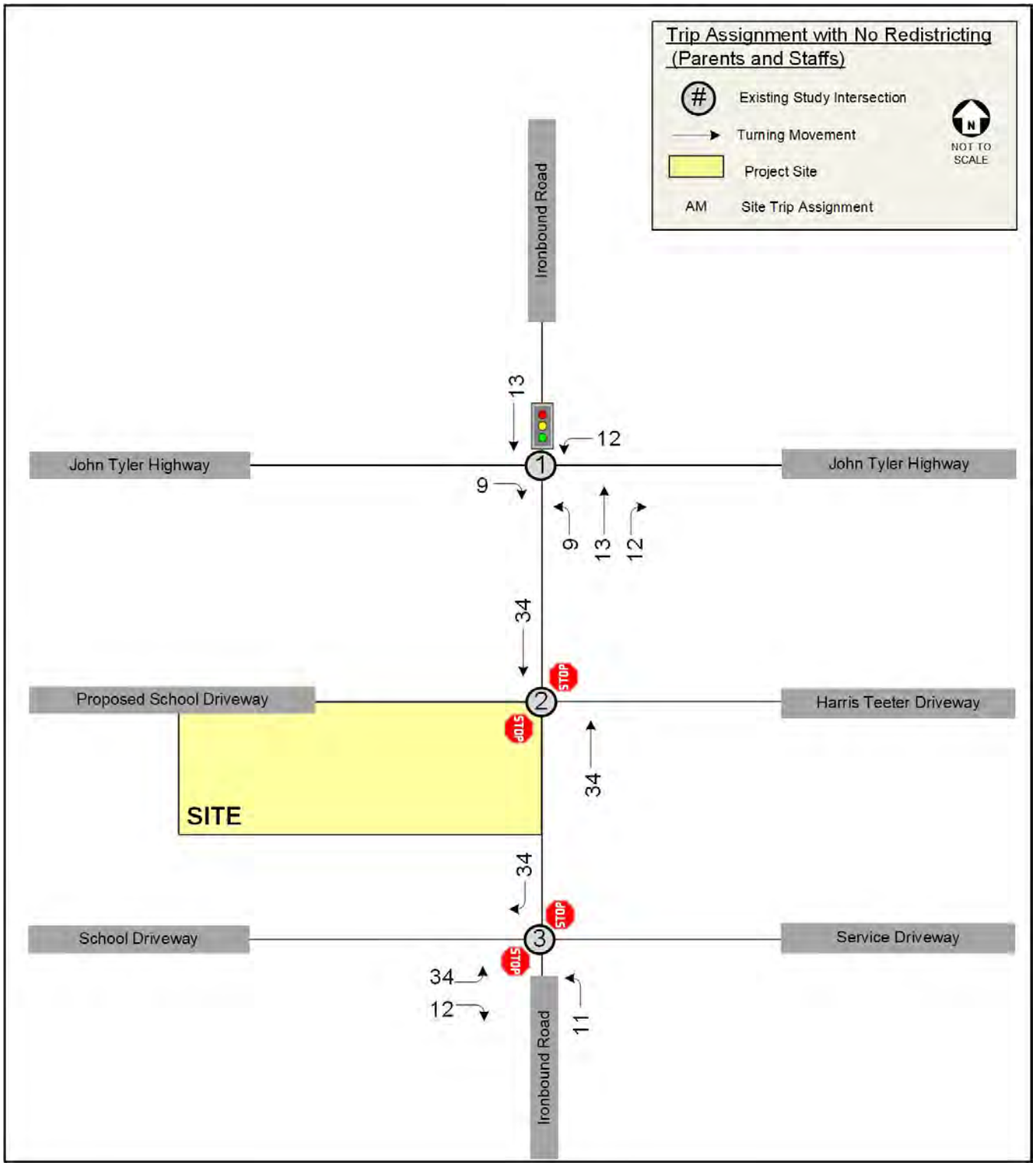

Figure 12: Trip Assignment with No Redistricting (Parents and Staffs)

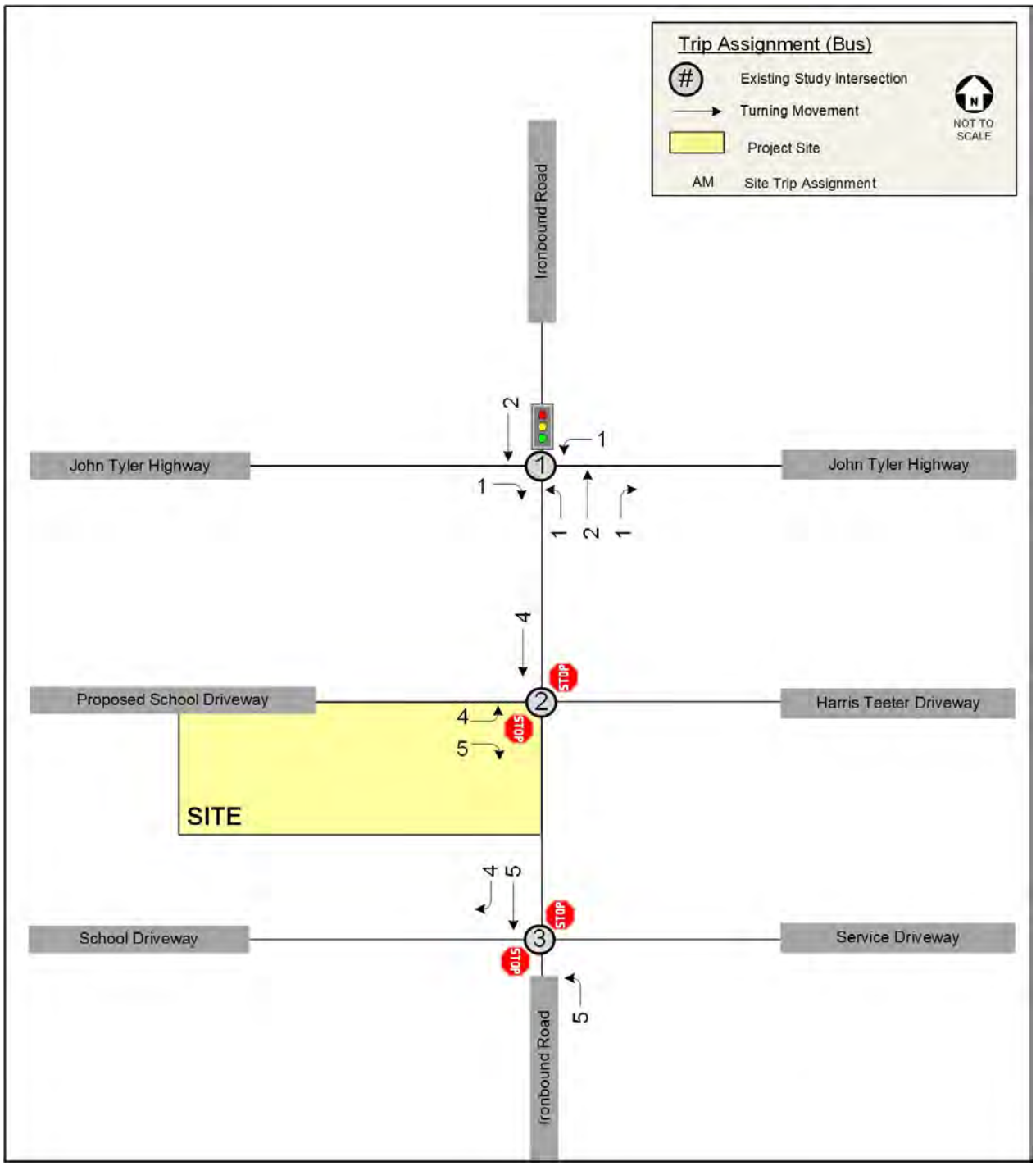

Figure 13: Trip Assignment (Bus)

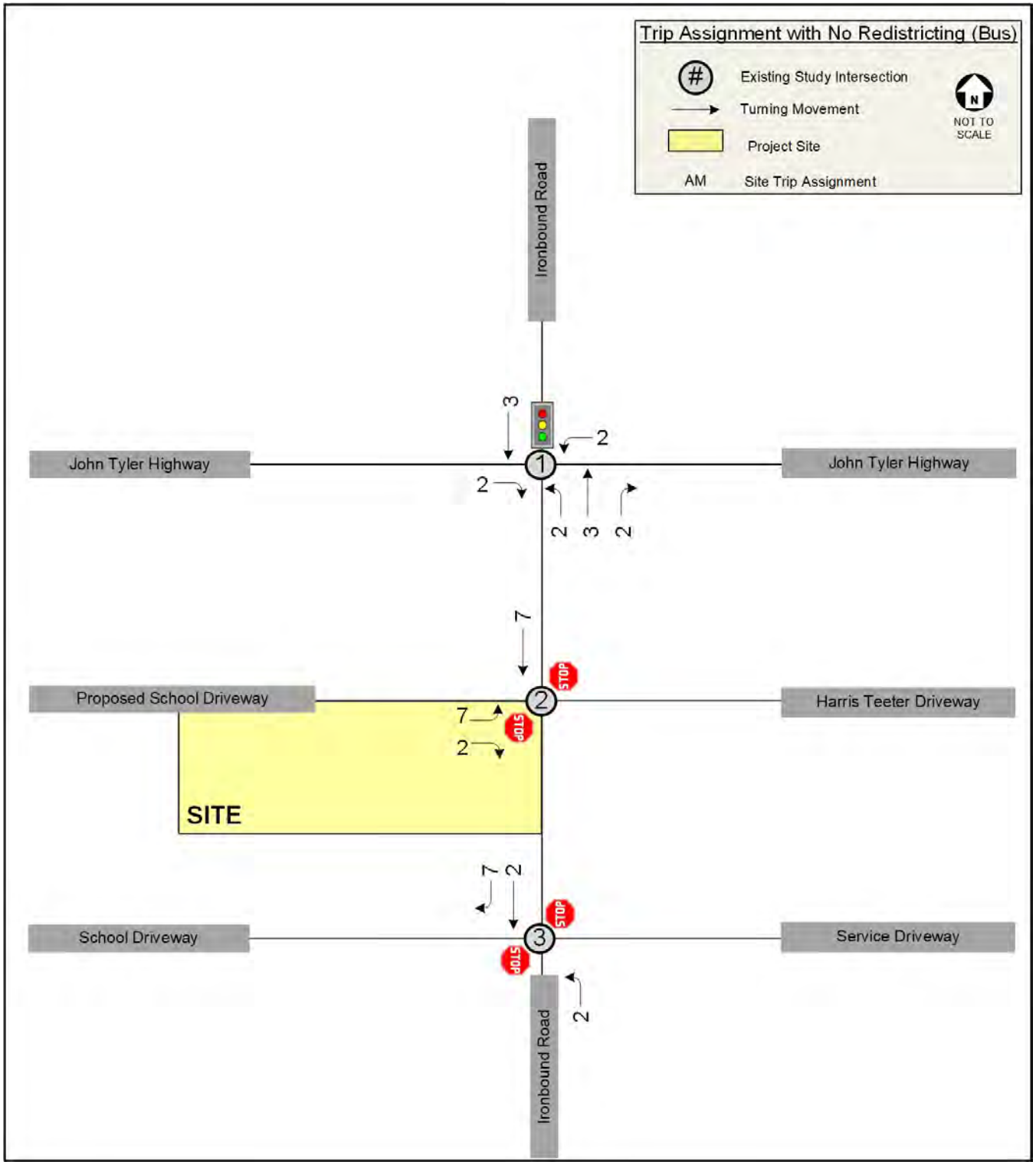

Figure 14: Trip Assignment with No Redistricting (Bus)

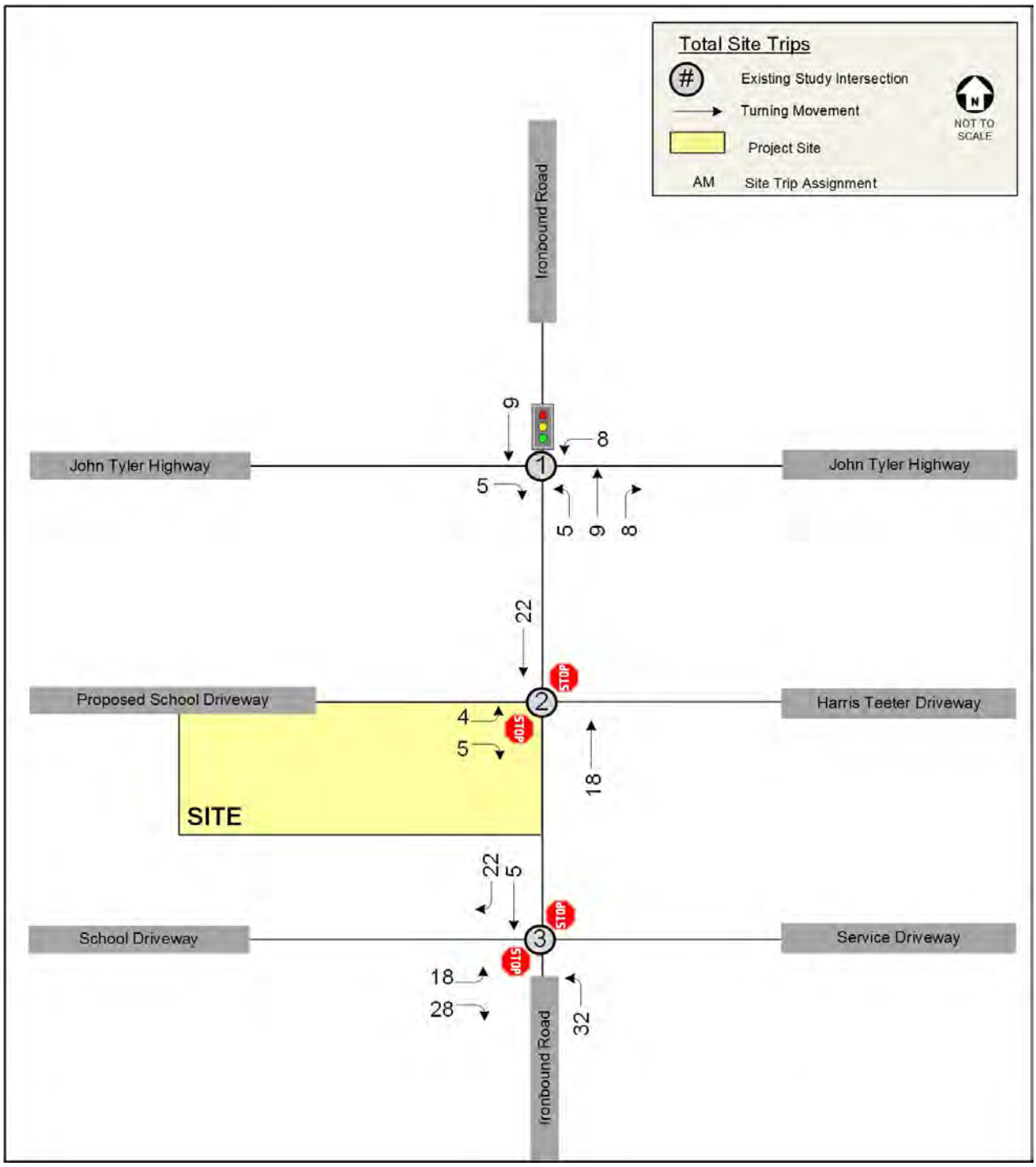

Figure 15: Total Site Trips

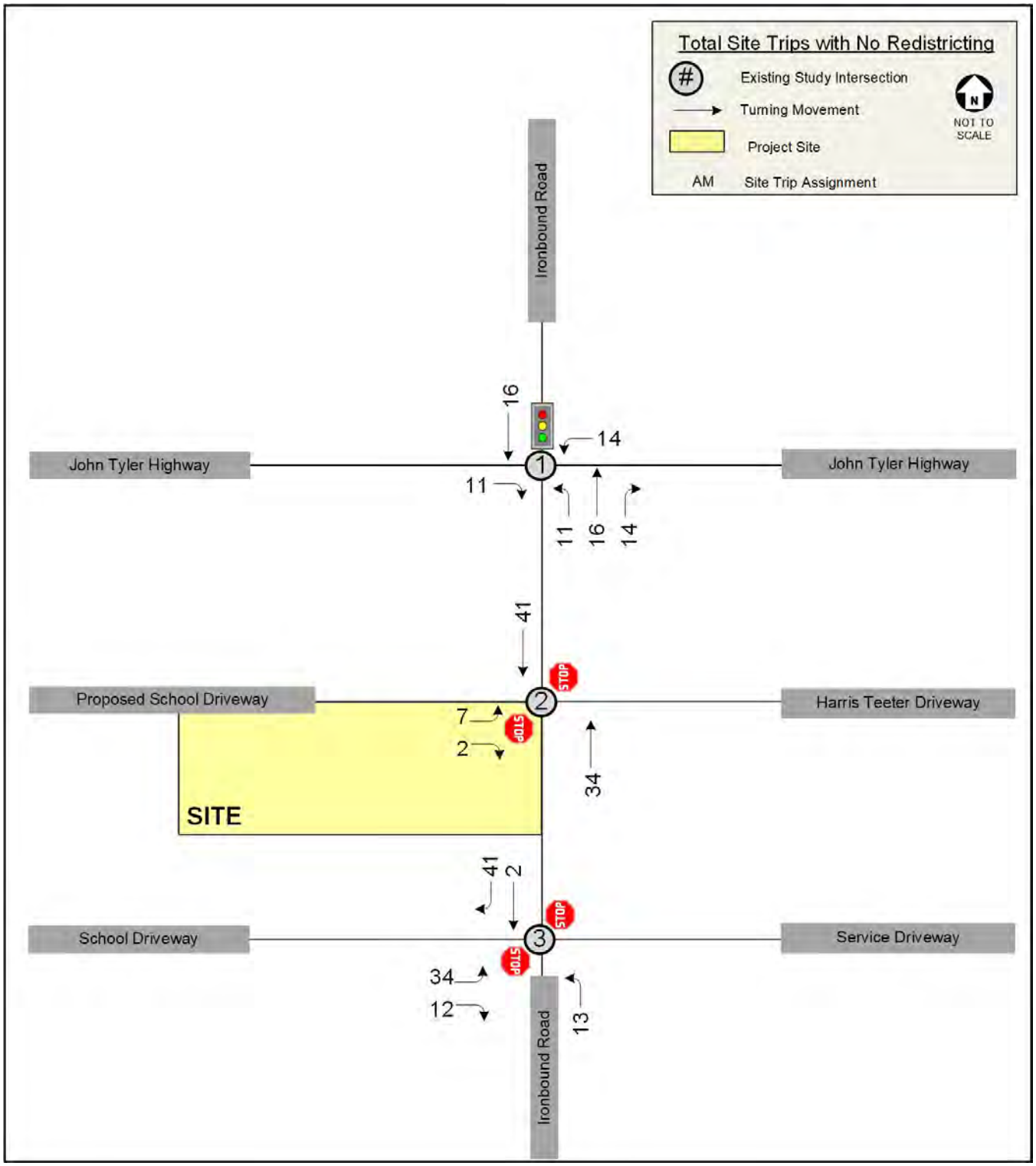

Figure 16: Total Site Trips with No Redistricting

Build 2025 Traffic Volumes

The Build 2025 traffic volumes were estimated by adding the No-Build 2025 volumes (Figure 6) and total site trips (Figure 15). Figure 17 shows the Build 2025 peak hour traffic volumes. All buses exiting the site under the future condition will use the proposed exit-only driveway across from the Harris Teeter Driveway, hence all the bus trips will be redirected as shown in Figure 19.

Figure 21 shows the Build 2025 traffic volumes after redirection, which was calculated by adding the trips shown in Figure 17 and Figure 19.

Additionally, the Build 2025 traffic volumes with no redistricting were estimated by adding the No-Build 2025 volumes (Figure 6) and total site trips with no redistricting (Figure 16). Figure 18 shows the Build 2025 peak hour traffic volumes. As part of the school's redistricting, all buses exiting the site under the future condition will use the proposed exit-only driveway across from the Harris Teeter Driveway, hence all the bus trips will be redirected as shown in Figure 20.

Figure 22 shows the Build 2025 traffic volumes with no redistricting after redirection, which was calculated by adding the trips shown in Figure 18 and Figure 20.

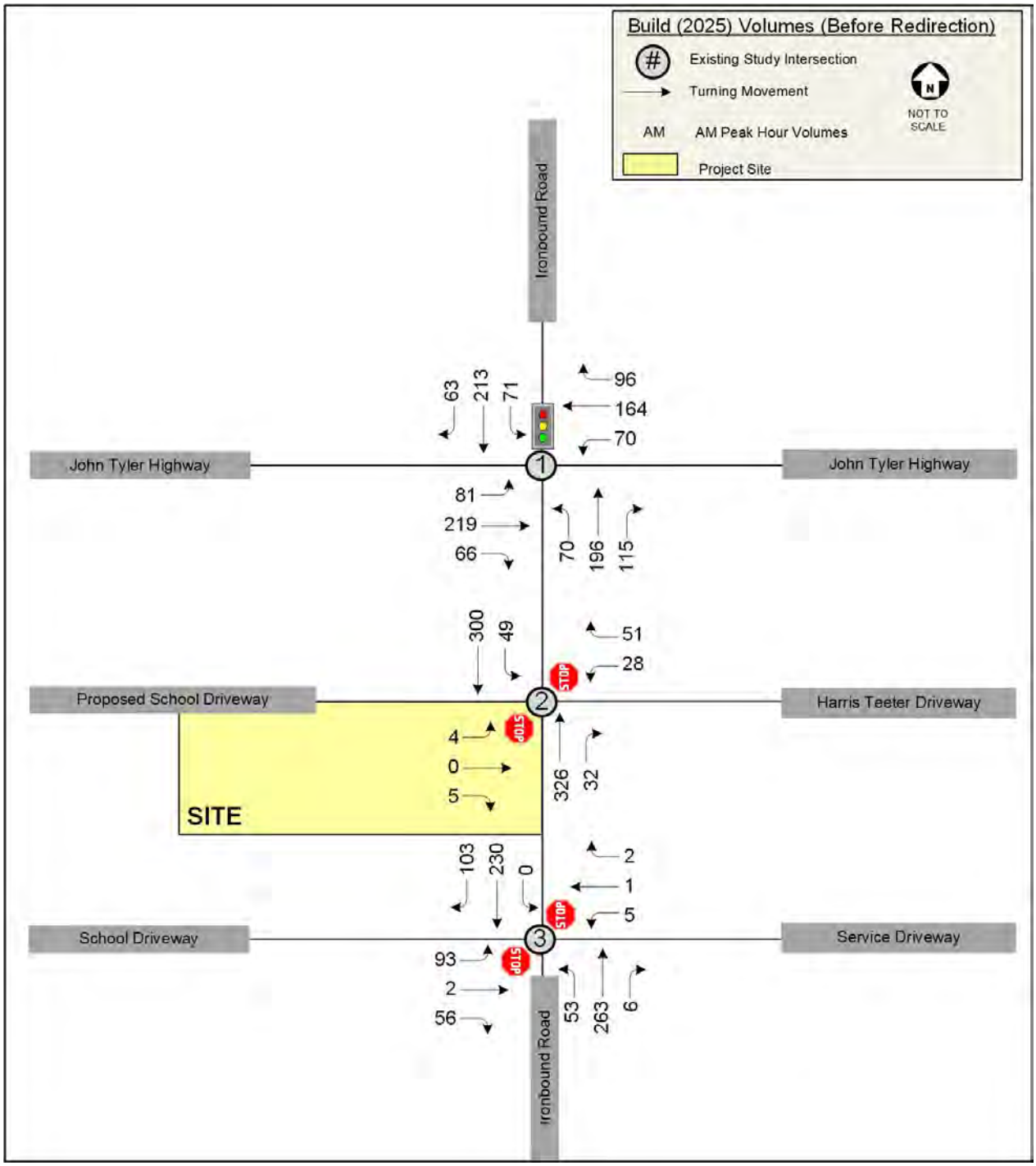

Figure 17: Build (2025) Peak Hour Traffic Volumes (Before Redirection)

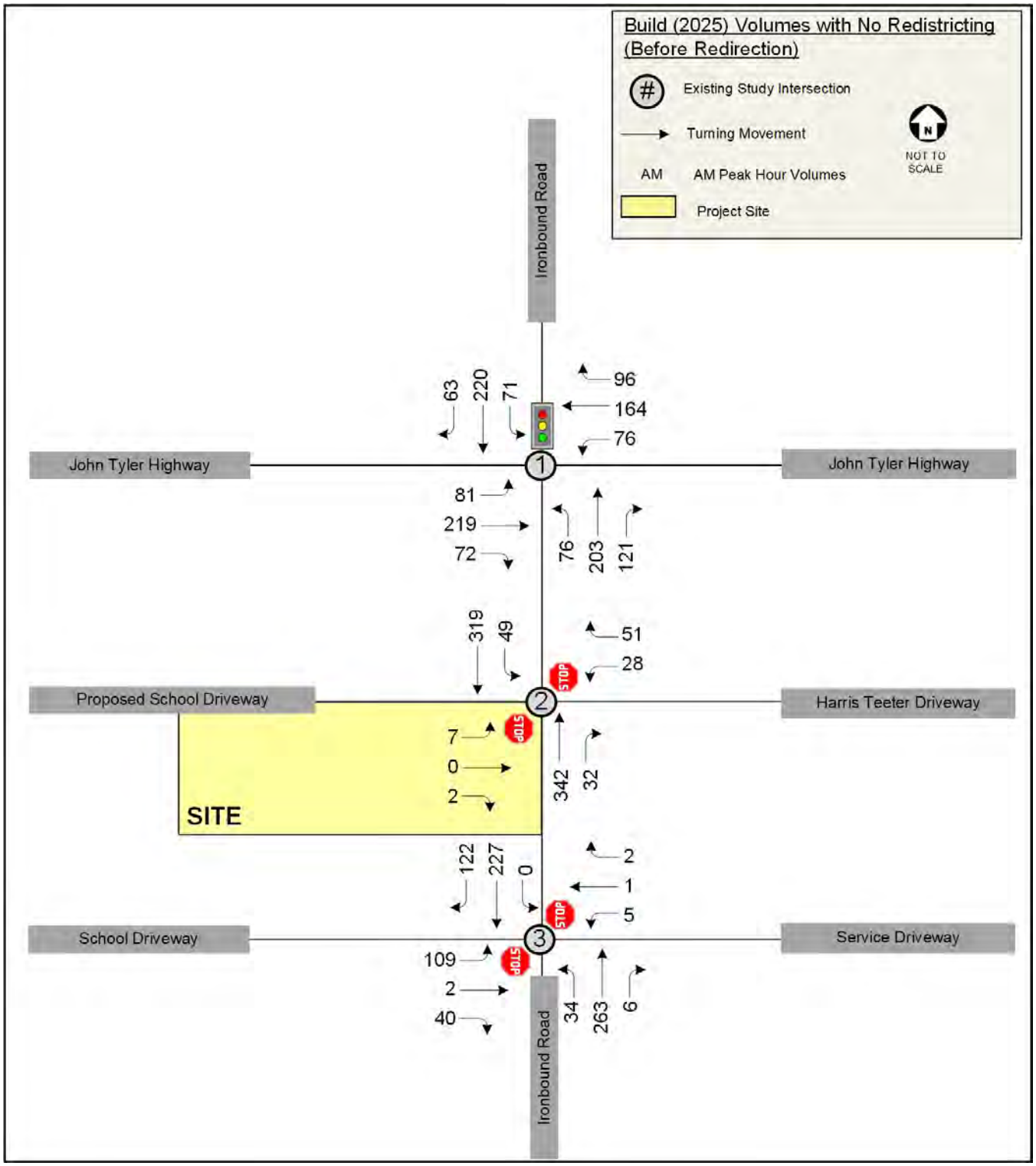

Figure 18: Build (2025) with No Redistricting (Before Redirection)

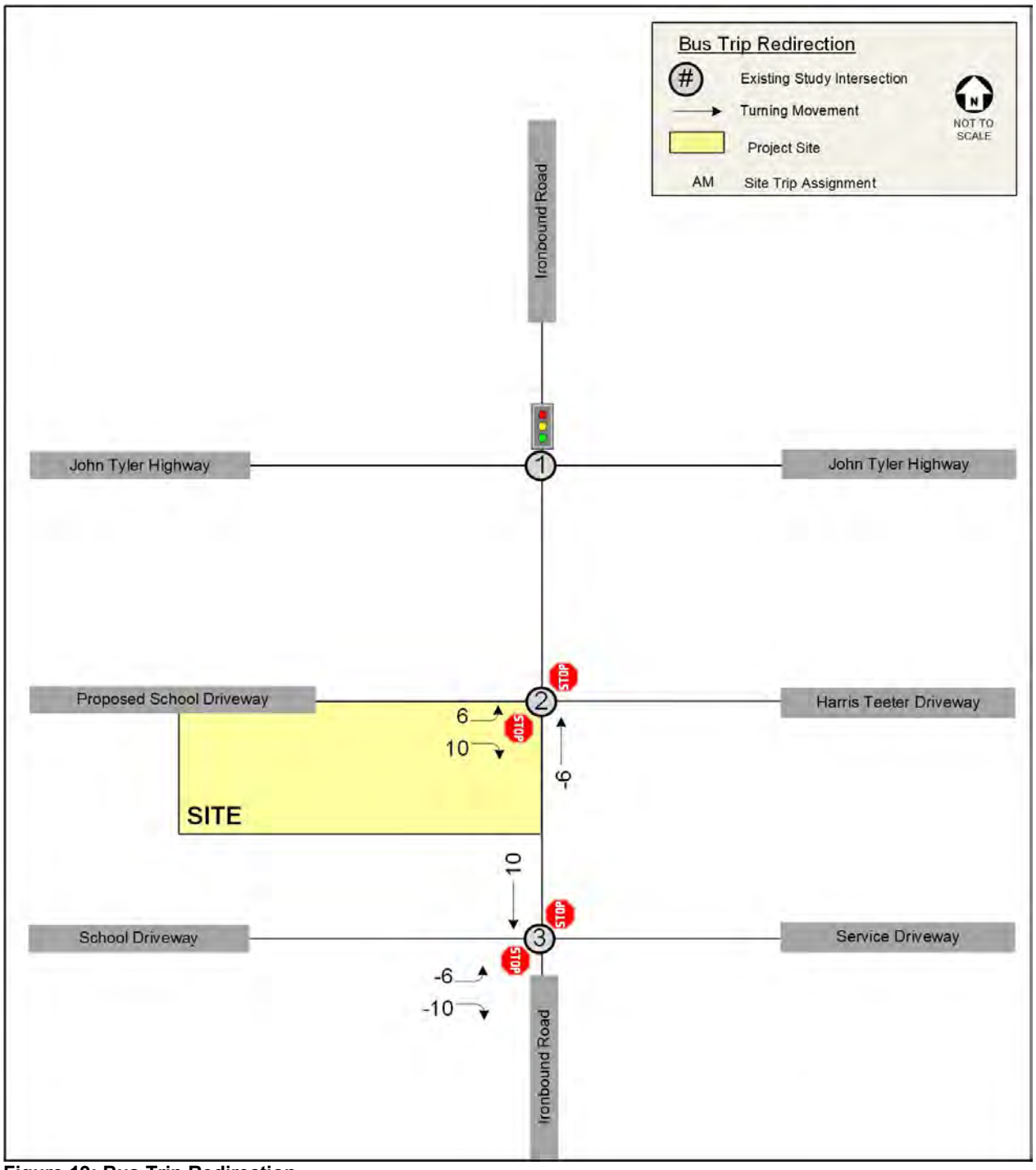

Figure 19: Bus Trip Redirection

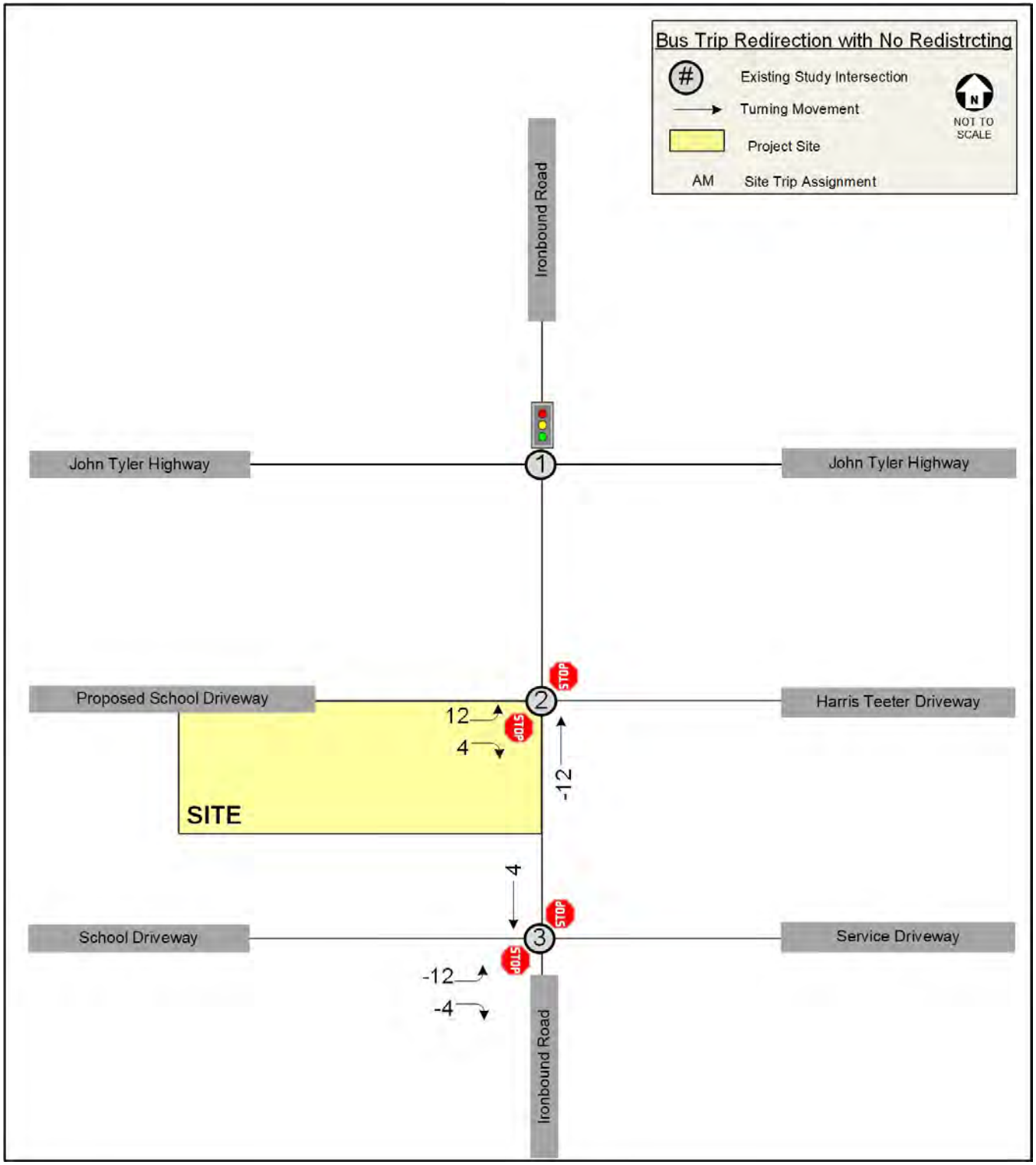

Figure 20: Bus Trip Redirection with No Redistricting

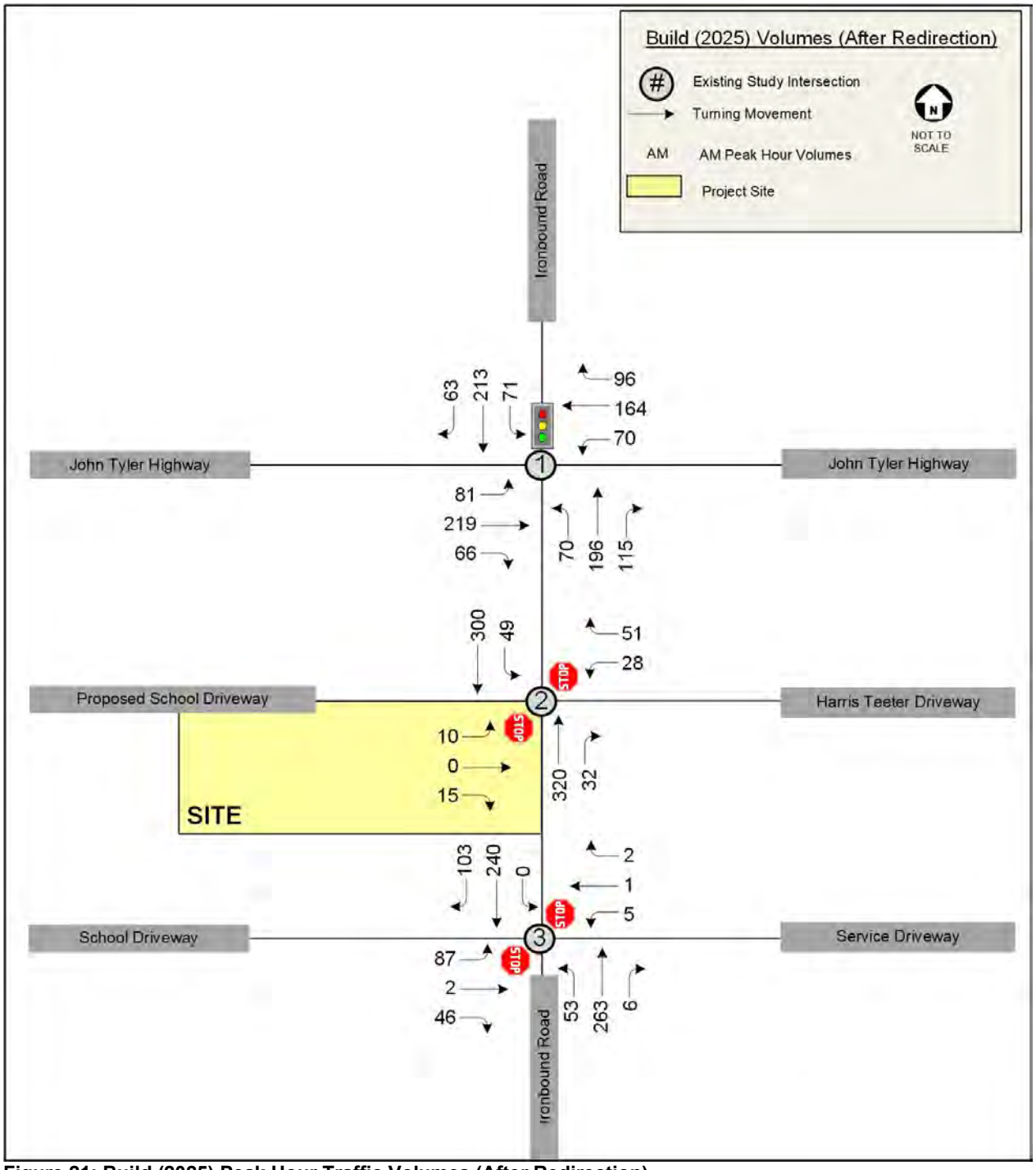

Figure 21: Build (2025) Peak Hour Traffic Volumes (After Redirection)

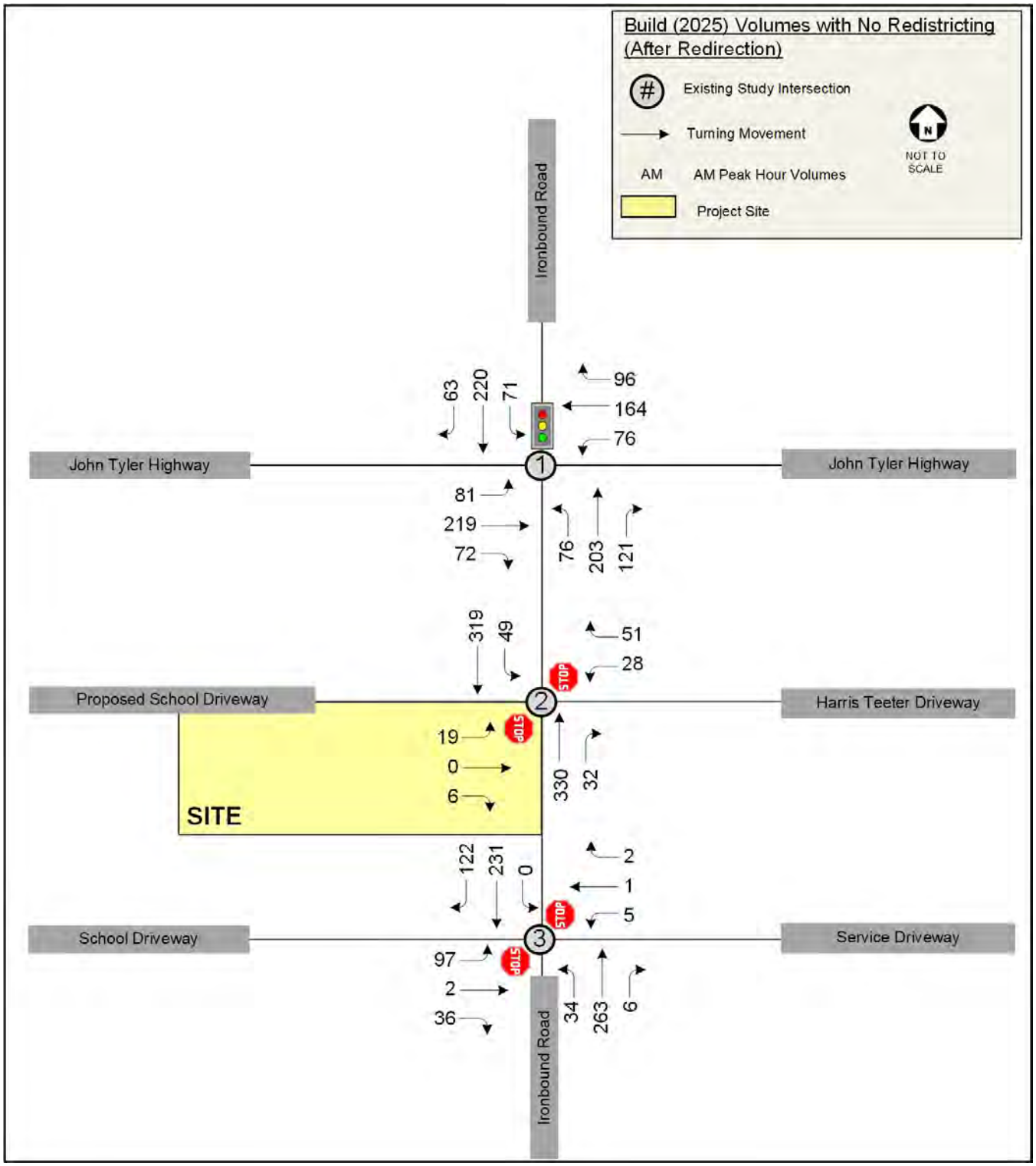

Figure 22: Build (2025) with No Redistricting (After Redirection)

Capacity Analysis

Capacity Analysis Procedure

Capacity analyses were performed at the study area intersections during the weekday AM and PM peak hours. Synchro 11 was used to analyze the study intersections based on the Highway Capacity Manual (HCM) methodology and include level of service, delay, and queue length comparisons for the turning movements analyzed. SimTraffic queues were based on the maximum of an average of 10 microsimulation runs. The Synchro and SimTraffic outputs are included in the Appendix.

Capacity Analysis Results

For unsignalized intersections, the average delays for the minor street left-turn movement are described as short delays (less than 25 seconds), moderate delays (between 25 and 50 seconds), and long delays (greater than 50 seconds). It is not uncommon for side street movements and left turns to experience long delays during the peak hours at intersections with major thoroughfares. Capacity analysis results are summarized below.

Table 3 shows the LOS, average delays, and queue lengths for the signalized intersection of John Tyler Highway at Ironbound Road. The results shown are based on HCM 6th Edition methodology.

Table 3: Level-of-Service Summary – John Tyler Highway at Ironbound Road

Analysis Scenario	Lane Group	Effective Storage Length (ft.)	AM Peak Hour				
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	SimTraffic Ave. Max Queue (ft.)	Overall LOS
Existing 2023 Traffic Conditions	NBL	175	D	36.4	63	119	D 37.7
	NBT	-	E	57.1	#211	223	
	NBR	-	D	44.1	0	58	
	SBL	200	D	36.5	68	143	
	SBT	-	E	67.7	#239	231	
	SBR	200	D	41.1	0	123	
	EBL	175	B	17.2	57	174	
	EBT/R	-	C	25.4	250	254	
	WBL	150	B	18.0	47	120	
	WBT	-	C	22.1	151	174	
	WBR	300	C	21.1	0	76	
No-Build 2025 Traffic Conditions	NBL	175	D	35.6	60	148	C 34.3
	NBT	-	D	47.2	190	243	
	NBR	-	D	42.5	0	62	
	SBL	200	D	35.6	64	148	
	SBT	-	D	52.5	208	239	
	SBR	200	D	40.1	0	117	
	EBL	175	B	17.9	64	140	
	EBT/R	-	C	26.5	263	287	
	WBL	150	B	18.8	52	125	
	WBT	-	C	23.1	158	193	
	WBR	300	C	22.0	0	67	
Build 2025 Traffic Conditions (with Redistricting)	NBL	175	D	35.1	63	153	C 34.8
	NBT	-	D	47.0	200	233	
	NBR	-	D	42.0	0	62	
	SBL	200	D	35.2	64	127	
	SBT	-	D	53.3	217	228	
	SBR	200	D	39.5	0	121	
	EBL	175	B	18.4	64	174	
	EBT/R	-	C	27.8	264	305	
	WBL	150	B	19.4	57	136	
	WBT	-	C	23.6	153	192	
	WBR	300	C	22.5	0	66	
Build 2025 Traffic Conditions (with No Redistricting)	NBL	175	C	34.7	67	152	C 34.8
	NBT	-	D	45.5	202	239	
	NBR	-	D	41.3	0	75	
	SBL	200	C	34.7	63	156	
	SBT	-	D	51.5	218	231	
	SBR	200	D	38.9	0	134	
	EBL	175	B	18.9	66	174	
	EBT/R	-	C	29.0	270	344	
	WBL	150	C	20.2	63	143	
	WBT	-	C	24.4	158	199	
	WBR	300	C	23.2	0	71	

Capacity Analysis indicates that this intersection currently operates at LOS D. Under No-Build 2025 conditions, the intersection is expected to operate at LOS C with signal timing optimization.

Under Build 2025 conditions, with and without redistricting, the intersection is expected to continue to operate at LOS C, with all movements operating similar to No-Build conditions. No improvements are warranted or recommended at this intersection upon build-out of the proposed pre-school.

Table 4 shows the LOS, average delays, and queue lengths for the unsignalized intersection of Ironbound Road at the existing Harris Teeter Driveway and the proposed exit-only School Driveway. The results shown are based on HCM 6th Edition methodology.

Table 4: Level-of-Service Summary – Ironbound Road at Proposed School Driveway / Harris Teeter Driveway

Analysis Scenario	Lane Group	Effective Storage Length (ft.)	AM Peak Hour			
			LOS	Delay (sec/veh)	95th % Queue (ft.)	SimTraffic Ave. Max Queue (ft.)
Existing 2023 Traffic Conditions	NBT	-	-	-	-	-
	NBR	-	-	-	-	-
	SBL	150	A	8.3	5	39
	SBT	-	-	-	-	-
	WBL/R	-	C	15.1	20	68
No-Build 2025 Traffic Conditions	NBT	-	-	-	-	-
	NBR	-	-	-	-	-
	SBL	150	A	8.3	5	30
	SBT	-	-	-	-	-
	WBL/R	-	C	15.4	20	70
Build 2025 Traffic Conditions	NBT	-	-	-	-	-
	NBR	-	-	-	-	-
	SBL	150	A	8.4	5	37
	SBT	-	-	-	-	-
	EBL/T/R		C	21.2	10	105
	WBL/T/R	-	C	16.6	23	85
Build 2025 Traffic Conditions (with No Redistricting)	NBT	-	-	-	-	-
	NBR	-	-	-	-	-
	SBL	150	A	8.4	5	38
	SBT	-	-	-	-	-
	EBL/T/R		D	32.0	18	101
	WBL/T/R	-	C	16.9	23	70

Capacity analysis indicates that the minor street left-turn movement currently operates with short delays. Under No-Build conditions, the minor street left-turn movement is expected to continue operating with short delays.

Under Build conditions with redistricting, the minor street left-turn movement is expected to operate with moderate delay and under build without redistricting, the minor street left-turn movement is expected to operate with short delay. No improvements are warranted or recommended at this intersection upon build-out of the proposed pre-school.

Table 5 shows the LOS, average delays, and queue lengths for the unsignalized intersection of Ironbound Road at the proposed School Driveway / Service Driveway. The results shown are based on HCM 6th Edition methodology.

Table 5: Level-of-Service Summary – Ironbound Road at School Driveway / Service Driveway

Analysis Scenario	Lane Group	Effective Storage Length (ft.)	AM Peak Hour			
			LOS	Delay (sec/veh)	95th % Queue (ft.)	SimTraffic Avg. Max Queue (ft.)
Existing 2023 Traffic Conditions	NBL	175	A	8.4	3	43
	NBT/R	-	-	-	-	-
	SBL	150	-	-	-	-
	SBT	-	-	-	-	-
	SBR	150	-	-	-	-
	EBL/T/R	-	C	20.9	45	113
	WBL/T/R	-	C	16.2	3	34
No-Build 2025 Traffic Conditions	NBL	175	A	8.4	3	45
	NBT/R	-	-	-	-	-
	SBL	150	-	-	-	-
	SBT	-	-	-	-	-
	SBR	150	-	-	-	-
	EBL/T/R	-	C	21.7	48	118
	WBL/T/R	-	C	16.5	3	29
Build 2025 Traffic Conditions	NBL	175	A	8.7	5	67
	NBT/R	-	-	-	-	-
	SBL	150	-	-	-	-
	SBT	-	-	-	-	-
	SBR	150	-	-	-	-
	EBL/T/R	-	D	31.7	90	131
	WBL/T/R	-	C	20.0	3	33
Build 2025 Traffic Conditions (with No Redistricting)	NBL	175	A	8.7	3	54
	NBT/R	-	-	-	-	-
	SBL	150	-	-	-	-
	SBT	-	-	-	-	-
	SBR	150	-	-	-	-
	EBL/T/R	-	D	28.9	83	162
	WBL/T/R	-	C	18.2	3	31

Capacity analysis indicates that the minor street left-turn movement currently operates with short delays. Under No-Build conditions, the minor street left-turn movement is expected to continue operating with short delays.

Under Build conditions with or without redistricting, the minor street left-turn movement is expected to operate with moderate delays. No improvements are warranted or recommended at this intersection upon build-out of the proposed pre-school.

Recommendations

Based on the results of the analysis, all study intersections will operate with acceptable queueing and delay with the following improvement:

Ironbound Road at Harris Teeter Driveway / Proposed School Driveway:

- Construct the site driveway with one egress lane

Figure 23 shows the recommended lane configuration.

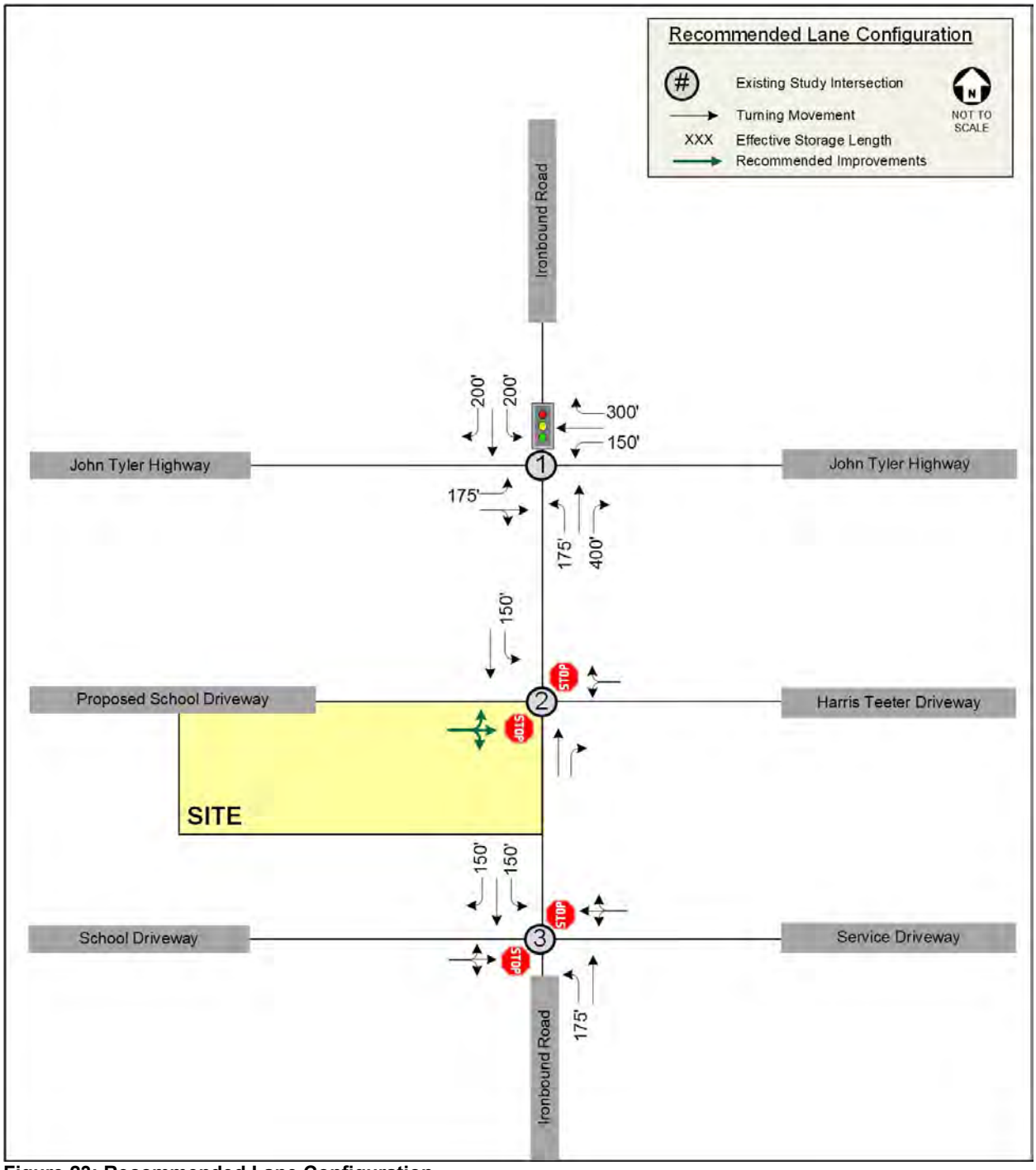

Figure 23: Recommended Lane Configuration

APPENDIX

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APPENDIX A: VDOT TIA SCOPE FORM

THIS IS A NOT CHAPTER 527 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:	Michale Bailey, P.E., RSP1 - Gorove Slade (804) 362-0578 mb@goroveslade.com			
Developer/Owner Name: Tele: E-mail:	Mr. Daniel Hayes, P.E., PMP (571) 469-6459 daniel.hayes@alphacorporation.com			
Project Information				
Project Name:	Bright Beginnings at Clara Byrd Baker Elementary	Locality/County:	James City County	
Project Location: (Attach regional and site specific location map)	Refer to 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 plan includes a pre-school with 252 students in the northwest corner of the Ironbound Road at Clara Byrd Baker Elementary School driveway. The access plan includes one exit-only driveway on Ironbound Road, across from the Harris Teeter shopping center driveway and connections to the existing elementary school road network.			
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☐	Other ☒
	Residential Uses(s) N/A		**Commercial Use(s)** See Trip Table	
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: 2025		Design Year: 2025	
Study Area Boundaries (Attach map)	North: Refer to Figure 1			South:	
	West:			East:	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	Governors Grove Section 3 self-storage facility				
Consistency With Comprehensive Plan (Land use, transportation plan)	The existing zoning is Public School which allows the proposed use				
Available Traffic Data (Historical, forecasts)	Ironbound Road – 6,900 vpd in 2016 / 5,900 vpd in 2021				
Trip Distribution	Road Name: See Figure 1			Road Name:	
	Road Name:			Road Name:	
Annual Vehicle Trip Growth Rate:	1.0 %	Peak Period for Study (Check all that apply)		☒ AM ☐ PM ☐ SAT	
		Peak Hour of Generator			
Study Intersections and/or Road Segments (Attach additional sheets as necessary) **(Please refer to attached Figure 1.)**	1.	John Tyler Highway at Ironbound Road		7.	
	2.	Ironbound Road at Harris Teeter Driveway / Proposed Pre-School Driveway		8.	
	3.	Ironbound Road at CBB Elementary School Driveway / Harris Teeter Service Driveway		9.	
	4.			10.	
	5.			11.	
	6.			12.	
Trip Adjustment Factors	Internal allowance ☐ Yes ☒ No Reduction: N/A			Pass-by allowance ☐ Yes ☒ No Reduction: ITE	
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☒ Other SimTraffic				
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Analysis Software: Synchro / SimTraffic 11				

Improvement(s) Assumed or to be Considered	The need for turn lanes and other off-site improvements will be determined based on the results of the TIA.
Background Traffic Studies Considered	Governors Grove Section 3 TIA by DRW dated May 2023
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:

The TIA will include three analysis scenarios:

- Existing 2023 Conditions (with current school districting)
- No-Build 2025 Conditions (with revised school districting)
- Build 2025 Conditions (with revised school districting)

Figure 1: Site Location and Trip Distribution

Table 1: ITE Trip Generation – Typical Weekday – 11th Edition

Land Use	Size	Average Weekday Daily Traffic (vpd)		AM Peak Hour	
		Enter	Exit	Enter	Exit
Current Enrollment[1]	551 students	408	408	101	103
Staff[2] = 78		344	344	78	8
Buses[2] = 16		64	64	16	16
(Parents/Other)		0	0	7	79
Future Enrollment	845 students	626	626	155	158
Staff[3] = 120		104	104	120	12
Buses[3] = 25		100	100	25	25
(Parents/Other)		422	422	10	121
Net Difference		**218**	**218**	**54**	**55**

APPENDIX B: TRAFFIC COUNT DATA

THIS IS A NOT CHAPTER 527 STUDY

VDOT Virginia Department of Transportation

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	Road Name:			Road Name:	
Annual Vehicle Trip Growth Rate:	1.0 %	Peak Period for Study (Check all that apply)		☒ AM ☐ PM ☐ SAT	
		Peak Hour of Generator			
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	4.			10.	
	5.			11.	
	6.			12.	
Trip Adjustment Factors	Internal allowance ☐ Yes ☒ No Reduction: N/A			Pass-by allowance ☐ Yes ☒ No Reduction: ITE	
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☒ Other SimTraffic				
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Analysis Software: Synchro / SimTraffic 11				

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NOTES on ASSUMPTIONS:

The TIA will include three analysis scenarios:

- Existing 2023 Conditions (with current school districting)
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- Build 2025 Conditions (with revised school districting)

File Name : JamesCity(Ironbound and John Taylor)
Site Code :
Start Date : 11/15/2023
Page No : 1

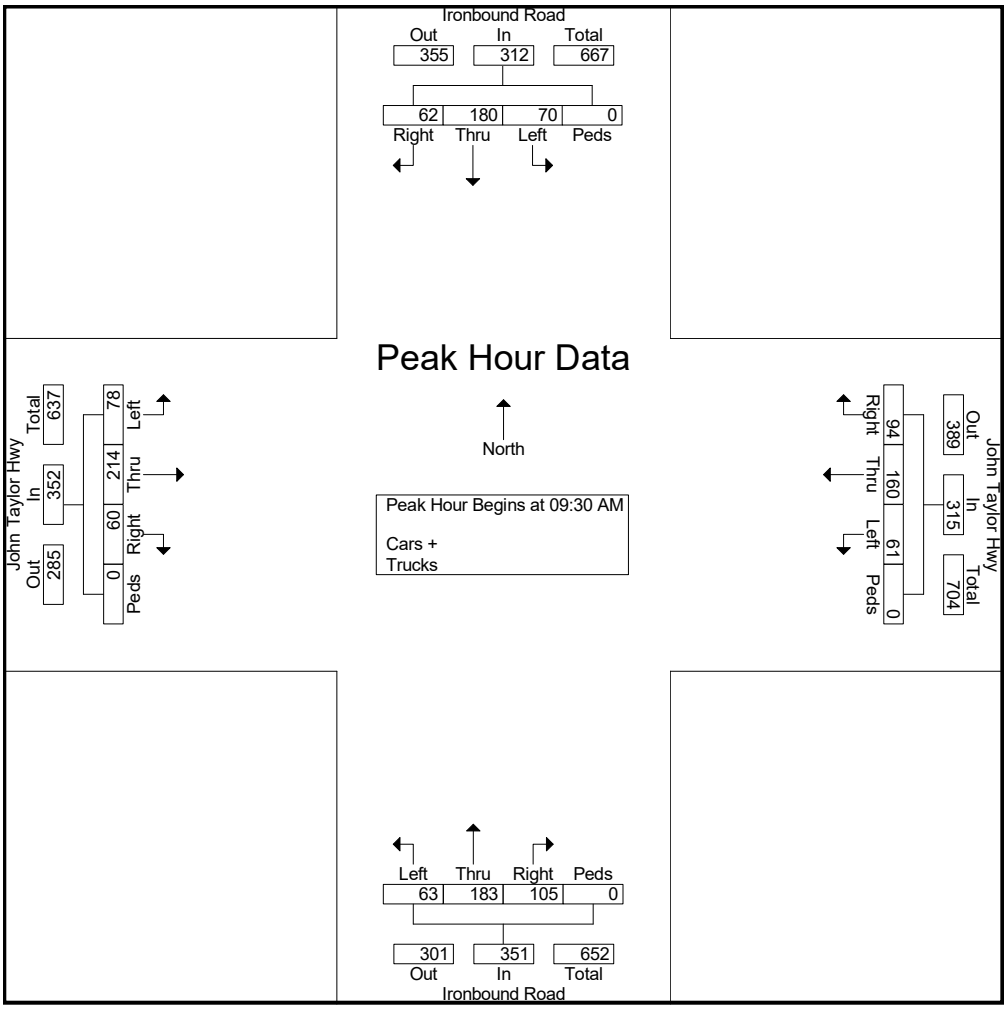
Groups Printed- Cars + - Trucks

	Ironbound Road Southbound					John Taylor Hwy Westbound					Ironbound Road Northbound					John Taylor Hwy Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:30 AM	10	35	18	0	63	21	51	24	0	96	17	42	19	1	79	15	61	19	1	96	334
08:45 AM	9	36	15	0	60	19	30	11	0	60	22	54	16	0	92	20	63	16	0	99	311
Total	19	71	33	0	123	40	81	35	0	156	39	96	35	1	171	35	124	35	1	195	645
09:00 AM	9	30	8	0	47	22	32	10	0	64	10	30	12	0	52	19	55	20	0	94	257
09:15 AM	9	36	16	0	61	9	38	26	0	73	24	21	15	0	60	20	37	19	0	76	270
09:30 AM	16	50	11	0	77	39	45	21	0	105	44	51	14	0	109	26	65	19	0	110	401
09:45 AM	14	51	18	0	83	23	31	18	0	72	26	63	17	0	106	12	45	24	0	81	342
Total	48	167	53	0	268	93	146	75	0	314	104	165	58	0	327	77	202	82	0	361	1270
10:00 AM	16	40	22	0	78	22	38	11	0	71	15	35	19	0	69	11	52	15	0	78	296
10:15 AM	16	39	19	0	74	10	46	11	0	67	20	34	13	0	67	11	52	20	0	83	291
Grand Total	99	317	127	0	543	165	311	132	0	608	178	330	125	1	634	134	430	152	1	717	2502
Apprch %	18.2	58.4	23.4	0		27.1	51.2	21.7	0		28.1	52.1	19.7	0.2		18.7	60	21.2	0.1		
Total %	4	12.7	5.1	0	21.7	6.6	12.4	5.3	0	24.3	7.1	13.2	5	0	25.3	5.4	17.2	6.1	0	28.7	
Cars +	94	312	125	0	531	162	301	119	0	582	169	322	122	1	614	128	414	151	1	694	2421
% Cars +	94.9	98.4	98.4	0	97.8	98.2	96.8	90.2	0	95.7	94.9	97.6	97.6	100	96.8	95.5	96.3	99.3	100	96.8	96.8
Trucks	5	5	2	0	12	3	10	13	0	26	9	8	3	0	20	6	16	1	0	23	81
% Trucks	5.1	1.6	1.6	0	2.2	1.8	3.2	9.8	0	4.3	5.1	2.4	2.4	0	3.2	4.5	3.7	0.7	0	3.2	3.2

TRAFFIC DATA COLLECTION

File Name : JamesCity(Ironbound and John Taylor)
Site Code :
Start Date : 11/15/2023

	Ironbound Road Southbound					John Taylor Hwy Westbound					Ironbound Road Northbound					John Taylor Hwy Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 10:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:30 AM																					
09:30 AM	**16**	50	11	0	77	**39**	45	**21**	0	**105**	**44**	51	14	0	**109**	**26**	**65**	19	0	**110**	**401**
09:45 AM	14	**51**	18	0	**83**	23	31	18	0	72	26	**63**	17	0	106	12	45	**24**	0	81	342
10:00 AM	16	40	**22**	0	78	22	38	11	0	71	15	35	**19**	0	69	11	52	15	0	78	296
10:15 AM	16	39	19	0	74	10	**46**	11	0	67	20	34	13	0	67	11	52	20	0	83	291
Total Volume	62	180	70	0	312	94	160	61	0	315	105	183	63	0	351	60	214	78	0	352	1330
% App. Total	19.9	57.7	22.4	0		29.8	50.8	19.4	0		29.9	52.1	17.9	0		17	60.8	22.2	0		
PHF	.969	.882	.795	.000	.940	.603	.870	.726	.000	.750	.597	.726	.829	.000	.805	.577	.823	.813	.000	.800	.829



File Name : JamesCity(Ironbound and Shopping)
Site Code :
Start Date : 11/15/2023
Page No : 1

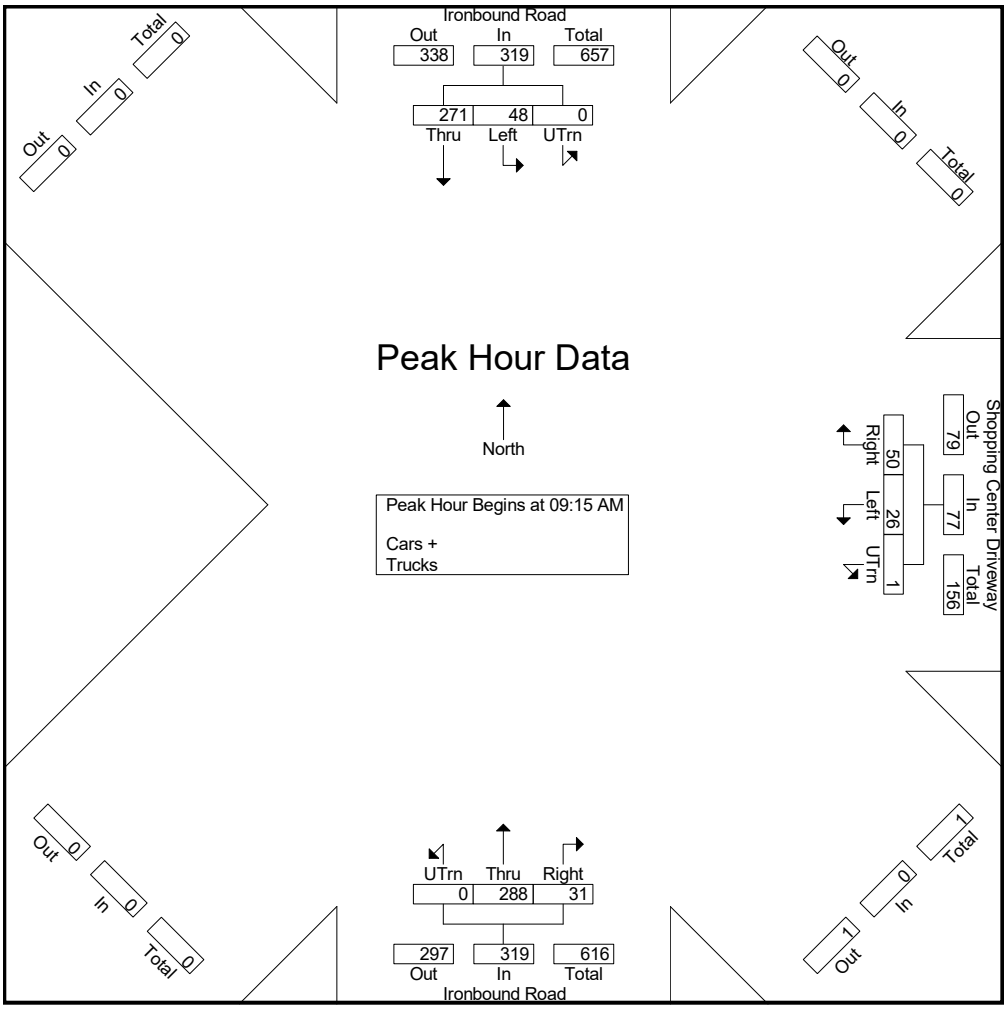
Groups Printed- Cars + - Trucks

	Ironbound Road Southbound				Shopping Center Driveway Westbound				Ironbound Road Northbound				
Start Time	Thru	Left	UTrn	App. Total	Right	Left	UTrn	App. Total	Right	Thru	UTrn	App. Total	Int. Total
08:30 AM	68	10	0	78	13	8	0	21	6	73	0	79	178
08:45 AM	53	14	0	67	11	9	0	20	13	79	0	92	179
Total	121	24	0	145	24	17	0	41	19	152	0	171	357
09:00 AM	48	17	0	65	14	7	0	21	4	38	0	42	128
09:15 AM	67	13	0	80	15	7	0	22	2	62	0	64	166
09:30 AM	89	10	0	99	6	4	1	11	13	97	0	110	220
09:45 AM	67	13	0	80	12	9	0	21	6	85	0	91	192
Total	271	53	0	324	47	27	1	75	25	282	0	307	706
10:00 AM	48	12	0	60	17	6	0	23	10	44	0	54	137
10:15 AM	43	17	0	60	16	6	0	22	12	51	0	63	145
Grand Total	483	106	0	589	104	56	1	161	66	529	0	595	1345
Apprch %	82	18	0		64.6	34.8	0.6		11.1	88.9	0		
Total %	35.9	7.9	0	43.8	7.7	4.2	0.1	12	4.9	39.3	0	44.2	
Cars +	460	105	0	565	103	55	1	159	65	510	0	575	1299
% Cars +	95.2	99.1	0	95.9	99	98.2	100	98.8	98.5	96.4	0	96.6	96.6
Trucks	23	1	0	24	1	1	0	2	1	19	0	20	46
% Trucks	4.8	0.9	0	4.1	1	1.8	0	1.2	1.5	3.6	0	3.4	3.4

TRAFFIC DATA COLLECTION

File Name : JamesCity(Ironbound and Shopping)
Site Code :
Start Date : 11/15/2023

	Ironbound Road Southbound				Shopping Center Driveway Westbound				Ironbound Road Northbound				
Start Time	Thru	Left	UTrn	App. Total	Right	Left	UTrn	App. Total	Right	Thru	UTrn	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 10:15 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 09:15 AM													
09:15 AM	67	**13**	0	80	15	7	0	22	2	62	0	64	166
09:30 AM	**89**	10	0	**99**	6	4	**1**	11	**13**	**97**	0	**110**	**220**
09:45 AM	67	13	0	80	12	**9**	0	21	6	85	0	91	192
10:00 AM	48	12	0	60	**17**	6	0	**23**	10	44	0	54	137
Total Volume	271	48	0	319	50	26	1	77	31	288	0	319	715
% App. Total	85	15	0		64.9	33.8	1.3		9.7	90.3	0		
PHF	.761	.923	.000	.806	.735	.722	.250	.837	.596	.742	.000	.725	.813



File Name : JamesCity(Ironbound and Elementary)
Site Code :
Start Date : 11/15/2023
Page No : 1

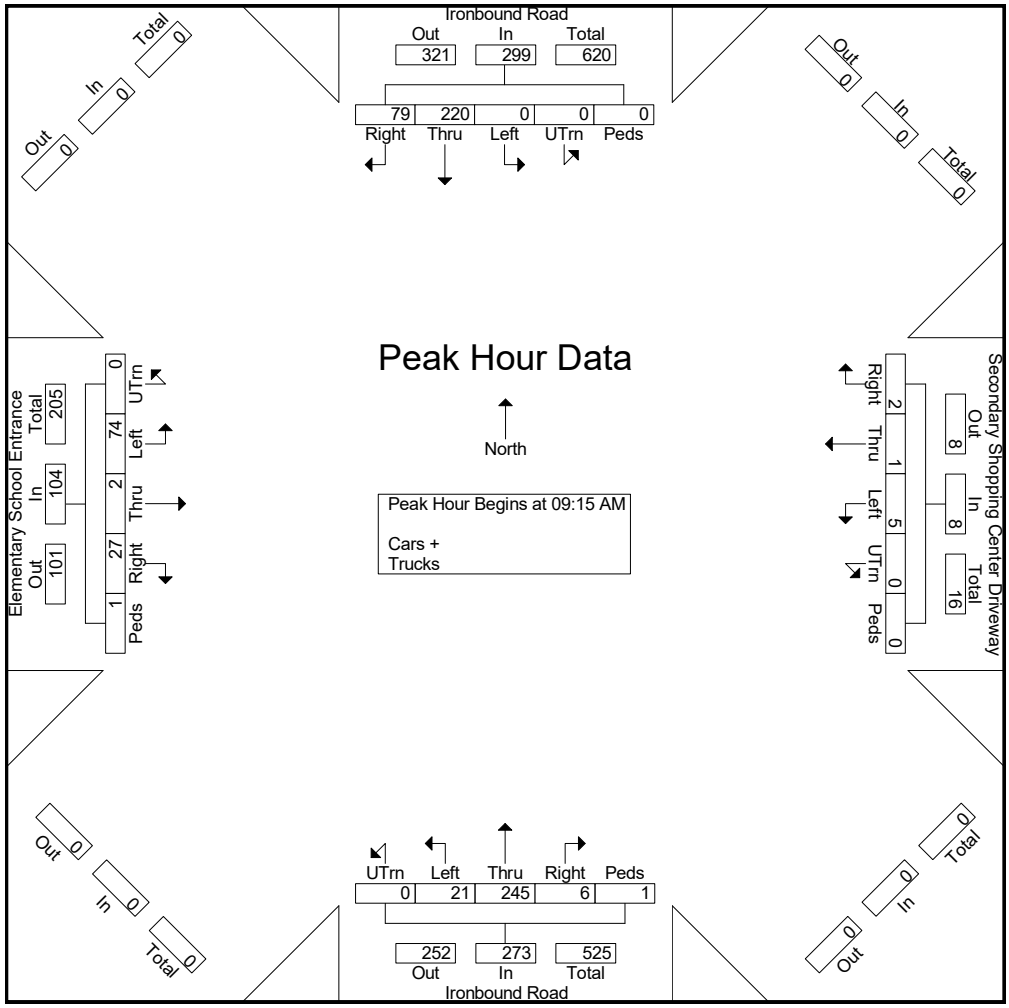
Groups Printed- Cars + - Trucks

	Ironbound Road Southbound						Secondary Shopping Center Driveway Westbound						Ironbound Road Northbound						Elementary School Entrance Eastbound						
Start Time	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Int. Total
08:30 AM	21	55	0	0	0	76	0	0	0	0	0	0	0	78	5	0	1	84	0	0	2	0	0	2	162
08:45 AM	18	41	1	0	0	60	0	0	0	0	0	0	1	89	8	0	0	98	0	0	2	0	0	2	160
Total	39	96	1	0	0	136	0	0	0	0	0	0	1	167	13	0	1	182	0	0	4	0	0	4	322
09:00 AM	11	45	0	0	0	56	0	0	1	0	1	2	0	43	1	0	0	44	1	0	0	0	0	1	103
09:15 AM	29	48	0	0	0	77	0	1	0	0	0	1	1	56	10	0	0	67	2	1	12	0	0	15	160
09:30 AM	40	51	0	0	0	91	0	0	2	0	0	2	4	63	11	0	1	79	20	1	44	0	0	65	237
09:45 AM	9	69	0	0	0	78	1	0	2	0	0	3	0	78	0	0	0	78	3	0	12	0	0	15	174
Total	89	213	0	0	0	302	1	1	5	0	1	8	5	240	22	0	1	268	26	2	68	0	0	96	674
10:00 AM	1	52	0	0	0	53	1	0	1	0	0	2	1	48	0	0	0	49	2	0	6	0	1	9	113
10:15 AM	3	46	0	1	0	50	0	0	2	0	0	2	1	61	0	0	0	62	0	0	0	0	0	0	114
Grand Total	132	407	1	1	0	541	2	1	8	0	1	12	8	516	35	0	2	561	28	2	78	0	1	109	1223
Apprch %	24.4	75.2	0.2	0.2	0		16.7	8.3	66.7	0	8.3		1.4	92	6.2	0	0.4		25.7	1.8	71.6	0	0.9		
Total %	10.8	33.3	0.1	0.1	0	44.2	0.2	0.1	0.7	0	0.1	1	0.7	42.2	2.9	0	0.2	45.9	2.3	0.2	6.4	0	0.1	8.9	
Cars +	119	397	0	1	0	517	2	1	8	0	1	12	8	509	31	0	2	550	25	2	65	0	1	93	1172
% Cars +	90.2	97.5	0	100	0	95.6	100	100	100	0	100	100	100	98.6	88.6	0	100	98	89.3	100	83.3	0	100	85.3	95.8
Trucks	13	10	1	0	0	24	0	0	0	0	0	0	0	7	4	0	0	11	3	0	13	0	0	16	51
% Trucks	9.8	2.5	100	0	0	4.4	0	0	0	0	0	0	0	1.4	11.4	0	0	2	10.7	0	16.7	0	0	14.7	4.2

TRAFFIC DATA COLLECTION

File Name : JamesCity(Ironbound and Elementary)
Site Code :
Start Date : 11/15/2023

	Ironbound Road Southbound						Secondary Shopping Center Driveway Westbound						Ironbound Road Northbound						Elementary School Entrance Eastbound						
Start Time	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 10:15 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 09:15 AM																									
09:15 AM	29	48	0	0	0	77	0	**1**	0	0	0	1	1	56	10	0	0	67	2	**1**	12	0	0	15	160
09:30 AM	**40**	51	0	0	0	**91**	0	0	**2**	0	0	2	**4**	63	**11**	0	**1**	**79**	**20**	1	**44**	0	0	**65**	**237**
09:45 AM	9	**69**	0	0	0	78	**1**	0	2	0	0	**3**	0	**78**	0	0	0	78	3	0	12	0	0	15	174
10:00 AM	1	52	0	0	0	53	1	0	1	0	0	2	1	48	0	0	0	49	2	0	6	0	**1**	9	113
Total Volume	79	220	0	0	0	299	2	1	5	0	0	8	6	245	21	0	1	273	27	2	74	0	1	104	684
% App. Total	26.4	73.6	0	0	0		25	12.5	62.5	0	0		2.2	89.7	7.7	0	0.4		26	1.9	71.2	0	1		
PHF	.494	.797	.000	.000	.000	.821	.500	.250	.625	.000	.000	.667	.375	.785	.477	.000	.250	.864	.338	.500	.420	.000	.250	.400	.722

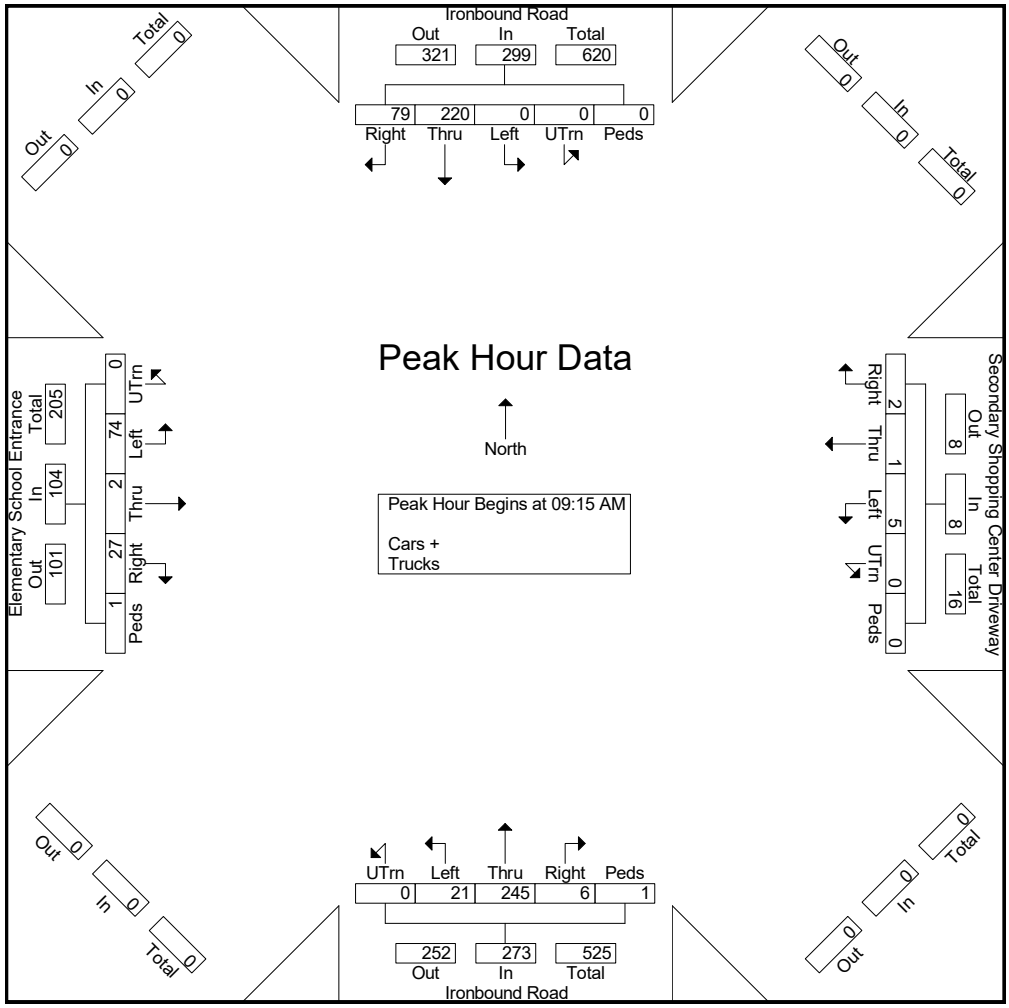


APPENDIX C: SIGNAL PLANS AND TIMING

TRAFFIC DATA COLLECTION

File Name : JamesCity(Ironbound and Elementary)
Site Code :
Start Date : 11/15/2023

	Ironbound Road Southbound						Secondary Shopping Center Driveway Westbound						Ironbound Road Northbound						Elementary School Entrance Eastbound						
Start Time	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Right	Thru	Left	UTrn	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 10:15 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 09:15 AM																									
09:15 AM	29	48	0	0	0	77	0	**1**	0	0	0	1	1	56	10	0	0	67	2	**1**	12	0	0	15	160
09:30 AM	**40**	51	0	0	0	**91**	0	0	**2**	0	0	2	**4**	63	**11**	0	**1**	**79**	**20**	1	**44**	0	0	**65**	**237**
09:45 AM	9	**69**	0	0	0	78	**1**	0	2	0	0	**3**	0	**78**	0	0	0	78	3	0	12	0	0	15	174
10:00 AM	1	52	0	0	0	53	1	0	1	0	0	2	1	48	0	0	0	49	2	0	6	0	**1**	9	113
Total Volume	79	220	0	0	0	299	2	1	5	0	0	8	6	245	21	0	1	273	27	2	74	0	1	104	684
% App. Total	26.4	73.6	0	0	0		25	12.5	62.5	0	0		2.2	89.7	7.7	0	0.4		26	1.9	71.2	0	1		
PHF	.494	.797	.000	.000	.000	.821	.500	.250	.625	.000	.000	.667	.375	.785	.477	.000	.250	.864	.338	.500	.420	.000	.250	.400	.722



APPENDIX C: SIGNAL PLANS AND TIMING

PROJECT MANAGER KEISHA WILKINS (VDOT) (757) 956-3110
SURVEYED BY, DATE TIMMONS GROUP (804) 200-6500, 04/2019
DESIGN BY TIMMONS GROUP (804) 200-6500
SUBSURFACE UTILITY BY, DATE TIMMONS GROUP (804) 200-6500, 04/2019

ANDREW LANE SMITH
Lic. No. 053606
COMMONWEALTH OF VIRGINIA
PROFESSIONAL ENGINEER

Timmons Group
Richmond, Virginia
TRAFFIC ENGINEER

REVISED	STATE	STATE ROUTE	STATE PROJECT	SHEET NO.
	VA.	615	EN18-047-723 M501	6(3)

DESIGN FEATURES RELATING TO CONSTRUCTION OR TO REGULATION AND CONTROL OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY THE DEPARTMENT

Signal Pole & Controller Legend

(ALL DIMENSIONS ARE TO CENTER OF POLE)

(1) EXISTING CONTROLLER CABINET, UPS, & FOUNDATION (CF-1)

(A) EXISTING METAL STRAIN POLE
Install Pedestrian Signal Head, SP-8, on Existing Pole (SMB-3)
Install Accessible Ped. Push Button, PA-2, on Existing Pole with 1' Mounting Arm

(B) EXISTING METAL STRAIN POLE

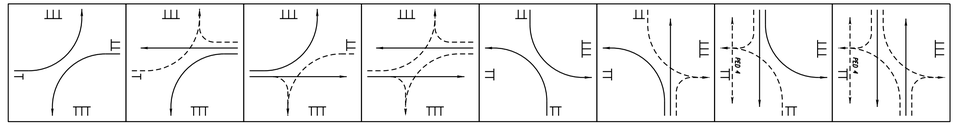
(C) EXISTING METAL STRAIN POLE

(D) EXISTING METAL STRAIN POLE
Install Pedestrian Signal Head, SP-8, on Existing Pole (SMB-3)
Install Accessible Ped. Push Button, PA-2, on Existing Pole with 1' Mounting Arm

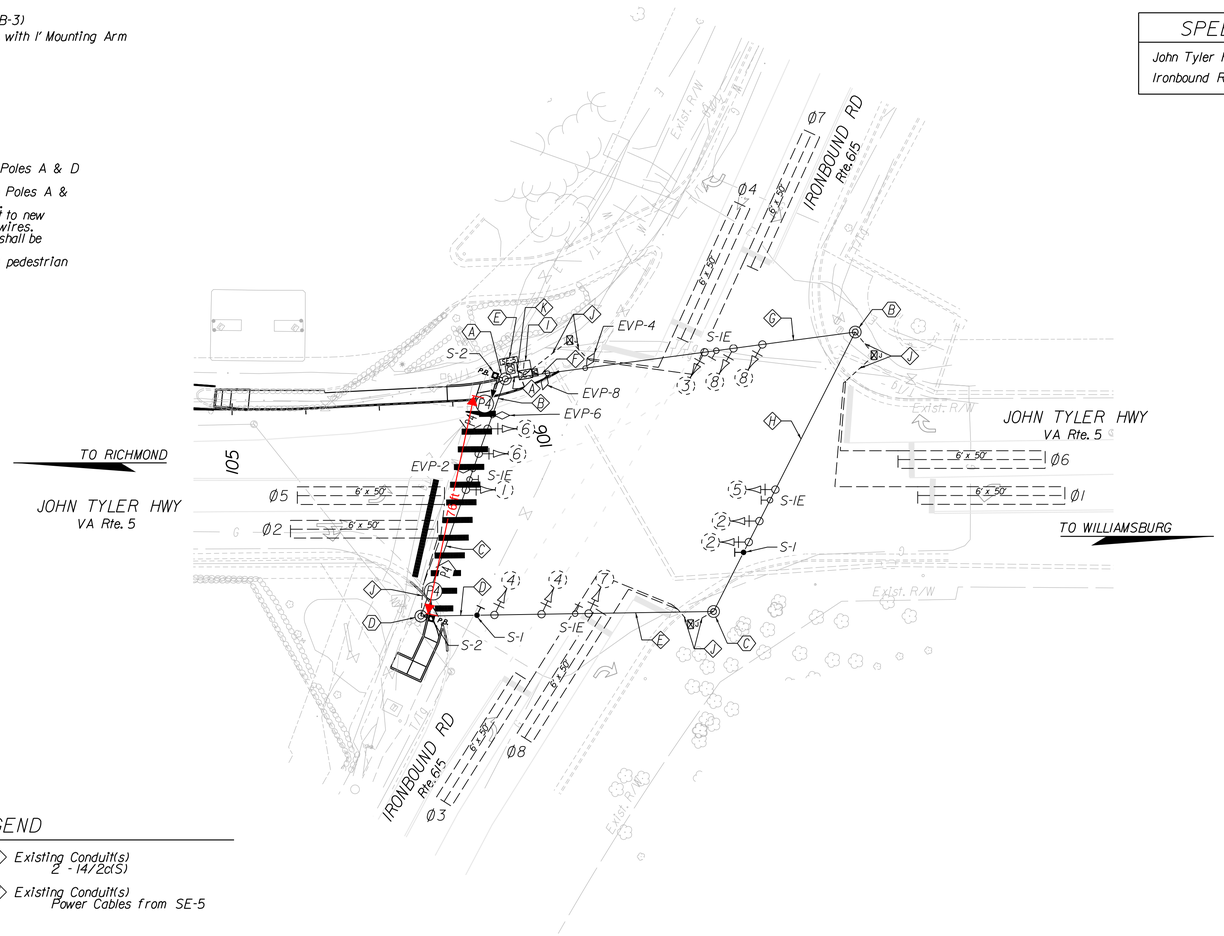
(E) EXISTING ELECTRIC SERVICE CONNECTION

Scope of Modifications
- Instal new SP-8 Pedestrian Signal Heads on Existing Strain Poles A & D as shown
- Install Accessible Ped Push Buttons (PA-2) on Existing Strain Poles A & D as shown. Push buttons shall be mounted on 1' extension arms.
- Install new 14/4c and 14/2c(S) cables from Controller Cabinet to new signal heads and push buttons via existing conduits and span wires.
- Install new signs S-1 as shown on existing span wires. Signs shall be secured to tether wire as shown on Std SMD-1.
- Modify controller cabinet & phasing as necessary for new P4 pedestrian movement

Phasing Diagram



SPEED LIMITS	
John Tyler Hwy.	35 MPH
Ironbound Rd.	45 MPH



Color Sequence Chart

	SIGNAL	PHASES								FLASH
		1-5	1-6	2-5	2-6	3-7	3-8	4-7	4-8	
SIGNALS	1	→G	→G	→FY	→FY					→Y
	2			G	G					Y
	3					→G	→G	→FY	→FY	→R
	4							G	G	R
	5	→G	→FY	→G	→FY					→Y
	6		G		G					Y
	7					→G	→FY	→G	→FY	→R
	8						G		G	R
	P4	DW	DW	DW	DW	DW	DW	W	W	BLANK

- Empty box denotes RED Indication (Red Ball or Red Arrow as appropriate)
- Heads 1 & 5: During flash mode, the display of a flashing left-turn yellow arrow indication shall be only from the signal section that displays a steady left-turn arrow indication during steady mode (stop-and-go) operation.

CABLE AND CONDUIT LEGEND

(A) Existing Conduit(s)
4 - 14/7c
4 - 14/4c
6 - 14/2c(S)
4 - EPDC
2 - 14/4c(*)
2 - 14/2c(S)(*)

(B) Existing Span Wire
2 - 14/7c
2 - 14/4c
4 - 14/2c(S)
2 - EPDC
1 - 14/4c(*)
1 - 14/2c(S)(*)

(C) Existing Span Wire
1 - 14/7c
1 - 14/4c
4 - 14/2c(S)
1 - 14/4c(*)
1 - 14/2c(S)(*)

(D) Existing Span Wire
1 - 14/7c
1 - 14/4c
2 - 14/2c(S)

(E) Existing Span Wire
2 - 14/2c(S)

(F) Existing Span Wire
2 - 14/7c
2 - 14/4c
2 - 14/2c(S)
2 - EPDC

(G) Existing Span Wire
1 - 14/7c
1 - 14/4c
2 - 14/2c(S)

(H) Existing Span Wire
1 - 14/7c
1 - 14/4c

(J) Existing Conduit(s)
2 - 14/2c(S)

(K) Existing Conduit(s)
Power Cables from SE-5

(S) Denotes "Shielded Cable"
(*) Denotes New Cable
EPDC Denotes "Emergency Preemption Detector Cable"

Proposed Signals

SP-8

P4

Proposed Signs

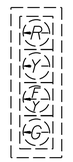
S-1

R10-15
(30" x 30")
QUANTITY - 2 EA.

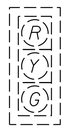
S-2

R10-3E(R)
(9" x 15")
QUANTITY - 2 EA.

Existing Signals



1,3,5,7



2,4,6,8

Existing Signs

S-1E

SCALE
0 25' 50'

REFERENCES
(PLAN AND DETAIL SHEETS)

Mainline Plan	3
SPM Plan	5(3)

TRAFFIC CONTROL DEVICE PLANS

TRAFFIC SIGNAL MODIFICATION PLAN

VA ROUTE 5 (JOHN TYLER HWY) &
ROUTE 615 (IRONBOUND RD)
JAMES CITY COUNTY

PROJECT	SHEET NO.
EN18-047-723	6(3)

Rt 5 & 615 (5 Forks)

Phase Timing

11/20/2023 4:33:00 PM

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Min Green	5	15	5	7	5	15	5	7	0	0	0	0	0	0	0	0
Veh Ext	2.0	6.0	2.0	3.0	2.0	6.0	2.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Green 1	20	40	20	25	20	40	20	25	0	0	0	0	0	0	0	0
Max Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Green 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Ext	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4.1	4.1	4.8	4.8	4.1	4.1	4.8	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clr	5.6	5.6	3.9	3.9	5.6	5.6	3.9	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Adv Flash	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bike MG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clr	0	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sol DW	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Early Wlk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Wlk	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	3.5	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reduce After	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0
TTReduce	0	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Neg Ped	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AP Disc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pmt Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pmt Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pmt Ped Clr	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Return Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rt 5 & 615 (5 Forks)

Phase Options

11/20/2023 4:33:00 PM

Phases	1-8								9-16							
Min Recalls		2				6		8								
Max Recalls																
Ped Recalls																
Soft Recall																
Dual Entry																
Red Rest								8								
Walk Rest																
Walk Expand																
Ped Recycle																
Sim Ped Term																
PC Thru Clr																
Guar Passage		2				6										
No Simult Gap																
Yel Lock																
Red Lock																
PhaseNext Lock	1	2	3	4	5	6	7	8								
No Term Call	1	2	3	4	5	6	7	8								
Cond Serv																
CS Enable																
Cond Reserve																
Reserve																
Veh Omit																
Ped Omit																
Perm Phase																
Protect Calls																
Protect Calls 2																
Flash Entry																
Flash Exit																
Flash Exit Yel																
Flash Exit Red																
Ped Scramble																
No Min Yel																
No Min Red Rev																
Max Scramble Walk																
Flash Yellow																
Flash FYA																
CNA 1																
CNA 2																

Rt 5 & 615 (5 Forks)

Phase Startup Options

11/20/2023 4:33:00 PM

Startup Flash	0	Mode	Yel->Red
Startup All Red	0	Yellow	0.0

Phases	1-8								9-16							
Startup Phases		2				6										
Startup Yellow		2				6										
Startup Red																
Startup No Walk																
Startup Next																
Startup Yel Fls																
Startup FYA																
No Veh Call	1	2	3	4	5	6	7	8								
No Ped Call		2		4		6		8								

Phase Startup Timing

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Max Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Unit

Red Revert	0.0	Ped Protect	No	AdvFls in Flash	No

Rt 5 & 615 (5 Forks)

Ring Sequence / Conflicting Phases

11/20/2023 4:33:00 PM

Ringgroup 1

Ring 1	1	2	3	4	0	0	0	0	0	0	0	0	0	0	0	0
Ring 2	5	6	7	8	0	0	0	0	0	0	0	0	0	0	0	0

Ringgroup 2

Custom Sequences

Seq 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Seq 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Conflicting Phases

	1-8							9-16							
Phase 1															
Phase 2															
Phase 3															
Phase 4															
Phase 5															
Phase 6															
Phase 7															
Phase 8															
Phase 9															
Phase 10															
Phase 11															
Phase 12															
Phase 13															
Phase 14															
Phase 15															
Phase 16															

Rt 5 & 615 (5 Forks)

MCE Options

11/20/2023 4:33:00 PM

Phases	1-8	9-16
MCE Ped Protect		
MCE Veh Call		
MCE Ped Call		
MCE Veh Omit		
MCE Ped Omit		
MCE Veh Sync		
MCE Ped Sync		
MCE Halt Don't Walk		

LRV Phases	1-8
MCE LRV Term Early	

Rt 5 & 615 (5 Forks)

FYA/FRA

11/20/2023 4:33:00 PM

FYA	1	2	3	4	5	6	7	8
Prot Phs	1	0	3	0	5	0	7	0
Opp Thru	2	0	4	0	6	0	8	0
Start Phs	0	0	0	0	0	0	0	0
Opp Ped	0	0	0	0	0	0	0	0
Delay	4.5	0.0	4.5	0.0	4.5	0.0	4.5	0.0
Min FYA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Skip Prot Red	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Head Mode	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1	FYA 1

Ped Hawk 1

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Ped Hawk 2

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Ped Hawk 3

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Ped Hawk 4

Veh Phase	0		
Ped Phase	0		
Flash Yel	0.0	Dark Signal	Yes
Flash Delay	0.0	Flash Carryover	0.0
Green Mode	Normal		

Rt 5 & 615 (5 Forks)

Overlap Startup Options

11/20/2023 4:33:00 PM

Overlaps	1-8							9-16							
Startup Overlap Green															
Startup Overlap Yellow															

Overlap Startup Timing

Overlap	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Start Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Min Green	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Overlap Unit Options

Overlaps	1-8							9-16							
Overlap Ped Recalls															
MCE Olap Ped Protect															
MCE Olap Ped Calls															
MCE Olap Ped Expand															
No Min Yellow															
No Min Red Rev															
Flash Yellow															
No Conflict															
Pre Signal															
Perm Red															
Perm FYA															
Perm FRA															

Rt 5 & 615 (5 Forks)

Coordination Options

11/20/2023 4:33:00 PM

Sync Time	00:00	RTC Set Time	00:00
Transition Mode	Best	Ped Adjust	None
Trans Short %	0	Trans Long %	0
Offset Reference	Lag FO	Short Cycles	0
Dual Entry	Normal	Overlap F/O	Disabled
Master Sync Mode	RTC	Master Sync Length	0
Adapt Thresh	0	Adapt Step	0
External Plan Max	0		
Hardwire No Match	Sched	Hardwire Sync Fail	0
Override Omit/Recall	No		

Phases	1-8	9-16
No Trans Recall		
Trans Ped Recall		
Trans Phases		

Rt 5 & 615 (5 Forks)

Hardwire Plans

11/20/2023 4:33:00 PM

Hardwire	Plan Select							Pattern	Offset	Mode
Plan 1								0	0	Hardwire
Plan 2								0	0	Hardwire
Plan 3								0	0	Hardwire
Plan 4								0	0	Hardwire
Plan 5								0	0	Hardwire
Plan 6								0	0	Hardwire
Plan 7								0	0	Hardwire
Plan 8								0	0	Hardwire
Plan 9								0	0	Hardwire
Plan 10								0	0	Hardwire
Plan 11								0	0	Hardwire
Plan 12								0	0	Hardwire
Plan 13								0	0	Hardwire
Plan 14								0	0	Hardwire
Plan 15								0	0	Hardwire
Plan 16								0	0	Hardwire
Plan 17								0	0	Hardwire
Plan 18								0	0	Hardwire
Plan 19								0	0	Hardwire
Plan 20								0	0	Hardwire
Plan 21								0	0	Hardwire
Plan 22								0	0	Hardwire
Plan 23								0	0	Hardwire
Plan 24								0	0	Hardwire
Plan 25								0	0	Hardwire
Plan 26								0	0	Hardwire
Plan 27								0	0	Hardwire
Plan 28								0	0	Hardwire
Plan 29								0	0	Hardwire
Plan 30								0	0	Hardwire
Plan 31								0	0	Hardwire
Plan 32								0	0	Hardwire

Rt 5 & 615 (5 Forks)

Soft Interconnect

11/20/2023 4:33:00 PM

Mode	Slave	Remote Int Number	0
Yield Delay	0		
Yield Duration	0		
Permissive	0		
Local Hold Limit	0		

Phases	1-8	9-16
Local Control Phases		
Local Hold Phases		
Local Perm Phases		
Local Call Phases		
Remote Perm Phases		
Remote Hold Phases		

Rt 5 & 615 (5 Forks)

Preempt Inputs

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Preempt Input	1	2	3	4	5	6	7	8	9	10
Delay	0	0	0	0	0	0	0	0	0	0
Checkout Limit	0	0	0	0	0	0	0	0	0	0
Locked	No	No	No	No	No	No	No	No	No	No
Interlock	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Input Number	0	0	0	0	0	0	0	0	0	0
Input Priority	All	All	All	All	All	All	All	All	All	All
Delay Mode	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp	Inp

Preempt Priority

Preempt	1	2	3	4	5	6	7	8	9	10
Priority	0	0	0	0	0	0	0	0	0	0

Remote Preemption

Remote Preempt	RM 1	RM 2	RM 3	RM 4	RM 5	RM 6	RM 7	RM 8
Int Number	0	0	0	0	0	0	0	0
PE Number	0	0	0	0	0	0	0	0
Mode	Dis	Dis	Dis	Dis	Dis	Dis	Dis	Dis
Slack	0	0	0	0	0	0	0	0
Travel Time	0	0	0	0	0	0	0	0
Alt TT 1	0	0	0	0	0	0	0	0
Alt TT 2	0	0	0	0	0	0	0	0
Alt TT 3	0	0	0	0	0	0	0	0
Alt TT 4	0	0	0	0	0	0	0	0
Alt TT 5	0	0	0	0	0	0	0	0
Alt TT 6	0	0	0	0	0	0	0	0
Alt TT 7	0	0	0	0	0	0	0	0

Rt 5 & 615 (5 Forks)

Preempt 1 (Configuration)

11/20/2023 4:33:00 PM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16
Enable Phases		
Preempt Inputs	1	

	1-8		
LRV Disable		Max	0
LRV Dwell Flash			
LRV Omit		Delay	0
LRV No Yel			

Preempt 1 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16
Omit Olap Grn Clr		
Phs EWlk to Grn		
TClr 1 Veh Phases		
TClr 1 Ped Phases		
TClr 1 Olap		
TClr 1 Olap Ped		
TClr 2 Veh Phases		
TClr 2 Ped Phases		
TClr 2 Olap		
TClr 2 Olap Ped		
Init Dwell Phases		
Dwell Veh Phases	1, 6	
Dwell Ped Phases		
Dwell Olap		
Dwell Olap Ped		
Exit Veh Phases	2, 6	
Exit Ped Phases		
Exit Olap		
Exit Olap Ped		
Zero Phase Walk		
Zero Phase Ped Clr		
Zero Phase Green	1, 2, 3, 4, 5, 6, 7, 8	
Zero Olap Walk		
Zero Olap Ped Clr		
Zero Olap Green		
Dwell-Phase Red		
Dwell-Phase Red Flash		
Dwell-Phase Yel Flash		
Dwell-Olap Red Flash		
Dwell-Olap Yel Flash		
Dwell-Ped Dark		
Dwell-Olap Ped Dark		

Start Green	0	Start Walk	0
		Start Ped Clr	0
Track Clear 1	0	Track Clear 2	0
TC1 Extend	0	TC1 Max	0
Exit Ped Clr	0	Exit Yellow	0.0
Exit Red	0.0		
Min Dwell	0	Min Duration	0
Dwell Extend	0		
Max Dwell	0	Max Call	180
Reserve Inh Same	0		
Reserve Inh All	0		
Delay	0		

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA	5	

Rt 5 & 615 (5 Forks)

Preempt 2 (Configuration)

11/20/2023 4:33:00 PM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16
Enable Phases		
Preempt Inputs	2	

	1-8		
LRV Disable		Max	0
LRV Dwell Flash			
LRV Omit		Delay	0
LRV No Yel			

Preempt 2 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16
Omit Olap Grn Clr		
Phs EWlk to Grn		
TClr 1 Veh Phases		
TClr 1 Ped Phases		
TClr 1 Olap		
TClr 1 Olap Ped		
TClr 2 Veh Phases		
TClr 2 Ped Phases		
TClr 2 Olap		
TClr 2 Olap Ped		
Init Dwell Phases		
Dwell Veh Phases	2 5	
Dwell Ped Phases		
Dwell Olap		
Dwell Olap Ped		
Exit Veh Phases	2 6	
Exit Ped Phases		
Exit Olap		
Exit Olap Ped		
Zero Phase Walk		
Zero Phase Ped Clr		
Zero Phase Green	1 2 3 4 5 6 7 8	
Zero Olap Walk		
Zero Olap Ped Clr		
Zero Olap Green		
Dwell-Phase Red		
Dwell-Phase Red Flash		
Dwell-Phase Yel Flash		
Dwell-Olap Red Flash		
Dwell-Olap Yel Flash		
Dwell-Ped Dark		
Dwell-Olap Ped Dark		

Start Green	0	Start Walk	0
		Start Ped Clr	0
Track Clear 1	0	Track Clear 2	0
TC1 Extend	0	TC1 Max	0
Exit Ped Clr	0	Exit Yellow	0.0
Exit Red	0.0		
Min Dwell	0	Min Duration	0
Dwell Extend	0		
Max Dwell	0	Max Call	180
Reserve Inh Same	0		
Reserve Inh All	0		
Delay	0		

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA	1	

Rt 5 & 615 (5 Forks)

Preempt 3 (Configuration)

11/20/2023 4:33:00 PM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16
Enable Phases		
Preempt Inputs	3	

	1-8		
LRV Disable		Max	0
LRV Dwell Flash			
LRV Omit		Delay	0
LRV No Yel			

Preempt 3 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16
Omit Olap Grn Clr		
Phs EWlk to Grn		
TClr 1 Veh Phases		
TClr 1 Ped Phases		
TClr 1 Olap		
TClr 1 Olap Ped		
TClr 2 Veh Phases		
TClr 2 Ped Phases		
TClr 2 Olap		
TClr 2 Olap Ped		
Init Dwell Phases		
Dwell Veh Phases	3 8	
Dwell Ped Phases		
Dwell Olap		
Dwell Olap Ped		
Exit Veh Phases	2 6	
Exit Ped Phases		
Exit Olap		
Exit Olap Ped		
Zero Phase Walk		
Zero Phase Ped Clr		
Zero Phase Green	1 2 3 4 5 6 7 8	
Zero Olap Walk		
Zero Olap Ped Clr		
Zero Olap Green		
Dwell-Phase Red		
Dwell-Phase Red Flash		
Dwell-Phase Yel Flash		
Dwell-Olap Red Flash		
Dwell-Olap Yel Flash		
Dwell-Ped Dark		
Dwell-Olap Ped Dark		

Start Green	0	Start Walk	0
		Start Ped Clr	0
Track Clear 1	0	Track Clear 2	0
TC1 Extend	0	TC1 Max	0
Exit Ped Clr	0	Exit Yellow	0.0
Exit Red	0.0		
Min Dwell	0	Min Duration	0
Dwell Extend	0		
Max Dwell	0	Max Call	180
Reserve Inh Same	0		
Reserve Inh All	0		
Delay	0		

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA	7	

Rt 5 & 615 (5 Forks)

Preempt 4 (Configuration)

11/20/2023 4:33:00 PM

Enabled	Yes	Dwell Mode	Normal	Output Mode	All
Output2 Mode	All	Fail Action	Preempt Off	Exit Mode	Normal
Override Flash	No	Change Phasenext	Yes		

	1-8	9-16
Enable Phases		
Preempt Inputs	4	

	1-8		
LRV Disable		Max	0
LRV Dwell Flash			
LRV Omit		Delay	0
LRV No Yel			

Preempt 4 (Timing/Phases/Overlaps)

Phases/Overlaps	1-8	9-16
Omit Olap Grn Clr		
Phs EWlk to Grn		
TClr 1 Veh Phases		
TClr 1 Ped Phases		
TClr 1 Olap		
TClr 1 Olap Ped		
TClr 2 Veh Phases		
TClr 2 Ped Phases		
TClr 2 Olap		
TClr 2 Olap Ped		
Init Dwell Phases		
Dwell Veh Phases	4 7	
Dwell Ped Phases		
Dwell Olap		
Dwell Olap Ped		
Exit Veh Phases	2 6	
Exit Ped Phases		
Exit Olap		
Exit Olap Ped		
Zero Phase Walk		
Zero Phase Ped Clr		
Zero Phase Green	1 2 3 4 5 6 7 8	
Zero Olap Walk		
Zero Olap Ped Clr		
Zero Olap Green		
Dwell-Phase Red		
Dwell-Phase Red Flash		
Dwell-Phase Yel Flash		
Dwell-Olap Red Flash		
Dwell-Olap Yel Flash		
Dwell-Ped Dark		
Dwell-Olap Ped Dark		

Start Green	0	Start Walk	0
		Start Ped Clr	0
Track Clear 1	0	Track Clear 2	0
TC1 Extend	0	TC1 Max	0
Exit Ped Clr	0	Exit Yellow	0.0
Exit Red	0.0		
Min Dwell	0	Min Duration	0
Dwell Extend	0		
Max Dwell	0	Max Call	180
Reserve Inh Same	0		
Reserve Inh All	0		
Delay	0		

Phases/Overlaps	1-8	9-16
TClr 1 FR Olap		
TClr 2 FR Olap		
Dwell FR Olap		
TClr 1 FYA		
TClr 2 FYA		
Dwell FYA	3	

Rt 5 & 615 (5 Forks)

TOD Pattern Events

11/20/2023 4:33:00 PM

	Time	DOW							Holidays								Mode	Pattern	Offset
Event 1	00:00																Sched	0	0
Event 2	00:00																Sched	0	0
Event 3	00:00																Sched	0	0
Event 4	00:00																Sched	0	0
Event 5	00:00																Sched	0	0
Event 6	00:00																Sched	0	0
Event 7	00:00																Sched	0	0
Event 8	00:00																Sched	0	0
Event 9	00:00																Sched	0	0
Event 10	00:00																Sched	0	0
Event 11	00:00																Sched	0	0
Event 12	00:00																Sched	0	0
Event 13	00:00																Sched	0	0
Event 14	00:00																Sched	0	0
Event 15	00:00																Sched	0	0
Event 16	00:00																Sched	0	0
Event 17	00:00																Sched	0	0
Event 18	00:00																Sched	0	0
Event 19	00:00																Sched	0	0
Event 20	00:00																Sched	0	0
Event 21	00:00																Sched	0	0
Event 22	00:00																Sched	0	0
Event 23	00:00																Sched	0	0
Event 24	00:00																Sched	0	0
Event 25	00:00																Sched	0	0
Event 26	00:00																Sched	0	0
Event 27	00:00																Sched	0	0
Event 28	00:00																Sched	0	0
Event 29	00:00																Sched	0	0
Event 30	00:00																Sched	0	0
Event 31	00:00																Sched	0	0
Event 32	00:00																Sched	0	0

Rt 5 & 615 (5 Forks)

Holidays

11/20/2023 4:33:00 PM

	Active Holidays							Month	Day	DOW						WOM
Date 1								0	0							0
Date 2								0	0							0
Date 3								0	0							0
Date 4								0	0							0
Date 5								0	0							0
Date 6								0	0							0
Date 7								0	0							0
Date 8								0	0							0
Date 9								0	0							0
Date 10								0	0							0
Date 11								0	0							0
Date 12								0	0							0
Date 13								0	0							0
Date 14								0	0							0
Date 15								0	0							0
Date 16								0	0							0
Date 17								0	0							0
Date 18								0	0							0
Date 19								0	0							0
Date 20								0	0							0
Date 21								0	0							0
Date 22								0	0							0
Date 23								0	0							0
Date 24								0	0							0
Date 25								0	0							0
Date 26								0	0							0
Date 27								0	0							0
Date 28								0	0							0
Date 29								0	0							0
Date 30								0	0							0
Date 31								0	0							0
Date 32								0	0							0

Rt 5 & 615 (5 Forks)

Vehicle Detector 1

11/20/2023 4:33:00 PM

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0
Mode	No Disc	Added	Disabled	System	Disabled		
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0
Fail Time	0						
Delay 2	0.0						

Phases	1-8	9-16
Call Phases	1	
Yellow Lock Phases		
Red Lock Phases		
Extend Phases	1	
XSwitch Phases		
Bike Call Phases		

Vehicle Detector 2

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0
Mode	No Disc	Added	Disabled	System	Enabled		
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0
Fail Time	0						
Delay 2	0.0						

Phases	1-8	9-16
Call Phases	2	
Yellow Lock Phases		
Red Lock Phases		
Extend Phases	2	
XSwitch Phases		
Bike Call Phases		

Rt 5 & 615 (5 Forks)

Vehicle Detector 3

11/20/2023 4:33:00 PM

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0				
Mode	No Disc	Added	Disabled	System	Disabled						
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0		
Delay 2	0.0										

Phases	1-8								9-16							
Call Phases			3													
Yellow Lock Phases																
Red Lock Phases																
Extend Phases			3													
XSwitch Phases																
Bike Call Phases																

Vehicle Detector 4

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0				
Mode	No Disc	Added	Disabled	System	Disabled						
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0		
Delay 2	0.0										

Phases	1-8								9-16							
Call Phases				4												
Yellow Lock Phases																
Red Lock Phases																
Extend Phases				4												
XSwitch Phases																
Bike Call Phases																

Rt 5 & 615 (5 Forks)

Vehicle Detector 5

11/20/2023 4:33:00 PM

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0
Mode	No Disc	Added	Disabled	System	Disabled		
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0
Fail Time	0						
Delay 2	0.0						

Phases	1-8	9-16
Call Phases	5	
Yellow Lock Phases		
Red Lock Phases		
Extend Phases	5	
XSwitch Phases		
Bike Call Phases		

Vehicle Detector 6

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0
Mode	No Disc	Added	Disabled	System	Enabled		
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0
Fail Time	0						
Delay 2	0.0						

Phases	1-8	9-16
Call Phases	6	
Yellow Lock Phases		
Red Lock Phases		
Extend Phases	6	
XSwitch Phases		
Bike Call Phases		

Rt 5 & 615 (5 Forks)

Vehicle Detector 7

11/20/2023 4:33:00 PM

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0				
Mode	No Disc	Added	Disabled	System	Disabled						
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0		
Delay 2	0.0										

Phases	1-8							9-16							
Call Phases						7									
Yellow Lock Phases															
Red Lock Phases															
Extend Phases						7									
XSwitch Phases															
Bike Call Phases															

Vehicle Detector 8

Delay	0.0	Extend	0.0	Carryover	0.0	Queue Limit	0				
Mode	No Disc	Added	Disabled	System	Disabled						
Fail Mode	None	Max Pres	0	No Act	0	Erratic	0	Fail Time	0		
Delay 2	0.0										

Phases	1-8							9-16							
Call Phases							8								
Yellow Lock Phases															
Red Lock Phases															
Extend Phases							8								
XSwitch Phases															
Bike Call Phases															

Rt 5 & 615 (5 Forks)

Pedestrian Detector 4

11/20/2023 4:33:00 PM

No Act	Max Pres	Erratic	Fail Mode
0	0	0	None

Phases/Overlaps	1-8							9-16							
Call Ped Phases				4											
Call Ped Olaps															
Call Phases															
Locked Call Phases															
Ped Entry Phases															
Olap Ped Entry Phases															
Ped Cascade Phases															
Call Walk2															

Rt 5 & 615 (5 Forks)

Transit/LRV Startup/Options

11/20/2023 4:33:00 PM

	LRV 1-8									
No Startup Call									Warn Flash Rate	1 Hz	Rsrv Inh Mode	Seconds

Rt 5 & 615 (5 Forks)

Control / Config

11/20/2023 4:33:00 PM

Pattern Mode	Free					
Manual Pattern	0	Manual Offset	0			
Stop Time Input	Enabled					
Aux Switch	None		0			
DLS Mode	Auto	Time Zone	Est (UTC-5)	GPS Thresh	0	
Password Timeout	5					

	1-8	9-16
Maint Phs Recalls		
Maint Ped Recalls		

Serial 1 Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
Serial Rebroadcast	Disabled	Response	None

Serial 2 Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00

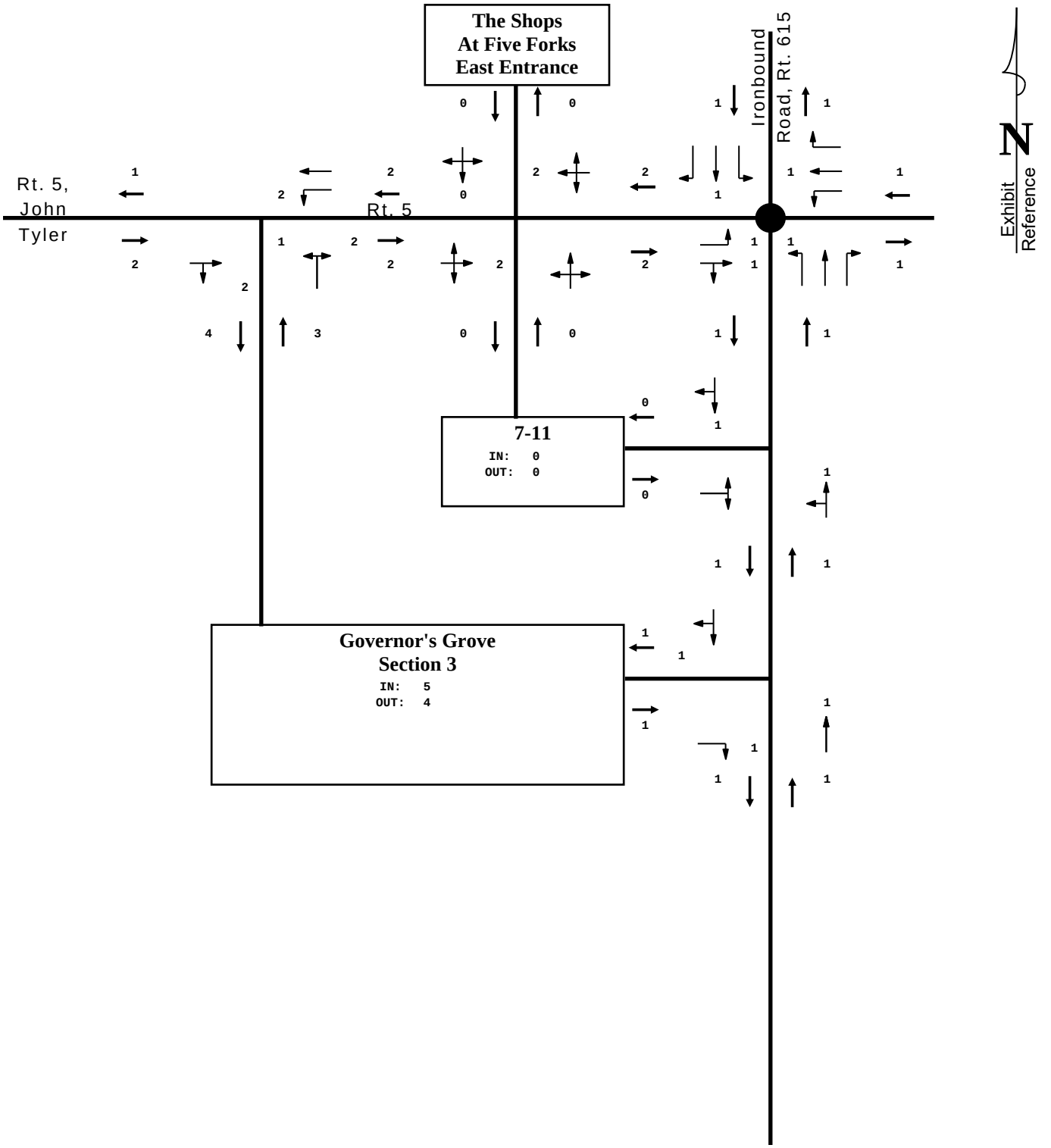
Ethernet Port Configuration

Broadcast Plan/Sync	Disabled	Broadcast Time	00:00
Serial Rebroadcast	Disabled		

Peer Configuration

Peer 1	0
Peer 2	0
Peer 3	0
Peer 4	0
Peer 5	0
Peer 6	0
Peer 7	0
Peer 8	0

APPENDIX D: APPROVED DEVELOPMENT



PROPOSED DEVELOPMENT AM PEAK HOUR ASSIGNMENT
RT. 5 FULL ACCESS AND IRONBOUND ROAD RIGHT TURN IN/OUT

DRW Consultants, LLC
804-794-7312

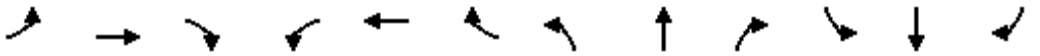
Exhibit 14a

APPENDIX E: SYNCHRO OUTPUT – EXISTING (2023) CONDITIONS

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	94	330	73	193	113	76	220	127	84	240	75
v/c Ratio	0.17	0.50	0.18	0.29	0.15	0.29	0.72	0.27	0.30	0.77	0.16
Control Delay	15.8	30.5	16.3	28.2	0.4	27.8	55.7	1.4	27.9	58.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	30.5	16.3	28.2	0.4	27.8	55.7	1.4	27.9	58.9	0.7
Queue Length 50th (ft)	33	175	26	98	0	35	138	0	39	151	0
Queue Length 95th (ft)	57	250	47	151	0	63	#211	0	68	#239	0
Internal Link Dist (ft)		772		449			360			944	
Turn Bay Length (ft)	175		150		300	175			200		200
Base Capacity (vph)	611	659	464	671	735	311	316	477	322	322	481
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	0.15	0.50	0.16	0.29	0.15	0.24	0.70	0.27	0.26	0.75	0.16

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	214	60	61	160	94	63	183	105	70	199	62
Future Volume (veh/h)	78	214	60	61	160	94	63	183	105	70	199	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1841	1841	1752	1856	1870	1870	1870	1826	1870	1870	1826
Adj Flow Rate, veh/h	94	258	72	73	193	113	76	220	127	84	240	75
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	1	4	4	10	3	2	2	2	5	2	2	5
Cap, veh/h	514	555	155	407	739	631	188	276	228	199	274	226
Arrive On Green	0.05	0.40	0.40	0.05	0.40	0.40	0.05	0.15	0.15	0.05	0.15	0.15
Sat Flow, veh/h	1795	1385	386	1668	1856	1585	1781	1870	1547	1781	1870	1547
Grp Volume(v), veh/h	94	0	330	73	193	113	76	220	127	84	240	75
Grp Sat Flow(s),veh/h/ln	1795	0	1771	1668	1856	1585	1781	1870	1547	1781	1870	1547
Q Serve(g_s), s	3.2	0.0	14.4	2.7	7.3	4.8	3.7	11.9	8.0	4.2	13.2	4.6
Cycle Q Clear(g_c), s	3.2	0.0	14.4	2.7	7.3	4.8	3.7	11.9	8.0	4.2	13.2	4.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	514	0	710	407	739	631	188	276	228	199	274	226
V/C Ratio(X)	0.18	0.00	0.47	0.18	0.26	0.18	0.40	0.80	0.56	0.42	0.88	0.33
Avail Cap(c_a), veh/h	600	0	710	491	739	631	282	290	240	295	290	240
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	0.0	23.2	17.9	21.2	20.5	35.9	43.3	41.6	36.0	43.9	40.2
Incr Delay (d2), s/veh	0.1	0.0	2.2	0.1	0.9	0.6	0.5	13.9	2.6	0.5	23.9	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	6.3	1.0	3.3	1.8	1.6	6.4	3.1	1.8	7.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	25.4	18.0	22.1	21.1	36.4	57.1	44.1	36.5	67.7	41.1
LnGrp LOS	B	A	C	B	C	C	D	E	D	D	E	D
Approach Vol, veh/h		424			379			423			399	
Approach Delay, s/veh		23.6			21.0			49.5			56.2	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	51.8	14.5	24.1	14.9	51.5	14.4	24.2
Change Period (Y+Rc), s	9.7	9.7	* 8.7	* 8.7	9.7	9.7	* 8.7	* 8.7
Max Green Setting (Gmax), s	10.3	30.3	* 11	* 16	10.3	30.3	* 11	* 16
Max Q Clear Time (g_c+I1), s	4.7	16.4	5.7	15.2	5.2	9.3	6.2	13.9
Green Ext Time (p_c), s	0.0	3.5	0.0	0.2	0.0	3.5	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	27	0	50	0	301	31	48	272	0
Future Vol, veh/h	0	0	0	27	0	50	0	301	31	48	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	1	1	0	4	2	1	5	0
Mvmt Flow	0	0	0	33	0	62	0	372	38	59	336	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	876	864	336	826	826	372	-	0	0	410	0	0
Stage 1	454	454	-	372	372	-	-	-	-	-	-	-
Stage 2	422	410	-	454	454	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.51	6.21	-	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.009	3.309	-	-	-	2.209	-	-
Pot Cap-1 Maneuver	269	292	706	291	308	676	0	-	-	1154	-	-
Stage 1	586	569	-	648	621	-	0	-	-	-	-	-
Stage 2	609	595	-	586	571	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	235	277	706	280	292	676	-	-	-	1154	-	-
Mov Cap-2 Maneuver	351	372	-	400	396	-	-	-	-	-	-	-
Stage 1	586	540	-	648	621	-	-	-	-	-	-	-
Stage 2	553	595	-	556	542	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	13	0	1.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	544	1154	-	-
HCM Lane V/C Ratio	-	-	-	0.175	0.051	-	-
HCM Control Delay (s)	-	-	0	13	8.3	-	-
HCM Lane LOS	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0.6	0.2	-	-

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	74	2	27	5	1	2	21	256	6	0	220	79
Future Vol, veh/h	74	2	27	5	1	2	21	256	6	0	220	79
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	17	0	11	0	0	0	11	1	0	100	2	10
Mvmt Flow	103	3	38	7	1	3	29	356	8	0	306	110

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	726	728	306	800	834	360	416	0	0	364	0	0
Stage 1	306	306	-	418	418	-	-	-	-	-	-	-
Stage 2	420	422	-	382	416	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.5	6.31	7.1	6.5	6.2	4.21	-	-	5.1	-	-
Critical Hdwy Stg 1	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4	3.399	3.5	4	3.3	2.299	-	-	3.1	-	-
Pot Cap-1 Maneuver	321	353	713	306	306	689	1096	-	-	808	-	-
Stage 1	673	665	-	616	594	-	-	-	-	-	-	-
Stage 2	582	592	-	645	595	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	312	344	713	282	298	689	1096	-	-	808	-	-
Mov Cap-2 Maneuver	312	344	-	282	298	-	-	-	-	-	-	-
Stage 1	656	665	-	600	579	-	-	-	-	-	-	-
Stage 2	563	577	-	609	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.9	16.2	0.6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1096	-	-	367	333	808	-	-
HCM Lane V/C Ratio	0.027	-	-	0.39	0.033	-	-	-
HCM Control Delay (s)	8.4	-	-	20.9	16.2	0	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	0.1	0	-	-

Intersection: 1: Ironbound Road & John Tyler Highway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	174	254	120	174	76	119	223	58	143	231	123
Average Queue (ft)	43	118	28	71	30	36	100	13	39	93	11
95th Queue (ft)	113	212	75	145	62	92	190	38	93	184	63
Link Distance (ft)		801		469			332	332		955	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175		150		300	175			200		200
Storage Blk Time (%)	0	2	0	1		0	1		0	1	0
Queuing Penalty (veh)	0	2	0	1		0	1		0	1	0

Intersection: 2: Ironbound Road & Proposed School Driveway/Harris Teeter Driveway

Movement	WB	SB
Directions Served	LTR	L
Maximum Queue (ft)	68	39
Average Queue (ft)	30	6
95th Queue (ft)	55	22
Link Distance (ft)	446	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Ironbound Road & School Driveway/Harris Teeter Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	R
Maximum Queue (ft)	113	34	43	2	0
Average Queue (ft)	42	7	5	0	0
95th Queue (ft)	82	27	26	2	1
Link Distance (ft)	573	546		291	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 5

APPENDIX F: SYNCHRO OUTPUT – NO-BUILD (2025) CONDITIONS

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	98	337	75	198	116	78	225	129	86	246	76
v/c Ratio	0.18	0.51	0.19	0.29	0.16	0.31	0.68	0.26	0.32	0.74	0.16
Control Delay	16.6	31.2	17.2	28.5	0.5	27.2	50.4	1.3	27.4	53.8	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	31.2	17.2	28.5	0.5	27.2	50.4	1.3	27.4	53.8	0.7
Queue Length 50th (ft)	35	179	26	100	0	36	143	0	40	157	0
Queue Length 95th (ft)	64	263	52	158	0	60	190	0	64	208	0
Internal Link Dist (ft)		772		449			360			944	
Turn Bay Length (ft)	175		150		300	175			200		200
Base Capacity (vph)	565	659	414	673	736	261	431	556	277	431	556
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	0.17	0.51	0.18	0.29	0.16	0.30	0.52	0.23	0.31	0.57	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	219	61	62	164	96	65	187	107	71	204	63
Future Volume (veh/h)	81	219	61	62	164	96	65	187	107	71	204	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1841	1841	1752	1856	1870	1870	1870	1826	1870	1870	1826
Adj Flow Rate, veh/h	98	264	73	75	198	116	78	225	129	86	246	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	1	4	4	10	3	2	2	2	5	2	2	5
Cap, veh/h	498	542	150	390	717	613	197	294	243	208	292	241
Arrive On Green	0.05	0.39	0.39	0.05	0.39	0.39	0.06	0.16	0.16	0.05	0.16	0.16
Sat Flow, veh/h	1795	1388	384	1668	1856	1585	1781	1870	1547	1781	1870	1547
Grp Volume(v), veh/h	98	0	337	75	198	116	78	225	129	86	246	76
Grp Sat Flow(s),veh/h/ln	1795	0	1772	1668	1856	1585	1781	1870	1547	1781	1870	1547
Q Serve(g_s), s	3.4	0.0	15.0	2.8	7.7	5.1	3.8	12.1	8.1	4.2	13.4	4.6
Cycle Q Clear(g_c), s	3.4	0.0	15.0	2.8	7.7	5.1	3.8	12.1	8.1	4.2	13.4	4.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	498	0	692	390	717	613	197	294	243	208	292	241
V/C Ratio(X)	0.20	0.00	0.49	0.19	0.28	0.19	0.40	0.77	0.53	0.41	0.84	0.31
Avail Cap(c_a), veh/h	530	0	692	426	717	613	222	433	358	235	433	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	24.1	18.7	22.1	21.3	35.1	42.4	40.7	35.1	43.1	39.3
Incr Delay (d2), s/veh	0.1	0.0	2.4	0.1	1.0	0.7	0.5	4.8	1.8	0.5	9.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	6.6	1.1	3.5	1.9	1.6	5.8	3.1	1.8	6.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	26.5	18.8	23.1	22.0	35.6	47.2	42.5	35.6	52.5	40.1
LnGrp LOS	B	A	C	B	C	C	D	D	D	D	D	D
Approach Vol, veh/h		435			389			432			408	
Approach Delay, s/veh		24.6			21.9			43.7			46.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	50.7	14.5	25.1	15.1	50.3	14.4	25.2
Change Period (Y+Rc), s	9.7	9.7	* 8.7	* 8.7	9.7	9.7	* 8.7	* 8.7
Max Green Setting (Gmax), s	7.3	29.3	* 7.3	* 24	7.3	29.3	* 7.3	* 24
Max Q Clear Time (g_c+I1), s	4.8	17.0	5.8	15.4	5.4	9.7	6.2	14.1
Green Ext Time (p_c), s	0.0	3.3	0.0	1.0	0.0	3.5	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	34.3
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	28	0	51	0	308	32	49	278	0
Future Vol, veh/h	0	0	0	28	0	51	0	308	32	49	278	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	1	1	0	4	2	1	5	0
Mvmt Flow	0	0	0	35	0	63	0	380	40	60	343	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	895	883	343	843	843	380	-	0	0	420	0	0
Stage 1	463	463	-	380	380	-	-	-	-	-	-	-
Stage 2	432	420	-	463	463	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.51	6.21	-	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.009	3.309	-	-	-	2.209	-	-
Pot Cap-1 Maneuver	261	285	700	284	301	669	0	-	-	1145	-	-
Stage 1	579	564	-	642	616	-	0	-	-	-	-	-
Stage 2	602	589	-	579	566	-	0	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	227	270	700	273	285	669	-	-	-	1145	-	-
Mov Cap-2 Maneuver	343	366	-	393	391	-	-	-	-	-	-	-
Stage 1	579	535	-	642	616	-	-	-	-	-	-	-
Stage 2	545	589	-	549	537	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	13.2	0	1.2
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	-	-	-	536	1145	-	-
HCM Lane V/C Ratio	-	-	-	0.182	0.053	-	-
HCM Control Delay (s)	-	-	0	13.2	8.3	-	-
HCM Lane LOS	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0.7	0.2	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	2	28	5	1	2	21	263	6	0	225	81
Future Vol, veh/h	75	2	28	5	1	2	21	263	6	0	225	81
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	17	0	11	0	0	0	11	1	0	100	2	10
Mvmt Flow	104	3	39	7	1	3	29	365	8	0	313	113

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	742	744	313	818	853	369	426	0	0	373	0	0
Stage 1	313	313	-	427	427	-	-	-	-	-	-	-
Stage 2	429	431	-	391	426	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.5	6.31	7.1	6.5	6.2	4.21	-	-	5.1	-	-
Critical Hdwy Stg 1	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4	3.399	3.5	4	3.3	2.299	-	-	3.1	-	-
Pot Cap-1 Maneuver	313	345	707	297	299	681	1087	-	-	800	-	-
Stage 1	667	661	-	610	589	-	-	-	-	-	-	-
Stage 2	576	586	-	637	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	304	336	707	273	291	681	1087	-	-	800	-	-
Mov Cap-2 Maneuver	304	336	-	273	291	-	-	-	-	-	-	-
Stage 1	649	661	-	594	573	-	-	-	-	-	-	-
Stage 2	557	570	-	599	589	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.7	16.5	0.6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1087	-	-	359	324	800	-	-
HCM Lane V/C Ratio	0.027	-	-	0.406	0.034	-	-	-
HCM Control Delay (s)	8.4	-	-	21.7	16.5	0	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.1	0	-	-

Intersection: 1: Ironbound Road & John Tyler Highway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	140	287	125	193	67	148	243	62	148	239	117
Average Queue (ft)	44	132	31	74	29	41	102	15	38	97	10
95th Queue (ft)	117	238	80	146	57	106	193	42	92	186	54
Link Distance (ft)		801		469			332	332		955	
Upstream Blk Time (%)							0				
Queuing Penalty (veh)							0				
Storage Bay Dist (ft)	175		150		300	175			200		200
Storage Blk Time (%)	0	4	0	1		0	1		0	1	0
Queuing Penalty (veh)	0	3	0	2		0	1		0	1	0

Intersection: 2: Ironbound Road & Proposed School Driveway/Harris Teeter Driveway

Movement	WB	SB
Directions Served	LTR	L
Maximum Queue (ft)	70	30
Average Queue (ft)	31	6
95th Queue (ft)	57	21
Link Distance (ft)	446	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: Ironbound Road & School Driveway/Harris Teeter Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	R
Maximum Queue (ft)	118	29	45	3	3
Average Queue (ft)	48	7	6	0	0
95th Queue (ft)	91	27	29	2	3
Link Distance (ft)	573	546		291	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 7

APPENDIX G: SYNCHRO OUTPUT – BUILD (2025) CONDITIONS

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	98	344	84	198	116	84	236	139	86	257	76
v/c Ratio	0.18	0.53	0.22	0.29	0.16	0.33	0.69	0.28	0.32	0.75	0.15
Control Delay	17.4	31.6	17.5	28.0	0.5	27.5	50.7	1.4	27.1	54.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	31.6	17.5	28.0	0.5	27.5	50.7	1.4	27.1	54.4	0.7
Queue Length 50th (ft)	35	186	30	102	0	38	149	0	39	164	0
Queue Length 95th (ft)	64	264	57	153	0	63	200	0	64	217	0
Internal Link Dist (ft)		772		449			360			944	
Turn Bay Length (ft)	175		150		300	175			200		200
Base Capacity (vph)	542	650	394	676	738	259	431	556	275	431	556
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	0.18	0.53	0.21	0.29	0.16	0.32	0.55	0.25	0.31	0.60	0.14

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	219	66	70	164	96	70	196	115	71	213	63
Future Volume (veh/h)	81	219	66	70	164	96	70	196	115	71	213	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1841	1841	1752	1856	1870	1870	1870	1826	1870	1870	1826
Adj Flow Rate, veh/h	98	264	80	84	198	116	84	236	139	86	257	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	1	4	4	10	3	2	2	2	5	2	2	5
Cap, veh/h	487	516	156	375	704	602	201	309	256	210	303	250
Arrive On Green	0.05	0.38	0.38	0.05	0.38	0.38	0.06	0.17	0.17	0.05	0.16	0.16
Sat Flow, veh/h	1795	1356	411	1668	1856	1585	1781	1870	1547	1781	1870	1547
Grp Volume(v), veh/h	98	0	344	84	198	116	84	236	139	86	257	76
Grp Sat Flow(s),veh/h/ln	1795	0	1767	1668	1856	1585	1781	1870	1547	1781	1870	1547
Q Serve(g_s), s	3.5	0.0	15.7	3.2	7.8	5.1	4.1	12.7	8.6	4.2	14.0	4.5
Cycle Q Clear(g_c), s	3.5	0.0	15.7	3.2	7.8	5.1	4.1	12.7	8.6	4.2	14.0	4.5
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	0	672	375	704	602	201	309	256	210	303	250
V/C Ratio(X)	0.20	0.00	0.51	0.22	0.28	0.19	0.42	0.76	0.54	0.41	0.85	0.30
Avail Cap(c_a), veh/h	487	0	672	393	704	602	222	433	358	238	433	358
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	0.0	25.0	19.3	22.6	21.8	34.6	41.8	40.2	34.7	42.8	38.8
Incr Delay (d2), s/veh	0.1	0.0	2.8	0.1	1.0	0.7	0.5	5.1	1.8	0.5	10.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	6.9	1.2	3.5	1.9	1.7	6.1	3.3	1.8	7.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	27.8	19.4	23.6	22.5	35.1	47.0	42.0	35.2	53.3	39.5
LnGrp LOS	B	A	C	B	C	C	D	D	D	D	D	D
Approach Vol, veh/h		442			398			459			419	
Approach Delay, s/veh		25.7			22.4			43.3			47.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	49.7	14.8	25.7	15.0	49.5	14.4	26.1
Change Period (Y+Rc), s	9.7	9.7	* 8.7	* 8.7	9.7	9.7	* 8.7	* 8.7
Max Green Setting (Gmax), s	6.3	30.3	* 7.3	* 24	5.3	31.3	* 7.3	* 24
Max Q Clear Time (g_c+I1), s	5.2	17.7	6.1	16.0	5.5	9.8	6.2	14.7
Green Ext Time (p_c), s	0.0	3.4	0.0	1.0	0.0	3.6	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	15	28	0	51	0	320	32	49	300	0
Future Vol, veh/h	10	0	15	28	0	51	0	320	32	49	300	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	100	100	100	2	0	1	0	4	2	1	5	0
Mvmt Flow	12	0	19	35	0	63	0	395	40	60	370	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	937	925	370	895	885	395	-	0	0	435	0	0
Stage 1	490	490	-	395	395	-	-	-	-	-	-	-
Stage 2	447	435	-	500	490	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.12	6.5	6.21	-	-	-	4.11	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.518	4	3.309	-	-	-	2.209	-	-
Pot Cap-1 Maneuver	167	188	504	261	286	656	0	-	-	1130	-	0
Stage 1	414	416	-	630	608	-	0	-	-	-	-	0
Stage 2	440	444	-	553	552	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	145	178	504	241	271	656	-	-	-	1130	-	-
Mov Cap-2 Maneuver	145	178	-	241	271	-	-	-	-	-	-	-
Stage 1	414	394	-	630	608	-	-	-	-	-	-	-
Stage 2	398	444	-	504	523	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.2	16.6	0	1.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	253	407	1130	-
HCM Lane V/C Ratio	-	-	0.122	0.24	0.054	-
HCM Control Delay (s)	-	-	21.2	16.6	8.4	-
HCM Lane LOS	-	-	C	C	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.9	0.2	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	2	46	5	1	2	53	263	6	0	240	103
Future Vol, veh/h	87	2	46	5	1	2	53	263	6	0	240	103
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	17	0	11	0	0	0	11	1	0	100	2	10
Mvmt Flow	121	3	64	7	1	3	74	365	8	0	333	143

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	852	854	333	955	993	369	476	0	0	373	0	0
Stage 1	333	333	-	517	517	-	-	-	-	-	-	-
Stage 2	519	521	-	438	476	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.5	6.31	7.1	6.5	6.2	4.21	-	-	5.1	-	-
Critical Hdwy Stg 1	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4	3.399	3.5	4	3.3	2.299	-	-	3.1	-	-
Pot Cap-1 Maneuver	263	298	689	240	247	681	1041	-	-	800	-	-
Stage 1	650	647	-	545	537	-	-	-	-	-	-	-
Stage 2	513	535	-	601	560	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	246	277	689	204	229	681	1041	-	-	800	-	-
Mov Cap-2 Maneuver	246	277	-	204	229	-	-	-	-	-	-	-
Stage 1	604	647	-	506	499	-	-	-	-	-	-	-
Stage 2	473	497	-	543	560	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.7	20	1.4	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	316	251	800	-	-
HCM Lane V/C Ratio	0.071	-	-	0.593	0.044	-	-	-
HCM Control Delay (s)	8.7	-	-	31.7	20	0	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.6	0.1	0	-	-

Intersection: 1: Ironbound Road & John Tyler Highway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	174	305	136	192	66	153	233	62	127	228	121
Average Queue (ft)	53	136	40	79	29	42	106	15	38	102	12
95th Queue (ft)	130	247	97	156	57	105	193	43	89	185	62
Link Distance (ft)		801		469			332	332		955	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175		150		300	175			200		200
Storage Blk Time (%)	0	4	0	1		0	2		0	1	0
Queuing Penalty (veh)	0	4	0	2		0	1		0	1	0

Intersection: 2: Ironbound Road & Proposed School Driveway/Harris Teeter Driveway

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	R	L
Maximum Queue (ft)	105	85	4	37
Average Queue (ft)	37	33	0	6
95th Queue (ft)	90	62	3	20
Link Distance (ft)	424	446	291	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				150
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Ironbound Road & School Driveway/Service Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	T	R
Maximum Queue (ft)	131	33	67	1	9
Average Queue (ft)	53	6	17	0	0
95th Queue (ft)	100	25	49	0	6
Link Distance (ft)	573	546		291	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

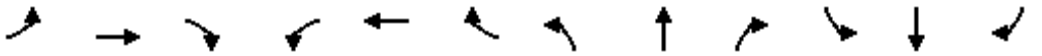
Network Summary

Network wide Queuing Penalty: 8

APPENDIX H: SYNCHRO OUTPUT – BUILD (2025) CONDITIONS – WITHOUT REDISTRICTING

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	98	351	92	198	116	92	245	146	86	265	76
v/c Ratio	0.18	0.55	0.24	0.30	0.16	0.36	0.69	0.29	0.32	0.75	0.15
Control Delay	17.2	32.3	18.8	29.1	0.5	28.0	49.1	1.4	26.9	52.9	0.6
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	17.2	32.3	18.8	29.1	0.5	28.0	49.1	1.4	26.9	52.9	0.6
Queue Length 50th (ft)	36	194	34	103	0	42	154	0	39	169	0
Queue Length 95th (ft)	66	270	63	158	0	67	202	0	63	218	0
Internal Link Dist (ft)		772		449			360			944	
Turn Bay Length (ft)	175		150		300	175			200		200
Base Capacity (vph)	546	641	379	658	725	255	466	580	269	466	580
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	0.18	0.55	0.24	0.30	0.16	0.36	0.53	0.25	0.32	0.57	0.13

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	219	72	76	164	96	76	203	121	71	220	63
Future Volume (veh/h)	81	219	72	76	164	96	76	203	121	71	220	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1841	1841	1752	1856	1870	1870	1870	1826	1870	1870	1826
Adj Flow Rate, veh/h	98	264	87	92	198	116	92	245	146	86	265	76
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	1	4	4	10	3	2	2	2	5	2	2	5
Cap, veh/h	479	493	162	361	686	586	206	324	268	213	313	259
Arrive On Green	0.05	0.37	0.37	0.05	0.37	0.37	0.06	0.17	0.17	0.05	0.17	0.17
Sat Flow, veh/h	1795	1325	437	1668	1856	1585	1781	1870	1547	1781	1870	1547
Grp Volume(v), veh/h	98	0	351	92	198	116	92	245	146	86	265	76
Grp Sat Flow(s),veh/h/ln	1795	0	1762	1668	1856	1585	1781	1870	1547	1781	1870	1547
Q Serve(g_s), s	3.5	0.0	16.4	3.6	7.9	5.2	4.4	13.1	9.0	4.1	14.4	4.5
Cycle Q Clear(g_c), s	3.5	0.0	16.4	3.6	7.9	5.2	4.4	13.1	9.0	4.1	14.4	4.5
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	479	0	655	361	686	586	206	324	268	213	313	259
V/C Ratio(X)	0.20	0.00	0.54	0.25	0.29	0.20	0.45	0.76	0.54	0.40	0.85	0.29
Avail Cap(c_a), veh/h	493	0	655	361	686	586	206	468	388	224	468	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	0.0	25.9	20.0	23.3	22.5	34.2	41.3	39.6	34.3	42.4	38.3
Incr Delay (d2), s/veh	0.1	0.0	3.1	0.1	1.1	0.8	0.6	4.2	1.7	0.5	9.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	7.2	1.4	3.6	2.0	1.9	6.2	3.4	1.8	7.2	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.9	0.0	29.0	20.2	24.4	23.2	34.7	45.5	41.3	34.7	51.5	38.9
LnGrp LOS	B	A	C	C	C	C	C	D	D	C	D	D
Approach Vol, veh/h		449			406			483			427	
Approach Delay, s/veh		26.8			23.1			42.2			45.9	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	48.8	15.0	26.2	15.2	48.5	14.4	26.9
Change Period (Y+Rc), s	9.7	9.7	* 8.7	* 8.7	9.7	9.7	* 8.7	* 8.7
Max Green Setting (Gmax), s	5.3	30.3	* 6.3	* 26	6.3	29.3	* 6.3	* 26
Max Q Clear Time (g_c+I1), s	5.6	18.4	6.4	16.4	5.5	9.9	6.1	15.1
Green Ext Time (p_c), s	0.0	3.4	0.0	1.1	0.0	3.5	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	0	6	28	0	51	0	330	32	49	319	0
Future Vol, veh/h	19	0	6	28	0	51	0	330	32	49	319	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	100	100	100	2	0	1	0	4	2	1	5	0
Mvmt Flow	23	0	7	35	0	63	0	407	40	60	394	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	973	961	394	925	921	407	-	0	0	447	0	0
Stage 1	514	514	-	407	407	-	-	-	-	-	-	-
Stage 2	459	447	-	518	514	-	-	-	-	-	-	-
Critical Hdwy	8.1	7.5	7.2	7.12	6.5	6.21	-	-	-	4.11	-	-
Critical Hdwy Stg 1	7.1	6.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	6.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4.9	4.2	3.518	4	3.309	-	-	-	2.209	-	-
Pot Cap-1 Maneuver	157	178	486	250	273	646	0	-	-	1119	-	0
Stage 1	400	404	-	621	601	-	0	-	-	-	-	0
Stage 2	432	438	-	541	539	-	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	136	168	486	236	258	646	-	-	-	1119	-	-
Mov Cap-2 Maneuver	226	250	-	360	368	-	-	-	-	-	-	-
Stage 1	400	382	-	621	601	-	-	-	-	-	-	-
Stage 2	390	438	-	504	510	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.8	13.8	0	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	259	504	1119	-
HCM Lane V/C Ratio	-	-	0.119	0.194	0.054	-
HCM Control Delay (s)	-	-	20.8	13.8	8.4	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.7	0.2	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	97	2	36	5	1	2	34	263	6	0	231	122
Future Vol, veh/h	97	2	36	5	1	2	34	263	6	0	231	122
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	175	-	-	150	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	72	72	72	72	72	72	72	72	72
Heavy Vehicles, %	17	0	11	0	0	0	11	1	0	100	2	10
Mvmt Flow	135	3	50	7	1	3	47	365	8	0	321	169

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	786	788	321	895	953	369	490	0	0	373	0	0
Stage 1	321	321	-	463	463	-	-	-	-	-	-	-
Stage 2	465	467	-	432	490	-	-	-	-	-	-	-
Critical Hdwy	7.27	6.5	6.31	7.1	6.5	6.2	4.21	-	-	5.1	-	-
Critical Hdwy Stg 1	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.27	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.653	4	3.399	3.5	4	3.3	2.299	-	-	3.1	-	-
Pot Cap-1 Maneuver	292	326	699	264	261	681	1028	-	-	800	-	-
Stage 1	660	655	-	583	568	-	-	-	-	-	-	-
Stage 2	550	565	-	606	552	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	279	311	699	235	249	681	1028	-	-	800	-	-
Mov Cap-2 Maneuver	279	311	-	235	249	-	-	-	-	-	-	-
Stage 1	630	655	-	556	542	-	-	-	-	-	-	-
Stage 2	521	539	-	560	552	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28.9	18.2	1	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1028	-	-	333	283	800	-	-
HCM Lane V/C Ratio	0.046	-	-	0.563	0.039	-	-	-
HCM Control Delay (s)	8.7	-	-	28.9	18.2	0	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.3	0.1	0	-	-

Intersection: 1: Ironbound Road & John Tyler Highway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	174	344	143	199	71	152	239	75	156	231	134
Average Queue (ft)	47	144	41	79	30	44	108	18	39	114	12
95th Queue (ft)	125	285	99	157	57	106	201	50	99	205	65
Link Distance (ft)		801		469			332	332		955	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175		150		300	175			200		200
Storage Blk Time (%)	0	6	0	1		0	2		0	1	0
Queuing Penalty (veh)	0	5	0	2		0	1		0	1	0

Intersection: 2: Ironbound Road & Proposed School Driveway/Harris Teeter Driveway

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	T	L	T
Maximum Queue (ft)	101	70	12	38	3
Average Queue (ft)	36	32	1	7	0
95th Queue (ft)	89	57	8	22	3
Link Distance (ft)	424	446	291		332
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Ironbound Road & School Driveway/Service Driveway

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	T	R
Maximum Queue (ft)	162	31	54	2	1	10
Average Queue (ft)	53	7	12	0	0	1
95th Queue (ft)	111	26	40	2	1	8
Link Distance (ft)	573	546		1127	291	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175			150
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 10

R E S O L U T I O N

VIRGINIA CODE 15.2-2232 ACTION ON CASE NO. Z-24-0002/SUP-24-0002. BRIGHT BEGINNINGS PRE-K CENTER AT CLARA BYRD BAKER ELEMENTARY SCHOOL

REZONING AND SPECIAL USE PERMIT

WHEREAS, in accordance with Section 15.2-2232 of the Code of Virginia, schools or other public facilities, whether publicly or privately owned, shall not be constructed, established, or authorized, unless and until the general location or approximate location, character, and extent thereof has been submitted to and approved by the Planning Commission as being substantially in accord with the adopted Comprehensive Plan or part thereof; and

WHEREAS, Williamsburg-James City County School Board (the "Owner"), owns properties located at 3175 and 3131 Ironbound Road and further identified as James City County Real Estate Tax Map Parcel Nos. 4710100057 and 4710100058 (the "Properties"), which are zoned R-8, Rural Residential and PL, Public Lands; and

WHEREAS, Ms. Holly Adams of Alpha Corporation, on behalf of the Owner, has applied for a Rezoning and Special Use Permit (SUP) to rezone 3175 Ironbound Road to PL, Public Lands, with an SUP to allow for schools, libraries, museums, and similar institutions, as shown on a plan titled "Bright Beginnings Pre-K Center Clara Byrd Baker Elementary School Conceptual Master Plan Update" and dated March 2024; and

WHEREAS, in accordance with Section 15.2-2204 of the Code of Virginia and Section 24-9 of the James City County Zoning Ordinance, a public hearing was advertised, adjacent property owners notified, and a hearing scheduled for Case No. Z-24-0002/SUP-24-0002.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission of James City County, Virginia, finds that the general or approximate location, character, and extent of the public facility shown in Case No. Z-24-0002/SUP-24-0002 are substantially in accord with the adopted Comprehensive Plan and applicable parts thereof.

_____
Tim O'Connor
Chair, Planning Commission

ATTEST:

_____
Susan Istenes, Secretary

Adopted by the Planning Commission of James City County, Virginia, this 1st day of May 2024.

RZ-SUP24-2BrtBgCBB-res

SUMMARY FACTS

Applicant:	Ms. Holly Adams, Alpha Corporation
Landowners:	Williamsburg-James City County (WJCC) School Board James City Service Authority (JCSA)
Proposal:	Rezoning of 7311A Richmond Road from R-2, General Residential to PL, Public Lands, and a Special Use Permit (SUP) to allow a 42,000-square-foot Pre-K Center.
Locations:	7311 Richmond Road 7311A Richmond Road
Tax Map/Parcel Nos.:	2320100035 2320100035A
Project Acreage:	± 20.23 acres
Current Zoning:	R-2, General Residential (2320100035A) PL, Public Lands (2320100035)
Proposed Zoning:	PL, Public Lands
Comprehensive Plan:	Federal, State, or County Land
Primary Service Area:	Inside
Staff Contact:	Ben Loppacker, Planner

PUBLIC HEARING DATES

Planning Commission: May 1, 2024, 6:00 p.m.

Board of Supervisors: June 11, 2024, 5:00 p.m. (Tentative)

FACTORS FAVORABLE

1. Staff finds the proposal is consistent with *Our County, Our Shared Future: James City County 2045 Comprehensive Plan*.
2. With the proposed conditions, the proposal is compatible with surrounding zoning and development.
3. The proposal passes the Traffic Impact Analysis (TIA) Submittal Requirements Policy Test.
4. Impacts: Please see Impact Analysis on Pages 4-6.

FACTORS UNFAVORABLE

1. With the proposed conditions, staff finds that there are no unfavorable factors.

SUMMARY STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of this Rezoning and SUP applications to the Board of Supervisors, subject to the proposed conditions.

PROJECT DESCRIPTION

Ms. Holly Adams of Alpha Corporation, on behalf of WJCC Public Schools, has submitted a request to rezone approximately 0.23 acres

located at 7311A Richmond Road from R-2, General Residential to PL, Public Lands. This property is currently owned by JCSA and originally served as a well facility prior to Norge Elementary School existing. WJCC Public Schools and JCSA are currently in talks of conveying this small parcel of land to WJCC Public Schools and consolidating the property into the school property. Ms. Adams has also applied for a corresponding SUP to allow the use of schools, libraries, museums, and similar institutions for a 42,000-square-foot standalone Pre-K school at 7311 and 7311A Richmond Road that would provide a new 252-student center for ages 2-5, including classrooms, meeting rooms, offices, multipurpose space, indoor and outdoor play areas, and administrative space.

PUBLIC IMPACTS

The scale of this proposal requires the submittal of a TIA. The TIA examines the existing conditions of vehicular traffic, including Level of Service (LOS), with a focus on the roads and intersections serving and impacted by the proposed development.

All Rezoning and SUP applications are subject to the adequate transportation facilities test. A proposed Rezoning or SUP application will be tested for adequate transportation facilities. A proposed Rezoning or SUP application will pass the test if:

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

- All off-site improvements recommended by a TIA that are approved by both the Planning Director and VDOT are guaranteed in a form approved by the Planning Director and the County Attorney.

The TIA (Attachment No. 6) analyzed the AM peak hour traffic estimating that the new Pre-K Center will generate 253 peak hour AM trips entering the site and 247 peak hour AM trips exiting the site. This represents a net increase of 82 peak hour AM trips entering the site and 80 peak hour AM trips exiting the site. The following intersections were studied:

Richmond Road and Existing School Driveway

The Richmond Road and Existing School Driveway intersection currently operates at an overall LOS B with some individual through or turning movements operating at LOS D or E. With the proposed development, the LOS overall would maintain LOS B, which is still considered to be an acceptable LOS. The through movements on Richmond Road remain LOS A; however, similar to existing conditions, most turning movements are projected to operate at LOS B or C.

Richmond Road and Hitchens Lane

The Richmond Road at Hitchens Lane intersection currently has all turning movements operating at a LOS B or higher. After build-out, all turning movements would operate at LOS C or higher.

Based on the results of the TIA, the study concluded that all studied intersections will operate with acceptable queueing and delay with no improvements warranted or recommended. While the TIA studied the possible connection from the adjacent Walnut Farm subdivision via Hitchens Lane and made recommendations for improvements should that occur, the proposed layout on the Master Plan does not show this connection, and therefore those recommendations of improvements are not warranted. Per the staff recommended conditions, no connection to Hitchens Lane is shown on the Master Plan and is not proposed to be allowed (Condition No. 4). Should a connection to

Hitchens Lane be proposed in the future, an SUP amendment and updated Master Plan would be required.

Staff finds that no off-site improvements are required by the TIA and both VDOT and the Planning Director have reviewed and approved the traffic study.

Richmond Road Corridor LOS - AM Peak Hour	2023 Existing Conditions	Projected 2025 ("No-Build")	Projected 2025 with Bright Beginnings ("Build with Redistricting")	Projected 2025 with Bright Beginnings (Build with No Redistricting")
	LOS	LOS	LOS	LOS
School Driveway	B	B	B	B
Hitchens Lane	B	B	C	C

PLANNING AND ZONING HISTORY

- Norge Elementary School did not require an SUP when it was opened in 1967; however, when the property was rezoned to Public Lands in 2006, it required an SUP for schools and similar institutions.

- In 2015, SUP-0031-2005 was approved for a 2,000-square-foot addition to the existing school cafeteria, as well as bringing the existing school use into conformance with the Zoning Ordinance.

- SUPs for additional classrooms in trailers and learning cottages were approved on the Norge Elementary School property in 1988, 1990, 1991, 1993, 1994, 2005, 2008, and 2021.

SURROUNDING ZONING AND DEVELOPMENT

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

	ZONING DESIGNATION	EXISTING LAND USE	FUTURE LAND USE DESIGNATION
NORTH	R-2, General Residential District	Single-family Residential and Commercial	Low Density Residential
SOUTH	R-2, General Residential District, LB, Limited Business District, B-1, General Business District	Single-family Residential and Commercial	Low Density Residential and Neighborhood Commercial
EAST	B-1, General Business District, R-2, General Residential District, A-1 General Agricultural District	Single-family Residential and Commercial	Low Density Residential and Economic Opportunity
WEST	R-2, General Residential District	Single-family Residential	Low Density Residential

Impacts/Potentially Unfavorable Conditions	Status *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	Considerations/Proposed Mitigation of Potentially Unfavorable Conditions
Public Transportation: Vehicular	No Mitigation Required	- The new development would take access from Richmond Road via a shared intersection with the adjacent existing Norge Elementary School. As discussed in the Staff Report, a traffic study has been conducted and found that no off-site improvements are required with Richmond Road as the only access point to the property. - The application passes the County's Adequate Transportation Facilities Test. - VDOT has reviewed and approved the traffic study.
Public Transportation: Bicycle/Pedestrian	Mitigated	- Per the Pedestrian Accommodation's Master Plan, a sidewalk is required to be maintained along the south side of Richmond Road. The adopted Regional Bikeways Master Plan specifies bike lanes along Richmond Road. The site is located within the Norge Community Character Area (CCA) Sidewalk Inclusion Zone and sidewalks shall be constructed on the north or east side of internal roads. All improvements are required to be constructed at the construction plan stage.
Public Safety	No Mitigation Required	- Fire Station 1 on Forge Road serves this area of the County, approximately 2.7 miles from the proposed development. - Staff finds this project does not generate impacts that require mitigation to the County's Fire Department facilities or services.
Public Schools	Mitigated	- The proposal would accommodate existing and future Bright Beginnings students in a dedicated building. Currently, the Bright Beginnings program is split amongst multiple elementary schools across the County; however, this proposal would consolidate the Bright Beginnings program, opening classroom space at existing elementary schools.
Public Parks and Recreation	No Mitigation Required	- The proposal does not generate impacts that require mitigation to the County's parks and recreation services or facilities.
Public Libraries and Cultural Centers	No Mitigation Required	- Staff finds this project does not generate impacts that require mitigation.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
Groundwater and Drinking Water Resources	Mitigated	- The property is served by public water and sewer. - JCSA has reviewed the proposal and noted items that will need to be addressed at the development stage.
Watersheds, Streams, and Reservoirs Project is located in the Yarmouth Creek Watershed.	Mitigated	- This project will need to demonstrate full compliance with environmental regulations at the development plan stage and evidence that the development will not negatively affect the existing off-site facilities. - Stormwater and Resource Protection Division reviewed and approved the application with proposed SUP Condition Nos. 6, and 7 regarding the use of Special Stormwater Criteria, and wet and dry pond fencing.
Cultural/Historic	No Mitigation Required	- The Bright Beginnings Pre-K Center site has been previously disturbed and is located in a moderate sensitivity area, which does not require a Phase 1A Archaeological Study per Section 24-23 of the Zoning Ordinance.
Nearby and Surrounding Properties	Mitigated	- Staff finds that this proposal is generally consistent with the character of the existing surrounding development, which is generally commercial and residential in nature. - Proposed SUP Condition No. 5 addresses the requirement for proper screening of dumpsters and roof and ground-mounted HVAC and mechanical units from adjacent properties and right-of-way.
Community Character The project is located along the Richmond Road Community Character Corridor (CCC) and the Norge CCA.	Mitigated	- The Comprehensive Plan designates Richmond Road as a CCC. Richmond Road is characterized as an "Urban and Suburban" CCC. Urban and Suburban CCCs have high to moderate traffic, commercial, and some residential uses. The predominant visual character of these areas should be the built environment and the natural landscape, with parking and other auto-related areas as a secondary component. - This parcel also falls within the Norge CCA and the Sidewalk Inclusion Zone. - Pedestrian accommodations shall be maintained along Richmond Road, as well as internal to the site.

Impacts/Potentially Unfavorable Conditions	**Status** *(No Mitigation Required/Mitigated/Not Fully Mitigated)*	**Considerations/Proposed Mitigation of Potentially Unfavorable Conditions**
		- The proposed structure maintains side and rear yard buffers and the location of the proposed structure behind the existing Norge Elementary School screens the structure from Richmond Road.
Covenants and Restrictions	No Mitigation Required	- The applicant has verified that she is not aware of any covenants or restrictions on the property that prohibit the proposed use.

COMPREHENSIVE PLAN

The site is designated Federal, State, or County Land on the 2045 Comprehensive Plan Land Use Map.

- Lands designated Federal, State, or County Land are publicly owned lands, such as Eastern State Hospital, military installations, County offices and facilities, and larger utility sites such as the Hampton Roads Sanitation District Treatment Plant. Development in these areas should follow applicable development standards listed in the charts.

  Staff finds that this project is consistent with the 2045 Comprehensive Plan, which lists County offices and facilities as a recommended use in areas designated Federal, State, or County Land.

The property is located along the Richmond Road CCC, an Urban/Suburban CCC.

- Characterized as having high to moderate traffic, commercial uses, and some residential uses.

- Predominant visual character should be the built environment and natural landscape.

- Buffer treatments should incorporate existing and new vegetation, berms, and other desirable design features to complement and enhance the visual quality of the corridor.

- Vehicle-related activities such as parking lots, deliveries, and outdoor operations should be screened.

  Staff finds this proposal satisfies the requirements in the 2045 Comprehensive Plan for Urban/Suburban CCCs through preservation of existing buffering and screening of vehicle-related activities from adjacent properties and right-of-way.

The property is also located within the Norge CCA.

- The office, warehouse, or commercial uses should be compatible with the adjacent residential development in terms of size, scale, and architecture. The architecture should also complement historic structures in Norge. These areas should be designed and developed under a unified development plan or multiple coordinated development plans which emphasize shared access and parking, consistent treatment for landscaping and architecture, and the preservation of environmental and cultural resources. The intensity of development should be conditioned on the provision of sufficient buffering and screening to protect adjacent residential development, and traffic, noise, light, odor, and other impacts should be assessed and mitigated. Internal streets and sidewalks should be connected to adjacent properties to the extent possible.

  Staff finds the proposed project to be consistent with the elements of the Comprehensive Plan noted above through preservation of buffering on the property to mitigate traffic, noise, light, odor, and other impacts from adjacent properties.

FINDING OF CONSISTENCY

Section 15.2-2232 of the Code of Virginia states, in part, that no public facility be allowed unless the Planning Commission finds the location of the Pre-K Center "substantially" consistent with the adopted Comprehensive Plan. As previously stated, in the *Our County, Our Shared Future: James City County 2045 Comprehensive Plan* Land Use Map, Bright Beginnings Pre-K Center at Norge Elementary School is designated as Federal, State, or County Land. Also, staff

finds this proposal consistent with the Comprehensive Plan since the Bright Beginnings Pre-K Center at Norge Elementary School will serve County students and because it is a public facility.

STAFF RECOMMENDATION

Staff recommends that the Planning Commission recommend approval of this application to the Board of Supervisors, subject to the proposed SUP conditions. Staff also recommends that the Planning Commission find this application consistent with Section 15.2-2232 of the Code of Virginia.

BL/md
RZ-SUP24-3BrtBgNES

Attachments:
1. Proposed Conditions
2. Location Map
3. Master Plan
4. Building Elevations
5. Community Impact Statement
6. Traffic Impact Analysis Resolution
7. Resolution for Consistency with the Adopted Comprehensive Plan

PROPOSED CONDITIONS FOR CASE NO. RZ-24-0003/SUP-24-0003. BRIGHT BEGINNINGS

PRE-K CENTER AT NORGE ELEMENTARY SCHOOL REZONING

AND SPECIAL USE PERMIT

1. *Master Plan.* This Special Use Permit ("SUP") shall apply to property consisting of parcels located at 7311 Richmond Road and 7311A Richmond Road and further identified as James City County Real Estate Tax Map Parcel Nos. 2320100035 and 2320100035A, respectively (together, the "Property"). The SUP shall be valid for the operation of a 42,000-square-foot Pre-K Center (the "Project"). All final development plans for the Project shall be consistent with the Master Plan entitled "Bright Beginnings Pre-K Center Norge Elementary School Conceptual Master Plan Update" prepared by Alpha Corporation and dated March 2024 (the "Master Plan"), with any deviations considered per Section 24-23(a)(2) of the Zoning Ordinance, as amended.

2. *Architectural Review*. The design and materials of the Project shall be consistent with the elevations titled "Pre-K Center at Norge ES Exterior Elevations" dated April 1, 2024 (the "Elevations"), and submitted with Z-24-0003/SUP-24-0003, as determined by the Director of Planning. Prior to final site plan approval, all architectural elevations, building materials, colors, signage, site lighting, and hardscapes shall be submitted to the Director of Planning for the Director of Planning's approval for consistency with the Elevations.

3. *Lighting.* All new exterior light fixtures on the Property, including new building lighting shall have recessed fixtures with no lens, bulb, or globe extending below the casing. All new light poles shall not exceed 20 feet in height from finished grade. No light trespass, defined as 0.1 foot-candle or higher shall extend across any property line. A lighting plan shall be approved by the Director of Planning or designee prior to final site plan approval.

4. *Ingress and Egress.* No ingress/egress point shall be constructed from Hitchens Lane to the Property.

5. *Screening of Site Features.* All dumpsters and roof and ground-mounted HVAC and mechanical units located on the Property shall be screened by an enclosure composed of masonry, closed-cell PVC, prefinished metal, or cementitious panels, in detail and colors to blend with adjacent building materials. Such features and enclosures shall be shown on the site plan and shall be reviewed and approved by the Director of Planning or designee for consistency with this condition prior to final site plan approval.

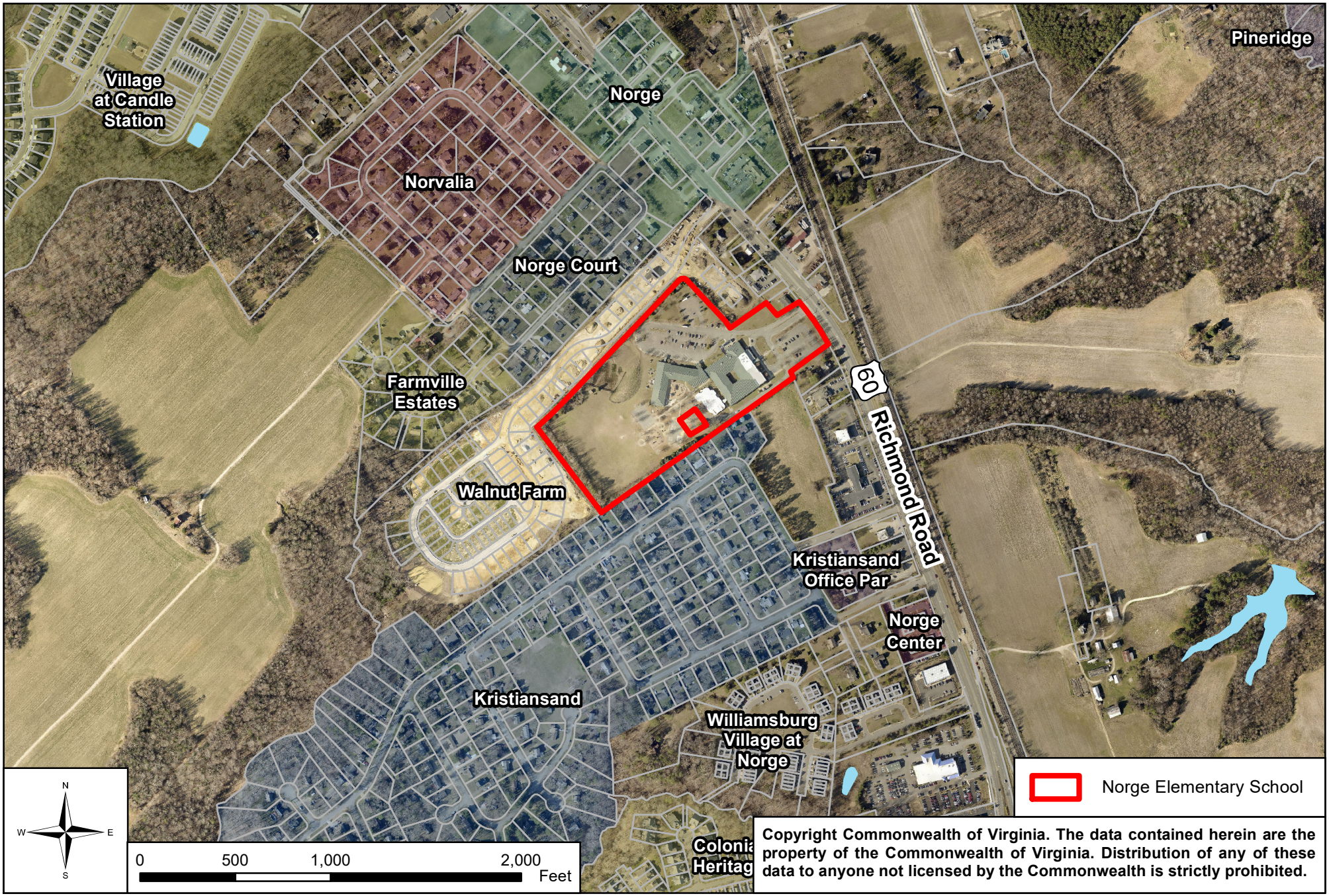
6. *Special Stormwater Criteria.*
   a. The application of Special Stormwater Criteria ("SSC") practices are required for the Project and shall be shown on the site plan. The number of practices required shall be per Table SSC-1 of the Stormwater Resource Protection Division's form entitled, "Stormwater-Special Criteria SSC in James City County, Virginia". Practices to be used for the Project shall be approved by the Director of Stormwater and Resource Protection Division.
   b. If permeable pavement is used on the Project, it must be counted toward needed SSC credit and not as part of a Virginia Runoff Reduction Method treatment train. Permeable pavement, if used, may only be applied to parking stalls.

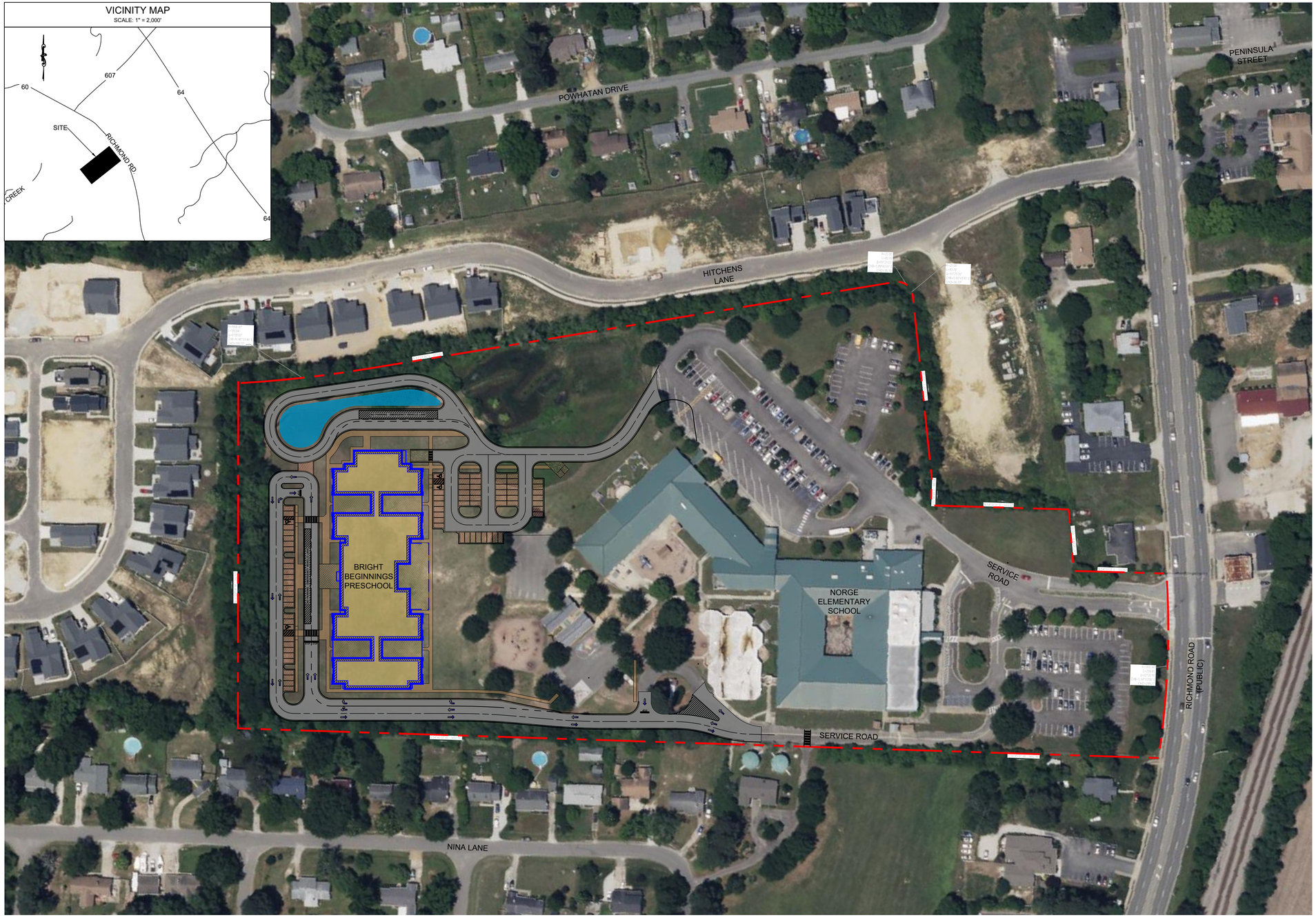
7. *Pond Fencing*. Any wet or extended detention dry ponds included on the site plan will be completely surrounded by a fence that shall be black or of a neutral color and shall be between four feet and five feet in height with adequate gated width for vehicular access to the pond for maintenance. The fencing must be of such a material and installed in such a manner as to prevent unauthorized entry into the pond area. If chain-link fencing is used, it shall be black in color.

8. *Commencement for Construction*. If construction has not commenced on the Project within 36 months from the issuance of the SUP, the SUP shall become void. Construction shall be defined as (i) obtaining permits for building construction, and (ii) installation of footings and/or foundations.

9. *Severance Clause*. This SUP is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

JCC SUP-24-0003/Z-24-0003
Bright Beginnings Pre-K Center at Norge





SITE DATA	
LEGAL REFERENCE	
OWNER	WILLIAMSBURG JCC PUBLIC SCHOOLS
TAX PARCEL	2320100035
ADDRESS	7311 RICHMOND RD. WILLIAMSBURG, VA 23188
PARCEL AREA	871,988 SF / 20.0181 AC
ZONING	
EXISTING	PUBLIC LANDS SUP
PROPOSED	PUBLIC LANDS SUP
CORRIDORS	RICHMOND RD COMMUNICTY CHARACTER NORGE COMMUNITY CHARACTER
USE	
EXISTING	PUBLIC SCHOOL
PROPOSED	PUBLIC SCHOOL
SETBACKS	
FRONT	50 FT
SIDE	15 FT
REAR	15 FT
BUILDING	15 FT FROM PERIMETER LANDSCAPE BUFFER
LAND USE SUMMARY	
EXISTING IMPERVIOUS AREA	
BUILDING	103,559 SF / 2.38 AC / 11.88 %
OTHER	296,041 SF / 6.80 AC / 33.95 %
TOTAL	399,600 SF / 9.17 AC / 45.83 %
PROPOSED IMPERVIOUS AREA	
BUILDING	145,559 SF / 3.34 AC / 16.69 %
ENCLOSED PLAY YARD	11,472 SF / 0.26 AC / 1.32 %
OTHER	409,419 SF / 9.40 AC / 46.95 %
TOTAL	566,450 SF / 13.00 AC / 64.96 %
OPEN SPACE AREA	
EXISTING	472,388 SF / 10.84 AC / 54.17 %
PROPOSED	305,538 SF / 7.01 AC / 35.04 %
UTILITIES	
WATER	PUBLIC
SEWER	PUBLIC
SCHOOL CAMPUS SUMMARY	
EXISTING STUDENTS	680 (K-5 = 575, PRE-K = 105)
PROPOSED STUDENTS	827 (K-5 = 575, PRE-K = 252)
PARKING SUMMARY	
EXISTING	
PARKING	237, INCLUDING 8 ACCESSIBLE
BUS	14
PROPOSED	
PARKING	314, INCLUDING 12 ACCESSIBLE
BUS	21

GENERAL NOTES

1. THE PURPOSE OF THIS REQUEST IS TO PROVIDE A NEW 252-STUDENT PRESCHOOL CENTER AT THE EXISTING SCHOOL SITE.
2. THIS CONCEPTUAL PLAN IS A GRAPHIC REPRESENTATION SHOWING APPROXIMATE BUILDING SIZES, ROADWAYS, PARKING, AND OTHER KEY SITE DESIGN ELEMENTS TO SHOW THE INTENT OF THIS PROJECT.
3. HATCHING SHOWN IS FOR GENERAL INFORMATIONAL PURPOSES.
4. BUILDING FOOTPRINTS SHOWN ARE WITH RESPECT TO OUTER WALL LINES.
5. DIMENSIONS SHOWN ARE FROM FACE OF CURB, EDGE OF PAVEMENT, OR FACE OF STRUCTURE UNLESS OTHERWISE NOTED.
6. ALL BUILDING ENTRANCES, SIDEWALKS, CURB RAMPS, RAMPS AND ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT ADAA AND ABAA GUIDELINES AS THEY PERTAIN TO THE REQUIRED GRADES, CONSTRUCTION MATERIALS, SPECIFICATIONS, AND SIGNAGE.
7. ALL ROADWAY AND PARKING STRIPING AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD.
8. ALL NEW ELECTRICAL, COMMUNICATIONS, AND GAS ALIGNMENTS, INCLUDING LOCATIONS FOR ACCESS/MANHOLES, SHALL BE COORDINATED WITH ALL FRANCHISE UTILITY PROVIDERS.
9. STORMWATER MANAGEMENT, INCLUDING LOW IMPACT DEVELOPMENT (LID) FEATURES SUCH AS BIORETENTION AND PERMEABLE PAVERS, WILL BE IMPLEMENTED AS FEASIBLE TO ENSURE THE REQUIREMENTS OF THE VIRGINIA NPDES STORMWATER PROGRAM AND ALL OTHER LOCAL AND STATE REGULATIONS ARE MET.
10. WHERE EXISTING SOILS DO NOT MEET MINIMUM INFILTRATION RATES FOR THE USE OF SELECTED INFILTRATION FEATURES, SOIL MATERIAL IS EXPECTED TO BE REMOVED AND REPLACED WITH SUITABLE MATERIAL TO SUPPORT THE MINIMUM DESIGN INFILTRATION RATES IN CONJUNCTION WITH UNDERDRAIN SYSTEMS WHERE NECESSASRY.
11. STORMWATER DETENTION SYSTEMS UNDER ROADWAYS AND PARKING LOTS ARE ANTICIPATED.

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BRIGHT BEGINNINGS PRE-K CENTER

NORGE ELEMENTARY SCHOOL

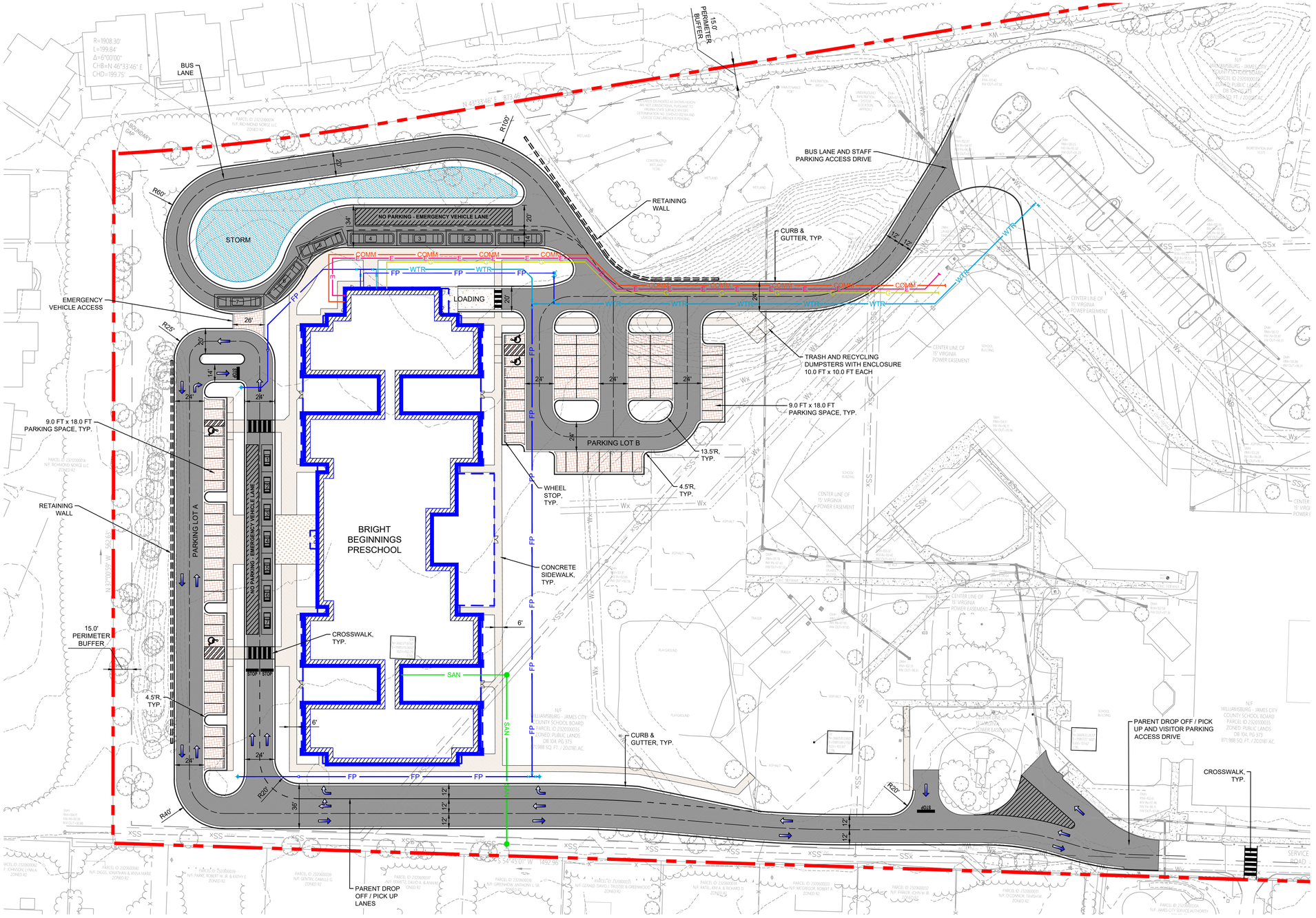
WILLIAMSBURG JAMES CITY COUNTY

CONCEPTUAL MASTER PLAN UPDATE

REV. MARCH 2024

0 80 160 240

GRAPHIC SCALE IN FEET



PROJECT INFORMATION

LEGAL REFERENCE	
TAX PARCEL	2320100035
ADDRESS	7311 RICHMOND RD. WILLIAMSBURG, VA 23188
PROJECT AREA SUMMARY	
DISTURBED AREA	
WETLANDS	0.34 AC
SURFACE WATERS	0.00 AC
UPLAND AREA	7.66 AC +/-
TOTAL	8.00 AC +/-
FIRM MAP	51095C0107D, 12/16/15
FLOOD ZONE	X
FLOOD ELEVATION	N/A
WATERSHED	YARMOUTH CREEK
STORMWATER MANAGEMENT	LOW IMPACT DEVELOPMENT (LID)
BUILDING SUMMARY	
NO. STORIES	1
MAX. HEIGHT	25' - 7 3/8"
CONSTRUCTION TYPE	II-B
FOOTPRINT	42,000 SF
F.F.E.	103.00 +/-
DESCRIPTION	PUBLIC PRESCHOOL
PARKING SUMMARY	
STAFF PARKING	48, INCLUDING 2 ACCESSIBLE
VISITOR PARKING	29, INCLUDING 2 ACCESSIBLE
TOTAL PARKING	77, INCLUDING 4 ACCESSIBLE
BUS LOOP QUEUE	675 LF
PARENT DROP OFF QUEUE	640 LF

LEGEND

- PROPERTY LINE
- PERIMETER BUFFER
- CENTERLINE ROAD/ AISLE
- ASPHALT PAVEMENT
- CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- DECORATIVE CONCRETE
- PERMEABLE PAVERS
- STORMWATER MANAGEMENT
- WTR — DOMESTIC WATER
- FP — FIRE SERVICE
- SAN — SANITARY SEWER
- G — GAS
- E — ELECTRIC
- COMM — COMMUNICATIONS
- STORM

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BRIGHT BEGINNINGS PRE-K CENTER

NORGE ELEMENTARY SCHOOL

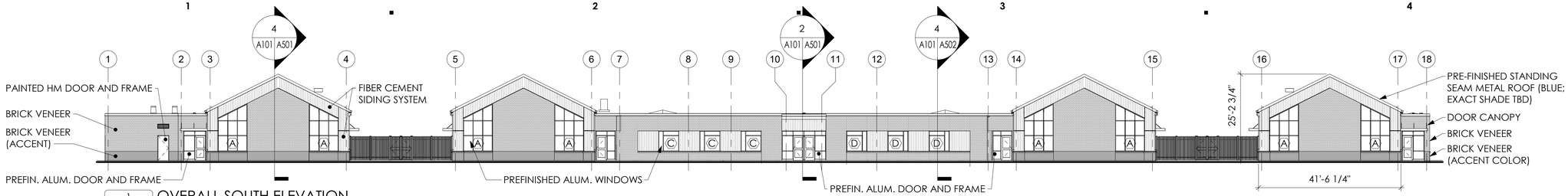
WILLIAMSBURG JAMES CITY COUNTY

CONCEPTUAL PRESCHOOL ADDITION

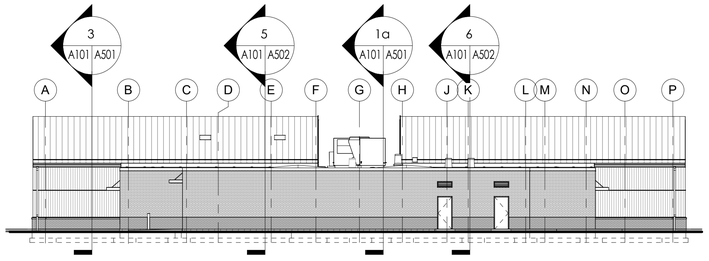
REV. MARCH 2024

0 40 80 120

GRAPHIC SCALE IN FEET



1 OVERALL SOUTH ELEVATION
A101 A401 1/16" = 1'-0"



2 OVERALL WEST ELEVATION
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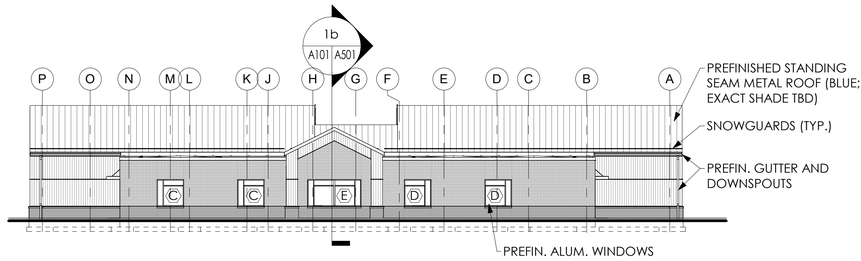
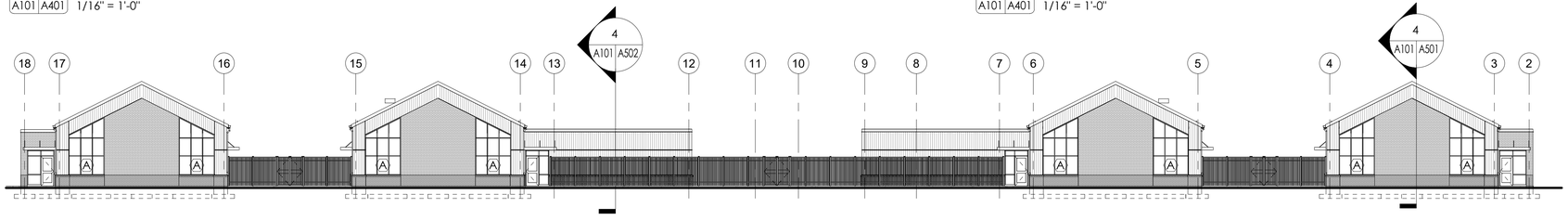
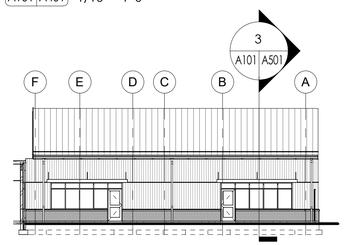


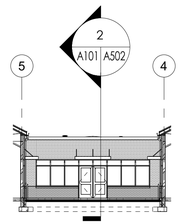
3 OVERALL EAST ELEVATION
A101 A401 1/16" = 1'-0"



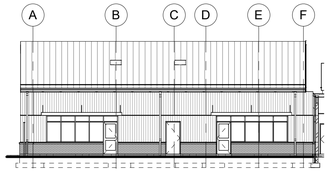
4 OVERALL NORTH ELEVATION
A101 A401 1/16" = 1'-0"



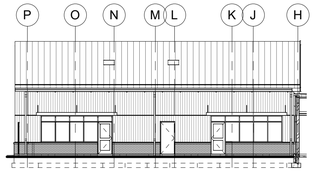
PARTIAL EAST ELEVATION - PLAY AREA A1
5 A101 A401 1/16" = 1'-0"



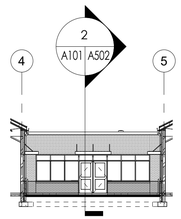
PARTIAL NORTH ELEVATION - PLAY AREA A1
6 A101 A401 1/16" = 1'-0"



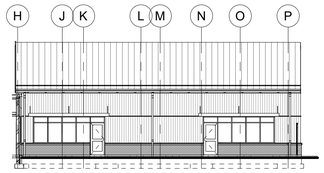
PARTIAL WEST ELEVATION - PLAY AREA A1
7 A101 A401 1/16" = 1'-0"



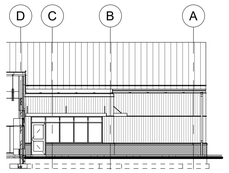
PARTIAL EAST ELEVATION - PLAY AREA A2
8 A101 A401 1/16" = 1'-0"



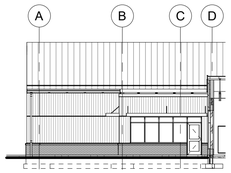
PARTIAL SOUTH ELEVATION - PLAY AREA A2
9 A101 A401 1/16" = 1'-0"



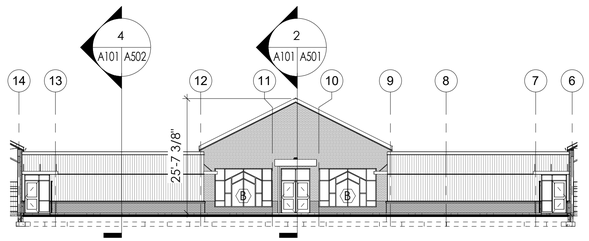
PARTIAL WEST ELEVATION - PLAY AREA A2
10 A101 A401 1/16" = 1'-0"



PARTIAL EAST ELEVATION - PLAY AREA B1
11 A101 A401 1/16" = 1'-0"



PARTIAL WEST ELEVATION - PLAY AREA B1
12 A101 A401 1/16" = 1'-0"



PARTIAL NORTH ELEVATION - PLAY AREA B1
13 A101 A401 1/16" = 1'-0"

NOTE: FENCING NOT SHOWN, FOR CLARITY.

GRAPHIC SCALE 0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

DISCLAIMER: GRAPHIC INFORMATION IN DRAWING MAY NOT NECESSARILY BE TO SCALE. USE DIMENSIONAL TEXT FOR ACCURACY. DO NOT SCALE.

WILLIAMSBURG JAMES CITY COUNTY PUBLIC SCHOOLS

Williamsburg James City County Public Schools

Pre-K Center at Norge ES

Norge ES
7311 Richmond Road
Williamsburg, VA 23188

Architect of Record
Ballou Justice Upton Architects + PBK
2402 N. Parham Rd, Richmond, VA 23229
T: 804 270 0909 F: 804 346 3301

Civil Engineer
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Structural Engineer
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MEP Engineers
Hall Collaborative
7814 Carousel Lane
Suite 200
Richmond, VA 23294
T: 804 270 7222

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Key Information

No:	Revision	Date

Sheet Title:
EXTERIOR ELEVATIONS

Drawn By:	Author
Issue Date:	April 1, 2024
Scale:	As Noted
BJUA Project No.:	23001.00
SDE No.:	131-07-00-100
Sheet No.:	A401

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March 20, 2024

Bright Beginnings Pre-K Center
Norge Elementary School
Civil Design Narrative – Special Use Permit Application
Williamsburg James City County, Virginia

1.0 Project Summary

The intent of this narrative is to identify key civil engineering design standards that will be used throughout the project design process. The information presented in this narrative is preliminary and based on the Special Use Permit Design Documents. This narrative will be refined as the project design progresses.

1.1 Project Description

The purpose of this project is to provide a new 252-student preschool center at the existing Norge Elementary School site. The project site is located at 7311 Richmond Road, Williamsburg, Virginia.

The one-story stand-alone building will be approximately 42,000 sf and include classrooms, restrooms, meeting rooms, offices, multipurpose space, indoor and outdoor play areas, and administrative space for students ages 2-5. Supporting facilities include site development, visitor parking lot, parent drop off/pick up lanes, staff parking lot, bus lanes, retaining walls, sidewalks, utilities, lighting, landscaping, green spaces, storm drainage, and stormwater management.

Approximately 8.0 acres will be disturbed for this work.

1.2 Site Layout

The preschool building has been placed as far to the rear of the school site as possible while maintaining the perimeter buffers and limiting perimeter grading to maximum the open space between the schools.

The site supports 252 preschool students along with 86 staff. Separate access roads have been provided to separate parents and visitors from buses and staff.

Convenient and safe pedestrian access will be provided throughout the project site to facilitate pedestrian access and accessibility between buildings, bus lanes, parent drop off lanes, and parking areas. Crosswalks will be provided where possible to promote designated pedestrian paths to make pedestrians more visible to motorists and increase driver recognition when crossing lanes of traffic.

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All building entrances, sidewalks, curb ramps, ramps, and accessible parking spaces will be constructed in accordance with the current ADAA and ABAA guidelines as they pertain to the required grades, construction materials, specifications, and signage.

2.0 Existing Site Conditions

A topographic survey has been provided by Vanasse Hangen Brustlin, Inc. (VHB), sealed January 18, 2024.

The existing topography is relatively flat with typical elevations ranging from 95.0 to 103.0. The perimeter of the project area contains dense woods. An existing fenced stormwater management facility is located to the north of the project area where the majority of the existing school site runoff is transported and treated. A berm approximately 18.0 feet in height is located just south of the stormwater management facility. Additionally, a smaller berm approximately 5.0 feet in height is located along the western perimeter. The remainder of the site is open turf grass with minor development including a picnic shelter, score board, play areas, and other miscellaneous items. Utilities and utility easements run throughout the site in the area of the project.

3.0 Grading and Drainage Impact Statement

The site will be graded to promote positive drainage away from the proposed building and the proposed grade surrounding the building is to slope away from the finished floor. The grade elevations immediately adjacent to the building in areas without patios or walkways will be a minimum of 6.0 to 8.0-inches below the finished floor elevations and slope away from the building at a minimum of 5.0% over ten (10.0) feet.

Slopes across the parking lots are expected to vary from 1.0%-3.0%, except at ADA accessible parking areas and crosswalks which will not exceed 2.0% slopes. Areas of permeable pavers will also not exceed 2.0% slopes to promote infiltration.

Several retaining walls extending 3.0 – 4.0 feet in height may be needed throughout the site in order to maximum the development while minimizing disturbance to existing surrounding features, including roads, stormwater management facilities, and perimeter buffers.

On-site stormwater drainage collection systems will be designed to convey runoff from the design storm event to stormwater management facilities that will maintain, to the maximum extent technically feasible, the predevelopment hydrology of the project areas.

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4.0 Stormwater Management Impact Statement

Stormwater management facilities will be selected based upon the subsurface conditions, permeability of soils, and groundwater elevations found while considering topographic conditions and existing stormwater management facilities. Stormwater management, including low impact development (LID) features, such as bio-retention and permeable pavers, will be implemented as feasible to ensure the requirements of the Virginia NPDES Stormwater Program and all other local and state regulations are met.

Permeable pavers are anticipated to be used in parking areas and will be the primary treatment for proposed parking lots. Roadways, including bus lanes, and building roof drainage are anticipated to be treated by infiltration methods, such as bio-retention and underground storage systems used to detain the volume of runoff prior to release. Stormwater detention systems under the proposed roadways and parking areas is anticipated. The stormwater runoff will be collected, retained, treated, and infiltrated as required and conveyed to the northwest corner of the project site where it will discharge adjacent to the existing constructed wetland.

Geotechnical results show Hydrologic Soil Group Class A, B, and C soils at the Norge Elementary project site. Class A, B, and some Class C soils are suitable for infiltration. Where existing site soils do not meet minimum infiltration rates for the use of selected infiltration features, soil material is expected to be removed and replaced with suitable material to support the minimum design infiltration rates in conjunction with underdrain systems where necessary.

Rails or fencing will surround any stormwater management facility with standing surface water.

5.0 Water and Sewer Impact Statement

5.1 Water Supply - Domestic and Fire Protection

The proposed water system improvements for the new sprinklered preschool building will be designed to provide both domestic water and fire protection services extending from the existing 8” water main running through the Norge Elementary project site. Based on the October 2023 fire hydrant flow test results, the 8” main has adequate pressure and flow to support the proposed development. Results show a static pressure of 57 psi and a residual pressure of 49 psi at fire hydrant FHE110017 with a flow of 1,902 gpm at fire hydrants FHE110016 and FHE110018 off of Richmond Road in the area of the project.

Fire hydrants will be provided throughout the preschool site as required to meet manual fire protection requirements. A fire department connection (FDC) is to be located a minimum of 40 feet from the building and within 50 feet of a fire hydrant.

The existing combination meter currently serving Norge Elementary will be evaluated and replaced, as required, for the additional preschool capacity. Domestic and fire backflows are anticipated to be installed within the buildings.

ALPHA CORPORATION
295 Bendix Road, Suite 340
Virginia Beach, VA 23452
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The Total Fixture Units projected for the preschool = 430.

TYPE	QTY
Water Closet	26
Lavatory	30
Sink	22
Mop sink	4
Shower	2
Drinking Fountains	5

Additionally, the building will have 12 hose bibs/ wall hydrants. Water meter sizing calculations will be provided during the Site Plan design stage.

Approximately 280 gpm is the estimated fire sprinkler demand for the building.

JCSA staff has verified that the proposed project can tie to the public water system.

5.2 Sanitary Sewer

Flows are estimated at 10 gpd/ student with a total of 252 students and 10 gpd/ faculty with a total of 86 staff.

The existing 10" SDR26 PVC gravity sanitary sewer main running through the back of the Norge project site will be relocated around the new building and extended to serve the new preschool.

All sanitary sewer service laterals from the proposed buildings will be a minimum of 6-inches with a minimum slope of 1.04%.

JCSA staff has verified that there is adequate capacity available in the gravity sanitary sewer mains and receiving pump station. As excess capacity is available, a capacity analysis of the system is not provided.

All water and sanitary sewerage facilities to be dedicated to JCSA will be designed in accordance with HRPDC Regional Standards, dated June 2016, and the JCSA Design and Acceptance Criteria for Water Distribution and Sanitary Systems dated September 2023.

Traffic Impact Analysis

Bright Beginnings at Norge Elementary School

James City County, Virginia

April 2024

Prepared for:
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Appendix B – Turning Movement Count Data and Signal Timing Plans
Appendix C – Synchro Output – Existing 2023 Conditions
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Executive Summary

This report summarizes the findings of the Traffic Impact Analysis (TIA) that was performed for the proposed Bright Beginnings pre-school on the west side of Richmond Road (U.S. 60) between Hitchens Lane and Nina Lane in James City County, Virginia. The development plan includes the construction of a pre-school with 252 students. The access plan includes connections to the existing Norge Elementary School Driveway on the west side of Richmond Road (U.S. 60) and a potential connection to Hitchens Lane. If approved, the pre-school is expected to be complete in 2025.

In addition to the proposed pre-school, Williamsburg-James City County Public Schools (WJCCPS) is in the process of redistricting, and they are planning to increase the enrollment of Norge Elementary School by approximately 175 students. This study accounts for all anticipated increases in enrollment, including those resulting from the proposed pre-school and the planned redistricting.

This study was performed based on the TIA scope meeting with the Virginia Department of Transportation (VDOT) and James City County on November 17.

Site Location and Study Area

The site is located on the west side of Richmond Road behind the existing Norge Elementary School. Based on discussion with the County and VDOT, the following scenarios were analyzed:

- Existing 2023 conditions
- No-Build 2025 conditions
- Build 2025 conditions
- Build 2025 conditions (without Redistricting)
- Build 2025 conditions with connection to Hitchens Lane
- Build 2025 conditions with connection to Hitchens Lane (without Redistricting)

The weekday AM were studied for the following intersections:

1. Richmond Road at School Driveway / Gas Station Driveway
2. Richmond Road at Hitchens Lane

Recommendations

Based on the results of the analysis, all study intersections will operate with acceptable queueing and delay upon build-out of the proposed pre-school. Without a connection to Hitchens Lane, no improvements are warranted or recommended.

<u>If a connection to Hitchens Lane is made without school redistricting, the following improvement is warranted:</u>

- Construct a southbound right-turn lane on Richmond Road as deemed appropriate by VDOT

<u>If a connection to Hitchens Lane is made with school redistricting, the following improvement is warranted:</u>

- Construct a southbound right turn lane on Richmond Road at Hitchins Lane

Introduction

This report summarizes the findings of the Traffic Impact Analysis (TIA) that was performed for the proposed Bright Beginnings pre-school on the west side of Richmond Road (U.S. 60) between Hitchens Lane and Nina Lane in James City County, Virginia. The development plan includes the construction of a pre-school with 252 students. The access plan includes connections to the existing Norge Elementary School Driveway on the west side of Richmond Road (U.S. 60) and a potential connection to Hitchens Lane. If approved, the pre-school is expected to be complete in 2025.

In addition to the proposed pre-school, Williamsburg-James City County Public Schools (WJCCPS) is in the process of redistricting, and they are planning to increase the enrollment of Norge Elementary School by approximately 175 students. This study accounts for all anticipated increases in enrollment, including those resulting from the proposed pre-school and the planned redistricting.

This study was performed based on the TIA scope meeting with the Virginia Department of Transportation (VDOT) and James City County on November 17.

Scope of the Traffic Study

Based on discussions with the County and VDOT, the following intersections were analyzed:

1. Richmond Road at School Driveway / Gas Station Driveway
2. Richmond Road at Hitchens Lane

Figure 1 shows the site location and study intersections and Figure 2 shows the preliminary site plan.

Figure 1: Site Location and Study Intersections

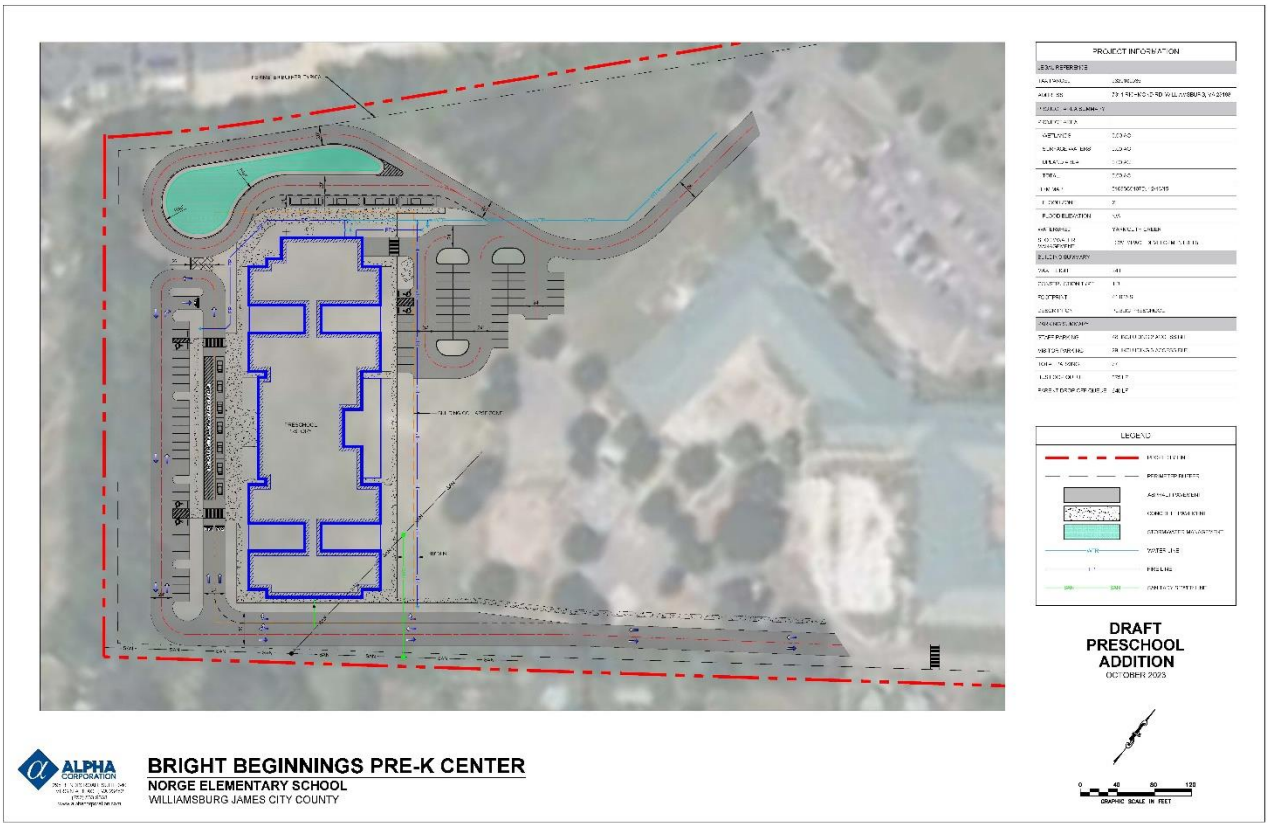

Figure 2: Preliminary Site Plan

Existing Conditions

Existing Roadway Network

Existing lane configurations and turn lane storage lengths were collected in the field by Gorove Slade and signal timing information was provided by VDOT. A description of the major roadways within the study area is presented below in Table 1. The existing lane configuration is shown in Figure 3.

Table 1: Existing Roadway Network

Roadway	RTE #	VDOT Classification	Legal/Design Speed Limit (mph)	AADT (vpd)
Richmond Road	U.S. 60	Principal Arterial	45	15000*
* VDOT 2021 ADT Traffic Data				

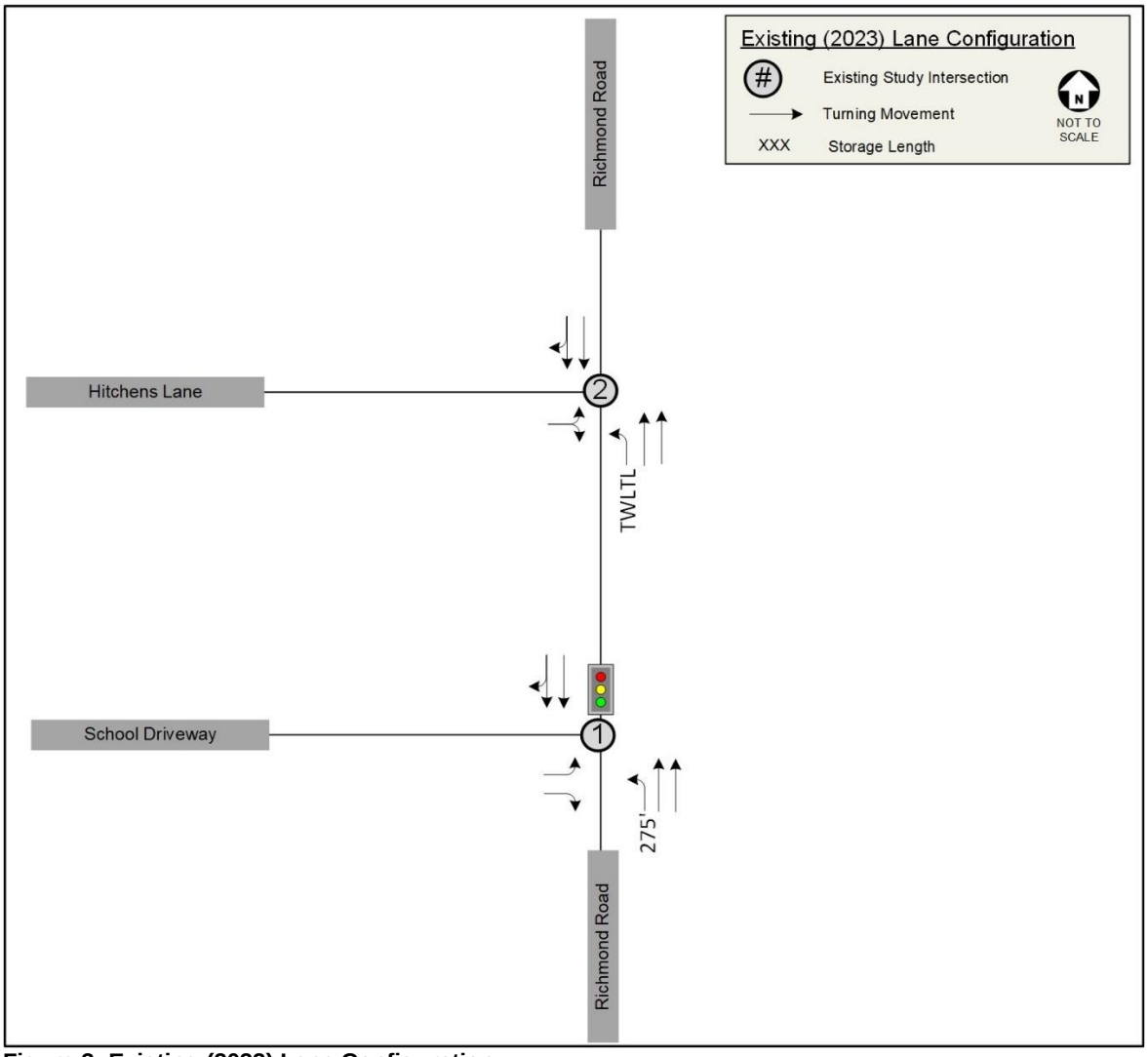

Figure 3: Existing (2023) Lane Configuration

Existing Traffic Volumes

Norge Elementary is open from 8:55 AM – 3:25 PM, so the intake / dismissal of students does not align with standard AM peak hour (7:00 – 9:00) and PM peak hour (4:00 – 6:00) times of the adjacent roadway network. To properly capture the peak hour traffic volumes related to the school, the weekday AM peak hour (8:30 to 10:30 AM) was collected.

Turning movement counts were conducted by Burns Service Inc. (BSI) during the week of November 15 at the intersection of Richmond Road at School Driveway / Gas Station Driveway. The volumes from the adjacent gas station were incorporated in the figures and modeled as throughs. The gas station driveways were not incorporated in the signal modeling because the driveways are not served by the signal (none of the existing signal heads face the gas station entrances). It should also be noted that the PM peak hour was not analyzed because staff leave the school over a longer period of time which is less impactful to the surrounding roadway network.

The existing peak hour traffic volumes are shown in Figure 4, and the turning movement count data is included in the Appendix. For the Hitchens Road intersection, the turning movement count data was taken from the Traffic Analysis for Jennings Way TIA, performed by DRW Consultants, LLC in January of 2006. The turning movements used for this study are based on Exhibit 8 of the Jennings Way TIA, which can be found on page 20 of that report and is included in the Appendix for reference. These turning movement counts were further grown to 2023 using an annual growth rate of 1%. All through movements were calculated by balancing the traffic volumes with data from the adjacent intersection.

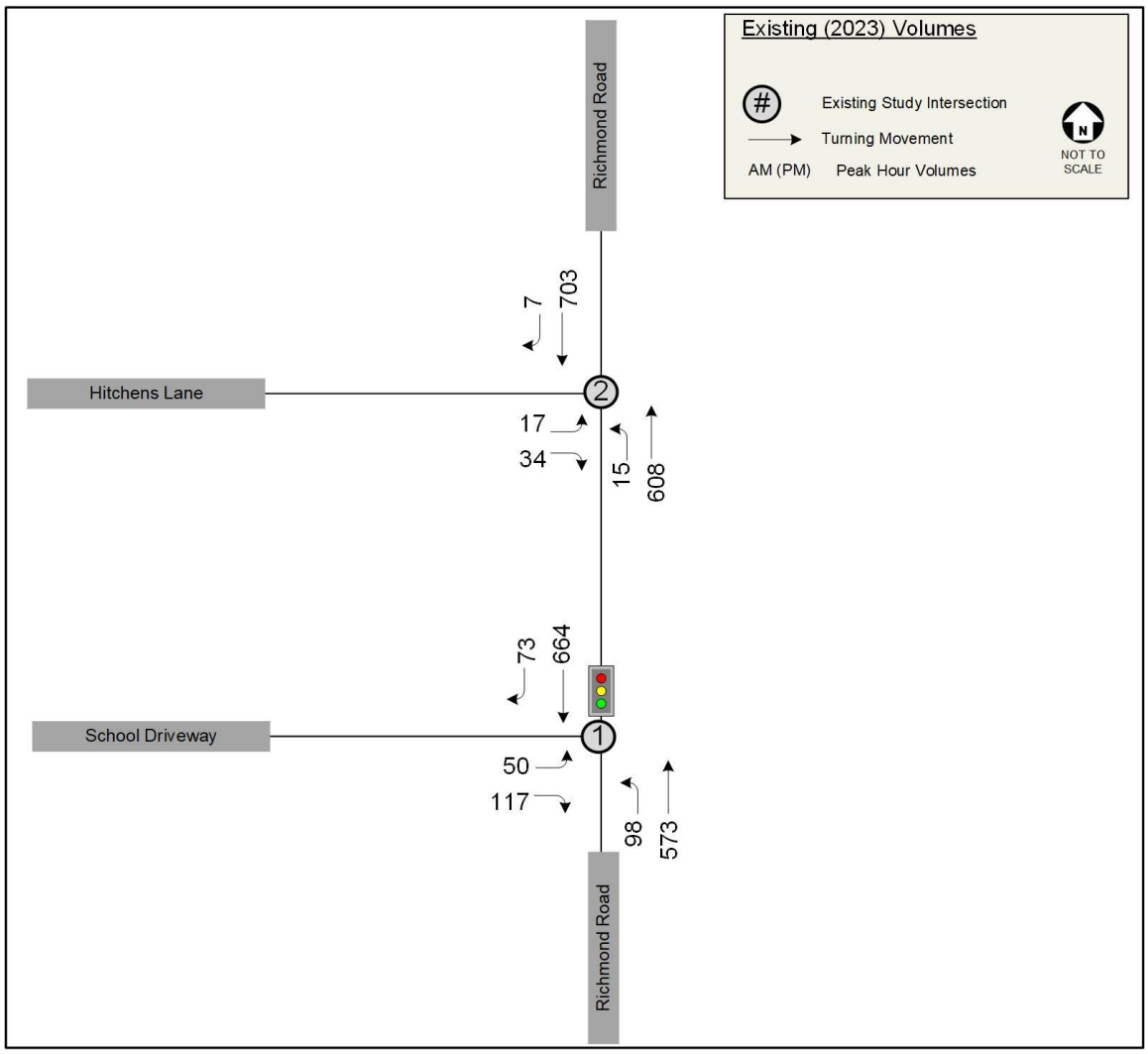

Figure 4: Existing (2023) Peak Hour Traffic Volumes

No-Build Conditions

In order to determine the traffic impact of the proposed pre-school, a comparison of the future conditions of the study intersections must be made. This is achieved by analyzing the horizon year (2025) with the traffic generated by the proposed pre-school. The future year condition without construction of the pre-school is called the no-build condition, and it its determined by projecting the existing traffic to the build-out year using an annualized growth rate and adding it to the traffic from approved (but not yet built) developments in the study area. No approved developments were identified as part of the scope for this study.

Background Traffic Growth

At the request of VDOT, an annual traffic growth rate of 1% was applied to the 2023 traffic count volumes for two years to estimate the No-Build 2025 traffic volumes, which are shown in Figure 5.

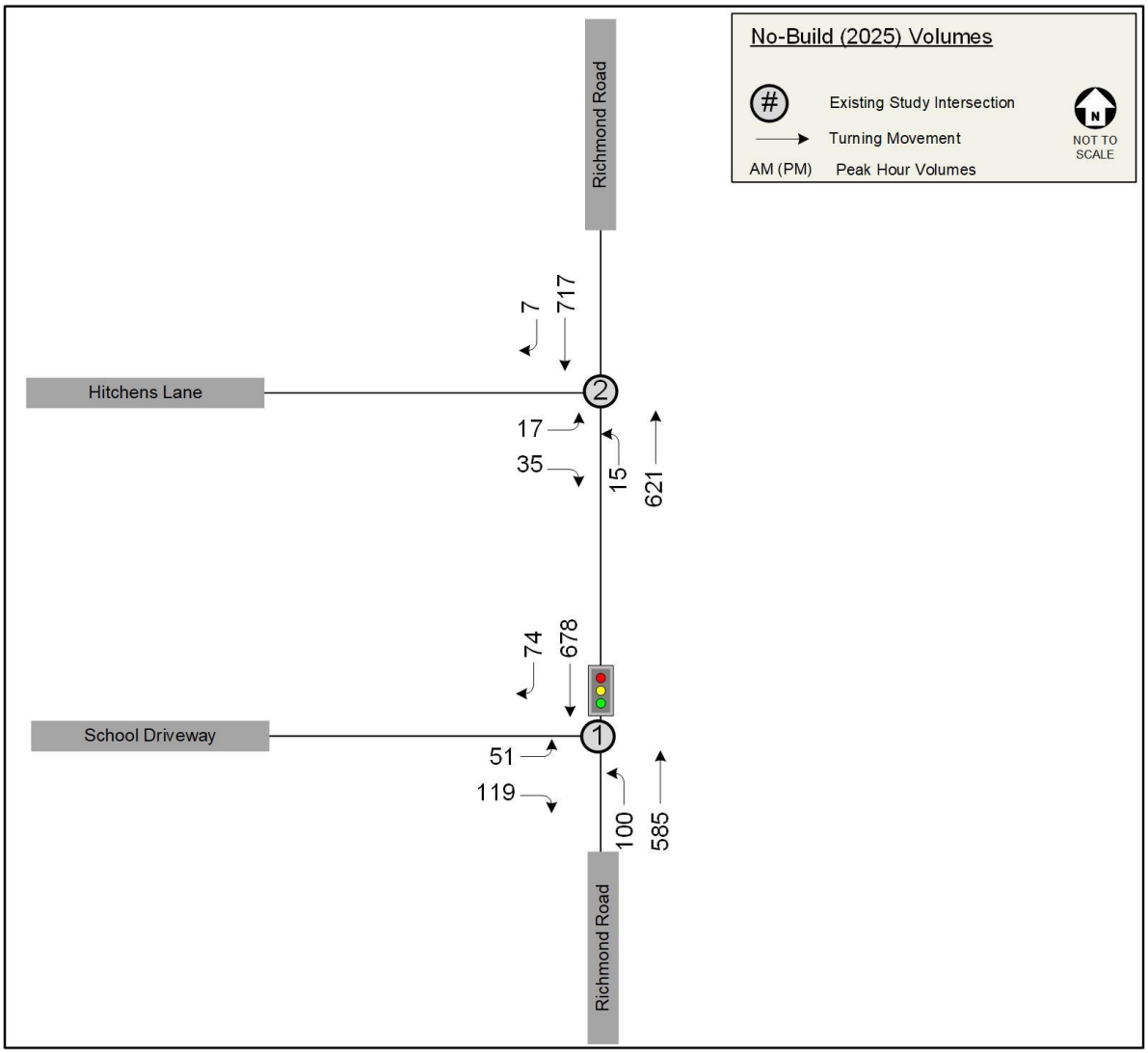

Figure 5: No-Build (2025) Peak Hour Traffic Volumes

Build Conditions

Site Trip Generation

Table 2 shows the anticipated trip generation potential of the proposed pre-school during the weekday AM peak hour based on the current traffic count data, current school enrollment, and the projected increase in school enrollment.

Table 2: Elementary Pre-School – Trip Generation

Land Use	Size	AM Peak Hour	
		Enter	Exit
Current Enrollment[1]	680	171	167
Staff[2] = 86		86	9
Buses[2] = 19		19	19
(Parents/Other)		66	139
Future Enrollment	1,002 students	253	247
Staff[3] = 127		127	13
Buses[3] = 28		28	28
(Parents/Other)		98	206
Net Difference		**82**	**80**

[1]Site trip generation based on traffic count volume data
[2]Site trip data provided by WJCC PS
[3]Buses and staff were scaled proportionally to accommodate future enrollment

The existing traffic count data was used to determine the entering and exiting trips (Current Enrollment) for Norge Elementary School during the AM peak hour. In conjunction with construction of the proposed Bright Beginnings pre-school, WJCCPS is in the process of redistricting, which is projected to increase the overall number of students at Norge Elementary School. The Future Enrollment trip generation accounts for all projected increases in school trips, including those generated by the pre-school, and these numbers were determined by proportionally increasing the number of trips based on the projected increase in student enrollment. Total trips are further separated into staff, buses, and parent trips. It is assumed that 100% of the staff trips will arrive and 10% will leave during the peak hour, while 100% of the buses will arrive / leave at the peak hour.

Of the 680 current students enrolled at Norge Elementary, 105 students will be relocated to the proposed Bright Beginnings school addition. The redistricting is anticipated to add an additional 175 new students to the current enrollment. The total future school population will be 1,002 students (680 existing + 252 new Bright Beginnings + 175 from redistricting – 105 existing students to be relocated to the proposed school addition).

Site Trip Distribution

The site trip distribution was determined based on discussion with VDOT, a review of existing traffic patterns, surrounding land uses, and engineering judgement. The following primary site trip distribution was applied based on redistricting of the school:

- 55% to / from the north on Richmond Road
- 45% to / from the south on Richmond Road

Figure 6 and Figure 8 show the primary distributions, without and with a connection to Hitchens Lane, respectively. Similarly, Figure 10 and Figure 12 show the trip assignments, without and with Hitchens Lane. For the analysis with Hitchens Lane, it was assumed that only buses and staff would utilize the access on Hitchens Lane, and resulting traffic redirection is shown in Figure 14.

Additionally, when redistricting is not taken into consideration, following trip distribution is applied to match the existing count:

- 35% to / from the north on Richmond Road
- 65% to / from the south on Richmond Road

Figure 7 and Figure 9 show the trip distributions, without and with a connection to Hitchens Lane with no redistricting, respectively. Similarly, Figure 11 and Figure 13 show the trip assignments, without and with Hitchens Lane with no redistricting. For the analysis with Hitchens Lane, it was assumed that only buses and staff would utilize the access on Hitchens Lane, and resulting traffic redirection is shown in Figure 15. The connection to Hitchens Lane is proposed as an option to separate school children being picked up by parents from bus / staff traffic.

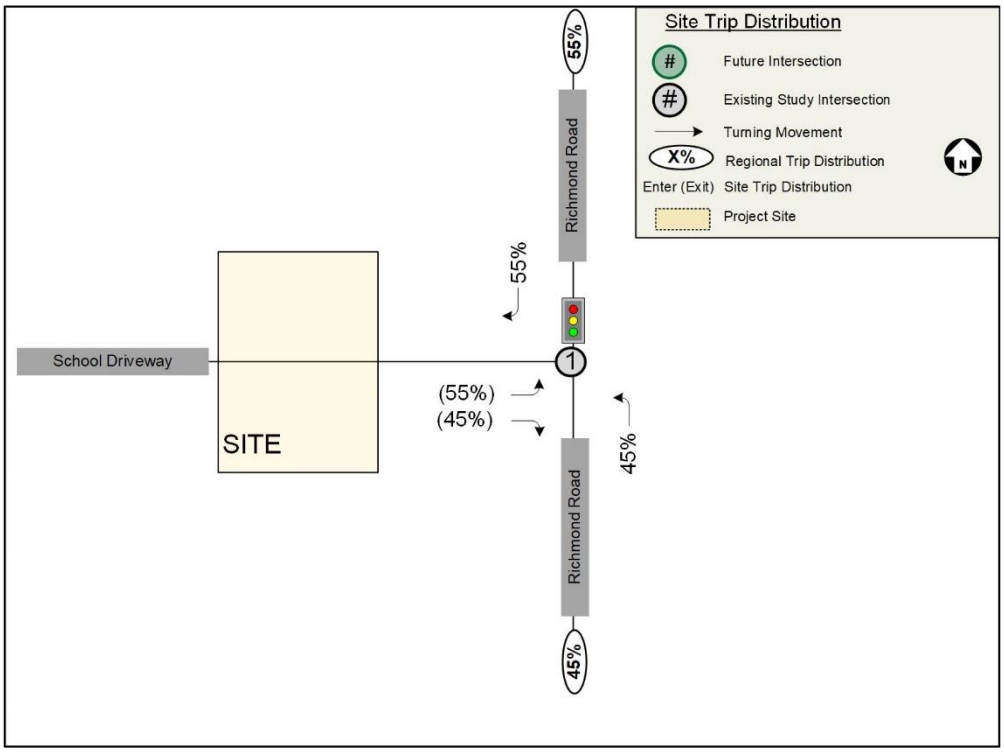

Figure 6: Trip Distribution (without Hitchens Lane)

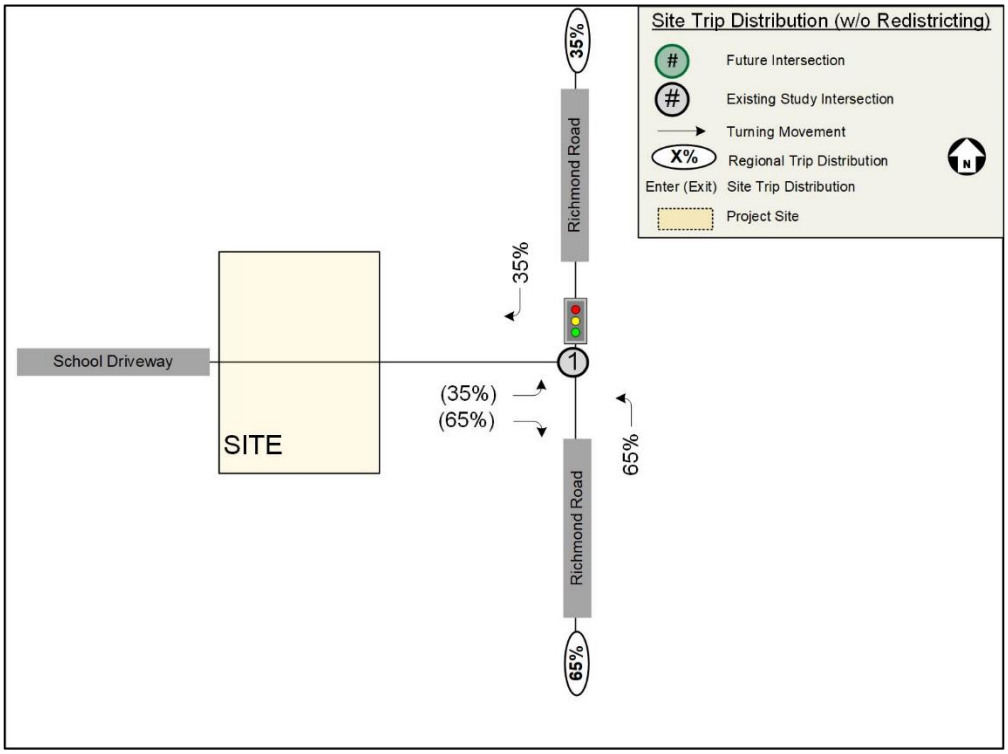

Figure 7: Trip Distribution with No Redistricting (without Hitchens Lane)

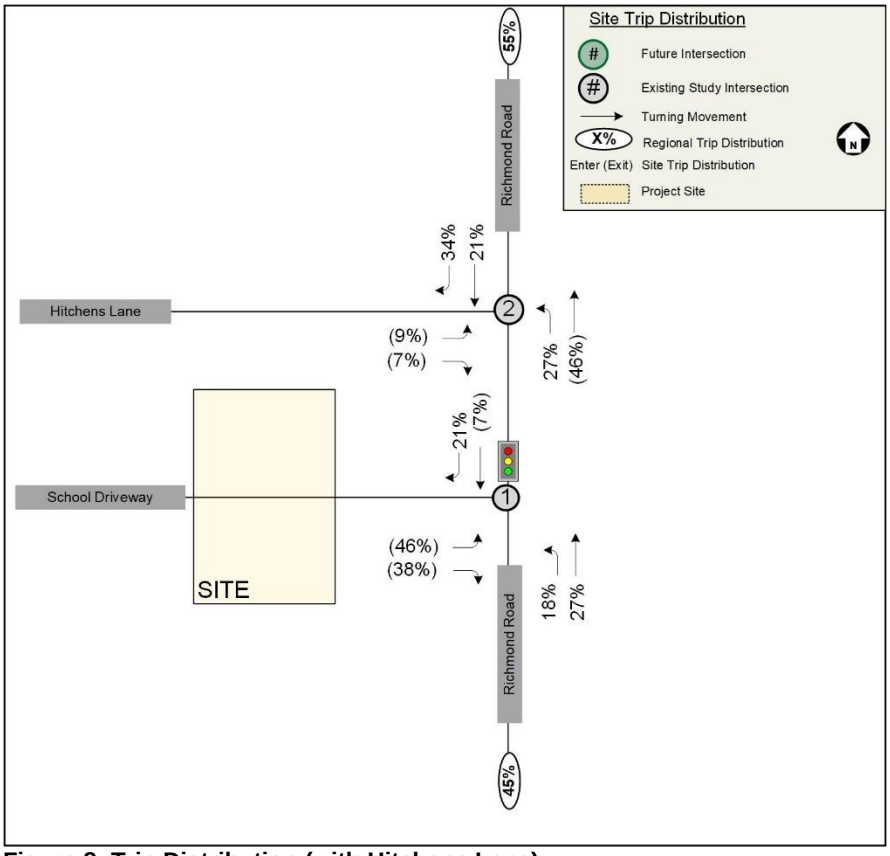

Figure 8: Trip Distribution (with Hitchens Lane)

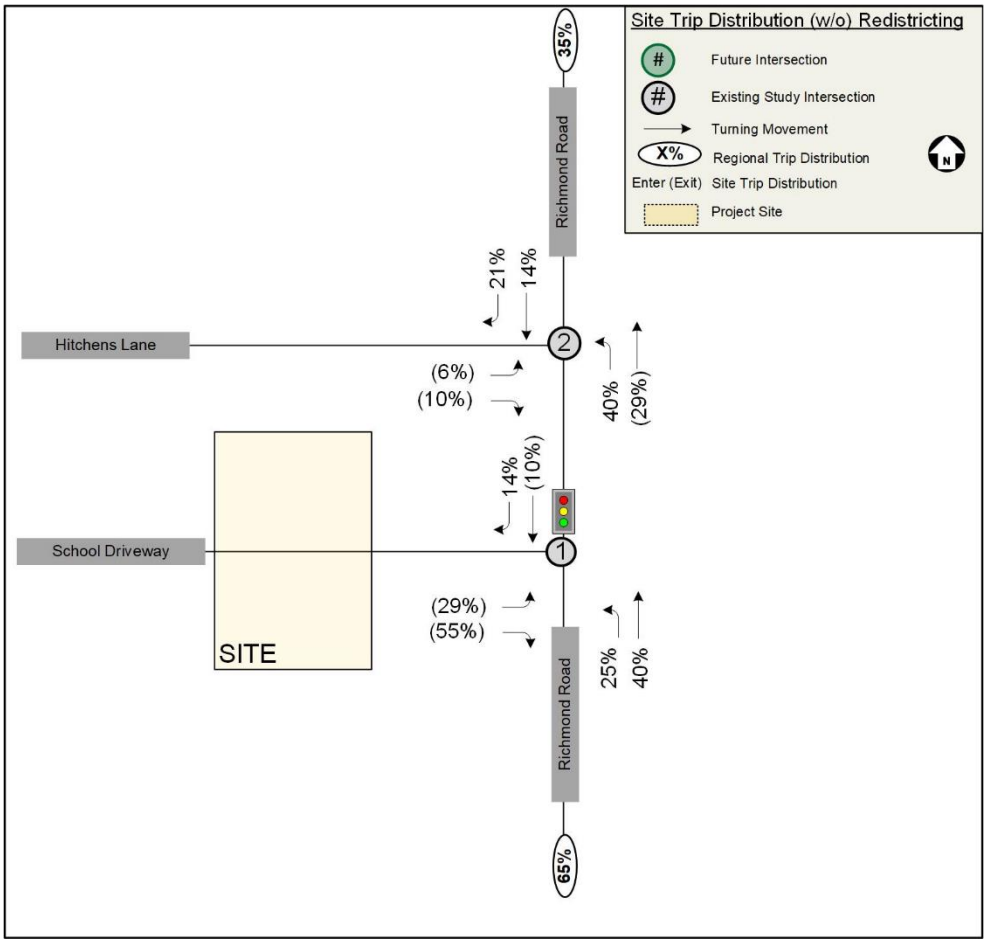

Figure 9: Trip Distribution with No Redistricting (with Hitchens Lane)

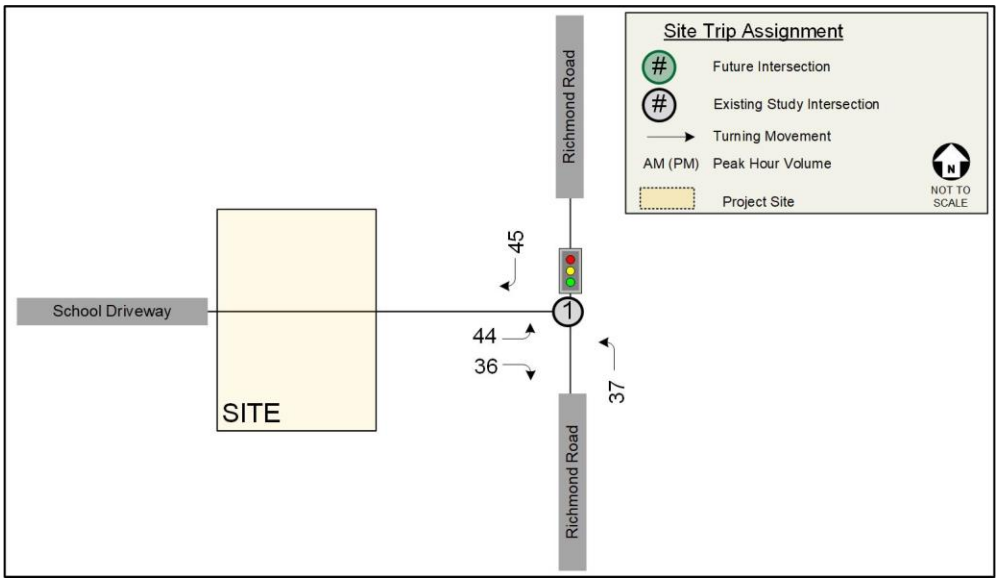

Figure 10: Trip Assignment (without Hitchens Lane)

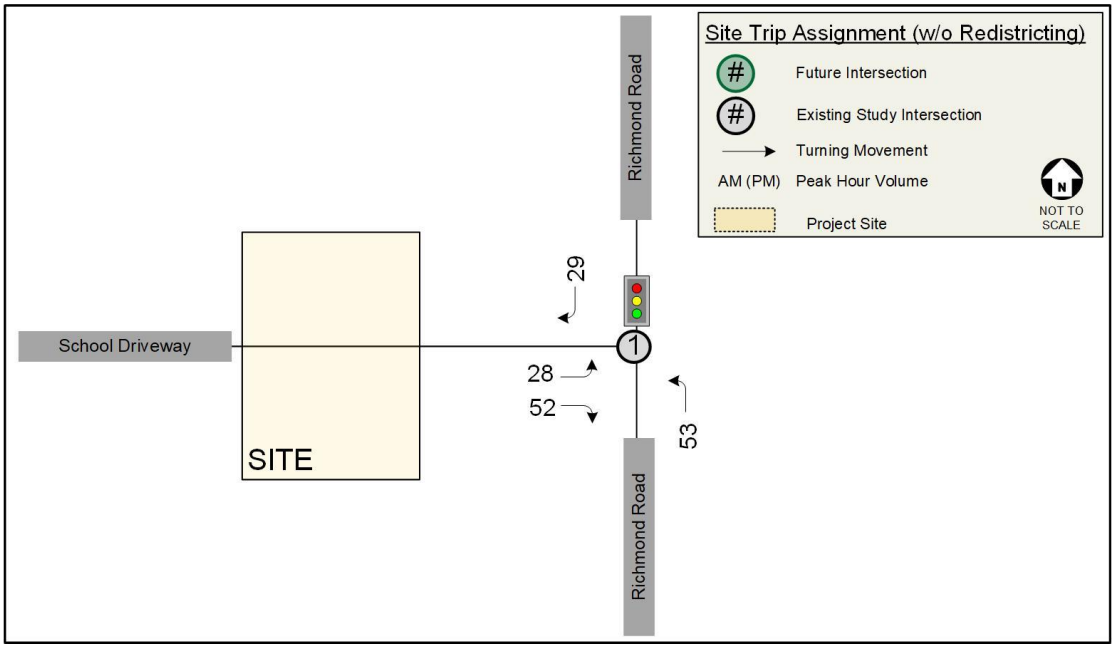

Figure 11: Trip Assignment with No Redistricting (without Hitchens Lane)

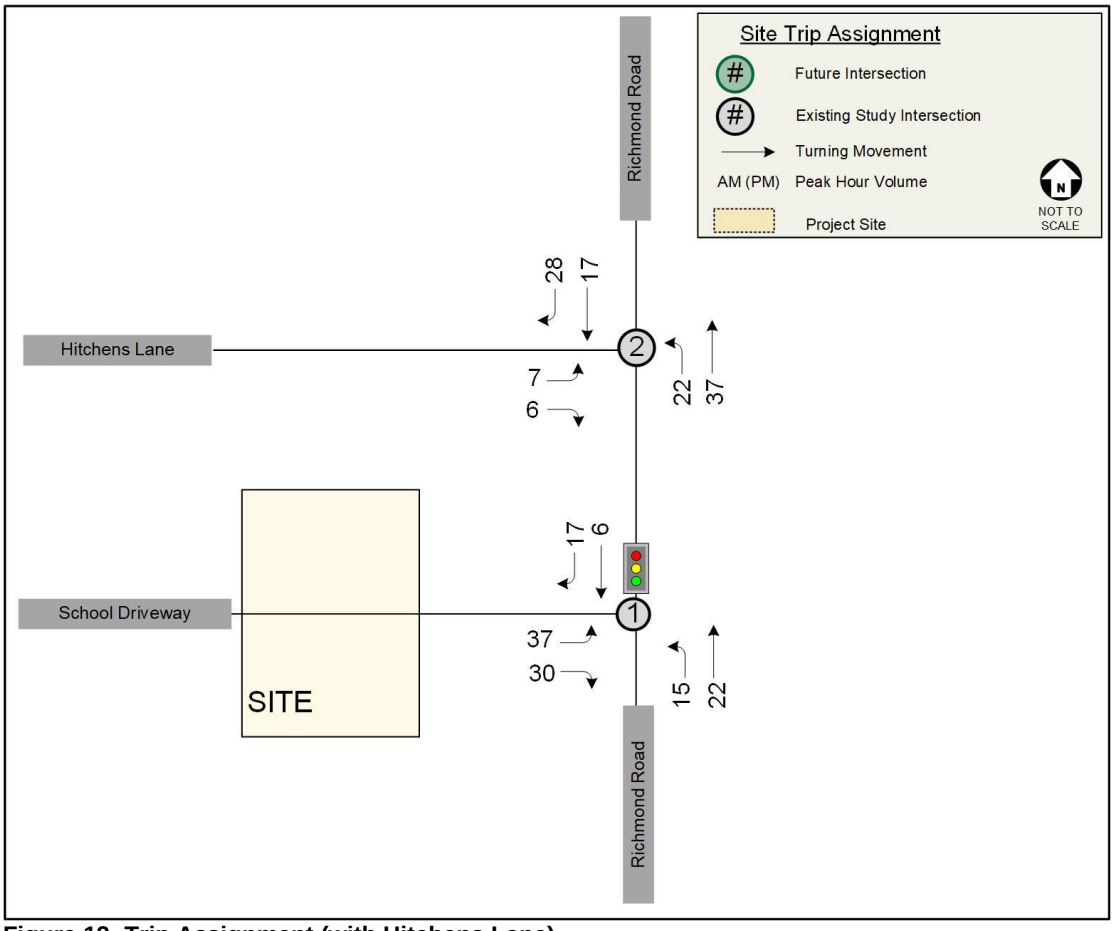

Figure 12: Trip Assignment (with Hitchens Lane)

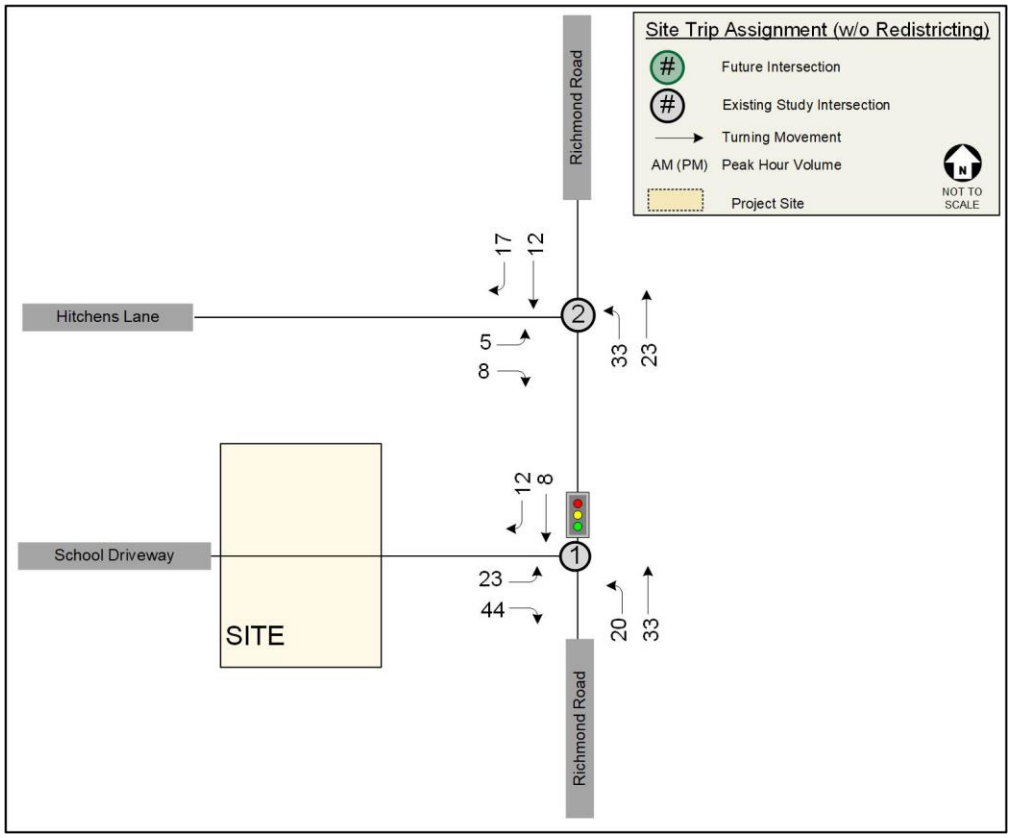

Figure 13: Trip Assignment with No Redistricting (with Hitchens Lane)

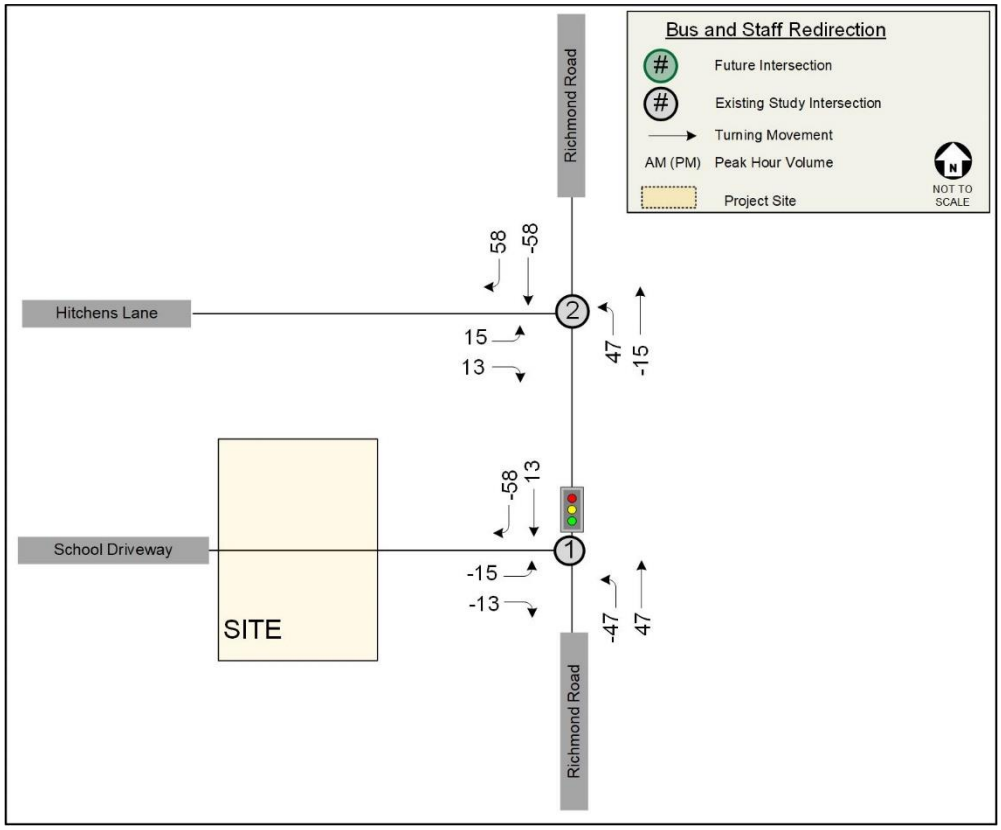

Figure 14: Traffic Volume Redirections (Bus and Staff)

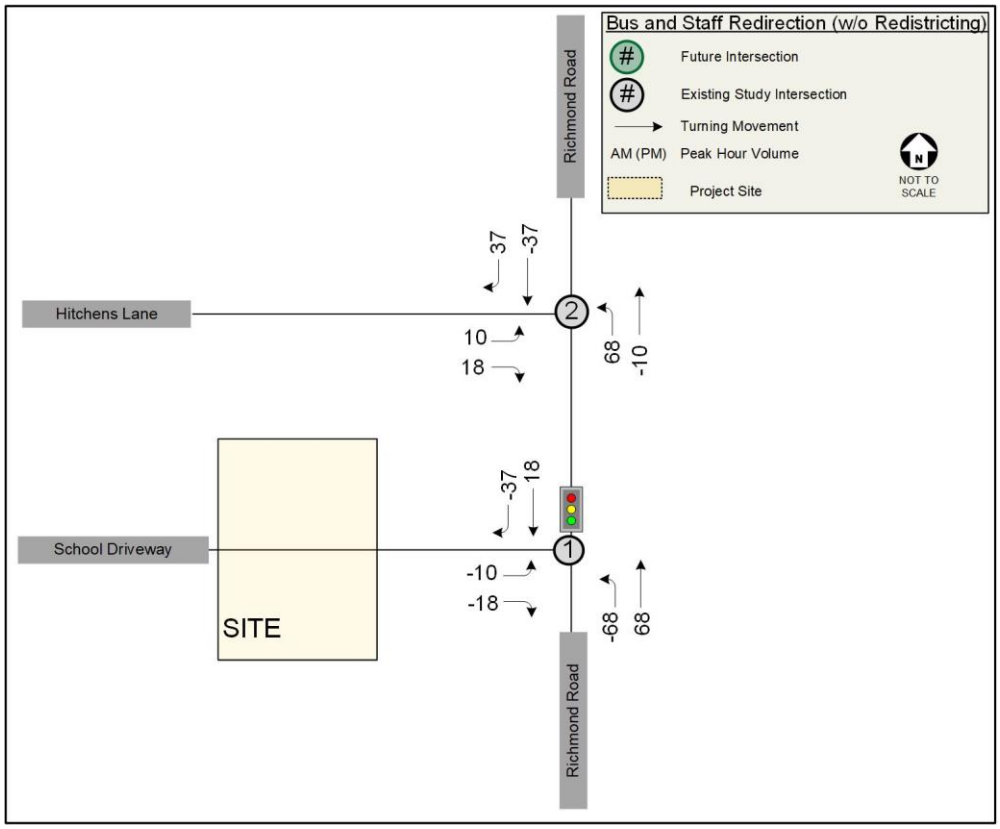

Figure 15: Traffic Volume Redirection (Buses and Staff) with No Redistricting

Build 2025 Traffic Volumes

The Build 2025 traffic volumes (Figure 16) without Hitchens Lane were estimated by adding the No-Build 2025 volumes (Figure 5) and assigned trips (Figure 10). Similarly, the No-Build 2025 volumes (Figure 5) were added with the trip assignment (Figure 12) and redirected trips (Figure 14) to determine the Build 2025 peak hour traffic volumes with Hitchens Lane (Figure 18).

The Build 2025 traffic volumes with no redistricting (Figure 17) without Hitchens Lane were estimated by adding the No-Build 2025 volumes (Figure 5) and assigned trips (Figure 11). Similarly, the No-Build 2025 volumes (Figure 5) were added with the trip assignment (Figure 13) and redirected trips (Figure 15) to determine the Build 2025 peak hour traffic volumes with Hitchens lane and no redistricting (Figure 19).

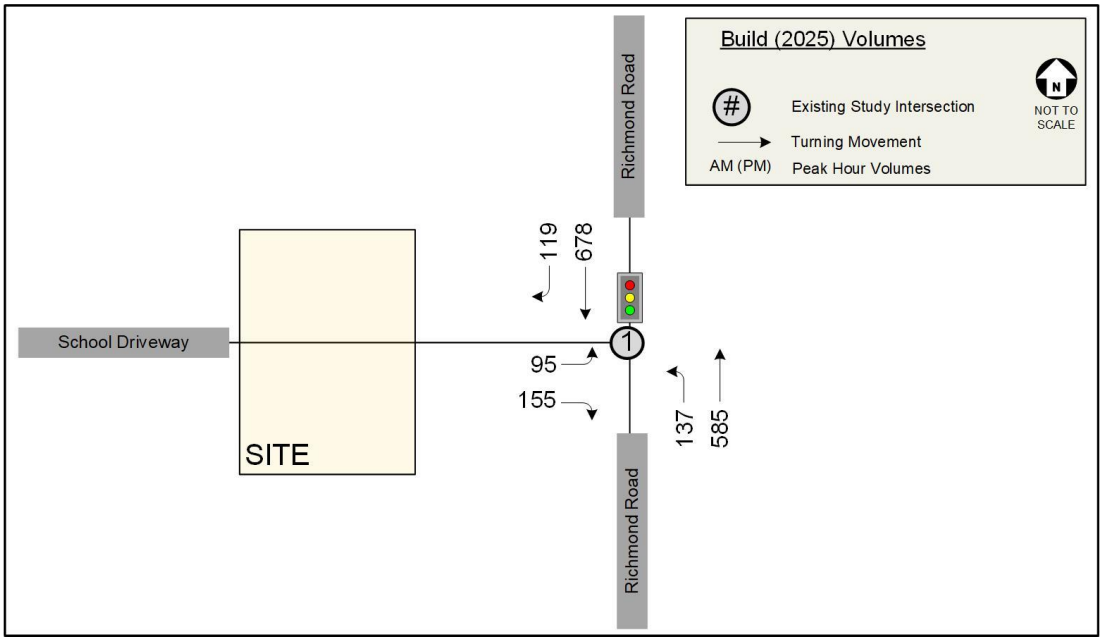

Figure 16: Build (2025) Peak Hour Traffic Volumes (without Hitchens Lane)

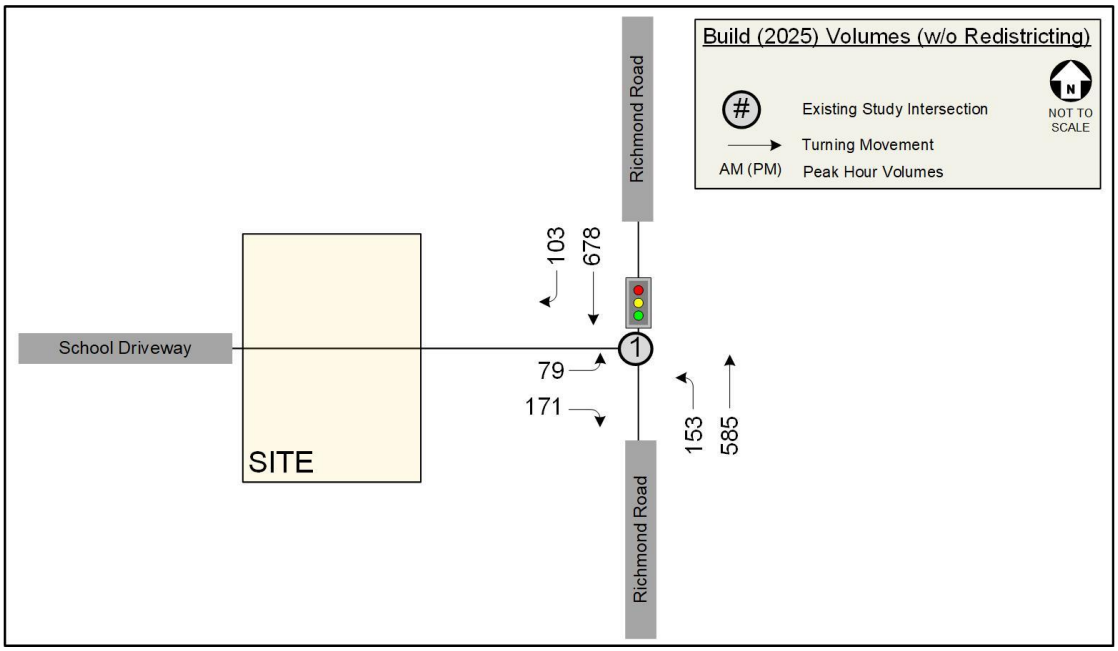

Figure 17: Build (2025) with No Redistricting (without Hitchens Lane)

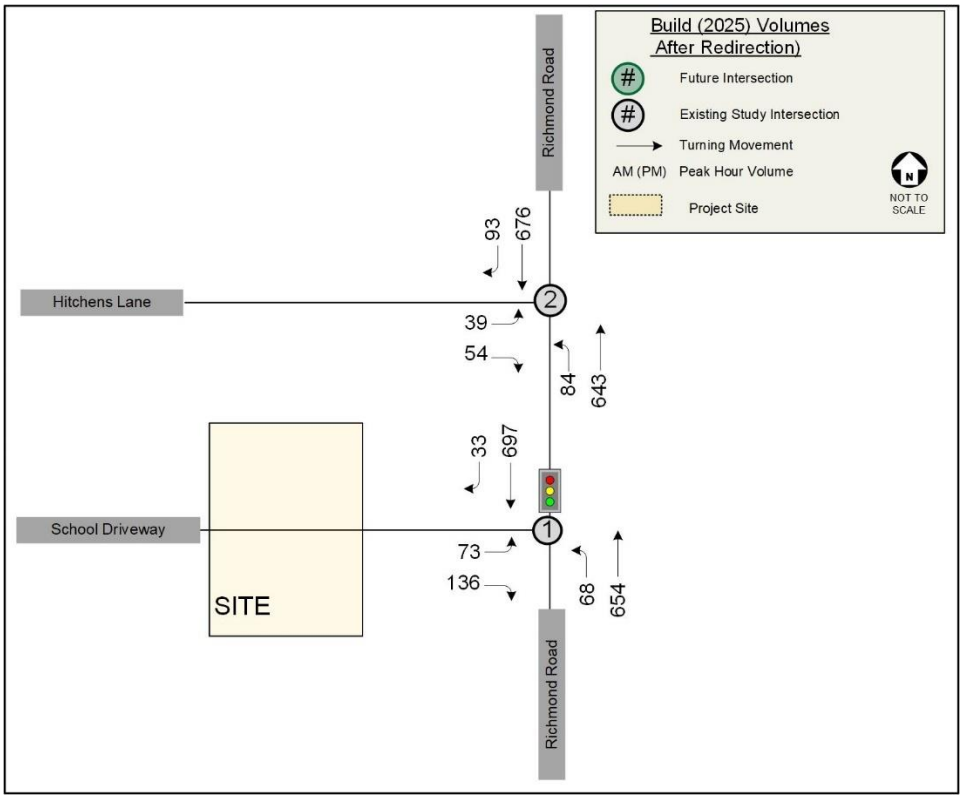

Figure 18: Build (2025) Peak Hour Traffic Volumes (with Hitchens Lane)

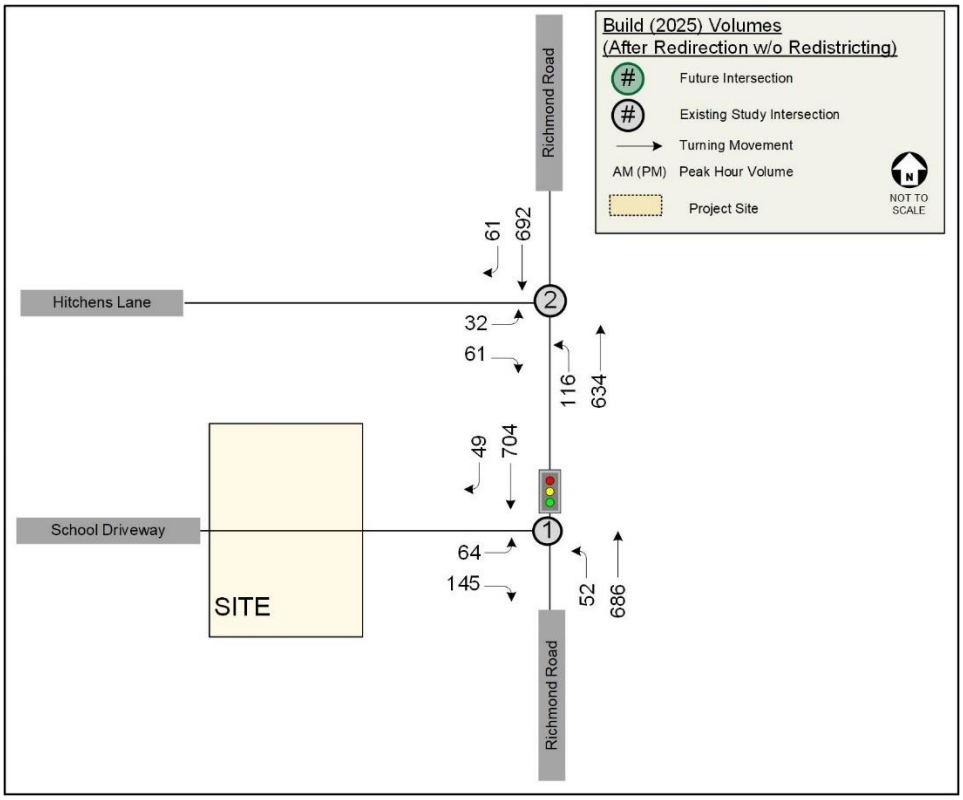

Figure 19:Build (2025) Peak Hour Traffic Volumes with No Redistricting (with Hitchens Lane)

Turn Lane Warrant Analysis

The need for turn lanes was evaluated at the site driveway based on VDOT's access management standard appendix F. The results of the analyses are summarized below and turn lane warrant charts are included in the Appendix.

Richmond Road at Hitchens Lane (with Hitchens Lane and No Redistricting):

- Construct a southbound right turn taper on Richmond Road

Richmond Road at Hitchens Lane (with Hitchens Lane and Redistricting):

- Construct a southbound right-turn lane on Richmond Road as deemed appropriate by VDOT

Capacity Analysis

Capacity Analysis Procedure

Capacity analyses were performed at the study area intersections during the weekday AM peak hour. Synchro 11 was used to analyze the study intersections based on the Highway Capacity Manual (HCM) methodology, and the results include level of service, delay, and queue length comparisons for the turning movements analyzed. SimTraffic queues were based on the maximum of an average of 10 microsimulation runs. The Synchro and SimTraffic outputs are included in the Appendix.

Capacity Analysis Results

For unsignalized intersections, the average delays for the minor street left-turn movement are described as short delays (less than 25 seconds), moderate delays (between 25 and 50 seconds), and long delays (greater than 50 seconds). It is not uncommon for side street movements and left turns to experience long delays during the peak hours at intersections with major thoroughfares. Capacity analysis results are summarized below.

The results shown are based on HCM 6th Edition methodology.

Table 3 shows the LOS, average delays, and queue lengths for the signalized intersection of Richmond Road (U.S. 60) at the School Driveway.

Table 3: Level-of-Service Summary – Richmond Road (U.S. 60) at School Driveway

Analysis Scenario	Lane Group	Storage Length (ft.)	AM Peak Hour				
			LOS	Delay (sec/veh)	95th % Queue (ft.)	SimTraffic Ave. Max Queue (ft.)	Overall LOS
Existing 2023 Traffic conditions	NBL	275	A	6.1	28	97	
	NBT	-	A	3.9	70	99	
	SBT/R	-	A	9.1	173	155	B
	EBL	-	D	45.0	77	124	11.8
	EBR	-	E	58.1	48	108	
No-Build 2025 Traffic conditions	NBL	275	A	6.2	28	83	
	NBT	-	A	4.0	71	111	
	SBT/R	-	A	9.4	180	168	B
	EBL	-	D	44.8	77	163	12.0
	EBR	-	E	59.0	48	127	
Build 2025 Traffic conditions (without connection to Hitchens Ln)	NBL	275	A	8.3	24	133	
	NBT	-	A	5.0	59	110	
	SBT/R		B	12.3	236	246	B
	EBL	-	D	43.4	121	184	16.3
	EBR	-	E	70.0	50	120	
Build 2025 Traffic conditions with No Redistricting (without connection to Hitchens Ln)	NBL	275	A	9.2	48	138	
	NBT	-	A	5.6	83	110	
	SBT/R		B	13.5	233	226	B
	EBL	-	D	41.3	105	166	16.4
	EBR	-	E	62.2	52	136	
Build 2025 Traffic conditions (with connection to Hitchens Ln)	NBL	275	A	6.4	23	83	
	NBT	-	A	4.6	92	111	
	SBT/R		B	9.5	173	168	B
	EBL	-	D	44.2	100	163	13.5
	EBR	-	E	64.5	49	127	
Build 2025 Traffic conditions with No Redistricting (with connection to Hitchens Ln)	NBL	275	A	6.7	18	82	
	NBT	-	A	5.0	92	113	
	SBT/R		B	9.7	172	147	B
	EBL	-	D	43.0	91	134	13.9
	EBR	-	E	67.4	50	117	

Capacity analysis indicates that this intersection currently operates at LOS B. Under No-Build 2025 conditions, the intersection is expected to continue operating at LOS B.

Under Build 2025 conditions with or without redistricting, the intersection is expected to operate at LOS B, with or without the connection to Hitchens Lane. No improvements are warranted or recommended at this intersection upon build-out of the site.

Table 4 shows the LOS, average delays, and queue lengths for the unsignalized intersection of Richmond Road (U.S. 60) at Hitchens Lane. The results shown are based on HCM 6th Edition methodology.

Table 4: Level-of-Service Summary – Richmond Road at Hitchens Lane

Analysis Scenario	Lane Group	Storage Length (ft.)	AM Peak Hour			
			LOS	Delay (sec/veh)	95th % Queue (ft.)	SimTraffic Ave. Max Queue (ft.)
Existing 2023 Traffic conditions	NBL	TWLTL	A	9.4	3	36
	NBT	-	-	-	-	-
	SBT	-	-	-	-	-
	SBT/R	-	-	-	-	-
	EBL/R	-	B	13.8	10	69
No-Build 2025 Traffic conditions	NBL	TWLTL	A	9.4	3	77
	NBT	-	-	-	-	-
	SBT	-	-	-	-	-
	SBT/R	-	-	-	-	-
	EBL/R	-	B	13.9	10	167
Build 2025 Traffic conditions (with connection to Hitchens Ln)	NBL	200	B	10.1	10	83
	NBT	-	-	-	-	-
	SBT	-	-	-	-	-
	SBR	200	-	-	-	-
	EBL/R	-	C	16.9	25	163
Build 2025 Traffic conditions with No Redistricting (with connection to Hitchens Ln)	NBL	200	B	10.3	15	89
	NBT	-	-	-	-	-
	SBT	-	-	-	-	-
	SBR	200	-	-	-	-
	EBL/R	-	C	16.7	25	134

Capacity analysis indicates that the minor street left-turn movement currently operates with short delays. Under No-Build 2025 conditions, the minor street left-turn movement is expected to continue operating with short delays.

Under Build 2025 conditions with redistricting, the minor street left-turn movement is expected to continue operating with short delays with the following improvement in place:

- Construct a southbound right-turn lane on Richmond Road as deemed appropriate by VDOT

Under Build 2025 conditions without redistricting, the minor street left-turn movement is expected to continue operating with short delays with the following improvement in place:

- Construct a southbound right-turn taper on Richmond Road

Recommendations

Based on the results of the analysis, all study intersections will operate with acceptable queueing and delay upon build-out of the proposed pre-school. Without a connection to Hitchens Lane, no improvements are warranted or recommended.

<u>If a connection to Hitchens Lane is made without school redistricting, the following improvement is warranted:</u>

- Construct a southbound right turn taper on Richmond Road at Hitchins Lane

<u>If a connection to Hitchens Lane is made with school redistricting, the following improvement is warranted:</u>

- Construct a southbound right turn lane on Richmond Road as deemed appropriate by VDOT.

Figure 20 and Figure 21 show the recommended lane configurations for each scenario.

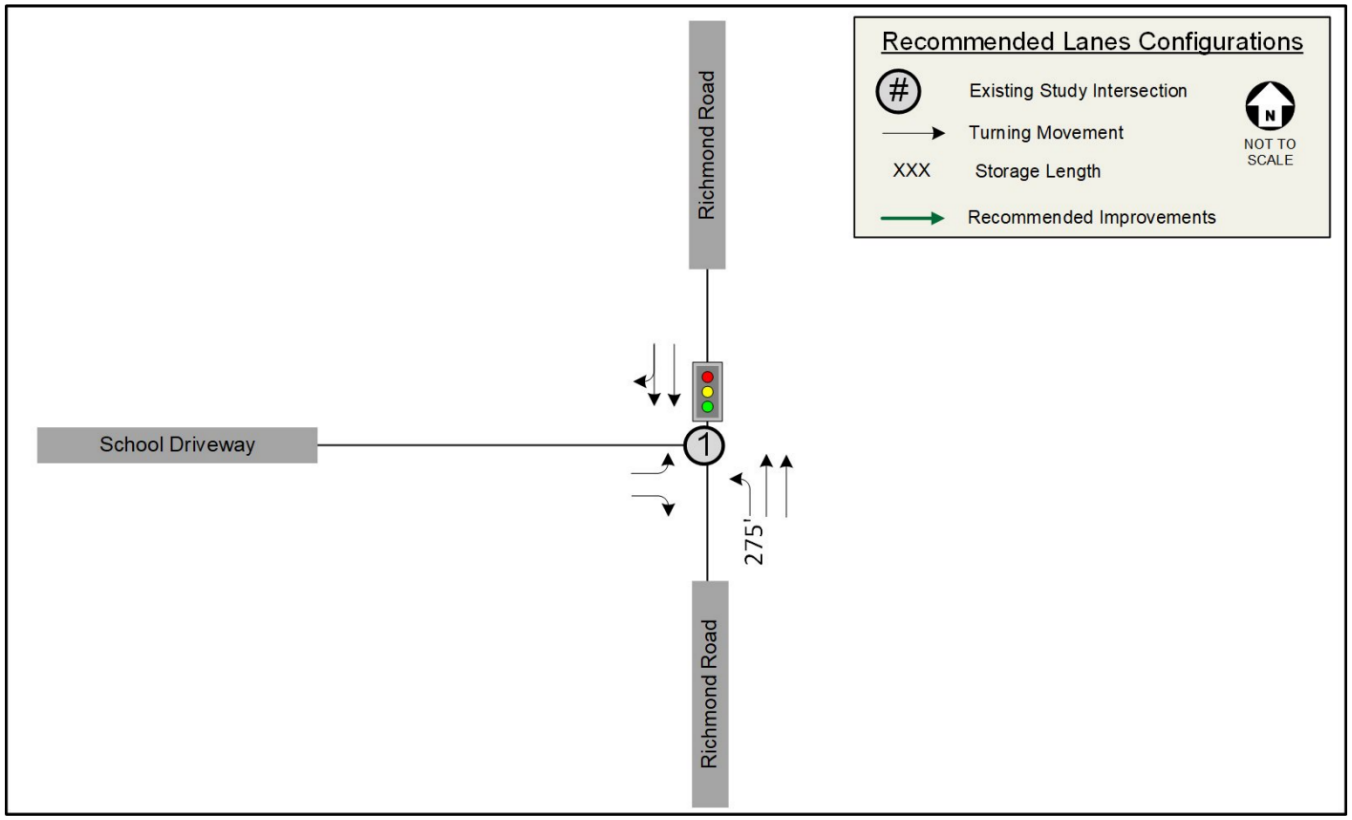

Figure 20: Recommended Lane Configuration (without Hitchens Lane)

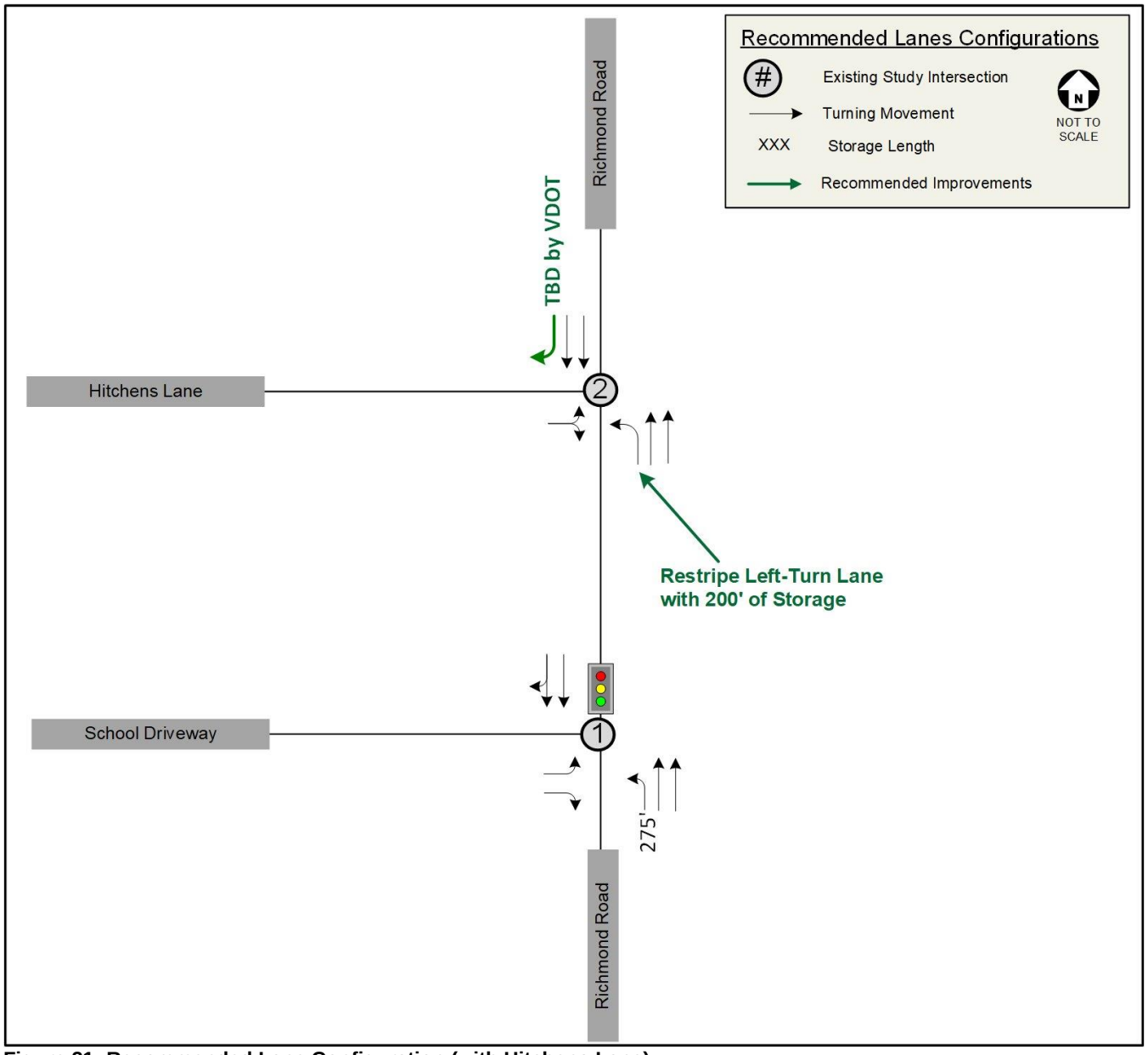

Figure 21: Recommended Lane Configuration (with Hitchens Lane)

APPENDIX

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APPENDIX A: VDOT TIA SCOPE FORM

THIS IS A NOT CHAPTER 527 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:	Michale Bailey, P.E., RSP1 - Gorove Slade (804) 362-0578 mb@goroveslade.com			
Developer/Owner Name: Tele: E-mail:	Mr. Daniel Hayes, P.E., PMP (571) 469-6459 daniel.hayes@alphacorporation.com			
Project Information				
Project Name:	Bright Beginnings at Norge Elementary	Locality/County:	James City County	
Project Location: (Attach regional and site specific location map)	Refer to 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 plan includes a pre-school with 252 students with two connections to the existing Norge Elementary School on the west side of U.S. 60 (Richmond Road) between Hitchens Lane and Nina Lane.			
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☐	Other ☒
	Residential Uses(s) N/A		**Commercial Use(s)** See Trip Table	
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: 2025		Design Year: 2025
Study Area Boundaries (Attach map)	North: Refer to Figure 1			South:	
	West:			East:	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	None				
Consistency With Comprehensive Plan (Land use, transportation plan)	The existing zoning is Public School which allows the proposed use				
Available Traffic Data (Historical, forecasts)	U.S. 60 (Richmond Road) – 21,000 vpd in 2016 / 20,000 vpd in 2021				
Trip Distribution	Road Name: See Figure 1			Road Name:	
	Road Name:			Road Name:	
Annual Vehicle Trip Growth Rate:	1.0 %	Peak Period for Study (Check all that apply)		☒ AM ☐ PM ☐ SAT	
		Peak Hour of Generator			
Study Intersections and/or Road Segments (Attach additional sheets as necessary) **(Please refer to attached Figure 1.)**	1.	U.S. 60 (Richmond Road) at Norge Elementary School Driveway / Gas Station Driveway	7.		
	2.	U.S. 60 at Hitchens Lane	8.		
	3.		9.		
	4.		10.		
	5.		11.		
	6.		12.		
Trip Adjustment Factors	Internal allowance ☐ Yes ☒ No Reduction: N/A			Pass-by allowance ☐ Yes ☒ No Reduction: ITE	
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☒ Other SimTraffic				
Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Analysis Software: Synchro / SimTraffic 11				
Improvement(s) Assumed or to be Considered	The need for turn lanes and other off-site improvements will be determined based on the results of the TIA.				

Background Traffic Studies Considered	Walnut Farms TIA
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:

The TIA will include four analysis scenarios:

- Existing 2023 Conditions (with current school districting)
- No-Build 2025 Conditions (with revised school districting)
- Build 2025 Conditions (with revised school districting)
- Build 2025 Conditions (with revised school districting) with connection to Hitchens Lane

Figure 1: Site Location and Trip Distribution

Table 1: ITE Trip Generation – Typical Weekday – 11th Edition

Land Use (ITE Land Use Code)	Size	Average Weekday Daily Traffic (vpd)		AM Peak Hour		PM Peak hour	
		Enter	Exit	Enter	Exit	Enter	Exit
Day Care Center (565)	252 students	516	516	104	93	94	105

APPENDIX B: TRAFFIC COUNT DATA

File Name : Norge(Richmond and Elementary)
Site Code :
Start Date : 11/15/2023
Page No : 1

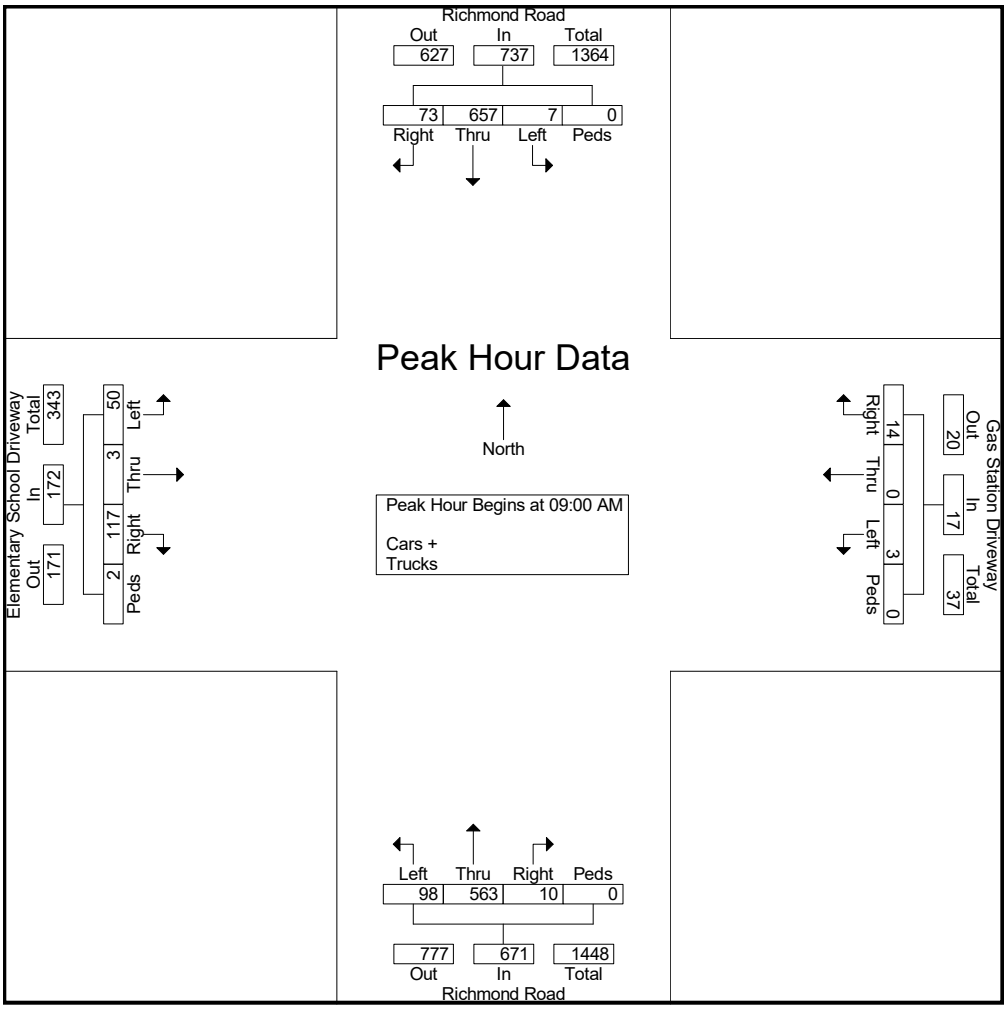
Groups Printed- Cars + - Trucks

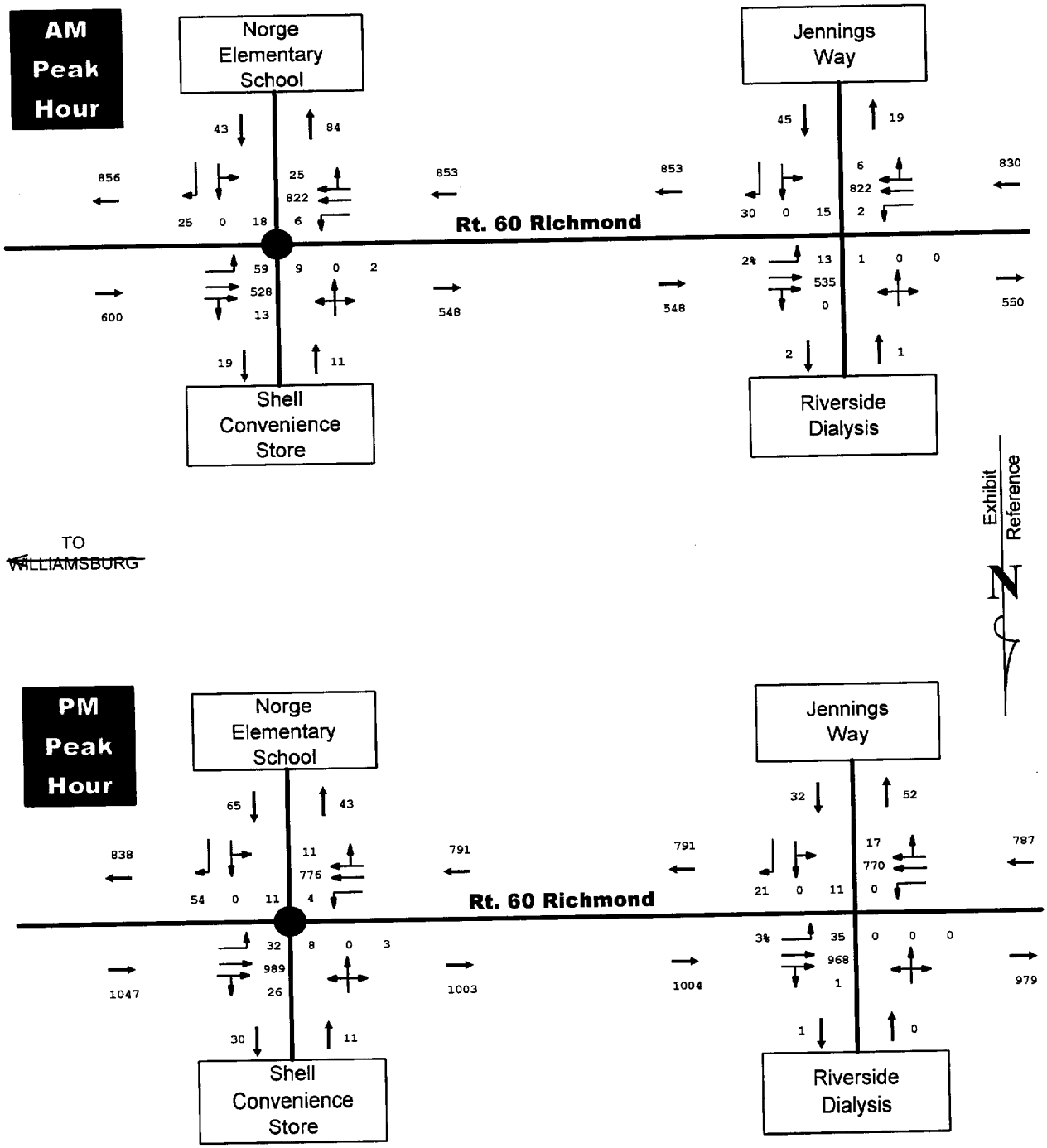
	Richmond Road Southbound					Gas Station Driveway Westbound					Richmond Road Northbound					Elementary School Driveway Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:30 AM	8	192	0	0	200	2	0	0	0	2	3	103	23	0	129	2	0	0	0	2	333
08:45 AM	16	168	1	0	185	0	0	1	0	1	0	111	22	0	133	2	0	1	0	3	322
Total	24	360	1	0	385	2	0	1	0	3	3	214	45	0	262	4	0	1	0	5	655
09:00 AM	19	164	1	0	184	4	0	0	0	4	2	132	23	0	157	9	0	4	1	14	359
09:15 AM	19	165	4	0	188	2	0	2	0	4	2	130	23	0	155	36	0	15	0	51	398
09:30 AM	29	167	0	0	196	5	0	0	0	5	3	158	43	0	204	48	2	21	0	71	476
09:45 AM	6	161	2	0	169	3	0	1	0	4	3	143	9	0	155	24	1	10	1	36	364
Total	73	657	7	0	737	14	0	3	0	17	10	563	98	0	671	117	3	50	2	172	1597
10:00 AM	2	155	3	0	160	5	0	0	0	5	0	138	3	0	141	6	1	2	0	9	315
10:15 AM	2	153	5	0	160	3	0	1	0	4	0	126	3	0	129	2	0	2	2	6	299
Grand Total	101	1325	16	0	1442	24	0	5	0	29	13	1041	149	0	1203	129	4	55	4	192	2866
Apprch %	7	91.9	1.1	0		82.8	0	17.2	0		1.1	86.5	12.4	0		67.2	2.1	28.6	2.1		
Total %	3.5	46.2	0.6	0	50.3	0.8	0	0.2	0	1	0.5	36.3	5.2	0	42	4.5	0.1	1.9	0.1	6.7	
Cars +	88	1272	13	0	1373	21	0	5	0	26	11	1009	133	0	1153	110	4	49	4	167	2719
% Cars +	87.1	96	81.2	0	95.2	87.5	0	100	0	89.7	84.6	96.9	89.3	0	95.8	85.3	100	89.1	100	87	94.9
Trucks	13	53	3	0	69	3	0	0	0	3	2	32	16	0	50	19	0	6	0	25	147
% Trucks	12.9	4	18.8	0	4.8	12.5	0	0	0	10.3	15.4	3.1	10.7	0	4.2	14.7	0	10.9	0	13	5.1

TRAFFIC DATA COLLECTION

File Name : Norge(Richmond and Elementary)
Site Code :
Start Date : 11/15/2023

	Richmond Road Southbound					Gas Station Driveway Westbound					Richmond Road Northbound					Elementary School Driveway Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 08:30 AM to 10:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 09:00 AM																					
09:00 AM	19	164	1	0	184	4	0	0	0	4	2	132	23	0	157	9	0	4	**1**	14	359
09:15 AM	19	165	**4**	0	188	2	0	**2**	0	4	2	130	23	0	155	36	0	15	0	51	398
09:30 AM	**29**	**167**	0	0	**196**	**5**	0	0	0	**5**	**3**	**158**	**43**	0	**204**	**48**	**2**	**21**	0	**71**	**476**
09:45 AM	6	161	2	0	169	3	0	1	0	4	3	143	9	0	155	24	1	10	1	36	364
Total Volume	73	657	7	0	737	14	0	3	0	17	10	563	98	0	671	117	3	50	2	172	1597
% App. Total	9.9	89.1	0.9	0		82.4	0	17.6	0		1.5	83.9	14.6	0		68	1.7	29.1	1.2		
PHF	.629	.984	.438	.000	.940	.700	.000	.375	.000	.850	.833	.891	.570	.000	.822	.609	.375	.595	.500	.606	.839





2011 TOTAL PEAK HOUR TRAFFIC

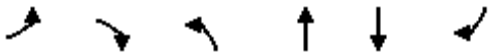
DRW Consultants, LLC
804-794-7312

Exhibit 8

APPENDIX C: SYNCHRO OUTPUT – EXISTING (2023) CONDITIONS

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	60	139	117	682	877
v/c Ratio	0.48	0.59	0.26	0.24	0.38
Control Delay	60.3	18.4	4.2	3.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	18.4	4.2	3.0	8.5
Queue Length 50th (ft)	41	0	13	47	122
Queue Length 95th (ft)	77	48	28	70	173
Internal Link Dist (ft)	786			1104	624
Turn Bay Length (ft)			275		
Base Capacity (vph)	282	358	598	2825	2311
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.39	0.20	0.24	0.38

Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	50	117	98	573	664	73
Future Volume (veh/h)	50	117	98	573	664	73
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1678	1737	1856	1841	1707
Adj Flow Rate, veh/h	60	139	117	682	790	87
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	11	15	11	3	4	13
Cap, veh/h	191	164	458	2708	2113	233
Arrive On Green	0.12	0.12	0.04	0.77	0.67	0.67
Sat Flow, veh/h	1654	1422	1654	3618	3269	350
Grp Volume(v), veh/h	60	139	117	682	435	442
Grp Sat Flow(s),veh/h/ln	1654	1422	1654	1763	1749	1778
Q Serve(g_s), s	3.7	10.5	2.5	6.1	12.2	12.2
Cycle Q Clear(g_c), s	3.7	10.5	2.5	6.1	12.2	12.2
Prop In Lane	1.00	1.00	1.00			0.20
Lane Grp Cap(c), veh/h	191	164	458	2708	1163	1182
V/C Ratio(X)	0.31	0.85	0.26	0.25	0.37	0.37
Avail Cap(c_a), veh/h	287	247	663	2708	1163	1182
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	47.7	6.0	3.7	8.2	8.2
Incr Delay (d2), s/veh	0.3	10.4	0.1	0.2	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	4.2	0.7	1.6	4.7	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.0	58.1	6.1	3.9	9.1	9.1
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	199			799	877	
Approach Delay, s/veh	54.1			4.2	9.1	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.3	80.1		18.6		91.4
Change Period (Y+Rc), s	6.9	6.9		5.9		6.9
Max Green Setting (Gmax), s	18.1	53.1		19.1		78.1
Max Q Clear Time (g_c+I1), s	4.5	14.2		12.5		8.1
Green Ext Time (p_c), s	0.1	10.5		0.2		7.4

Intersection Summary			
HCM 6th Ctrl Delay		11.8	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	34	15	608	703	7
Future Vol, veh/h	17	34	15	608	703	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	37	16	661	764	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1131	386	772	0	-	0
Stage 1	768	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	197	612	839	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	193	612	839	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	410	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.8	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	839	-	464	-	-
HCM Lane V/C Ratio	0.019	-	0.119	-	-
HCM Control Delay (s)	9.4	-	13.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection: 1: Richmond Rd & School Driveway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	124	108	97	99	72	155	152
Average Queue (ft)	46	50	40	31	15	66	54
95th Queue (ft)	96	87	77	77	52	130	122
Link Distance (ft)	819	819		1148	1148	653	653
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Richmond Rd & Hitchens Lane

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	69	36
Average Queue (ft)	26	7
95th Queue (ft)	56	28
Link Distance (ft)	589	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 0

APPENDIX D: SYNCHRO OUTPUT – NO-BUILD (2025) CONDITIONS

Intersection: 1: Richmond Rd & School Driveway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	116	108	107	101	79	159	170
Average Queue (ft)	46	53	40	32	17	70	58
95th Queue (ft)	97	92	81	79	55	138	132
Link Distance (ft)	819	819		1148	1148	653	653
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Richmond Rd & Hitchens Lane

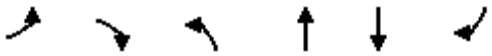
Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	80	31
Average Queue (ft)	26	6
95th Queue (ft)	55	26
Link Distance (ft)	589	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		50
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 0

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	61	142	119	696	895
v/c Ratio	0.48	0.59	0.27	0.25	0.39
Control Delay	60.5	18.4	4.3	3.0	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.5	18.4	4.3	3.0	8.7
Queue Length 50th (ft)	42	0	14	48	126
Queue Length 95th (ft)	77	48	28	71	180
Internal Link Dist (ft)	786			1104	624
Turn Bay Length (ft)			275		
Base Capacity (vph)	282	361	590	2823	2305
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	0.39	0.20	0.25	0.39

Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	119	100	585	678	74
Future Volume (veh/h)	51	119	100	585	678	74
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1678	1737	1856	1841	1707
Adj Flow Rate, veh/h	61	142	119	696	807	88
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	11	15	11	3	4	13
Cap, veh/h	194	167	450	2701	2106	230
Arrive On Green	0.12	0.12	0.04	0.77	0.66	0.66
Sat Flow, veh/h	1654	1422	1654	3618	3272	347
Grp Volume(v), veh/h	61	142	119	696	444	451
Grp Sat Flow(s),veh/h/ln	1654	1422	1654	1763	1749	1778
Q Serve(g_s), s	3.7	10.8	2.5	6.3	12.6	12.6
Cycle Q Clear(g_c), s	3.7	10.8	2.5	6.3	12.6	12.6
Prop In Lane	1.00	1.00	1.00			0.19
Lane Grp Cap(c), veh/h	194	167	450	2701	1158	1178
V/C Ratio(X)	0.31	0.85	0.26	0.26	0.38	0.38
Avail Cap(c_a), veh/h	287	247	654	2701	1158	1178
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	47.6	6.1	3.7	8.4	8.4
Incr Delay (d2), s/veh	0.3	11.4	0.1	0.2	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	4.4	0.7	1.6	4.9	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.8	59.0	6.2	4.0	9.4	9.3
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	203			815	895	
Approach Delay, s/veh	54.7			4.3	9.4	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.4	79.8		18.8		91.2
Change Period (Y+Rc), s	6.9	6.9		5.9		6.9
Max Green Setting (Gmax), s	18.1	53.1		19.1		78.1
Max Q Clear Time (g_c+I1), s	4.5	14.6		12.8		8.3
Green Ext Time (p_c), s	0.1	10.8		0.2		7.6

Intersection Summary		
HCM 6th Ctrl Delay		12.0
HCM 6th LOS		B

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	35	15	621	717	7
Future Vol, veh/h	17	35	15	621	717	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	38	16	675	779	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1153	394	787	0	-	0
Stage 1	783	-	-	-	-	-
Stage 2	370	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	191	605	828	-	-	-
Stage 1	411	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	605	828	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	403	-	-	-	-	-
Stage 2	669	-	-	-	-	-

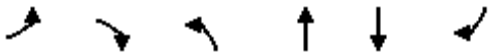
Approach	EB	NB	SB
HCM Control Delay, s	13.9	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	828	-	459	-	-
HCM Lane V/C Ratio	0.02	-	0.123	-	-
HCM Control Delay (s)	9.4	-	13.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

APPENDIX E: SYNCHRO OUTPUT – BUILD (2025) CONDITIONS WITH REDISTRICITNG

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	113	185	163	696	949
v/c Ratio	0.64	0.58	0.39	0.26	0.45
Control Delay	62.4	14.1	6.7	4.1	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.4	14.1	6.7	4.1	12.2
Queue Length 50th (ft)	78	0	24	59	166
Queue Length 95th (ft)	121	50	47	90	236
Internal Link Dist (ft)	786			1104	659
Turn Bay Length (ft)			275		
Base Capacity (vph)	282	396	539	2714	2105
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.47	0.30	0.26	0.45

Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	155	137	585	678	119
Future Volume (veh/h)	95	155	137	585	678	119
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1678	1737	1856	1841	1707
Adj Flow Rate, veh/h	113	185	163	696	807	142
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	11	15	11	3	4	13
Cap, veh/h	244	209	418	2596	1839	324
Arrive On Green	0.15	0.15	0.05	0.74	0.62	0.62
Sat Flow, veh/h	1654	1422	1654	3618	3064	523
Grp Volume(v), veh/h	113	185	163	696	475	474
Grp Sat Flow(s),veh/h/ln	1654	1422	1654	1763	1749	1747
Q Serve(g_s), s	6.9	14.0	3.9	7.1	15.6	15.6
Cycle Q Clear(g_c), s	6.9	14.0	3.9	7.1	15.6	15.6
Prop In Lane	1.00	1.00	1.00			0.30
Lane Grp Cap(c), veh/h	244	209	418	2596	1082	1081
V/C Ratio(X)	0.46	0.88	0.39	0.27	0.44	0.44
Avail Cap(c_a), veh/h	287	247	599	2596	1082	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	46.0	8.1	4.8	11.0	11.0
Incr Delay (d2), s/veh	0.5	24.0	0.2	0.3	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	6.4	1.2	2.0	6.2	6.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.4	70.0	8.3	5.0	12.3	12.3
LnGrp LOS	D	E	A	A	B	B
Approach Vol, veh/h	298			859	949	
Approach Delay, s/veh	59.9			5.6	12.3	
Approach LOS	E			A	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.9	75.0		22.1		87.9
Change Period (Y+Rc), s	6.9	6.9		5.9		6.9
Max Green Setting (Gmax), s	18.1	53.1		19.1		78.1
Max Q Clear Time (g_c+I1), s	5.9	17.6		16.0		9.1
Green Ext Time (p_c), s	0.2	11.5		0.2		7.6

Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B

Intersection: 1: Richmond Rd & School Driveway

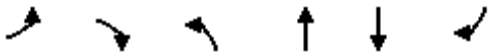
Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	184	120	133	110	82	246	214
Average Queue (ft)	81	58	56	39	24	97	68
95th Queue (ft)	157	98	105	87	64	185	155
Link Distance (ft)	819	819		1148	1148	704	704
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 0

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	87	162	81	779	869
v/c Ratio	0.58	0.58	0.18	0.28	0.36
Control Delay	61.9	15.9	4.2	3.6	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	15.9	4.2	3.6	8.3
Queue Length 50th (ft)	60	0	10	62	125
Queue Length 95th (ft)	100	49	23	92	173
Internal Link Dist (ft)	786			1104	624
Turn Bay Length (ft)			275		
Base Capacity (vph)	282	377	594	2770	2391
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.31	0.43	0.14	0.28	0.36

Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	73	136	68	654	697	33
Future Volume (veh/h)	73	136	68	654	697	33
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1678	1737	1856	1841	1707
Adj Flow Rate, veh/h	87	162	81	779	830	39
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	11	15	11	3	4	13
Cap, veh/h	218	187	442	2651	2236	105
Arrive On Green	0.13	0.13	0.03	0.75	0.66	0.66
Sat Flow, veh/h	1654	1422	1654	3618	3493	160
Grp Volume(v), veh/h	87	162	81	779	427	442
Grp Sat Flow(s),veh/h/ln	1654	1422	1654	1763	1749	1812
Q Serve(g_s), s	5.3	12.3	1.8	7.7	12.2	12.2
Cycle Q Clear(g_c), s	5.3	12.3	1.8	7.7	12.2	12.2
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	218	187	442	2651	1150	1191
V/C Ratio(X)	0.40	0.87	0.18	0.29	0.37	0.37
Avail Cap(c_a), veh/h	287	247	661	2651	1150	1191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	46.8	6.4	4.3	8.5	8.5
Incr Delay (d2), s/veh	0.4	17.7	0.1	0.3	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.3	0.5	2.1	4.7	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.2	64.5	6.4	4.6	9.5	9.4
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	249			860	869	
Approach Delay, s/veh	57.4			4.8	9.4	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.4	79.2		20.4		89.6
Change Period (Y+Rc), s	6.9	6.9		5.9		6.9
Max Green Setting (Gmax), s	18.1	53.1		19.1		78.1
Max Q Clear Time (g_c+I1), s	3.8	14.2		14.3		9.7
Green Ext Time (p_c), s	0.1	10.3		0.2		8.8

Intersection Summary	
HCM 6th Ctrl Delay	13.5
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	54	84	643	676	93
Future Vol, veh/h	39	54	84	643	676	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	59	91	699	735	101

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1267	368	836	0	-	0
Stage 1	735	-	-	-	-	-
Stage 2	532	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	161	629	794	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	142	629	794	-	-	-
Mov Cap-2 Maneuver	269	-	-	-	-	-
Stage 1	385	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	794	-	403	-	-
HCM Lane V/C Ratio	0.115	-	0.251	-	-
HCM Control Delay (s)	10.1	-	16.9	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	1	-	-

Intersection: 1: Richmond Rd & School Driveway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	134	117	82	113	85	147	136
Average Queue (ft)	53	56	24	44	19	65	49
95th Queue (ft)	106	95	56	95	57	121	110
Link Distance (ft)	819	819		1148	1148	653	653
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Richmond Rd & Hitchens Lane

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	134	89	2	4
Average Queue (ft)	47	38	0	0
95th Queue (ft)	98	72	2	4
Link Distance (ft)	577		653	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		200		200
Storage Blk Time (%)				
Queuing Penalty (veh)				

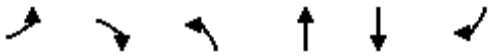
Network Summary

Network wide Queuing Penalty: 0

APPENDIX F: SYNCHRO OUTPUT – BUILD (2025) CONDITIONS WITHOUT REDISTRICITNG

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	94	204	182	696	930
v/c Ratio	0.59	0.64	0.40	0.25	0.44
Control Delay	62.0	15.7	6.4	3.7	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.0	15.7	6.4	3.7	12.5
Queue Length 50th (ft)	65	0	25	55	165
Queue Length 95th (ft)	105	52	48	83	233
Internal Link Dist (ft)	786			1104	659
Turn Bay Length (ft)			275		
Base Capacity (vph)	356	466	546	2754	2093
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.26	0.44	0.33	0.25	0.44

Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	79	171	153	585	678	103
Future Volume (veh/h)	79	171	153	585	678	103
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1678	1737	1856	1841	1707
Adj Flow Rate, veh/h	94	204	182	696	807	123
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	11	15	11	3	4	13
Cap, veh/h	267	230	420	2546	1819	277
Arrive On Green	0.16	0.16	0.06	0.72	0.60	0.60
Sat Flow, veh/h	1654	1422	1654	3618	3134	464
Grp Volume(v), veh/h	94	204	182	696	464	466
Grp Sat Flow(s),veh/h/ln	1654	1422	1654	1763	1749	1757
Q Serve(g_s), s	5.6	15.5	4.6	7.5	16.0	16.0
Cycle Q Clear(g_c), s	5.6	15.5	4.6	7.5	16.0	16.0
Prop In Lane	1.00	1.00	1.00			0.26
Lane Grp Cap(c), veh/h	267	230	420	2546	1045	1050
V/C Ratio(X)	0.35	0.89	0.43	0.27	0.44	0.44
Avail Cap(c_a), veh/h	362	311	591	2546	1045	1050
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	45.1	8.9	5.3	12.1	12.1
Incr Delay (d2), s/veh	0.3	17.0	0.3	0.3	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.6	1.4	2.2	6.5	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.3	62.2	9.2	5.6	13.5	13.5
LnGrp LOS	D	E	A	A	B	B
Approach Vol, veh/h	298			878	930	
Approach Delay, s/veh	55.6			6.3	13.5	
Approach LOS	E			A	B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	13.7	72.7		23.7		86.3
Change Period (Y+Rc), s	6.9	6.9		5.9		6.9
Max Green Setting (Gmax), s	18.1	48.1		24.1		73.1
Max Q Clear Time (g_c+I1), s	6.6	18.0		17.5		9.5
Green Ext Time (p_c), s	0.2	10.5		0.3		7.6

Intersection Summary			
HCM 6th Ctrl Delay		16.4	
HCM 6th LOS		B	

Intersection: 1: Richmond Rd & School Driveway

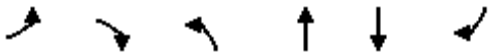
Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	166	136	138	110	91	226	199
Average Queue (ft)	73	63	60	35	26	103	66
95th Queue (ft)	137	109	110	84	72	188	151
Link Distance (ft)	819	819		1148	1148	704	704
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 0

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	76	173	62	817	896
v/c Ratio	0.54	0.62	0.14	0.29	0.37
Control Delay	61.5	17.1	3.8	3.5	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	61.5	17.1	3.8	3.5	7.8
Queue Length 50th (ft)	52	0	7	63	125
Queue Length 95th (ft)	91	50	18	92	172
Internal Link Dist (ft)	786			1104	624
Turn Bay Length (ft)			275		
Base Capacity (vph)	282	386	588	2793	2414
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.45	0.11	0.29	0.37

Intersection Summary



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	145	52	686	704	49
Future Volume (veh/h)	64	145	52	686	704	49
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1737	1678	1737	1856	1841	1707
Adj Flow Rate, veh/h	76	173	62	817	838	58
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	11	15	11	3	4	13
Cap, veh/h	230	198	420	2625	2176	151
Arrive On Green	0.14	0.14	0.03	0.74	0.66	0.66
Sat Flow, veh/h	1654	1422	1654	3618	3410	230
Grp Volume(v), veh/h	76	173	62	817	442	454
Grp Sat Flow(s),veh/h/ln	1654	1422	1654	1763	1749	1799
Q Serve(g_s), s	4.6	13.1	1.4	8.5	12.8	12.8
Cycle Q Clear(g_c), s	4.6	13.1	1.4	8.5	12.8	12.8
Prop In Lane	1.00	1.00	1.00			0.13
Lane Grp Cap(c), veh/h	230	198	420	2625	1146	1180
V/C Ratio(X)	0.33	0.88	0.15	0.31	0.39	0.39
Avail Cap(c_a), veh/h	287	247	649	2625	1146	1180
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.7	46.4	6.6	4.7	8.7	8.7
Incr Delay (d2), s/veh	0.3	21.0	0.1	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	5.8	0.4	2.4	4.9	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.0	67.4	6.7	5.0	9.7	9.7
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	249			879	896	
Approach Delay, s/veh	60.0			5.1	9.7	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.8	79.0		21.2		88.8
Change Period (Y+Rc), s	6.9	6.9		5.9		6.9
Max Green Setting (Gmax), s	18.1	53.1		19.1		78.1
Max Q Clear Time (g_c+I1), s	3.4	14.8		15.1		10.5
Green Ext Time (p_c), s	0.0	10.8		0.2		9.5

Intersection Summary			
HCM 6th Ctrl Delay		13.9	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	61	116	634	692	61
Future Vol, veh/h	32	61	116	634	692	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	66	126	689	752	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1349	376	818	0	-	0
Stage 1	752	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	142	622	806	-	-	-
Stage 1	426	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	120	622	806	-	-	-
Mov Cap-2 Maneuver	246	-	-	-	-	-
Stage 1	360	-	-	-	-	-
Stage 2	513	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.7	1.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	806	-	408	-	-
HCM Lane V/C Ratio	0.156	-	0.248	-	-
HCM Control Delay (s)	10.3	-	16.7	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1	-	-

Intersection: 1: Richmond Rd & School Driveway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	134	117	82	113	85	147	136
Average Queue (ft)	53	56	24	44	19	65	49
95th Queue (ft)	106	95	56	95	57	121	110
Link Distance (ft)	819	819		1148	1148	653	653
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			275				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 2: Richmond Rd & Hitchens Lane

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	R
Maximum Queue (ft)	134	89	2	4
Average Queue (ft)	47	38	0	0
95th Queue (ft)	98	72	2	4
Link Distance (ft)	577		653	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		200		200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 0

APPENDIX G: TURN LANE WARRANT ANALYSIS

VIRGINIA DEPARTMENT OF TRANSPORTATION
COMMERCIAL ENTRANCE DESIGN

General Project Information *Enter a value for all input cells*

Project Name: Bright Beginning at Norge Elementary School (Without Redistricting)

County: James City County

Reviewer: AM Peak Hour Date: 3/21/2024

Adjacent Roadway Data

Adjacent Road Name: Richmond Road Type: 3 or 4 lane Undivided

Posted Speed: 45 mph * Classification: Principal Rural Arterial

AADT: 15000 VPD D: N/A k: N/A *enter N/A if factors are unknown*

*Use Design Speed if available

Trip Generation

Generated Trips: VPD % Trucks in Entrance: 3 %

Right In: 61 VPH Advancing Volume: 750 VPH

Left In: 116 VPH 15% Opposing Volume: 753 VPH**

**Also used as Approaching Volume for Rt. Turns

Entrance Criteria Entrance is a Low Volume Commercial Entrance

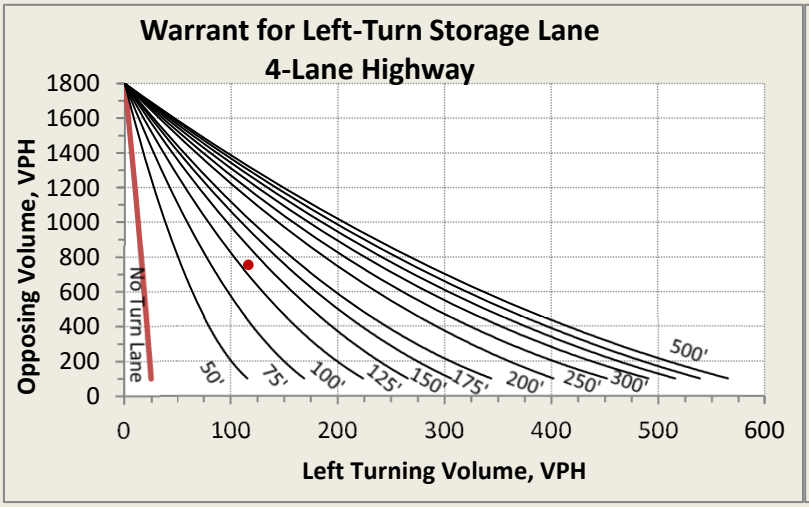
Entrance Type: Full Access Entrance

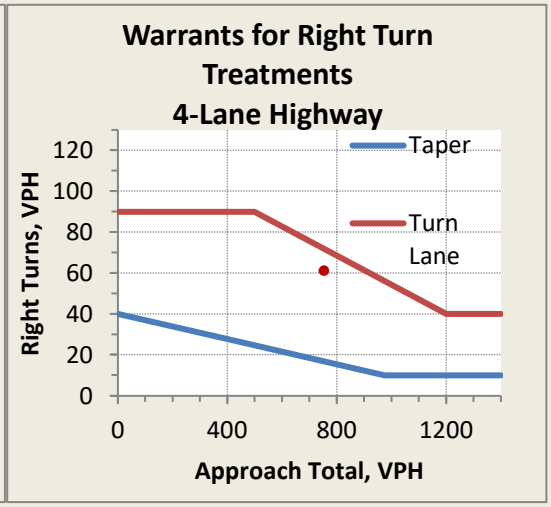
Minimum Spacing: **565** ft SDL: **530** ft SDR: **565** ft

Left Turn Lane Warrant: Left Turn in Volume ≥ 16 VPH **Left Turn Lane Required w/200' Taper**

Right Turn Taper Warrant: Rt. Turn Volume ≥ 17 VPH **200' Right Turn Taper Required**

Right Turn Lane Warrant: Rt. Turn Volume ≥ 72 VPH **No Right Turn Lane Required**





1. The Minimum Warranted Left Turn Stacking Length 50' unless more required as plotted above.

VIRGINIA DEPARTMENT OF TRANSPORTATION
COMMERCIAL ENTRANCE DESIGN

General Project Information *Enter a value for all input cells*

Project Name: Bright Beginning at Norge Elementary School (with Redistricting)

County: James City County

Reviewer: AM Peak Hour Date: 3/21/2024

Adjacent Roadway Data

Adjacent Road Name: Richmond Road Type: 3 or 4 lane Undivided

Posted Speed: 45 mph * Classification: Principal Rural Arterial

AADT: 15000 VPD D: N/A k: N/A *enter N/A if factors are unknown*

*Use Design Speed if available

Trip Generation

Generated Trips: VPD % Trucks in Entrance: 3 %

Right In: 93 VPH Advancing Volume: 727 VPH

Left In: 84 VPH 12% Opposing Volume: 769 VPH**

**Also used as Approaching Volume for Rt. Turns

Entrance Criteria Entrance is a Low Volume Commercial Entrance

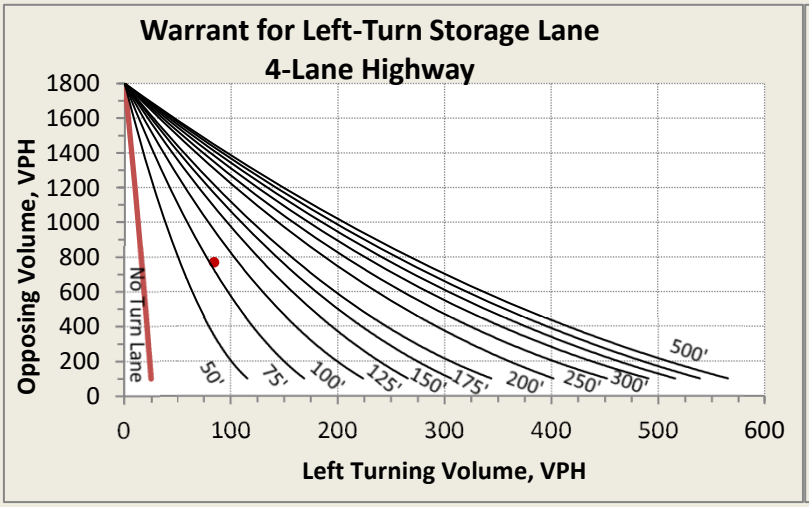
Entrance Type: Full Access Entrance

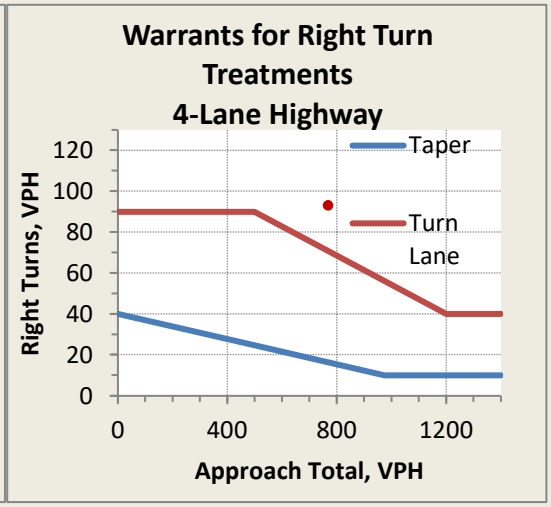
Minimum Spacing: **565** ft SDL: **530** ft SDR: **565** ft

Left Turn Lane Warrant: Left Turn in Volume ≥ 15 VPH **Left Turn Lane Required w/200' Taper**

Right Turn Taper Warrant: Rt. Turn Volume ≥ 16 VPH **200' Right Turn Taper Required**

Right Turn Lane Warrant: Rt. Turn Volume ≥ 71 VPH **Full Right Turn/Taper Required**





1. The Minimum Warranted Left Turn Stacking Length 50' unless more required as plotted above.

R E S O L U T I O N

VIRGINIA CODE 15.2-2232 ACTION ON CASE NO. Z-24-0003/SUP-24-0003. BRIGHT BEGINNINGS PRE-K CENTER AT NORGE ELEMENTARY SCHOOL REZONING AND SPECIAL USE PERMIT

WHEREAS, in accordance with Section 15.2-2232 of the Code of Virginia, schools or other public facilities, whether publicly or privately owned, shall not be constructed, established, or authorized, unless and until the general location or approximate location, character, and extent thereof has been submitted to and approved by the Planning Commission as being substantially in accord with the adopted Comprehensive Plan or part thereof; and

WHEREAS, Williamsburg-James City County School Board (the "Owner"), owns properties located at 7311 and 7311A Richmond Road and further identified as James City County Real Estate Tax Map Parcel Nos. 2320100035 and 2320100035A (the "Properties"), which are zoned R-2, General Residential and PL, Public Lands; and

WHEREAS, Ms. Holly Adams of Alpha Corporation, on behalf of the Owner, has applied for a Rezoning and Special Use Permit (SUP) to rezone 7311A Richmond Road to PL, Public Lands, with an SUP to allow for schools, libraries, museums, and similar institutions, as shown on a plan titled "Bright Beginnings Pre-K Center Norge Elementary School Conceptual Master Plan Update" and dated March 2024; and

WHEREAS, in accordance with Section 15.2-2204 of the Code of Virginia and Section 24-9 of the James City County Zoning Ordinance, a public hearing was advertised, adjacent property owners notified, and a hearing scheduled for Case No. Z-24-0003/SUP-24-0003.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission of James City County, Virginia, finds that the general or approximate location, character, and extent of the public facility shown in Case No. Z-24-0003/SUP-24-0003 are substantially in accord with the adopted Comprehensive Plan and applicable parts thereof.

_____
Tim O'Connor
Chair, Planning Commission

ATTEST:

_____
Susan Istenes, Secretary

Adopted by the Planning Commission of James City County, Virginia, this 1st day of May 2024.

RZ-SUP24-3BrtBgNES-res

PLANNING DIRECTOR'S REPORT
May 2024

This report summarizes the status of selected Department of Community Development activities during the past month.

- **Planning**

  - **Monthly Case Report:** For a list of all cases received in the last month, please see the attached document.

  - **Board Action Results:**
    - HW-24-0010. Ford's Village Retirement Center Height Waiver (Deferred to June 11th, 2024)

- **Building Safety & Permits**

  Congratulations to David Malarkey on his transfer from Inspections Section Chief to Plan Review Section Chief and to Eve Copeland on her transfer from Permit Tech I to Administrative Coordinator.

Plan Type	Plan Number	Case Title	Address	Plan District	Plan Assigned To	Plan Description
Conceptual Plan	C-24-0022	4125 S Riverside Drive Chickahominy Marina Renovation Conceptual Plan	4125 S RIVERSIDE DR Lanexa, VA 23089	Powhatan	Roberta Sulouff	4125 S Riverside Drive Chickahominy Marina Renovation Conceptual Plan
	C-24-0023	6945 Pocahontas Trail Hotel to Multi-Family Conversion Conceptual Plan	6945 POCAHONTAS TRL Williamsburg, VA 23185	Roberts	Ben Loppacker	6945 Pocahontas Trail Hotel to Multi-Family Conversion Conceptual Plan
	C-24-0024	7775 Richmond Road Mixed Use Conceptual Plan	7775 RICHMOND RD Toano, VA 23168	Stonehouse	John Risinger	7775 Richmond Road Mixed Use Conceptual Plan
	C-24-0025	5939 Richmond Rd. Conceptual Subdivision	5939 RICHMOND RD Williamsburg, VA 23188	Powhatan	Terry Costello	5939 Richmond Rd. Conceptual Subdivision
	C-24-0026	The Bluffs of Kiskiack (President's Head Conceptual Development)	8212 CROAKER RD Williamsburg, VA 23188	Stonehouse	Roberta Sulouff	The Bluffs of Kiskiack (President's Head Conceptual Development)
	C-24-0027	4515 News Road Boat/Trailer/RV Storage Concept Plan	4515 NEWS RD Williamsburg, VA 23188	Jamestown	Terry Costello	4515 News Road Boat/Trailer/RV Storage Concept Plan
Subdivision Plat	S-24-0006	3 Lot subdivision- 2790 and 2800 Lake Powell Road	2800 LAKE POWELL RD Williamsburg, VA 23185	Roberts	Roberta Sulouff	3 Lot subdivision- 2790 and 2800 Lake Powell Road
	S-24-0007	2 lot Subdivision-106 Indigo Dam Road	106 INDIGO DAM RD Williamsburg, VA 23188	Jamestown	Tess Lynch	2 lot Subdivision-106 Indigo Dam Road
	S-24-0009	Ridgewood Estates, Phase 1	5327 OLDE TOWNE RD 3240100004B Williamsburg, VA 23188	Powhatan	Terry Costello	Ridgewood Estates, Phase 1
	S-24-0010	8936 Croaker Rd Family subdivision	8936 CROAKER RD Williamsburg, VA 23188	Stonehouse	Terry Costello	8936 Croaker Rd Family subdivision
Site Plan	SP-24-0039	JCSA College Creek Water Main Replacement 199 Humelsine Parkway/Massie Bridge	8615 HUMELSINE PKWY E Williamsburg, VA 23185	Roberts	Terry Costello	JCSA College Creek Water Main Replacement 199 Humelsine Parkway/Massie Bridge
	SP-24-0040	Green Mount Industrial Park, InLight Industrial Site Lighting SP Amend.	1637 GREEN MOUNT PKWY Williamsburg, VA 23185	Roberts	John Risinger	Green Mount Industrial Park, InLight Industrial Site Lighting SP Amend.
	SP-24-0042	227 Industrial Blvd Parcel 11 Lighting Plan SP Amend.	227 INDUSTRIAL BLVD Toano, VA 23168	Stonehouse	Terry Costello	227 Industrial Blvd Parcel 11 Lighting Plan SP Amend.
	SP-24-0043	6487 Richmond Road, Tower Antenna Additions SP Amend.	6487 RICHMOND RD Williamsburg, VA 23188	Stonehouse	Ben Loppacker	6487 Richmond Road, Tower Antenna Additions SP Amend.
	SP-24-0044	7581 Richmond Rd- Blaine Landing Apartments Amendment #3 (Lighting)	1000 COWPEN CT Williamsburg, VA 23188	Stonehouse	John Risinger	7581 Richmond Rd- Blaine Landing Apartments Amendment #3 (Lighting)
	SP-24-0045	Westport JCSA Water System Tie-In Site Plan	4891 CENTERVILLE RD 3040100007A Williamsburg, VA 23188	Berkeley	Terry Costello	Westport JCSA Water System Tie-In Site Plan
	SP-24-0046	Liberty Ridge JCSA Water System Tie-In Site Plan	5207 COLONNADE PKWY 3030300001A Williamsburg, VA 23188	Powhatan	Terry Costello	Liberty Ridge JCSA Water System Tie-In Site Plan
	SP-24-0048	Stonehouse Elementary School Security Bollards	3651 ROCHAMBEAU DR Williamsburg, VA 23188	Stonehouse	Paxton Condon	Stonehouse Elementary School Security Bollards
	SP-24-0049	Lafayette High School Track Repair SP Amend	4460 LONGHILL RD Williamsburg, VA 23188	Powhatan	Tess Lynch	Lafayette High School Track Repair SP Amend
Special Use Permit	SUP-24-0006	3709 Strawberry Plains Rd. Suite A Williamsburg Montessori School	3709-A STRAWBERRY PLAINS RD Unit: A Williamsburg, VA 23188	Jamestown	Terry Costello	3709 Strawberry Plains Rd. Suite A Williamsburg Montessori School
Zoning Verification Letter	ZVL-24-0004	American National Project #20240445 Site 2 - Zoning Verification Letter	7761 RICHMOND RD Toano, VA 23168	Stonehouse	Taylor Orne	American National Project #20240445 Site 2 - Zoning Verification Letter
	ZVL-24-0005	3500 La Grange PKWY Self Storage	3500 LA GRANGE PKWY Toano, VA 23168	Stonehouse	John Rogerson	3500 La Grange PKWY Self Storage
	ZVL-24-0006	5225 Settlers Market BlVD Public Health and Fitness Club	5225 SETTLERS MARKET BLVD Williamsburg, VA 23188	Jamestown	Taylor Orne	5225 Settlers Market BlVD Public Health and Fitness Club
	ZVL-24-0007	Zoning Letter and Records Request for the Ford's Colony Country Club	240 FORDS COLONY DR Williamsburg, VA 23188	Powhatan	Taylor Orne	Zoning Letter and Records Request for the Ford's Colony Country Club