

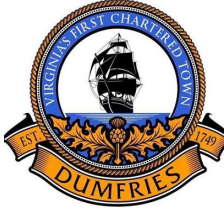
# Town of Dumfries Council Meeting Packet



Derrick R. Wood, Mayor  
Monaé S. Nickerson, Vice Mayor  
Tyrone Brown, Councilmember  
Shaun Peet, Councilmember  
Selonia B. Miles, Councilmember  
Cydny A. Neville, Councilmember  
Brian K. Fields, Councilmember

Keith C. Rogers, Jr., Town Manager  
Sharon E. Pandak, Town Attorney  
Tangi R. Hill, Town Clerk

March 1, 2022



## DUMFRIES, VIRGINIA

Virginia's Oldest Continuously Chartered Town  
CHARTERED 1749 INCORPORATED 1961

John Wilmer Porter Municipal Building  
17739 Main Street, Suite 200  
Dumfries, Virginia 22026  
Tel: 703-221-3400 / Fax: 703-221-3544  
[www.dumfriesva.gov](http://www.dumfriesva.gov)

### **DUMFRIES TOWN COUNCIL MEETING TUESDAY, MARCH 1, 2022 AT 7:00 PM COUNCIL CHAMBERS**

- I. Call to Order and Roll Call
- II. Moment of Prayer and Pledge of Allegiance
- III. Adoption of Agenda
- IV. Awards and Proclamations
  - A. Proclamation Recognizing Women's History Month – Mayor Derrick Wood
  - B. Proclamation Recognizing the Potomac Landfill - Mayor Derrick Wood
- V. Approval of Minutes
  - A. Dumfries Town Council Meeting Minutes - February 1, 2022
- VI. Citizen Comment Period
- VII. Mayor and Council Comments
- VIII. Action Items (Public Hearings)
  - A. Public Hearing- Consideration of an Ordinance to Approve Conditional Use Application, CUP2021-001, Filed by Rising Stars Daycare, LLC
  - B. Public Hearing - Consideration of an Ordinance to Approve Proffer Condition Amendment Application, PCA2016-001, Filed by Townsquare at Dumfries, LLC
  - C. Consideration of a Resolution Amending Town Council Rules of Procedure Section 3-3
- IX. Introduction Items
  - A. Resolution Authorizing the Town Manager to Advertise Public Hearing on the Conditional Use Application, CUP2022-001, Pooch Purrfect Pet Spa - Public Hearing Date: March 15, 2022
- X. Closed Session
  - A. One (1) Personnel Matter Relating to the Annual Performance Evaluation of the Town Manager (Va. Code 2.2-3711.A.1)

XI. Adjournment



## PROCLAMATION RECOGNIZING WOMEN'S HISTORY MONTH

**WHEREAS**, the month of March is nationally recognized as Women's History Month; and

**WHEREAS**, American women of every race, class, and ethnic background have made historic contributions to the growth and strength of our Nation in countless recorded and unrecorded ways; and

**WHEREAS**, American women have played and continue to play critical economic, cultural, and social role in every sphere of the life of the Nation by constituting a significant portion of the labor force working inside and outside of the home; and

**WHEREAS**, American women have played a unique role throughout the history of the Nation by providing the majority of the volunteer labor force of the Nation; and

**WHEREAS**, American women were particularly important in the establishment of early charitable, philanthropic, and cultural institutions in our Nation; and

**WHEREAS**, American women of every race, class, and ethnic background served as early leaders in the forefront of every major progressive social change movement; and

**WHEREAS**, American women have served our country courageously in the military; and

**WHEREAS**, American women have been leaders, not only in securing their own rights of suffrage and equal opportunity, but also in the abolitionist movement, the emancipation movement, the industrial labor movement, the civil rights movement, and other movements, especially the peace movement, which create a more fair and just society for all; and

**WHEREAS**, despite these contributions, the role of American women in history has been consistently overlooked and undervalued, in the literature, teaching and study of American history; and

**WHEREAS**, the national theme for Women's History Month 2022 is "Women Providing Healing, Promoting Hope;" and

**NOW, THEREFORE, BE IT PROCLAIMED** that the Town of Dumfries celebrates and recognizes March 2022, as Women's History Month.

By Order of Council:

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Derrick R. Wood, Mayor  
Town of Dumfries  
March 1, 2022



## **PROCLAMATION RECOGNIZING THE POTOMAC RECYCLING, INC.**

**WHEREAS**, Potomac Recycling, Inc. came to Dumfries in 2007 for the purpose of mining and recycling construction, demolition, and miscellaneous inert debris materials to return them to their natural state at the Potomac Landfill, 100 acres located at 3730 Greentree Lane, Dumfries, Virginia; and

**WHEREAS**, Sandy Crippen, CEO of Potomac Recycling, affectionately known as “Miss Virginia” by her business colleagues and friends, took the trash and turned it into treasure by “Taking the Dump Out of Dumfries”; and

**WHEREAS**, Potomac Recycling has always been a vital member of our community and has shown its support by sponsoring the Town’s Annual 4<sup>th</sup> of July Fireworks; supporting the Dumfries Police Department with very generous donations for their Christmas in Dumfries and Dual-Purpose-Police K-9 program; and

**WHEREAS**, Potomac Recycling philanthropic spirit towards ChildHelp, a non-profit organization dedicated to the prevention and treatment of child abuse, has not gone unnoticed; and

**WHEREAS**, on Friday, January 28, 2022, the Potomac Recycling took its last load of construction debris for the purpose of recycling and disposal at the Potomac Landfill; and

**WHEREAS**, we echo the sentiments of Potomac Landfill’s President Phil Peet that we too are “proud of what the landfill operators and employees have accomplished over the years,” and the departure of Potomac Recycling is “bittersweet.”

**NOW, THEREFORE, BE IT RESOLVED** that the Town of Dumfries hereby recognize and express our sincere appreciation to Potomac Recycling for their contribution and years of service to the Town of Dumfries.

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Derrick R. Wood, Mayor  
Town of Dumfries  
March 1, 2022

**DUMFRIES TOWN COUNCIL  
MEETING MINUTES  
TUESDAY, FEBRUARY 1, 2022**

**MEETING HELD VIRTUALLY VIA ZOOM AND THE TOWN'S YOUTUBE CHANNEL**

A video recording of this meeting is available on the Town's YouTube Channel:  
<https://www.youtube.com/watch?v=IOkR-TLgLmc>

**I. Call to Order and Roll Call**

At 7:00 PM, Mayor Wood called the meeting to order. The following members were recorded as present: Brown, Fields, Miles, Nickerson, and Wood; Councilwoman Neville and Councilman Peet attended virtually due to health safety reasons.

**II. Moment of Prayer & Pledge of Allegiance**

A moment of silent prayer was followed by the Pledge of Allegiance.

**III. Adoption of the Agenda**

On a motion made by Vice Mayor Nickerson, seconded by Councilwoman Miles, to adopt the agenda. Vote 7-0 (Yes: Brown, Fields, Miles, Neville, Nickerson, Peet, and Wood; No: N/A; Abstain: N/A)

**IV. Awards & Proclamations**

Proclamation Recognizing Black History Month was presented by Vice Mayor Nickerson.

**V. Approval of the Minutes**

On a motion made by Councilwoman Miles, seconded by Vice Mayor Nickerson to approve the February 1, 2022 Town of Dumfries Council meeting minutes. Vote 7-0 (Yes: Brown, Fields, Miles, Neville, Nickerson, Peet, and Wood; No: N/A; Abstain: N/A)

**VI. Citizen Comment Period**

**VII. Mayor and Council Comments**

During this time, the Mayor and Council provided their comments.

## **VIII. Reports & Presentations**

Boys & Girls Club Update was presented by Branch Director Judy Moore. Questions from Council was addressed.

Historic Dumfries Update was presented by Executive Director Lisa Timmerman.

## **IX. Action Items (Public Hearing)**

### Options for Revising the Rules of Procedure Relating to Remotely Attending Council Meetings – Town Attorney Sharon Pandek

Town Attorney Pandek presented options for revising the rules of procedure relating to remotely attending council meetings. After discussion, the Council directed Town Attorney Pandek to revise Section 3.3 of the Council Rules of Procedure based upon their discussions and prepare a resolution for consideration at the February 15, 2022 Council meeting.

### Motion Directing the Town Manager to Develop a Plan for a Multi-Use Building for Former Rescue Squad Property – Councilman Peet

On a motion made by Councilman Peet, seconded by Councilwoman Neville, to direct the Town Manager to develop a plan for a multi-use building for the former rescue squad building, in accordance with the acceptable and sustainable use of funding, to be presented at the May 2022 meeting. Vote 7-0 (Yes: Brown, Fields, Miles, Neville, Nickerson, Peet, and Wood; No: N/A; Abstain: N/A).

## **X. Closed Session**

### One (1) Personnel Matter Relating to the Annual Performance Evaluation of the Town Manager (Va. Code §2.2-3711.A.1)

On a motion made by Councilwoman Neville, seconded by Councilman Fields the Council convened in Closed Session at 8:58 pm pursuant to Va. Code § 2.2-3711.A.1 one (1) Personnel Matter Relating to the Annual Performance Evaluation of the Town Manager. Vote 7-0 (Yes: Brown, Fields, Miles, Neville, Nickerson, Peet, and Wood; No: N/A; Abstain: N/A).

On a motion made by Mayor Wood, seconded by Councilman Brown, the Council concluded Closed Session and reconvened its meeting in Open Session at 9:58 pm. Vote 7-0 (Yes: Brown, Fields, Miles, Neville, Nickerson, Peet, and Wood; No: N/A; Abstain: N/A).

**XI. Adjournment**

Mayor Wood adjourned the meeting at 10:00 pm.





## **AGENDA ITEM REQUEST FORM**

### **Item Type**

Award     Proclamation     Resolution/Ordinance     Motion     Discussion

### **Statement of Purpose**

Public Hearing- Consideration of an Ordinance to Approve Conditional Use Application, CUP2021-001, Filed by Rising Stars Daycare, LLC

### **Background/References**

Please see attached ordinance.

### **Fiscal Impact**

N/A

### **Suggested Motion**

Approve CUP2021-001, Filed by Rising Stars Daycare, LLC

### **Requested Meeting Date**

March 1, 2022

### **Attachments**

- [2022-03-01 CUP22-001 Public Hearing Authorization.pdf](#)
- [2021-12-28 Rising Stars Daycare CUP21-001 Final Staff Report.pdf](#)

**AT A REGULAR MEETING OF THE DUMFRIES TOWN COUNCIL HELD ON  
MARCH 1, 2022: ON A MOTION DULY MADE BY \_\_\_\_\_, AND  
SECONDED BY \_\_\_\_\_, THE FOLLOWING ORDINANCE WAS  
ADOPTED BY THE FOLLOWING VOTE:**

**Tyrone A. Brown, \_\_\_\_\_;**  
**Brian K. Fields, \_\_\_\_\_;**  
**Selonia B. Miles, \_\_\_\_\_;**  
**Cydney A. Neville, \_\_\_\_\_;**  
**Monae S. Nickerson, \_\_\_\_\_;**  
**Shaun R. Peet, \_\_\_\_\_;**  
**Derrick R. Wood, \_\_\_\_\_;**

**ORDINANCE TO APPROVE A CONDITIONAL USE PERMIT,  
CUP 2021-001 FOR A DAYCARE CENTER,  
RISING STARS DAYCARE LLC, FOR 17944 MAIN STREET.**

**WHEREAS**, Rising Stars Daycare, LLC submitted a Conditional Use Permit application, CUP 2021-001, to the Town of Dumfries Department of Planning and Community Development on May 27, 2021; and

**WHEREAS**, the Dumfries Planning Commission held a duly advertised public hearing on February 14, 2022; and recommended approval of the Conditional Use Permit Application to the Town Council; and

**WHEREAS**, the Dumfries Town Council held a duly advertised public hearing on March 1, 2022; and

**WHEREAS**, in accordance with Section 70-10 of the Town Zoning Ordinance, the application as submitted or as modified will not affect adversely the health, safety, or welfare of persons residing or working in the neighborhood of the proposed use, and will not be detrimental to public welfare or injurious to the property or improvements in the neighborhood; and

**WHEREAS** the Council acts in accordance with public necessity, general welfare, and good zoning practice.

**NOW, THEREFORE, BE IT RESOLVED** by the Town Council of the Town of Dumfries, on this 1st day of March 2022, that the Conditional Use Permit application (CUP 2021-001), as proposed by Rising Stars Daycare, LLC.) is approved with the following conditions:

1. This Conditional Use Permit (“CUP”) for a Daycare Center is granted for and runs with the land indicated in this application, 17944 Main Street. This CUP is not transferable to other land.

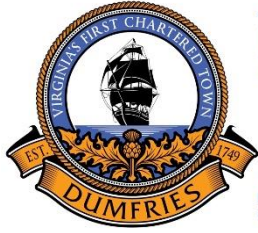
2. The Conditional Use Permit is subject to the requirements outlined in Section 70-7 of the Zoning Ordinance which authorizes a daycare center; and requirements of a Building Permit as may be determined by the Town Department of Public Works.
3. The applicant must obtain a Certificate of Occupancy in accordance with current building and zoning regulations of the Town of Dumfries and the Virginia Statewide Uniform Building Code.
4. Traffic and Safety Measures: parents will park and then walk their children into the building.

By Order of Council:

---

Derrick R. Wood, Mayor

ATTEST: \_\_\_\_\_  
Tangi Hill, Town Clerk



## **Staff Report**

**Conditional Use Permit, CUP2021-001:** To provide authorization of a conditional use permit to allow the use of a Daycare Facility within the Neighborhood Business, B-2 zoning district at a property known as 17944 Main Street (GPIN #8189-70-2425).

### **APPLICANT**

Rising Stars Daycare LLC

### **LOCATION**

17944 Main Street  
Dumfries, VA 22026

GPIN #8189-70-2425

### **PROPOSAL**

Approval of a Conditional Use Permit (CUP) to allow the expansion of a Daycare Facility from 17934 Main Street to the adjoining property at 17944 Main Street.

### **STAFF RECOMMENDATION**

Staff recommends approval of CUP2021-001, subject to the approval of the proposed development conditions consistent with those provided in Appendix A.

It should be further noted that the content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Town Council.

### **Background**

#### **Conditional Use Permit**

As outlined in Section 70-10 of the Town Zoning Ordinance, *“Conditional Use Permits may be granted by the Town Council for any of the uses for which a CUP is required by the Zoning Ordinance. In granting any such CUP, the Council may impose any such conditions in connection therewith as will assure that the use(s) will conform with the requirements contained herein and will continue to do so and may require a guarantee or bond to insure the conditions imposed are being and will continue to be complied with.”*

*A CUP shall not be issued unless the Council shall find that:*

- 1. The proposal as submitted or as modified will not affect adversely the health, safety, or welfare of persons residing or working in the neighborhood of the proposed use; and will not be detrimental to public welfare or injurious to the property or improvements in the neighborhood. Among matters to be considered in this connection are traffic congestion, noise, lights, dust, odor fumes, and vibrations, with due regard for timing of operation, screening, and other matters which might be regulated to mitigate adverse impact.*
  
- 2. The proposal as submitted or modified will conform to the Comprehensive Plan for the Town or to specific elements of such Plan, and the official policies adopted in relation thereto, including the purposes and the express intent of this chapter.”*

A. Request - This is a Conditional Use Permit request for Rising Stars Daycare to expand operations to 17944 Main Street, Dumfries, VA 22026.

B. Site Location - The site is 0.61 acres and located on the corner of Main Street and White Haven Drive, seen below in Figure 1. The subject site currently contains 1 primary structure, with the applicant proposing to occupy around 1,800 square feet of the space. The parking lot developed with the site has 24 parking spaces. For the use of a daycare the Town Code requires 1 parking space per 175 square feet of building area, multiplied by the core factor of 0.8. Based on the proposed square footage, the Daycare meets the parking requirements of 10 spaces.



Figure 1

C. Comprehensive Plan - The Future Land Use Map and Graham/ Fraley Small Area Plan both designate this parcel for Commercial Land Use.

D. Zoning –The site is currently zoned B-2, Neighborhood Business.

E. Surrounding Land Uses - The subject site is bordered on the North by current Rising Stars Daycare Facility. The USPS Store and Harley Davidson of Quantico are located to the east of the properties. All adjacent lots are zoned B-2 except for the R-2 residential lots to the west fronting on Willow Road and Whitehaven Drive that back up to the subject property.

F. Previous Use of the Property - Prior to being vacant, the site was developed and used by Majestic Glass and Mirror as a Warehouse and Showroom.

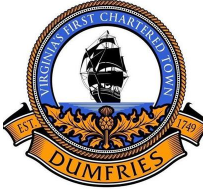
## **SUMMARY/CONCLUSION**

Staff has determined that the proposed development is consistent with the Comprehensive Plan. The use will benefit the residents of the Town of Dumfries by expanding an existing daycare close to a residential area that offers hours that are more flexible for working parents. In addition, staff concludes that the development proposal will not adversely affect the health, safety, and general welfare of persons occupying the site as well as those in the neighboring vicinity of the site.

## **RECCOMENDATIONS**

Staff recommends approval of the Conditional Use Permit, CUP21-001, for Rising Stars Daycare LLC, to operate a daycare facility located at 17944 Main Street, subject to the Development Condition below:

1. Traffic and Safety Measures: parents will park and walk their children into the building.



## **AGENDA ITEM REQUEST FORM**

### **Item Type**

Award     Proclamation     Resolution/Ordinance     Motion     Discussion

### **Statement of Purpose**

Public Hearing - Consideration of an Ordinance to Approve Proffer Condition Amendment Application, PCA2016-001, Filed by Townsquare at Dumfries, LLC

### **Background/References**

Please see attached ordinance.

### **Fiscal Impact**

N/A

### **Suggested Motion**

Approve PCA2016-001, Filed by Townsquare at Dumfries, LLC

### **Requested Meeting Date**

February 1, 2022

### **Attachments**

- [PCA2016-001 Final Approval Ordinance 3-1-22.pdf](#)
- [FINAL COMBINED STAFF REPORT PCA2016-001.pdf](#)

**AT A REGULAR MEETING OF THE DUMFRIES TOWN COUNCIL HELD ON MARCH 1, 2022: ON A MOTION DULY MADE BY \_\_\_\_\_, AND SECONDED BY \_\_\_\_\_, THE FOLLOWING ORDINANCE WAS ADOPTED BY THE FOLLOWING VOTE:**

**Tyrone A. Brown, \_\_\_\_\_;  
Brian K. Fields, \_\_\_\_\_;  
Selonia B. Miles, \_\_\_\_\_;  
Cydny A. Neville, \_\_\_\_\_;  
Monae S. Nickerson, \_\_\_\_\_;  
Shaun R. Peet, \_\_\_\_\_;  
Derrick R. Wood, \_\_\_\_\_;**

**ORDINANCE TO APPROVE  
THE PROFFER AMENDMENT APPLICATION, PCA2016-0001,  
TOWNSQUARE AT DUMFRIES, FILED FOR THE PROPERTY LOCATED AT  
3925 GRAHAM PARK ROAD, AND TO WAIVE THE REQUIREMENT SET  
FORTH IN SECTION 535.5 (4) OF THE ZONING ORDINANCE TO  
INCREASE THE MAXIMUM ALLOWABLE DENSITY FOR RESIDENTIAL  
UNITS, AND TO WAIVE THE REQUIREMENT FOR THE 15 FOOT  
TRANSITIONAL BUFFER ALONG THE PERIMETER OF THE PMUD  
BOUNDARY AS OTHERWISE REQUIRED BY § 70-535.10(C).**

**WHEREAS,** Townsquare, LLC has applied for a modification of its proffers on the 5.16 acre property identified as 8188-78-8078 and 8188-79-6806 rezoned REZ 2016-001 in order to modify the development on Land Bay 4; and

**WHEREAS,** the applicant is requesting a waiver of the requirement set forth in Sec. 535.5 (4) of the Zoning ordinance to increase the maximum allowable density for residential units to 19.38 Dwelling Units (DU) per acre as part of PCA2016-001; and to waive the requirement for the 15 foot transitional buffer along the perimeter of the PMUD Boundary As Otherwise Required By § 70-535.10(C); and

**WHEREAS,** the Department of Community Development and Zoning staff have recommended approval of the proffer amendments which are attached; and

**WHEREAS,** the Planning Commission advertised and held a public hearing on the proposed proffer amendments on February 14, 2022, and has recommended approval of the proffer amendments; and

**WHEREAS,** the Town Council advertised and held a public hearing on the proposed proffer amendments on March 1, 2022; and

**WHEREAS,** the Town Council acts on the basis of public necessity, convenience, general welfare, and good zoning practice;



**NOW, THEREFORE, BE IT ORDAINED** that the Town Council of the Town of Dumfries hereby approves the proffer amendments made in conjunction with REZ2016-001 on property identified as 8188-78-8078 and 8188-79-6806 by Townsquare at Dumfries, LLC, for Land Bay 4 as attached here to, and

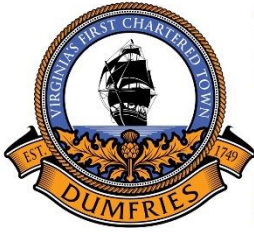
**BE IT FURTHER ORDAINED** that the Town Council of the Town of Dumfries does hereby waive the requirement set forth in Sec. 535.5 (4) of the Zoning Ordinance to increase the maximum allowable density for residential units to 19.38 Dwelling Units (DU) per acre, and that the requirement for the 15-foot transitional buffer along the perimeter of the PMUD boundary as otherwise required by § 70-535.10(c). be waived as a part of PCA 2016-001.

By Order of Council:

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Derrick R. Wood, Mayor

ATTEST: \_\_\_\_\_  
Tangi R. Hill, Town Clerk



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**February 14, 2022**

### STAFF REPORT

#### PROFFER CONDITION AMENDMENT APPLICATION: PCA2016-001

**APPLICANT:** Townsquare at Dumfries, LLC  
4915 Radford Avenue, Suite 300  
Richmond, VA 23230

**LOCATION:** 3925 Graham Park Road  
Triangle, Virginia 22172

**PARCEL (S):** 8188-78-8078 and 8188-779-6806

**EXISTING ZONING:** PMUD, Planned Mixed Used District

**ACREAGE:** 5.16 acres

#### DESCRIPTION OF THE APPLICATION

The Applicant proposes to amend the Proffer Statement associated with REZ2016-001. The purpose of the amendment is to update proffers that (1) designate the amount of commercial development; (2) commit to the amount and age-restriction of multifamily units; (3) define on-site recreational activities; (4) remove accommodation of a Town Police facility; and (5) update the MZP to reflect the land use changes and accommodation for road safety improvements.

The specific amendments include:

1. Increase the overall number of age-restricted multifamily dwelling units from 40 to 100, as permitted in the PMUD High designation, classify them as affordable dwelling units, and authorize a modification of the density cap on the age-restricted housing units;
2. Commit to a minimum of 5,000 square feet of commercial uses;
3. Modify the building layout in Land Bay 4;
4. Modify the Proffers to accommodate comments made by the Town staff;
5. Remove the "public facility" use from Land Bay 4; and
6. Authorize a modification of the 15-foot transitional buffer along the perimeter of the PMUD boundary as otherwise required by § 70-535.10(c).

Amendments 1 and 6 require the following waiver and modification:

- Waiver of Sec. 70-535.5 of the Zoning Ordinance to allow 100 age-restricted dwelling units, 23 more than the 77 dwelling units permitted by right.
- Modification of the 15 foot transitional buffer along the perimeter of the PMUD boundary as otherwise required by § 70-535.10(c).

### STAFF RECOMMENDATION

Staff recommends that the Town Council approve PCA2016-001 including the following:

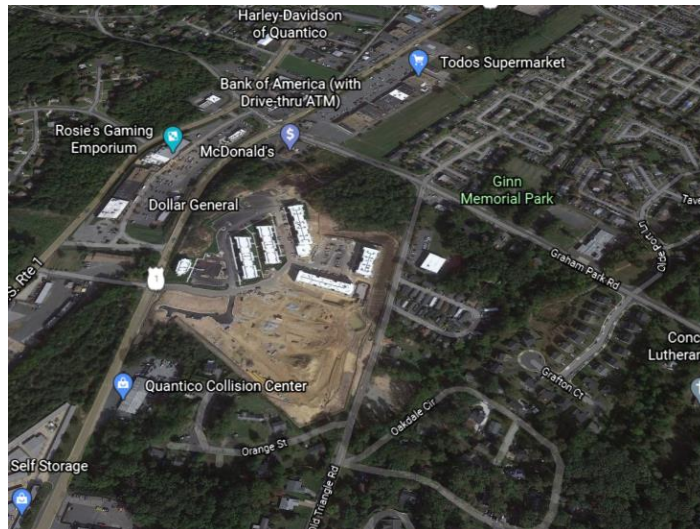
- Amendment to the REZ2016-001 Proffer Statement, included as Appendix A.
- Modifications to the MZP, as described below and shown in Appendix B.
- Waiver of Sec. 70-535.5 of the Zoning Ordinance to allow 100 age-restricted dwelling units, 23 more than the 77 dwelling units permitted by right.
- Modification of the 15 foot transitional buffer along the perimeter of the PMUD boundary as otherwise required by § 70-535.10(c).

The content of this report reflects the analysis and recommendations of staff; it does not reflect the position of the Town Council.

### LOCATION AND CHARACTER

The subject property is located at 3925 Graham Park Road, which is situated along Graham Park Road, east of Rt. 1 (Fraleley Boulevard) and west of Old Triangle Road, as shown in Figure 1. The property is currently undeveloped with no existing access points along the property's frontage.

Figure 1



## **Background**

### **I. Rezoning of the Property (2016)**

On December 6, 2016, the Town Council approved rezoning application, REZ 2016-001 (Townsquare at Dumfries) and rezoned approximately 28.6 acres of land from the R-2, General Residential District to Planned Mixed Use District (PMUD). The rezoning was subject to executed proffers by the applicant. The approved rezoning application with associated MZP and proffers are included in Appendix C. Proffer I “Land Use, Development, and Operations”, outlined the project’s development by permitting a mix of residential and commercial uses, limited to 105 townhomes, 270 multi-family units, 40 senior living units and up to 20,000 SF of retail. In addition, Proffer II “Master Zoning Plan” (“MZP”) states that the development of the site shall be in substantial conformance with the approved MZP. These proffers established parameters in the review of any subsequent development plans and/or permits for the site.

### **II. Two Site Plans Approved by Town Council in 2018 and 2019**

#### 1<sup>st</sup> Site Plan (SP 2018-002)

On November 7, 2018, the Town Council, in its former capacity as the approval agent for site plan applications<sup>1</sup>, approved SP 2018-002 submitted by Community Housing Partners, to develop Phase I of the Townsquare project, which included 270 multifamily dwelling units (DUs) generally located in the area shown as Land Bay 3 on the approved MZP.

#### 2<sup>nd</sup> Site Plan (SP2019-004)

In 2019, K. Hovnanian Homes submitted a site plan application, SP2019-004, for Phase II of the development to include 105 Townhome DUs in an area shown as Land Bay 1 and Land Bay 2 on the MZP. Town Council approved this site plan on November 19, 2019.

### **Request for a Proffer Condition Amendment and MZP Modifications**

On November 23, 2021, Townsquare submitted to the Town a Proffer Condition Amendment application related to the development of Land Bay 4. The subject portion of the property represents the final Land Bay of the December 6, 2016 approved rezoning application, REZ 2016-001. As noted above, this Proffer Condition Amendment will allow for the following: A Density increase from 40 to 100 age-restricted dwelling units, subject to approval of the proposed waiver, modification of commercial space provided (20,000 sq. ft to 5,000 sq.ft), modification of the Land Bay 4 site layout, and removal of public facility use. The modification also would incorporate Parcel D onto the site, subject to a Land Purchase Agreement (agreed upon in principle).

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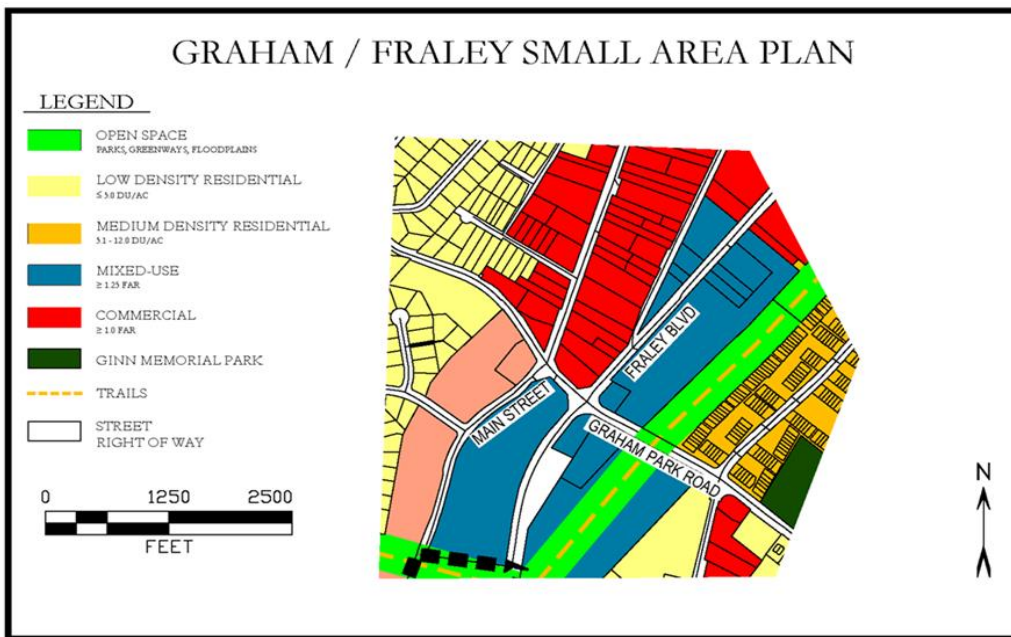
<sup>1</sup> Note, the Town Council, subsequently revised the Town Code on March 16, 2021, to make the Director of Planning & Community Development the approval agent.

As stated above, the amendment will enable Townsquare to submit the Final Site Plan, as well as allowing for the Zoning Certification required for VDHA Low Income Housing Tax Credit projects.

## COMPREHENSIVE PLAN PROVISIONS

As shown in Figure 2, Graham/ Fraley Small Area Plan of the Comprehensive Plan designates the subject area as mixed use, which allows for additional residential units along with a mixture of commercial uses. The amendment to the MZP and Proffer Condition Statement will allow the development of an additional 60 age-restricted units (100 total) with a minimum of 5,000 square feet of first floor commercial space. Thus, the proposed Proffer Condition Statement Amendment is consistent with the Comprehensive Plan vision and will satisfy many of the land use goals of the Comprehensive Plan.

Figure 2

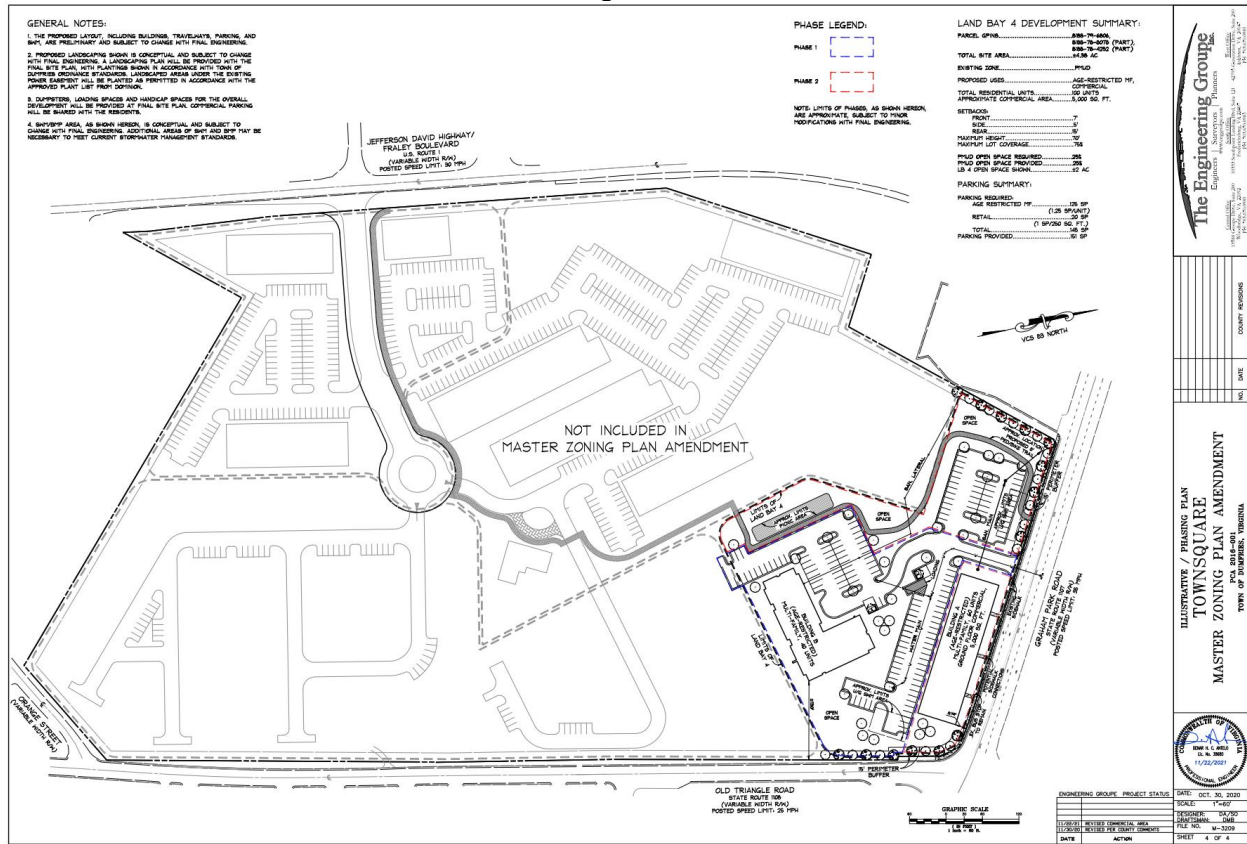


## SITE LAYOUT

As shown in the updated Master Zoning Plan (MZP) depicted in Figure 3, the proposed development on Land Bay 4 will be constructed on consolidated parcels of land encompassing 5.16 acres immediately fronting Graham Park Road and Old Triangle Road. The Applicant

proposes to purchase a parcel from the Town (shown in Figure 4) to meet the zoning density requirements and utilize the property to improve the site access, circulation, and parking.

Figure 3



The 100 age-restricted units would be split between buildings “A” and “B” as displayed on Figure 5. Building “A” would also include a minimum of 5,000 square feet of commercial space along Graham Park Road. Land Bay 4 would be constructed in two phases, delineated in Figure 5 with Blue (Phase 1) and red (Phase 2) boundaries. The site’s property in the vicinity of Graham Park Road and Old Triangle Road has been reviewed to ensure that safety improvements along Graham Park Road can be accommodated in a separate transportation project as detailed in the Off-site Improvements Section.

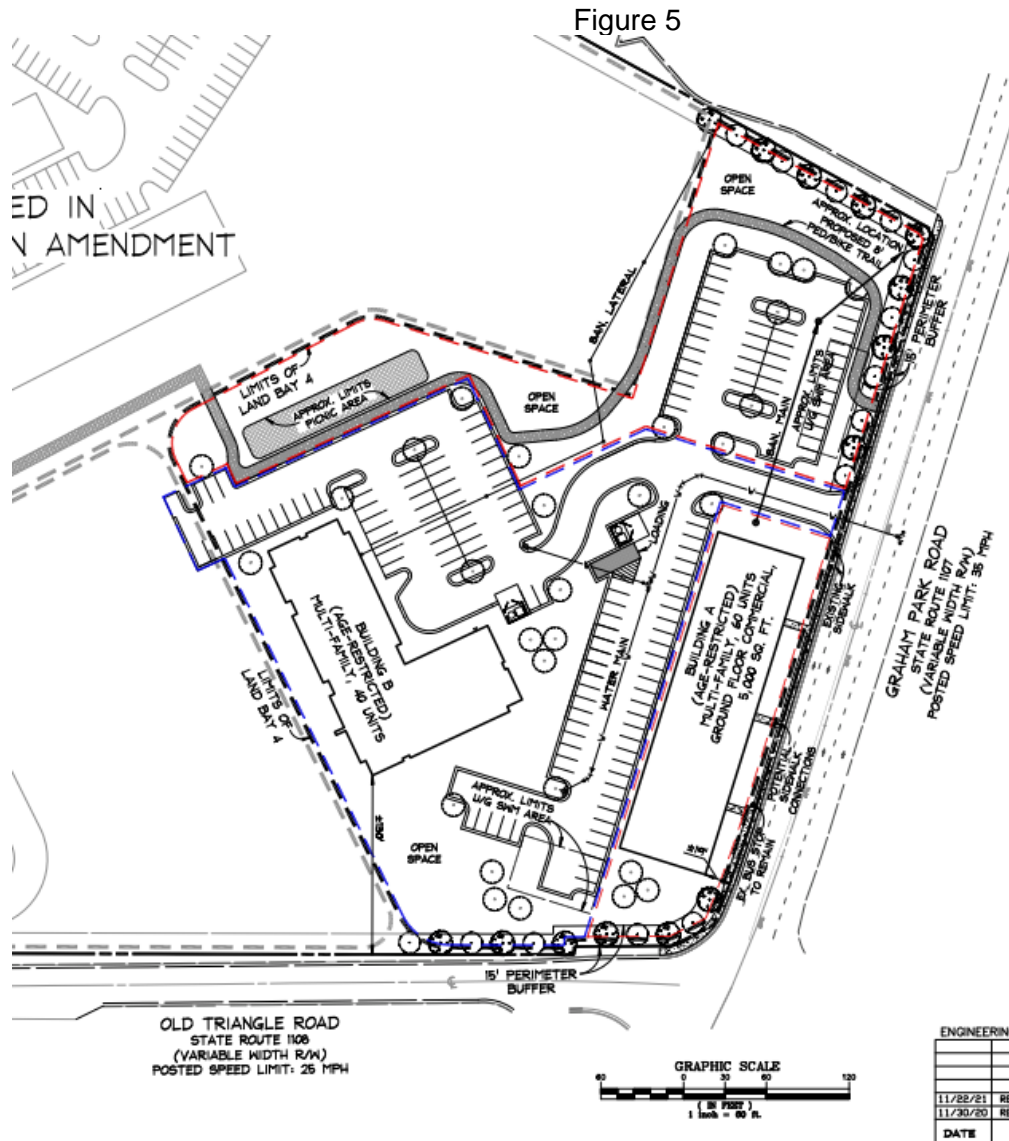
Figure 4



#### Site Access and Circulation

This section of Townsquare will be accessible via a new driveway off of Graham Park Road. A pedestrian / bicycle trail connects the Graham Park Road frontage sidewalk with the open space, picnic areas, and other sections of Townsquare. Figures 3 and 5 detail the driveway, internal circulation, and trail alignments.

Given that this is a proffer statement amendment, further site circulation and loading access will be reviewed in detail at the site plan submission.



**OFF-SITE TRANSPORTATION**

The Applicant has volunteered to collaborate with the Town to improve safety on Graham Park Road and at the intersection of Graham Park Road and Old Triangle Road. The Town is currently working closely with the Metropolitan Washington Council of Governments (MWCOG) and Prince William County to study and develop a concept design for safety improvements including a potential roundabout at Graham Park Road and Old Triangle Road. The application’s MZP, attached as Appendix B, has been modified to accommodate these safety improvements on their property. The Applicant has also proffered to change the lane configuration on Graham Park Road to accommodate a right turn lane into their site, as recommended in the traffic impact study, and implement a portion of the road diet if deemed beneficial by the MWCOG / County / Town joint safety study.



## **SUMMARY/CONCLUSION**

Staff has determined that the proposed development is consistent with the Comprehensive Plan. In addition, staff concludes that the development proposal will not adversely affect the health, safety, and general welfare of persons occupying the site as well as those in the neighboring vicinity of the site. The amendment will enable Townsquare to submit the final site plan, as well as allow for the Zoning Certification required for VDHA Low Income Housing Tax Credit projects. This zoning certification will be used in determining whether the development qualifies for points available under VHDA's Qualified Allocation Plan for housing tax credits. The timing for this amendment is vital, with the application due to VHDA by March 11<sup>th</sup>. Ultimately, this project will benefit all parties, and increase the diversity of the housing stock in Dumfries while simultaneously providing more commercial space within the Town.

**STAFF CONTACT:** Nick Cicero, Town Planner - (703) 221-3400 ext. 140.

## **APPENDICES**

- A. Application and Proffers
- B. Final MZPA
- C. 2016 Rezoning Resolution and Proffers

# Appendix A

# APPLICATION FOR REZONING



**TOWN OF DUMFRIES, VIRGINIA  
17739 MAIN STREET  
DUMFRIES, VIRGINIA 22026  
703-221-3400 Ext. 115  
Fax: 703-221-3544**

# APPLICATION FOR REZONING

## TO THE TOWN COUNCIL OF THE TOWN OF DUMFRIES, VIRGINIA

The undersigned, being all of the owner(s), contract purchasers or the respective duly authorized agents thereof, do hereby petition to change the zoning of the property described below and shown on the accompanying plans, which are made part of this application, as follows: (attach additional pages if necessary)

Tax Map #	GPIN #	From	To	Acres
_____	8188-78-4252 (part)	PMUD	PMUD	0.20 ac
_____	8188-78-8078 (part)	PMUD	PMUD	2.66 ac
_____	8188-79-6806	PMUD	PMUD	1.5207 ac

**Property Location:** (Describe the location of the property by distance, in feet or portion of a mile, and direction from an intersection of two (2) public roads or streets.)

The property is located at the southeast quadrant of the U. S. Route 1 and Graham Park Road intersection.

**Proffer Condition Amendment (PCA)**- Does this application proposes to amend the proffers approved pursuant to REZ 2016-001 (case number) to permit an increase in the overall number of age restricted multifamily units from 40 to 100, modify the building layout in Land Bay 4, change B-2 to B-1 as the zoning designation in Land Bay 4, and remove the "public facility" use from Land Bay 4.

If this is a partial PCA, please identify the affected acreage: 4.4 acres

The name(s), mailing address(es), and telephone number(s) of owner(s) and contract purchaser, lessee, and/or authorized agent(s), as applicable are: (Attach additional pages if necessary)

### OWNER OF PROPERTY:

Name: See attached property owner list Phone #: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

### CONTRACT PURCHASER/LESSEE:

Name: N/A Phone #: \_\_\_\_\_

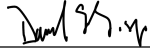
Mailing Address: \_\_\_\_\_

### AUTHORIZED AGENT(S):

Name: Thomas Moore Lawson, Esquire Phone #: 540-665-0050


Mailing Address: P.O. Box 2740, Winchester, VA 22604

Signed this 23rd day of November 2021.



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Signature of Townsquare at Dumfries, LLC  
By: Community Housing Partners Corporation  
Its: Managing Member  
By: David Schultz  
Its: Senior Vice President of Development



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Signature of Townsquare at Dumfries Bond, LLC  
By: CHP Townsquare at Dumfries Bond, LLC  
Its: Managing Member  
By: Community Housing Partners Corporation  
Its: Managing Member  
By: David Schultz  
Its: Senior Vice President of Development

*Page 2*

**Describe briefly the type of use and improvements proposed. State whether new buildings are to be constructed, existing structures are to be used or removed, or additions made to existing buildings:**

The proposed Proffer Amendment application is a request to increase in the overall number of age restricted multifamily units from 40 to 100, modify the building layout in Land Bay 4, change B-2 to B-1 as the zoning designation in Land Bay 4, and remove the "public facility" use from Land Bay 4.

**Why does applicant believe the location of the use in question on the particular property is essential or desirable for the public convenience or welfare and will not be detrimental to the immediate neighborhood?**

Please see the Proffer Amendment application narrative.

**Describe how the proposed use and improvements are to be designed and arranged to fit into the development of adjacent property and the neighborhood:**

Please see the Proffer Amendment application narrative.

**Furnish plat showing boundaries and dimensions of property, width of boundary streets, location and size of buildings on the site, roadways, walks, off-street parking and loading space, landscaping and the like. Architect's sketches showing elevations of proposed buildings and complete plans are also desirable and if available should be filed with the application:**

Please see the Amended Master Zoning Plan provided with this application.

**It is proposed that the following proffer(s) will be made in conjunction with this rezoning request:**

Please see the Amended Proffer Statement provided with this application.

**Is the request consistent with the relevant components of the Comprehensive Plan?** Yes

The following are all of the individuals, firms, or corporations owning property adjacent to both sides and rear, and the property in front of (across the street from) the property sought to be rezoned: (Attach additional pages if necessary)

Name: PLEASE SEE ATTACHED ADJACENT PROPERTY OWNER LIST Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

Name: \_\_\_\_\_ Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

Name: \_\_\_\_\_ Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

Name: \_\_\_\_\_ Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

Name: \_\_\_\_\_ Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

Name: \_\_\_\_\_ Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

Name: \_\_\_\_\_ Property Address: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

GPIN #: \_\_\_\_\_

**Other comments or information:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**TO THE GOVERNING BODY OF THE TOWN OF DUMFRIES:**

This petition for rezoning property within the jurisdiction of the Town of Dumfries was received on \_\_\_\_\_, a public hearing was held on \_\_\_\_\_, and the Planning Commission wishes to make the following recommendations to the Town Council:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By: \_\_\_\_\_

Chairman, Planning Commission

---

**ACTION OF THE TOWN COUNCIL:**

On \_\_\_\_\_ the Town of Dumfries Town Council took the following action of the attached petition for rezoning:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

---

**FILING FEE:**

Permit # \_\_\_\_\_

Amount Paid \$ \_\_\_\_\_

Date Paid \_\_\_\_\_





Department of Planning and Community Development  
Submission Requirements for Rezoning/Conditional Use Permits

Requirement	Submitted
1. Application and Fee	
2. Notarized Affidavit completed and signed by the applicant or agent	
3. Six (6) copies of a Statement of Justification, to include a statement that the proposed development conforms to the comprehensive plan and zoning ordinance, or if any waiver, modification, exception or variance is requested by the applicant <sup>4</sup>	
4. Six (6) copies of the Legal Description of the Property to include the metes and bounds of the property	
5. Six (6) 24X36 copies of a Generalized Development Plan (GDP) that is prepared and sealed by a professional engineer, surveyor, or architect/landscape architect. The GDP should include the appropriate notes, specifications and contents as outlined in Article IV of the Zoning Ordinance where applicable <sup>2</sup>	
6. Six (6) copies of the Town of Dumfries Zoning Map and description of the Zoning and land use adjacent to the site.	
7. Trip Generation Assessment/Traffic Impact Analysis <sup>4</sup>	

**Notes:**

- 1) Modifications or Waivers for the PMUD district should be submitted to the Zoning Administrator as part of the Rezoning Application
- 2) Rezoning Applications for the PMUD district requires a PMUD Master Zoning Plan and should conform to the requirements outlined in Sec. 70-535.3 of the Zoning Ordinance
- 3) A Trip Generation assessment should be submitted to staff for a TIA determination  
Once a determination is made, a scoping meeting should be scheduled to discuss the parameters of the TIA if applicable

## **NOTICE**

The Town of Dumfries does not discriminate-against religions or on the basis of sex, age, race, national origin, or a disability. If you believe that you have been discriminated against or that the Religious Land Use & Institutionalized Persons Act ("RLUIPA") has been violated, please ask for a complaint form.

Under the laws of the United States and the Commonwealth of Virginia, no government may discriminate against religions or on the basis of sex, age, race, national origin, or a disability - in its planning and land use processes.

Under RLUIPA, no government may apply its zoning or land use laws, or its policies and procedures in a manner that unjustifiably imposes a substantial burden on the religious exercise of a person, including a religious assembly or institution.

RLUIPA also provides that no government may apply its zoning or land use laws in a manner that treats a religious assembly or institution on less than equal terms that a non-religious institution or assembly.

Finally, RLUIPA provides that no government may impose or implement a land use regulation in a manner that discriminates against a religious assembly or institution.

The Town of Dumfries does not discriminate against religions in its planning and land use processes. If you believe that you have been discriminated against or that the Religious Land Use & Institutionalized Persons Act ("RLUIPA") has been violated, please ask for a complaint form.

## Owners

Townsquare at Dumfries, LLC  
4915 Radford Avenue, Suite 300  
Richmond, VA 23230

Townsquare at Dumfries Bond, LLC  
4915 Radford Avenue, Suite 300  
Richmond, VA 23230

Town of Dumfries  
17755 Main Street  
Dumfries, VA 22026

The following are all of the individuals, firms, or corporations owning property adjacent to both sides and rear, and the property in front of (across the street from) the property sought to be rezoned and located within 500 feet of the property:

Name: First National Bank of Quantico  
Property Address: 4001 Graham Park Road, Dumfries, VA 22026  
Mailing Address: 101 N. Tryon Street, Charlotte, NC 28255  
GPIN #: 8188-79-3812

Name: SEJ Asset Management & Investment Co.  
Property Address: 18075 Fraley Boulevard, Dumfries, VA 22026  
Mailing Address: P.O. Box 711, Dallas, TX 75221  
GPIN #: 8188-79-3020

Name: Triangle Plaza LLC  
Property Address: 18030 Triangle Shopping Plaza, Dumfries, VA 22026  
Mailing Address: 5620 Linda Lane, Camp Springs, MD 20748  
GPIN #: 8188-68-8491

Name: Virginia Department of Highways  
Property Address: 18200 Jefferson Davis Highway, Dumfries, VA 22026  
Mailing Address: 10228 Residency Road, Manassas, VA 20110  
GPIN #: 8188-68-4402

Name: Quantico Property LLC  
Property Address: 18260 Jefferson Davis Highway, Dumfries, VA 22026  
Mailing Address: 10001 Georgetown Pike, Unit 280, Great Falls, VA 22066  
GPIN #: 8188-67-6688

Name: Highland Park at Townsquare Homeowners Association, Inc.  
Property Address: 18196 Summit Point Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-3768

Name: Arroyo Cap IA LLC  
Property Address: 4020 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-68-9711

Name: Arroyo Cap IA LLC  
Property Address: 4018 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-0011

Name: Arroyo Cap IA LLC  
Property Address: 4016 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-0210

Name: Arroyo Cap IA LLC  
Property Address: 4014 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-0410

Name: Arroyo Cap IA LLC  
Property Address: 4012 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-0609

Name: Arroyo Cap IA LLC  
Property Address: 4010 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-0909

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 4004 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-78-1208

Name: Nguyen, Alejandro Isaac and Cruz, Stefanie Kimberly  
Property Address: 4002 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 4002 Shire Meadow Lane, Triangle, VA 22172  
GPIN #: 8188-78-1408

Name: Clarke, Kiyomi Tamika  
Property Address: 4000 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 4000 Shire Meadow Lane, Triangle, VA 22172  
GPIN #: 8188-78-1707

Name: Otwechey, James and Omari, Gifty  
Property Address: 3998 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 3998 Shire Meadow Lane, Triangle, VA 22172  
GPIN #: 8188-78-1907

Name: Jalloh, Oumou Drame and Jalloh, Mohammed Alpha  
Property Address: 3996 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 3996 Shire Meadow Lane, Triangle, VA 22172  
GPIN #: 8188-78-2107

Name: Arroyo Cap IA LLC  
Property Address: 18319 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-1596

Name: Arroyo Cap IA LLC  
Property Address: 18317 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-1795

Name: Arroyo Cap IA LLC  
Property Address: 18315 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-1993

Name: Arroyo Cap IA LLC  
Property Address: 18313 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-2092

Name: Arroyo Cap IA LLC  
Property Address: 18311 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-2290

Name: Arroyo Cap IA LLC  
Property Address: 18309 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-2389

Name: Arroyo Cap IA LLC  
Property Address: 18307 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-2587

Name: Arroyo Cap IA LLC  
Property Address: 18305 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-2786

Name: Arroyo Cap IA LLC  
Property Address: 18303 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-2884

Name: Arroyo Cap IA LLC  
Property Address: 18301 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3082

Name: Arroyo Cap IA LLC  
Property Address: 18297 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3280

Name: Arroyo Cap IA LLC  
Property Address: 18295 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3479

Name: Arroyo Cap IA LLC  
Property Address: 18293 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3677

Name: Arroyo Cap IA LLC  
Property Address: 18291 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3776

Name: Arroyo Cap IA LLC  
Property Address: 18289 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3974

Name: Arroyo Cap IA LLC  
Property Address: 18287 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4473

Name: Arroyo Cap IA LLC  
Property Address: 18285 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4471

Name: Arroyo Cap IA LLC  
Property Address: 18283 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4470

Name: Arroyo Cap IA LLC  
Property Address: 3992 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-2906

Name: Arroyo Cap IA LLC  
Property Address: 3990 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-3205

Name: Arroyo Cap IA LLC  
Property Address: 3988 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-3405

Name: Arroyo Cap IA LLC  
Property Address: 3986 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-3604

Name: Arroyo Cap IA LLC  
Property Address: 3984 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-3804

Name: Arroyo Cap IA LLC  
Property Address: 3982 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-4003

Name: Arroyo Cap IA LLC  
Property Address: 3978 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-4402

Name: Arroyo Cap IA LLC  
Property Address: 3976 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-4602

Name: Arroyo Cap IA LLC  
Property Address: 3974 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-4801



Name: Arroyo Cap IA LLC  
Property Address: 3972 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-5001

Name: Arroyo Cap IA LLC  
Property Address: 3970 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-5200

Name: Arroyo Cap IA LLC  
Property Address: 3968 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-78-5500

Name: Arroyo Cap IA LLC  
Property Address: 3966 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-5799

Name: Ikram, Zara and Rasheed, Faizan  
Property Address: 18228 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18228 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-6296

Name: Harrington, Deon Shanel  
Property Address: 18226 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18226 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-6399

Name: Locke, Jeremy A.  
Property Address: 18224 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18224 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-6301

Name: Cunigan, Virginia Shavon and Purnell, William Franklin, III  
Property Address: 18222 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18222 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-6403

Name: Phillips, Kevin Dwayne and Phillips, Nicole Wilona  
Property Address: 18220 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18220 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-6405

Name: Van Rensburg, Jan Hendrick Janse  
Property Address: 18218 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18218 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-6407

Name: Cullum, Sarah Grace and Theimer, Robert Mills  
Property Address: 18216 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18216 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-6510

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18212 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-5908

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18210 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-5609

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18208 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-5409

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18206 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-5210

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18204 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-5010

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18202 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-5810

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18200 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-78-4511

Name: Haider, Malik N.  
Property Address: 18221 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18221 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-4603

Name: Tagoe, Ebenezer and Tagoe, Vanessa  
Property Address: 18223 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18223 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-78-7601

Name: Sabah, Sabah H. and Juma, Sama  
Property Address: 18225 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18225 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7699

Name: Cunningham, Paul and Cunningham, Crystalle  
Property Address: 18227 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18227 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7597

Name: Boateng, Okyere  
Property Address: 18229 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18229 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7595

Name: Caza, Brian Patrick and Caza, Kimberly Ann  
Property Address: 18231 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18231 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7493

Name: Stoney, Nichell Wiley and Stoney, Leon Elliot  
Property Address: 18233 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18233 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7491

Name: James, Alexis  
Property Address: 18235 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18235 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7489

Name: Osaro, Emmanuel  
Property Address: 18237 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18237 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7387

Name: Brown, Thomas B.  
Property Address: 18239 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18239 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7385

Name: Orokzai, Ali  
Property Address: 18243 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18243 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7281

Name: Pagan, Luis Wolf, Jr.  
Property Address: 18224 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18245 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7179

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18247 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-7177

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18249 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-7175

Name: Manoharan, Preethi  
Property Address: 18251 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18251 Summit Pointe Drive, Triangle, VA 22172  
GPIN #: 8188-77-7073

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18253 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-7071

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18255 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-6969

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18257 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-6967

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18259 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-6865

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18261 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-6863

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18252 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-5772

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18250 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-5874

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18248 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-5876

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18246 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-5878

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18244 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-5980

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18242 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-5983

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18240 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090 Lafayette Center Drive, Suite A, Chantilly, VA 20151  
GPIN #: 8188-77-6085

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18238 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-6087

Name: K. Hovnanian at Highland Park, LLC  
Property Address: 18236 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 4090-A Lafayette Center Drive, Chantilly, VA 20151  
GPIN #: 8188-77-6189

Name: Arroyo Cap IA LLC  
Property Address: 3965 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-5588

Name: Arroyo Cap IA LLC  
Property Address: 3967 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-5289

Name: Arroyo Cap IA LLC  
Property Address: 3969 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-5089

Name: Arroyo Cap IA LLC  
Property Address: 3971 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4890

Name: Arroyo Cap IA LLC  
Property Address: 3973 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4690

Name: Arroyo Cap IA LLC  
Property Address: 3975 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4491

Name: Arroyo Cap IA LLC  
Property Address: 3977 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4191

Name: Arroyo Cap IA LLC  
Property Address: 3979 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3992

Name: Arroyo Cap IA LLC  
Property Address: 3981 Shire Meadow Lane, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-3792

Name: Arroyo Cap IA LLC  
Property Address: 18290 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4782

Name: Arroyo Cap IA LLC  
Property Address: 18288 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-4980

Name: Arroyo Cap IA LLC  
Property Address: 18286 Summit Pointe Drive, Triangle, VA 22172  
Mailing Address: 18575 Jamboree Road, Suite 350, Irvine, CA 92612  
GPIN #: 8188-77-5178

Name: Karaca, Hakan  
Property Address: 18257 Jefferson Davis Highway, Triangle, VA 22172  
Mailing Address: 15019 Bridgeport Drive, Dumfries, VA 22025  
GPIN #: 8188-77-0987

Name: K&R Investment Properties, LLC  
Property Address: 18261 Jefferson Davis Highway, Triangle, VA 22172  
Mailing Address: 4530 Stonecroft Boulevard, Chantilly, VA 20151  
GPIN #: 8188-77-0776

Name: K&R Investment Properties, LLC  
Property Address: 18265 Jefferson Davis Highway, Triangle, VA 22172  
Mailing Address: 4530 Stonecroft Boulevard, Chantilly, VA 20151  
GPIN #: 8188-67-9964

Name: Town of Dumfries  
Property Address: 3990 Orange Street, Triangle, VA 22172  
Mailing Address: 17755 Main Street, Dumfries, VA 22026  
GPIN #: 8188-77-1472

Name: Brown, Timothy Russell and Brown, Abigail Song  
Property Address: 3980 Orange Street, Triangle, VA 22172  
Mailing Address: 3980 Orange Street, Triangle, VA 22172  
GPIN #: 8188-77-2170

Name: Jackson, Caroline  
Property Address: 3988 Orange Street, Triangle, VA 22172  
Mailing Address: 3988 Orange Street, Triangle, VA 22172  
GPIN #: 8188-77-1558

Name: Rendon, Jose Corral  
Property Address: 17991 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17965 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-77-8861

Name: Rendon, Jose Corral  
Property Address: 17965 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17965 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-77-9373

Name: Anwar, Imrana  
Property Address: 17957 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17957 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-77-9383

Name: Fernandez, Juan B. and Alvarez, Sandra C. Bacca  
Property Address: 17951 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17951 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-77-9591

Name: Streetlight Community Outreach  
Property Address: 17945 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 1550 Prince William Parkway, Woodbridge, VA 22191  
GPIN #: 8188-87-0687

Name: SMJ Management, LLC  
Property Address: 17915 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 14485 Sedona Drive, Gainesville, VA 20155  
GPIN #: 8188-88-1610

Name: Khaliq, Imran and Mustafa, Chowdhry G.  
Property Address: 3925 Oakdale Circle, Triangle, VA 22172  
Mailing Address: 3925 Oakdale Circle, Triangle, VA 22172  
GPIN #: 8188-87-2476



Name: Jordan, Virgil John and Harriet, Megan  
Property Address: 3825 Grafton Court, Triangle, VA 22172  
Mailing Address: 3825 Grafton Court, Triangle, VA 22172  
GPIN #: 8188-87-3378

Name: Josepha, E. Ward  
Property Address: 3829 Grafton Court, Triangle, VA 22172  
Mailing Address: 3829 Grafton Court, Triangle, VA 22172  
GPIN #: 8188-87-3288

Name: Jefferson, Kimberly B. and Jefferson, Bruce A., Jr.  
Property Address: 3830 Grafton Court, Triangle, VA 22172  
Mailing Address: 3830 Grafton Court, Triangle, VA 22172  
GPIN #: 8188-87-3794

Name: Forest Edge Homeowners Association  
Property Address: 18196 Jillian Lane, Triangle, VA 22172  
Mailing Address: 1220 Sunrise Valley Drive, Suite 400, Reston, VA 20191  
GPIN #: 8188-88-5106

Name: Redding, Tyler Gene  
Property Address: 3837 Graham Park Road, Triangle, VA 22172  
Mailing Address: P.O. Box 481, Triangle, VA 22172  
GPIN #: 8188-88-3633

Name: Thujone Enterprises, LLC  
Property Address: 17877 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17877 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-88-0840

Name: Thujone Enterprises, LLC  
Property Address: 17863 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17877 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-88-1150

Name: Thujone Enterprises, LLC  
Property Address: 17845 Old Triangle Road, Triangle, VA 22172  
Mailing Address: 17877 Old Triangle Road, Triangle, VA 22172  
GPIN #: 8188-88-1361

Name: Wells Inc.  
Property Address: 3901 Graham Park Road, Triangle, VA 22172  
Mailing Address: 3901 Graham Park Road, Triangle, VA 22172  
GPIN #: 8188-88-1681

Name: Lambiasi, Sandra L., Trustee  
Property Address: 3871 Graham Park Road, Triangle, VA 22172  
Mailing Address: 3871 Graham Park Road, Triangle, VA 22172  
GPIN #: 8188-88-3063

Name: Unit Owners Triangle Estates I Condo  
Property Address: 3859 Graham Park Road, Triangle, VA 22172  
Mailing Address: 3859 Graham Park Road, Triangle, VA 22172  
GPIN #: 8188-88-4152

Name: Zaidi, Uzair M. and Zaidi, Syed A.  
Property Address: 3857 Graham Park Road, Triangle, VA 22172  
Mailing Address: 3857 Graham Park Road, Triangle, VA 22172  
GPIN #: 8188-88-4058.01

Name: Chaudhri, Usman and Chaudhri, Warda  
Property Address: 3855 Graham Park Road, Triangle, VA 22172  
Mailing Address: 3855 Graham Park Road, Unit 2, Triangle, VA 22172  
GPIN #: 8188-88-4155.01

Name: Unit Owners Triangle Estates II Condo  
Property Address: 3849 Graham Park Road, Triangle, VA 22172  
Mailing Address: 3849 Graham Park Road, Triangle, VA 22172  
GPIN #: 8188-88-4846

Name: Town of Dumfries  
Property Address: 3876 Graham Park Road, Triangle, VA 22172  
Mailing Address: 17755 Main Street, Dumfries, VA 22026  
GPIN #: 8188-88-5393

Name: Williamstown Homeowners Association, Inc.  
Property Address: 2570 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: P.O. Box 370, Dumfries, VA 22026  
GPIN #: 8188-89-0954

Name: Aleem, Mohammad  
Property Address: 2612 Heth Court, Dumfries, VA 22026  
Mailing Address: 7900 Lake Pleasant Drive, Springfield, VA 22153  
GPIN #: 8188-88-3090

Name: Fleischer, Warren C. and Fleischer, Michele K.  
Property Address: 2614 Heth Court, Dumfries, VA 22026  
Mailing Address: 2614 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-3192

Name: Kassaye, Mismak  
Property Address: 2616 Heth Court, Dumfries, VA 22026  
Mailing Address: 2616 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-3294

Name: Ehsan, Khurram and Independent Management LLC  
Property Address: 2618 Heth Court, Dumfries, VA 22026  
Mailing Address: 17016 Gatlin Court, Woodbridge, VA 22191  
GPIN #: 8188-88-3395

Name: Jimenez, Manuel A. and Turcios, Maria G.  
Property Address: 2620 Heth Court, Dumfries, VA 22026  
Mailing Address: 2620 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-3497

Name: Hand, Eileen Elva  
Property Address: 2622 Heth Court, Dumfries, VA 22026  
Mailing Address: 2622 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-3699

Name: Ochoa Ochoa, Jose Alfonso and Galeano, Neftaly Isai Isabas  
Property Address: 2610 Heth Court, Dumfries, VA 22026  
Mailing Address: 2610 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-2696

Name: Mozingo, Anna  
Property Address: 2608 Heth Court, Dumfries, VA 22026  
Mailing Address: 2608 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-2597

Name: Serrano, Federico B. and Rojas, Antonia  
Property Address: 2606 Heth Court, Dumfries, VA 22026  
Mailing Address: 2606 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-88-2398

Name: Zamore, Joi Aneitra and Maravilla, Fredis  
Property Address: 2604 Heth Court, Dumfries, VA 22026  
Mailing Address: 2604 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-89-2100

Name: Kuhn, Michael W. and Kuhn, Debra A.  
Property Address: 2602 Heth Court, Dumfries, VA 22026  
Mailing Address: 2464 Pitchfork Way, Virginia Beach, VA 23456  
GPIN #: 8188-89-2001

Name: Orozco, Jose F.  
Property Address: 2600 Heth Court, Dumfries, VA 22026  
Mailing Address: 2600 Heth Court, Dumfries, VA 22026  
GPIN #: 8188-89-1802

Name: Stapleton, Katherine A.  
Property Address: 2715 Steele Court, Dumfries, VA 22026  
Mailing Address: 2715 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-2812

Name: Webster, Larry Ignatius, Jr. and Webster, Deyna Marie  
Property Address: 2713 Steele Court, Dumfries, VA 22026  
Mailing Address: 2713 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-3011

Name: Martinez, Maira and Chicas, Pedro Martinez  
Property Address: 2711 Steele Court, Dumfries, VA 22026  
Mailing Address: 2711 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-3210

Name: Withheld at Request of Owner  
Property Address: 2709 Steele Court, Dumfries, VA 22026  
Mailing Address: Withheld at Request of Owner  
GPIN #: 8188-89-3309

Name: Stan, Ion M. and Stan, Elena C.  
Property Address: 2707 Steele Court, Dumfries, VA 22026  
Mailing Address: 2707 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-3507

Name: Tucker, Kendalle and Jenkins, Bennie McCoy  
Property Address: 2705 Steele Court, Dumfries, VA 22026  
Mailing Address: 2705 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-3606

Name: Connelly, Francis J. and Connelly Sharon  
Property Address: 2703 Steele Court, Dumfries, VA 22026  
Mailing Address: P.O. Box 1792, Annandale, VA 22003  
GPIN #: 8188-89-3805

Name: Menear, Wade S.  
Property Address: 2701 Steele Court, Dumfries, VA 22026  
Mailing Address: 2701 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-4004

Name: Argueta, Esperanza  
Property Address: 2700 Steele Court, Dumfries, VA 22026  
Mailing Address: 2700 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-4211

Name: Hernandez, Aida R.  
Property Address: 2702 Steele Court, Dumfries, VA 22026  
Mailing Address: 2702 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-4313

Name: Sims, Canoneros Q. and Sims, Alicia M.  
Property Address: 2704 Steele Court, Dumfries, VA 22026  
Mailing Address: 2704 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-4414

Name: Barros, Janneth F.  
Property Address: 2706 Steele Court, Dumfries, VA 22026  
Mailing Address: 2706 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-4516

Name: Chicas Chicas, Jose I. and Sorto, Georgina F. Navarrette  
Property Address: 2708 Steele Court, Dumfries, VA 22026  
Mailing Address: 2708 Steele Court, Dumfries, VA 22026  
GPIN #: 8188-89-4618

Name: Shifflett, Donald L., Trustee and Thi, Yen, Trustee  
Property Address: 2500 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 4141 Glendale Road, Woodbridge, VA 22193  
GPIN #: 8188-89-3535

Name: Truong, Thuy-Dung  
Property Address: 2502 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 6818 Lois Drive, Springfield, VA 22150  
GPIN #: 8188-89-3336

Name: 2T&T Management, LLC  
Property Address: 2504 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: P.O. Box 1280, Lorton, VA 22199  
GPIN #: 8188-89-3137

Name: Shifflett, Donald L., Trustee and Thi, Yen, Trustee  
Property Address: 2506 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 4141 Glendale Road, Woodbridge, VA 22193  
GPIN #: 8188-89-3039

Name: Lazo, Karla Teresa Rodas  
Property Address: 2508 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 7266 Joffa Circle, Warrenton, VA 20187  
GPIN #: 8188-89-2840

Name: Peyton, Eric M., Sr. and Anthony, Michaelle A.  
Property Address: 2510 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 4125 Anderson Road, Triangle, VA 22172  
GPIN #: 8188-89-2642

Name: Benitez, Wilber H.G. and Sosa, Yesenia S.  
Property Address: 2518 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2518 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-1942

Name: Zhang, Zhuohui  
Property Address: 2520 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 360 East First Street, #975, Tustin, CA 92780  
GPIN #: 8188-89-1740

Name: Young, Anthony L. and Young, Morena R.  
Property Address: 2522 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 10353 Lemon Tree Court, Manassas, VA 20110  
GPIN #: 8188-89-1437

Name: Zakholy, Masoud S. and Alger, P.A.  
Property Address: 2524 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2524 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-1236

Name: De Vanegas, Patrocinia A.  
Property Address: 2526 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2526 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-1134

Name: Flamenco, Julio Cesar and Corado, Monica Y. Martinez  
Property Address: 2528 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2528 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0933

Name: Altagracia, Rodriguez Gilberto  
Property Address: 2530 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2530 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0832

Name: Girgis, Azmy K. and Salame, Marlene Y.  
Property Address: 2532 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 6865 Saint Albans Road, McLean, VA 22101  
GPIN #: 8188-89-0630

Name: Reyes, Gertrodís and Reyes, María  
Property Address: 2536 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2536 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0125

Name: Mmounty LLC  
Property Address: 2538 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 1003 Bragg Road, Fredericksburg, VA 22407  
GPIN #: 8188-89-0023

Name: Walker, Wesley  
Property Address: 2540 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 42837 Sykes Terrace, Chantilly, VA 20152  
GPIN #: 8188-79-9921

Name: Martínez, Claudia C. Bojas and Cordero, Bertha M.  
Property Address: 2542 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2542 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-79-9820

Name: Zavala, Henry E.  
Property Address: 2544 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2544 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-79-9618

Name: Nguyen, Tuan N.  
Property Address: 2546 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 18809 Hundred Acre Lane, Triangle, VA 22172  
GPIN #: 8188-79-9517

Name: 2548 Sedgewick Place, LLC  
Property Address: 2548 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 43777 Central Station Drive, Suite 390, Ashburn, VA 20147  
GPIN #: 8188-79-9414

Name: Calcagno, Ingrid M.  
Property Address: 2550 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2550 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0115

Name: Shifflett, Donald L., Trustee and Thi, Yen, Trustee  
Property Address: 2552 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 4141 Glendale Road, Woodbridge, VA 22193  
GPIN #: 8188-89-0314

Name: Diaz-Garcia, Dinora and Gonzalez, Grabiell  
Property Address: 2554 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2554 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0513

Name: Sanapala, Ravindra and Sanapala, Sangeeta  
Property Address: 2556 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2556 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0712

Name: Lara, Luis and de Lara, Nancy L. Herrera  
Property Address: 2558 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2558 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-0810

Name: Henriquez, Mario N. and Martinez, Maria D. Hernandez  
Property Address: 2560 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2560 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-1009

Name: Vermejo, Sergio A.  
Property Address: 2511 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2511 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-1619

Name: Aguila, Fernando Del  
Property Address: 2509 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2509 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-1821

Name: Thomas, Peter Jay and Thomas, Dawn M.  
Property Address: 2507 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 7400 Mount Vernon Square Drive, Apartment 301, Alexandria, VA 22306  
GPIN #: 8188-89-1923

Name: 2505 Sedgewick Place, LLC  
Property Address: 2505 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 2505 Sedgewick Place, Dumfries, VA 22026  
GPIN #: 8188-89-2024



Name: FHY Investment LLC  
Property Address: 2503 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 13406 Occoquan Road, Woodbridge, VA 22191  
GPIN #: 8188-89-2226

Name: Shifflett, Donald L., Trustee and Thi, Yen, Trustee  
Property Address: 2501 Sedgewick Place, Dumfries, VA 22026  
Mailing Address: 4141 Glendale Road, Woodbridge, VA 22193  
GPIN #: 8188-89-2328

Name: Dumfries Shopping Center Inc.  
Property Address: 17985 Dumfries Shopping Plaza, Dumfries, VA 22026  
Mailing Address: 17965 Dumfries Shopping Plaza, Dumfries, VA 22026  
GPIN #: 8188-79-7450

Name: Dumfries Family Limited Partnership  
Property Address: 18043 Dumfries Shopping Plaza, Dumfries, VA 22026  
Mailing Address: 4215 Windermere View Place, Woodbridge, VA 22192  
GPIN #: 8188-79-5043

Name: SMAI LLC  
Property Address: 18021 Main Street, Dumfries, VA 22026  
Mailing Address: 18021 Main Street, Dumfries, VA 22026  
GPIN #: 8188-79-3158

Name: MGB Properties VII LLC  
Property Address: 18005 Main Street, Dumfries, VA 22026  
Mailing Address: 11165 Fairfax Boulevard, Fairfax, VA 22030  
GPIN #: 8188-79-3567

Name: Reliable Auto Sales and Services, Inc.  
Property Address: 18014 Fraley Boulevard, Dumfries, VA 22026  
Mailing Address: 18014 Fraley Boulevard, Dumfries, VA 22026  
GPIN #: 8188-79-5169

Name: MGB Properties VII LLC  
Property Address: 17995 Main Street, Dumfries, VA 22026  
Mailing Address: 11165 Fairfax Boulevard, Fairfax, VA 22030  
GPIN #: 8188-79-3979

**Amended Proffer Statement**

**PCA #2016-001**

**MODIFICATION OF PLANNED MIXED USE DISTRICT (PMUD) PROFFERS**

**PROJECT: TOWNSQUARE AT DUMFRIES**

**OWNERS/  
APPLICANTS: TOWNSQUARE AT DUMFRIES, LLC  
TOWNSQUARE AT DUMFRIES BOND, LLC  
TOWN OF DUMFRIES**

**PROPERTY: TAX MAP PARCELS 8188-78-8078 (part),  
8188-78-4252 (part), and  
8188-79-6806  
(The "Property")**

**DATE OF ORIGINAL PROFFER APPROVAL: December 6, 2016**

**REVISED: November 23, 2021**

Pursuant to Section 15.2-2303(A), Code of Virginia, 1950, as amended, and § 70-646 of the Town's Zoning Ordinance, the undersigned hereby proffers that the development and use of the Property, consisting of 4.4+/- acres, comprising all of Parcel D, a portion of Parcel C and a portion of Parcel B,<sup>1</sup> will be in substantial conformance with the following conditions. In the event this Proffer Condition Amendment is granted as applied for by the Applicant, then these proffers will supersede and replace in their entirety all other proffers made prior hereto with respect to the Property, including REZ 2016-001. The Proffers associated with that Rezoning will continue to remain applicable to the other Parcels subject thereto. In the event this Proffer Condition Amendment is not granted as applied for by the Applicant, then these proffers will be deemed withdrawn and will be null and void, and the Proffer Statement associated with REZ2016-001 will remain in full force and effect as to all Parcels.

"Final Rezoning" as the term is used herein will be defined as that zoning that is in effect on the day following the last day upon which the Dumfries Town Council (the "Council") decision approving this rezoning may be contested in the appropriate court or, if contested, the day following the entry of a final court order affirming the decision of the Council that has not

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<sup>1</sup> These Parcel designations are taken from the Subdivision Plat that created them, and that is found in the Land Records of Prince William County as Instrument Number 201811080080951. Land Bay Lines do not correspond to the Parcel Lines.

been appealed, or, if appealed, the day following which the decision has been affirmed on appeal.

The headings on the proffers set forth below have been prepared for convenience and reference only and will not control or affect the meaning or be taken as an interpretation of any provision of these proffers.

The term “Applicant” as referenced herein includes Townsquare at Dumfries, LLC, Townsquare at Dumfries Bond, LLC, and the Town and Town Council of Dumfries, Virginia, and all future owners, and successors in interest to the Property that is subject to these Proffers.

#### **I. LAND USE, DEVELOPMENT, AND OPERATIONS:**

- a. The Property will be developed with a mix of residential and commercial uses, employing one separate and distinct entrance at Graham Park Road, consistent with Sheet 3 of the Master Zoning Plan Amendment as amended (“MZPA”) as further proffered herein.
- b. Commercial development on the Property will be not less than 5,000 gross square feet.
- c. Residential development of the Property will be limited to not more than 100 age-restricted multifamily units for persons 55 years of age and older. Accessory uses and home occupations, including business centers inside the residential buildings, will be permitted. The Applicant may construct service, resident amenity, and storage uses in the cellar space of each building. In addition, the Applicant may construct accessory buildings (such as maintenance space) and dumpster locations. The Applicant will include in one of the residential structures a multi-purpose room that will be made available to the Town and its residents at no cost, for gatherings, events, and other nonprofit purposes, subject only to reasonable prior notice to the entity holding title thereto, or managing the building, finished consistently with instructions provided by the Town. The overall average income for the age-restricted multifamily units will not exceed 60% of the Area Median Income, as permitted by law.
- d. The Applicant will provide recreational facilities and amenities to serve the residents of homes constructed on the Property, including indoor and outdoor recreation facilities that may include exercise rooms, meeting rooms, and media centers, as generally shown on the MZP.
- e. During the course of the development of the Property, the Applicant will provide to the Town of Dumfries Zoning Administrator the contact information (i.e.,

telephone number or email address) of a developer's liaison. The role of the liaison will be to address potential citizen inquiries during site development.

## II. MASTER ZONING PLAN:

- a. Development of the Property will be in substantial conformance with the MZPA entitled "Master Zoning Plan Amendment PCA2016-0001 for Townsquare," prepared by The Engineering Groupe, dated November 30, 2020, consisting of the following:
  - i. Land Bay Plan (sheet 3 of 4) (the "Amended Land Bay Plan") and
  - ii. Illustrative/Phasing Plan (sheet 4 of 4) (the "Illustrative Plan")
- b. Notwithstanding the foregoing, the proffered elements of the MZPA will be the entire plan set as it relates to (i) point of access, (ii) the maximum number and type of dwelling units that may be constructed, (iii) the square footage of non-residential uses, (iv) building heights, (v) the amount and location of open space, (vi) the location of the limits of clearing and grading, (vii) uses, (viii) setbacks from peripheral lot lines, and (ix) the general location and arrangement of the buildings and parking.
- c. The exact locations of buildings, amenities, road alignment, and the like are shown as general in nature and will be subject to final design and engineering criteria in concert with the Virginia Department of Transportation ("VDOT") and any design elements required by Town or other agencies with jurisdiction.

## III. DESIGN ELEMENTS OF THE PROJECT:

- a. **MIXED USE DESIGN:** Commercial and apartment uses will be permitted.
- b. **FREE STANDING MULTIFAMILY DESIGN:** All multifamily buildings will be developed as buildings either with or without corridors and/or elevators. The final building and site design (including but not limited to the total number of dwelling units, number, and configuration of parking, landscaping, etc.) will be determined at the time of final site/subdivision plan review.
- c. **SIDEWALK CONNECTIVITY:** All residential and commercial buildings will provide for interconnectivity between and among the buildings by means of sidewalks and for access to external sidewalks or trails.
- d. **ARCHITECTURAL ELEMENTS:** All buildings on the Property must incorporate exterior front elevations that include a combination of brick and/or stone with vinyl and/or cementitious style siding or panels. All buildings featuring a front-siding elevation will incorporate a water table of brick or stone across the

front elevation, to include the area of the “return” of the side of the home, where the home is offset beyond the front plain of an adjacent unit. Any “box” or “bow” window structures will be trimmed in a material other than siding and painted in the unit’s trim color(s) or a complimenting color(s). Flat and/or pitched roofs will be permitted. All exterior mechanical units will be screened from public roads with either landscaping materials or hardscape lattice made from durable materials unless the mechanical equipment is mounted on the roof of any multifamily building, in which case, the Applicant will make every effort to conceal their presence from the street view.

- e. **ENGINEERING DETAIL:** Subject to the cap on residential and non-residential development as proffered herein, the final building and site design (including but not limited to the total number of dwelling units, number, and configuration of parking, landscaping, etc.) for each residential unit type will be determined at the time of final site/subdivision plan review. The Land Bay Line between Land Bays 2 and 4 may be adjusted at final site/subdivision plan to accommodate parking and other engineering requirements.

#### **IV. CREATION OF PROPERTY AND HOMEOWNERS’ ASSOCIATIONS:**

- a. **MULTIFAMILY ASSOCIATION.** The age-restricted multifamily buildings will be professionally managed and maintained.
- b. Operation and maintenance of common elements shall be the responsibility of a property owners’ association.

**V. CONSTRUCTION OF A BUS SHELTER:** No later than the issuance of the occupancy permit for the 200th residential unit in the Project, a three-sided public bus shelter will be constructed at the current bus stop location at the northern property line of the Property, along Graham Parkway and Old Triangle Road.

**VI. TRANSPORTATION ACCESS:** The Project is designed to be accessed by one (1) entrance from Graham Park Road, as shown on the MZPA. This entrance will be located and constructed in accordance with applicable Town of Dumfries criteria for such an entrance.

- a. The access to Land Bay 4 will be on the northern side of the property and will connect a portion of the property to Graham Park Road, generally as shown on the MZPA.

**VII. EXTERIOR LIGHTING:** The development of the Property will include street lighting along the Graham Park Road entrance that employs lighting fixtures designed to project the light downward (“full cut-off” fixtures). Any pole-mounted fixtures installed within

fifty (50) feet of adjacent residential properties or streets will incorporate fixtures with directional reflector systems to allow the lighting to be cast inward toward the Property.

### **VIII. PROFFERS SPECIFICALLY APPLICABLE AGE-RESTRICTED HOUSING UNITS**

- a. The Applicant will construct age-restricted multifamily residences in the locations generally shown on the MZPA.
- b. Not more than 100 such residential units may be constructed.
- c. These residential units must constitute an age-restricted community compliant with the requirements for Housing for Older Persons under federal and state law.
- d. For the purposes of these Proffers and in order to conform to the requirements of state and federal law with respect to age-restricted residential occupancy, such residential units must be occupied in accordance with the following:
  - i. Except to the extent otherwise prohibited by the Virginia Fair Housing Law, the Federal Fair Housing Amendments Act, or other applicable federal, state, or local legal requirements, 100 percent of the age-restricted dwelling units designated on the MZPA will be restricted to "Housing for Older Persons" as defined in Va. Code Ann. § 36-96.7 and 42 U.S.C. § 3607 for persons aged 55 and older, or by a surviving spouse as provided herein, as those statutes are in effect or may be amended hereafter, and pursuant to any state or federal regulations promulgated thereunder,.
  - ii. All other residents of such dwellings than those specified above must be a spouse, a cohabitant, or one who provides primary physical or economic support to the person who is 55 years of age or older. No children under the age of 18 will be permitted to reside permanently in such a home.
  - iii. Notwithstanding the foregoing limitation, any person hired to provide live-in, long term or terminal health care to a person 55 years of age or older for compensation may also occupy a dwelling during the time such person is actually providing such care.
  - iv. Guests under the age of 55 are permitted to reside in a unit for periods not to exceed thirty (30) days total for each such guest in any rolling twelve-month period.
  - v. If such units are subjected to a condominium regime under Virginia law and sold as opposed to rented, title to any lot or unit will become vested in any person under the age of 55 by reason of descent, distribution, foreclosure, or operation of law, the age restriction covenant will not work

a forfeiture or reversion of title, but rather, such person thus taking title cannot reside in such unit until he or she will have attained the age of 55. Notwithstanding this, the surviving spouse of a qualifying person will be allowed to continue to occupy a dwelling unit without regard to age.

- vi. The undersigned has responsibility for the enforcement and administration of these requirements and for compliance with state and federal regulations pertaining thereto, without limitation as to the authority of the Town of Dumfries to enforce these proffers. These occupancy restrictions will be deemed amended from time to time without further action by the Town, if required to conform to applicable state and federal law and regulations governing such age-restricted housing.

**IX. MODIFICATIONS TO PMUD REQUIREMENTS PURSUANT TO § 70-535.14(C) OF THE DUMFRIES ZONING ORDINANCE**

a. The minimum lot area required for the construction of 100 age-restricted homes in Land Bay 4 as otherwise required by the PMUD Zoning District is waived.

b. The transitional perimeter buffer required by § 70-535.10(c) of the Zoning Ordinance is waived.

SIGNATURES APPEAR ON FOLLOWING PAGES

**SIGNATURE PAGE**

Townsquare at Dumfries, LLC  
a Virginia limited liability company

By: Community Housing partners Corporation,  
a Virginia nonstock corporation, its Managing Member

By: David Schultz

Name: David Schultz

Title: Senior Vice President of Development and Construction

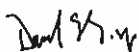


**SIGNATURE PAGE**

Townsquare at Dumfries Bond, LLC  
A Virginia limited liability company

By: CHP Townsquare at Dumfries Bond, LLC,  
a Virginia limited liability company, its Managing Member

By: Community Housing Partners Corporation  
a Virginia nonstock corporation, its Managing Member

By:  \_\_\_\_\_

Name: David Schultz

Title: Senior Vice President of Development and Construction

**SIGNATURE PAGE**

Town of Dumfries, Virginia

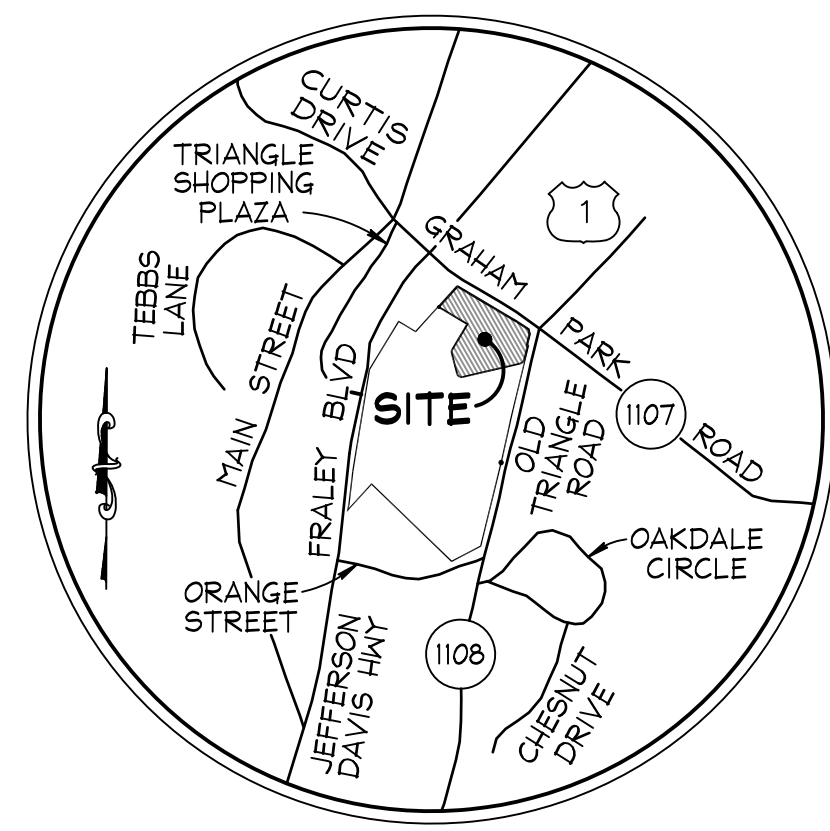
By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

P1045467.DOCX



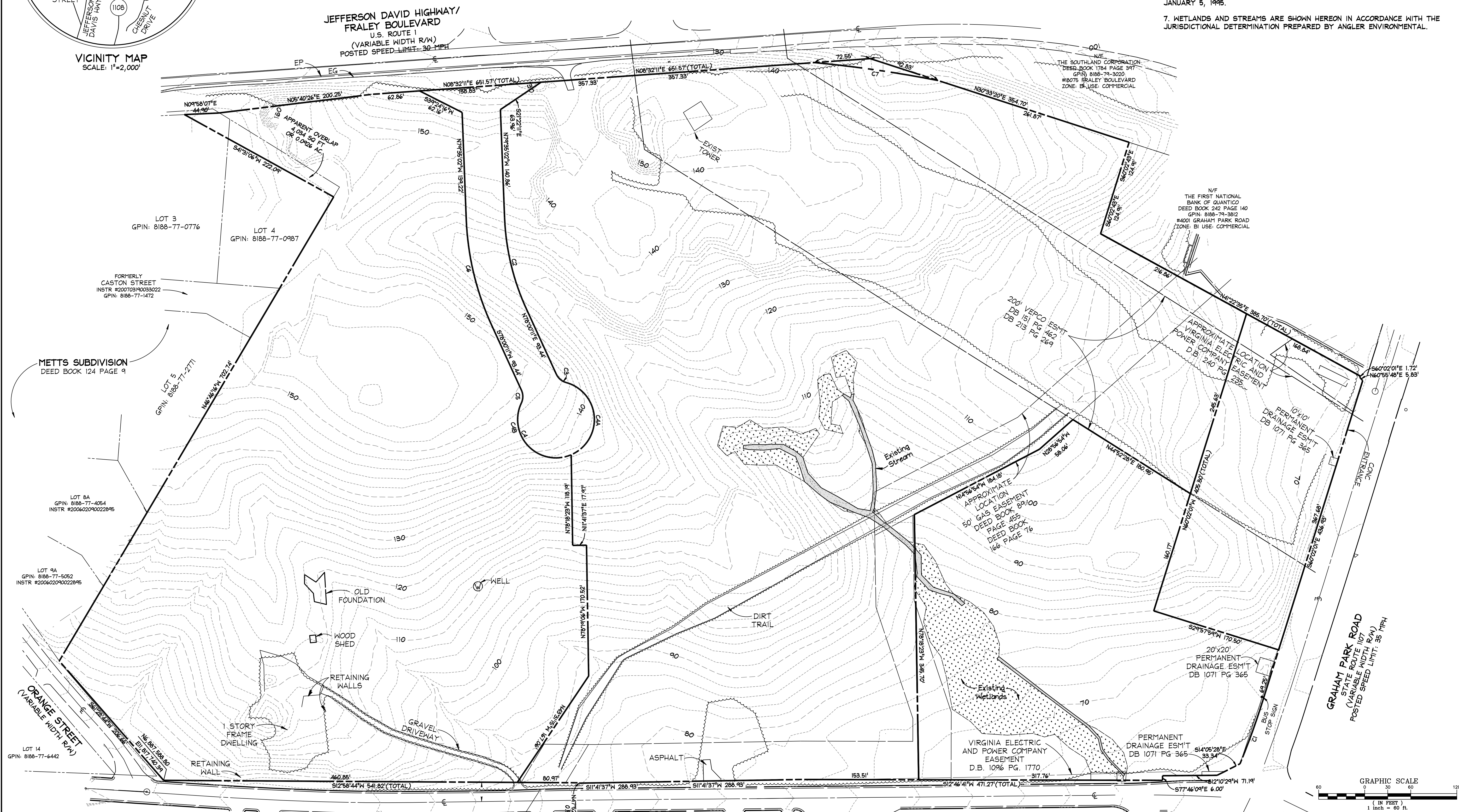


VICINITY MAP  
SCALE: 1"=2,000'



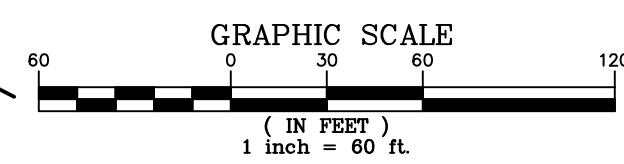
- NOTES:**
1. THE PROPERTIES DELINEATED ON THIS PLAN ARE REFERENCED ON THE PRINCE WILLIAM COUNTY TAX ASSESSMENT MAP DESIGNATED AS GPINS: 8188-79-6806, 8188-78-8078, 8188-78-4252, 8188-77-4490 AND 8188-78-2017 AND ARE ZONED: PMUD, PLANNED MIXED USE DISTRICT.
  2. TITLE COMMITMENT FURNISHED BY STEWART TITLE GUARANTY COMPANY, FILE NO. 00104-1087, EFFECTIVE DATE: APRIL 29, 2015, HOWEVER ALL EASEMENTS AND ENCUMBRANCES MAY NOT BE SHOWN ON THIS PLAN.
  3. THE EXISTING BOUNDARY INFORMATION, AS SHOWN HEREON, IS TAKEN FROM A PLAT PREPARED BY THE ENGINEERING GROUPE, INC., DATED AUGUST 27, 2018.
  4. OWNER/APPLICANTS:  
TOWNSQUARE AT DUMFRIES LLC  
4915 RADFORD AVE STE 300  
RICHMOND, VA 23230  
  
TOWNSQUARE AT DUMFRIES BOND LLC  
4915 RADFORD AVE STE 300  
RICHMOND, VA 23230  
  
TOWN OF DUMFRIES  
17755 MAIN ST  
DUMFRIES, VA 22026
  5. TOPOGRAPHIC INFORMATION, AS SHOWN HEREON, IS TAKEN FROM FIELD SHOT TOPOGRAPHY, AS PREPARED BY THE ENGINEERING GROUPE, INC., DATED OCTOBER 8, 2007.
  6. THE PROPERTY SHOWN HEREON IS LOCATED WITHIN ZONE "X" (OTHER AREAS) AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 51153C0312D, EFFECTIVE DATE JANUARY 5, 1995.
  7. WETLANDS AND STREAMS ARE SHOWN HEREON IN ACCORDANCE WITH THE JURISDICTIONAL DETERMINATION PREPARED BY ANGLER ENVIRONMENTAL.

**The Engineering Groupe Inc.**  
Engineers | Surveyors | Planners  
www.enggroupe.com  
South Office: 10333 Swarthmore Blvd, Suite 121, Woodbridge, VA 22192  
West Office: 42795 Centerville Rd, Suite 200, Ashburn, VA 20147  
PH: 703.670.0985



**CURVE TABLE**

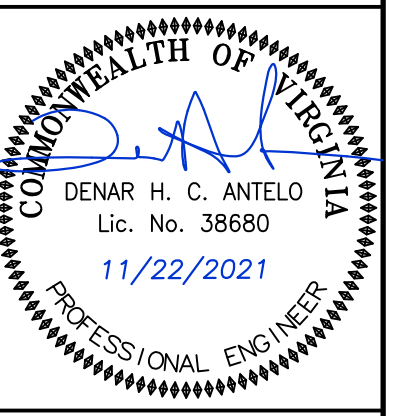
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C2	315.00'	123.22'	22°24'47"	62.41'	N89°12'34"E	122.44'
C3	20.00'	17.45'	49°59'41"	9.33'	N53°00'20"E	16.90'
C4	50.00'	244.34'	279°59'23"	41.96'	S11°59'49"E	64.29'
C4A	50.00'	123.33'	141°19'18"	142.46'	S81°19'52"E	94.36'
C4B	50.00'	121.01'	138°40'05"	132.56'	S58°39'50"W	93.57'
C5	20.00'	17.45'	49°59'41"	9.33'	N76°59'59"W	16.90'
C6	365.00'	142.78'	22°24'47"	72.32'	S89°12'34"W	141.87'



**OLD TRIANGLE ROAD**  
STATE ROUTE 1108  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 25 MPH

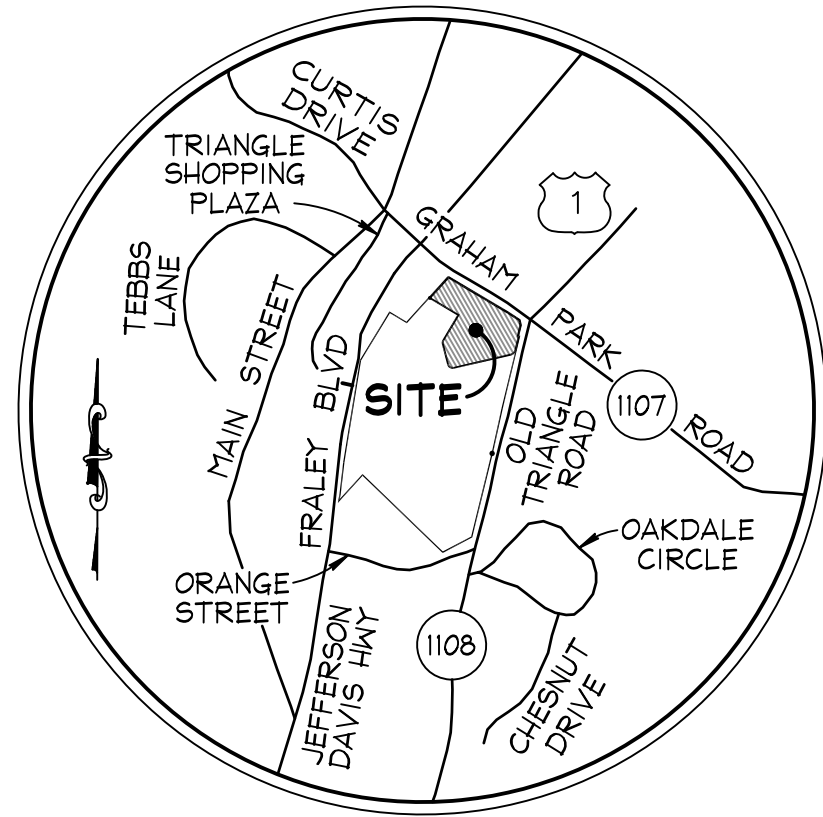
NO.	DATE	COUNTY REVISIONS

EXISTING CONDITIONS PLAN  
**TOWNSQUARE**  
MASTER ZONING PLAN AMENDMENT  
PCA 2016-001  
TOWN OF DUMFRIES, VIRGINIA



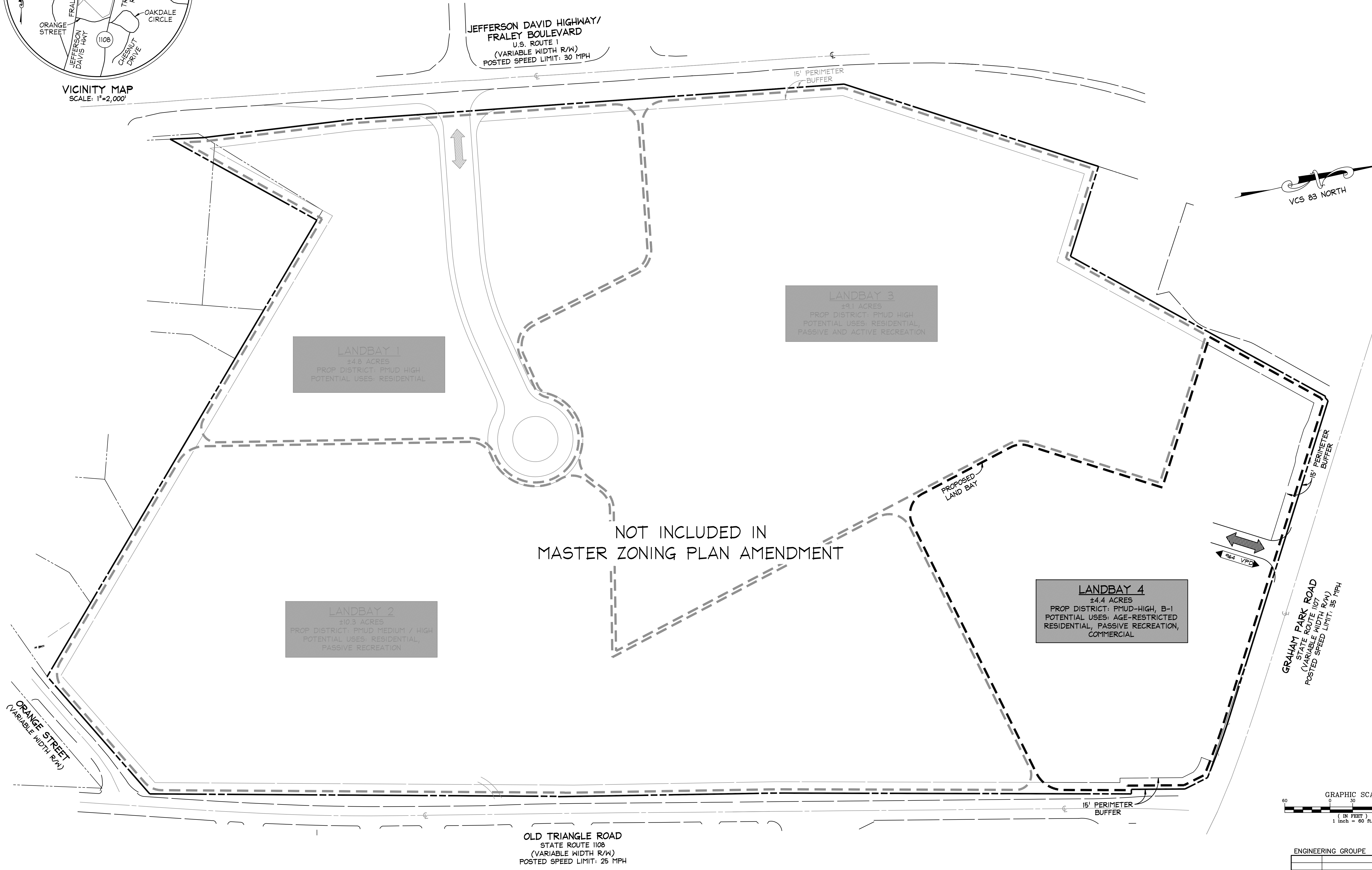
DATE	ACTION	ENGINEERING GROUPE PROJECT STATUS
11/30/20	REVISED PER COUNTY COMMENTS	

DATE: OCT. 30, 2020  
SCALE: 1"=60'  
DESIGNER: DA/SO  
DRAFTSMAN: DMB  
FILE NO.: M-3209  
SHEET 2 OF 4



VICINITY MAP  
SCALE: 1"=2,000'

JEFFERSON DAVID HIGHWAY/  
FRALEY BOULEVARD  
U.S. ROUTE 1  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 30 MPH



**LANDBAY 1**  
±4.8 ACRES  
PROP DISTRICT: PMUD HIGH  
POTENTIAL USES: RESIDENTIAL

**LANDBAY 2**  
±10.3 ACRES  
PROP DISTRICT: PMUD MEDIUM / HIGH  
POTENTIAL USES: RESIDENTIAL,  
PASSIVE RECREATION

**LANDBAY 3**  
±4.1 ACRES  
PROP DISTRICT: PMUD HIGH  
POTENTIAL USES: RESIDENTIAL,  
PASSIVE AND ACTIVE RECREATION

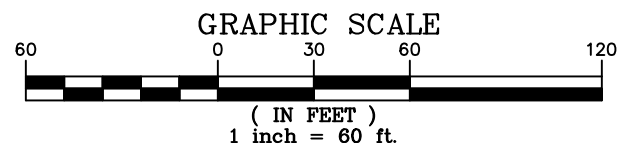
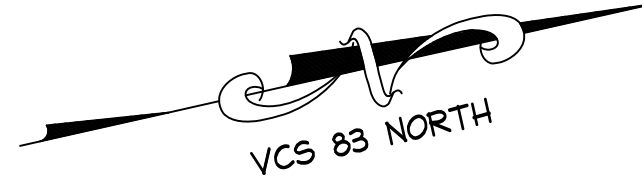
**LANDBAY 4**  
±4.4 ACRES  
PROP DISTRICT: PMUD-HIGH, B-1  
POTENTIAL USES: AGE-RESTRICTED  
RESIDENTIAL, PASSIVE RECREATION,  
COMMERCIAL

NOT INCLUDED IN  
MASTER ZONING PLAN AMENDMENT

ORANGE STREET  
(VARIABLE WIDTH R/W)

OLD TRIANGLE ROAD  
STATE ROUTE 1108  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 25 MPH

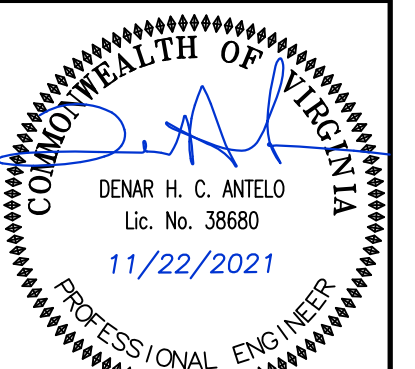
GRAHAM PARK ROAD  
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**LAND BAY 4 DEVELOPMENT SUMMARY:**  
 PARCEL GPINS.....8188-79-6806,  
 8188-78-8078 (PART),  
 8188-78-4252 (PART)  
 TOTAL SITE AREA.....±4.38 AC  
 EXISTING ZONE.....PMUD  
 PROPOSED USES.....AGE-RESTRICTED MF,  
 COMMERCIAL

NO.	DATE	COUNTY REVISIONS

LAND BAY PLAN  
**TOWNSQUARE**  
MASTER ZONING PLAN AMENDMENT  
PCA 2018-001  
TOWN OF DUMFRIES, VIRGINIA



DATE	ACTION	PROJECT STATUS
11/30/20	REVISED PER COUNTY COMMENTS	

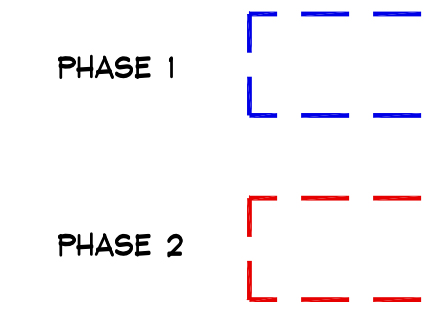
DATE:	OCT. 30, 2020
SCALE:	1"=60'
DESIGNER:	DA/SO
DRAFTSMAN:	DMB
FILE NO.:	M-3209
SHEET	3 OF 4

**The Engineering Group Inc.**  
 Engineers | Surveyors | Planners  
 www.engrgrupec.com  
 South Office  
 10333 Southpoint Landing Blvd, Suite 121  
 42795 Germantown, TN 37034  
 PH: 703.670.0985  
 West Office  
 13860 George Drive, Suite 200  
 42705 Germantown, TN 37034  
 PH: 703.670.0985

**GENERAL NOTES:**

1. THE PROPOSED LAYOUT, INCLUDING BUILDINGS, TRAVELWAYS, PARKING, AND SWM, ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL ENGINEERING.
2. PROPOSED LANDSCAPING SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING. A LANDSCAPING PLAN WILL BE PROVIDED WITH THE FINAL SITE PLAN, WITH PLANTINGS SHOWN IN ACCORDANCE WITH TOWN OF DUMFRIES ORDINANCE STANDARDS. LANDSCAPED AREAS UNDER THE EXISTING POWER EASEMENT WILL BE PLANTED AS PERMITTED IN ACCORDANCE WITH THE APPROVED PLANT LIST FROM DOMINION.
3. DUMPSTERS, LOADING SPACES AND HANDICAP SPACES FOR THE OVERALL DEVELOPMENT WILL BE PROVIDED AT FINAL SITE PLAN. COMMERCIAL PARKING WILL BE SHARED WITH THE RESIDENTS.
4. SWM/BMP AREA, AS SHOWN HEREON, IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING. ADDITIONAL AREAS OF SWM AND BMP MAY BE NECESSARY TO MEET CURRENT STORMWATER MANAGEMENT STANDARDS.

**PHASE LEGEND:**

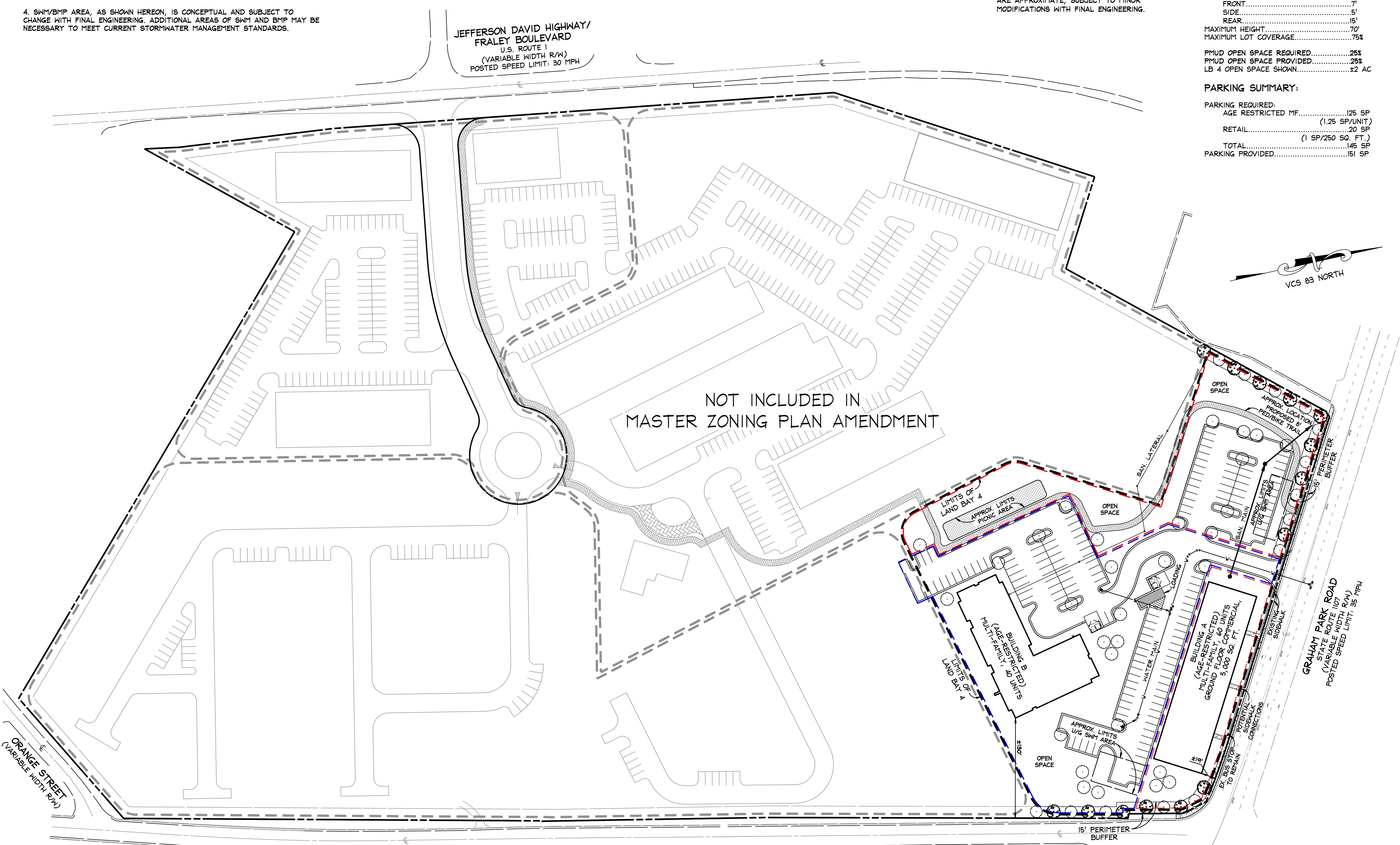


NOTE: LIMITS OF PHASES, AS SHOWN HEREON, ARE APPROXIMATE, SUBJECT TO MINOR MODIFICATIONS WITH FINAL ENGINEERING.

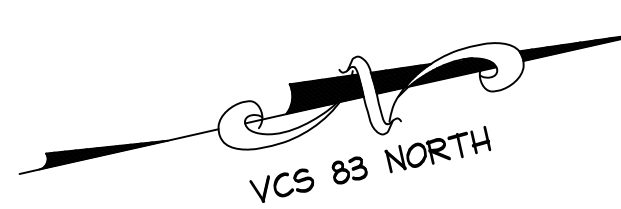
**LAND BAY 4 DEVELOPMENT SUMMARY:**

PARCEL GPINS.....	8188-79-6806, 8188-78-8078 (PART), 8188-78-4252 (PART)
TOTAL SITE AREA.....	14.38 AC
EXISTING ZONE.....	PMUD
PROPOSED USES.....	AGE-RESTRICTED MF, COMMERCIAL
TOTAL RESIDENTIAL UNITS.....	100 UNITS
APPROXIMATE COMMERCIAL AREA.....	5,000 SQ. FT.
<b>SETBACKS:</b>	
FRONT.....	7'
SIDE.....	5'
REAR.....	15'
MAXIMUM HEIGHT.....	70'
MAXIMUM LOT COVERAGE.....	75%
PMUD OPEN SPACE REQUIRED.....	25%
PMUD OPEN SPACE PROVIDED.....	25%
LB 4 OPEN SPACE SHOWN.....	12 AC
<b>PARKING SUMMARY:</b>	
PARKING REQUIRED:	
AGE RESTRICTED MF.....	125 SP (1.25 SP/UNIT)
RETAIL.....	20 SP (1 SP/250 SQ. FT.)
TOTAL.....	145 SP
PARKING PROVIDED.....	151 SP

JEFFERSON DAVID HIGHWAY/  
FRALEY BOULEVARD  
U.S. ROUTE 1  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 30 MPH



NOT INCLUDED IN  
MASTER ZONING PLAN AMENDMENT



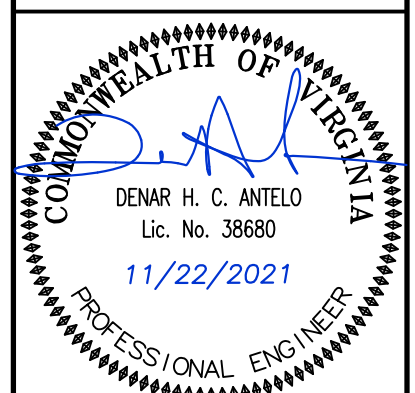
**The Engineering Group Inc.**  
Engineers | Surveyors | Planners  
www.theengineeringgroup.com  
13580 Grouse Drive, Suite 200  
Woodbridge, VA 22192  
PH: 703.670.0985

West Office  
42705 Generation Drive, Suite 200  
Ashburn, VA 20147  
PH: 703.670.0985

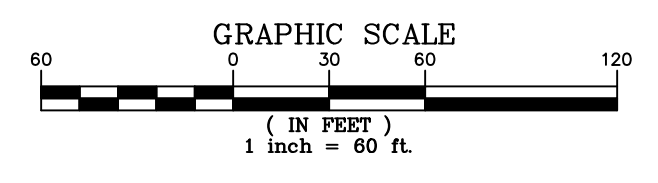
South Office  
10333 Southpoint Landing Blvd, Suite 121  
Fredericksburg, VA 22407  
PH: 703.670.0985

NO.	DATE	COUNTY REVISIONS

ILLUSTRATIVE / PHASING PLAN  
**TOWNSQUARE**  
MASTER ZONING PLAN AMENDMENT  
PCA 2016-001  
TOWN OF DUMFRIES, VIRGINIA



OLD TRIANGLE ROAD  
STATE ROUTE 1109  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 25 MPH



DATE	ACTION	ENGINEERING GROUPE	PROJECT STATUS	DATE	SCALE:
11/22/21	REVISED COMMERCIAL AREA			OCT. 30, 2020	1"=60'
11/30/20	REVISED PER COUNTY COMMENTS				

DESIGNER: DA/SO  
DRAFTSMAN: DMB  
FILE NO. M-3209  
SHEET 4 OF 4

## MEMORANDUM

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Date: November 24, 2020 Project #: 19150

To: Will Capers, PTP  
Town of Dumfries – Director of Planning and Community Development  
17739 Main Street, Suite 200  
Dumfries, VA 22026

From: Chris Tiesler, PE; Andrew Butsick, PE

Project: Townsquare at Dumfries

Subject: Proffer Condition Amendment – Land Bay 4 Response to Town Comments

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Kittelison & Associates, Inc. (Kittelison) has prepared this memorandum to respond to transportation-related comments from Town of Dumfries staff (Will Capers – Director of Planning and Community Development) related to the Proffer Condition Amendment (PCA) for Land Bay 4 of the Townsquare at Dumfries development. Transportation-related comments provided by staff in February 2020 are listed below in *italics*; responses follow in normal text.

In summary, the proposed PCA does not require a full turn lane at the Graham Park Road access. While a taper is technically triggered during one peak hour, the PCA generates less overall traffic compared to the original TIA at this access. If necessary, a design waver can be submitted. The applicant still intends to submit an access management waiver for the entrance as was state in the original TIA. However, this action is not required for PCA approval and will be addressed later on in the design/permitting stages of the project.

### COMMENT/RESPONSE

*Comment #3. The increase of traffic generated by the proposed application to the site access driveway along Graham Park was not considered in the TIA accepted in 2016. Given the anticipated volume expected to be assigned to the driveway staff request the applicant submit turn lane warrants as a part of the PCA application.*

**Response:** The 2016 TIA assumed Land Bay 4 would have a single entrance to Graham Park Road serving 42 Senior Adult Housing units and 8,000 square feet of General Office space. The current plan calls for 100 Senior Adult Housing units 6,500 square-feet of ground floor retail/commercial space. **Table 1** provides a trip generation comparison between the 2016 TIA and the current proposed plan.

**Table 1. Land Bay 4 Trip Generation Comparison**

Land Bay 4 in Approved TIA - Sept. 2016 (ITE Trip Generation Manual, 9th Edition)				Weekday Daily	Peak Hour Adjacent Street					
Land Use	ITE Code	Units			Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Senior Adult Housing - Attached	252	42	units	146	8	3	5	12	6	6
General Office	710	8,000	1000 sq. ft	193	25	22	3	87	15	72
<b>Total</b>				<b>339</b>	<b>33</b>	<b>25</b>	<b>8</b>	<b>99</b>	<b>21</b>	<b>78</b>
Land Bay 4 in Current Site Plan - Nov. 2020 (ITE Trip Generation Manual, 10th Edition)				Weekday Daily	Peak Hour Adjacent Street					
Land Use	ITE Code	Units			Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Senior Adult Housing - Attached	252	100	units	377	20	7	13	26	14	12
Shopping Center	820	6,500	1000 sq. ft	937	6	4	2	72	35	37
<i>Internal Trips (5% AM, 10% PM)</i>				(47)	0	0	0	(7)	(4)	(3)
<i>Pass-By (34%)</i>				(303)	(2)	(1)	(1)	(22)	(11)	(11)
<b>Total:</b>				<b>1,314</b>	<b>26</b>	<b>11</b>	<b>15</b>	<b>98</b>	<b>49</b>	<b>49</b>
<i>Less Internal Trips</i>				(47)	0	0	0	(7)	(4)	(3)
<i>Less Pass-By</i>				(303)	(2)	(1)	(1)	(22)	(11)	(11)
<b>Net New Trips</b>				<b>964</b>	<b>24</b>	<b>10</b>	<b>14</b>	<b>69</b>	<b>34</b>	<b>35</b>
<b>Comparison of Total Trips</b>										
<b>Approved TIA - September 2016</b>				339	33	25	8	99	21	78
<b>Proposed Amendment - November 2020</b>				1,314	26	11	15	98	49	49
<b>Difference</b>				<b>975</b>	<b>-7</b>	<b>-14</b>	<b>7</b>	<b>-1</b>	<b>28</b>	<b>-29</b>

As shown in Table 1, the current plan will generate fewer weekday a.m. and p.m. peak hour trips compared to the 2016 TIA. The increase in weekday daily trips is predominantly a result of the different trip generations patterns/profiles of General Office and Shopping Center uses. Offices typically have pronounced trip generation “peaks” during the weekday commuter hours but generate relatively few trips during off-peak hours throughout the day. Shopping Center trip profiles are generally lower during morning hours but increase to a more sustained generation throughout the remainder of the day. Note that during the weekday p.m. peak hour, the General Office use was still projected to generate more trips than the commercial/retail use.

It is also worth noting that the prior land use code used in the TIA (826 – Specialty Retail) no longer exists in the ITE manual, and as such a more conservative land use code (820 – Shopping Center) was applied. This produces a conservative estimate of trips potentially generated by the retail use(s) proposed on this site.

**Total Traffic Operations – Graham Park Road Site Driveway**

An updated operational analysis of the Graham Park Road site driveway was conducted assuming the new Land Bay 4 land uses. These results were compared to the 2016 TIA results and are compared below in **Table 2**.



**Table 2. Graham Park Road Site Driveway Operational Analysis - Comparison**

Intersection	Weekday AM Peak Hour			Weekday PM Peak Hour		
	LOS	Delay (sec)	V/C	LOS	Delay (sec)	V/C
Graham Park Road & Site Driveway	<b>2016 TIA</b>					
	C	17.4	0.03	C	21.9	0.29
	<b>2020 Land Bay 4 Update</b>					
	C	17.6	0.05	C	19.1	0.13

LOS – Level of Service  
V/C – Volume-to-capacity ratio

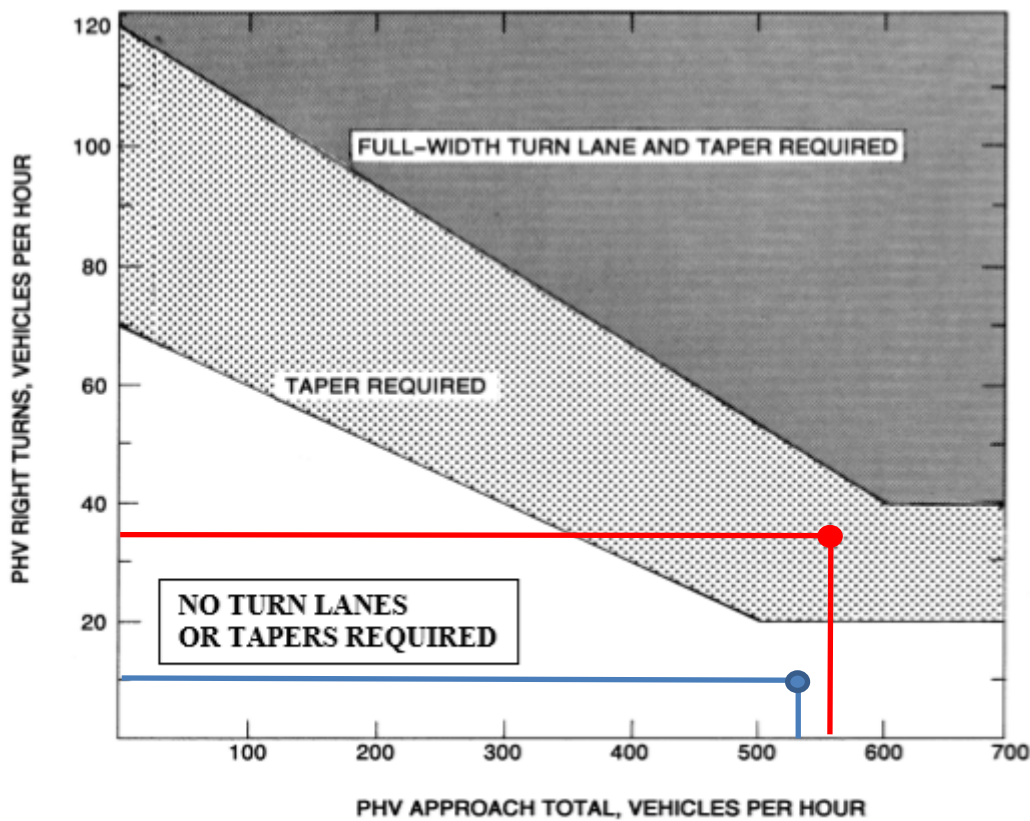
As shown in Table 2, the Graham Park Road/Site Driveway intersection is forecast to continue to operate at LOS C during both the weekday a.m. and p.m. peak hours. **Attachment A** contains the worksheets.

**Right-Turn Lane Warrants**

VDOT

Figure 3-26 in Appendix F of the VDOT *Road Design Manual* provides a warrant for right-turn lanes/tapers on two-lane highways. Graham Park Road is a two-lane roadway classified as a major collector with a posted 35 mile-per-hour speed limit. **Exhibit 1** below illustrates the projected volumes at the Graham Park Road/Site Driveway intersection.

**Exhibit 1. VDOT Right-Turn Lane Warrant (RDM Appendix F Figure 3-26)**



AM —  
PM —

As shown in Exhibit 1, the warrant suggests a right-turn taper would be required due to conditions during the weekday p.m. peak hour only.

Despite the warrant being triggered by the weekday p.m. hour, the operational performance of this intersection during peak periods and the lack of on-site impediments to traffic entering the site does not provide a rational nexus to requiring such an improvement. The intersection is projected to operate well below capacity and at LOS C without a taper during both study time periods, and the proposed land use changes contemplated by the PCA represent a net *reduction* of site-generated trips at this access compared to the 2016 TIA.

*Comment #6. Please verify if the proposed driveway for Land Bay 4 meets the minimal distance requirements per the VDOT Road Design Manual.*

**Response:** As stated in the 2106 TIA, per Appendix F of VDOT's Road Design Manual (RDM), the minimum required spacing between the proposed full-movement entrance on Graham Park Road (a major collector with a posted 35 mile-per-hour speed limit) and the adjacent intersections/entrances is 335 feet. The proposed access point on Graham Park Road is located greater than 335 feet from the downstream Graham Park Road/Old Triangle Road intersection. Proposed spacing to the upstream commercial entrance is approximately 245 feet; however, increasing this spacing would decrease the spacing between the proposed driveway and downstream Graham Park Road/Old Triangle Road intersection. The applicant still intends to submit an access management waiver for this entrance. However, this action is not required for PCA approval and will be addressed later on in the design/permitting stages of the project.

## CONCLUSION

The proposed PCA does not require a full turn lane at the Graham Park Road access. While a taper is technically triggered during one peak hour, the PCA generates less overall traffic compared to the original TIA at this access. If necessary, a design waiver can be submitted. The applicant still intends to submit an access management waiver for the entrance as was state in the original TIA. However, this action is not required for PCA approval and will be addressed later on in the design/permitting stages of the project.

**Attachment A**  
Updated Total Traffic Analysis

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Vol, veh/h	525	10	0	509	14	0
Future Vol, veh/h	525	10	0	509	14	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	571	11	0	553	15	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	582	0	854
Stage 1	-	-	-	-	577
Stage 2	-	-	-	-	277
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1002	-	302
Stage 1	-	-	-	-	530
Stage 2	-	-	-	-	751
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1002	-	302
Mov Cap-2 Maneuver	-	-	-	-	302
Stage 1	-	-	-	-	530
Stage 2	-	-	-	-	751

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	302	-	-	1002	-
HCM Lane V/C Ratio	0.05	-	-	-	-
HCM Control Delay (s)	17.6	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Vol, veh/h	528	34	0	511	35	0
Future Vol, veh/h	528	34	0	511	35	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	2	0	0
Mvmt Flow	574	37	0	555	38	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	611	0	871
Stage 1	-	-	-	-	593
Stage 2	-	-	-	-	278
Critical Hdwy	-	-	4.1	-	6.8
Critical Hdwy Stg 1	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	5.8
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	978	-	294
Stage 1	-	-	-	-	521
Stage 2	-	-	-	-	750
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	978	-	294
Mov Cap-2 Maneuver	-	-	-	-	294
Stage 1	-	-	-	-	521
Stage 2	-	-	-	-	750

Approach	EB	WB	NB
HCM Control Delay, s	0	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	294	-	-	978	-
HCM Lane V/C Ratio	0.129	-	-	-	-
HCM Control Delay (s)	19.1	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

# Townsquare

Dumfries, Virginia

March 2016



**KITTELSON & ASSOCIATES, INC.**  
TRANSPORTATION ENGINEERING/PLANNING

# Transportation Impact Analysis

## Townsquare

Dumfries, Virginia

Prepared For:  
**Community Housing Partners**  
David Schultz  
4915 Radford Avenue, Suite 300  
Richmond, Virginia 23220

Prepared By:  
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Project Manager: Chris Tiesler, PE  
Project Principal: John Callow  
Project Analysts: Elizabeth Gordon

Project No. 19150.00

March 2016



A circular professional engineer seal for Christopher B. Tiesler, Commonwealth of Virginia, License No. 47441. The seal has a decorative border of small black diamonds. The text 'COMMONWEALTH OF VIRGINIA' is at the top, 'PROFESSIONAL ENGINEER' is at the bottom, and 'CHRISTOPHER B. TIESLER Lic. No. 47441' is in the center.
Christopher B. Tiesler No. 47441
Kittelson & Associates, Inc. Associate Engineer

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Section 1  
Executive Summary

## EXECUTIVE SUMMARY

A traffic operations analysis has been conducted to confirm that the transportation system can adequately support the proposed development of the Townsquare development, in fulfillment of Virginia Department of Transportation's (VDOT) Chapter 870 requirements. The scope of the project analysis was developed in collaboration with Town and VDOT staff.

Specifically, this analysis includes:

- Year 2015 existing land use and transportation system conditions within the site vicinity;
- Forecast year 2020 background traffic conditions (without site development) during the weekday a.m. and p.m. peak periods including in-process/approved developments and regional growth;
- Trip generation and distribution estimates for the proposed development;
- Forecast year 2020 total traffic conditions based on full build out of the development including queuing and turn lane warrant analyses; and,
- Conclusions and recommendations.

Based on the results of the transportation impact analysis, all intersections are forecast to operate acceptably with full build-out of the proposed development and assuming provision of the recommended mitigations.

## TRANSPORTATION IMPACT ANALYSIS FINDINGS

The findings of this analysis and our recommendations are discussed below.

### Existing Conditions

- All study intersections currently operate at LOS D or better during all study time periods.

### 2020 Background Traffic Conditions

- A two percent annual growth rate (compounded annually) was used to account for regional traffic growth.
- In-process traffic from the First Town Center development was added to background traffic to project year 2020 background traffic conditions.
- All study intersections are forecast to continue to operate at LOS D or better during all study time periods.



## Proposed Development

- Community Housing Partners is applying to rezone and develop a mixed-use development in Dumfries, Virginia. The site is comprised of four parcels (GPIN Parcels 8188-78-5384, 8188-78-8257, 8188-78-8432 and 8188-77-5398), and is located in the southeast quadrant of the Fraley Boulevard (Route 1)/Graham Park Road intersection.
- The concept development plan includes 200 multi-family units, 105 townhouses, 20,000 SF of retail uses, 8,000 SF of commercial/public facility uses (office), and 40,000 SF of a self-storage (mini-warehouse) facility.
- The development is estimated to generate approximately 2,856 net new weekday daily trips, 320 weekday a.m. (117 in, 203 out), and 328 weekday p.m. (161 in, 167 out) peak hour trips.

The development proposes two access points: a right-in/right-out site driveway on Fraley Boulevard (Route 1 NB) and a full movement site driveway on Graham Park Road.

## 2020 Total Traffic Conditions

- All study intersections are forecast to continue to operate at LOS D or better during all study time periods.
- A northbound right-turn lane is warranted at the right-in/right-out site driveway on Fraley Boulevard (Route 1 NB). The applicant proposes to construct a turn lane with 100 feet of storage and a 100-foot taper.
- The lack of a direct connection from the site driveway on Fraley Boulevard (Route 1 NB) to Main Street (Route 1 SB) introduces out-of-direction travel and increases left-turn demand at the Route 1/Curtis Drive/Graham Park Road and Route 1/Quantico Gateway Drive intersections.
  - During the peak 15-minute period of both peak hours, northbound left-turn queues at the Fraley Boulevard (Route 1 NB)/Graham Park Road are forecast to extend beyond the available storage. However, this movement is forecast to operate well below capacity (0.29 and 0.27 during the weekday a.m. and p.m. peak hours, respectively), and is not anticipated to adversely impact traffic operations as compared to background conditions.

## RECOMMENDATIONS

The following improvements are recommended to mitigate the impacts of the proposed Townsquare development.

- Construct a northbound right-turn lane on turn lane on Fraley Boulevard (Route 1 NB) with 100 feet of storage and a 100-foot taper.

Section 2  
Introduction

## INTRODUCTION

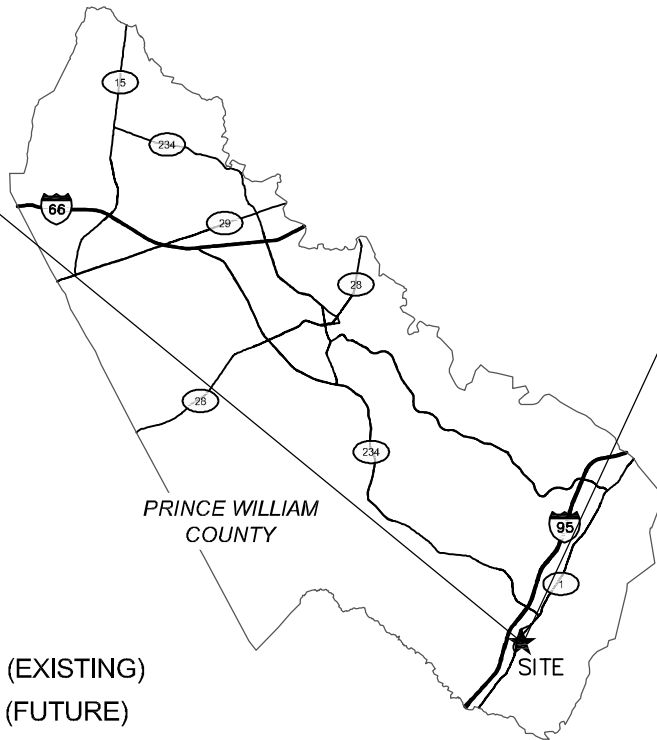
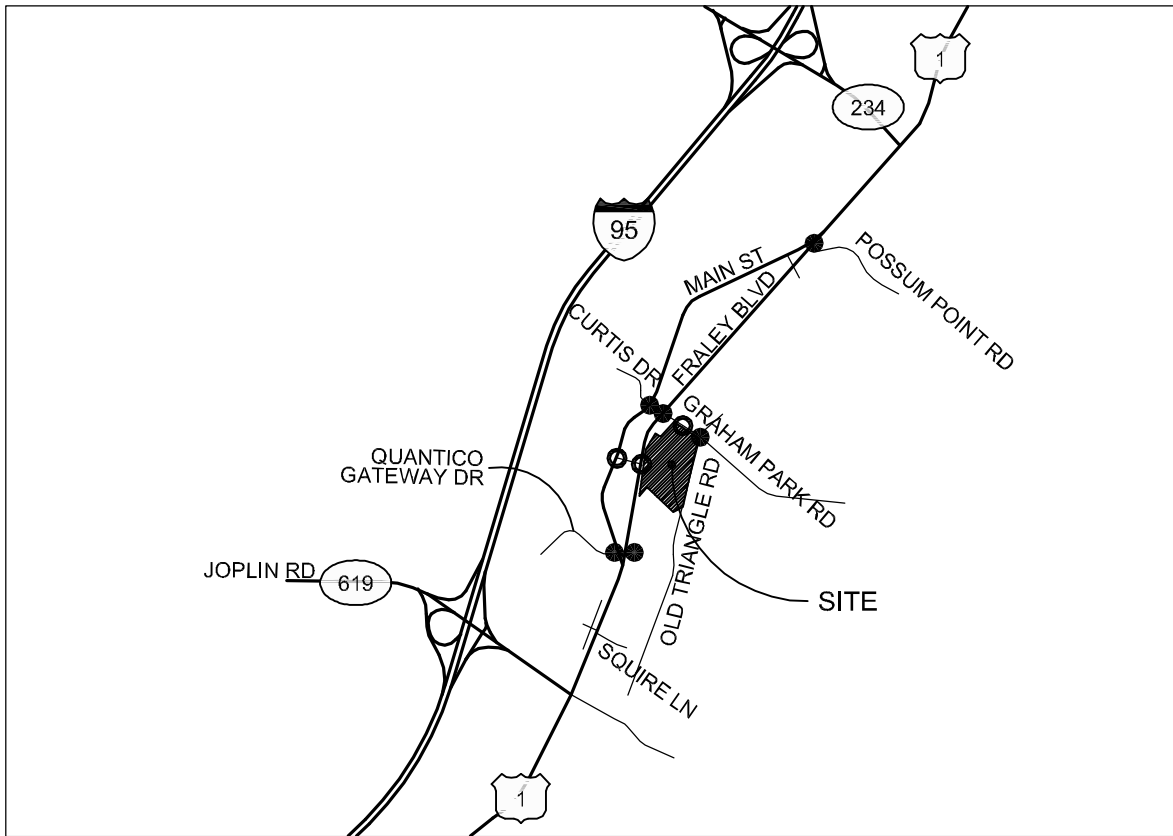
Community Housing Partners is applying to rezone and develop a mixed-use development in Dumfries, Virginia. The site is comprised of four parcels (GPIN Parcels 8188-78-5384, 8188-78-8257, 8188-78-843 and 8188-77-5398), and is located in the southeast quadrant of the Route 1 (Fraleley Boulevard)/Graham Park Road intersection as illustrated in **Figure 1**. The concept development plan includes 200 multi-family units, 105 townhouses, 20,000 SF of retail uses, 8,000 SF of commercial/public facility uses (office), and 40,000 SF of a self-storage (mini-warehouse) facility. Two access points are proposed: a right-in/right-out access to Fraleley Boulevard (Route 1 NB), and a full access to Graham Park Road. The area surrounding the site is generally suburban with some residential development and small commercial/industrial uses in the immediate vicinity of the site.

The general topography can be best described as level to rolling terrain. A preliminary site plan of the development is shown in **Figure 2**. **Figure 3** illustrates the current Town of Dumfries zoning map. The current zoning is R-2, and the proposed zoning district is *Planned Mixed Use District* (PMUD). The development is expected to be fully built out in the year 2020.

This analysis determines the transportation related impacts associated with the proposed Townsquare development and was prepared in accordance with Virginia Department of Transportation (VDOT) requirements for traffic impact studies. The study intersections, time periods for analysis, and scope of this project were selected after Town and VDOT staff were consulted. A *scoping letter provided by VDOT for this project is provided in **Appendix A***.

A traffic operations analysis has been conducted to confirm that the transportation system can adequately support the proposed development. Specifically, this analysis includes:

- Year 2015 existing land use and transportation system conditions within the site vicinity;
- Forecast year 2020 background traffic conditions (without site development) during the weekday a.m. and p.m. peak periods including in-process/approved developments and regional growth;
- Trip generation and distribution estimates for the proposed development;
- Forecast year 2020 total traffic conditions based on full build out of the development including queuing and turn lane warrant analyses; and,
- Conclusions and recommendations.



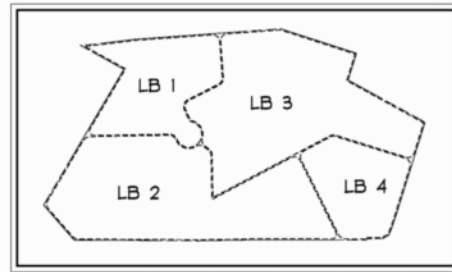
- - STUDY INTERSECTION (EXISTING)
- - STUDY INTERSECTION (FUTURE)

**SITE VICINITY MAP  
DUMFRIES, VIRGINIA**

**Figure  
1**

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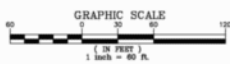
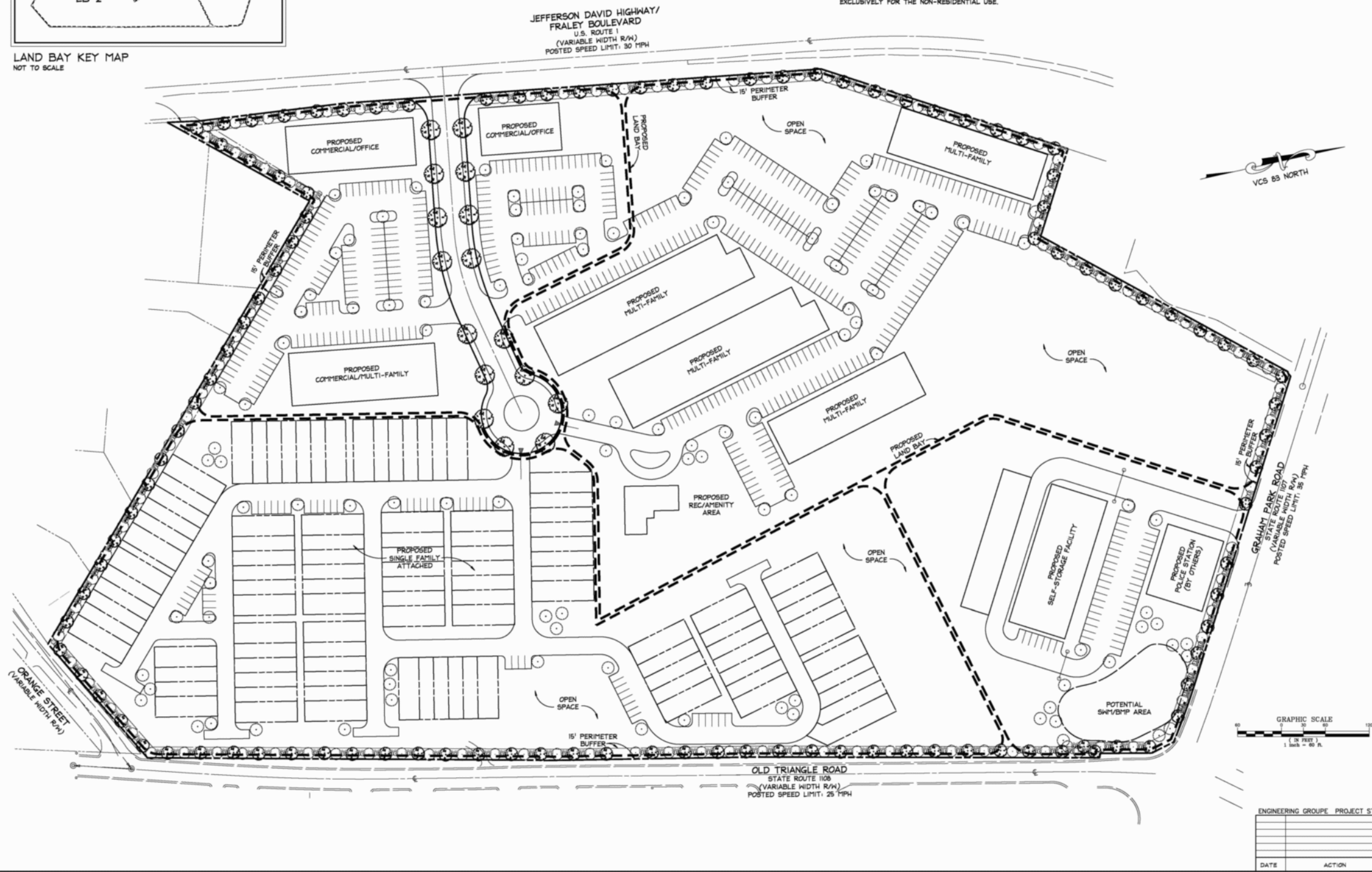
LAND BAY KEY MAP  
NOT TO SCALE

NOTES:

- 1) THE PROPOSED LAYOUT, INCLUDING BUILDINGS, TRAVELWAYS, PARKING, AND SHIP, ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL ENGINEERING.
2. PROPOSED LANDSCAPING SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING. A LANDSCAPING WILL BE PROVIDED WITH THE FINAL SITE PLAN, WITH PLANTINGS SHOWN IN ACCORDANCE WITH TOWN OF DUMFRIES ORDINANCE STANDARDS.
3. DUMPSTERS AND LOADING SPACES FOR THE COMMERCIAL AREAS AND HANDICAP SPACES FOR THE OVERALL DEVELOPMENT WILL BE PROVIDED AT FINAL SITE PLAN. COMMERCIAL PARKING WILL BE SHARED WITH THE RESIDENTS. THE COMMERCIAL BUILDING ADJACENT TO GRAHAM PARK ROAD WILL HAVE A PARKING AREA DEDICATED EXCLUSIVELY FOR THE NON-RESIDENTIAL USE.

DEVELOPMENT SUMMARY:

PARCEL GPINS.....	8186-78-8257, 8186-77-5396, 8186-78-5384 & 8186-78-5432
TOTAL SITE AREA.....	128.6 AC
EXISTING ZONE.....	R-2
PROPOSED ZONE.....	PMUD
PROPOSED USES.....	COMMERCIAL, OFFICE, RESIDENTIAL (SFA, MF)
OVERALL OPEN SPACE REQUIRED.....	25%
OVERALL OPEN SPACE PROVIDED.....	25%



DATE	ACTION	ENGINEERING GROUP	PROJECT STATUS

**The Engineering Groupe**  
 Inc.  
 Engineers | Surveyors | Planners  
 4936 South Orange  
 Woodbridge, VA 22192  
 PH: 540.703.5987 FAX: 540.710.5988

NO.	DATE	COUNTY	REVISIONS

ILLUSTRATIVE PLAN  
**TOWNSQUARE**  
 ORANGE FIELDS PROPERTIES  
 TOWN OF DUMFRIES  
 VIRGINIA

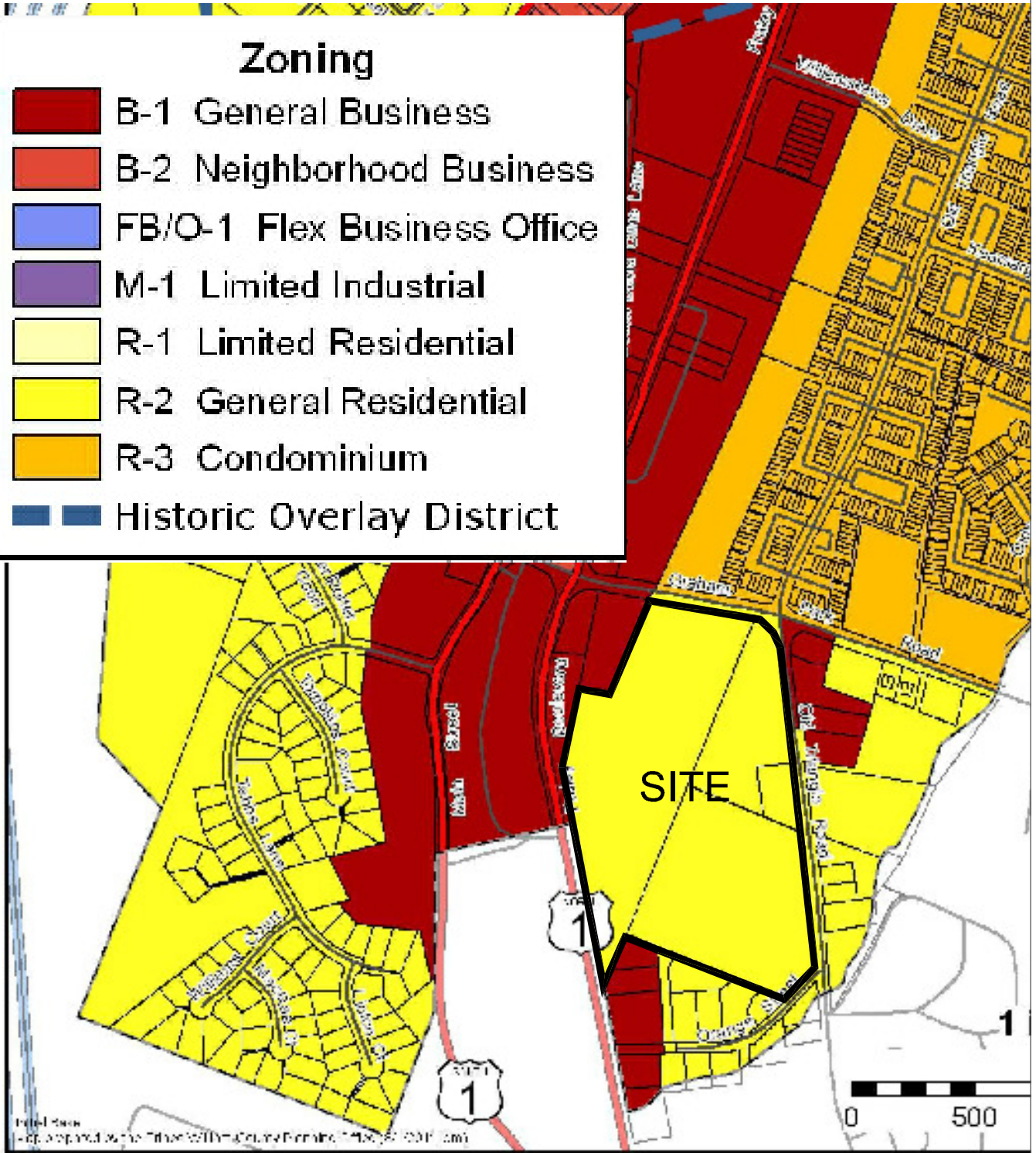
DATE:	MARCH 4, 2016
SCALE:	1"=60'
DESIGNER:	DA/SO
CHECKSMAN:	DMD
FILE NO.:	
SHEET:	4 OF 4

©:PROJECT\Wai\_Prosperity-Graham Park\_Drive\PLANNING\DWG\Resorcing\Master\_Resorcing\Illustrative\_Plan.dwg, Made: 3/15/2016 3:19:12 PM, dmb, 1.60

**CONCEPTUAL SKETCH SITE PLAN  
 THE ENGINEERING GROUPE (MARCH 4, 2016)  
 DUMFRIES, VIRGINIA**

Figure  
2

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**TOWN ZONING MAP AS OF MARCH 20, 2012 DUMFRIES, VIRGINIA**

**Figure 3**

Section 3  
Existing Conditions

## EXISTING CONDITIONS

The proposed site was visited and inventoried in October 2015. At that time, information was collected regarding site conditions, adjacent land use, existing transportation facilities and traffic operations in the study area.

### Transportation Facilities

**Table 1** summarizes the primary transportation facilities in the site vicinity. **Figure 4** shows the existing lane configurations and traffic control devices at the study intersections.

Table 1 Existing Transportation Facilities and Roadway Designations

Roadway	Classification <sup>1</sup>	Number of Lanes	Speed Limit (mph)	Median	Side-walks	Bicycle Lanes	On-Street Parking	Surface
Fraleley Boulevard (Route 1 NB)	Other Principal Arterial	2	35	No	No	No	No	Paved
Main Street (Route 1 SB)	Other Principal Arterial	2	35	No	Yes	No	Yes	Paved
Possum Point Road	Minor Collector	2	25	No	No	No	No	Paved
Graham Park Road	Major Collector	4	35	No	Yes	No	No	Paved
Curtis Drive	Unclassified	2	25	No	Yes	No	No	Paved
Old Triangle Road	Unclassified	2	25	No	No	No	No	Paved
Quantico Gateway Drive	Unclassified	2	25	No	Yes	No	No	Paved

<sup>1</sup> Classifications based on VDOT's 2014 Functional Classification Map.

### Pedestrian and Bicycle Facilities

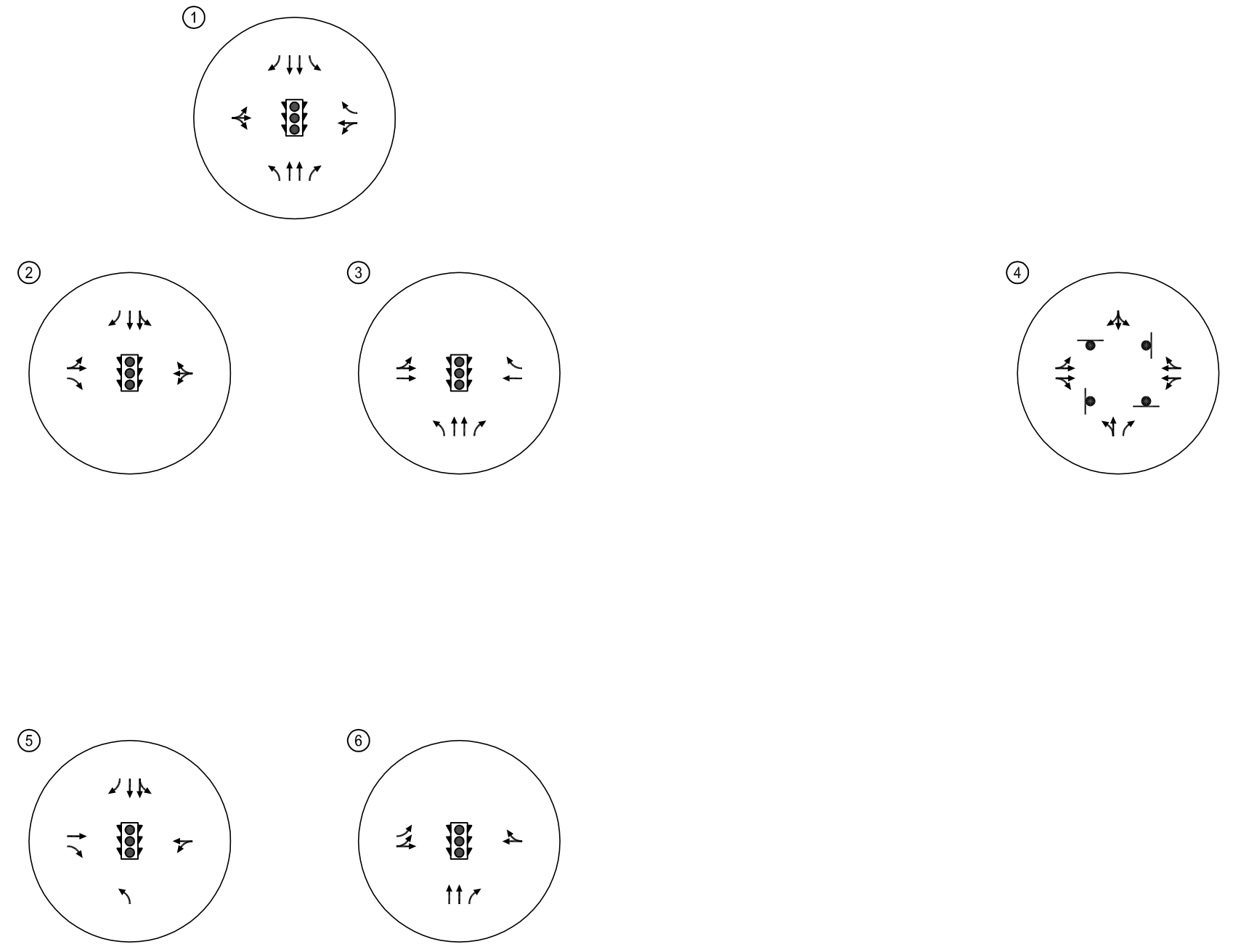
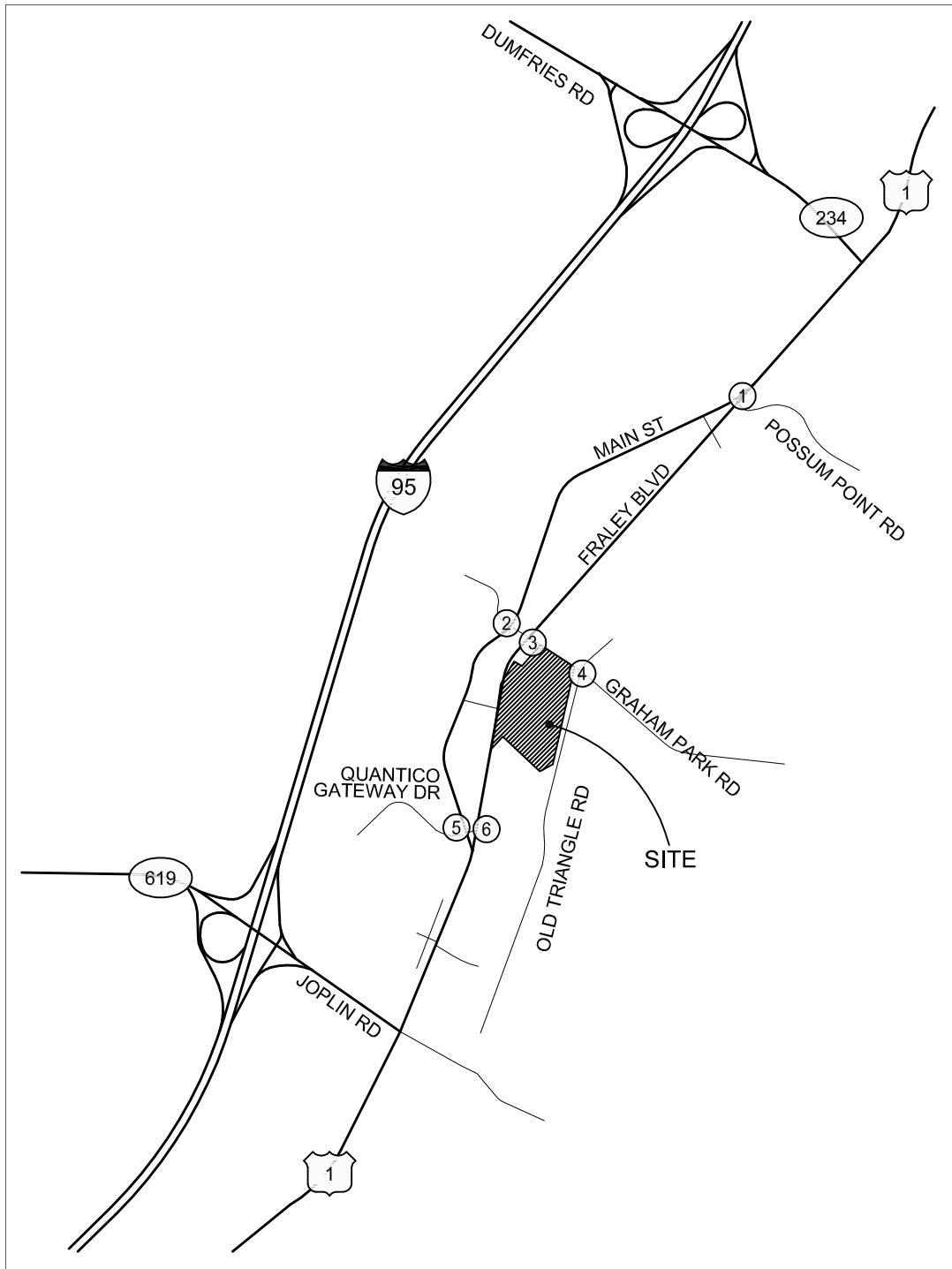
No sidewalks or bike lanes are present on Route 1 (Fraleley Boulevard) in the vicinity of the site. Sidewalk facilities are present along Graham Park Road and Curtis Drive, and at the intersection with Route 1 (Main Street and Fraleley Boulevard). No bicycle lanes are present on any of the study roadways in the vicinity of the site.



### Transit Facilities

The Potomac and Rappahannock Transportation Commission (PRTC) provides bus service in the vicinity of the site.

The R1-L (OmniLink Route 1) and DF-L (OmniLink Dumfries) bus lines provides weekday (5:30 AM to 11:00 PM) and Saturday AM "on-demand" service to River Run Senior Apartments, Elm Farm Mobile Home Park, the Ferlazzo Building, commuter parking lots and Virginia Railway Express stations. Off-route "on-demand" service is provided at additional cost. The closest existing bus stops are located at Graham Park Road and Curtis Drive along Route 1.





-  - STOP SIGN
-  - TRAFFIC SIGNAL

**EXISTING LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES DUMFRIES, VIRGINIA**

Figure 4

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## Existing Traffic Volumes and Peak Hour Operations

Turning-movement counts were obtained in June 2015 at all the existing study intersections while school was still in session. The counts were conducted on a typical weekday during the morning (6:00 to 9:00 a.m.) and weekday evening (4:00 to 7:00 p.m.) peak time periods. A system peak hour for the study was calculated as the close proximity of all study intersections resulted in nearly identical peak hours. **Appendix B** contains all turning movement count data sheets.

Consistent with scoping requirements, operational analyses were performed at the following intersections:

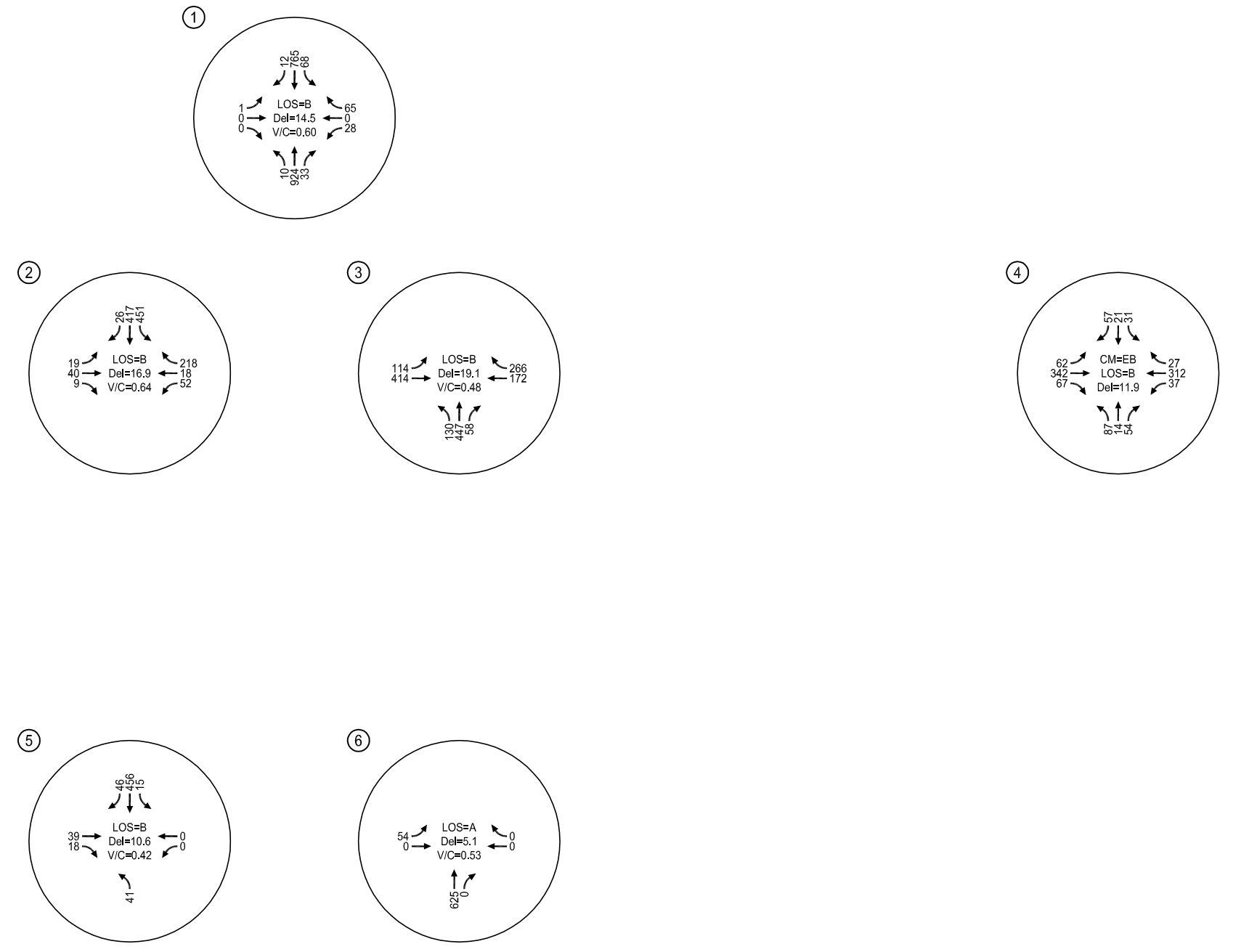
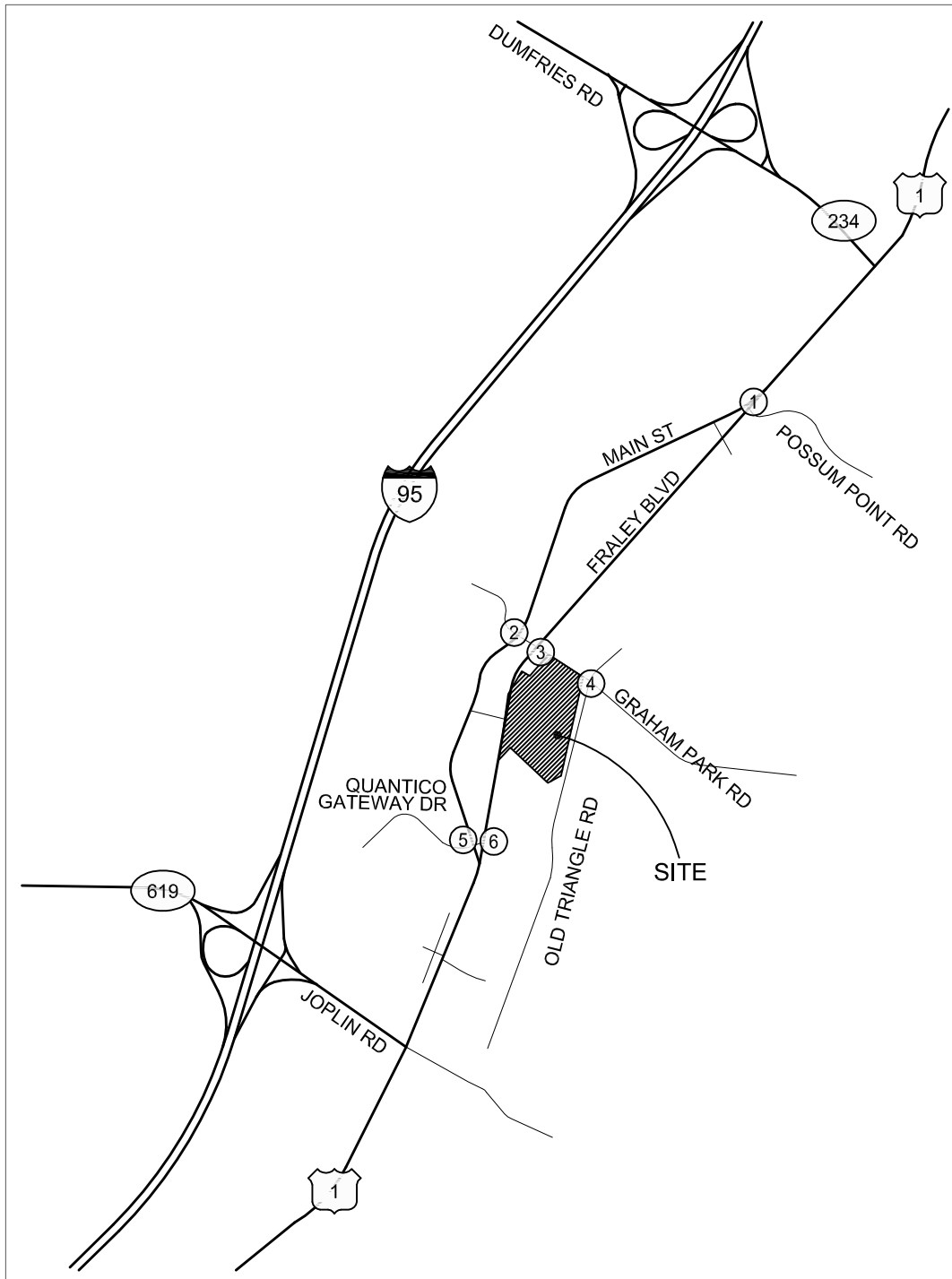
- Route 1 / Possum Point Road
- Route 1 SB (Main Street) / Curtis Drive
- Route 1 NB (Fraley Boulevard) / Graham Park Road
- Old Triangle Road / Graham Park Road
- Route 1 / Quantico Gateway Drive

## Current Levels of Service and Volume-to-Capacity Ratios

All level of service (LOS) analyses described in this report were performed in accordance with the procedures stated in the 2010 *Highway Capacity Manual* (HCM - Reference 1) and report HCM 2000 outputs. *A description of level of service and the criteria by which they are determined is presented in Appendix C.*

This analysis is based on the peak 15-minute flow rate during each of the study periods to evaluate of all intersection levels-of-service. For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each average peak hour. Traffic conditions during all other weekday time periods and throughout the weekend will likely operate under better conditions than described in this report. Existing signal timing data was obtained from VDOT. Traffic operations were evaluated using Synchro 9.

**Figure 5** and **Figure 6** show the overall intersection operational results of the existing traffic operations analysis for the weekday a.m. and weekday p.m. peak hours, respectively. **Figure 7** and **Figure 8** show the lane group LOS. **Table 2** summarizes the Synchro 9 peak hour levels of service, 95<sup>th</sup> percentile back of queue, and delay for each lane group by intersection. **Appendix D** contains the existing conditions level of service worksheets.

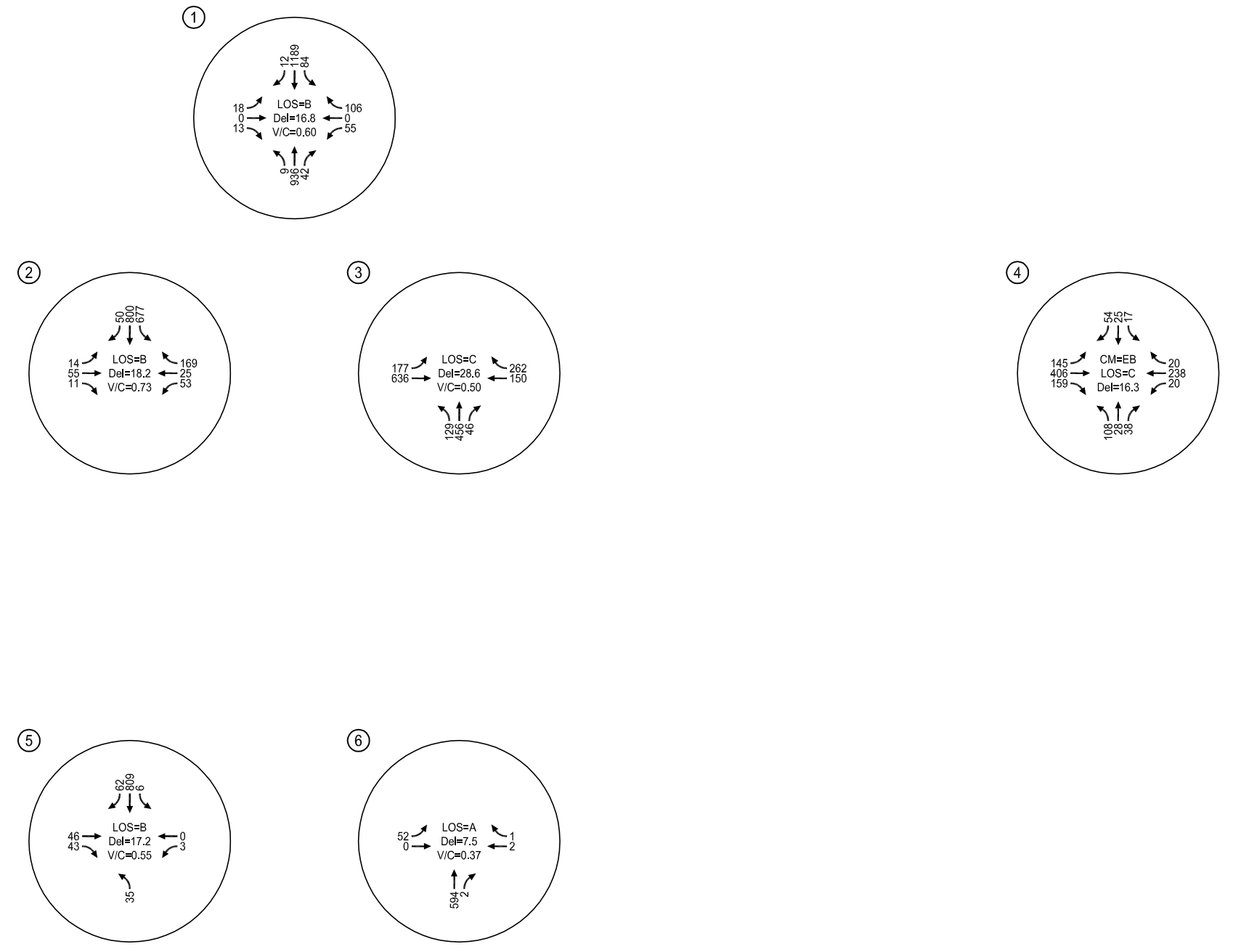
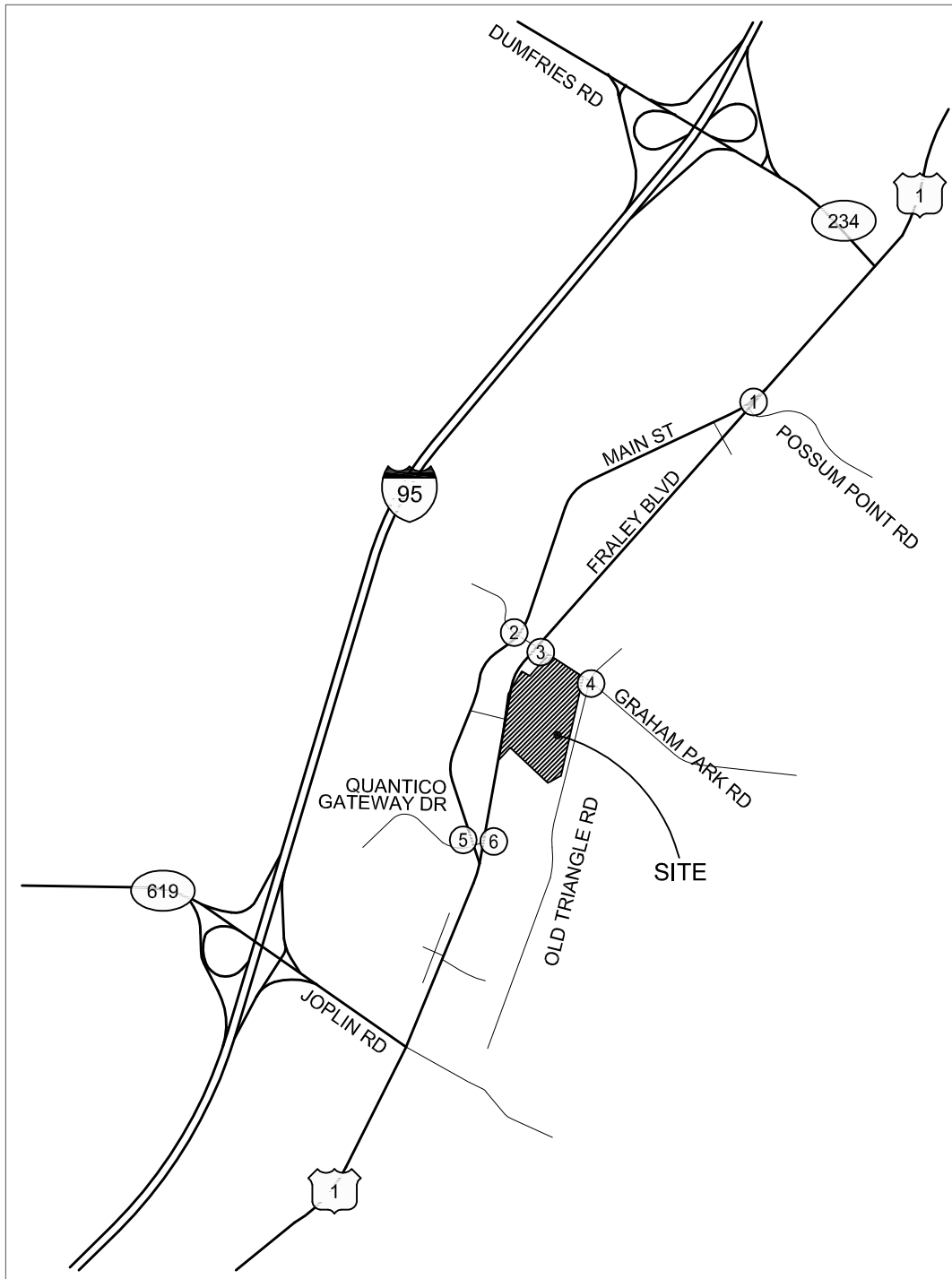


CM = CRITICAL MOVEMENT (TWS)  
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWS)  
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWS)  
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO  
 TWS = TWO-WAY STOP CONTROL  
 AWSC = ALL-WAY STOP CONTROL

**EXISTING TRAFFIC CONDITIONS  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**5**

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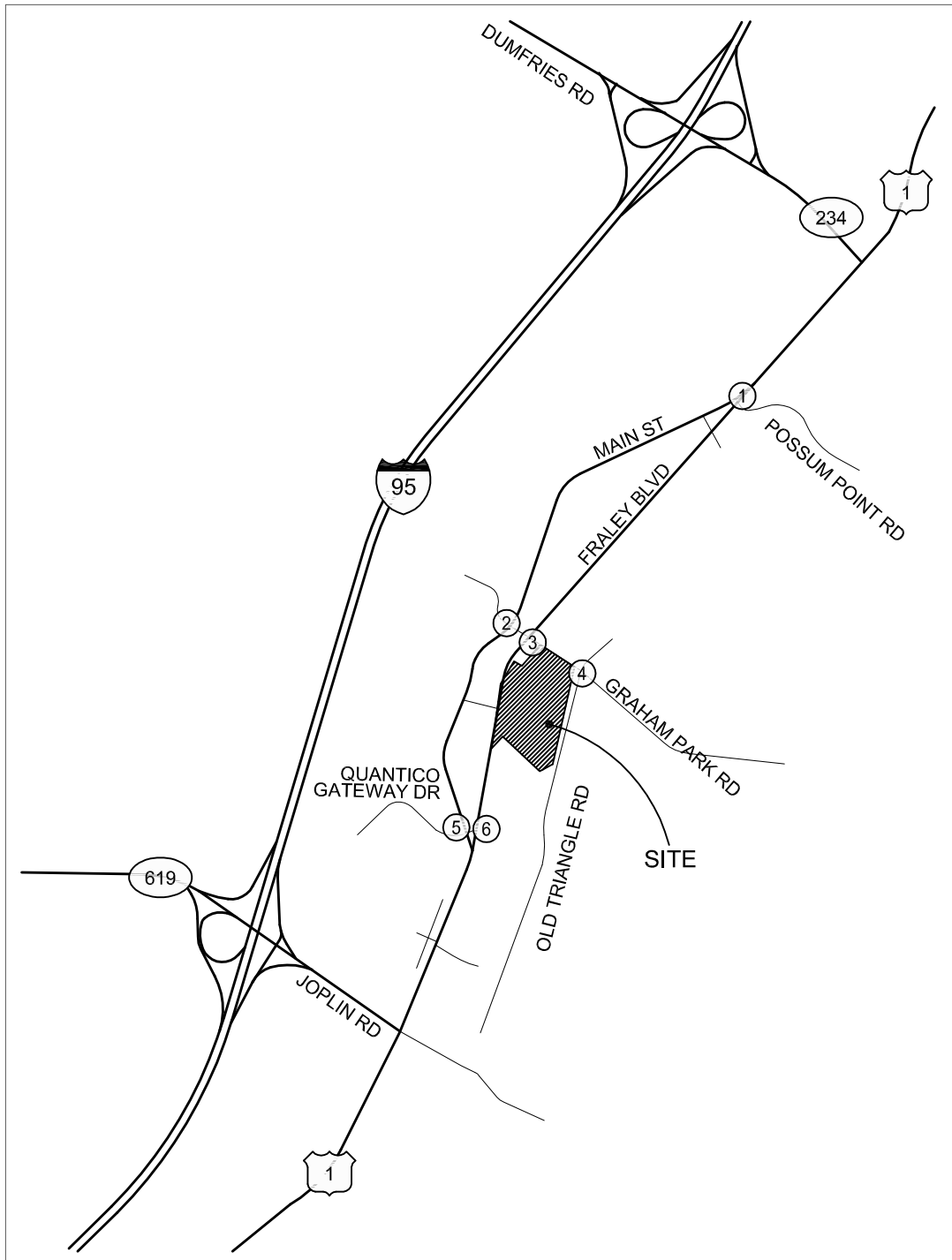
CM = CRITICAL MOVEMENT (TWSC)  
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)  
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)  
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO  
 TWC = TWO-WAY STOP CONTROL  
 AWSC= ALL-WAY STOP CONTROL

**EXISTING TRAFFIC CONDITIONS  
 WEEKDAY PM PEAK HOUR  
 DUMFRIES, VIRGINIA**

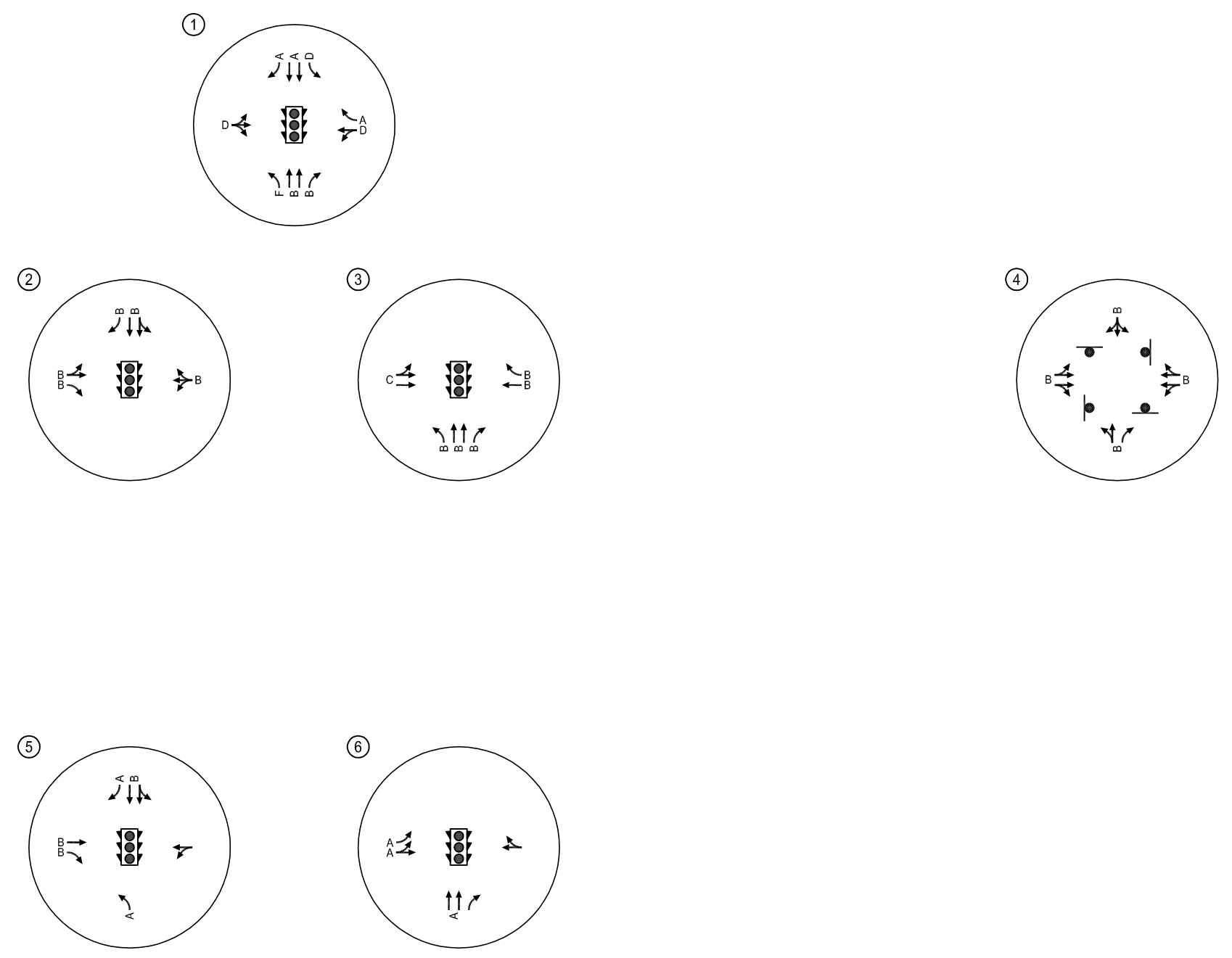
Figure  
**6**

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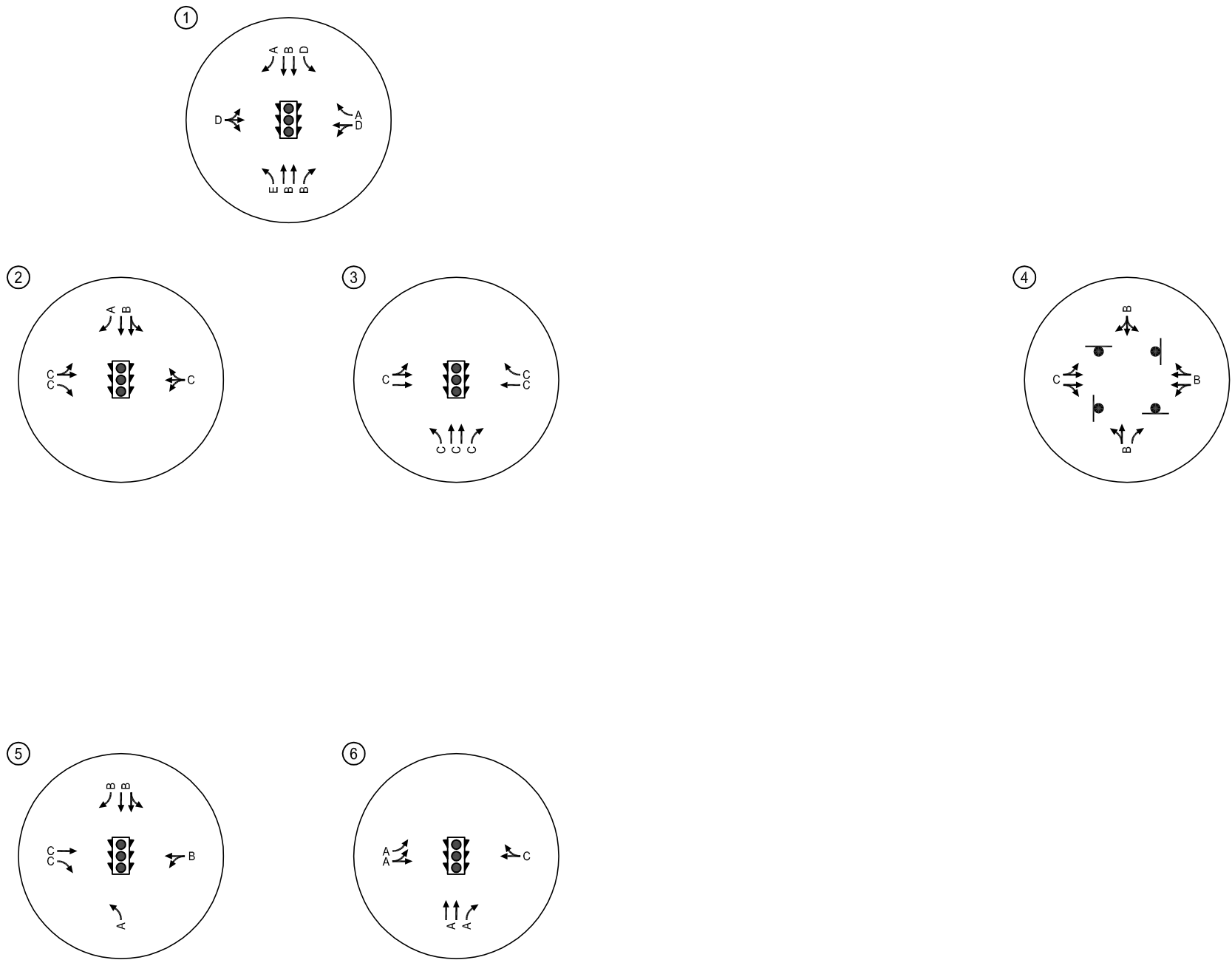
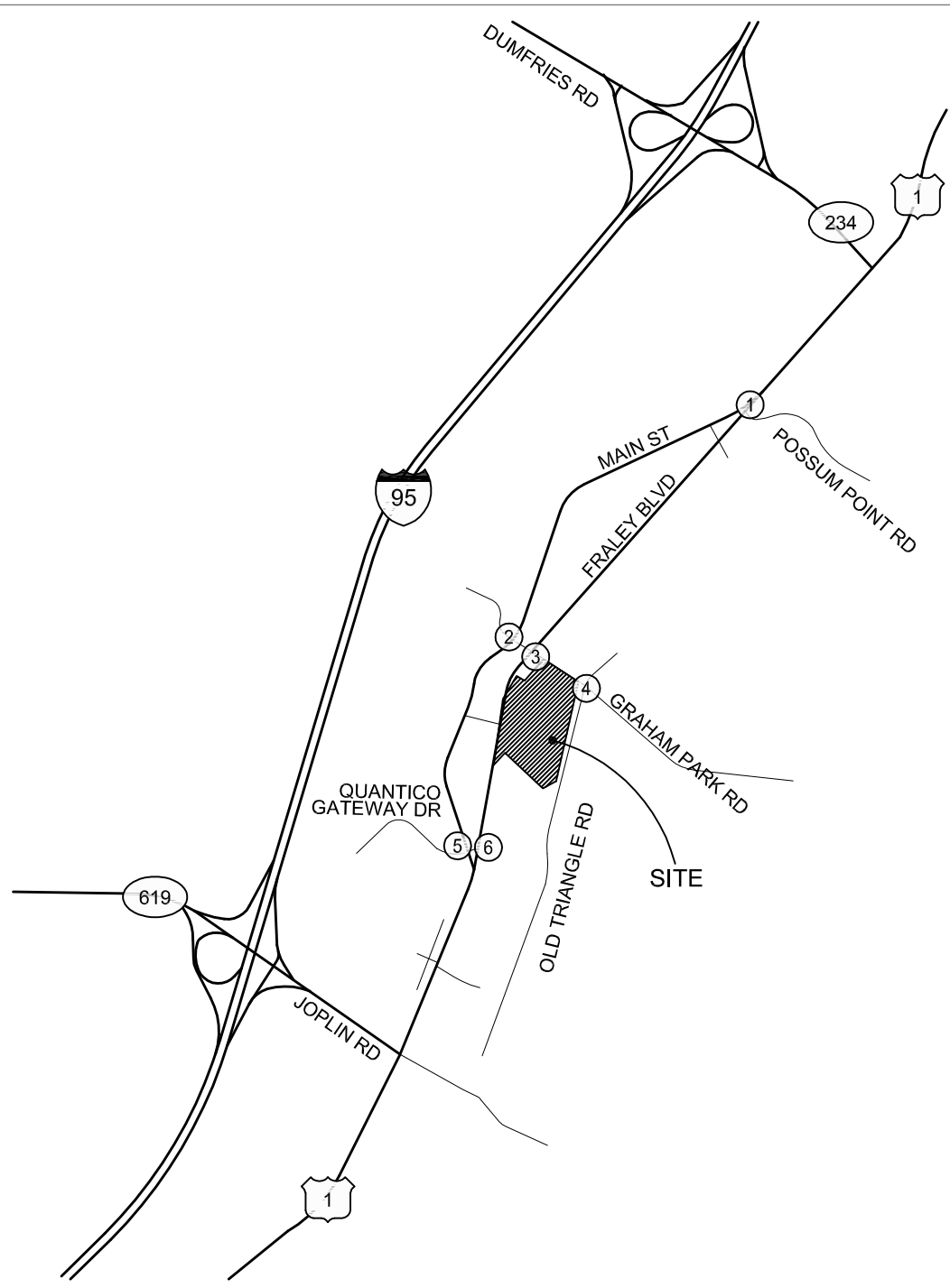
\*X"= LANE GROUP LEVEL OF SERVICE



**EXISTING LANE GROUP LEVEL OF SERVICE  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**7**

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\*X\*= LANE GROUP LEVEL OF SERVICE

**EXISTING LANE GROUP LEVEL OF SERVICE  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**8**

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Table 2 Existing Conditions – Summary of Peak Hour Levels of Service, 95<sup>th</sup> Percentile Back of Queue, and Delay for Each Lane Group by Intersection

Intersection Information					AM Peak Hour			PM Peak Hour		
Intersection	Traffic Control	Approach	Lane Group	Existing/ Proposed turn-lane lengths (ft)	LOS	Back of Queue (feet)	Delay (sec)	LOS	Back of Queue (feet)	Delay (sec)
Route 1 & Possum Point Road (#1)	Signalized	EB	EBLRT		D	6	44.0	D	0	43.0
		EB Approach			D		44.0	D		43.0
		WB	WBLT		D	52	42.8	D	78	41.2
			WBR	70	A	0	0.1	A	0	0.1
		WB Approach			B		13.0	B		14.1
		NB	NBL	85	F	26	85.2	E	23	57.5
			NBT		B	384	16.7	B	370	18.4
			NBR	440	B	0	10.9	B	0	13.0
		NB Approach			B		17.2	B		18.5
		SB	SBL	335	D	96	38.6	D	104	41.5
			SBT		A	243	9.3	B	414	13.5
SBR	250		A	0	6.9	A	0	8.5		
SB Approach			B		11.6	B		15.3		
Overall LOS			B		14.5	B		16.8		
Route 1 SB & Curtis Drive (#2)	Signalized	EB	EBLT		B	51	15.4	C	91	29.3
			EBR	90	B	0	14.6	C	0	27.8
		EB Approach			B		15.3	C		29.1
		WB	WBLTR		B	97	16.2	C	130	20.4
			WB Approach			B		16.2	C	
		SB	SBLT		B	270	17.5	B	458	17.6
			SBR	200	B	14	11.7	A	16	9.0
		SB Approach			B		17.3	B		17.3
Overall LOS			B		16.9	B		18.2		
Route 1 NB & Graham Park Road (#3)	Signalized	EB	EBLT		C	242	28.2	C	322	28.3
			EB Approach			C		28.2	C	
		WB	WBT		B	126	16.8	C	177	31.0
			WBR		B	50	16.0	C	73	29.6
		WB Approach			B		16.3	C		30.1
		NB	NBL	710	B	82	12.7	C	120	26.6
			NBT		B	124	13.7	C	190	28.6
			NBR	330	B	17	11.8	C	16	24.6
NB Approach			B		13.4	C		27.9		
Overall LOS			B		19.1	C		28.6		
Old Triangle Road & Graham Park Road (#4)	Unsignalized <sup>1</sup>	EB	EBLT				12.9			17.4
			EBRT				12.2			15.2
		EB Approach			B		12.5	C		16.3
		WB	WBLT				11.9			10.8
			WBRT				11.2			10.5
		WB Approach			B		11.5	B		10.6
		NB	NBLT				11.8			12.5
			NBR	100			9.0			8.7
NB Approach			B		10.8	B		11.6		
SB	SBLTR				11.7			11.5		
	SB Approach			B		11.7	B		11.5	
Route 1 & Quantico Gateway Drive (#5)	Signalized	EB	EBT		B	32	19.9	C	59	27.8
			EBR	300	B	0	19.4	C	0	26.7
		EB Approach			B		19.8	C		27.2
		WB	WBLT		A	0	0.0	B	4	17.4
			WB Approach			A		0.0	B	
		NB	NBL		A	14	4.6	A	22	8.2
			NB Approach			A		4.6	A	
		SB	SBLT		B	100	10.1	B	277	16.9
SBR	275		A	0	8.7	B	7	11.9		
SB Approach			B		10.0	B		16.5		
Overall LOS			B		10.6	B		17.2		



Intersection Information					AM Peak Hour			PM Peak Hour			
Intersection	Traffic Control	Approach	Lane Group	Existing/ Proposed turn-lane lengths (ft)	LOS	Back of Queue (feet)	Delay (sec)	LOS	Back of Queue (feet)	Delay (sec)	
Route 1 & Quantico Gateway Drive  (#6)	Signalized	EB	EBL		A	11	7.0	A	7	5.3	
			EBLT		A	11	7.0	A	7	5.3	
		EB Approach				A		7.0	A		5.3
		WB	WBRT		A	0	0.0	C	9	32.6	
			WB Approach				A		0.0	C	
		NB	NBT		A	74	5.0	A	130	7.6	
			NBR	100	A	0	0.0	A	0	6.1	
		NB Approach				A		5.0	A		7.5
		Overall LOS				A		5.1	A		7.5

\*The '#' indicates 95<sup>th</sup> percentile volume exceeds capacity, queue may be longer and the queue shown is the maximum after two cycles.

<sup>1</sup> HCM all way stop control methodology does not calculate queues or LOS by lane group.

As shown in the figures and Table 2, all study intersections operate at LOS D or better during all time periods.



Section 4  
Transportation Impact Analysis

## TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study area's transportation system will operate through total build out of the project. The proposed development is anticipated to be constructed and built out by year 2020. Traffic impacts of the proposed Townsquare development during the typical weekday a.m. and p.m. peak hours were examined as follows:

- Background traffic conditions were developed by applying a two percent compound annual growth rate on all roads to account for growth in the site vicinity between years 2015 and 2020.
- Additional approved "in-process" developments were identified and confirmed through the scoping process and added to assumed regional traffic growth to develop year 2020 background traffic conditions.
- Year 2020 background weekday a.m. and p.m. peak hour traffic conditions were analyzed at each of the study intersections.
- Site-generated trips were estimated for the proposed site plan.
- Site trip distribution patterns identified and confirmed through the scoping process were derived from existing traffic patterns and major trip origins and destinations in the study area.
- Year 2020 total traffic conditions were analyzed at each of the study intersections and site-access driveway during the weekday a.m. and p.m. peak hours.
- Forecast 95<sup>th</sup> percentile queues were evaluated.
- Turn lane warrants were evaluated at the proposed site-access driveways under year 2020 total traffic conditions.

### YEAR 2020 TRAFFIC CONDITIONS

In the 2020 background analysis, traffic operations prior to full build-out of the proposed development are analyzed for the purposes of establishing a baseline against which to measure the specific impacts of the proposed development. Background growth in traffic volumes is attributed to regional growth in the area as well as any specific development within the study area. These two components of growth are discussed below.

#### ***Regional Growth***

A two percent annual growth rate was identified and confirmed through the scoping process to account for regional traffic growth. This growth rate was compounded annually to forecast year 2020 background traffic volumes.

#### ***Planned Development – First Town Center***

The First Town Center development is located along the south side of Main Street within the Town of Dumfries. The site will consist of approximately 232 apartment units, 66,000 SF of



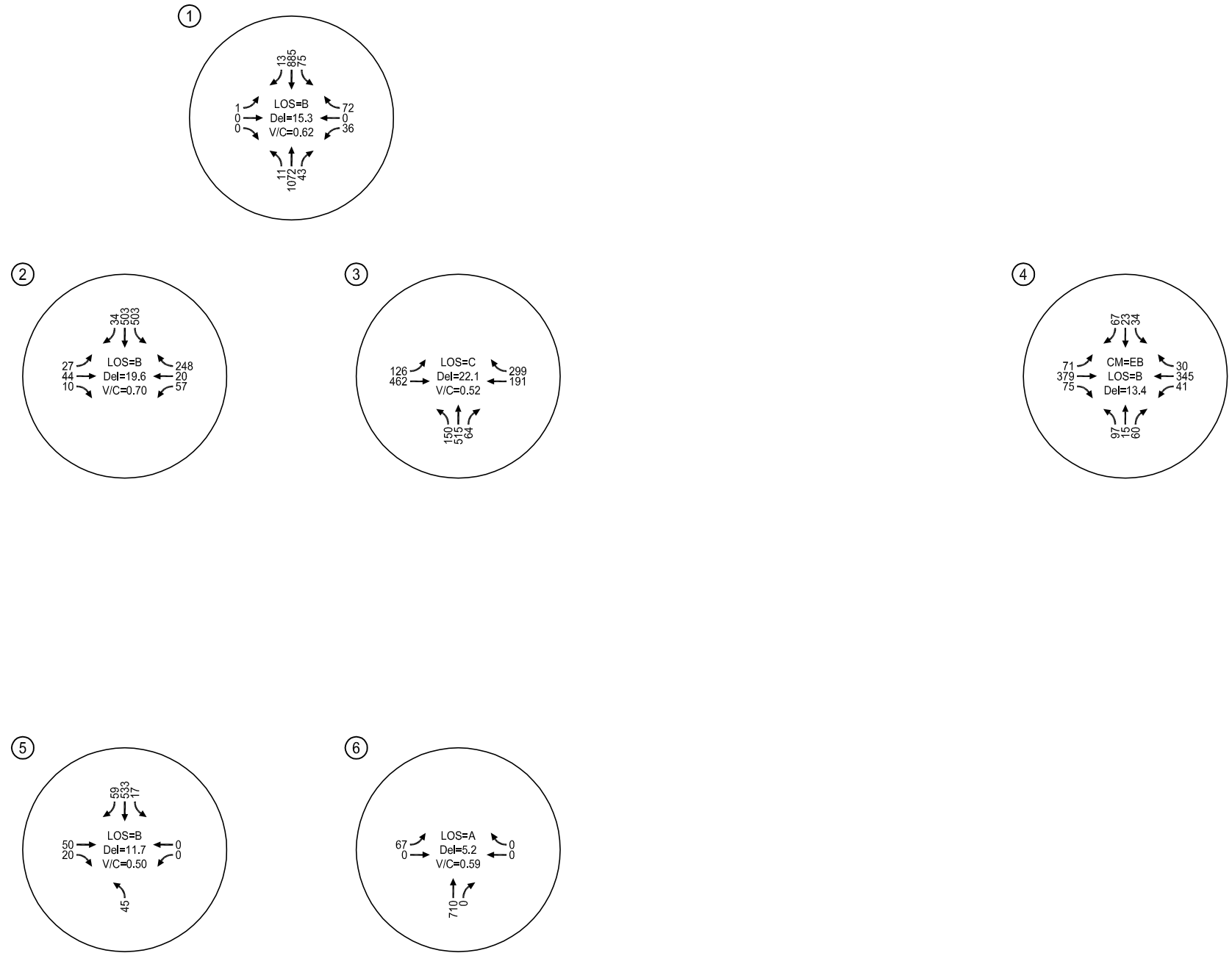
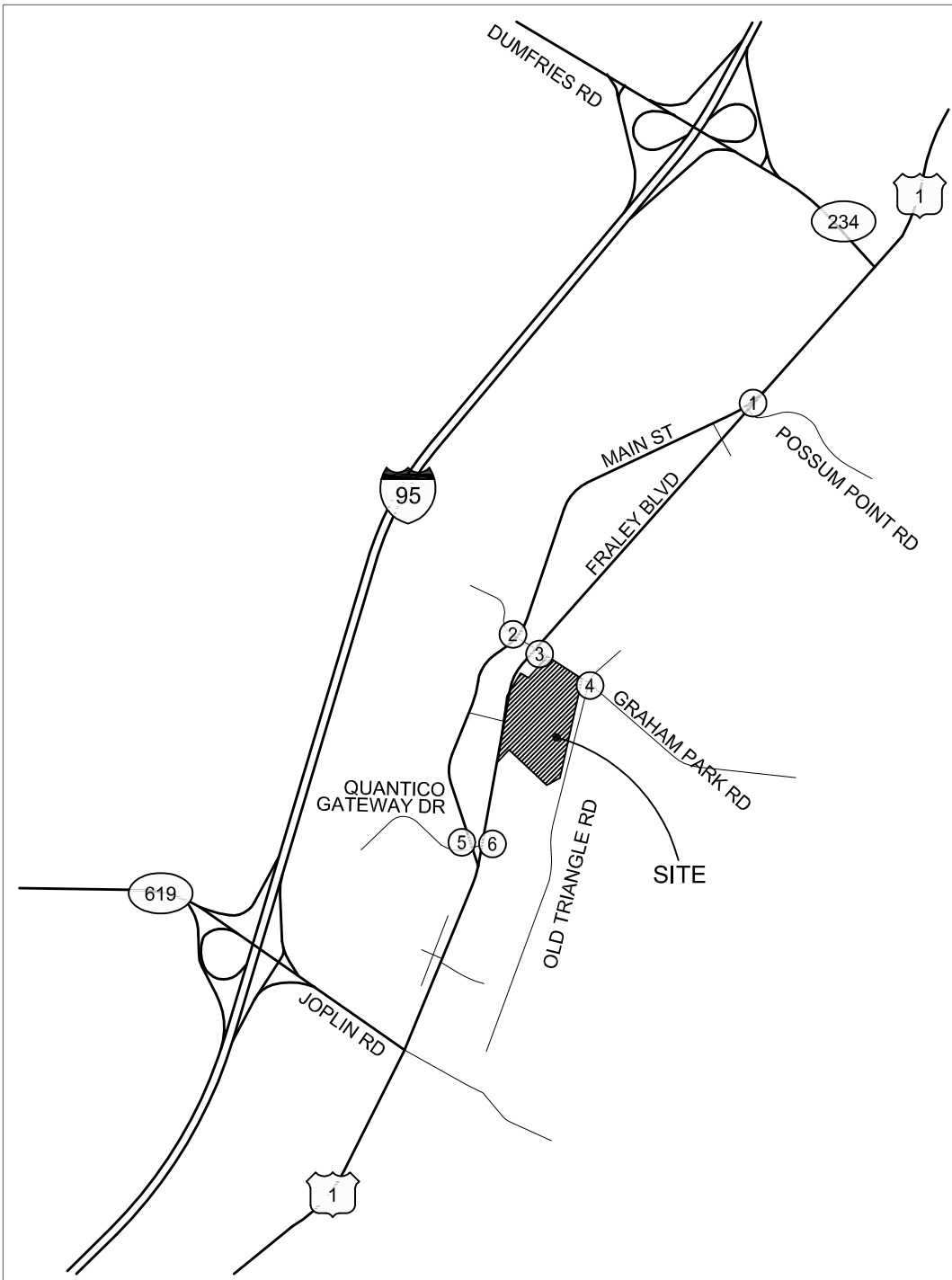
specialty retail and 36,000 SF of office space. The development is expected to be completed in 2016. Trips generated by this development have been added to background traffic volumes and assigned to the network consistent with the approved TIA. **Appendix E** contains details regarding the assignment of in-process development traffic.

## Year 2020 Transportation Improvements

Route 1 is planned to be widened by Prince William County and VDOT, transforming the two-lane northbound section of Fraley Boulevard to a six-lane arterial serving both north and southbound directions. This will provide an opportunity to recreate Main Street as a pedestrian friendly town boulevard. However, given the uncertain timing of this project, this future improvement is not assumed in the subsequent analyses consistent with the approved scope.

## 2020 Background Traffic Conditions

**Figure 9** and **Figure 10** show the overall intersection operational results of the existing traffic operations analysis for the weekday a.m. and p.m. peak hours, respectively. **Figure 11** and **Figure 12** show the lane group LOS. **Table 3** summarizes the peak hour levels of service, 95<sup>th</sup> percentile back of queue, and delay for each lane group by intersection. **Appendix F** contains the 2020 background traffic operational analysis worksheets.



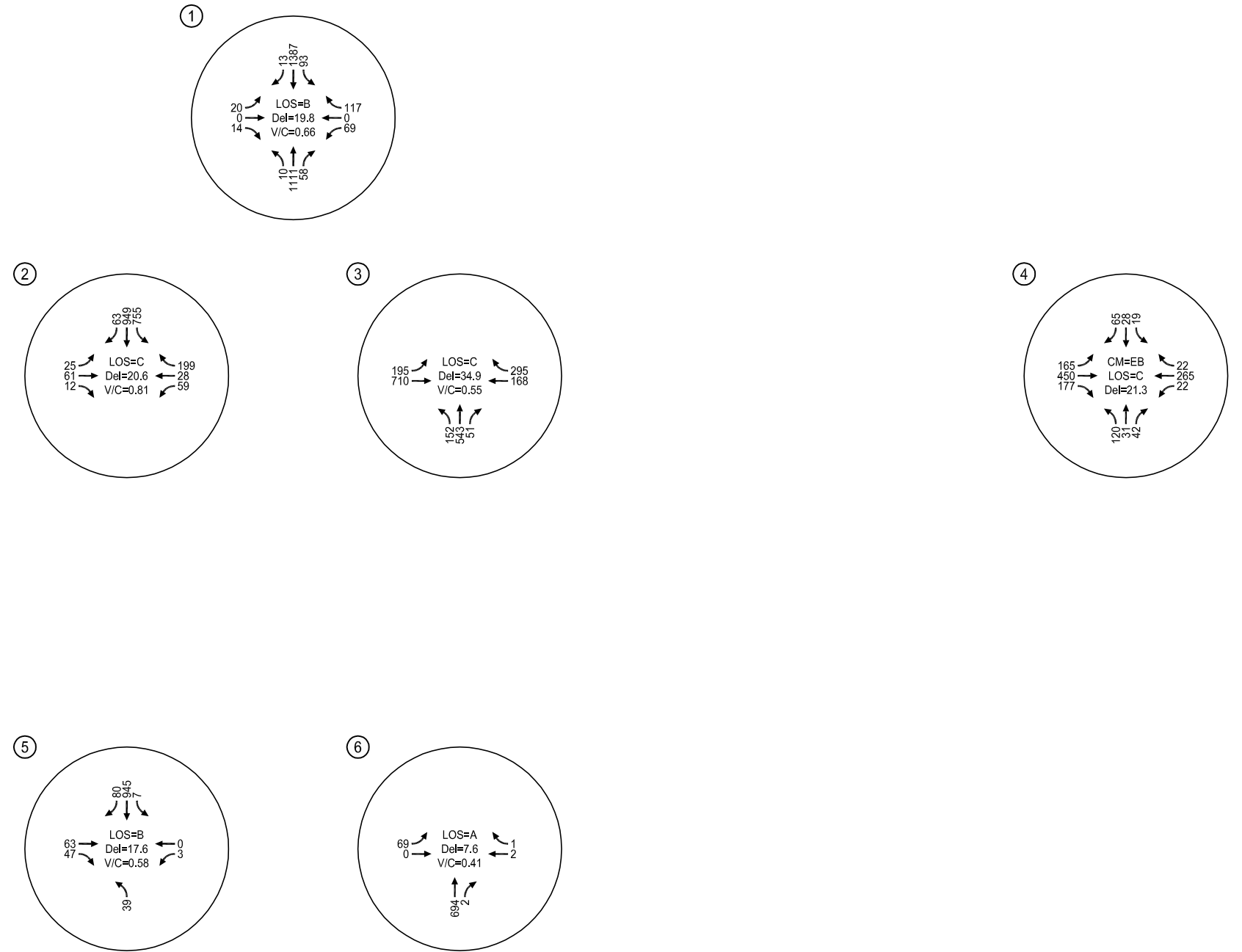
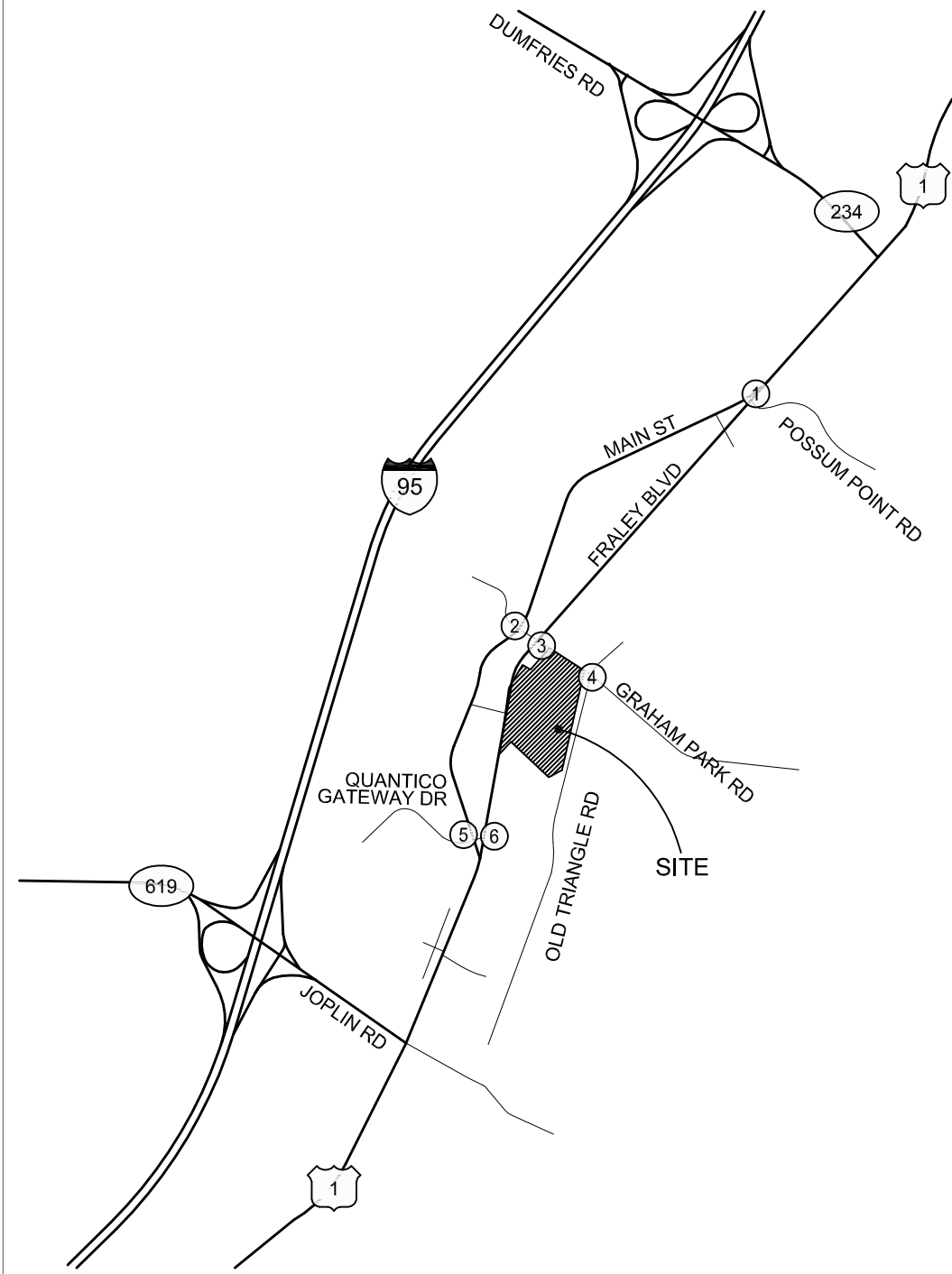
CM = CRITICAL MOVEMENT (TWSC)  
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)  
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)  
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO  
 TWSC = TWO-WAY STOP CONTROL  
 AWSC= ALL-WAY STOP CONTROL

**2020 BACKGROUND TRAFFIC CONDITIONS  
 WEEKDAY AM PEAK HOUR  
 DUMFRIES, VIRGINIA**

Figure  
**9**

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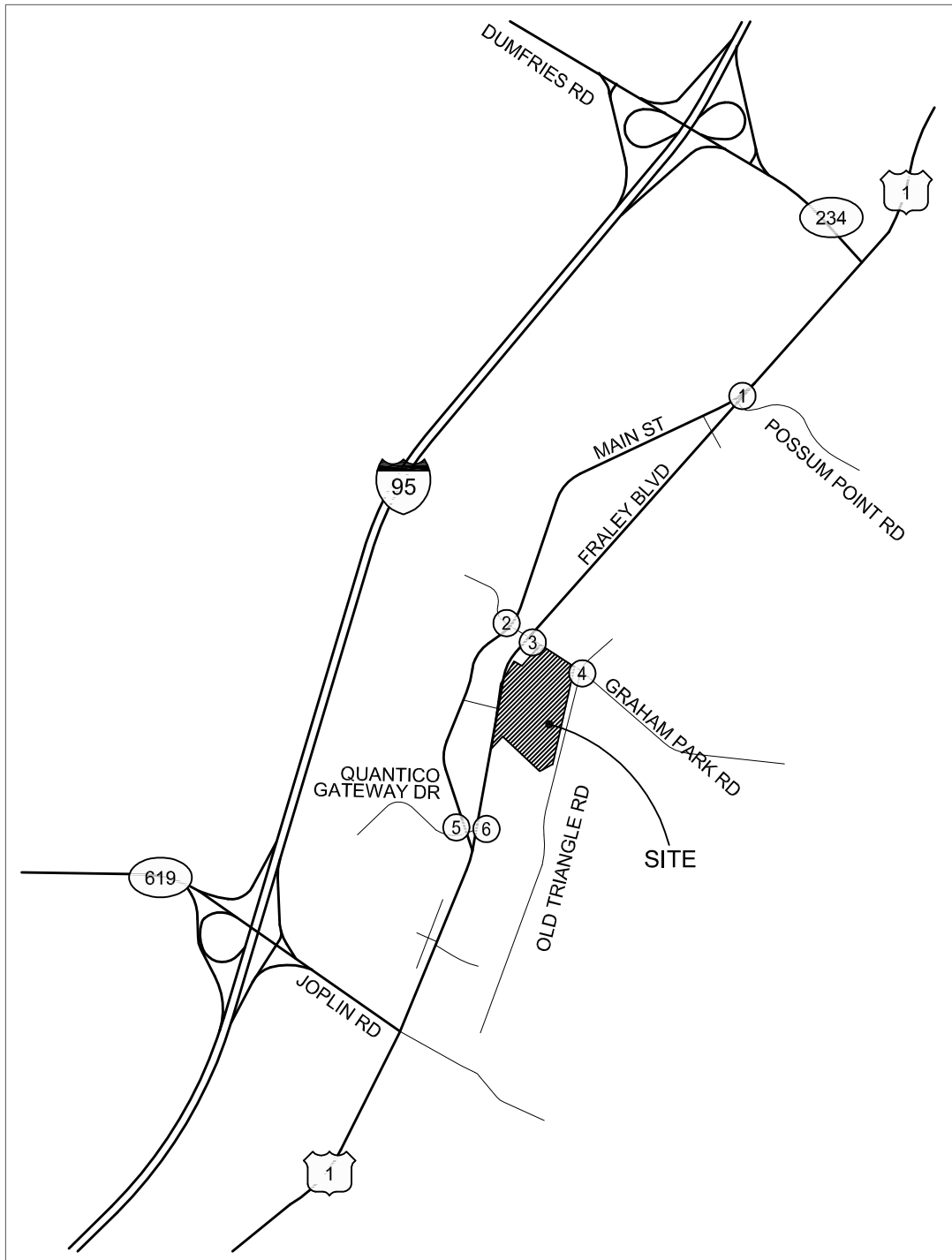


CM = CRITICAL MOVEMENT (TWSC)  
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)  
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)  
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO  
 TWC = TWO-WAY STOP CONTROL  
 AWSC= ALL-WAY STOP CONTROL

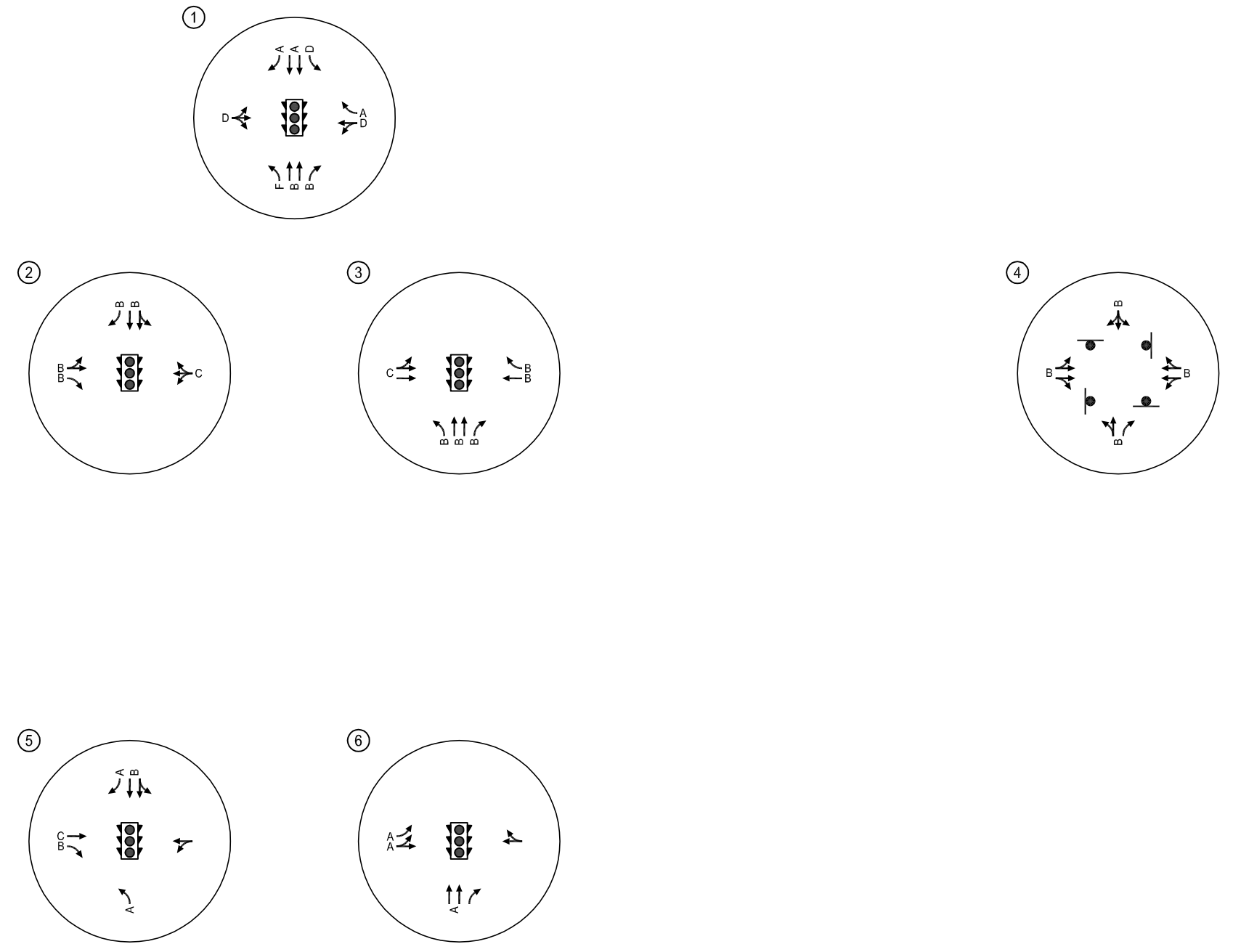
**2020 BACKGROUND TRAFFIC CONDITIONS  
 WEEKDAY PM PEAK HOUR  
 DUMFRIES, VIRGINIA**

Figure  
**10**

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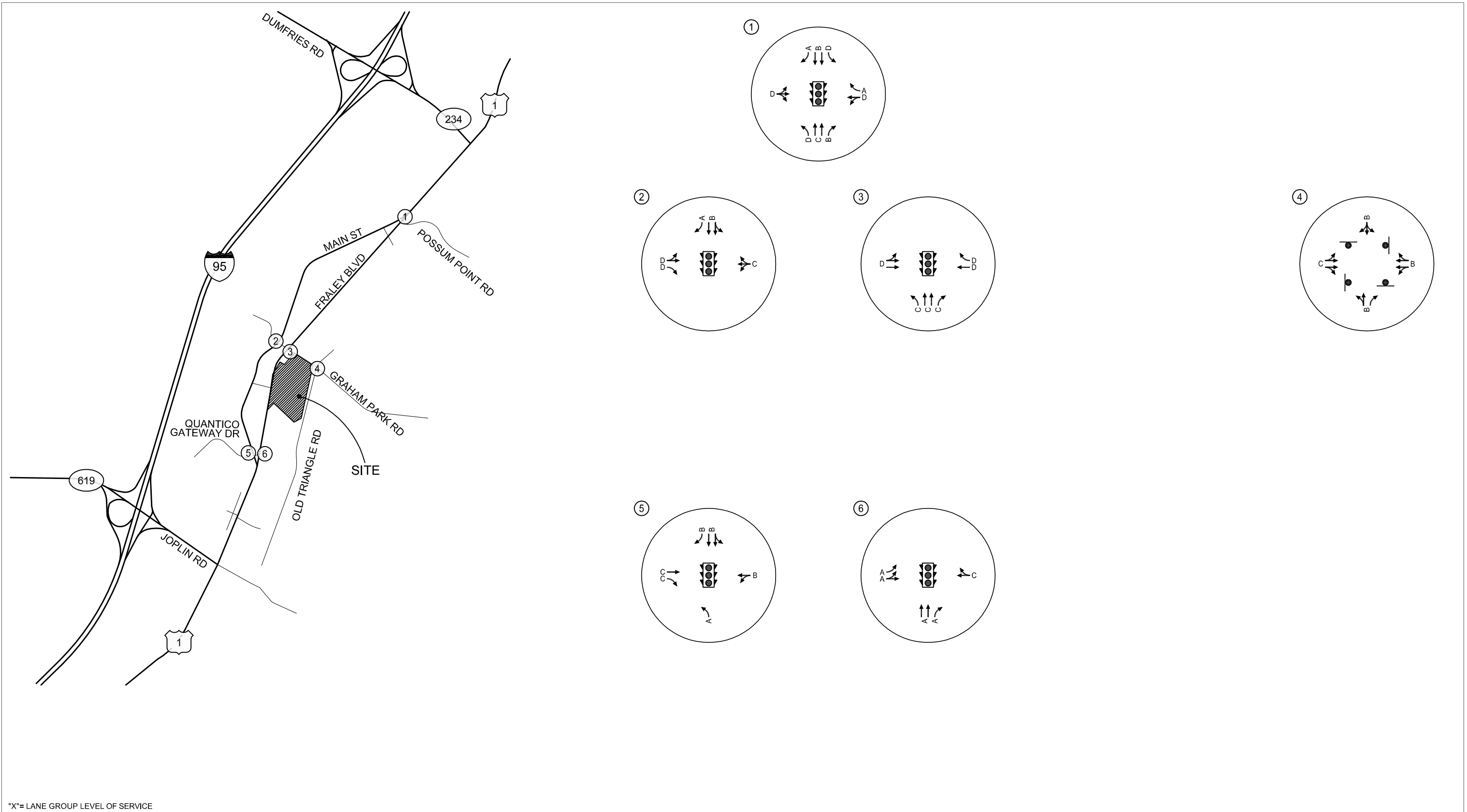
\*X"= LANE GROUP LEVEL OF SERVICE



**2020 BACKGROUND LANE GROUP LEVEL OF SERVICE  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**11**

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\*X"= LANE GROUP LEVEL OF SERVICE

2020 BACKGROUND LANE GROUP LEVEL OF SERVICE  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA

Figure  
12

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Table 3 2020 Background Traffic Conditions – Summary of Peak Hour Levels of Service, 95<sup>th</sup> Percentile Back of Queue, and Delay for Each Lane Group by Intersection

Intersection Information					AM Peak Hour			PM Peak Hour		
Intersection	Traffic Control	Approach	Lane Group	Existing/ Proposed turn-lane lengths (ft)	LOS	Back of Queue (feet)	Delay (sec)	LOS	Back of Queue (feet)	Delay (sec)
Route 1 & Possum Point Road (#1)	Signalized	EB	EBLRT		D	7	51.5	D	0	49.4
			EB Approach		D		51.5	D		49.4
		WB	WBLT		D	65	52.0	D	106	47.7
			WBR	70	A	0	0.1	A	0	0.1
		WB Approach			B		17.4	B		17.8
		NB	NBL	85	F	31	129.5	D	30	53.1
			NBT		B	468	17.7	C	502	23.1
			NBR	440	B	0	11.0	B	0	14.7
		NB Approach			B		18.6	C		23.0
		SB	SBL	335	D	112	43.5	D	133	42.3
			SBT		A	288	8.6	B	548	15.1
			SBR	250	A	0	6.1	A	0	8.5
		SB Approach			B		11.3	B		16.8
Overall LOS			B		15.3	B		19.8		
Route 1 SB & Curtis Drive (#2)	Signalized	EB	EBLT		B	69	18.4	D	144	41.7
			EBR	90	B	0	17.2	D	0	38.4
		EB Approach			B		18.2	D		41.3
		WB	WBLTR		C	118	20.3	C	#453	34.5
			WB Approach		C		20.3	C		34.5
		SB	SBLT		B	325	19.7	B	576	17.6
			SBR	200	B	16	12.2	A	18	7.9
		SB Approach			B		19.4	B		17.2
Overall LOS			B		19.6	C		20.6		
Route 1 NB & Graham Park Road (#3)	Signalized	EB	EBLT		C	290	34.2	D	375	36.4
			EB Approach		C		34.2	D		36.4
		WB	WBT		C	160	20.0	D	256	43.6
			WBR		B	58	19.0	D	92	40.8
		WB Approach			B		19.4	D		41.8
		NB	NBL	710	B	91	13.4	C	170	27.0
			NBT		B	142	14.6	C	283	29.5
			NBR	330	B	19	12.3	C	23	24.8
NB Approach			B		14.2	C		28.7		
Overall LOS			C		22.1	D		34.9		
Old Triangle Road & Graham Park Road (#4)	Unsignalized <sup>1</sup>	EB	EBLT				15.0			23.2
			EBRT				14.1			19.5
		EB Approach			B		14.5	C		21.3
		WB	WBLT				13.4			11.8
			WBRT				12.4			11.5
		WB Approach			B		12.9	B		11.7
		NB	NBLT				12.7			13.7
			NBR	100			9.5			9.2
NB Approach			B		11.6	B		12.7		
SB	SBLTR				12.6			12.4		
SB Approach			B		12.6	B		12.4		
Route 1 & Quantico Gateway Drive (#5)	Signalized	EB	EBT		C	40	20.4	C	78	29.4
			EBR	300	B	0	19.6	C	0	27.8
		EB Approach			C		20.2	C		28.7
		WB	WBLT		A		0.0	B	m5	17.9
			WB Approach		A		0.0	B		17.9
		NB	NBL		A	15	4.6	A	24	8.6
			NB Approach		A		4.6	A		8.6
		SB	SBLT		B	122	11.4	B	340	17.2
			SBR	275	A	4	9.5	B	17	11.6
		SB Approach			B		11.2	B		16.8
Overall LOS			B		11.7	B		17.6		

Intersection Information					AM Peak Hour			PM Peak Hour			
Intersection	Traffic Control	Approach	Lane Group	Existing/ Proposed turn-lane lengths (ft)	LOS	Back of Queue (feet)	Delay (sec)	LOS	Back of Queue (feet)	Delay (sec)	
Route 1 & Quantico Gateway Drive  (#6)	Signalized	EB	EBL		A	12	6.2	A	8	5.3	
			EBLT		A	12	6.2	A	8	5.3	
		EB Approach				A		6.2	A		5.3
		WB	WBRT		A	0	0.0	C	10	34.2	
		WB Approach				A		0.0	C		34.2
		NB	NBT		A	90	5.1	A	156	7.7	
			NBR	100	A	0	0.0	A	0	6.0	
		NB Approach				A		5.1	A		7.7
		Overall LOS				A		5.2	A		7.6

\*The '#' indicates 95<sup>th</sup> percentile volume exceeds capacity, queue may be longer and the queue shown is the maximum after two cycles.

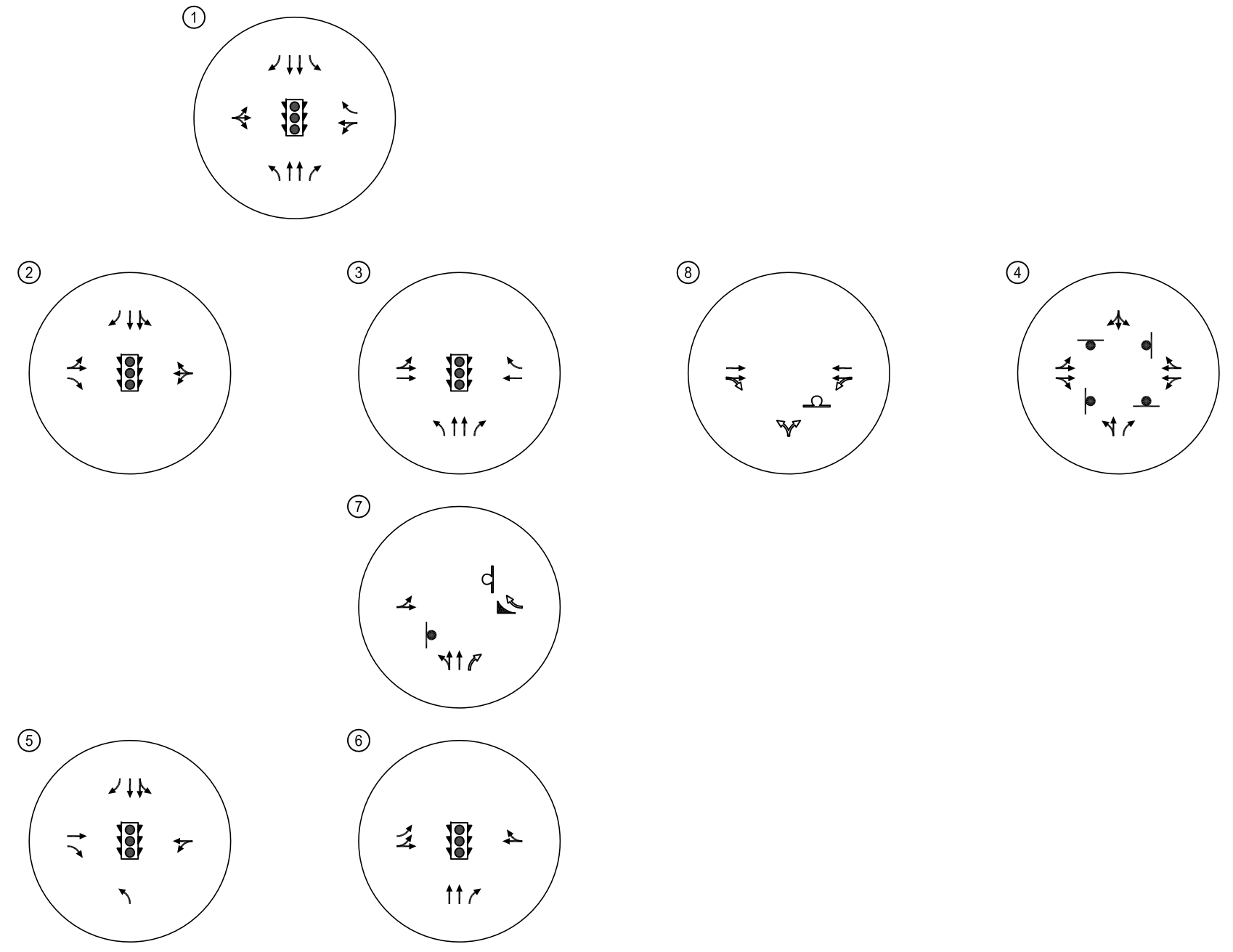
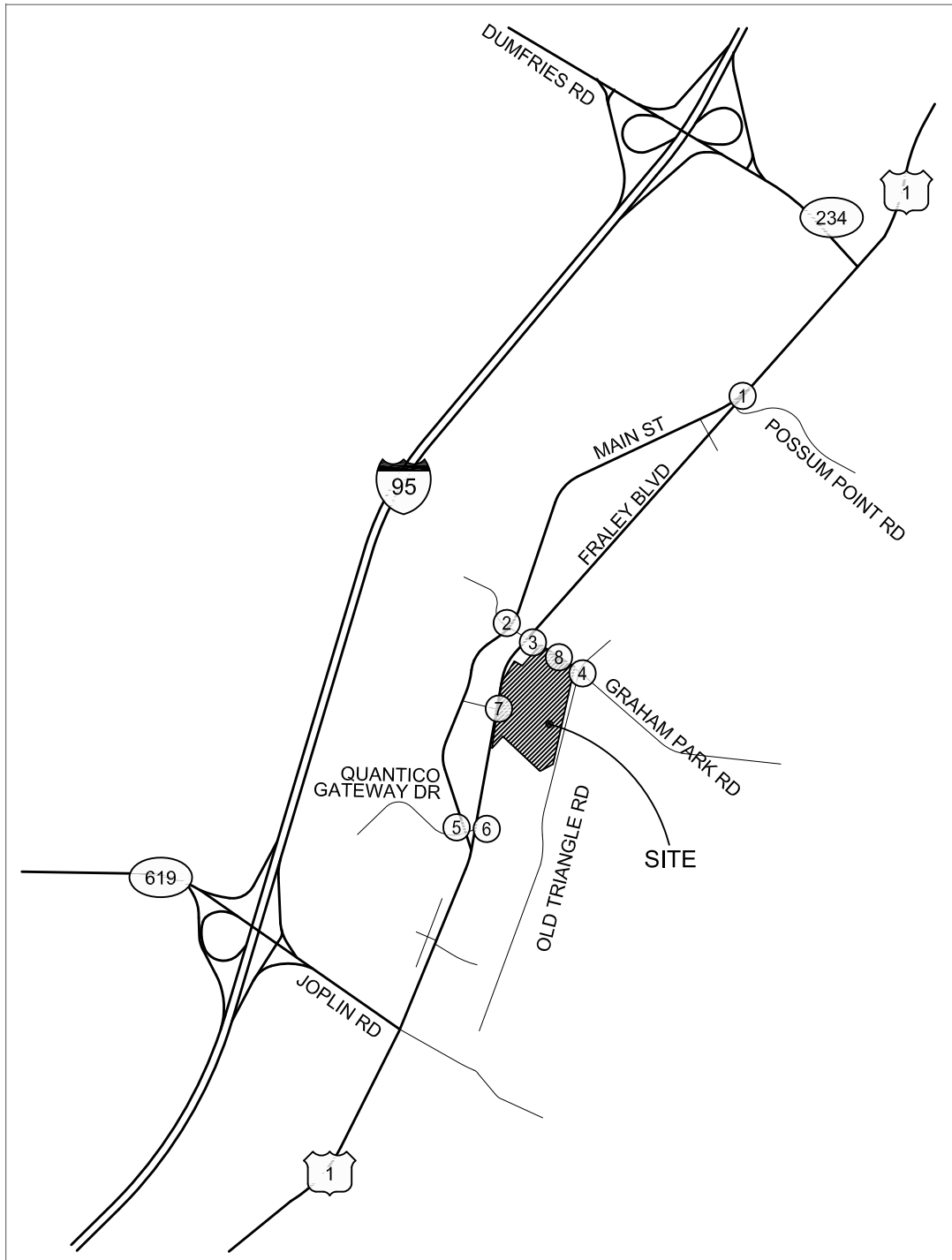
<sup>1</sup> HCM all way stop control methodology does not calculate queues or LOS by lane group.

As shown in the figures and Table 3, all study intersections are forecast to continue to operate at LOS D or better during all time periods.

## PROPOSED DEVELOPMENT

Community Housing Partners is applying to rezone and develop a mixed-use development in Dumfries, Virginia. The site is comprised of four parcels (GPIN Parcels 8188-78-5384, 8188-78-8257, 8188-78-8432 and 8188-77-5398), and is located in the southeast quadrant of the Route 1 (Fraleley Boulevard)/Graham Park Road intersection. The concept development plan includes 200 multi-family units, 105 townhouses, 20,000 SF of retail uses, 8,000 SF of commercial/public facility uses (office), and 40,000 SF of a self-storage (mini-warehouse) facility. Two access points are proposed: a right-in/right-out site driveway on Fraleley Boulevard (Route 1 NB), and a full access to Graham Park Road.

**Figure 13** illustrates the assumed lane configurations and traffic control devices under year 2020 total traffic conditions.



- STOP SIGN
- TRAFFIC SIGNAL
- PROPOSED IMPROVEMENT

**2020 ASSUMED LANE CONFIGURATIONS AND TRAFFIC CONTROL DEVICES DUMFRIES, VIRGINIA**

Figure 13

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## Trip Generation

Trip generation estimates for the proposed development were developed using the standard reference *Trip Generation, 9<sup>th</sup> Edition* (Reference 2) published by the Institute of Transportation Engineers (ITE). **Table 4** summarizes the trip generation estimates for the proposed development.

Table 4 Estimated Trip Generation

Northern Portion of Site				Weekday Daily	Peak Hour Adjacent Street					
Land Use	ITE Code	Units			Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Mini-Warehouse	151	40.0	1000 sq. ft	100	6	3	3	10	5	5
General Office	710	8.0	1000 sq. ft	193	25	22	3	87	15	72
<b>Net New Trips</b>				<b>293</b>	<b>31</b>	<b>25</b>	<b>6</b>	<b>97</b>	<b>20</b>	<b>77</b>

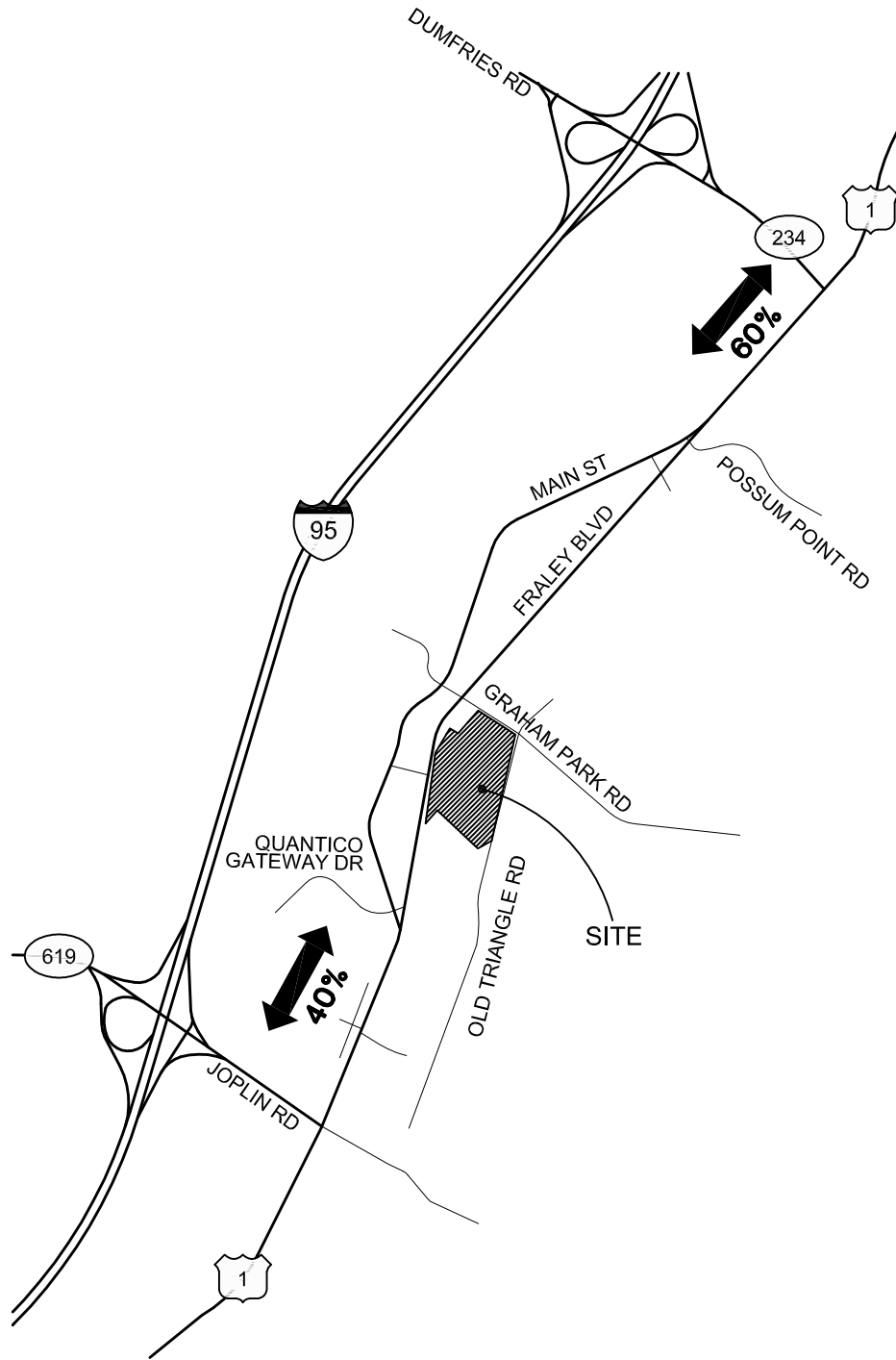
Southern Portion of Site				Weekday Daily	Peak Hour Adjacent Street					
Land Use	ITE Code	Units			Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Townhouse	230	105	units	671	54	9	45	63	42	21
Apartment	220	200	units	1,336	102	20	82	128	83	45
Specialty Retail	826	20.0	1000 sq. ft	886	214	103	111	69	30	39
<i>Internal Trips (5% AM, 10% PM)</i>				(44)	(11)	(5)	(6)	(7)	(3)	(4)
<i>Pass-By (34%)</i>				(286)	(70)	(35)	(35)	(22)	(11)	(11)
<b>Subtotal:</b>				<b>556</b>	<b>133</b>	<b>63</b>	<b>70</b>	<b>40</b>	<b>16</b>	<b>24</b>
<b>Total:</b>				<b>2,893</b>	<b>370</b>	<b>132</b>	<b>238</b>	<b>260</b>	<b>155</b>	<b>105</b>
<i>Less Internal Trips</i>				(44)	(11)	(5)	(6)	(7)	(3)	(4)
<i>Less Pass-By</i>				(286)	(70)	(35)	(35)	(22)	(11)	(11)
<b>Net New Trips</b>				<b>2,563</b>	<b>289</b>	<b>92</b>	<b>197</b>	<b>231</b>	<b>141</b>	<b>90</b>

COMBINED TOTAL										
<b>Total:</b>				<b>3,186</b>	<b>401</b>	<b>157</b>	<b>244</b>	<b>357</b>	<b>175</b>	<b>182</b>
<i>Less Internal Trips</i>				(44)	(11)	(5)	(6)	(7)	(3)	(4)
<i>Less Pass-By</i>				(286)	(70)	(35)	(35)	(22)	(11)	(11)
<b>Net New Trips</b>				<b>2,856</b>	<b>320</b>	<b>117</b>	<b>203</b>	<b>328</b>	<b>161</b>	<b>167</b>

As shown in Table 4, the development is estimated to generate approximately 2,856 net new weekday daily trips, 320 weekday a.m. (117 in, 203 out), and 328 weekday p.m. (161 in, 167 out) peak hour trips.

## Trip Distribution and Trip Assignment

Trip distribution estimates for the proposed project were developed based on anticipated future travel patterns observed near the site and a major origin/destination patterns in the site vicinity. **Figure 14** illustrates the estimated trip distribution pattern. **Figure 15** and **Figure 16** illustrate the assignment of site-generated trips to the surrounding roadway network during the weekday a.m. and weekday p.m. peak hours, respectively. **Figure 17** and **Figure 18** illustrate the assignment of pass-by trips.



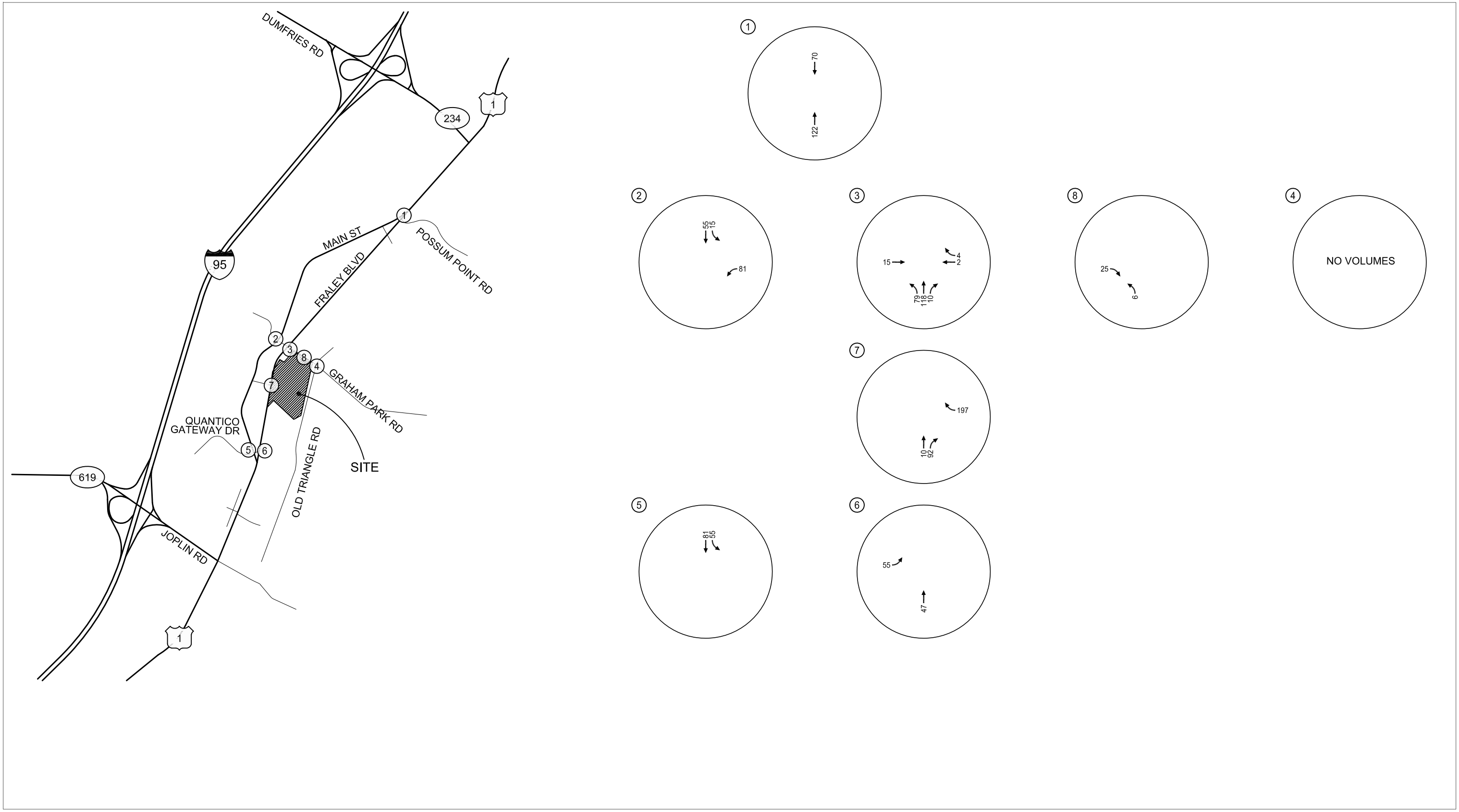
**XX%** = ESTIMATED TRIP DISTRIBUTION PATTERN

**ESTIMATED TRIP DISTRIBUTION PATTERN  
DUMFRIES, VIRGINIA**

**Figure  
14**

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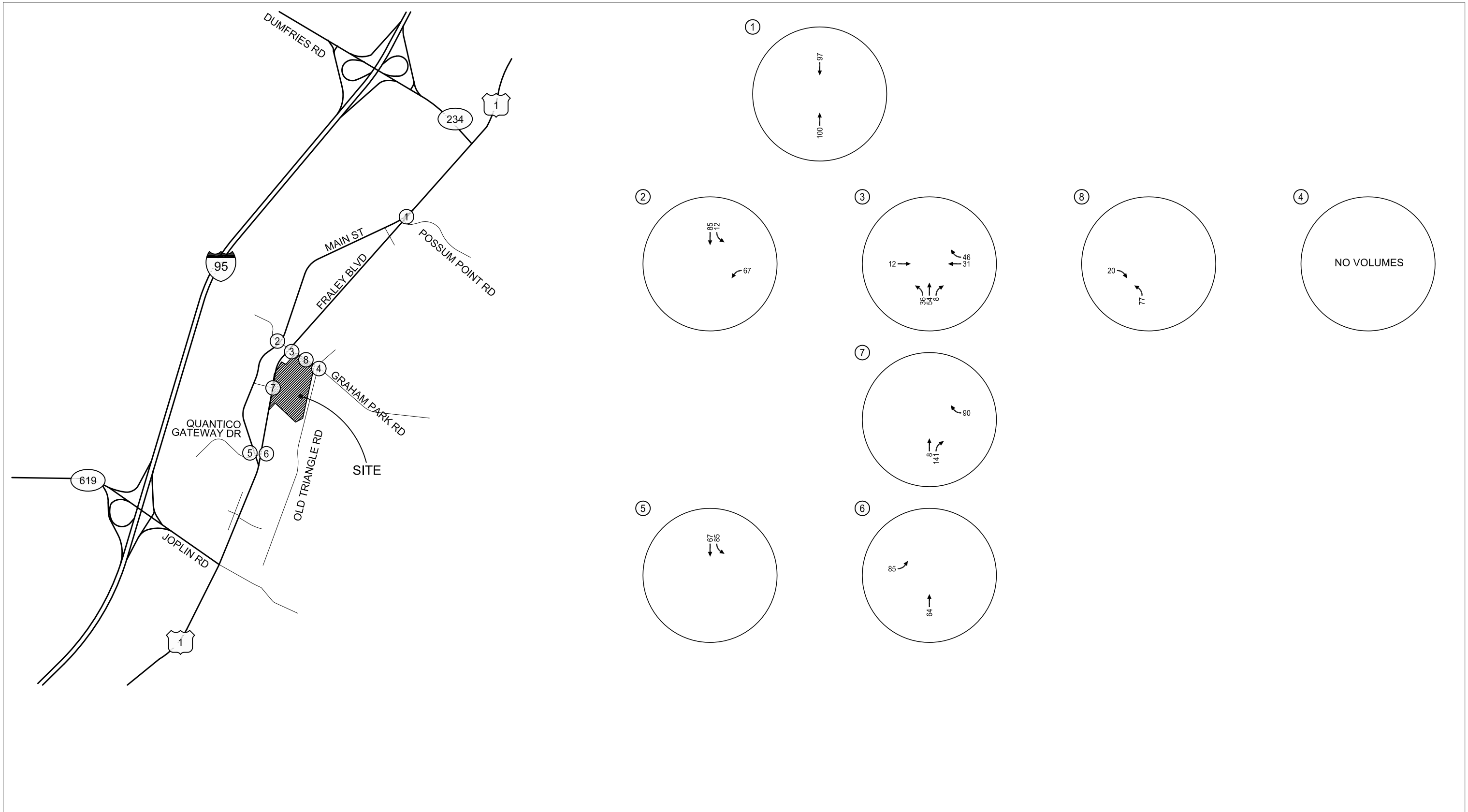




**NET NEW SITE-GENERATED TRIPS  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**15**

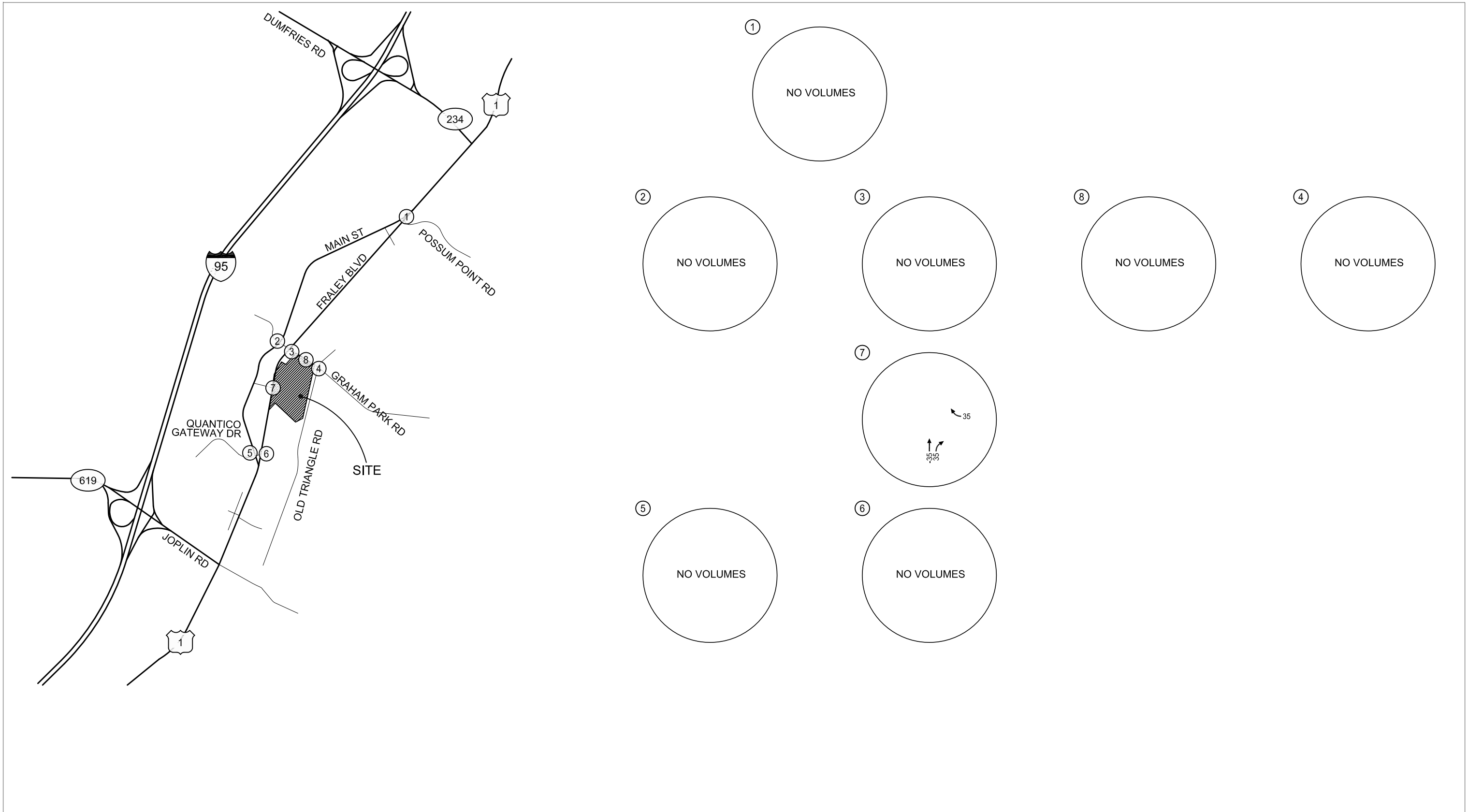
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**NET NEW SITE-GENERATED TRIPS  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**16**

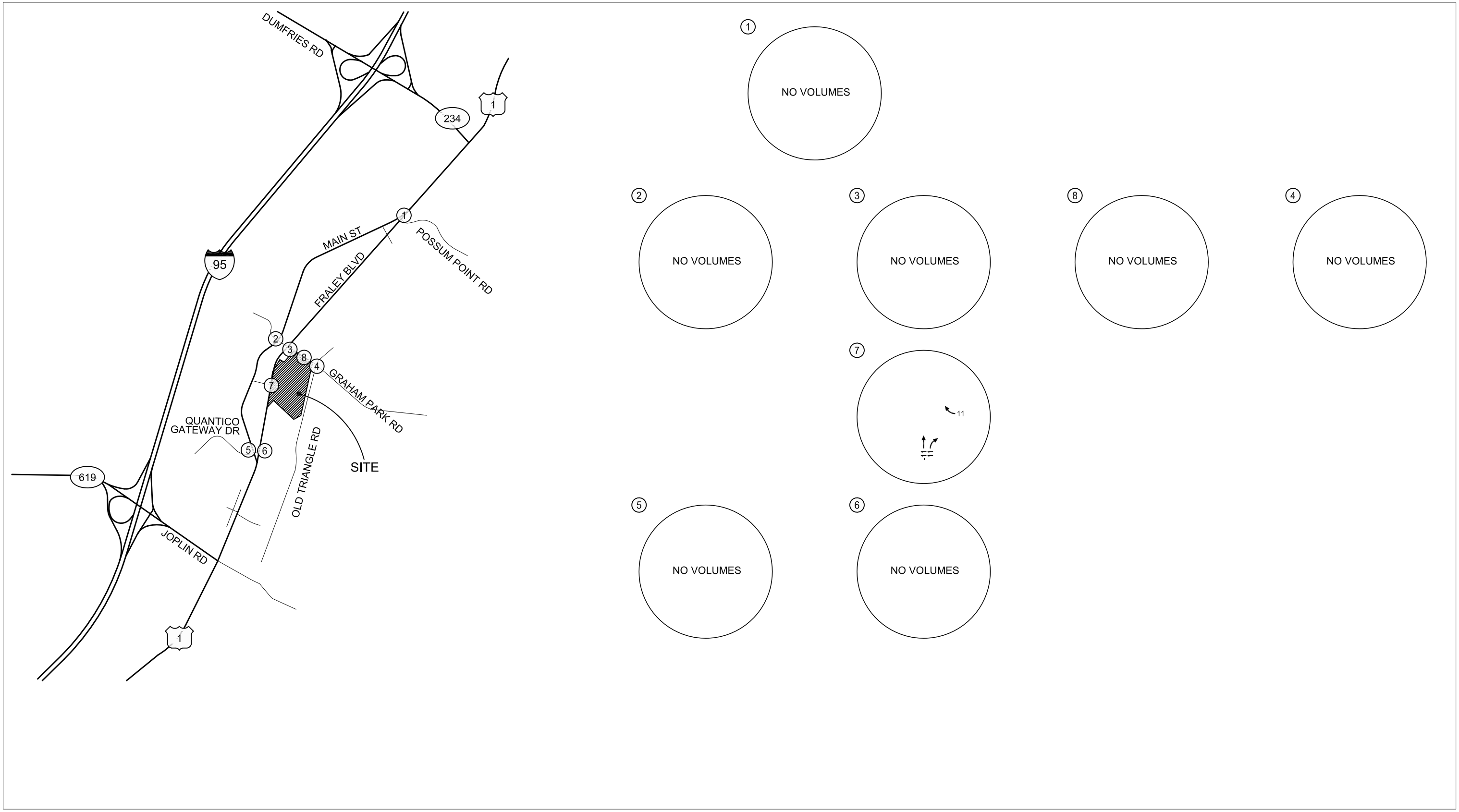
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**PASS-BY TRIPS  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**17**

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**PASS-BY TRIPS  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA**

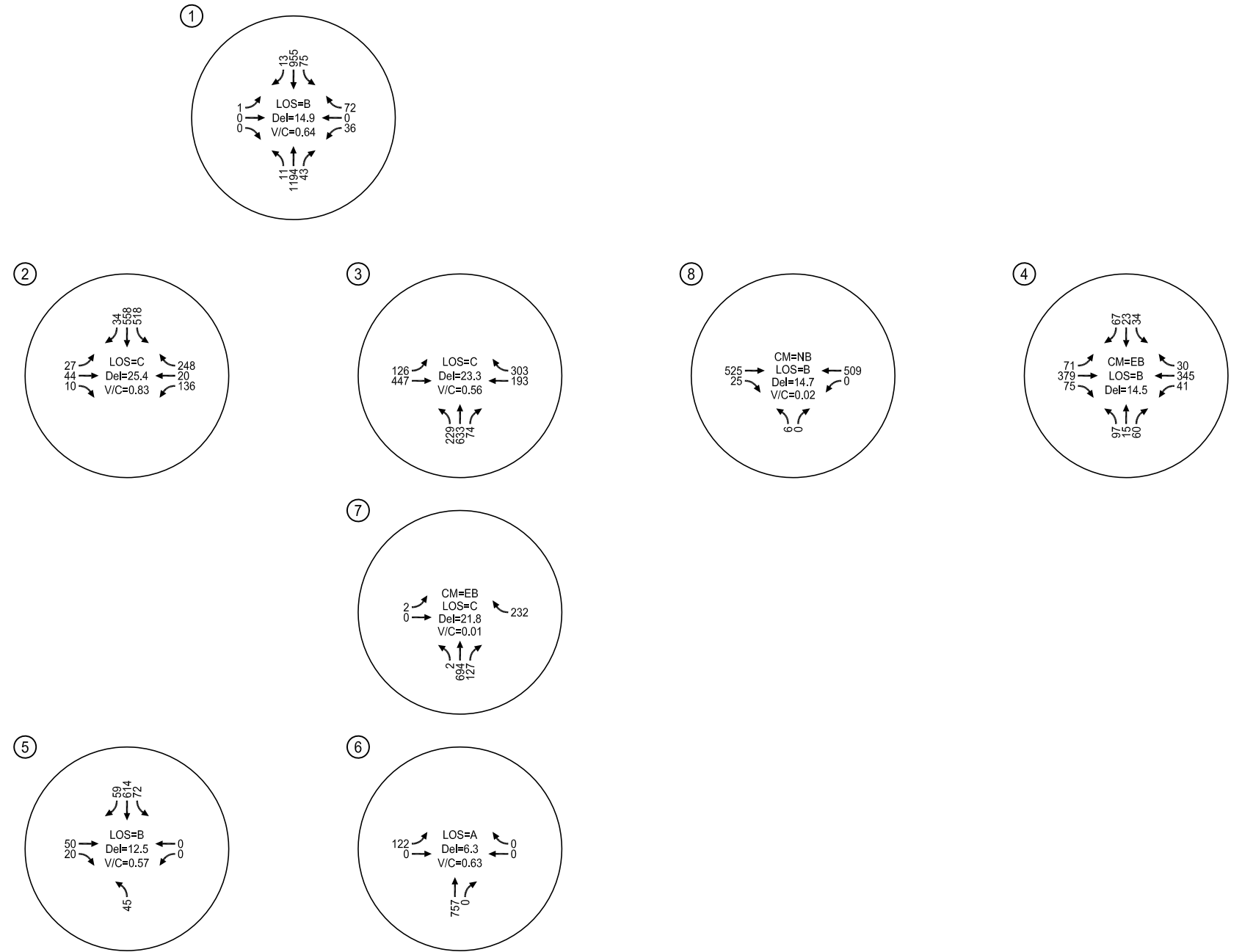
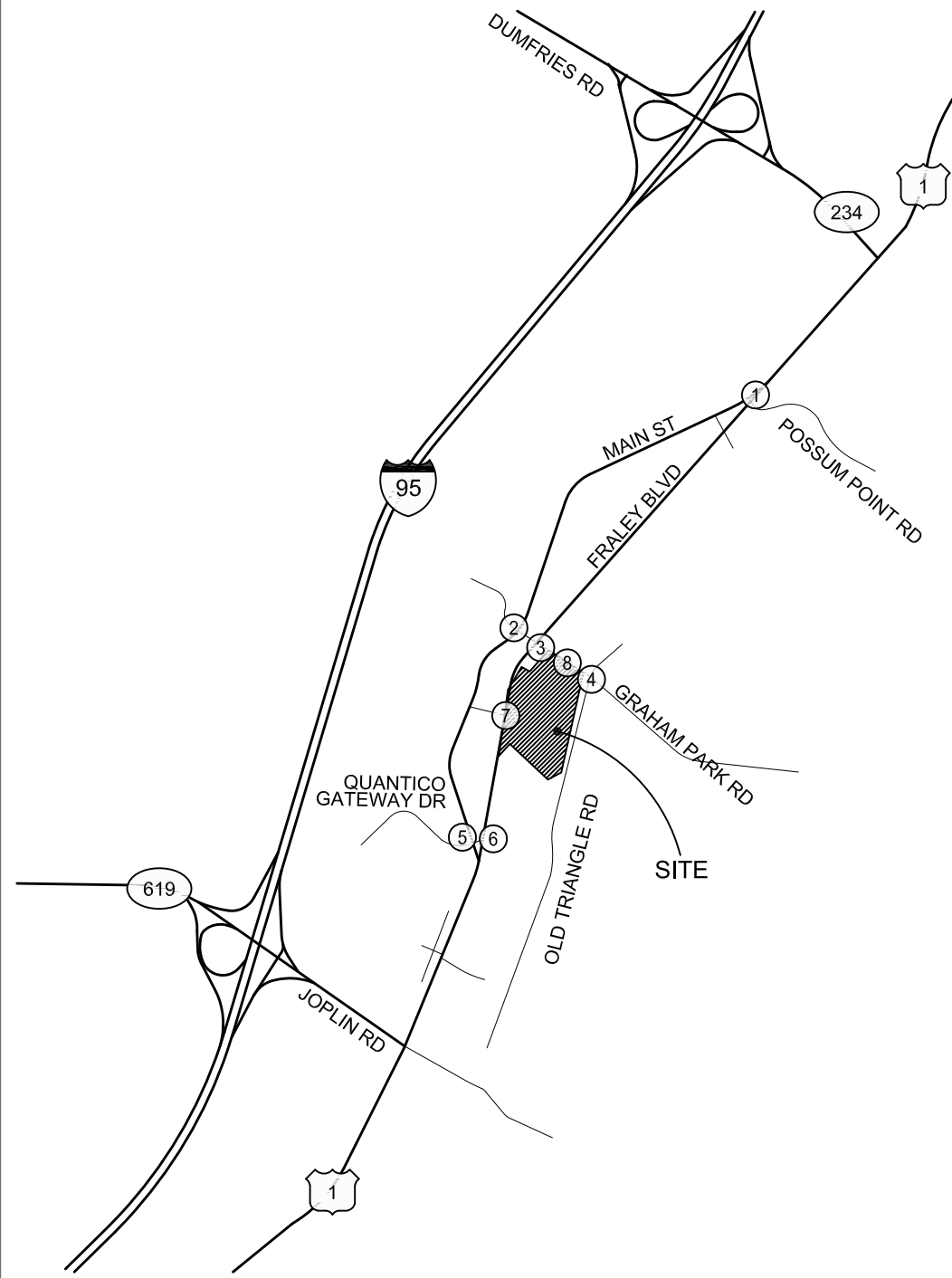
Figure  
**18**

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## 2020 Total Traffic Conditions

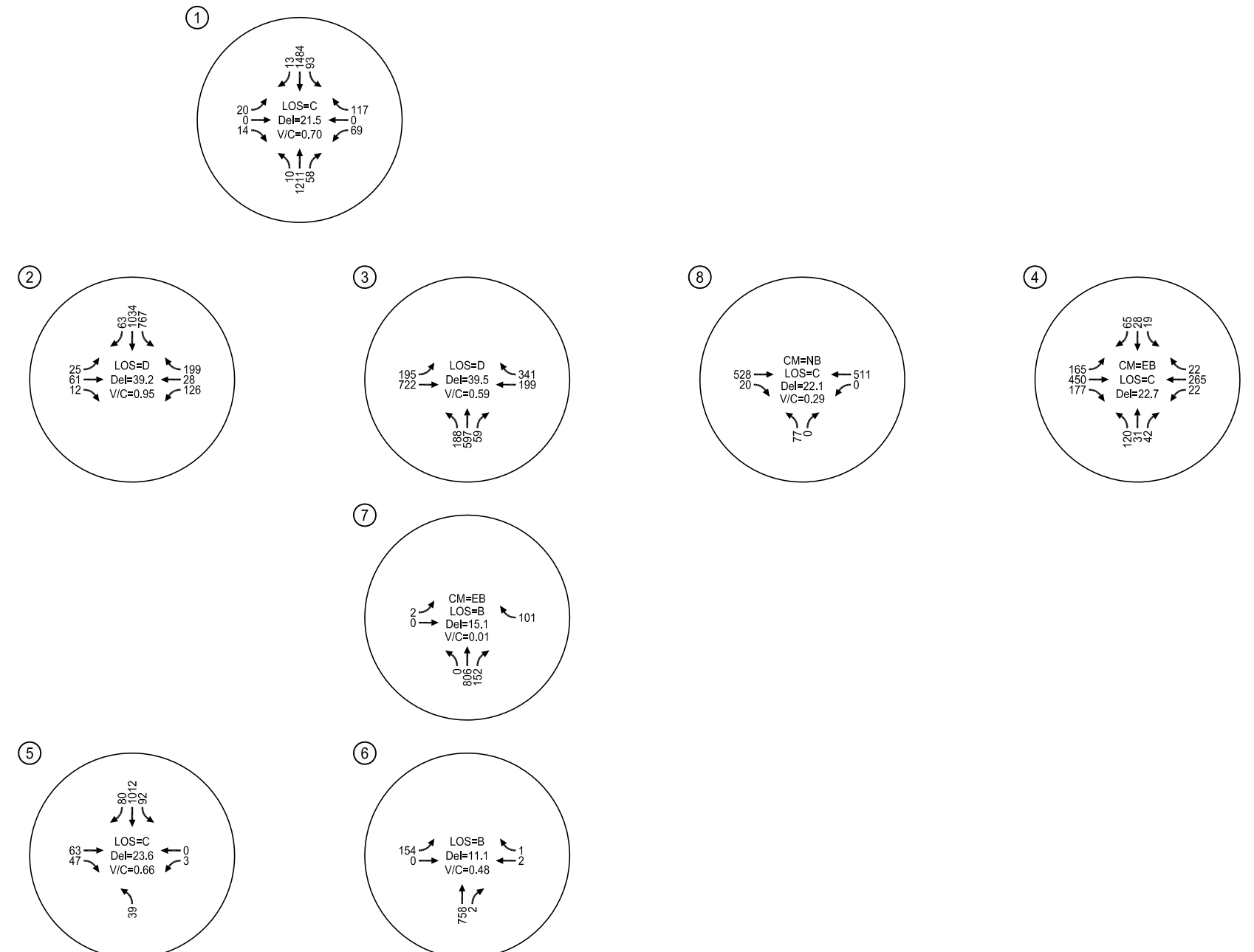
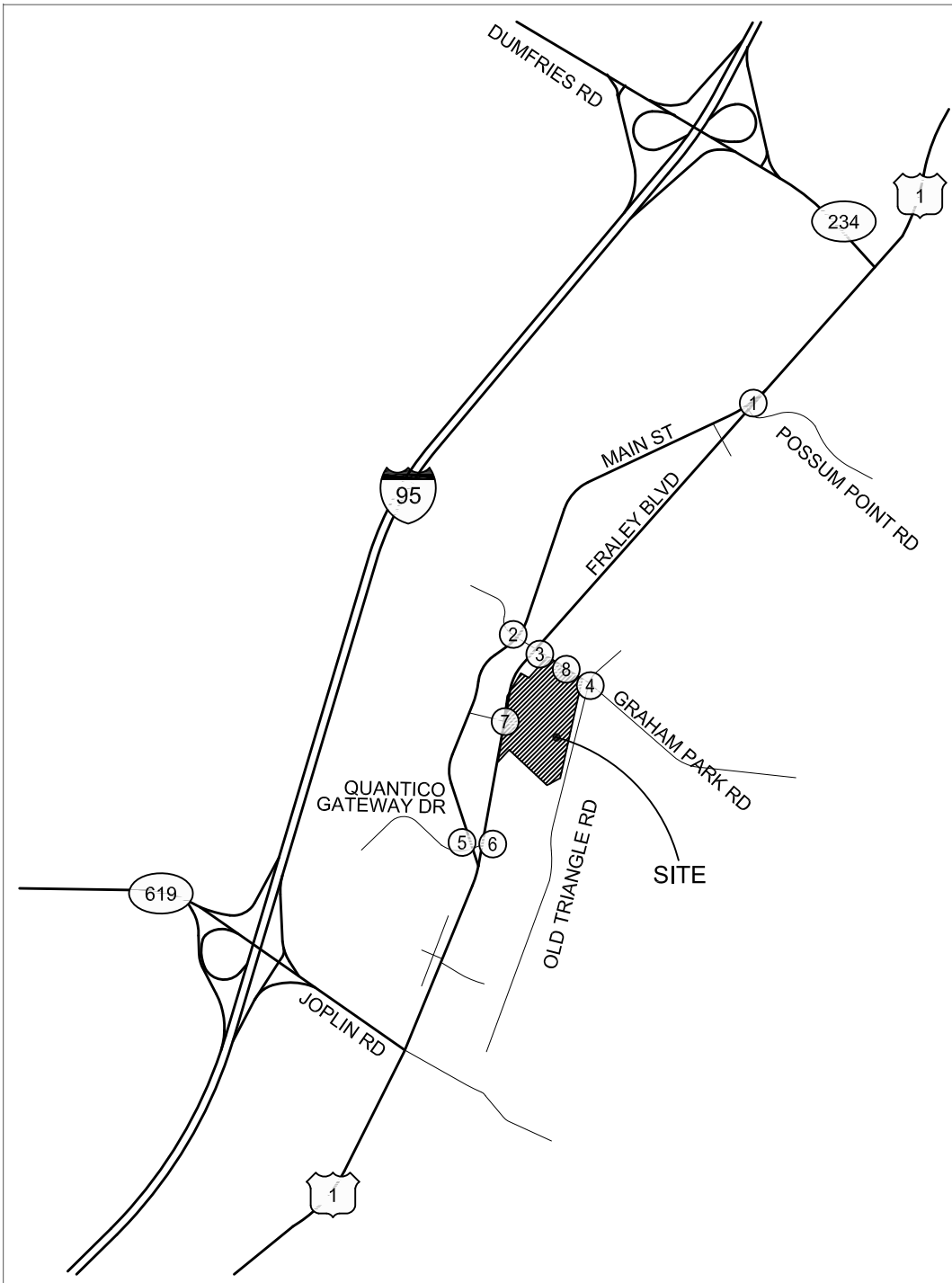
The 2020 total traffic conditions analysis forecasts how the transportation system in the study area will operate after full build out of proposed development. Site-generated trips shown in Figure 15 and Figure 16 were added to year 2020 background volumes shown in Figure 9 and Figure 10 to arrive at the 2020 total traffic volumes shown in **Figure 19** and **Figure 20**, respectively. **Figure 21** and **Figure 22** show the lane group LOS. **Table 5** summarizes the Synchro 9 peak hour levels of service, 95<sup>th</sup> percentile back of queue, and delay for each lane group by intersection. **Appendix G** contains the year 2020 total traffic conditions operational worksheets.



CM = CRITICAL MOVEMENT (TWSC)  
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)  
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)  
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO  
 TWC = TWO-WAY STOP CONTROL  
 AWSC= ALL-WAY STOP CONTROL

**2020 TOTAL TRAFFIC CONDITIONS  
 WEEKDAY AM PEAK HOUR  
 DUMFRIES, VIRGINIA**

Figure  
**19**

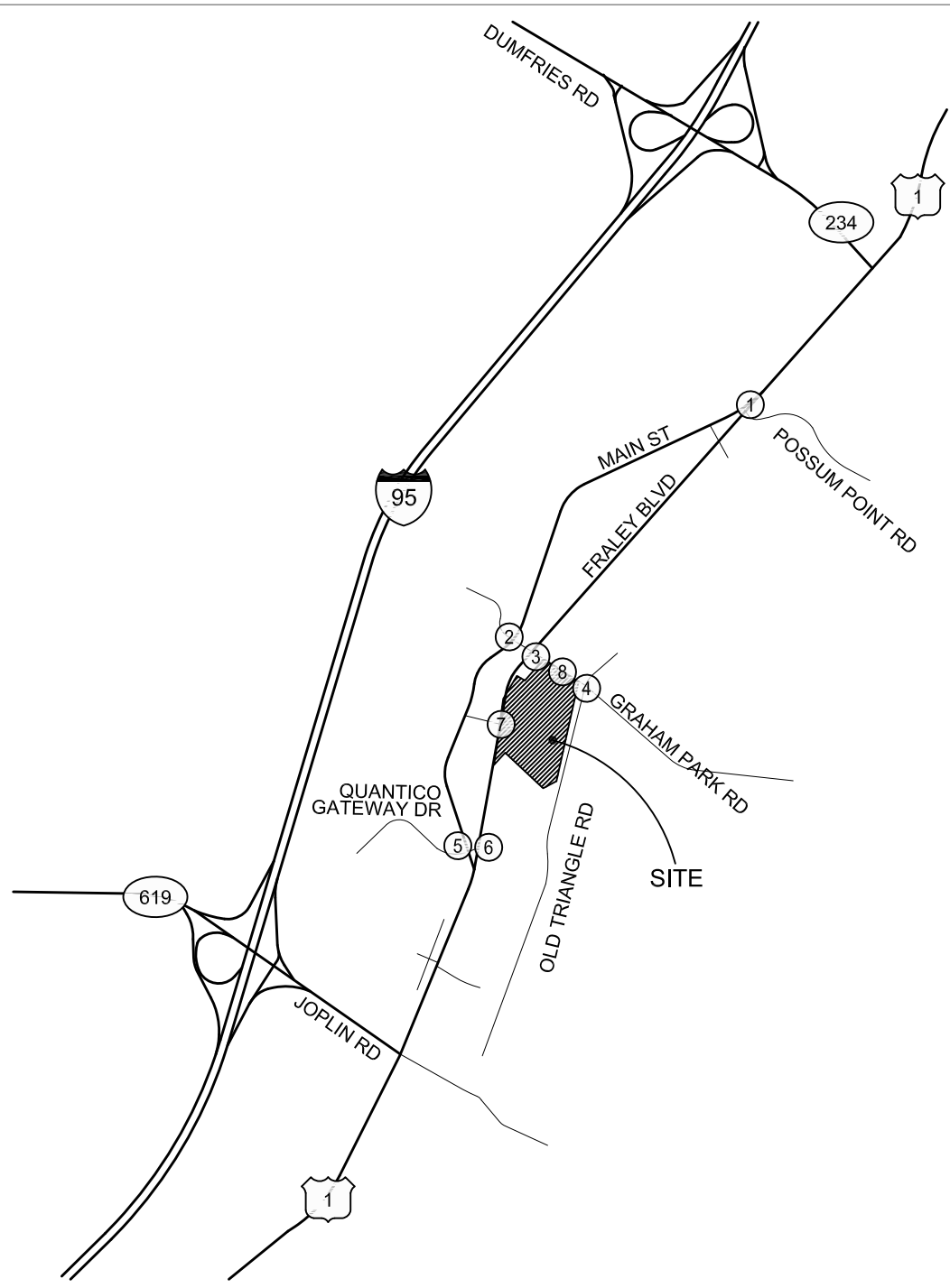


CM = CRITICAL MOVEMENT (TWSC)  
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED/AWSC) / CRITICAL MOVEMENT LEVEL OF SERVICE (TWSC)  
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED/AWSC) / CRITICAL MOVEMENT CONTROL DELAY (TWSC)  
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO  
 TWSC = TWO-WAY STOP CONTROL  
 AWSC = ALL-WAY STOP CONTROL

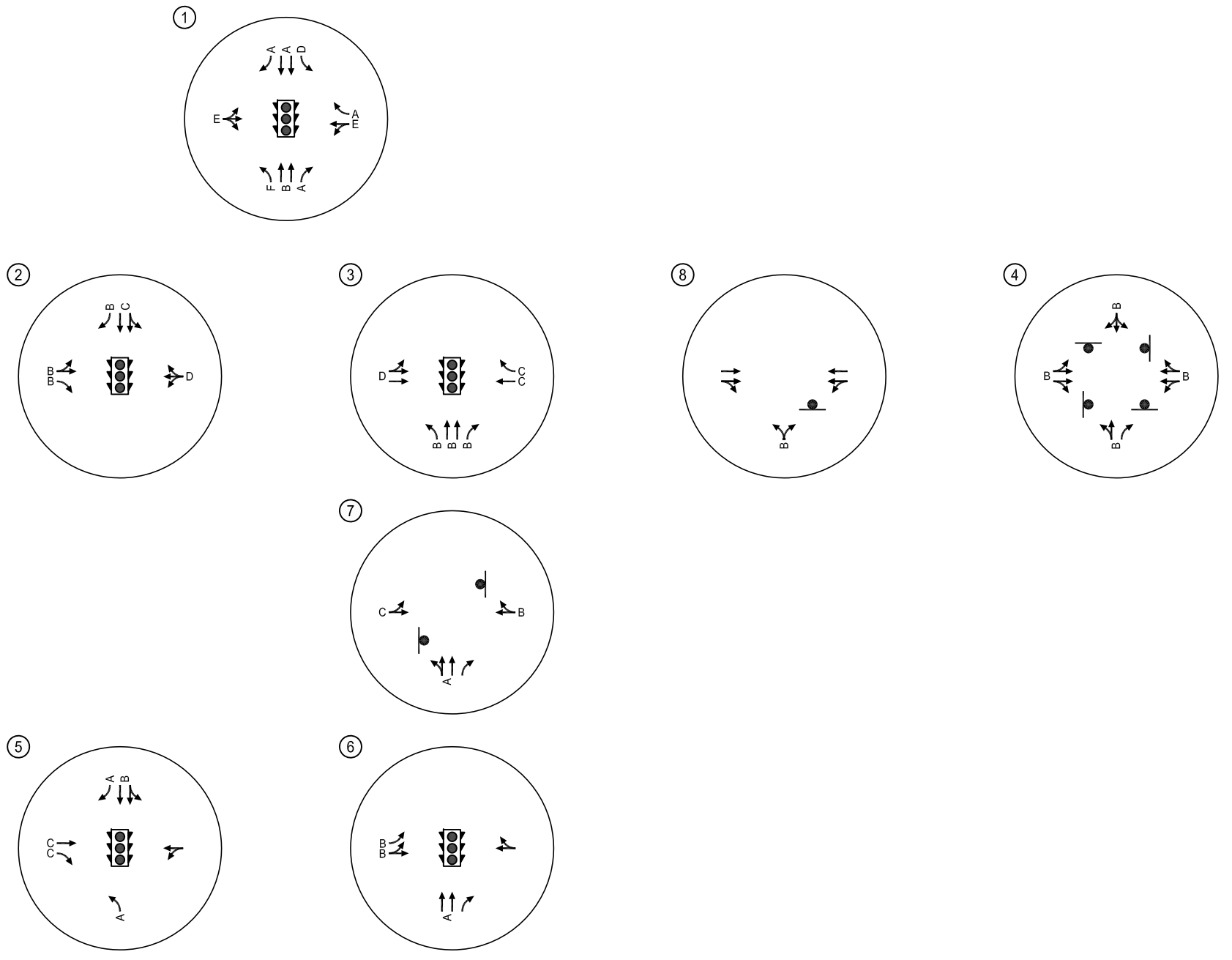
**2020 TOTAL TRAFFIC CONDITIONS  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure **20**

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"X"= LANE GROUP LEVEL OF SERVICE

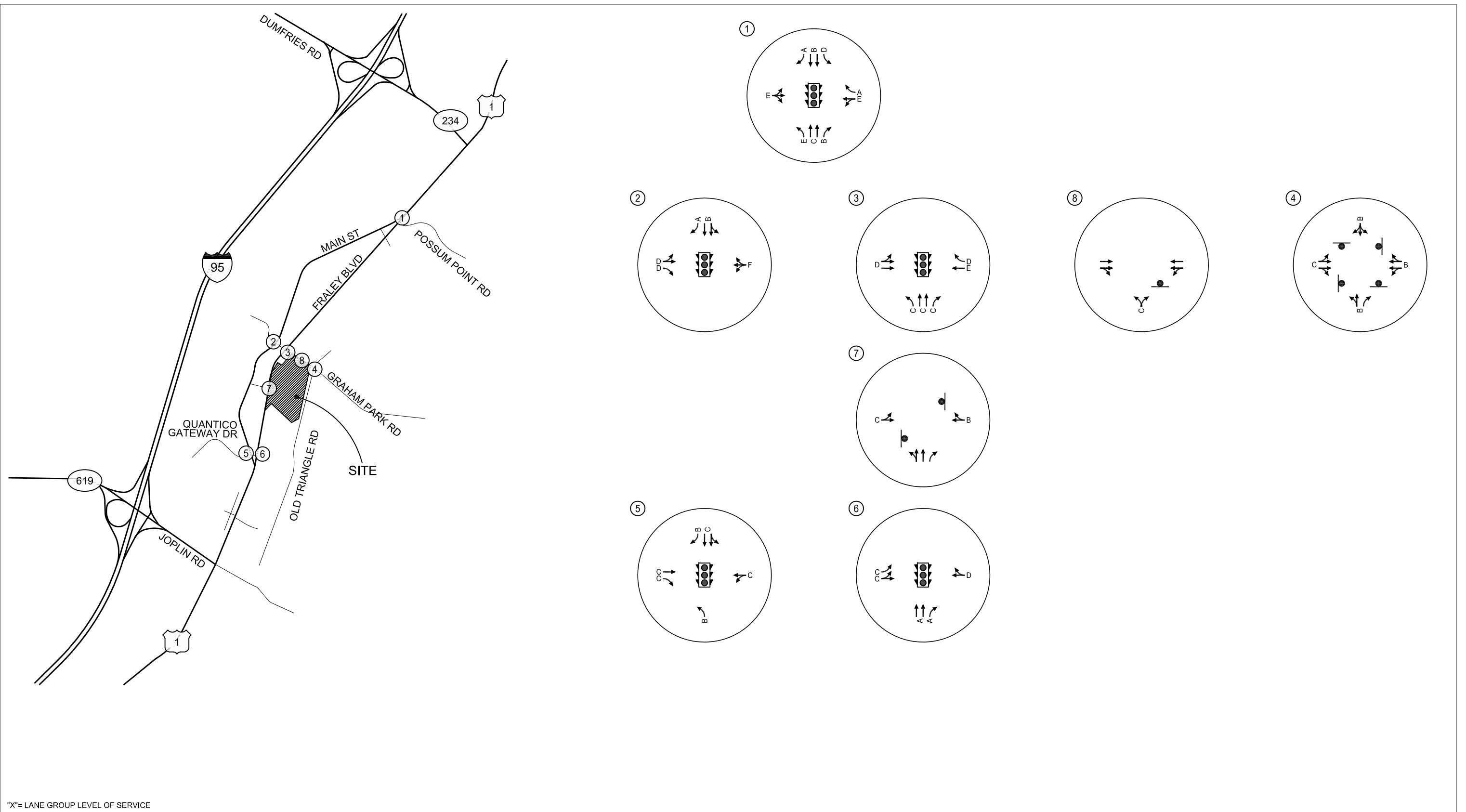


2020 TOTAL LANE GROUP LEVEL OF SERVICE  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA

Figure  
**21**

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"X"= LANE GROUP LEVEL OF SERVICE

2020 TOTAL LANE GROUP LEVEL OF SERVICE  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA

Figure  
22

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Table 5 2020 Total Traffic Conditions – Summary of Peak Hour Levels of Service, 95<sup>th</sup> Percentile Back of Queue, and Delay for Each Lane Group by Intersection

Intersection Information					AM Peak Hour			PM Peak Hour		
Intersection	Traffic Control	Approach	Lane Group	Existing/ Proposed turn-lane lengths (ft)	LOS	Back of Queue (feet)	Delay (sec)	LOS	Back of Queue (feet)	Delay (sec)
Route 1 & Possum Point Road (#1)	Signalized	EB	EBLRT		E	7	58.7	E	0	56.4
			EB Approach		E		58.7	E		56.4
		WB	WBLT		E	65	60.9	E	122	58.8
			WBR	70	A	0	0.1	A	0	0.1
		WB Approach			C		20.3	C		22.0
		NB	NBL	85	F	31	118.0	E	33	62.3
			NBT		B	556	16.8	C	610	24.8
			NBR	440	A	0	9.8	B	0	14.2
		NB Approach			B		17.4	C		24.6
		SB	SBL	335	D	112	52.3	D	151	50.9
			SBT		A	320	8.1	B	656	16.2
			SBR	250	A	0	5.6	A	0	8.2
SB Approach			B		11.2	B		18.2		
Overall LOS			B		14.9	C		21.5		
Route 1 SB & Curtis Drive (#2)	Signalized	EB	EBLT		B	74	19.6	D	167	51.3
			EBR	90	B	0	18.4	D	0	46.7
		EB Approach			B		19.5	D		50.7
		WB	WBLTR		D	#446	36.2	F	#786	150.4
			WB Approach		D		36.2	F		150.4
		SB	SBLT		C	355	22.3	B	671	18.0
			SBR	200	B	15	13.1	A	18	7.1
		SB Approach			C		22.0	B		17.6
Overall LOS			C		25.4	D		39.2		
Route 1 NB & Graham Park Road (#3)	Signalized	EB	EBLT		D	312	36.6	D	402	39.5
			EB Approach		D		36.6	D		39.5
		WB	WBT		C	173	21.3	E	351	56.1
			WBR		C	61	20.4	D	108	49.9
		WB Approach			C		20.7	D		52.2
		NB	NBL	710	B	134	15.4	C	238	29.8
			NBT		B	176	16.6	C	365	32.5
			NBR	330	B	22	13.4	C	32	26.6
NB Approach			B		16.1	C		31.5		
Overall LOS			C		23.3	D		39.5		
Old Triangle Road & Graham Park Road (#4)	Unsignalized <sup>1</sup>	EB	EBLT				15.0			24.4
			EBRT				14.1			21.0
		EB Approach			B		14.5	C		22.7
		WB	WBLT				13.4			12.1
			WBRT				12.4			11.7
		WB Approach			B		12.9	B		11.9
		NB	NBLT				12.7			14.3
			NBR	100			9.5			9.3
NB Approach			B		11.6	B		13.2		
SB	SBLTR				12.6			12.5		
	SB Approach		B		12.6	B		12.5		
Route 1 & Quantico Gateway Drive (#5)	Signalized	EB	EBT		C	45	21.1	C	93	30.7
			EBR	300	C	0	20.3	C	0	29.6
		EB Approach			C		20.8	C		30.2
		WB	WBLT		A	0	0.0	C	m5	21.6
			WB Approach		A		0.0	C		21.6
		NB	NBL		A	17	4.9	B	26	11.2
			NB Approach		A		4.9	B		11.2
		SB	SBLT		B	169	12.4	C	482	24.1
			SBR	275	A	3	9.5	B	15	12.5
		SB Approach			B		12.2	C		23.3
Overall LOS			B		12.5	C		23.6		



Intersection Information					AM Peak Hour			PM Peak Hour			
Intersection	Traffic Control	Approach	Lane Group	Existing/ Proposed turn-lane lengths (ft)	LOS	Back of Queue (feet)	Delay (sec)	LOS	Back of Queue (feet)	Delay (sec)	
Route 1 & Quantico Gateway Drive  (#6)	Signalized	EB	EBL		B	43	11.7	C	78	20.3	
			EBLT		B	43	11.7	C	78	20.3	
		EB Approach				B		11.7	C		20.3
		WB	WBRT		A	0	0.0	D	12	40.1	
			WB Approach			A		0.0	D		40.1
		NB	NBT		A	108	5.4	A	196	9.2	
			NBR	100	A	0	0.0	A	0	6.8	
		NB Approach			A		5.4	A		9.2	
Overall LOS			A		6.3	B		11.1			
Route 1 & Site Driveway  (#7)	Unsignalized	EB	EBLT		C	1	21.8	C	0	15.1	
			EB Approach			C		21.8	C		15.1
		WB	WBRT		B	49	14.7	B	17	12.4	
			WB Approach			B		14.7	B		12.4
		NB	NBLT		A	0	0.1		0	0.0	
			NBR	100		0	0.0		0	0.0	
NB Approach					0.0			0.0			
Site Driveway and Graham Park Road  (#8)	Unsignalized	EB	EBRT			0	0.0		0	0.0	
			EB Approach				0.0			0.0	
		WB	WBLT			0	0.0		0	0.0	
			WB Approach				0.0			0.0	
		NB	NBR		B	1	14.7	C	29	22.1	
			NB Approach			B		14.7	C		22.1

\*The ‘#’ indicates 95<sup>th</sup> percentile volume exceeds capacity, queue may be longer and the queue shown is the maximum after two cycles. The ‘m’ indicates the volume for the 95<sup>th</sup> percentile queue is metered by the upstream signal.

<sup>1</sup> HCM all way stop control methodology does not calculate queues or LOS by lane group.

As shown in the figures and Table 5, all study intersections are forecast to continue to operate at or above LOS D during all time periods.

### SimTraffic Queuing Analysis

Forecast 95<sup>th</sup> percentile queues for background and total traffic conditions were estimated using SimTraffic. Ten simulation runs were performed for each time period in accordance with VDOT’s *Traffic Operations and Safety Analysis Manual v1.0*. **Table 6** below provides a queue comparison between forecast 95<sup>th</sup> percentile queues estimated in SimTraffic between background and total traffic conditions for each study time period. **Appendix H** contains the year 2020 background and total traffic conditions SimTraffic worksheets.



Table 6 95<sup>th</sup> Percentile SimTraffic Queue Comparison

Intersection	Movement	Storage	Weekday AM			Weekday PM		
			BK	Total	Δ	BK	Total	Δ
Route 1 & Possum Point Road (#1)	EBLTR		9	9	0	51	53	2
	WBLT		75	85	10	96	132	36
	WBR	70	0	17	17	23	35	12
	NBL	85	36	42	6	50	56	6
	NBT		210	242	32	302	361	59
	NBR	440	6	0	-6	64	5	-59
	SBL	335	91	101	10	119	141	22
	SBT	250	144	168	24	266	314	48
SBR		12	16	4	42	41	-1	
Route 1 SB & Curtis Drive (#2)	EBLT		182	122	-60	238	182	-56
	EBR	90	44	25	-19	42	33	-9
	WBLTR		249	251	2	284	258	-26
	SBLT		2451	2411	-40	812	1023	211
	SBT		2486	2425	-61	635	899	264
	SBR	200	18	50	32	166	141	-25
Route 1 NB & Graham Park Road (#3)	EBLT		244	240	-4	260	267	7
	EBT		256	252	-4	292	263	-29
	WBT		339	319	-20	83	307	224
	WBR		89	78	-11	72	135	63
	NBL	710	129	927	798	490	953	463
	NBT		157	956	799	404	1096	692
NBR	330	50	61	11	79	107	28	
Old Triangle Road & Graham Park Road (#4)	EBLT		133	128	-5	168	185	17
	EBTR		145	132	-13	185	188	3
	WBLT		78	84	6	57	150	93
	WBTR		83	74	-9	72	159	87
	NBLT		74	73	-1	64	250	186
	NBR	100	52	56	4	39	64	25
	SBLTR		67	68	1	69	109	40
Route 1 & Quantico Gateway Drive (#5)	EBT		58	54	-4	67	71	4
	EBR	300	31	34	3	41	47	6
	WBLT		0	0	0	7	4	-3
	NBL		43	46	3	50	54	4
	SBLT		109	146	37	181	293	112
	SBT		120	134	14	196	257	61
	SBR	275	40	38	-2	47	66	19
Route 1 & Quantico Gateway Drive (#6)	EBL		48	66	18	27	77	50
	EBLT		20	51	31	10	72	62
	WBTR		0	0	0	26	16	-10
	NBLT		0	0	0	158	169	11
	NBT		124	133	9	94	128	34
	NBR		0	0	0	4	3	-1
Route 1 & Site Driveway (#7)	EBL		-	12	-	-	15	-
	EBLT		-	0	-	-	0	-
	WBTR		-	286	-	-	400	-
	NBLT		-	178	-	-	517	-
	NBT		-	144	-	-	491	-
	NBR	100	-	29	-	-	52	-
Site Driveway and Graham Park Road (#8)	WBLT		-	5	-	-	508	-
	WBT		-	4	-	-	458	-
	NBLR		-	26	-	-	428	-

EB – Eastbound; WB – Westbound; NB – Northbound; SB – Southbound; Cont. – Continuous.  
L – Left; T – Through; R – Right.

As shown in Table 6, many of the forecast queues remain unchanged or decrease as compared to background conditions. In instances where the forecast queue increases, the increase is many cases less than the assumed length of one vehicle (25 feet).

The lack of a direct connection from the site driveway on Fraley Boulevard (Route 1 NB) to Main Street (Route 1 SB) introduces out-of-direction travel and increases left-turn demand at the Route 1/Curtis Drive/Graham Park Road and Route 1/Quantico Gateway Drive intersections. During the peak 15-minute period of both peak hours, northbound left-turn queues at the Fraley Boulevard (Route 1 NB)/Graham Park Road are forecast to extend beyond the available storage. However, this movement is forecast to operate well below capacity (0.29 and 0.27 during the weekday a.m. and p.m. peak hours, respectively), and is not anticipated to adversely impact traffic operations as compared to background conditions.

*Turn Lane Warrants*

VDOT turn lane warrants were evaluated at the proposed site-access driveways. **Table 7** below summarizes the warranted turn lanes and required storage/taper lengths.

Table 7 Turn Lane Warrant Analysis

Turn Lane & Location	Turn Lane Warranted?	VDOT Storage/Taper (ft)	Proposed Turn Lane Storage/Taper (ft)
Route 1 NB (Fraley Blvd ) / Right-In / Right-Out Entrance	Yes	100 / 100	100 / 100
Graham Park Road / Site Entrance	No	N/A	N/A

As shown in Table 7, a full northbound right-turn lane and taper are warranted at the right-in/right-out access on Route 1 (Fraley Boulevard) based on an urban roadway, 45 mph design speed, and the forecast 95<sup>th</sup> percentile queue. No eastbound turn lane or taper is warranted at the Graham Park Road site driveway. **Appendix I** contains the right-turn warrant analysis worksheets.



Section 5  
Conclusions and Recommendations

## CONCLUSIONS AND RECOMMENDATIONS

The results of the traffic impact analysis indicate that the proposed Townsquare development can be constructed while maintaining acceptable operations on the surrounding transportation system assuming provision of mitigations specified in this report. The findings of this analysis and our recommendations are discussed below.

### Existing Conditions

- All study intersections currently operate at LOS D or better during all study time periods.

### 2020 Background Traffic Conditions

- A two percent annual growth rate (compounded annually) was used to account for regional traffic growth.
- In-process traffic from the First Town Center development was added to background traffic to project year 2020 background traffic conditions.
- All study intersections are forecast to continue to operate at LOS D or better during all study time periods.

### Proposed Development

- Community Housing Partners is applying to rezone and develop a mixed-use development in Dumfries, Virginia. The site is comprised of four parcels (GPIN Parcels 8188-78-5384, 8188-78-8257, 8188-78-8432 and 8188-77-5398), and is located in the southeast quadrant of the Fraley Boulevard (Route 1)/Graham Park Road intersection.
- The concept development plan includes 200 multi-family units, 105 townhouses, 20,000 SF of retail uses, 8,000 SF of commercial/public facility uses (office), and 40,000 SF of a self-storage (mini-warehouse) facility.
- The development is estimated to generate approximately 2,856 net new weekday daily trips, 320 weekday a.m. (117 in, 203 out), and 328 weekday p.m. (161 in, 167 out) peak hour trips.

The development proposes two access points: a right-in/right-out site driveway on Fraley Boulevard (Route 1 NB) and a full movement site driveway on Graham Park Road.

### 2020 Total Traffic Conditions

- All study intersections are forecast to continue to operate at LOS D or better during all study time periods.

- A northbound right-turn lane is warranted at the right-in/right-out site driveway on Fraley Boulevard (Route 1 NB). The applicant proposes to construct a turn lane with 100 feet of storage and a 100-foot taper.
- The lack of a direct connection from the site driveway on Fraley Boulevard (Route 1 NB) to Main Street (Route 1 SB) introduces out-of-direction travel and increases left-turn demand at the Route 1/Curtis Drive/Graham Park Road and Route 1/Quantico Gateway Drive intersections.
  - During the peak 15-minute period of both peak hours, northbound left-turn queues at the Fraley Boulevard (Route 1 NB)/Graham Park Boulevard are forecast to extend beyond the available storage. However, this movement is forecast to operate well below capacity (0.29 and 0.27 during the weekday a.m. and p.m. peak hours, respectively), and is not anticipated to adversely impact traffic operations as compared to background conditions.

## RECOMMENDATIONS

The following improvements are recommended to mitigate the impacts of the proposed Townsquare development.

- Construct a northbound right-turn lane on turn lane on Fraley Boulevard (Route 1 NB) in its ultimate location with 100 feet of storage and a 100-foot taper.



Section 6  
References

## REFERENCES

1. Transportation Research Board. *Highway Capacity Manual*. 2010.
2. Institute of Transportation Engineers. *Trip Generation, 9<sup>th</sup> Edition*. 2012.



**Appendix A**  
Scoping Letter

## 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.

<b>Contact Information</b>				
Consultant Name: Tele: E-mail:	Chris Tiesler - Kittelson & Associates, Inc. (703) 885-8970 ctiesler@kittelson.com			
Developer/Owner Name: Tele: E-mail:	David Schultz - Community Housing Partners (804) 343-7201 dschultz@chpc2.org			
<b>Project Information</b>				
Project Name:	Townsquare	Locality/County:	Prince William County	
Project Location: <small>(Attach regional and site specific location map)</small>	See Figure 1 - attached			
Submission Type	Comp Plan <input type="checkbox"/>	Rezoning <input checked="" type="checkbox"/>	Site Plan <input type="checkbox"/>	Subd Plat <input type="checkbox"/>
Project Description: <small>(Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)</small>	Community Housing Partners is applying to rezone and develop a mixed-use development in Dumfries, VA. The site is comprised of four parcels (GPIN Parcels 8188-78-5384, 8188-78-8257, 8188-78-843 and 8188-77-5398). The concept development plan includes 220 multi-family units, 90 townhouses, 15,000 SF of retail uses, 7,200 SF of commercial/public facility uses (office), and 40,000 SF of a self-storage (mini-warehouse) facility. Two access points are proposed: a right-in/right-out access to Fraley Boulevard (US Route 1 NB), and a full access to Graham Park Road. Figure 2 illustrates a conceptual site plan.			
Proposed Use(s): <small>(Check all that apply; attach additional pages as necessary)</small>	Residential <input type="checkbox"/>	Commercial <input type="checkbox"/>	Mixed Use <input checked="" type="checkbox"/>	Other <input type="checkbox"/>
	<b>Residential Uses(s)</b> Number of Units: 310 ITE LU Code(s): 220 - 220 units 230 - 90 units _____ <b>Commercial Use(s)</b> ITE LU Code(s): 826 - 15 ksf 710 - 7.2 ksf _____ Square Ft or Other Variable:		_____ _____ _____ <b>Other Use(s)</b> ITE LU Code(s): 151 - 40 ksf _____ _____ Independent Variable(s): _____ See attached trip gen able	

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

Total Peak Hour Trip Projection:	Less than 100 <input type="checkbox"/>	100 – 499 <input checked="" type="checkbox"/>	500 – 999 <input type="checkbox"/>	1,000 or more <input type="checkbox"/>
<b>Traffic Impact Analysis Assumptions</b>				
Study Period	Existing Year: 2015	Build-out Year: 2020	Design Year: N/A	
Study Area Boundaries (Attach map)	North: Possum Point Road	South: Quantico Gateway Drive		
	East: Old Triangle Road	West: Main Street (US Route 1 SB)		
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	US Route 1 is currently in preliminary design to realign a 6-lane divided facility along the current alignment of Fraley Road (US Route 1 NB). The final alignment has yet to be determined. This project is not anticipated to be constructed before the proposed Townsquare project is completed.  First Town Center - this development will be included as in-process traffic.			
Consistency With Comprehensive Plan (Land use, transportation plan)	Yes			
Available Traffic Data (Historical, forecasts)	2014 AADT Volumes from VDOT US Route 1 (Par Main St to SCL Dumfries)-21,000 (combined both directions) US Route 1 (SCL Dumfries to Possum Point Rd)-30,000 (combined both directions) Graham Park Road (ECL Dumfries to Purvis Dr)-5,600			
Trip Distribution (Attach sketch)	Road Name: 60% US Route 1 [North]	Road Name: 40% US Route 1 [South]		
	Road Name:	Road Name:		
Annual Vehicle Trip Growth Rate:	2%	Peak Period for Study (check all that apply)	<input checked="" type="checkbox"/> AM <input checked="" type="checkbox"/> PM <input type="checkbox"/> SAT	
		Peak Hour of the Generator	6-9 am 4-7 pm	
Study Intersections and/or Road Segments (Attach additional sheets as necessary)	1.US Route 1/Possum Point Road	6.US Route 1 NB (Fraley Blvd)/Quantico Gateway Driver		
	2.US Route 1 SB (Main St)/Curtis Drive	7.US Route 1 NB (Fraley Blvd)/Site Access (future)		
	3.US Route 1 NB (Fralwy Blvd)/Graham Park Road	8.Site Access/Graham Park Road (future)		
	4.Old Triangle Road/Graham Park Road	9.		
	5.US Route 1 SB (Main St)/Quantico Gateway Dr	10.		
Trip Adjustment Factors	Internal allowance: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Pass-by allowance: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
	Reduction: 5% AM, 10% PM% trips	Reduction: 34%% trips		
Software Methodology	<input checked="" type="checkbox"/> Synchro <input type="checkbox"/> HCS (v.2000/+) <input type="checkbox"/> aaSIDRA <input type="checkbox"/> CORSIM <input type="checkbox"/> Other _____			

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

<b>Traffic Signal Proposed or Affected</b> (Analysis software to be used, progression speed, cycle length)	Analysis Software: Synchro v8 <span style="float: right;">Results: HCM Methodology</span>
<b>Improvement(s) Assumed or to be Considered</b>	US Route 1 is currently in preliminary design to realign a 6-lane divided facility along the current alignment of Fraley Road (US Route 1 NB). The final alignment has yet to be determined. This project is not anticipated to be constructed before the proposed Townsquare project is completed.
<b>Background Traffic Studies Considered</b>	First Town Center - this development will be included as in-process traffic.
<b>Plan Submission</b>	<input type="checkbox"/> Master Development Plan (MDP) <input checked="" type="checkbox"/> Generalized Development Plan (GDP) <input type="checkbox"/> Preliminary/Sketch Plan <input type="checkbox"/> Other Plan type (Final Site, Subd. Plan)
<b>Additional Issues to be Addressed</b>	<input checked="" type="checkbox"/> Queuing analysis <input type="checkbox"/> Actuation/Coordination <input type="checkbox"/> Weaving analysis <input type="checkbox"/> Merge analysis <input type="checkbox"/> Bike/Ped Accommodations <input checked="" type="checkbox"/> Intersection(s) <input type="checkbox"/> TDM Measures <input checked="" type="checkbox"/> Other SimTraffic Queuing Simulation (60 min)

**NOTES on ASSUMPTIONS:** Internal trip percentages calculated in accordance with VDOT Chapter 527 Guidelines 24VAC30-155-60(D)(3)(a)(3) for residential with a mix of non-residential (commercial/retail) development. The pass-by rate for ITE Code 820 is applied to the "Specialty Retail" (ITE Code 826) use.

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
                     Applicant or Consultant

PRINT NAME: \_\_\_\_\_  
                     Applicant or Consultant

It is important for the applicant to provide sufficient information to county and VDOT staff so that questions regarding geographic scope, alternate methodology, or other issues can be answered at the scoping meeting.

## SCOPE OF WORK MEETING

### ADDITIONS TO THE REQUIRED ELEMENTS, CHANGES TO THE METHODOLOGY OR STANDARD ASSUMPTIONS, AND SIGNATURE PAGE

Any additions to the Required Elements or changes to the Methodology or Standard Assumptions due to special circumstances that are approved by VDOT:

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AGREED:   
Applicant or Consultant

DATE: 10-1-15

PRINT NAME: Chris Tiesler  
Applicant or Consultant

SIGNED:   
VDOT Representative

DATE: 10/15/2015

PRINT NAME: Tahir Benabdi  
VDOT Representative

SIGNED:   
Local Government Representative

DATE: 15 Oct 2015

PRINT NAME: Richard Paul West  
Local Government Representative

**Townsquare**

ITE Trip Gen 9<sup>th</sup> Ed

<b>Northern Portion of Site</b>				Weekday Daily	Peak Hour Generator						Peak Hour Adjacent Street					
Land Use	ITE Code	Units			Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In		Out	Total	In	Out	Total	In	Out	Total	In	Out		
Mini-Warehouse	151	40.0	1000 sq. ft	100	11	5	6	12	6	6	6	3	3	10	5	5
General Office	710	7.2	1000 sq. ft	178	23	20	3	87	15	72	23	20	3	87	15	72
<b>Net New Trips</b>				<b>278</b>	<b>34</b>	<b>25</b>	<b>9</b>	<b>99</b>	<b>21</b>	<b>78</b>	<b>29</b>	<b>23</b>	<b>6</b>	<b>97</b>	<b>20</b>	<b>77</b>

<b>Southern Portion of Site</b>				Weekday Daily	Peak Hour Generator						Peak Hour Adjacent Street					
Land Use	ITE Code	Units			Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday AM Peak Hour			Weekday PM Peak Hour		
		Total	In		Out	Total	In	Out	Total	In	Out	Total	In	Out		
Townhouse	230	90	units	587	47	9	38	66	42	24	47	8	39	55	37	18
Apartment	220	220	units	1,457	121	35	86	147	90	57	112	22	90	139	90	49
Specialty Retail	826	15.0	1000 sq. ft	665	189	91	98	75	42	33	189	91	98	57	25	32
<i>Internal Trips (5% AM, 10% PM)</i>				(33)	(9)	(5)	(4)	(8)	(4)	(4)	(9)	(5)	(4)	(6)	(3)	(3)
<i>Pass-By (34%)</i>				(215)	(62)	(31)	(31)	(22)	(11)	(11)	(62)	(31)	(31)	(18)	(9)	(9)
<b>Subtotal:</b>				<b>417</b>	<b>118</b>	<b>55</b>	<b>63</b>	<b>45</b>	<b>27</b>	<b>18</b>	<b>118</b>	<b>55</b>	<b>63</b>	<b>33</b>	<b>13</b>	<b>20</b>
<b>Total:</b>				<b>2,709</b>	<b>357</b>	<b>135</b>	<b>222</b>	<b>288</b>	<b>174</b>	<b>114</b>	<b>348</b>	<b>121</b>	<b>227</b>	<b>251</b>	<b>152</b>	<b>99</b>
<i>Less Internal Trips</i>				(33)	(9)	(5)	(4)	(8)	(4)	(4)	(9)	(5)	(4)	(6)	(3)	(3)
<i>Less Pass-By</i>				(215)	(62)	(31)	(31)	(22)	(11)	(11)	(62)	(31)	(31)	(18)	(9)	(9)
<b>Net New Trips</b>				<b>2,461</b>	<b>286</b>	<b>99</b>	<b>187</b>	<b>258</b>	<b>159</b>	<b>99</b>	<b>277</b>	<b>85</b>	<b>192</b>	<b>227</b>	<b>140</b>	<b>87</b>

**COMBINED TOTAL**

<b>Total:</b>				<b>2,987</b>	<b>391</b>	<b>160</b>	<b>231</b>	<b>387</b>	<b>195</b>	<b>192</b>	<b>377</b>	<b>144</b>	<b>233</b>	<b>348</b>	<b>172</b>	<b>176</b>
<i>Less Internal Trips</i>				(33)	(9)	(5)	(4)	(8)	(4)	(4)	(9)	(5)	(4)	(6)	(3)	(3)
<i>Less Pass-By</i>				(215)	(62)	(31)	(31)	(22)	(11)	(11)	(62)	(31)	(31)	(18)	(9)	(9)
<b>Net New Trips</b>				<b>2,739</b>	<b>320</b>	<b>124</b>	<b>196</b>	<b>357</b>	<b>180</b>	<b>177</b>	<b>306</b>	<b>108</b>	<b>198</b>	<b>324</b>	<b>160</b>	<b>164</b>

**NOTES**

- Use AM Peak Hour of Generator for AM Peak of Adjacent Street (no data)

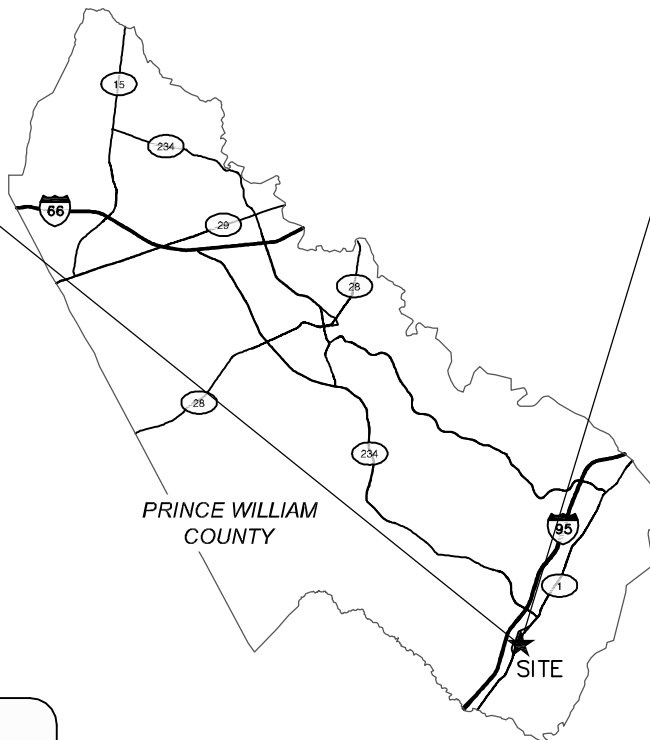
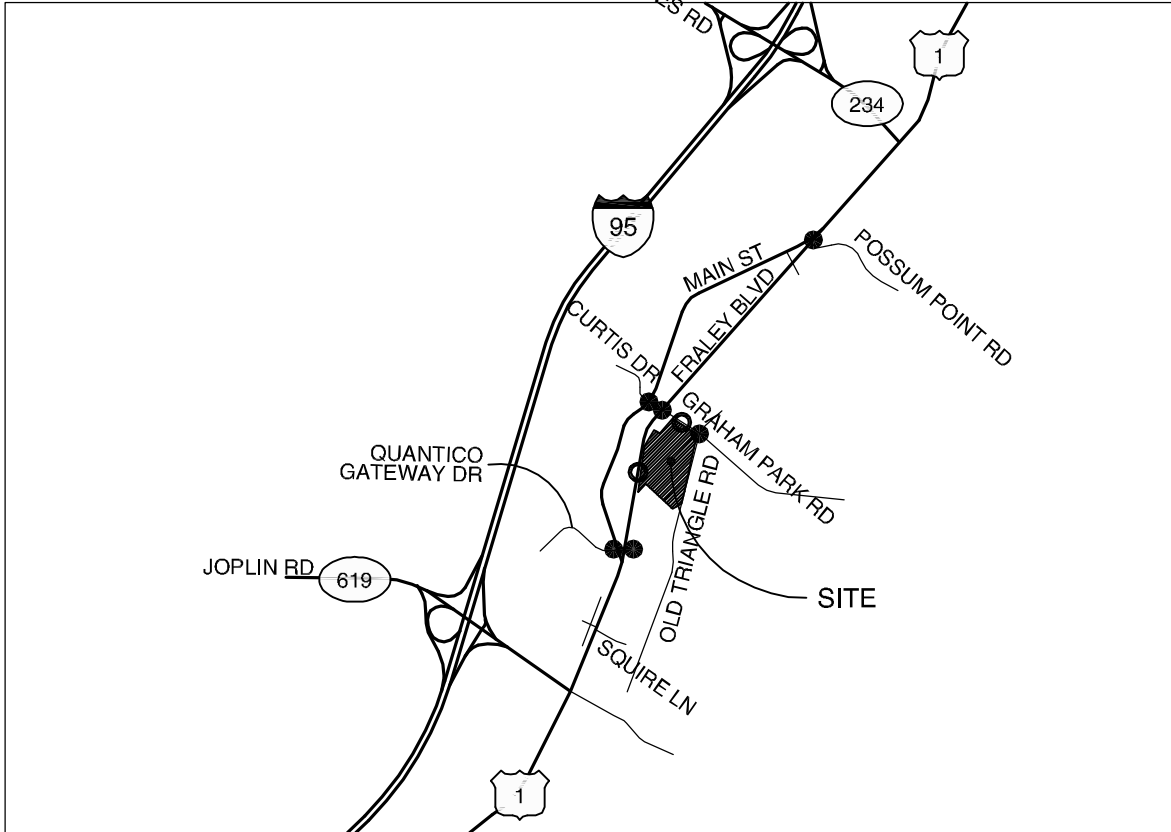
- Assumes 5% AM/10% PM reduction of smaller trip total (residential vs. non-residential) per VDOT Chapter 527 Guidelines 24VAC30-155-60(D)(3)(a)(3)

- Assumes pass-by rates from ITE Code 820





(NO SCALE)



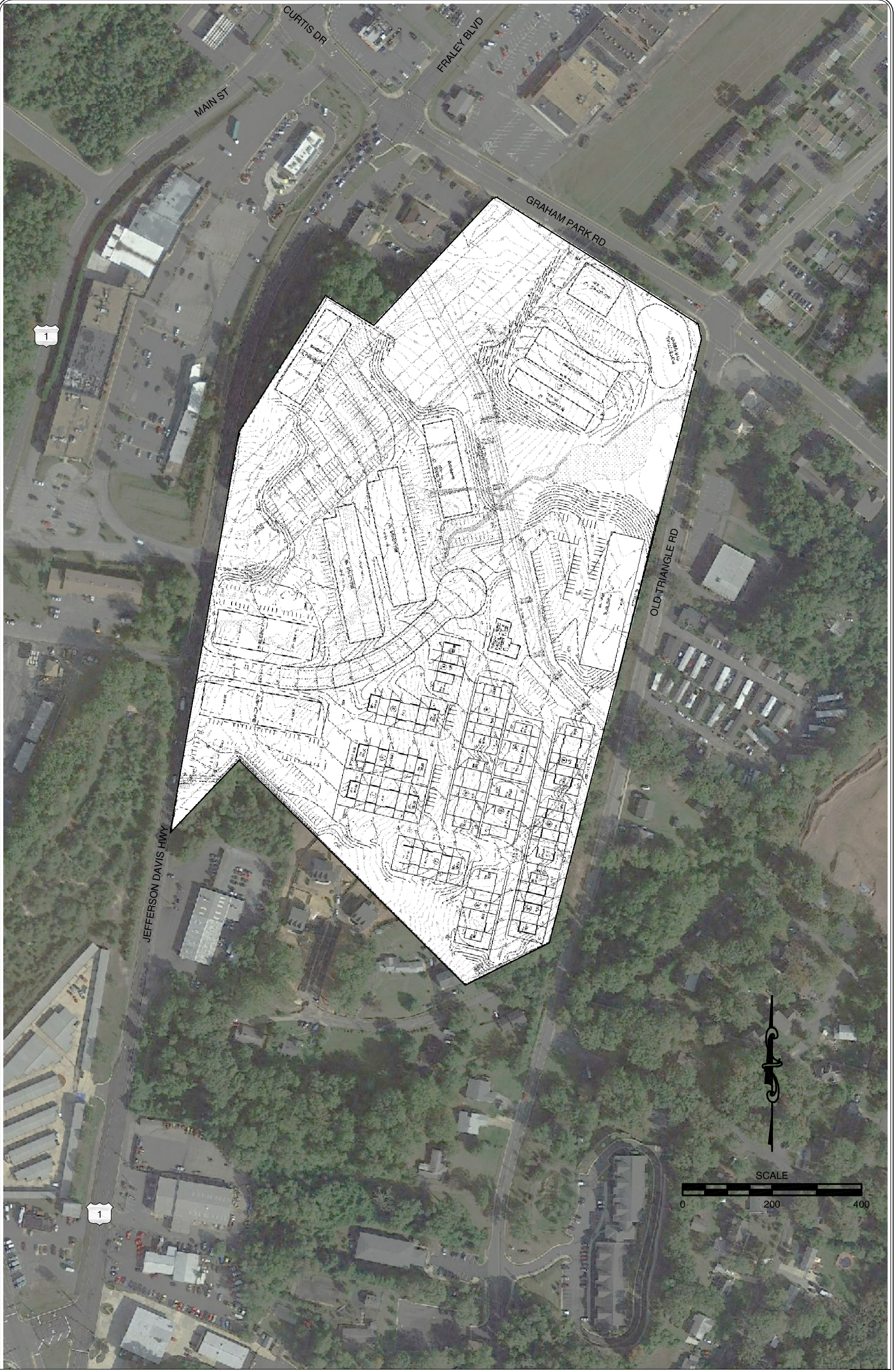
**LEGEND**

- - STUDY INTERSECTION (EXISTING)
- - STUDY INTERSECTION (FUTURE)

SITE VICINITY MAP  
DUMFRIES, VIRGINIA

FIGURE  
**1**

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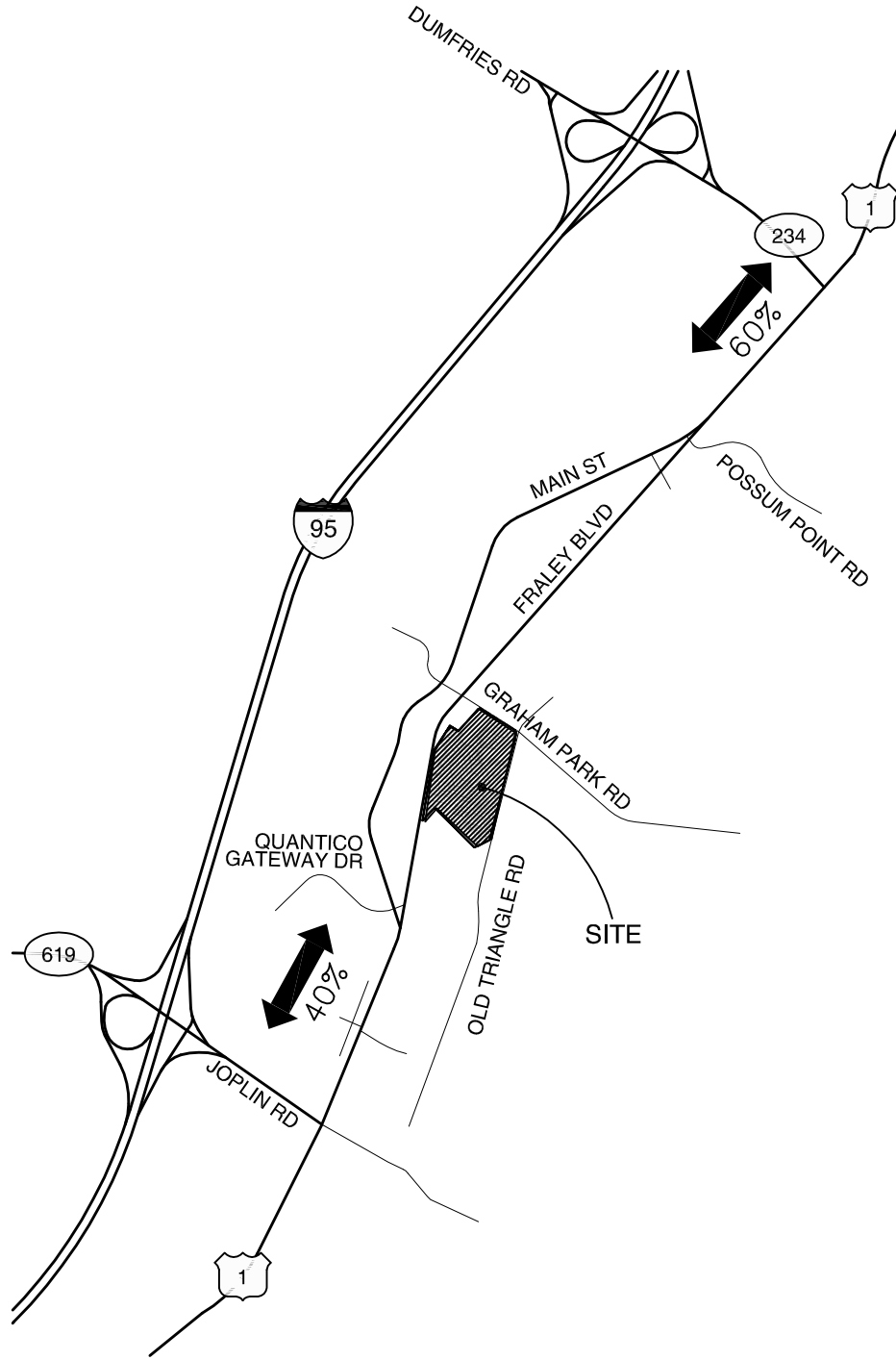
CONCEPTUAL SKETCH SITE PLAN  
 THE ENGINEERING GROUPE (AUGUST 26, 2015)  
 DUMFRIES, VIRGINIA

FIGURE  
**2**

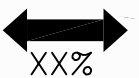
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(NO SCALE)



**LEGEND**



- ESTIMATED TRIP DISTRIBUTION PATTERN

ESTIAMTED TRIP DISTRIBUTION PATTERN  
DUMFRIES, VIRGINIA

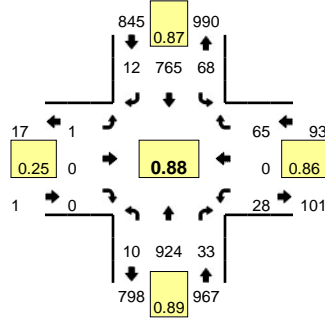
FIGURE  
**3**

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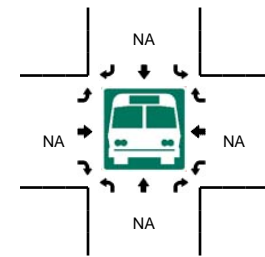
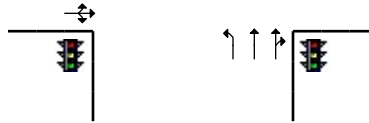
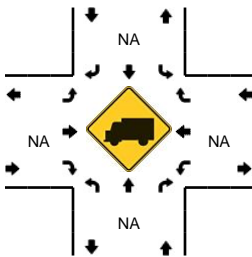
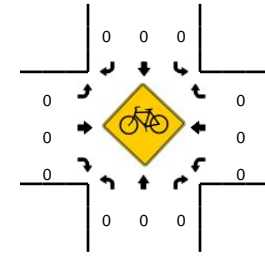
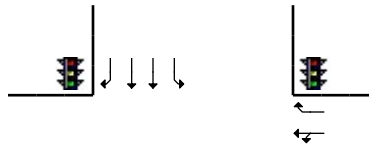
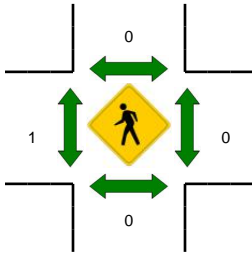
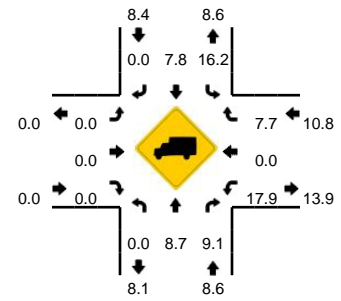
**Appendix B**  
Traffic Counts

**LOCATION:** Jefferson Davis Hwy -- Possum Point Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416804  
**DATE:** Tue, Jun 16 2015



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



15-Min Count Period Beginning At	Jefferson Davis Hwy (Northbound)				Jefferson Davis Hwy (Southbound)				Possum Point Rd (Eastbound)				Possum Point Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	215	24	0	26	76	1	0	0	0	0	0	2	0	12	0	356	
6:15 AM	0	255	31	0	20	107	0	0	0	0	0	0	10	0	29	0	452	
6:30 AM	1	255	14	0	20	134	0	0	0	0	0	0	8	0	17	0	449	
6:45 AM	0	292	18	0	35	139	0	0	1	0	0	0	4	0	13	0	502	1759
7:00 AM	1	194	7	0	19	183	0	0	0	0	0	0	4	0	19	0	427	1830
7:15 AM	0	225	7	1	17	182	0	0	0	0	0	0	4	0	14	0	450	1828
7:30 AM	0	213	7	0	20	163	0	0	0	0	0	0	8	0	27	0	438	1817
7:45 AM	0	232	10	0	16	196	0	0	0	0	0	0	7	0	17	0	478	1793
8:00 AM	0	222	10	2	15	160	0	0	1	0	0	0	4	0	15	0	429	1795
8:15 AM	1	206	9	0	18	175	2	0	0	0	0	0	4	0	17	0	432	1777
8:30 AM	1	237	5	2	16	211	6	0	0	0	0	0	10	0	16	0	504	1843
8:45 AM	3	259	9	1	19	219	4	0	0	0	0	0	10	0	17	0	541	1906

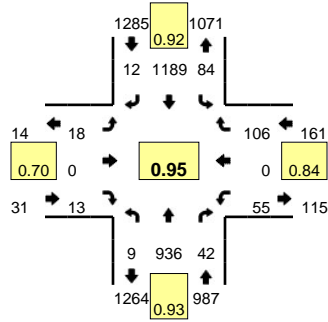
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Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	1036	36	4	76	876	16	0	0	0	0	0	40	0	68	0	2164
Heavy Trucks	0	100	4		8	72	0		0	0	0		12	0	8		204
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

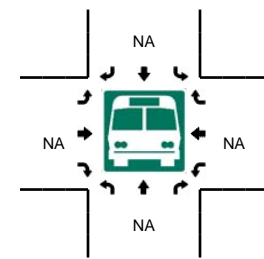
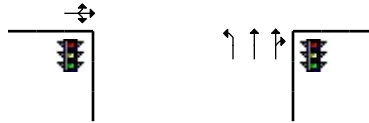
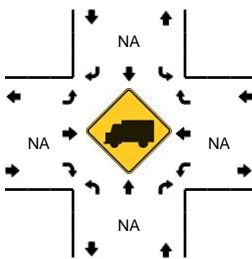
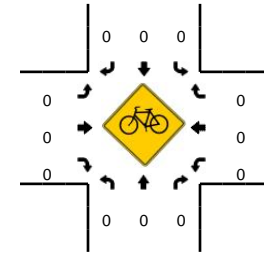
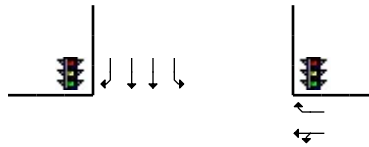
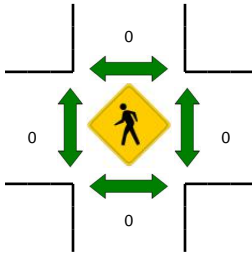
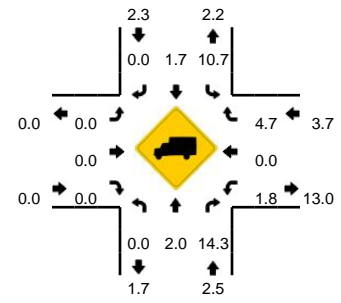
Comments:

**LOCATION:** Jefferson Davis Hwy -- Possum Point Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416805  
**DATE:** Tue, Jun 16 2015



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



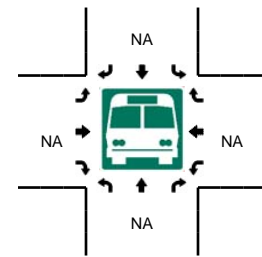
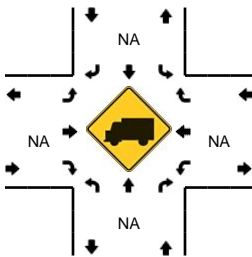
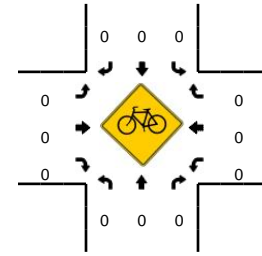
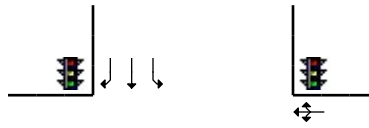
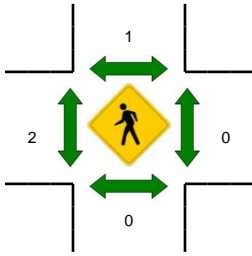
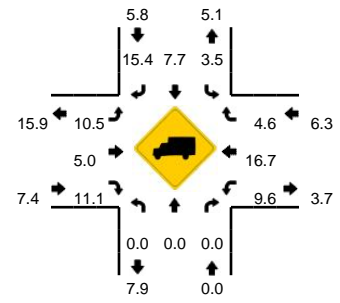
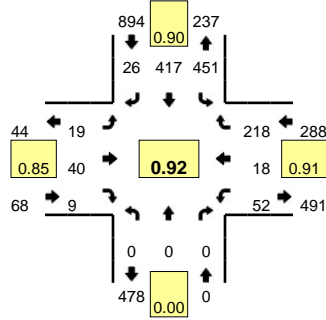
15-Min Count Period Beginning At	Jefferson Davis Hwy (Northbound)				Jefferson Davis Hwy (Southbound)				Possum Point Rd (Eastbound)				Possum Point Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	275	13	0	27	279	0	4	3	0	3	0	7	0	24	0	636	
4:15 PM	0	228	4	1	29	288	6	1	5	0	5	0	10	0	18	0	595	
4:30 PM	2	210	5	1	21	282	2	4	3	0	4	0	19	1	28	0	582	
4:45 PM	0	243	11	1	18	316	2	3	9	0	0	0	21	0	27	0	651	2464
5:00 PM	1	253	7	4	13	303	2	5	4	0	7	0	11	0	28	0	638	2466
5:15 PM	1	210	10	1	24	317	5	2	2	0	1	0	7	0	33	0	613	2484
5:30 PM	0	230	14	1	18	253	3	1	3	0	5	0	16	0	18	0	562	2464
5:45 PM	1	219	15	1	31	277	2	1	1	0	7	0	11	0	28	0	594	2407
6:00 PM	0	210	15	0	13	256	3	0	4	0	1	0	17	0	20	0	539	2308
6:15 PM	0	201	5	2	28	262	0	2	0	0	4	0	12	0	14	0	530	2225
6:30 PM	0	174	11	2	19	234	0	1	1	0	0	0	8	0	16	0	466	2129
6:45 PM	0	179	4	0	16	242	1	1	1	0	0	0	4	0	19	0	467	2002
<b>Peak 15-Min Flowrates</b>	<b>Northbound</b>				<b>Southbound</b>				<b>Eastbound</b>				<b>Westbound</b>				<b>Total</b>	
All Vehicles	0	972	44	4	72	1264	8	12	36	0	0	0	84	0	108	0	2604	
Heavy Trucks	0	28	0		4	20	0		0	0	0		4	0	4		60	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

**LOCATION:** Main St -- Curtis Dr/Graham Park Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416807  
**DATE:** Tue, Jun 16 2015

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

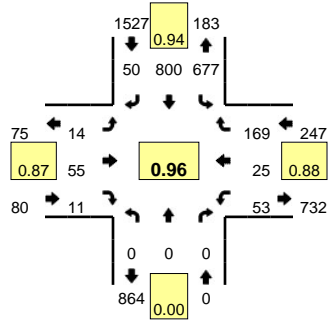


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Curtis Dr/Graham Park Rd (Eastbound)				Curtis Dr/Graham Park Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	26	53	3	0	5	6	3	0	14	0	36	0	146	
6:15 AM	0	0	0	0	32	99	3	0	4	6	6	0	12	3	42	0	207	
6:30 AM	0	0	0	0	55	114	3	0	6	10	1	0	12	0	39	0	240	
6:45 AM	0	0	0	0	58	113	3	0	7	5	4	0	13	4	47	0	254	847
7:00 AM	0	0	0	0	75	125	3	0	6	5	1	0	8	5	43	0	271	972
7:15 AM	0	0	0	0	79	150	2	0	5	9	3	0	11	2	55	0	316	1081
7:30 AM	0	0	0	0	91	113	7	0	3	11	2	0	18	2	32	0	279	1120
7:45 AM	0	0	0	0	122	108	9	0	4	4	2	0	13	2	56	0	320	1186
8:00 AM	0	0	0	0	83	93	5	0	3	14	0	0	11	5	52	0	266	1181
8:15 AM	0	0	0	0	117	108	7	0	6	6	6	0	11	5	48	0	314	1179
8:30 AM	0	0	0	0	126	99	7	0	6	12	2	0	20	7	52	0	331	1231
8:45 AM	0	0	0	0	125	117	7	0	4	8	1	0	10	1	66	0	339	1250
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	500	468	28	0	16	32	4	0	40	4	264	0	1356	
Heavy Trucks	0	0	0	0	4	48	8	0	4	4	0	0	4	0	12	0	84	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

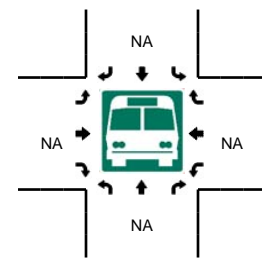
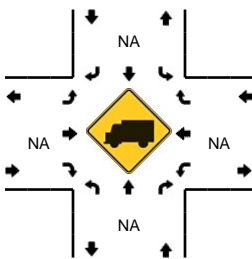
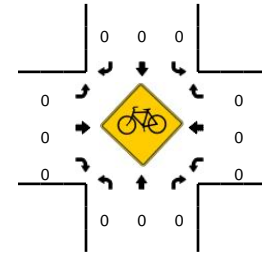
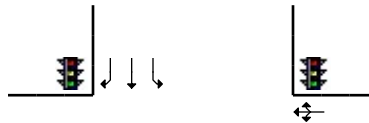
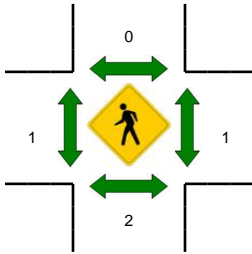
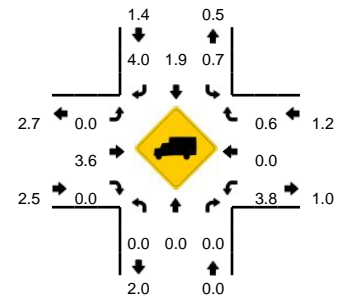
Comments:

**LOCATION:** Main St -- Curtis Dr/Graham Park Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416808  
**DATE:** Tue, Jun 16 2015



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



15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Curtis Dr/Graham Park Rd (Eastbound)				Curtis Dr/Graham Park Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	148	172	9	0	3	5	3	0	17	5	45	0	407	
4:15 PM	0	0	0	0	157	210	14	0	4	7	0	0	15	5	38	0	450	
4:30 PM	0	0	0	0	153	178	8	0	1	6	8	0	12	6	35	0	407	
4:45 PM	0	0	0	0	176	218	10	0	2	10	6	0	14	6	36	0	478	1742
5:00 PM	0	0	0	0	175	210	13	0	8	13	2	0	11	7	45	0	484	1819
5:15 PM	0	0	0	0	166	202	14	0	1	16	1	0	13	6	39	0	458	1827
5:30 PM	0	0	0	0	160	170	13	0	3	16	2	0	15	6	49	0	434	1854
5:45 PM	0	0	0	0	177	162	12	0	5	8	5	0	18	7	40	0	434	1810
6:00 PM	0	0	0	0	181	162	9	0	6	10	2	0	12	4	46	0	432	1758
6:15 PM	0	0	0	0	155	164	15	0	7	13	0	0	12	7	38	0	411	1711
6:30 PM	0	0	0	0	165	135	12	0	4	6	4	0	14	7	28	0	375	1652
6:45 PM	0	0	0	0	154	123	11	0	1	9	2	0	14	3	24	0	341	1559
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	700	840	52	0	32	52	8	0	44	28	180	0	1936	
Heavy Trucks	0	0	0	0	0	12	4	0	0	4	0	0	4	0	0	0	24	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

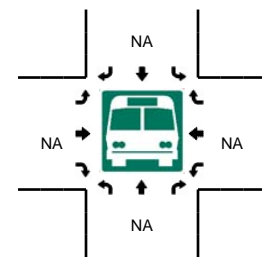
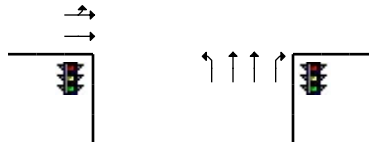
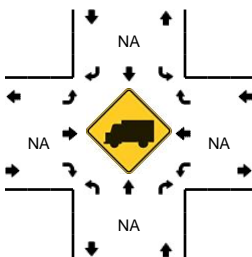
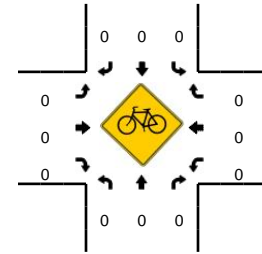
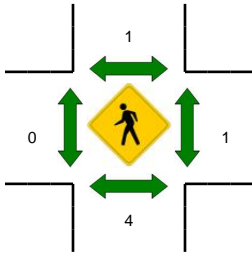
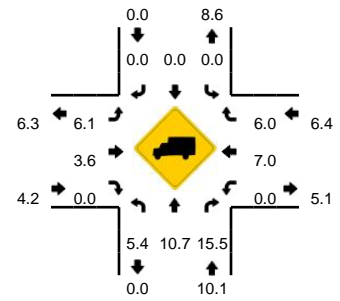
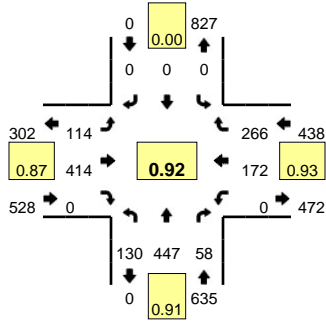
Comments:



**LOCATION:** Fraley Blvd -- Graham Park Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416810  
**DATE:** Tue, Jun 16 2015

**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:30 AM -- 8:45 AM**



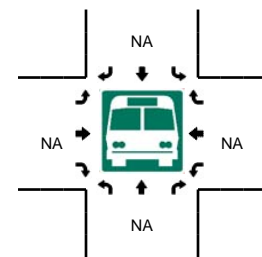
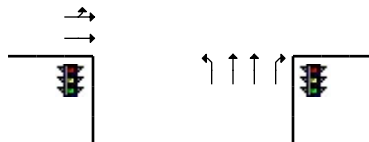
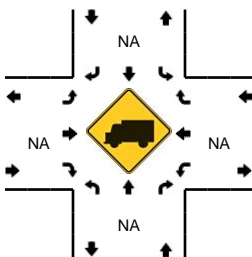
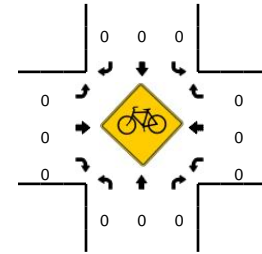
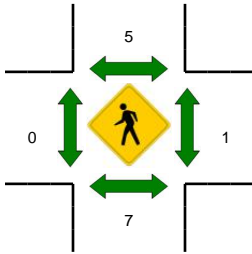
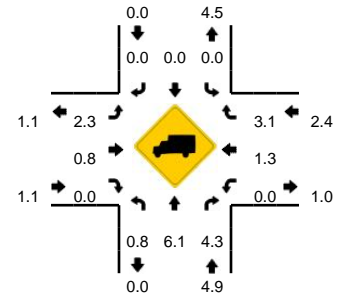
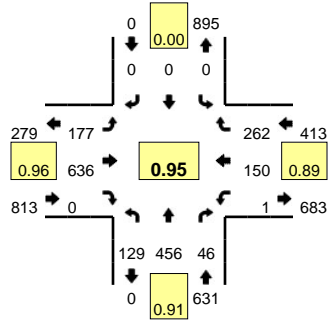
15-Min Count Period Beginning At	Fraley Blvd (Northbound)				Fraley Blvd (Southbound)				Graham Park Rd (Eastbound)				Graham Park Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	15	122	3	0	0	0	0	0	14	21	0	0	0	33	69	0	277	
6:15 AM	25	145	4	0	0	0	0	0	12	19	0	0	0	37	79	0	321	
6:30 AM	27	121	6	0	0	0	0	0	25	39	0	0	0	33	104	1	356	
6:45 AM	30	140	8	0	0	0	0	0	19	48	0	0	0	37	92	0	374	1328
7:00 AM	31	109	6	0	0	0	0	0	19	60	0	0	0	30	64	0	319	1370
7:15 AM	37	107	4	0	0	0	0	0	21	67	0	0	0	27	75	0	338	1387
7:30 AM	18	111	15	0	0	0	0	0	27	78	0	0	0	39	75	0	363	1394
7:45 AM	29	105	18	0	0	0	0	0	23	108	0	0	0	49	72	0	404	1424
8:00 AM	25	102	7	0	0	0	0	0	23	80	0	0	0	47	71	0	355	1460
8:15 AM	39	120	16	0	0	0	0	0	26	106	0	0	0	35	54	0	396	1518
8:30 AM	34	111	21	0	0	0	0	0	35	117	0	0	0	42	74	0	434	1589
8:45 AM	32	114	14	0	0	0	0	0	30	111	0	0	0	48	67	0	416	1601
<b>Peak 15-Min Flowrates</b>																		
All Vehicles	136	444	84	0	0	0	0	0	140	468	0	0	0	168	296	0	1736	
Heavy Trucks	8	36	0	0	0	0	0	0	4	24	0	0	0	20	16	0	108	
Pedestrians		4								0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

**LOCATION:** Fraley Blvd -- Graham Park Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416811  
**DATE:** Tue, Jun 16 2015

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



15-Min Count Period Beginning At	Fraley Blvd (Northbound)				Fraley Blvd (Southbound)				Graham Park Rd (Eastbound)				Graham Park Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	36	119	14	0	0	0	0	0	39	128	0	0	0	35	94	0	465	
4:15 PM	31	100	5	0	0	0	0	0	32	141	0	0	0	35	63	0	407	
4:30 PM	26	103	16	0	0	0	0	0	32	141	0	0	0	38	53	0	409	
4:45 PM	29	116	12	0	0	0	0	0	45	153	0	0	0	33	56	1	445	1726
5:00 PM	38	124	11	0	0	0	0	0	46	160	0	0	0	35	73	0	487	1748
5:15 PM	28	109	11	0	0	0	0	0	41	170	0	0	0	38	61	0	458	1799
5:30 PM	34	107	12	0	0	0	0	0	45	153	0	0	0	44	72	0	467	1857
5:45 PM	30	106	22	0	0	0	0	0	47	155	0	0	0	51	70	0	481	1893
6:00 PM	32	103	13	0	0	0	0	0	27	163	0	0	0	45	61	0	444	1850
6:15 PM	29	89	15	0	0	0	0	0	40	151	0	0	0	39	65	0	428	1820
6:30 PM	16	80	8	0	0	0	0	0	31	135	0	0	0	39	54	0	363	1716
6:45 PM	18	77	5	0	0	0	0	0	40	140	0	0	0	33	37	0	350	1585

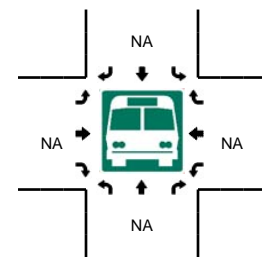
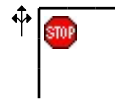
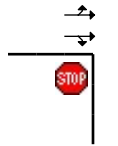
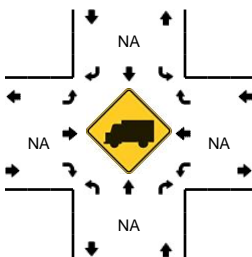
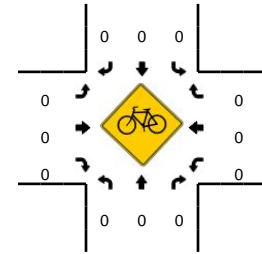
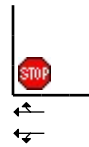
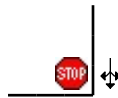
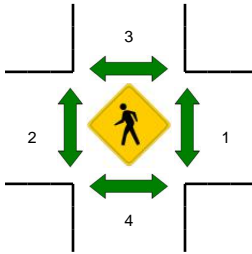
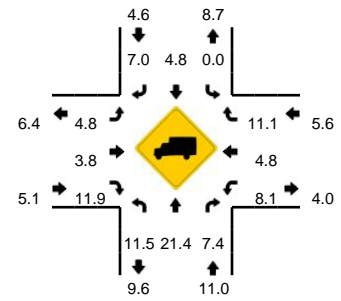
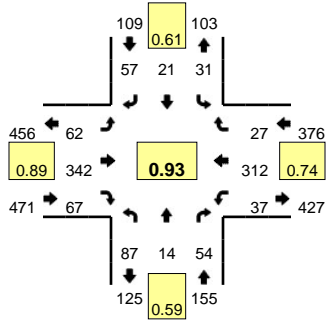
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	152	496	44	0	0	0	0	0	184	640	0	0	0	140	292	0	1948
Heavy Trucks	4	32	4	0	0	0	0	0	0	4	0	0	0	0	12	0	56
Pedestrians	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	16
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Comments:

**LOCATION:** Old Triangle Rd -- Graham Park Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416813  
**DATE:** Tue, Jun 16 2015

**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:30 AM -- 8:45 AM**



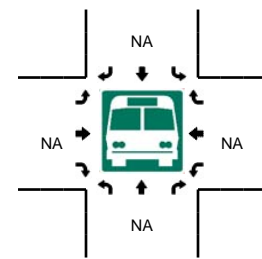
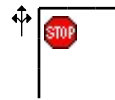
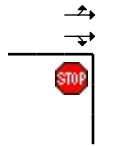
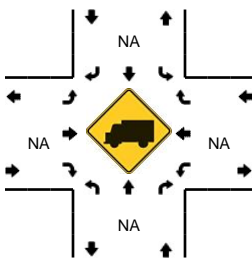
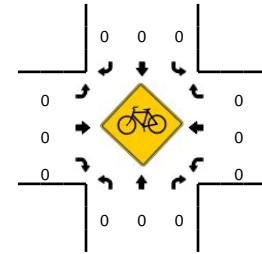
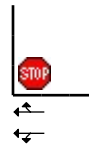
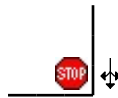
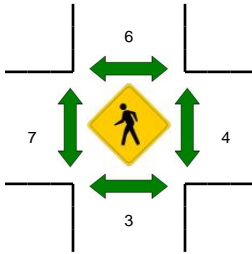
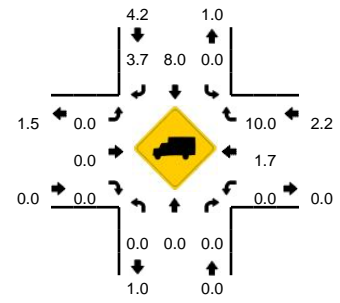
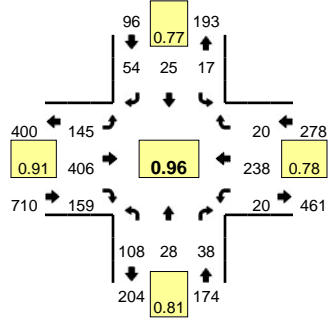
15-Min Count Period Beginning At	Old Triangle Rd (Northbound)				Old Triangle Rd (Southbound)				Graham Park Rd (Eastbound)				Graham Park Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	21	2	1	0	3	4	11	0	4	17	2	0	6	69	5	0	145	
6:15 AM	33	0	2	0	2	6	11	0	3	18	10	0	11	75	5	0	176	
6:30 AM	27	3	1	0	2	5	6	0	8	21	15	0	8	114	3	0	213	
6:45 AM	27	6	2	0	1	3	15	0	9	31	19	0	5	84	5	0	207	741
7:00 AM	23	3	5	0	1	3	6	0	10	39	21	0	7	60	3	0	181	777
7:15 AM	14	6	2	0	8	1	8	0	8	46	13	0	2	87	5	0	200	801
7:30 AM	16	3	5	0	5	4	11	0	8	62	23	0	10	76	2	0	225	813
7:45 AM	16	6	9	0	11	6	12	0	9	98	24	0	12	97	9	0	309	915
8:00 AM	12	1	11	0	12	2	11	0	15	53	15	0	13	99	15	0	259	993
8:15 AM	18	4	9	0	2	4	8	0	18	93	22	0	7	66	3	0	254	1047
8:30 AM	18	4	12	0	9	11	25	0	15	102	16	0	7	74	6	0	299	1121
8:45 AM	39	5	22	0	8	4	13	0	14	94	14	0	10	73	3	0	299	1111
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	72	16	48	0	36	44	100	0	60	408	64	0	28	296	24	0	1196	
Heavy Trucks	12	8	4		0	0	16		8	8	4		4	12	8		84	
Pedestrians		8				4				0				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																	0	
Stopped Buses																		

Comments:

**LOCATION:** Old Triangle Rd -- Graham Park Rd  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416814  
**DATE:** Tue, Jun 16 2015

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



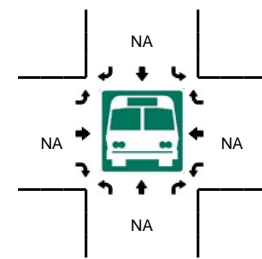
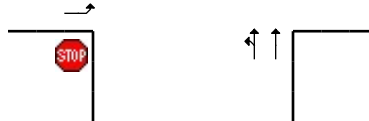
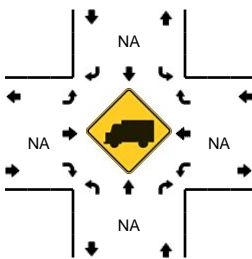
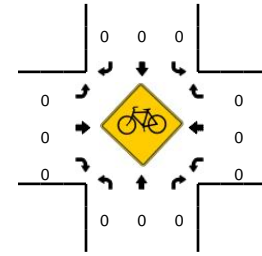
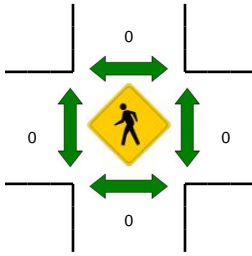
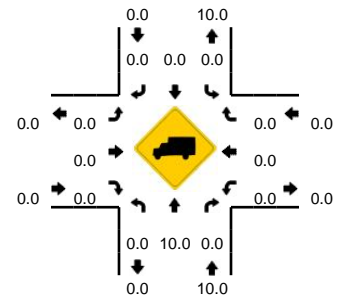
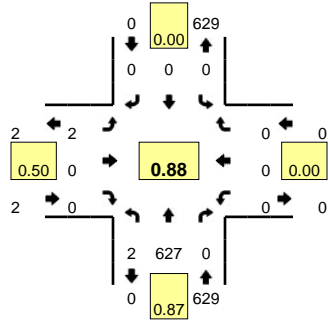
15-Min Count Period Beginning At	Old Triangle Rd (Northbound)				Old Triangle Rd (Southbound)				Graham Park Rd (Eastbound)				Graham Park Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	34	11	3	0	6	3	21	0	29	79	38	0	6	75	8	0	313		
4:15 PM	36	8	7	0	2	4	16	0	30	87	28	0	3	51	4	0	276		
4:30 PM	32	8	8	0	1	4	10	0	32	100	32	0	5	57	8	0	297		
4:45 PM	35	7	12	0	5	3	18	0	38	93	41	0	4	45	4	0	305	1191	
5:00 PM	30	7	12	0	2	6	6	0	28	101	42	0	6	54	7	0	301	1179	
5:15 PM	20	7	5	0	5	8	18	0	44	107	45	0	5	60	4	0	328	1231	
5:30 PM	23	7	9	0	5	8	12	0	35	105	31	0	5	79	5	0	324	1258	
5:45 PM	34	4	5	0	12	5	9	0	28	128	36	0	4	73	5	0	343	1296	
6:00 PM	29	10	10	0	21	7	17	0	39	111	35	0	5	63	6	0	353	1348	
6:15 PM	25	11	6	0	10	4	16	0	35	104	28	0	4	58	3	0	304	1324	
6:30 PM	22	13	9	0	8	7	8	0	24	104	29	0	8	56	5	0	293	1293	
6:45 PM	24	7	13	0	6	3	8	0	28	95	24	0	9	52	1	0	270	1220	
<b>Peak 15-Min Flowrates</b>	<b>Northbound</b>				<b>Southbound</b>				<b>Eastbound</b>				<b>Westbound</b>				<b>Total</b>		
All Vehicles	80	28	20	0	20	32	72	0	176	428	180	0	20	240	16	0	1312		
Heavy Trucks	0	0	0		0	4	4		0	0	0		0	8	0		16		
Pedestrians		8				8				20				4			40		
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0		
Railroad																			
Stopped Buses																			

Comments:

**LOCATION:** Jefferson Davis Hwy -- VDOT Maintenance Yard Dwy  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416816  
**DATE:** Thu, Jun 18 2015

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



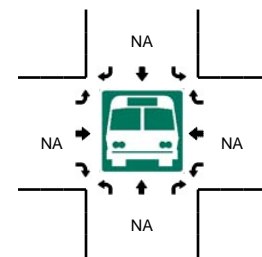
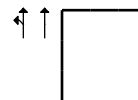
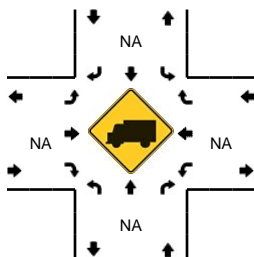
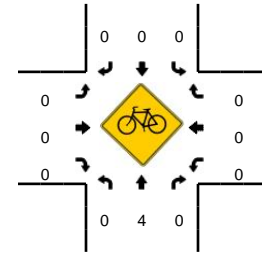
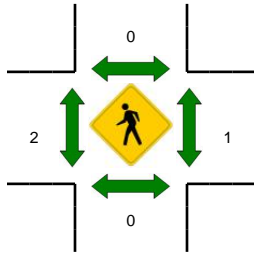
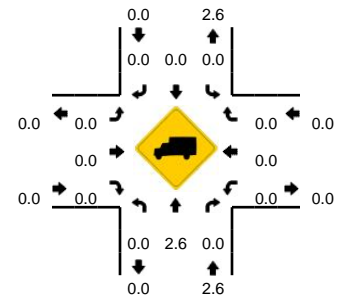
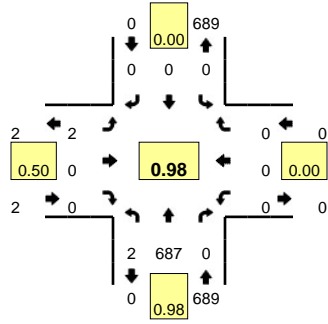
15-Min Count Period Beginning At	Jefferson Davis Hwy (Northbound)				Jefferson Davis Hwy (Southbound)				VDOT Maintenance Yard Dwy (Eastbound)				VDOT Maintenance Yard Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135	
6:15 AM	1	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151	
6:30 AM	0	162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	162	
6:45 AM	0	158	0	0	0	0	0	0	0	0	0	0	0	0	0	0	158	606
7:00 AM	0	134	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	605
7:15 AM	0	129	0	0	0	0	0	0	0	0	0	0	0	0	0	0	129	583
7:30 AM	0	192	0	0	0	0	0	0	0	0	0	0	0	0	0	0	192	613
7:45 AM	0	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	630
8:00 AM	1	179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	180	676
8:15 AM	0	166	0	0	0	0	0	0	1	0	0	0	0	0	0	0	167	714
8:30 AM	0	151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151	673
8:45 AM	1	131	0	0	0	0	0	0	1	0	0	0	0	0	0	0	133	631
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	716	0	0	0	0	0	0	0	0	0	0	0	0	0	0	720	
Heavy Trucks	0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

**LOCATION:** Jefferson Davis Hwy -- VDOT Maintenance Yard Dwy  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416817  
**DATE:** Thu, Jun 18 2015

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



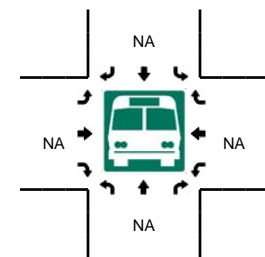
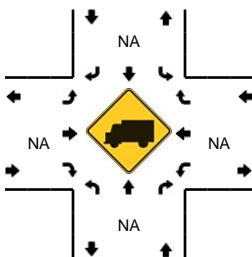
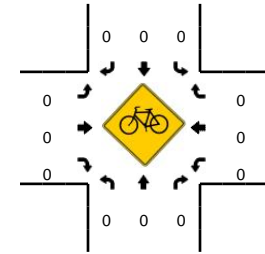
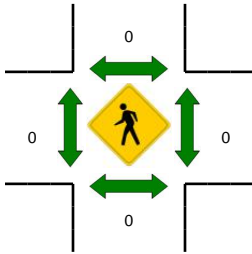
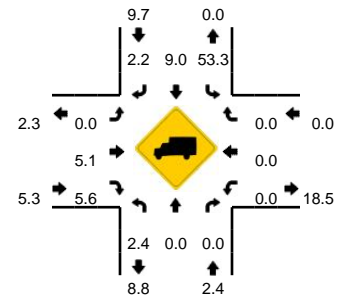
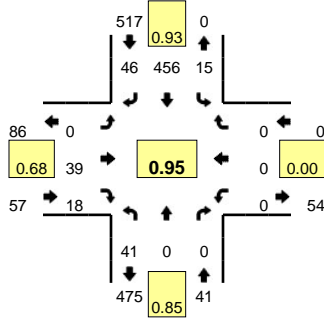
15-Min Count Period Beginning At	Jefferson Davis Hwy (Northbound)				Jefferson Davis Hwy (Southbound)				VDOT Maintenance Yard Dwy (Eastbound)				VDOT Maintenance Yard Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174	
4:15 PM	0	173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	173	
4:30 PM	0	194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194	
4:45 PM	1	171	0	0	0	0	0	0	1	0	0	0	0	0	0	0	173	714
5:00 PM	0	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174	714
5:15 PM	1	166	0	0	0	0	0	0	1	0	0	0	0	0	0	0	168	709
5:30 PM	0	176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	691
5:45 PM	0	149	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	667
6:00 PM	1	152	0	0	0	0	0	0	1	0	0	0	0	0	0	0	154	647
6:15 PM	0	139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	139	618
6:30 PM	0	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	106	548
6:45 PM	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96	495
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	704	0	0	0	0	0	0	0	0	0	0	0	0	0	0	704	
Heavy Trucks	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	
Pedestrians		0				0				4				4			8	
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4	
Railroad																		
Stopped Buses																		

Comments:

**LOCATION:** SB Jefferson Davis Hwy -- Quantico Gateway Dr  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416819  
**DATE:** Tue, Jun 16 2015

**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:30 AM -- 8:45 AM**

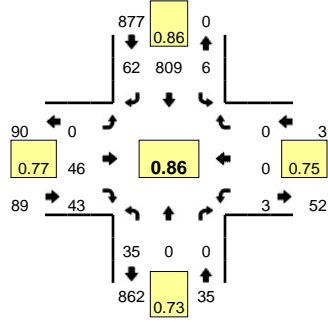


15-Min Count Period Beginning At	SB Jefferson Davis Hwy (Northbound)				SB Jefferson Davis Hwy (Southbound)				Quantico Gateway Dr (Eastbound)				Quantico Gateway Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	0	0	2	1	76	1	0	0	11	9	0	1	0	0	0	103	
6:15 AM	0	0	0	0	1	111	1	0	0	10	7	0	0	0	0	0	130	
6:30 AM	1	0	0	0	2	120	4	0	0	13	6	0	0	0	0	0	146	
6:45 AM	3	0	0	1	0	127	7	0	0	13	12	0	0	0	0	0	163	542
7:00 AM	3	0	0	0	1	124	4	0	0	8	11	0	0	0	0	0	151	590
7:15 AM	5	0	0	0	1	172	10	0	0	13	6	0	0	0	0	0	207	667
7:30 AM	3	0	0	0	4	120	8	0	0	5	2	0	0	0	0	0	142	663
7:45 AM	6	0	0	0	5	110	6	0	0	7	9	0	0	0	0	0	143	643
8:00 AM	6	0	0	0	7	127	5	0	0	9	2	0	0	0	0	0	156	648
8:15 AM	10	0	0	1	3	107	13	0	0	6	6	0	0	0	0	0	146	587
8:30 AM	12	0	0	0	4	110	15	0	0	17	4	0	0	0	0	0	162	607
8:45 AM	12	0	0	0	1	112	13	0	0	7	6	0	0	0	0	0	151	615
<b>Peak 15-Min Flowrates</b>	<b>Northbound</b>				<b>Southbound</b>				<b>Eastbound</b>				<b>Westbound</b>				<b>Total</b>	
All Vehicles	48	0	0	0	16	440	60	0	0	68	16	0	0	0	0	0	648	
Heavy Trucks	0	0	0	0	8	24	0	0	0	8	0	0	0	0	0	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

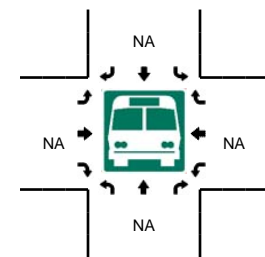
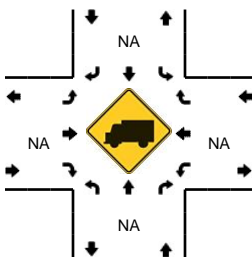
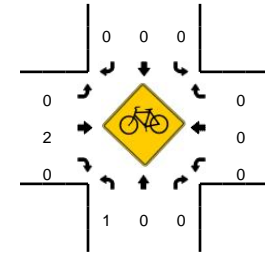
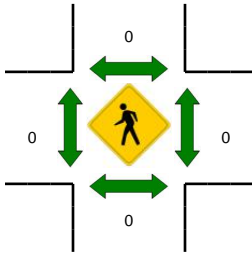
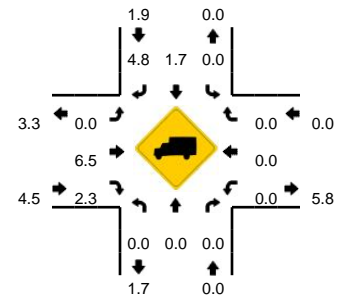
Comments:

**LOCATION:** SB Jefferson Davis Hwy -- Quantico Gateway Dr  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416820  
**DATE:** Tue, Jun 16 2015



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



15-Min Count Period Beginning At	SB Jefferson Davis Hwy (Northbound)				SB Jefferson Davis Hwy (Southbound)				Quantico Gateway Dr (Eastbound)				Quantico Gateway Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	0	0	1	5	183	9	0	0	11	10	0	1	0	0	0	223	
4:15 PM	9	0	0	0	1	205	17	0	0	2	5	0	0	0	0	0	239	
4:30 PM	5	0	0	1	3	171	15	0	0	8	6	0	0	0	0	0	209	
4:45 PM	2	0	0	2	0	215	17	0	0	12	16	0	1	0	0	0	265	936
5:00 PM	8	0	0	0	2	240	12	0	0	12	17	0	0	0	0	0	291	1004
5:15 PM	7	0	0	4	2	172	19	0	0	8	5	0	1	0	0	0	218	983
5:30 PM	11	0	0	1	2	182	14	0	0	14	5	0	1	0	0	0	230	1004
5:45 PM	4	0	0	2	1	170	19	0	0	16	6	0	0	0	0	0	218	957
6:00 PM	3	0	0	0	1	143	17	0	0	13	0	0	2	0	0	0	179	845
6:15 PM	3	0	0	0	2	154	15	0	0	6	3	0	0	0	0	0	183	810
6:30 PM	1	0	0	0	0	149	7	0	0	8	5	0	0	0	0	0	170	750
6:45 PM	4	0	0	0	2	120	6	0	0	7	2	0	0	0	0	0	141	673
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	32	0	0	0	8	960	48	0	0	48	68	0	0	0	0	0	1164	
Heavy Trucks	0	0	0		0	12	0		0	4	0		0	0	0		16	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	2	0		0	0	0		2	
Railroad																		
Stopped Buses																		

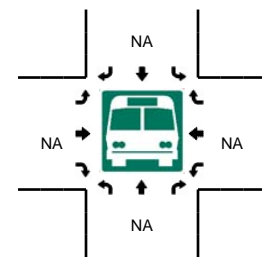
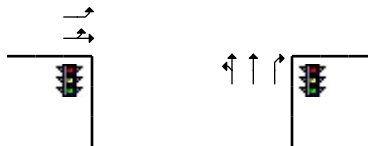
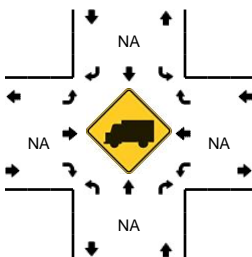
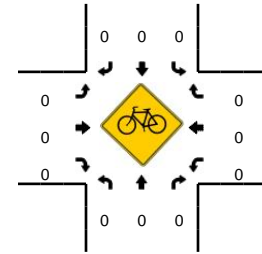
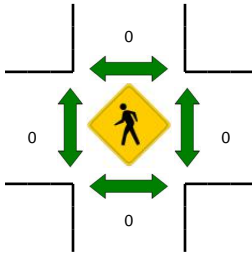
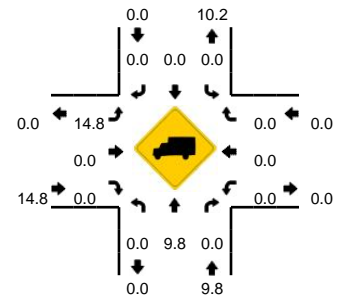
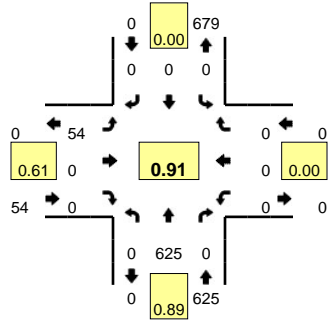
Comments:



**LOCATION:** NB Jefferson Davis Hwy -- Quantico Gateway Dr  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416822  
**DATE:** Tue, Jun 16 2015

**Peak-Hour: 8:00 AM -- 9:00 AM**  
**Peak 15-Min: 8:30 AM -- 8:45 AM**



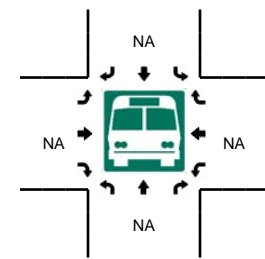
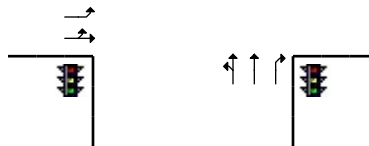
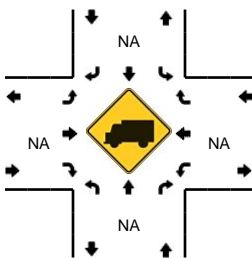
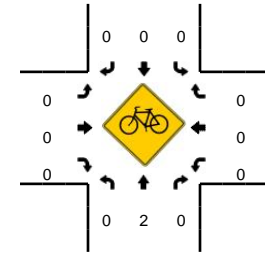
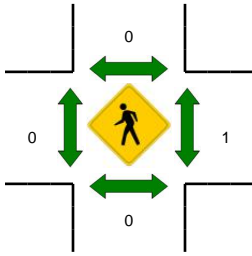
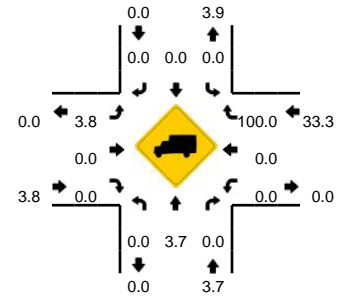
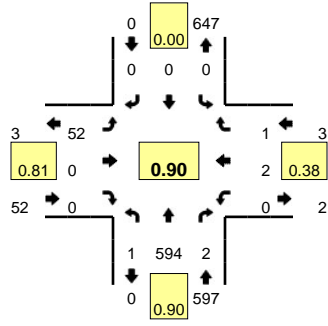
15-Min Count Period Beginning At	NB Jefferson Davis Hwy (Northbound)				NB Jefferson Davis Hwy (Southbound)				Quantico Gateway Dr (Eastbound)				Quantico Gateway Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	141	0	0	0	0	0	0	10	0	0	0	0	0	0	0	151	
6:15 AM	0	140	0	0	0	0	0	0	12	0	0	0	0	0	0	0	152	
6:30 AM	0	141	0	0	0	0	0	0	13	0	0	0	0	0	0	0	154	
6:45 AM	0	181	0	0	0	0	0	0	15	0	0	0	0	0	0	0	196	653
7:00 AM	0	138	0	0	0	0	0	0	8	0	0	0	0	0	0	0	146	648
7:15 AM	0	144	0	0	0	0	0	0	13	0	0	0	0	0	0	0	157	653
7:30 AM	0	168	0	0	0	0	0	0	9	0	0	0	0	0	0	0	177	676
7:45 AM	0	159	0	0	0	0	0	0	14	0	0	0	0	0	0	0	173	653
8:00 AM	0	134	0	0	0	0	0	0	17	0	0	0	0	0	0	0	151	658
8:15 AM	0	175	0	0	0	0	0	0	7	0	0	0	0	0	0	0	182	683
8:30 AM	0	165	0	0	0	0	0	0	22	0	0	0	0	0	0	0	187	693
8:45 AM	0	151	0	0	0	0	0	0	8	0	0	0	0	0	0	0	159	679
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	660	0	0	0	0	0	0	88	0	0	0	0	0	0	0	748	
Heavy Trucks	0	44	0	0	0	0	0	0	16	0	0	0	0	0	0	0	60	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

**LOCATION:** NB Jefferson Davis Hwy -- Quantico Gateway Dr  
**CITY/STATE:** Dumfries, VA

**QC JOB #:** 13416823  
**DATE:** Tue, Jun 16 2015

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



15-Min Count Period Beginning At	NB Jefferson Davis Hwy (Northbound)				NB Jefferson Davis Hwy (Southbound)				Quantico Gateway Dr (Eastbound)				Quantico Gateway Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	144	0	0	0	0	0	0	16	0	0	0	0	1	0	0	161	
4:15 PM	0	149	0	0	0	0	0	0	7	0	0	0	0	0	0	0	156	
4:30 PM	0	143	1	0	0	0	0	0	10	0	0	0	0	0	0	0	154	
4:45 PM	0	165	0	0	0	0	0	0	11	0	0	0	0	1	1	0	178	649
5:00 PM	1	133	0	0	0	0	0	0	14	0	0	0	0	0	0	0	148	636
5:15 PM	0	134	0	0	0	0	0	0	11	0	0	0	0	0	0	0	145	625
5:30 PM	0	162	2	0	0	0	0	0	16	0	0	0	0	1	0	0	181	652
5:45 PM	0	146	0	0	0	0	0	0	17	1	0	0	0	0	1	0	165	639
6:00 PM	0	136	0	0	0	0	0	0	12	0	0	0	0	0	0	0	148	639
6:15 PM	0	117	0	0	0	0	0	0	7	0	0	0	0	0	0	0	124	618
6:30 PM	0	102	0	0	0	0	0	0	7	0	0	0	0	0	0	0	109	546
6:45 PM	0	92	0	0	0	0	0	0	10	0	0	0	0	0	0	0	102	483
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	648	8	0	0	0	0	0	64	0	0	0	0	4	0	0	724	
Heavy Trucks	0	16	0	0	0	0	0	0	4	0	0	0	0	0	0	0	20	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																	0	
Stopped Buses																	0	

Comments:

**Appendix C**  
Level of Service Description

## APPENDIX C LEVEL-OF-SERVICE CONCEPT

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from “A” to “F”.<sup>1</sup>

### Signalized Intersections

The six level-of-service grades are described qualitatively for signalized intersections in Table C1. Additionally, Table C2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service “D” is generally considered to represent the minimum acceptable design standard.

Table C1 Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

Most of the material in this Appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2000).

<sup>1</sup> Most of the material in this Appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2010).

Table C2 Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and (20
C	>20 and (35
D	>35 and (55
E	>55 and (80
F	>80

*Unsignalized Intersections*

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2010 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table C3. A quantitative definition of level of service for unsignalized intersections is presented in Table C4. Using this definition, Level of Service “E” is generally considered to represent the minimum acceptable design standard.

Table C3 Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	<ul style="list-style-type: none"> <li>Nearly all drivers find freedom of operation.</li> <li>Very seldom is there more than one vehicle in queue.</li> </ul>
B	<ul style="list-style-type: none"> <li>Some drivers begin to consider the delay an inconvenience.</li> <li>Occasionally there is more than one vehicle in queue.</li> </ul>
C	<ul style="list-style-type: none"> <li>Many times there is more than one vehicle in queue.</li> <li>Most drivers feel restricted, but not objectionably so.</li> </ul>
D	<ul style="list-style-type: none"> <li>Often there is more than one vehicle in queue.</li> <li>Drivers feel quite restricted.</li> </ul>
E	<ul style="list-style-type: none"> <li>Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement.</li> <li>There is almost always more than one vehicle in queue.</li> <li>Drivers find the delays approaching intolerable levels.</li> </ul>
F	<ul style="list-style-type: none"> <li>Forced flow.</li> <li>Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.</li> </ul>



Table C4 Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ( 15.0
C	>15.0 and ( 25.0
D	>25.0 and ( 35.0
E	>35.0 and ( 50.0
F	>50.0

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95<sup>th</sup>-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.



**Appendix D**  
Existing Conditions Level of  
Service Worksheets

Queues

Existing Conditions

1: Jefferson Davis Hwy/Jefferson Davis Hwy (Rte 1) & Comm Dwy/Possum Point Rd Weekday AM Peak Hour



Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	32	74	11	1050	38	77	869	14
v/c Ratio	0.01	0.15	0.05	0.07	0.57	0.04	0.28	0.33	0.01
Control Delay	44.0	38.6	0.1	42.6	17.8	0.1	35.8	7.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	38.6	0.1	42.6	17.8	0.1	35.8	7.1	0.0
Queue Length 50th (ft)	0	13	0	5	201	0	30	71	0
Queue Length 95th (ft)	6	52	0	26	384	0	96	243	0
Internal Link Dist (ft)	1167	1363			414			1326	
Turn Bay Length (ft)			70	85		440	335		250
Base Capacity (vph)	569	724	1495	558	2679	1226	747	3041	1444
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.04	0.05	0.02	0.39	0.03	0.10	0.29	0.01

Intersection Summary
























# HCM Signalized Intersection Capacity Analysis

Existing Conditions

## 1: Jefferson Davis Hwy/Jefferson Davis Hwy (Rte 1) & Comm Dwy/Possum Pond Rd

Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	28	0	65	10	924	33	68	765	12
Future Volume (vph)	1	0	0	28	0	65	10	924	33	68	765	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			4%			-3%	
Total Lost time (s)		7.0			7.0	4.0	7.0	6.5	6.5	7.0	6.5	6.5
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1805			1530	1495	1747	3246	1452	1579	3393	1599
Flt Permitted		0.95			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1805			1530	1495	1747	3246	1452	1579	3393	1599
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	1	0	0	32	0	74	11	1050	38	77	869	14
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	6
Lane Group Flow (vph)	0	1	0	0	32	74	11	1050	19	77	869	8
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	18%	0%	8%	0%	9%	9%	16%	8%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						Free		6	6			2
Actuated Green, G (s)		0.7			5.2	86.2	0.9	43.1	43.1	9.7	51.9	51.9
Effective Green, g (s)		0.7			5.2	86.2	0.9	43.1	43.1	9.7	51.9	51.9
Actuated g/C Ratio		0.01			0.06	1.00	0.01	0.50	0.50	0.11	0.60	0.60
Clearance Time (s)		7.0			7.0		7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)		2.5			4.5		2.5	2.5	2.5	4.5	2.5	2.5
Lane Grp Cap (vph)		14			92	1495	18	1623	726	177	2042	962
v/s Ratio Prot		0.00			c0.02		0.01	c0.32		c0.05	c0.26	
v/s Ratio Perm						c0.05			0.01			0.01
v/c Ratio		0.07			0.35	0.05	0.61	0.65	0.03	0.44	0.43	0.01
Uniform Delay, d1		42.4			38.9	0.0	42.5	15.9	10.9	35.7	9.2	6.9
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.6			3.9	0.1	42.7	0.8	0.0	2.9	0.1	0.0
Delay (s)		44.0			42.8	0.1	85.2	16.7	10.9	38.6	9.3	6.9
Level of Service		D			D	A	F	B	B	D	A	A
Approach Delay (s)		44.0			13.0			17.2			11.6	
Approach LOS		D			B			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.5									B
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			86.2							27.5		
Intersection Capacity Utilization			51.0%									A
Analysis Period (min)			15									

c Critical Lane Group


















Queues  
 2: Main St (Rte 1) & Curtis Dr/Curtis Dr/Graham Park Rd

Existing Conditions  
 Weekday AM Peak Hour

	→	↘	←	↓	↙
Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	64	10	314	943	28
v/c Ratio	0.11	0.02	0.52	0.65	0.05
Control Delay	17.5	0.0	14.8	19.3	5.5
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	17.5	0.0	15.0	19.3	5.5
Queue Length 50th (ft)	19	0	49	172	0
Queue Length 95th (ft)	51	0	97	270	14
Internal Link Dist (ft)	970		183	276	
Turn Bay Length (ft)		90			200
Base Capacity (vph)	753	765	776	3323	1369
Starvation Cap Reductn	0	0	101	0	0
Spillback Cap Reductn	68	0	0	218	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.09	0.01	0.47	0.30	0.02
<b>Intersection Summary</b>					

HCM Signalized Intersection Capacity Analysis  
 2: Main St (Rte 1) & Curtis Dr/Curtis Dr/Graham Park Rd

Existing Conditions  
 Weekday AM Peak Hour

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	19	40	9	52	18	218	0	0	0	451	417	26		
Future Volume (vph)	19	40	9	52	18	218	0	0	0	451	417	26		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Grade (%)		-3%			-3%			0%			0%			
Total Lost time (s)		7.0	7.0		7.0						7.0	7.0		
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00		
Frbp, ped/bikes		1.00	1.00		0.98						1.00	0.98		
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00		
Frt		1.00	0.85		0.90						1.00	0.85		
Flt Protected		0.98	1.00		0.99						0.97	1.00		
Satd. Flow (prot)		1773	1477		1583						3322	1373		
Flt Permitted		0.85	1.00		0.93						0.97	1.00		
Satd. Flow (perm)		1532	1477		1488						3322	1373		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	21	43	10	57	20	237	0	0	0	490	453	28		
RTOR Reduction (vph)	0	0	6	0	58	0	0	0	0	0	0	16		
Lane Group Flow (vph)	0	64	4	0	256	0	0	0	0	0	943	12		
Confl. Peds. (#/hr)	1					1	2					2		
Heavy Vehicles (%)	11%	5%	11%	10%	17%	5%	0%	0%	0%	4%	8%	15%		
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	Perm		
Protected Phases		4			4						6			
Permitted Phases	4		4	4						6		6		
Actuated Green, G (s)		27.1	27.1		27.1						32.2	32.2		
Effective Green, g (s)		27.1	27.1		27.1						32.2	32.2		
Actuated g/C Ratio		0.37	0.37		0.37						0.44	0.44		
Clearance Time (s)		7.0	7.0		7.0						7.0	7.0		
Vehicle Extension (s)		5.0	5.0		5.0						5.0	5.0		
Lane Grp Cap (vph)		566	546		550						1459	603		
v/s Ratio Prot														
v/s Ratio Perm		0.04	0.00		0.17						0.28	0.01		
v/c Ratio		0.11	0.01		0.47						0.65	0.02		
Uniform Delay, d1		15.2	14.6		17.6						16.1	11.6		
Progression Factor		1.00	1.00		0.85						1.00	1.00		
Incremental Delay, d2		0.2	0.0		1.3						1.4	0.0		
Delay (s)		15.4	14.6		16.2						17.5	11.7		
Level of Service		B	B		B						B	B		
Approach Delay (s)		15.3			16.2			0.0			17.3			
Approach LOS		B			B			A			B			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			16.9									HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio			0.64											
Actuated Cycle Length (s)			73.3								21.0		Sum of lost time (s)	
Intersection Capacity Utilization			68.3%										ICU Level of Service	C
Analysis Period (min)			15											
c Critical Lane Group														





















Queues  
3: Fraley Blvd (Rte 1) & Graham Park Rd

Existing Conditions  
Weekday AM Peak Hour

	→	←	↖	↗	↑	↘
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	574	187	289	141	486	63
v/c Ratio	0.55	0.29	0.39	0.18	0.33	0.10
Control Delay	31.0	19.0	4.2	14.2	14.8	3.0
Queue Delay	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	19.0	4.2	14.2	14.8	3.0
Queue Length 50th (ft)	151	60	0	38	74	0
Queue Length 95th (ft)	242	126	50	82	124	17
Internal Link Dist (ft)	183	1196			771	
Turn Bay Length (ft)				710		330
Base Capacity (vph)	1406	873	895	1371	2594	1105
Starvation Cap Reductn	402	0	0	0	0	0
Spillback Cap Reductn	0	19	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.22	0.32	0.10	0.19	0.06
Intersection Summary						

HCM Signalized Intersection Capacity Analysis  
3: Fraley Blvd (Rte 1) & Graham Park Rd





















Existing Conditions  
Weekday AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 					
Traffic Volume (vph)	114	414	0	0	172	266	130	447	58	0	0	0	
Future Volume (vph)	114	414	0	0	172	266	130	447	58	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			-8%			0%		
Total Lost time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00				
Frbp, ped/bikes		1.00			1.00	1.00	1.00	1.00	0.99				
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00				
Frt		1.00			1.00	0.85	1.00	1.00	0.85				
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)		3419			1776	1524	1788	3382	1418				
Flt Permitted		0.83			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)		2863			1776	1524	1788	3382	1418				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	124	450	0	0	187	289	141	486	63	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	182	0	0	35	0	0	0	
Lane Group Flow (vph)	0	574	0	0	187	107	141	486	28	0	0	0	
Confl. Peds. (#/hr)	1								1	1			
Heavy Vehicles (%)	6%	4%	1%	0%	7%	6%	5%	11%	16%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0	
Turn Type	D.P+P	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	1	4			8			2					
Permitted Phases	8					8	2		2				
Actuated Green, G (s)		27.1			27.1	27.1	32.2	32.2	32.2				
Effective Green, g (s)		27.1			27.1	27.1	32.2	32.2	32.2				
Actuated g/C Ratio		0.37			0.37	0.37	0.44	0.44	0.44				
Clearance Time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Vehicle Extension (s)		5.0			5.0	5.0	5.0	5.0	5.0				
Lane Grp Cap (vph)		1058			656	563	785	1485	622				
v/s Ratio Prot					0.11			c0.14					
v/s Ratio Perm		c0.20				0.07	0.08		0.02				
v/c Ratio		0.54			0.29	0.19	0.18	0.33	0.04				
Uniform Delay, d1		18.2			16.3	15.7	12.5	13.5	11.8				
Progression Factor		1.49			1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2		1.0			0.5	0.3	0.2	0.3	0.1				
Delay (s)		28.2			16.8	16.0	12.7	13.7	11.8				
Level of Service		C			B	B	B	B	B				
Approach Delay (s)		28.2			16.3			13.4			0.0		
Approach LOS		C			B			B			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			19.1		HCM 2000 Level of Service				B				
HCM 2000 Volume to Capacity ratio			0.48										
Actuated Cycle Length (s)			73.3		Sum of lost time (s)				21.0				
Intersection Capacity Utilization			61.4%		ICU Level of Service				B				
Analysis Period (min)			15										

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
4: Old Triangle Rd & Graham Park Rd

Existing Conditions  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	62	342	67	37	312	27	87	14	54	31	21	57
Future Volume (vph)	62	342	67	37	312	27	87	14	54	31	21	57
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	67	368	72	40	335	29	94	15	58	33	23	61
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	251	256	208	197	109	58	117					
Volume Left (vph)	67	0	40	0	94	0	33					
Volume Right (vph)	0	72	0	29	0	58	61					
Hadj (s)	0.21	-0.09	0.19	0.00	0.66	-0.58	-0.18					
Departure Headway (s)	6.3	6.0	6.4	6.2	7.7	6.4	6.8					
Degree Utilization, x	0.44	0.43	0.37	0.34	0.23	0.10	0.22					
Capacity (veh/h)	551	582	539	556	427	511	485					
Control Delay (s)	12.9	12.2	11.9	11.2	11.8	9.0	11.7					
Approach Delay (s)	12.5		11.5		10.8		11.7					
Approach LOS	B		B		B		B					
Intersection Summary												
Delay			11.9									
Level of Service			B									
Intersection Capacity Utilization			46.9%		ICU Level of Service				A			
Analysis Period (min)			15									

Queues  
5: Main St (Rte 1) & Quantico Gateway Dr

Existing Conditions  
Weekday AM Peak Hour

	→	↘	↙	↓	↗
Lane Group	EBT	EBR	NBL	SBT	SBR
Lane Group Flow (vph)	41	19	43	496	48
v/c Ratio	0.14	0.05	0.08	0.30	0.06
Control Delay	18.9	0.3	5.3	11.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	0.3	5.3	11.4	0.1
Queue Length 50th (ft)	7	0	5	32	0
Queue Length 95th (ft)	32	0	14	100	0
Internal Link Dist (ft)	1316			1028	
Turn Bay Length (ft)		300			275
Base Capacity (vph)	1349	1169	922	3263	1583
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	0.03	0.02	0.05	0.15	0.03
Intersection Summary					

HCM Signalized Intersection Capacity Analysis  
5: Main St (Rte 1) & Quantico Gateway Dr

Existing Conditions  
Weekday AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	39	18	0	0	0	41	0	0	15	456	46
Future Volume (vph)	0	39	18	0	0	0	41	0	0	15	456	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0				7.0				7.0	7.0
Lane Util. Factor		1.00	1.00				1.00				0.95	1.00
Fr <sub>t</sub>		1.00	0.85				1.00				1.00	0.85
Fl <sub>t</sub> Protected		1.00	1.00				0.95				1.00	1.00
Satd. Flow (prot)		1810	1524				1770				3264	1583
Fl <sub>t</sub> Permitted		1.00	1.00				0.35				1.00	1.00
Satd. Flow (perm)		1810	1524				651				3264	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	41	19	0	0	0	43	0	0	16	480	48
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	0	41	2	0	0	0	43	0	0	0	496	20
Heavy Vehicles (%)	0%	5%	6%	0%	0%	0%	2%	0%	0%	53%	9%	2%
Turn Type		NA	Perm				pm+pt			Perm	NA	Perm
Protected Phases		4		3	3		5			6		6
Permitted Phases			4				2			6		6
Actuated Green, G (s)		5.6	5.6				29.6				20.2	20.2
Effective Green, g (s)		5.6	5.6				29.6				20.2	20.2
Actuated g/C Ratio		0.11	0.11				0.60				0.41	0.41
Clearance Time (s)		7.0	7.0				7.0				7.0	7.0
Vehicle Extension (s)		2.0	2.0				2.0				2.0	2.0
Lane Grp Cap (vph)		206	173				446				1340	649
v/s Ratio Prot		c0.02					c0.00					
v/s Ratio Perm			0.00				0.05				0.15	0.01
v/c Ratio		0.20	0.01				0.10				0.37	0.03
Uniform Delay, d <sub>1</sub>		19.8	19.3				4.5				10.1	8.7
Progression Factor		1.00	1.00				1.00				1.00	1.00
Incremental Delay, d <sub>2</sub>		0.2	0.0				0.0				0.1	0.0
Delay (s)		19.9	19.4				4.6				10.1	8.7
Level of Service		B	B				A				B	A
Approach Delay (s)		19.8			0.0			4.6			10.0	
Approach LOS		B			A			A			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			10.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			49.2				Sum of lost time (s)		28.0			
Intersection Capacity Utilization			37.2%				ICU Level of Service		A			
Analysis Period (min)			15									
c Critical Lane Group												

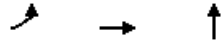


Queues

6: NB Jefferson Davis Hwy/Fraley Blvd (Rte 1) & Quantico Gateway Dr

Existing Conditions

Weekday AM Peak Hour





















Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	29	30	687
v/c Ratio	0.12	0.12	0.34
Control Delay	7.2	7.3	6.3
Queue Delay	0.0	0.0	0.0
Total Delay	7.2	7.3	6.3
Queue Length 50th (ft)	3	3	47
Queue Length 95th (ft)	11	11	74
Internal Link Dist (ft)		25	251
Turn Bay Length (ft)			
Base Capacity (vph)	1111	1111	3282
Starvation Cap Reductn	150	149	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.03	0.03	0.21

Intersection Summary









HCM Signalized Intersection Capacity Analysis  
 6: NB Jefferson Davis Hwy/Fraley Blvd (Rte 1) & Quantico Gateway Dr

Existing Conditions  
 Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	54	0	0	0	0	0	0	625	0	0	0	0
Future Volume (vph)	54	0	0	0	0	0	0	625	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0						7.0				
Lane Util. Factor	0.95	0.95						0.95				
Fr <sub>t</sub>	1.00	1.00						1.00				
Fl <sub>t</sub> Protected	0.95	0.95						1.00				
Satd. Flow (prot)	1491	1491						3282				
Fl <sub>t</sub> Permitted	0.95	0.95						1.00				
Satd. Flow (perm)	1491	1491						3282				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	59	0	0	0	0	0	0	687	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	29	30	0	0	0	0	0	687	0	0	0	0
Heavy Vehicles (%)	15%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Turn Type	Split	NA						NA	Perm			
Protected Phases	4	4			3			2				
Permitted Phases									2			
Actuated Green, G (s)	5.6	5.6						29.6				
Effective Green, g (s)	5.6	5.6						29.6				
Actuated g/C Ratio	0.11	0.11						0.60				
Clearance Time (s)	7.0	7.0						7.0				
Vehicle Extension (s)	2.0	2.0						2.0				
Lane Grp Cap (vph)	169	169						1974				
v/s Ratio Prot	0.02	c0.02						c0.21				
v/s Ratio Perm												
v/c Ratio	0.17	0.18						0.35				
Uniform Delay, d <sub>1</sub>	19.7	19.7						4.9				
Progression Factor	0.35	0.35						1.00				
Incremental Delay, d <sub>2</sub>	0.2	0.2						0.0				
Delay (s)	7.0	7.0						5.0				
Level of Service	A	A						A				
Approach Delay (s)		7.0			0.0			5.0			0.0	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			5.1					HCM 2000 Level of Service		A		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			49.2					Sum of lost time (s)		28.0		
Intersection Capacity Utilization			34.8%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												






















Queues  
1: Jefferson Davis Hwy & Possum Point Rd

Existing Conditions  
Weekday PM Peak Hour

									
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	58	112	9	985	44	88	1252	13
v/c Ratio	0.13	0.23	0.07	0.07	0.56	0.06	0.32	0.52	0.01
Control Delay	1.0	40.9	0.1	46.1	22.9	0.1	39.9	12.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.0	40.9	0.1	46.1	22.9	0.1	39.9	12.6	0.0
Queue Length 50th (ft)	0	29	0	5	249	0	44	211	0
Queue Length 95th (ft)	0	78	0	23	370	0	104	414	0
Internal Link Dist (ft)	802	985			414			1443	
Turn Bay Length (ft)			70	85		455	335		250
Base Capacity (vph)	591	744	1538	496	3110	1259	694	3418	1559
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.08	0.07	0.02	0.32	0.03	0.13	0.37	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis  
 1: Jefferson Davis Hwy & Possum Point Rd

Existing Conditions  
 Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	18	0	13	55	0	106	9	936	42	84	1189	12	
Future Volume (vph)	18	0	13	55	0	106	9	936	42	84	1189	12	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			4%			-3%		
Total Lost time (s)		7.0			7.0	4.0	7.0	6.5	6.5	7.0	6.5	6.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Fr <sub>t</sub>		0.94			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Fl <sub>t</sub> Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1741			1770	1538	1769	3468	1388	1651	3592	1633	
Fl <sub>t</sub> Permitted		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1741			1770	1538	1769	3468	1388	1651	3592	1633	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	19	0	14	58	0	112	9	985	44	88	1252	13	
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	23	0	0	6	
Lane Group Flow (vph)	0	1	0	0	58	112	9	985	21	88	1252	7	
Heavy Vehicles (%)	0%	0%	0%	2%	0%	5%	0%	2%	14%	11%	2%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1	
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	3	3		4	4		1	6		5	2		
Permitted Phases						Free		6	6			2	
Actuated Green, G (s)		2.5			8.2	90.6	1.0	42.5	42.5	9.9	51.4	51.4	
Effective Green, g (s)		2.5			8.2	90.6	1.0	42.5	42.5	9.9	51.4	51.4	
Actuated g/C Ratio		0.03			0.09	1.00	0.01	0.47	0.47	0.11	0.57	0.57	
Clearance Time (s)		7.0			7.0		7.0	6.5	6.5	7.0	6.5	6.5	
Vehicle Extension (s)		2.5			4.5		2.5	2.5	2.5	4.5	2.5	2.5	
Lane Grp Cap (vph)		48			160	1538	19	1626	651	180	2037	926	
v/s Ratio Prot		0.00			c0.03		0.01	0.28		c0.05	c0.35		
v/s Ratio Perm						c0.07			0.01			0.00	
v/c Ratio		0.02			0.36	0.07	0.47	0.61	0.03	0.49	0.61	0.01	
Uniform Delay, d <sub>1</sub>		42.9			38.7	0.0	44.5	17.8	13.0	38.0	13.0	8.5	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d <sub>2</sub>		0.1			2.4	0.1	12.9	0.5	0.0	3.6	0.5	0.0	
Delay (s)		43.0			41.2	0.1	57.5	18.4	13.0	41.5	13.5	8.5	
Level of Service		D			D	A	E	B	B	D	B	A	
Approach Delay (s)		43.0			14.1			18.5			15.3		
Approach LOS		D			B			B			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			16.8									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.60										
Actuated Cycle Length (s)			90.6									Sum of lost time (s)	27.5
Intersection Capacity Utilization			62.6%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													


















Queues  
2: Main St & Curtis Dr/Graham Park Rd

Existing Conditions  
Weekday PM Peak Hour

	→	↘	←	↓	↙
Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	72	11	257	1538	52
v/c Ratio	0.15	0.02	0.55	0.75	0.06
Control Delay	34.7	0.1	21.3	18.2	2.8
Queue Delay	0.2	0.0	1.0	0.1	0.0
Total Delay	34.9	0.1	22.3	18.3	2.8
Queue Length 50th (ft)	37	0	76	383	1
Queue Length 95th (ft)	91	0	130	458	16
Internal Link Dist (ft)	1114		183	276	
Turn Bay Length (ft)		90			200
Base Capacity (vph)	492	513	492	3474	1517
Starvation Cap Reductn	0	0	85	0	0
Spillback Cap Reductn	137	0	0	468	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.20	0.02	0.63	0.51	0.03
<b>Intersection Summary</b>					

HCM Signalized Intersection Capacity Analysis  
2: Main St & Curtis Dr/Graham Park Rd

Existing Conditions  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	14	55	11	53	25	169	0	0	0	677	800	50	
Future Volume (vph)	14	55	11	53	25	169	0	0	0	677	800	50	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		-3%			-3%			0%			0%		
Total Lost time (s)		7.0	7.0		7.0						7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00	
Frbp, ped/bikes		1.00	0.99		1.00						1.00	0.98	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00	
Fr t		1.00	0.85		0.91						1.00	0.85	
Fl t Protected		0.99	1.00		0.99						0.98	1.00	
Satd. Flow (prot)		1850	1615		1705						3474	1519	
Fl t Permitted		0.91	1.00		0.91						0.98	1.00	
Satd. Flow (perm)		1698	1615		1572						3474	1519	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	15	57	11	55	26	176	0	0	0	705	833	52	
RTOR Reduction (vph)	0	0	8	0	36	0	0	0	0	0	0	19	
Lane Group Flow (vph)	0	72	3	0	221	0	0	0	0	0	1538	33	
Confl. Peds. (#/hr)			2	2			1		1	1		1	
Heavy Vehicles (%)	0%	4%	0%	4%	0%	1%	0%	0%	0%	1%	2%	4%	
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		4			4						6		
Permitted Phases	4		4	4						6		6	
Actuated Green, G (s)		29.0	29.0		29.0						62.5	62.5	
Effective Green, g (s)		29.0	29.0		29.0						62.5	62.5	
Actuated g/C Ratio		0.27	0.27		0.27						0.59	0.59	
Clearance Time (s)		7.0	7.0		7.0						7.0	7.0	
Vehicle Extension (s)		5.0	5.0		5.0						5.0	5.0	
Lane Grp Cap (vph)		466	443		432						2058	899	
v/s Ratio Prot													
v/s Ratio Perm		0.04	0.00		0.14						0.44	0.02	
v/c Ratio		0.15	0.01		0.51						0.75	0.04	
Uniform Delay, d1		29.0	27.8		32.3						15.7	9.0	
Progression Factor		1.00	1.00		0.57						1.00	1.00	
Incremental Delay, d2		0.3	0.0		2.0						1.8	0.0	
Delay (s)		29.3	27.8		20.4						17.6	9.0	
Level of Service		C	C		C						B	A	
Approach Delay (s)		29.1			20.4			0.0			17.3		
Approach LOS		C			C			A			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			18.2									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73										
Actuated Cycle Length (s)			105.5									Sum of lost time (s)	21.0
Intersection Capacity Utilization			83.1%									ICU Level of Service	E
Analysis Period (min)			15										
c Critical Lane Group													





















Queues  
3: Fraley Blvd & Graham Park Rd

Existing Conditions  
Weekday PM Peak Hour

	→	←	↖	↗	↑	↘
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	855	158	276	136	480	48
v/c Ratio	0.56	0.31	0.45	0.23	0.42	0.09
Control Delay	27.0	35.7	7.0	26.6	28.8	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	35.8	7.0	26.6	28.8	3.6
Queue Length 50th (ft)	225	85	0	66	132	0
Queue Length 95th (ft)	322	177	73	120	190	16
Internal Link Dist (ft)	183	215			771	
Turn Bay Length (ft)				710		285
Base Capacity (vph)	3285	545	640	825	1572	737
Starvation Cap Reductn	403	0	0	0	0	0
Spillback Cap Reductn	0	24	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.30	0.43	0.16	0.31	0.07
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
3: Fraley Blvd & Graham Park Rd

Existing Conditions  
Weekday PM Peak Hour





















													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 					
Traffic Volume (vph)	177	636	0	0	150	262	129	456	46	0	0	0	
Future Volume (vph)	177	636	0	0	150	262	129	456	46	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			-8%			0%		
Total Lost time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00				
Frbp, ped/bikes		1.00			1.00	0.98	1.00	1.00	0.99				
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00				
Frt		1.00			1.00	0.85	1.00	1.00	0.85				
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)		3525			1881	1538	1859	3542	1581				
Flt Permitted		0.83			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)		2957			1881	1538	1859	3542	1581				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	186	669	0	0	158	276	136	480	48	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	200	0	0	33	0	0	0	
Lane Group Flow (vph)	0	855	0	0	158	76	136	480	15	0	0	0	
Confl. Peds. (#/hr)	5		7	7		5			1	1			
Heavy Vehicles (%)	2%	1%	0%	0%	1%	3%	1%	6%	4%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0	
Turn Type	D.P+P	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	1	1 8			8			2					
Permitted Phases	8					8	2		2				
Actuated Green, G (s)		50.6			29.0	29.0	33.9	33.9	33.9				
Effective Green, g (s)		50.6			29.0	29.0	33.9	33.9	33.9				
Actuated g/C Ratio		0.48			0.27	0.27	0.32	0.32	0.32				
Clearance Time (s)					7.0	7.0	7.0	7.0	7.0				
Vehicle Extension (s)					5.0	5.0	5.0	5.0	5.0				
Lane Grp Cap (vph)		1534			517	422	597	1138	508				
v/s Ratio Prot		c0.11			0.08			c0.14					
v/s Ratio Perm		c0.15				0.05	0.07		0.01				
v/c Ratio		0.56			0.31	0.18	0.23	0.42	0.03				
Uniform Delay, d1		19.5			30.3	29.2	26.2	28.1	24.5				
Progression Factor		1.42			1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2		0.7			0.7	0.4	0.4	0.5	0.1				
Delay (s)		28.3			31.0	29.6	26.6	28.6	24.6				
Level of Service		C			C	C	C	C	C				
Approach Delay (s)		28.3			30.1			27.9			0.0		
Approach LOS		C			C			C			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			28.6		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			105.5		Sum of lost time (s)					21.0			
Intersection Capacity Utilization			70.1%		ICU Level of Service					C			
Analysis Period (min)			15										

c Critical Lane Group



HCM Unsignalized Intersection Capacity Analysis  
4: Old Triangle Rd & Graham Park Rd

Existing Conditions  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	145	406	159	20	238	20	108	28	38	17	25	54
Future Volume (vph)	145	406	159	20	238	20	108	28	38	17	25	54
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	151	423	166	21	248	21	113	29	40	18	26	56
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	363	378	145	145	142	40	100					
Volume Left (vph)	151	0	21	0	113	0	18					
Volume Right (vph)	0	166	0	21	0	40	56					
Hadj (s)	0.21	-0.31	0.10	-0.05	0.40	-0.70	-0.23					
Departure Headway (s)	6.2	5.6	6.6	6.5	7.5	6.4	6.9					
Degree Utilization, x	0.62	0.59	0.27	0.26	0.30	0.07	0.19					
Capacity (veh/h)	570	627	518	530	439	514	481					
Control Delay (s)	17.4	15.2	10.8	10.5	12.5	8.7	11.5					
Approach Delay (s)	16.3		10.6		11.6		11.5					
Approach LOS	C		B		B		B					
Intersection Summary												
Delay			14.0									
Level of Service			B									
Intersection Capacity Utilization			53.5%		ICU Level of Service			A				
Analysis Period (min)			15									

Queues  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

Existing Conditions  
Weekday PM Peak Hour





















Lane Group	EBT	EBR	WBT	NBL	SBT	SBR
Lane Group Flow (vph)	53	50	3	41	948	72
v/c Ratio	0.20	0.15	0.01	0.10	0.52	0.09
Control Delay	29.2	1.0	16.3	6.8	15.8	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.2	1.0	16.3	6.8	15.8	1.4
Queue Length 50th (ft)	16	0	0	4	137	0
Queue Length 95th (ft)	59	0	m4	22	277	7
Internal Link Dist (ft)	1150		25		1028	
Turn Bay Length (ft)		300				275
Base Capacity (vph)	1140	1043	545	797	3440	1498
Starvation Cap Reductn	0	0	145	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.01	0.05	0.28	0.05

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr






Existing Conditions  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	46	43	3	0	0	35	0	0	6	809	62	
Future Volume (vph)	0	46	43	3	0	0	35	0	0	6	809	62	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		7.0	7.0		7.0		7.0				7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00		1.00				0.95	1.00	
Frbp, ped/bikes		1.00	0.98		1.00		1.00				1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00				1.00	1.00	
Frt		1.00	0.85		1.00		1.00				1.00	0.85	
Flt Protected		1.00	1.00		0.95		0.95				1.00	1.00	
Satd. Flow (prot)		1776	1557		1805		1805				3538	1538	
Flt Permitted		1.00	1.00		0.95		0.17				1.00	1.00	
Satd. Flow (perm)		1776	1557		1805		314				3538	1538	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	
Adj. Flow (vph)	0	53	50	3	0	0	41	0	0	7	941	72	
RTOR Reduction (vph)	0	0	45	0	0	0	0	0	0	0	0	43	
Lane Group Flow (vph)	0	53	5	0	3	0	41	0	0	0	948	29	
Confl. Bikes (#/hr)			2										
Heavy Vehicles (%)	0%	7%	2%	0%	0%	0%	0%	0%	0%	0%	2%	5%	
Turn Type		NA	Perm	Split	NA		pm+pt			Perm	NA	Perm	
Protected Phases		4		3	3		5				6		
Permitted Phases			4				2			6		6	
Actuated Green, G (s)		6.2	6.2		0.9		36.8				26.0	26.0	
Effective Green, g (s)		6.2	6.2		0.9		36.8				26.0	26.0	
Actuated g/C Ratio		0.10	0.10		0.01		0.57				0.40	0.40	
Clearance Time (s)		7.0	7.0		7.0		7.0				7.0	7.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0				2.0	2.0	
Lane Grp Cap (vph)		169	148		25		265				1417	616	
v/s Ratio Prot		c0.03			c0.00		c0.01						
v/s Ratio Perm			0.00				0.08				0.27	0.02	
v/c Ratio		0.31	0.03		0.12		0.15				0.67	0.05	
Uniform Delay, d1		27.4	26.6		31.6		8.1				15.9	11.9	
Progression Factor		1.00	1.00		0.53		1.00				1.00	1.00	
Incremental Delay, d2		0.4	0.0		0.8		0.1				0.9	0.0	
Delay (s)		27.8	26.7		17.4		8.2				16.9	11.9	
Level of Service		C	C		B		A				B	B	
Approach Delay (s)		27.2			17.4			8.2			16.5		
Approach LOS		C			B			A			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			17.2									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55										
Actuated Cycle Length (s)			64.9									Sum of lost time (s)	28.0
Intersection Capacity Utilization			51.7%									ICU Level of Service	A
Analysis Period (min)			15										

c Critical Lane Group


















Queues  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

Existing Conditions  
Weekday PM Peak Hour

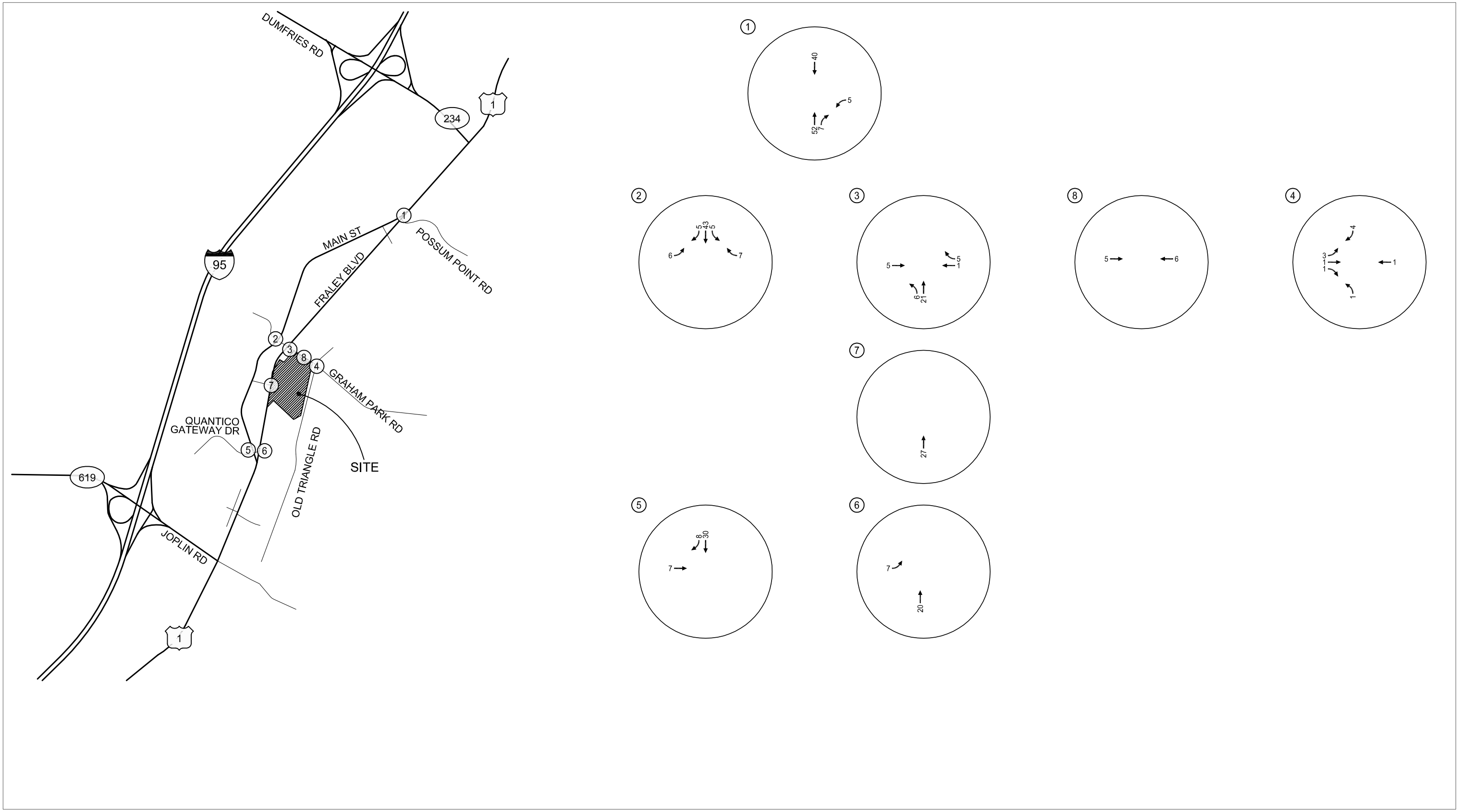
					
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	29	29	3	661	2
v/c Ratio	0.12	0.12	0.02	0.29	0.00
Control Delay	6.3	6.3	28.3	6.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	6.3	28.3	6.8	0.0
Queue Length 50th (ft)	2	2	1	44	0
Queue Length 95th (ft)	7	7	9	130	0
Internal Link Dist (ft)		25	201	251	
Turn Bay Length (ft)					100
Base Capacity (vph)	1058	1058	411	3471	1579
Starvation Cap Reductn	112	112	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.03	0.01	0.19	0.00
<b>Intersection Summary</b>					

HCM Signalized Intersection Capacity Analysis  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

Existing Conditions  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	0	0	0	2	1	1	594	2	0	0	0
Future Volume (vph)	52	0	0	0	2	1	1	594	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			7.0			7.0	7.0			
Lane Util. Factor	0.95	0.95			1.00			0.95	1.00			
Frb, ped/bikes	1.00	1.00			1.00			1.00	0.98			
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00			
Frt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	0.95			1.00			1.00	1.00			
Satd. Flow (prot)	1649	1649			1361			3471	1579			
Flt Permitted	0.95	0.95			1.00			1.00	1.00			
Satd. Flow (perm)	1649	1649			1361			3471	1579			
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	0	0	0	2	1	1	660	2	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	1	0	0	0
Lane Group Flow (vph)	29	29	0	0	2	0	0	661	1	0	0	0
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	4%	0%	0%	0%	0%	100%	0%	4%	0%	0%	0%	0%
Turn Type	Split	NA			NA		Perm	NA	Perm			
Protected Phases	4	4			3			2				
Permitted Phases							2		2			
Actuated Green, G (s)	6.2	6.2			0.9			36.8	36.8			
Effective Green, g (s)	6.2	6.2			0.9			36.8	36.8			
Actuated g/C Ratio	0.10	0.10			0.01			0.57	0.57			
Clearance Time (s)	7.0	7.0			7.0			7.0	7.0			
Vehicle Extension (s)	2.0	2.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	157	157			18			1968	895			
v/s Ratio Prot	c0.02	0.02			c0.00							
v/s Ratio Perm								0.19	0.00			
v/c Ratio	0.18	0.18			0.11			0.34	0.00			
Uniform Delay, d1	27.0	27.0			31.6			7.5	6.1			
Progression Factor	0.19	0.19			1.00			1.00	1.00			
Incremental Delay, d2	0.2	0.2			1.0			0.0	0.0			
Delay (s)	5.3	5.3			32.6			7.6	6.1			
Level of Service	A	A			C			A	A			
Approach Delay (s)		5.3			32.6			7.5			0.0	
Approach LOS		A			C			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			7.5					HCM 2000 Level of Service		A		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			64.9					Sum of lost time (s)		28.0		
Intersection Capacity Utilization			36.2%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												

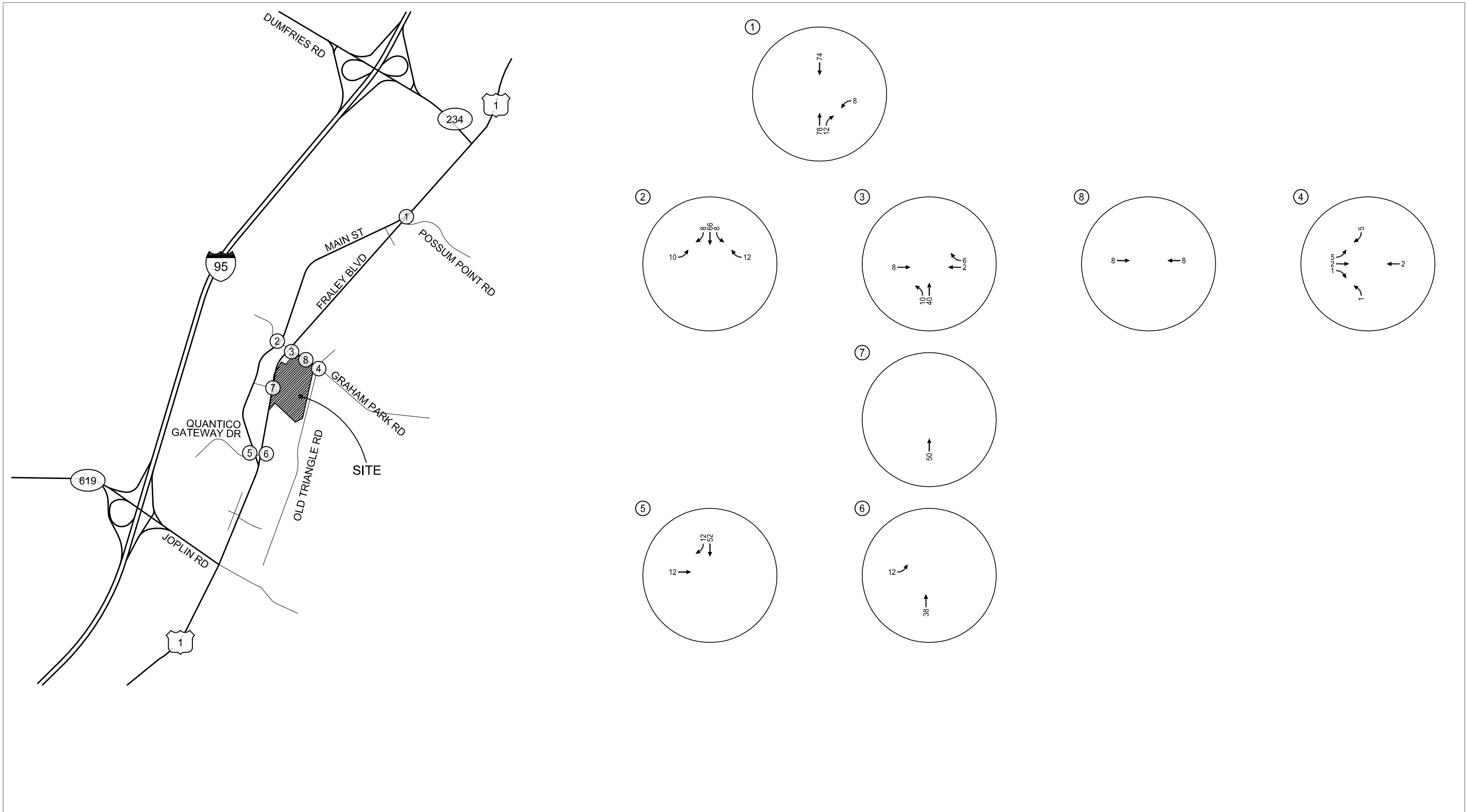
**Appendix E**  
In-Process and Rerouted  
Traffic Volumes



**IN-PROCESS TRIPS - FIRST TOWN CENTER  
WEEKDAY AM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**E1**

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**IN-PROCESS TRIPS - FIRST TOWN CENTER  
WEEKDAY PM PEAK HOUR  
DUMFRIES, VIRGINIA**

Figure  
**E2**









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**Appendix F**  
2020 Background Traffic  
Conditions Level of Service  
Worksheets






















Queues  
1: Jefferson Davis Hwy & Possum Point Rd

2020 Background  
Weekday AM Peak Hour

									
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	39	78	12	1165	47	82	962	14
v/c Ratio	0.01	0.22	0.05	0.10	0.64	0.05	0.36	0.35	0.01
Control Delay	50.0	44.5	0.1	48.6	18.2	0.1	42.9	6.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.0	44.5	0.1	48.6	18.2	0.1	42.9	6.8	0.0
Queue Length 50th (ft)	1	19	0	6	241	0	40	83	0
Queue Length 95th (ft)	7	65	0	31	468	0	112	288	0
Internal Link Dist (ft)	1167	1363			414			1326	
Turn Bay Length (ft)			70	85		440	335		250
Base Capacity (vph)	439	558	1495	430	2369	1103	576	2834	1354
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.07	0.05	0.03	0.49	0.04	0.14	0.34	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis  
1: Jefferson Davis Hwy & Possum Point Rd

2020 Background  
Weekday AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	1	0	0	36	0	72	11	1072	43	75	885	13	
Future Volume (vph)	1	0	0	36	0	72	11	1072	43	75	885	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			4%			-3%		
Total Lost time (s)		7.0			7.0	4.0	7.0	6.5	6.5	7.0	6.5	6.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected		0.95			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1805			1530	1495	1769	3246	1452	1579	3393	1599	
Flt Permitted		0.95			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1805			1530	1495	1769	3246	1452	1579	3393	1599	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	1	0	0	39	0	78	12	1165	47	82	962	14	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	22	0	0	5	
Lane Group Flow (vph)	0	1	0	0	39	78	12	1165	25	82	962	9	
Confl. Peds. (#/hr)							1					1	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	8%	0%	9%	9%	16%	8%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1	
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	3	3		4	4		1	6		5	2		
Permitted Phases						Free		6	6			2	
Actuated Green, G (s)		0.8			5.9	101.4	1.0	54.6	54.6	12.6	66.2	66.2	
Effective Green, g (s)		0.8			5.9	101.4	1.0	54.6	54.6	12.6	66.2	66.2	
Actuated g/C Ratio		0.01			0.06	1.00	0.01	0.54	0.54	0.12	0.65	0.65	
Clearance Time (s)		7.0			7.0		7.0	6.5	6.5	7.0	6.5	6.5	
Vehicle Extension (s)		2.5			4.5		2.5	2.5	2.5	4.5	2.5	2.5	
Lane Grp Cap (vph)		14			89	1495	17	1747	781	196	2215	1043	
v/s Ratio Prot		0.00			c0.03		0.01	c0.36		c0.05	c0.28		
v/s Ratio Perm						c0.05			0.02			0.01	
v/c Ratio		0.07			0.44	0.05	0.71	0.67	0.03	0.42	0.43	0.01	
Uniform Delay, d1		49.9			46.1	0.0	50.1	16.9	11.0	41.0	8.5	6.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.6			5.9	0.1	79.4	0.9	0.0	2.5	0.1	0.0	
Delay (s)		51.5			52.0	0.1	129.5	17.7	11.0	43.5	8.6	6.1	
Level of Service		D			D	A	F	B	B	D	A	A	
Approach Delay (s)		51.5			17.4			18.6			11.3		
Approach LOS		D			B			B			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			15.3		HCM 2000 Level of Service					B			
HCM 2000 Volume to Capacity ratio			0.62										
Actuated Cycle Length (s)			101.4		Sum of lost time (s)					27.5			
Intersection Capacity Utilization			55.0%		ICU Level of Service					B			
Analysis Period (min)			15										

c Critical Lane Group

Queues  
2: Main St & Curtis Dr/Graham Park Rd

2020 Background  
Weekday AM Peak Hour




















Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	77	11	354	1094	37
v/c Ratio	0.15	0.02	0.59	0.70	0.06
Control Delay	21.2	0.1	18.9	21.1	4.4
Queue Delay	0.2	0.0	0.6	0.0	0.0
Total Delay	21.4	0.1	19.4	21.1	4.4
Queue Length 50th (ft)	28	0	70	256	0
Queue Length 95th (ft)	69	0	117	325	16
Internal Link Dist (ft)	970		183	1910	
Turn Bay Length (ft)		90			200
Base Capacity (vph)	607	664	677	3324	1369
Starvation Cap Reductn	0	0	95	0	0
Spillback Cap Reductn	195	0	0	513	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.19	0.02	0.61	0.39	0.03

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
2: Main St & Curtis Dr/Graham Park Rd

2020 Background  
Weekday AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	27	44	10	57	20	248	0	0	0	503	503	34	
Future Volume (vph)	27	44	10	57	20	248	0	0	0	503	503	34	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		-3%			-3%			0%			0%		
Total Lost time (s)		7.0	7.0		7.0						7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00	
Frbp, ped/bikes		1.00	1.00		0.98						1.00	0.98	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00	
Frt		1.00	0.85		0.90						1.00	0.85	
Flt Protected		0.98	1.00		0.99						0.98	1.00	
Satd. Flow (prot)		1764	1477		1582						3323	1372	
Flt Permitted		0.81	1.00		0.93						0.98	1.00	
Satd. Flow (perm)		1448	1477		1483						3323	1372	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	29	48	11	62	22	270	0	0	0	547	547	37	
RTOR Reduction (vph)	0	0	7	0	61	0	0	0	0	0	0	20	
Lane Group Flow (vph)	0	77	4	0	293	0	0	0	0	0	1094	17	
Confl. Peds. (#/hr)	1					1	2					2	
Heavy Vehicles (%)	11%	5%	11%	10%	17%	5%	0%	0%	0%	4%	8%	15%	
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		4			4						6		
Permitted Phases	4		4	4						6		6	
Actuated Green, G (s)		31.2	31.2		31.2						40.1	40.1	
Effective Green, g (s)		31.2	31.2		31.2						40.1	40.1	
Actuated g/C Ratio		0.37	0.37		0.37						0.47	0.47	
Clearance Time (s)		7.0	7.0		7.0						7.0	7.0	
Vehicle Extension (s)		5.0	5.0		5.0						5.0	5.0	
Lane Grp Cap (vph)		529	540		542						1562	644	
v/s Ratio Prot													
v/s Ratio Perm		0.05	0.00		0.20						0.33	0.01	
v/c Ratio		0.15	0.01		0.54						0.70	0.03	
Uniform Delay, d1		18.1	17.2		21.4						17.9	12.1	
Progression Factor		1.00	1.00		0.85						1.00	1.00	
Incremental Delay, d2		0.3	0.0		1.9						1.8	0.0	
Delay (s)		18.4	17.2		20.1						19.7	12.2	
Level of Service		B	B		C						B	B	
Approach Delay (s)		18.2			20.1			0.0			19.4		
Approach LOS		B			C			A			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			19.5									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			85.3									Sum of lost time (s)	21.0
Intersection Capacity Utilization			74.0%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Queues  
3: Fraley Blvd & Graham Park Rd





















2020 Background  
Weekday AM Peak Hour

	→	←	↖	↗	↑	↘
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	639	208	325	163	560	70
v/c Ratio	0.62	0.32	0.43	0.19	0.35	0.10
Control Delay	37.6	22.7	4.7	14.3	15.4	3.1
Queue Delay	4.9	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	22.7	4.7	14.3	15.4	3.1
Queue Length 50th (ft)	202	80	0	54	105	0
Queue Length 95th (ft)	290	160	58	91	142	19
Internal Link Dist (ft)	183	1196			771	
Turn Bay Length (ft)				710		330
Base Capacity (vph)	1189	745	818	1179	2230	960
Starvation Cap Reductn	470	0	0	0	0	0
Spillback Cap Reductn	0	29	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.29	0.40	0.14	0.25	0.07
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 3: Fraley Blvd & Graham Park Rd





















2020 Background  
Weekday AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 					
Traffic Volume (vph)	126	462	0	0	191	299	150	515	64	0	0	0	
Future Volume (vph)	126	462	0	0	191	299	150	515	64	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			-8%			0%		
Total Lost time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00				
Frbp, ped/bikes		1.00			1.00	0.99	1.00	1.00	0.99				
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00				
Frt		1.00			1.00	0.85	1.00	1.00	0.85				
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)		3420			1776	1504	1788	3382	1418				
Flt Permitted		0.82			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)		2836			1776	1504	1788	3382	1418				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	137	502	0	0	208	325	163	560	70	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	206	0	0	37	0	0	0	
Lane Group Flow (vph)	0	639	0	0	208	119	163	560	33	0	0	0	
Confl. Peds. (#/hr)	1		4	4		1			1	1			
Heavy Vehicles (%)	6%	4%	0%	0%	7%	6%	5%	11%	16%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0	
Turn Type	D.P+P	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	1	4			8			2					
Permitted Phases	8					8	2		2				
Actuated Green, G (s)		31.2			31.2	31.2	40.1	40.1	40.1				
Effective Green, g (s)		31.2			31.2	31.2	40.1	40.1	40.1				
Actuated g/C Ratio		0.37			0.37	0.37	0.47	0.47	0.47				
Clearance Time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Vehicle Extension (s)		5.0			5.0	5.0	5.0	5.0	5.0				
Lane Grp Cap (vph)		1037			649	550	840	1589	666				
v/s Ratio Prot					0.12			c0.17					
v/s Ratio Perm		c0.23				0.08	0.09		0.02				
v/c Ratio		0.62			0.32	0.22	0.19	0.35	0.05				
Uniform Delay, d1		22.1			19.4	18.6	13.2	14.4	12.3				
Progression Factor		1.48			1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2		1.5			0.6	0.4	0.2	0.3	0.1				
Delay (s)		34.2			20.0	19.0	13.4	14.6	12.3				
Level of Service		C			C	B	B	B	B				
Approach Delay (s)		34.2			19.4			14.2			0.0		
Approach LOS		C			B			B			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			22.1		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.52										
Actuated Cycle Length (s)			85.3		Sum of lost time (s)					21.0			
Intersection Capacity Utilization			67.6%		ICU Level of Service					C			
Analysis Period (min)			15										

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
4: Old Triangle Rd & Graham Park Rd

2020 Background  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	71	379	75	41	345	30	97	15	60	34	23	67
Future Volume (vph)	71	379	75	41	345	30	97	15	60	34	23	67
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	76	408	81	44	371	32	104	16	65	37	25	72
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	280	285	230	218	120	65	134					
Volume Left (vph)	76	0	44	0	104	0	37					
Volume Right (vph)	0	81	0	32	0	65	72					
Hadj (s)	0.21	-0.09	0.19	0.00	0.64	-0.58	-0.19					
Departure Headway (s)	6.6	6.3	6.7	6.5	8.0	6.8	7.1					
Degree Utilization, x	0.51	0.50	0.43	0.39	0.27	0.12	0.26					
Capacity (veh/h)	528	557	516	531	411	487	466					
Control Delay (s)	15.0	14.1	13.4	12.4	12.7	9.5	12.6					
Approach Delay (s)	14.5		12.9		11.6		12.6					
Approach LOS	B		B		B		B					
Intersection Summary												
Delay			13.4									
Level of Service			B									
Intersection Capacity Utilization			50.8%		ICU Level of Service				A			
Analysis Period (min)			15									



Queues  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday AM Peak Hour





















Lane Group	EBT	EBR	NBL	SBT	SBR
Lane Group Flow (vph)	53	21	47	579	62
v/c Ratio	0.18	0.06	0.09	0.38	0.08
Control Delay	20.6	0.3	5.2	13.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	0.3	5.2	13.6	0.7
Queue Length 50th (ft)	14	0	5	74	0
Queue Length 95th (ft)	40	0	15	122	4
Internal Link Dist (ft)	1316		1028		
Turn Bay Length (ft)	300		275		
Base Capacity (vph)	1298	1130	899	3264	1583
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	0.04	0.02	0.05	0.18	0.04

Intersection Summary

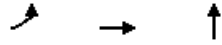
HCM Signalized Intersection Capacity Analysis  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	50	20	0	0	0	45	0	0	17	533	59
Future Volume (vph)	0	50	20	0	0	0	45	0	0	17	533	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0				7.0				7.0	7.0
Lane Util. Factor		1.00	1.00				1.00				0.95	1.00
Fr <sub>t</sub>		1.00	0.85				1.00				1.00	0.85
Fl <sub>t</sub> Protected		1.00	1.00				0.95				1.00	1.00
Satd. Flow (prot)		1810	1524				1770				3266	1583
Fl <sub>t</sub> Permitted		1.00	1.00				0.32				1.00	1.00
Satd. Flow (perm)		1810	1524				594				3266	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	53	21	0	0	0	47	0	0	18	561	62
RTOR Reduction (vph)	0	0	19	0	0	0	0	0	0	0	0	38
Lane Group Flow (vph)	0	53	2	0	0	0	47	0	0	0	579	24
Heavy Vehicles (%)	0%	5%	6%	0%	0%	0%	2%	0%	0%	53%	9%	2%
Turn Type		NA	Perm				pm+pt			Perm	NA	Perm
Protected Phases		4		3	3		5				6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)		5.7	5.7				30.2				19.4	19.4
Effective Green, g (s)		5.7	5.7				30.2				19.4	19.4
Actuated g/C Ratio		0.11	0.11				0.61				0.39	0.39
Clearance Time (s)		7.0	7.0				7.0				7.0	7.0
Vehicle Extension (s)		2.0	2.0				2.0				2.0	2.0
Lane Grp Cap (vph)		206	174				449				1269	615
v/s Ratio Prot		c0.03					c0.01					
v/s Ratio Perm			0.00				0.06				0.18	0.02
v/c Ratio		0.26	0.01				0.10				0.46	0.04
Uniform Delay, d1		20.2	19.6				4.5				11.3	9.5
Progression Factor		1.00	1.00				1.00				1.00	1.00
Incremental Delay, d2		0.2	0.0				0.0				0.1	0.0
Delay (s)		20.4	19.6				4.6				11.4	9.5
Level of Service		C	B				A				B	A
Approach Delay (s)		20.2			0.0			4.6			11.2	
Approach LOS		C			A			A			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			11.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			49.9				Sum of lost time (s)		28.0			
Intersection Capacity Utilization			39.4%				ICU Level of Service		A			
Analysis Period (min)			15									
c Critical Lane Group												

Queues  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr



















2020 Background  
Weekday AM Peak Hour



Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	36	37	772
v/c Ratio	0.15	0.15	0.37
Control Delay	7.1	7.1	6.3
Queue Delay	0.0	0.0	0.0
Total Delay	7.1	7.1	6.3
Queue Length 50th (ft)	4	4	55
Queue Length 95th (ft)	12	12	90
Internal Link Dist (ft)		25	251
Turn Bay Length (ft)			
Base Capacity (vph)	1069	1069	3282
Starvation Cap Reductn	113	112	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.04	0.04	0.24
<b>Intersection Summary</b>			









HCM Signalized Intersection Capacity Analysis  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	67	0	0	0	0	0	0	710	0	0	0	0
Future Volume (vph)	67	0	0	0	0	0	0	710	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0						7.0				
Lane Util. Factor	0.95	0.95						0.95				
Flt	1.00	1.00						1.00				
Flt Protected	0.95	0.95						1.00				
Satd. Flow (prot)	1491	1491						3282				
Flt Permitted	0.95	0.95						1.00				
Satd. Flow (perm)	1491	1491						3282				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	0	0	0	0	0	0	772	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	36	37	0	0	0	0	0	772	0	0	0	0
Heavy Vehicles (%)	15%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Turn Type	Split	NA						NA	Perm			
Protected Phases	4	4			3			2				
Permitted Phases									2			
Actuated Green, G (s)	5.7	5.7						30.2				
Effective Green, g (s)	5.7	5.7						30.2				
Actuated g/C Ratio	0.11	0.11						0.61				
Clearance Time (s)	7.0	7.0						7.0				
Vehicle Extension (s)	2.0	2.0						2.0				
Lane Grp Cap (vph)	170	170						1986				
v/s Ratio Prot	0.02	c0.02						c0.24				
v/s Ratio Perm												
v/c Ratio	0.21	0.22						0.39				
Uniform Delay, d1	20.1	20.1						5.1				
Progression Factor	0.30	0.30						1.00				
Incremental Delay, d2	0.2	0.2						0.0				
Delay (s)	6.2	6.2						5.1				
Level of Service	A	A						A				
Approach Delay (s)		6.2			0.0			5.1			0.0	
Approach LOS		A			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			5.2					HCM 2000 Level of Service		A		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			49.9					Sum of lost time (s)		28.0		
Intersection Capacity Utilization			37.1%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												






















Queues  
1: Jefferson Davis Hwy & Possum Point Rd

2020 Background  
Weekday PM Peak Hour

									
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	36	73	123	11	1169	61	98	1460	14
v/c Ratio	0.15	0.31	0.08	0.09	0.73	0.09	0.38	0.60	0.01
Control Delay	1.3	48.5	0.1	55.1	26.7	0.2	47.5	15.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.3	48.5	0.1	55.1	26.7	0.2	47.5	15.4	0.0
Queue Length 50th (ft)	0	44	0	7	340	0	58	284	0
Queue Length 95th (ft)	0	106	0	30	502	0	133	548	0
Internal Link Dist (ft)	802	985			414			1443	
Turn Bay Length (ft)			70	85		455	335		250
Base Capacity (vph)	522	629	1538	419	2863	1171	587	3156	1417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.12	0.08	0.03	0.41	0.05	0.17	0.46	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis  
1: Jefferson Davis Hwy & Possum Point Rd

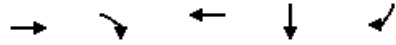
2020 Background  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	0	14	69	0	117	10	1111	58	93	1387	13
Future Volume (vph)	20	0	14	69	0	117	10	1111	58	93	1387	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			4%			-3%	
Total Lost time (s)		7.0			7.0	4.0	7.0	6.5	6.5	7.0	6.5	6.5
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1742			1770	1538	1769	3468	1388	1651	3592	1599
Flt Permitted		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1742			1770	1538	1769	3468	1388	1651	3592	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	0	15	73	0	123	11	1169	61	98	1460	14
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	32	0	0	6
Lane Group Flow (vph)	0	1	0	0	73	123	11	1169	29	98	1460	8
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	2%	0%	5%	0%	2%	14%	11%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						Free		6	6			2
Actuated Green, G (s)		2.6			9.6	103.5	2.2	48.9	48.9	14.9	61.6	61.6
Effective Green, g (s)		2.6			9.6	103.5	2.2	48.9	48.9	14.9	61.6	61.6
Actuated g/C Ratio		0.03			0.09	1.00	0.02	0.47	0.47	0.14	0.60	0.60
Clearance Time (s)		7.0			7.0		7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)		2.5			4.5		2.5	2.5	2.5	4.5	2.5	2.5
Lane Grp Cap (vph)		43			164	1538	37	1638	655	237	2137	951
v/s Ratio Prot		0.00			c0.04		0.01	0.34		c0.06	c0.41	
v/s Ratio Perm						c0.08			0.02			0.01
v/c Ratio		0.02			0.45	0.08	0.30	0.71	0.04	0.41	0.68	0.01
Uniform Delay, d1		49.2			44.4	0.0	49.9	21.7	14.7	40.3	14.3	8.5
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1			3.3	0.1	3.3	1.4	0.0	2.0	0.8	0.0
Delay (s)		49.4			47.7	0.1	53.1	23.1	14.7	42.3	15.1	8.5
Level of Service		D			D	A	D	C	B	D	B	A
Approach Delay (s)		49.4			17.8			23.0			16.8	
Approach LOS		D			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.8		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			103.5		Sum of lost time (s)					27.5		
Intersection Capacity Utilization			68.2%		ICU Level of Service					C		
Analysis Period (min)			15									

c Critical Lane Group

Queues  
2: Main St & Curtis Dr/Graham Park Rd

2020 Background  
Weekday PM Peak Hour






















Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	90	13	297	1775	66
v/c Ratio	0.26	0.03	0.74	0.78	0.07
Control Delay	49.3	0.2	36.7	17.8	2.5
Queue Delay	0.7	0.0	1.9	0.2	0.0
Total Delay	50.0	0.2	38.6	18.0	2.5
Queue Length 50th (ft)	62	0	107	504	4
Queue Length 95th (ft)	144	0	#453	576	18
Internal Link Dist (ft)	1114		183	276	
Turn Bay Length (ft)		90			200
Base Capacity (vph)	342	433	399	3388	1475
Starvation Cap Reductn	0	0	31	0	0
Spillback Cap Reductn	96	0	0	624	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.03	0.81	0.64	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis  
2: Main St & Curtis Dr/Graham Park Rd

2020 Background  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	25	61	12	59	28	199	0	0	0	755	949	63	
Future Volume (vph)	25	61	12	59	28	199	0	0	0	755	949	63	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		-3%			-3%			0%			0%		
Total Lost time (s)		7.0	7.0		7.0						7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00	
Frbp, ped/bikes		1.00	1.00		0.98						1.00	0.98	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00	
Frt		1.00	0.85		0.91						1.00	0.85	
Flt Protected		0.99	1.00		0.99						0.98	1.00	
Satd. Flow (prot)		1848	1639		1677						3478	1515	
Flt Permitted		0.78	1.00		0.91						0.98	1.00	
Satd. Flow (perm)		1466	1639		1534						3478	1515	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	26	64	12	61	29	207	0	0	0	786	989	66	
RTOR Reduction (vph)	0	0	10	0	41	0	0	0	0	0	0	18	
Lane Group Flow (vph)	0	90	3	0	256	0	0	0	0	0	1775	48	
Confl. Peds. (#/hr)	1					1	2					2	
Heavy Vehicles (%)	0%	4%	0%	4%	0%	1%	0%	0%	0%	1%	2%	4%	
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		4			4						6		
Permitted Phases	4		4	4						6		6	
Actuated Green, G (s)		30.7	30.7		30.7						86.2	86.2	
Effective Green, g (s)		30.7	30.7		30.7						86.2	86.2	
Actuated g/C Ratio		0.23	0.23		0.23						0.66	0.66	
Clearance Time (s)		7.0	7.0		7.0						7.0	7.0	
Vehicle Extension (s)		5.0	5.0		5.0						5.0	5.0	
Lane Grp Cap (vph)		343	384		359						2290	997	
v/s Ratio Prot													
v/s Ratio Perm		0.06	0.00		0.17						0.51	0.03	
v/c Ratio		0.26	0.01		0.71						0.78	0.05	
Uniform Delay, d1		40.9	38.4		46.1						15.6	7.9	
Progression Factor		1.00	1.00		0.58						1.00	1.00	
Incremental Delay, d2		0.9	0.0		7.9						2.0	0.0	
Delay (s)		41.7	38.4		34.5						17.6	7.9	
Level of Service		D	D		C						B	A	
Approach Delay (s)		41.3			34.5			0.0			17.2		
Approach LOS		D			C			A			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			20.6									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.81										
Actuated Cycle Length (s)			130.9									Sum of lost time (s)	21.0
Intersection Capacity Utilization			91.2%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													



Queues  
3: Fraley Blvd & Graham Park Rd





















2020 Background  
Weekday PM Peak Hour

	→	←	↖	↗	↑	↘
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	952	177	311	160	572	54
v/c Ratio	0.68	0.40	0.52	0.22	0.42	0.08
Control Delay	35.4	50.3	8.7	28.6	30.8	5.0
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	35.4	50.8	8.7	28.7	30.8	5.0
Queue Length 50th (ft)	317	126	0	85	174	0
Queue Length 95th (ft)	375	256	92	170	283	23
Internal Link Dist (ft)	183	215			771	
Turn Bay Length (ft)				710		285
Base Capacity (vph)	2965	439	599	757	1443	682
Starvation Cap Reductn	406	0	0	0	0	0
Spillback Cap Reductn	0	70	0	47	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.48	0.52	0.23	0.40	0.08
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 3: Fraley Blvd & Graham Park Rd





















2020 Background  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 					
Traffic Volume (vph)	195	710	0	0	168	295	152	543	51	0	0	0	
Future Volume (vph)	195	710	0	0	168	295	152	543	51	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			-8%			0%		
Total Lost time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00				
Frbp, ped/bikes		1.00			1.00	0.99	1.00	1.00	0.99				
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00				
Frt		1.00			1.00	0.85	1.00	1.00	0.85				
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)		3528			1881	1546	1859	3542	1580				
Flt Permitted		0.78			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)		2770			1881	1546	1859	3542	1580				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	205	747	0	0	177	311	160	572	54	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	238	0	0	33	0	0	0	
Lane Group Flow (vph)	0	952	0	0	177	73	160	572	21	0	0	0	
Confl. Peds. (#/hr)	1		4	4		1			1	1			
Heavy Vehicles (%)	2%	1%	0%	0%	1%	3%	1%	6%	4%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0	
Turn Type	D,P+P	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	1	1 8			8			2					
Permitted Phases	8					8	2		2				
Actuated Green, G (s)		58.9			30.7	30.7	51.0	51.0	51.0				
Effective Green, g (s)		58.9			30.7	30.7	51.0	51.0	51.0				
Actuated g/C Ratio		0.45			0.23	0.23	0.39	0.39	0.39				
Clearance Time (s)					7.0	7.0	7.0	7.0	7.0				
Vehicle Extension (s)					5.0	5.0	5.0	5.0	5.0				
Lane Grp Cap (vph)		1409			441	362	724	1380	615				
v/s Ratio Prot		c0.15			0.09			c0.16					
v/s Ratio Perm		c0.16				0.05	0.09		0.01				
v/c Ratio		0.68			0.40	0.20	0.22	0.41	0.03				
Uniform Delay, d1		28.5			42.3	40.3	26.7	29.1	24.7				
Progression Factor		1.23			1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2		1.5			1.3	0.6	0.3	0.4	0.0				
Delay (s)		36.4			43.6	40.8	27.0	29.5	24.8				
Level of Service		D			D	D	C	C	C				
Approach Delay (s)		36.4			41.8			28.7			0.0		
Approach LOS		D			D			C			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			34.9		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.55										
Actuated Cycle Length (s)			130.9		Sum of lost time (s)				21.0				
Intersection Capacity Utilization			76.4%		ICU Level of Service				D				
Analysis Period (min)			15										

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
4: Old Triangle Rd & Graham Park Rd

2020 Background  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	165	450	177	22	265	22	120	31	42	19	28	65
Future Volume (vph)	165	450	177	22	265	22	120	31	42	19	28	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	172	469	184	23	276	23	125	32	44	20	29	68
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	407	419	161	161	157	44	117					
Volume Left (vph)	172	0	23	0	125	0	20					
Volume Right (vph)	0	184	0	23	0	44	68					
Hadj (s)	0.21	-0.31	0.10	-0.05	0.40	-0.70	-0.24					
Departure Headway (s)	6.4	5.9	6.9	6.8	7.9	6.8	7.2					
Degree Utilization, x	0.72	0.68	0.31	0.30	0.34	0.08	0.23					
Capacity (veh/h)	550	594	494	504	423	492	466					
Control Delay (s)	23.2	19.5	11.8	11.5	13.7	9.2	12.4					
Approach Delay (s)	21.3		11.7		12.7		12.4					
Approach LOS	C		B		B		B					
Intersection Summary												
Delay			17.3									
Level of Service			C									
Intersection Capacity Utilization			57.1%		ICU Level of Service		B					
Analysis Period (min)			15									

Queues  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday PM Peak Hour





















Lane Group	EBT	EBR	WBT	NBL	SBT	SBR
Lane Group Flow (vph)	68	51	3	42	1035	87
v/c Ratio	0.25	0.15	0.01	0.11	0.55	0.10
Control Delay	31.0	0.9	17.0	6.9	16.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	0.9	17.0	6.9	16.1	2.2
Queue Length 50th (ft)	22	0	0	5	157	0
Queue Length 95th (ft)	78	0	m5	24	340	17
Internal Link Dist (ft)	1150		25		1028	
Turn Bay Length (ft)		300				275
Base Capacity (vph)	1104	1020	521	763	3399	1481
Starvation Cap Reductn	0	0	135	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	0.01	0.06	0.30	0.06

Intersection Summary

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

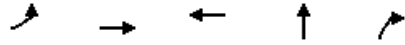
HCM Signalized Intersection Capacity Analysis  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	63	47	3	0	0	39	0	0	7	945	80	
Future Volume (vph)	0	63	47	3	0	0	39	0	0	7	945	80	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		7.0	7.0		7.0		7.0				7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00		1.00				0.95	1.00	
Fr <sub>t</sub>		1.00	0.85		1.00		1.00				1.00	0.85	
Fl <sub>t</sub> Protected		1.00	1.00		0.95		0.95				1.00	1.00	
Satd. Flow (prot)		1792	1583		1805		1805				3538	1538	
Fl <sub>t</sub> Permitted		1.00	1.00		0.95		0.14				1.00	1.00	
Satd. Flow (perm)		1792	1583		1805		275				3538	1538	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	68	51	3	0	0	42	0	0	8	1027	87	
RTOR Reduction (vph)	0	0	46	0	0	0	0	0	0	0	0	50	
Lane Group Flow (vph)	0	68	5	0	3	0	42	0	0	0	1035	37	
Heavy Vehicles (%)	0%	6%	2%	0%	0%	0%	0%	0%	0%	0%	2%	5%	
Turn Type		NA	Perm	Split	NA		pm+pt			Perm	NA	Perm	
Protected Phases		4		3	3		5				6		
Permitted Phases			4				2			6		6	
Actuated Green, G (s)		6.6	6.6		0.9		39.5				28.7	28.7	
Effective Green, g (s)		6.6	6.6		0.9		39.5				28.7	28.7	
Actuated g/C Ratio		0.10	0.10		0.01		0.58				0.42	0.42	
Clearance Time (s)		7.0	7.0		7.0		7.0				7.0	7.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0				2.0	2.0	
Lane Grp Cap (vph)		173	153		23		245				1493	649	
v/s Ratio Prot		c0.04			c0.00		c0.01						
v/s Ratio Perm			0.00				0.09				0.29	0.02	
v/c Ratio		0.39	0.03		0.13		0.17				0.69	0.06	
Uniform Delay, d <sub>1</sub>		28.8	27.8		33.2		8.4				16.1	11.6	
Progression Factor		1.00	1.00		0.51		1.00				1.00	1.00	
Incremental Delay, d <sub>2</sub>		0.5	0.0		0.9		0.1				1.1	0.0	
Delay (s)		29.4	27.8		17.9		8.6				17.2	11.6	
Level of Service		C	C		B		A				B	B	
Approach Delay (s)		28.7			17.9			8.6			16.8		
Approach LOS		C			B			A			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			17.6									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.58										
Actuated Cycle Length (s)			68.0									Sum of lost time (s)	28.0
Intersection Capacity Utilization			55.5%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

Queues  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday PM Peak Hour





















Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	37	38	3	755	2
v/c Ratio	0.15	0.15	0.02	0.33	0.00
Control Delay	6.4	6.4	30.7	7.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.4	6.4	30.7	7.0	0.0
Queue Length 50th (ft)	2	2	1	54	0
Queue Length 95th (ft)	8	8	10	156	0
Internal Link Dist (ft)		25	201	251	
Turn Bay Length (ft)					100
Base Capacity (vph)	1015	1015	394	3471	1615
Starvation Cap Reductn	110	109	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.04	0.01	0.22	0.00

Intersection Summary

HCM Signalized Intersection Capacity Analysis  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Background  
Weekday PM Peak Hour









													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations								 					
Traffic Volume (vph)	69	0	0	0	2	1	1	694	2	0	0	0	
Future Volume (vph)	69	0	0	0	2	1	1	694	2	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	7.0	7.0			7.0			7.0	7.0				
Lane Util. Factor	0.95	0.95			1.00			0.95	1.00				
Flt	1.00	1.00			0.95			1.00	0.85				
Flt Protected	0.95	0.95			1.00			1.00	1.00				
Satd. Flow (prot)	1649	1649			1361			3471	1615				
Flt Permitted	0.95	0.95			1.00			1.00	1.00				
Satd. Flow (perm)	1649	1649			1361			3471	1615				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	75	0	0	0	2	1	1	754	2	0	0	0	
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	1	0	0	0	
Lane Group Flow (vph)	37	38	0	0	2	0	0	755	1	0	0	0	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	100%	0%	4%	0%	0%	0%	0%	
Turn Type	Split	NA			NA		Perm	NA	Perm				
Protected Phases	4	4			3			2					
Permitted Phases							2		2				
Actuated Green, G (s)	6.6	6.6			0.9			39.5	39.5				
Effective Green, g (s)	6.6	6.6			0.9			39.5	39.5				
Actuated g/C Ratio	0.10	0.10			0.01			0.58	0.58				
Clearance Time (s)	7.0	7.0			7.0			7.0	7.0				
Vehicle Extension (s)	2.0	2.0			2.0			2.0	2.0				
Lane Grp Cap (vph)	160	160			18			2016	938				
v/s Ratio Prot	0.02	c0.02			c0.00								
v/s Ratio Perm								0.22	0.00				
v/c Ratio	0.23	0.24			0.11			0.37	0.00				
Uniform Delay, d1	28.4	28.4			33.2			7.6	6.0				
Progression Factor	0.18	0.18			1.00			1.00	1.00				
Incremental Delay, d2	0.3	0.3			1.0			0.0	0.0				
Delay (s)	5.3	5.3			34.2			7.7	6.0				
Level of Service	A	A			C			A	A				
Approach Delay (s)		5.3			34.2			7.7				0.0	
Approach LOS		A			C			A				A	
<b>Intersection Summary</b>													
HCM 2000 Control Delay			7.6									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.41										
Actuated Cycle Length (s)			68.0									Sum of lost time (s)	28.0
Intersection Capacity Utilization			39.5%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

**Appendix G**  
2020 Total Traffic Conditions  
Level of Service Worksheets
























Queues  
1: Jefferson Davis Hwy & Possum Point Rd

2020 Total (Alt 1)  
Weekday AM Peak Hour

									
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	39	78	12	1298	47	82	1038	14
v/c Ratio	0.01	0.27	0.05	0.12	0.64	0.05	0.42	0.37	0.01
Control Delay	53.0	49.9	0.1	52.8	17.5	0.1	49.8	6.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	49.9	0.1	52.8	17.5	0.1	49.8	6.6	0.0
Queue Length 50th (ft)	1	24	0	7	287	0	49	93	0
Queue Length 95th (ft)	7	65	0	31	556	0	112	320	0
Internal Link Dist (ft)	1167	1363			414			1326	
Turn Bay Length (ft)			70	85		440	335		250
Base Capacity (vph)	361	460	1495	354	2051	977	474	2780	1330
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.08	0.05	0.03	0.63	0.05	0.17	0.37	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis  
 1: Jefferson Davis Hwy & Possum Point Rd

2020 Total (Alt 1)  
 Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	36	0	72	11	1194	43	75	955	13
Future Volume (vph)	1	0	0	36	0	72	11	1194	43	75	955	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			4%			-3%	
Total Lost time (s)		7.0			7.0	4.0	7.0	6.5	6.5	7.0	6.5	6.5
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frbp, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1805			1530	1495	1769	3246	1452	1579	3393	1599
Flt Permitted		0.95			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1805			1530	1495	1769	3246	1452	1579	3393	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1	0	0	39	0	78	12	1298	47	82	1038	14
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	4
Lane Group Flow (vph)	0	1	0	0	39	78	12	1298	28	82	1038	10
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	0%	0%	18%	0%	8%	0%	9%	9%	16%	8%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		1	6		5	2	
Permitted Phases						Free		6	6			2
Actuated Green, G (s)		0.9			6.2	115.9	1.2	68.8	68.8	12.5	80.1	80.1
Effective Green, g (s)		0.9			6.2	115.9	1.2	68.8	68.8	12.5	80.1	80.1
Actuated g/C Ratio		0.01			0.05	1.00	0.01	0.59	0.59	0.11	0.69	0.69
Clearance Time (s)		7.0			7.0		7.0	6.5	6.5	7.0	6.5	6.5
Vehicle Extension (s)		2.5			4.5		2.5	2.5	2.5	4.5	2.5	2.5
Lane Grp Cap (vph)		14			81	1495	18	1926	861	170	2344	1105
v/s Ratio Prot		0.00			c0.03		0.01	c0.40		c0.05	c0.31	
v/s Ratio Perm						c0.05			0.02			0.01
v/c Ratio		0.07			0.48	0.05	0.67	0.67	0.03	0.48	0.44	0.01
Uniform Delay, d1		57.1			53.3	0.0	57.2	16.0	9.8	48.7	8.0	5.6
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		1.6			7.6	0.1	60.9	0.9	0.0	3.7	0.1	0.0
Delay (s)		58.7			60.9	0.1	118.0	16.8	9.8	52.3	8.1	5.6
Level of Service		E			E	A	F	B	A	D	A	A
Approach Delay (s)		58.7			20.3			17.5			11.2	
Approach LOS		E			C			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			14.9									B
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			115.9							27.5		
Intersection Capacity Utilization			58.4%									B
Analysis Period (min)			15									

c Critical Lane Group

Queues  
2: Main St & Curtis Dr/Graham Park Rd

2020 Total (Alt 1)  
Weekday AM Peak Hour




















	→	↘	←	↓	↙
Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	77	11	440	1170	37
v/c Ratio	0.14	0.02	0.80	0.74	0.06
Control Delay	23.2	0.1	38.9	22.9	4.1
Queue Delay	0.3	0.0	4.1	0.1	0.0
Total Delay	23.5	0.1	43.0	23.0	4.1
Queue Length 50th (ft)	30	0	243	284	0
Queue Length 95th (ft)	74	0	#466	355	15
Internal Link Dist (ft)	970		183	276	
Turn Bay Length (ft)		90			200
Base Capacity (vph)	539	602	552	3324	1369
Starvation Cap Reductn	0	0	59	0	0
Spillback Cap Reductn	187	0	0	588	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.22	0.02	0.89	0.43	0.03

Intersection Summary

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







HCM Signalized Intersection Capacity Analysis  
2: Main St & Curtis Dr/Graham Park Rd

2020 Total (Alt 1)  
Weekday AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	27	44	10	136	20	248	0	0	0	518	558	34	
Future Volume (vph)	27	44	10	136	20	248	0	0	0	518	558	34	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		-3%			-3%			0%			0%		
Total Lost time (s)		7.0	7.0		7.0						7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00	
Frbp, ped/bikes		1.00	1.00		0.99						1.00	0.98	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00	
Frt		1.00	0.85		0.92						1.00	0.85	
Flt Protected		0.98	1.00		0.98						0.98	1.00	
Satd. Flow (prot)		1764	1477		1600						3323	1372	
Flt Permitted		0.80	1.00		0.86						0.98	1.00	
Satd. Flow (perm)		1438	1477		1395						3323	1372	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	29	48	11	148	22	270	0	0	0	563	607	37	
RTOR Reduction (vph)	0	0	7	0	29	0	0	0	0	0	0	19	
Lane Group Flow (vph)	0	77	4	0	411	0	0	0	0	0	1170	18	
Confl. Peds. (#/hr)	1					1	2					2	
Heavy Vehicles (%)	11%	5%	11%	10%	17%	5%	0%	0%	0%	4%	8%	15%	
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		4			4						6		
Permitted Phases	4		4	4						6		6	
Actuated Green, G (s)		35.3	35.3		35.3						44.7	44.7	
Effective Green, g (s)		35.3	35.3		35.3						44.7	44.7	
Actuated g/C Ratio		0.38	0.38		0.38						0.48	0.48	
Clearance Time (s)		7.0	7.0		7.0						7.0	7.0	
Vehicle Extension (s)		5.0	5.0		5.0						5.0	5.0	
Lane Grp Cap (vph)		540	554		523						1580	652	
v/s Ratio Prot													
v/s Ratio Perm		0.05	0.00		0.29						0.35	0.01	
v/c Ratio		0.14	0.01		0.79						0.74	0.03	
Uniform Delay, d1		19.4	18.4		26.0						20.0	13.1	
Progression Factor		1.00	1.00		1.06						1.00	1.00	
Incremental Delay, d2		0.3	0.0		8.6						2.3	0.0	
Delay (s)		19.6	18.4		36.2						22.3	13.1	
Level of Service		B	B		D						C	B	
Approach Delay (s)		19.5			36.2			0.0			22.0		
Approach LOS		B			D			A			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			25.4									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.83										
Actuated Cycle Length (s)			94.0									Sum of lost time (s)	21.0
Intersection Capacity Utilization			80.2%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													





















Queues  
3: Fraley Blvd & Graham Park Rd

2020 Total (Alt 1)  
Weekday AM Peak Hour

						
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	655	208	326	249	688	80
v/c Ratio	0.62	0.31	0.43	0.29	0.43	0.11
Control Delay	40.6	24.5	4.8	15.6	16.8	3.2
Queue Delay	39.6	0.4	0.0	0.1	0.0	0.0
Total Delay	80.3	24.9	4.8	15.6	16.8	3.2
Queue Length 50th (ft)	217	86	0	86	135	0
Queue Length 95th (ft)	312	173	61	134	176	22
Internal Link Dist (ft)	183	674			943	
Turn Bay Length (ft)				710		330
Base Capacity (vph)	1056	666	767	1064	2013	875
Starvation Cap Reductn	442	0	0	0	0	0
Spillback Cap Reductn	0	170	0	145	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.42	0.43	0.27	0.34	0.09
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
3: Fraley Blvd & Graham Park Rd





















2020 Total (Alt 1)  
Weekday AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 						 					
Traffic Volume (vph)	126	477	0	0	193	303	229	633	74	0	0	0	
Future Volume (vph)	126	477	0	0	193	303	229	633	74	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			-8%			0%		
Total Lost time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00				
Frbp, ped/bikes		1.00			1.00	0.99	1.00	1.00	0.99				
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00				
Frt		1.00			1.00	0.85	1.00	1.00	0.85				
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (prot)		3421			1776	1503	1788	3382	1418				
Flt Permitted		0.81			1.00	1.00	0.95	1.00	1.00				
Satd. Flow (perm)		2816			1776	1503	1788	3382	1418				
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	137	518	0	0	208	326	249	688	80	0	0	0	
RTOR Reduction (vph)	0	0	0	0	0	204	0	0	42	0	0	0	
Lane Group Flow (vph)	0	655	0	0	208	122	249	688	38	0	0	0	
Confl. Peds. (#/hr)	1		4	4		1			1	1			
Heavy Vehicles (%)	6%	4%	0%	0%	7%	6%	5%	11%	16%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0	
Turn Type	D,P+P	NA			NA	Perm	Perm	NA	Perm				
Protected Phases	1	4			8			2					
Permitted Phases	8					8	2		2				
Actuated Green, G (s)		35.3			35.3	35.3	44.7	44.7	44.7				
Effective Green, g (s)		35.3			35.3	35.3	44.7	44.7	44.7				
Actuated g/C Ratio		0.38			0.38	0.38	0.48	0.48	0.48				
Clearance Time (s)		7.0			7.0	7.0	7.0	7.0	7.0				
Vehicle Extension (s)		5.0			5.0	5.0	5.0	5.0	5.0				
Lane Grp Cap (vph)		1057			666	564	850	1608	674				
v/s Ratio Prot					0.12			c0.20					
v/s Ratio Perm		c0.23				0.08	0.14		0.03				
v/c Ratio		0.62			0.31	0.22	0.29	0.43	0.06				
Uniform Delay, d1		23.9			20.8	20.0	15.0	16.2	13.3				
Progression Factor		1.47			1.00	1.00	1.00	1.00	1.00				
Incremental Delay, d2		1.5			0.6	0.4	0.4	0.4	0.1				
Delay (s)		36.6			21.3	20.4	15.4	16.6	13.4				
Level of Service		D			C	C	B	B	B				
Approach Delay (s)		36.6			20.7			16.1			0.0		
Approach LOS		D			C			B			A		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			23.3		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.56										
Actuated Cycle Length (s)			94.0		Sum of lost time (s)				21.0				
Intersection Capacity Utilization			71.3%		ICU Level of Service				C				
Analysis Period (min)			15										

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
4: Old Triangle Rd & Graham Park Rd

2020 Total (Alt 1)  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	71	379	75	41	345	30	97	15	60	34	23	67
Future Volume (vph)	71	379	75	41	345	30	97	15	60	34	23	67
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	76	408	81	44	371	32	104	16	65	37	25	72
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	280	285	230	218	120	65	134					
Volume Left (vph)	76	0	44	0	104	0	37					
Volume Right (vph)	0	81	0	32	0	65	72					
Hadj (s)	0.21	-0.09	0.19	0.00	0.64	-0.58	-0.19					
Departure Headway (s)	6.6	6.3	6.7	6.5	8.0	6.8	7.1					
Degree Utilization, x	0.51	0.50	0.43	0.39	0.27	0.12	0.26					
Capacity (veh/h)	528	557	516	531	411	487	466					
Control Delay (s)	15.0	14.1	13.4	12.4	12.7	9.5	12.6					
Approach Delay (s)	14.5		12.9		11.6		12.6					
Approach LOS	B		B		B		B					
Intersection Summary												
Delay			13.4									
Level of Service			B									
Intersection Capacity Utilization			50.8%	ICU Level of Service								A
Analysis Period (min)			15									

Queues  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr



















2020 Total (Alt 1)  
Weekday AM Peak Hour

	→	↘	↙	↓	↘
Lane Group	EBT	EBR	NBL	SBT	SBR
Lane Group Flow (vph)	53	21	47	722	62
v/c Ratio	0.17	0.06	0.09	0.47	0.07
Control Delay	21.9	0.3	5.5	14.8	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	0.3	5.5	14.8	0.4
Queue Length 50th (ft)	14	0	5	101	0
Queue Length 95th (ft)	45	0	17	169	3
Internal Link Dist (ft)	1316			1028	
Turn Bay Length (ft)		300			275
Base Capacity (vph)	1249	1093	864	3081	1546
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	143	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.04	0.02	0.05	0.25	0.04
Intersection Summary					



HCM Signalized Intersection Capacity Analysis  
 5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Total (Alt 1)  
 Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	50	20	0	0	0	45	0	0	72	614	59
Future Volume (vph)	0	50	20	0	0	0	45	0	0	72	614	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0				7.0				7.0	7.0
Lane Util. Factor		1.00	1.00				1.00				0.95	1.00
Fr <sub>t</sub>		1.00	0.85				1.00				1.00	0.85
Fl <sub>t</sub> Protected		1.00	1.00				0.95				0.99	1.00
Satd. Flow (prot)		1810	1524				1770				3160	1583
Fl <sub>t</sub> Permitted		1.00	1.00				0.27				0.99	1.00
Satd. Flow (perm)		1810	1524				495				3160	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	53	21	0	0	0	47	0	0	76	646	62
RTOR Reduction (vph)	0	0	18	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	53	3	0	0	0	47	0	0	0	722	25
Heavy Vehicles (%)	0%	5%	6%	0%	0%	0%	2%	0%	0%	53%	9%	2%
Turn Type		NA	Perm				pm+pt			Perm	NA	Perm
Protected Phases		4		3	3		5				6	
Permitted Phases			4				2			6		6
Actuated Green, G (s)		6.5	6.5				32.2				21.4	21.4
Effective Green, g (s)		6.5	6.5				32.2				21.4	21.4
Actuated g/C Ratio		0.12	0.12				0.61				0.41	0.41
Clearance Time (s)		7.0	7.0				7.0				7.0	7.0
Vehicle Extension (s)		2.0	2.0				2.0				2.0	2.0
Lane Grp Cap (vph)		223	187				394				1283	642
v/s Ratio Prot		c0.03					c0.01					
v/s Ratio Perm			0.00				0.06				0.23	0.02
v/c Ratio		0.24	0.01				0.12				0.56	0.04
Uniform Delay, d <sub>1</sub>		20.9	20.3				4.8				12.0	9.4
Progression Factor		1.00	1.00				1.00				1.00	1.00
Incremental Delay, d <sub>2</sub>		0.2	0.0				0.0				0.3	0.0
Delay (s)		21.1	20.3				4.9				12.4	9.5
Level of Service		C	C				A				B	A
Approach Delay (s)		20.8			0.0			4.9			12.2	
Approach LOS		C			A			A			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			12.5				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			52.7				Sum of lost time (s)			28.0		
Intersection Capacity Utilization			43.2%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												



















Queues  
 6: NB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Total (Alt 1)  
 Weekday AM Peak Hour

	↖	→	↑
Lane Group	EBL	EBT	NBT
Lane Group Flow (vph)	66	67	823
v/c Ratio	0.26	0.26	0.39
Control Delay	13.6	13.7	6.7
Queue Delay	0.0	0.0	0.0
Total Delay	13.6	13.7	6.7
Queue Length 50th (ft)	14	15	62
Queue Length 95th (ft)	43	43	108
Internal Link Dist (ft)		25	251
Turn Bay Length (ft)			
Base Capacity (vph)	1029	1029	3282
Starvation Cap Reductn	133	132	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.07	0.07	0.25
<b>Intersection Summary</b>			


















HCM Signalized Intersection Capacity Analysis  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Total (Alt 1)  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	122	0	0	0	0	0	0	757	0	0	0	0
Future Volume (vph)	122	0	0	0	0	0	0	757	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0						7.0				
Lane Util. Factor	0.95	0.95						0.95				
Flt	1.00	1.00						1.00				
Flt Protected	0.95	0.95						1.00				
Satd. Flow (prot)	1491	1491						3282				
Flt Permitted	0.95	0.95						1.00				
Satd. Flow (perm)	1491	1491						3282				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	0	0	0	0	0	0	823	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	66	67	0	0	0	0	0	823	0	0	0	0
Heavy Vehicles (%)	15%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Turn Type	Split	NA						NA	Perm			
Protected Phases	4	4			3			2				
Permitted Phases									2			
Actuated Green, G (s)	6.5	6.5						32.2				
Effective Green, g (s)	6.5	6.5						32.2				
Actuated g/C Ratio	0.12	0.12						0.61				
Clearance Time (s)	7.0	7.0						7.0				
Vehicle Extension (s)	2.0	2.0						2.0				
Lane Grp Cap (vph)	183	183						2005				
v/s Ratio Prot	0.04	c0.04						c0.25				
v/s Ratio Perm												
v/c Ratio	0.36	0.37						0.41				
Uniform Delay, d1	21.2	21.2						5.3				
Progression Factor	0.53	0.53						1.00				
Incremental Delay, d2	0.4	0.5						0.0				
Delay (s)	11.7	11.7						5.4				
Level of Service	B	B						A				
Approach Delay (s)		11.7			0.0			5.4			0.0	
Approach LOS		B			A			A			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			6.3					HCM 2000 Level of Service			A	
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			52.7					Sum of lost time (s)		28.0		
Intersection Capacity Utilization			38.4%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis  
7: Fraley Blvd & VDOT Driveway/Site Driveway

2020 Total (Alt 1)  
Weekday AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	2	0	0	0	0	232	2	694	127	0	0	0
Future Volume (Veh/h)	2	0	0	0	0	232	2	694	127	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	0	0	252	2	754	138	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	633	896	0	758	758	377	0			892		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	633	896	0	758	758	377	0			892		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	59	100			100		
cM capacity (veh/h)	216	278	1084	296	335	621	1622			756		
Direction, Lane #												
	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	2	252	253	503	138							
Volume Left	2	0	2	0	0							
Volume Right	0	252	0	0	138							
cSH	216	621	1622	1700	1700							
Volume to Capacity	0.01	0.41	0.00	0.30	0.08							
Queue Length 95th (ft)	1	49	0	0	0							
Control Delay (s)	21.8	14.7	0.1	0.0	0.0							
Lane LOS	C	B	A									
Approach Delay (s)	21.8	14.7	0.0									
Approach LOS	C	B										
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			46.9%	ICU Level of Service	A							
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis  
 8: Site Driveway & Graham Park Rd

2020 Total (Alt 1)  
 Weekday AM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↗	
Traffic Volume (veh/h)	525	25	0	509	6	0
Future Volume (Veh/h)	525	25	0	509	6	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	571	27	0	553	7	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	754					
pX, platoon unblocked			0.90		0.90	0.90
vC, conflicting volume			598		861	299
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			325		618	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1106		378	974
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	381	217	184	369	7	
Volume Left	0	0	0	0	7	
Volume Right	0	27	0	0	0	
cSH	1700	1700	1106	1700	378	
Volume to Capacity	0.22	0.13	0.00	0.22	0.02	
Queue Length 95th (ft)	0	0	0	0	1	
Control Delay (s)	0.0	0.0	0.0	0.0	14.7	
Lane LOS					B	
Approach Delay (s)	0.0		0.0		14.7	
Approach LOS					B	
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			25.3%		ICU Level of Service	A
Analysis Period (min)			15			






















Queues  
1: Jefferson Davis Hwy & Possum Point Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour

									
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	36	73	123	11	1275	61	98	1562	14
v/c Ratio	0.16	0.38	0.08	0.11	0.78	0.08	0.44	0.66	0.01
Control Delay	1.5	60.1	0.1	65.2	29.2	0.2	59.0	17.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	1.5	60.1	0.1	65.2	29.2	0.2	59.0	17.0	0.0
Queue Length 50th (ft)	0	52	0	8	430	0	69	352	0
Queue Length 95th (ft)	0	122	0	33	610	0	151	656	0
Internal Link Dist (ft)	802	985			414			1443	
Turn Bay Length (ft)			70	85		455	335		250
Base Capacity (vph)	462	458	1495	353	2333	1084	472	2667	1279
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.16	0.08	0.03	0.55	0.06	0.21	0.59	0.01
Intersection Summary									

HCM Signalized Intersection Capacity Analysis  
 1: Jefferson Davis Hwy & Possum Point Rd

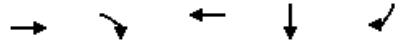
2020 Total (Alt 1)  
 Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	20	0	14	69	0	117	10	1211	58	93	1484	13	
Future Volume (vph)	20	0	14	69	0	117	10	1211	58	93	1484	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			4%			-3%		
Total Lost time (s)		7.0			7.0	4.0	7.0	6.5	6.5	7.0	6.5	6.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Frbp, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.94			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)		1742			1530	1495	1769	3246	1452	1579	3393	1599	
Flt Permitted		0.97			0.95	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)		1742			1530	1495	1769	3246	1452	1579	3393	1599	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	21	0	15	73	0	123	11	1275	61	98	1562	14	
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	29	0	0	5	
Lane Group Flow (vph)	0	1	0	0	73	123	11	1275	32	98	1562	9	
Confl. Peds. (#/hr)							1					1	
Heavy Vehicles (%)	0%	0%	0%	18%	0%	8%	0%	9%	9%	16%	8%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	1	
Turn Type	Split	NA		Split	NA	Free	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	3	3		4	4		1	6		5	2		
Permitted Phases						Free		6	6			2	
Actuated Green, G (s)		3.7			10.6	119.8	2.3	62.1	62.1	15.9	75.7	75.7	
Effective Green, g (s)		3.7			10.6	119.8	2.3	62.1	62.1	15.9	75.7	75.7	
Actuated g/C Ratio		0.03			0.09	1.00	0.02	0.52	0.52	0.13	0.63	0.63	
Clearance Time (s)		7.0			7.0		7.0	6.5	6.5	7.0	6.5	6.5	
Vehicle Extension (s)		2.5			4.5		2.5	2.5	2.5	4.5	2.5	2.5	
Lane Grp Cap (vph)		53			135	1495	33	1682	752	209	2143	1010	
v/s Ratio Prot		0.00			c0.05		0.01	0.39		c0.06	c0.46		
v/s Ratio Perm						c0.08			0.02			0.01	
v/c Ratio		0.02			0.54	0.08	0.33	0.76	0.04	0.47	0.73	0.01	
Uniform Delay, d1		56.3			52.3	0.0	58.0	22.9	14.2	48.0	15.0	8.2	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			6.5	0.1	4.3	1.9	0.0	2.9	1.2	0.0	
Delay (s)		56.4			58.8	0.1	62.3	24.8	14.2	50.9	16.2	8.2	
Level of Service		E			E	A	E	C	B	D	B	A	
Approach Delay (s)		56.4			22.0			24.6			18.2		
Approach LOS		E			C			C			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			21.5		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			119.8		Sum of lost time (s)					27.5			
Intersection Capacity Utilization			70.9%		ICU Level of Service					C			
Analysis Period (min)			15										

c Critical Lane Group

Queues  
2: Main St & Curtis Dr/Graham Park Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour



Lane Group	EBT	EBR	WBT	SBT	SBR
Lane Group Flow (vph)	90	13	367	1876	66
v/c Ratio	0.32	0.04	1.19	0.81	0.07
Control Delay	60.7	0.2	142.1	18.2	2.3
Queue Delay	1.3	0.0	0.4	0.4	0.0
Total Delay	62.0	0.2	142.5	18.6	2.3
Queue Length 50th (ft)	74	0	~405	598	5
Queue Length 95th (ft)	167	0	#786	671	18
Internal Link Dist (ft)	1114		183	1910	
Turn Bay Length (ft)		90			200
Base Capacity (vph)	280	356	308	3069	1265
Starvation Cap Reductn	0	0	10	0	0
Spillback Cap Reductn	82	0	0	557	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.04	1.23	0.75	0.05




















Intersection Summary

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



HCM Signalized Intersection Capacity Analysis  
2: Main St & Curtis Dr/Graham Park Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	25	61	12	126	28	199	0	0	0	767	1034	63	
Future Volume (vph)	25	61	12	126	28	199	0	0	0	767	1034	63	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		-3%			-3%			0%				0%	
Total Lost time (s)		7.0	7.0		7.0						7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00						0.95	1.00	
Frbp, ped/bikes		1.00	1.00		0.99						1.00	0.97	
Flpb, ped/bikes		1.00	1.00		1.00						1.00	1.00	
Fr t		1.00	0.85		0.92						1.00	0.85	
Fl t Protected		0.99	1.00		0.98						0.98	1.00	
Satd. Flow (prot)		1781	1477		1604						3325	1369	
Fl t Permitted		0.75	1.00		0.85						0.98	1.00	
Satd. Flow (perm)		1355	1477		1379						3325	1369	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	26	64	12	131	29	207	0	0	0	799	1077	66	
RTOR Reduction (vph)	0	0	10	0	24	0	0	0	0	0	0	15	
Lane Group Flow (vph)	0	90	3	0	343	0	0	0	0	0	1876	51	
Confl. Peds. (#/hr)	1					1	2					2	
Heavy Vehicles (%)	11%	5%	11%	10%	17%	5%	0%	0%	0%	4%	8%	15%	
Turn Type	Perm	NA	Perm	Perm	NA					Perm	NA	Perm	
Protected Phases		4			4						6		
Permitted Phases	4		4	4						6		6	
Actuated Green, G (s)		30.8	30.8		30.8						103.6	103.6	
Effective Green, g (s)		30.8	30.8		30.8						103.6	103.6	
Actuated g/C Ratio		0.21	0.21		0.21						0.70	0.70	
Clearance Time (s)		7.0	7.0		7.0						7.0	7.0	
Vehicle Extension (s)		5.0	5.0		5.0						5.0	5.0	
Lane Grp Cap (vph)		281	306		286						2321	955	
v/s Ratio Prot													
v/s Ratio Perm		0.07	0.00		0.25						0.56	0.04	
v/c Ratio		0.32	0.01		1.20						0.81	0.05	
Uniform Delay, d1		49.9	46.7		58.8						15.5	7.0	
Progression Factor		1.00	1.00		0.57						1.00	1.00	
Incremental Delay, d2		1.4	0.0		116.8						2.5	0.0	
Delay (s)		51.3	46.7		150.4						18.0	7.1	
Level of Service		D	D		F						B	A	
Approach Delay (s)		50.7			150.4			0.0			17.6		
Approach LOS		D			F			A			B		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			39.2									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95										
Actuated Cycle Length (s)			148.4									Sum of lost time (s)	21.0
Intersection Capacity Utilization			97.4%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													





















Queues  
3: Fraley Blvd & Graham Park Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour

	→	←	↖	↗	↑	↘
Lane Group	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	965	209	359	198	628	62
v/c Ratio	0.72	0.57	0.60	0.27	0.46	0.10
Control Delay	39.7	65.0	10.4	32.7	34.8	6.9
Queue Delay	0.1	9.0	0.0	0.2	0.0	0.0
Total Delay	39.8	74.0	10.4	32.9	34.8	6.9
Queue Length 50th (ft)	341	181	0	123	223	0
Queue Length 95th (ft)	402	351	108	238	365	32
Internal Link Dist (ft)	183	215			771	
Turn Bay Length (ft)				710		285
Base Capacity (vph)	2588	367	595	724	1371	612
Starvation Cap Reductn	432	0	0	0	0	0
Spillback Cap Reductn	0	122	0	162	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.85	0.60	0.35	0.46	0.10
<b>Intersection Summary</b>						

HCM Signalized Intersection Capacity Analysis  
3: Fraley Blvd & Graham Park Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						 				
Traffic Volume (vph)	195	722	0	0	199	341	188	597	59	0	0	0
Future Volume (vph)	195	722	0	0	199	341	188	597	59	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-8%			0%	
Total Lost time (s)		7.0			7.0	7.0	7.0	7.0	7.0			
Lane Util. Factor		0.95			1.00	1.00	1.00	0.95	1.00			
Frbp, ped/bikes		1.00			1.00	0.99	1.00	1.00	0.99			
Flpb, ped/bikes		1.00			1.00	1.00	1.00	1.00	1.00			
Frt		1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected		0.99			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3420			1776	1502	1788	3382	1417			
Flt Permitted		0.71			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		2455			1776	1502	1788	3382	1417			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	760	0	0	209	359	198	628	62	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	284	0	0	37	0	0	0
Lane Group Flow (vph)	0	965	0	0	209	75	198	628	25	0	0	0
Confl. Peds. (#/hr)	1		4	4		1			1	1		
Heavy Vehicles (%)	6%	4%	0%	0%	7%	6%	5%	11%	16%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	2	0	0	0
Turn Type	D,P+P	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	1	18			8			2				
Permitted Phases	8					8	2		2			
Actuated Green, G (s)		67.0			30.8	30.8	60.4	60.4	60.4			
Effective Green, g (s)		67.0			30.8	30.8	60.4	60.4	60.4			
Actuated g/C Ratio		0.45			0.21	0.21	0.41	0.41	0.41			
Clearance Time (s)					7.0	7.0	7.0	7.0	7.0			
Vehicle Extension (s)					5.0	5.0	5.0	5.0	5.0			
Lane Grp Cap (vph)		1343			368	311	727	1376	576			
v/s Ratio Prot		c0.18			0.12			c0.19				
v/s Ratio Perm		c0.15				0.05	0.11		0.02			
v/c Ratio		0.72			0.57	0.24	0.27	0.46	0.04			
Uniform Delay, d1		33.0			52.8	49.0	29.3	32.0	26.6			
Progression Factor		1.13			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2		2.0			3.3	0.8	0.4	0.5	0.1			
Delay (s)		39.5			56.1	49.9	29.8	32.5	26.6			
Level of Service		D			E	D	C	C	C			
Approach Delay (s)		39.5			52.2			31.5			0.0	
Approach LOS		D			D			C			A	





















Intersection Summary

HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	148.4	Sum of lost time (s)	21.0
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
4: Old Triangle Rd & Graham Park Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	165	450	177	22	265	22	120	31	42	19	28	65
Future Volume (vph)	165	450	177	22	265	22	120	31	42	19	28	65
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	172	469	184	23	276	23	125	32	44	20	29	68
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1					
Volume Total (vph)	407	419	161	161	157	44	117					
Volume Left (vph)	172	0	23	0	125	0	20					
Volume Right (vph)	0	184	0	23	0	44	68					
Hadj (s)	0.29	-0.18	0.16	0.00	0.62	-0.58	-0.22					
Departure Headway (s)	6.5	6.1	7.1	6.9	8.1	6.9	7.2					
Degree Utilization, x	0.74	0.70	0.32	0.31	0.35	0.08	0.24					
Capacity (veh/h)	541	579	486	497	411	482	463					
Control Delay (s)	24.4	21.0	12.1	11.7	14.3	9.3	12.5					
Approach Delay (s)	22.7		11.9		13.2		12.5					
Approach LOS	C		B		B		B					
Intersection Summary												
Delay			18.2									
Level of Service			C									
Intersection Capacity Utilization			57.1%		ICU Level of Service		B					
Analysis Period (min)			15									

Queues  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Total (Alt 1)  
Weekday PM Peak Hour



















	→	↘	←	↙	↓	↘
Lane Group	EBT	EBR	WBT	NBL	SBT	SBR
Lane Group Flow (vph)	68	51	3	42	1200	87
v/c Ratio	0.24	0.15	0.01	0.14	0.76	0.10
Control Delay	37.0	1.0	22.7	7.3	20.7	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay	37.0	1.0	22.7	7.3	20.7	1.7
Queue Length 50th (ft)	27	0	1	5	226	0
Queue Length 95th (ft)	93	0	m5	26	482	15
Internal Link Dist (ft)	1150		25		1028	
Turn Bay Length (ft)		300				275
Base Capacity (vph)	864	789	431	617	2921	1459
Starvation Cap Reductn	0	0	108	0	0	0
Spillback Cap Reductn	0	0	0	0	362	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.06	0.01	0.07	0.47	0.06

Intersection Summary

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






HCM Signalized Intersection Capacity Analysis  
5: SB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Total (Alt 1)  
Weekday PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	63	47	3	0	0	39	0	0	92	1012	80	
Future Volume (vph)	0	63	47	3	0	0	39	0	0	92	1012	80	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		7.0	7.0		7.0		7.0				7.0	7.0	
Lane Util. Factor		1.00	1.00		1.00		1.00				0.95	1.00	
Fr <sub>t</sub>		1.00	0.85		1.00		1.00				1.00	0.85	
Fl <sub>t</sub> Protected		1.00	1.00		0.95		0.95				1.00	1.00	
Satd. Flow (prot)		1810	1524		1805		1770				3191	1583	
Fl <sub>t</sub> Permitted		1.00	1.00		0.95		0.10				1.00	1.00	
Satd. Flow (perm)		1810	1524		1805		192				3191	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	68	51	3	0	0	42	0	0	100	1100	87	
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	0	0	0	48	
Lane Group Flow (vph)	0	68	7	0	3	0	42	0	0	0	1200	39	
Heavy Vehicles (%)	0%	5%	6%	0%	0%	0%	2%	0%	0%	53%	9%	2%	
Turn Type		NA	Perm	Split	NA		pm+pt			Perm	NA	Perm	
Protected Phases		4		3	3		5				6		
Permitted Phases			4				2			6		6	
Actuated Green, G (s)		11.2	11.2		0.8		46.6				35.5	35.5	
Effective Green, g (s)		11.2	11.2		0.8		46.6				35.5	35.5	
Actuated g/C Ratio		0.14	0.14		0.01		0.59				0.45	0.45	
Clearance Time (s)		7.0	7.0		7.0		7.0				7.0	7.0	
Vehicle Extension (s)		2.0	2.0		2.0		2.0				2.0	2.0	
Lane Grp Cap (vph)		254	214		18		193				1423	705	
v/s Ratio Prot		c0.04			c0.00		c0.01						
v/s Ratio Perm			0.00				0.12				0.38	0.02	
v/c Ratio		0.27	0.03		0.17		0.22				0.84	0.06	
Uniform Delay, d1		30.5	29.5		39.1		11.0				19.6	12.5	
Progression Factor		1.00	1.00		0.51		1.00				1.00	1.00	
Incremental Delay, d2		0.2	0.0		1.6		0.2				4.6	0.0	
Delay (s)		30.7	29.6		21.6		11.2				24.1	12.5	
Level of Service		C	C		C		B				C	B	
Approach Delay (s)		30.2			21.6			11.2			23.3		
Approach LOS		C			C			B			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			23.6									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.66										
Actuated Cycle Length (s)			79.6									Sum of lost time (s)	28.0
Intersection Capacity Utilization			59.8%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													


















Queues  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr

2020 Total (Alt 1)  
Weekday PM Peak Hour

					
Lane Group	EBL	EBT	WBT	NBT	NBR
Lane Group Flow (vph)	83	84	3	825	2
v/c Ratio	0.36	0.36	0.01	0.42	0.00
Control Delay	26.9	26.9	40.0	8.3	0.0
Queue Delay	0.1	0.1	0.0	0.0	0.0
Total Delay	26.9	27.0	40.0	8.3	0.0
Queue Length 50th (ft)	26	26	1	73	0
Queue Length 95th (ft)	78	78	12	196	0
Internal Link Dist (ft)		25	201	251	
Turn Bay Length (ft)					100
Base Capacity (vph)	712	712	434	3181	1567
Starvation Cap Reductn	119	119	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.01	0.26	0.00
<b>Intersection Summary</b>					

HCM Signalized Intersection Capacity Analysis  
6: NB Jefferson Davis Hwy & Quantico Gateway Dr


















2020 Total (Alt 1)  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	0	0	0	2	1	1	758	2	0	0	0
Future Volume (vph)	154	0	0	0	2	1	1	758	2	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			7.0			7.0	7.0			
Lane Util. Factor	0.95	0.95			1.00			0.95	1.00			
Flt	1.00	1.00			0.95			1.00	0.85			
Flt Protected	0.95	0.95			1.00			1.00	1.00			
Satd. Flow (prot)	1491	1491			1814			3282	1615			
Flt Permitted	0.95	0.95			1.00			1.00	1.00			
Satd. Flow (perm)	1491	1491			1814			3282	1615			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	167	0	0	0	2	1	1	824	2	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	1	0	0	0
Lane Group Flow (vph)	83	84	0	0	2	0	0	825	1	0	0	0
Heavy Vehicles (%)	15%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%
Turn Type	Split	NA			NA		Perm	NA	Perm			
Protected Phases	4	4			3			2				
Permitted Phases							2		2			
Actuated Green, G (s)	11.2	11.2			0.8			46.6	46.6			
Effective Green, g (s)	11.2	11.2			0.8			46.6	46.6			
Actuated g/C Ratio	0.14	0.14			0.01			0.59	0.59			
Clearance Time (s)	7.0	7.0			7.0			7.0	7.0			
Vehicle Extension (s)	2.0	2.0			2.0			2.0	2.0			
Lane Grp Cap (vph)	209	209			18			1921	945			
v/s Ratio Prot	0.06	c0.06			c0.00							
v/s Ratio Perm								0.25	0.00			
v/c Ratio	0.40	0.40			0.11			0.43	0.00			
Uniform Delay, d1	31.1	31.1			39.0			9.1	6.8			
Progression Factor	0.64	0.64			1.00			1.00	1.00			
Incremental Delay, d2	0.4	0.4			1.0			0.1	0.0			
Delay (s)	20.3	20.3			40.1			9.2	6.8			
Level of Service	C	C			D			A	A			
Approach Delay (s)		20.3			40.1			9.2				0.0
Approach LOS		C			D			A				A
<b>Intersection Summary</b>												
HCM 2000 Control Delay			11.1					HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			79.6					Sum of lost time (s)		28.0		
Intersection Capacity Utilization			43.6%					ICU Level of Service		A		
Analysis Period (min)			15									
c Critical Lane Group												



HCM Unsignalized Intersection Capacity Analysis  
7: Fraley Blvd & VDOT Driveway/Site Driveway

2020 Total (Alt 1)  
Weekday PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (veh/h)	2	0	0	0	0	101	0	806	152	0	0	0
Future Volume (Veh/h)	2	0	0	0	0	101	0	806	152	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	0	0	110	0	822	155	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)											961	
pX, platoon unblocked												
vC, conflicting volume	521	977	0	822	822	411	0		977			
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521	977	0	822	822	411	0		977			
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1		4.1			
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2		2.2			
p0 queue free %	99	100	100	100	100	82	100		100			
cM capacity (veh/h)	357	249	1084	269	307	596	1622		702			
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	2	110	274	548	155							
Volume Left	2	0	0	0	0							
Volume Right	0	110	0	0	155							
cSH	357	596	1622	1700	1700							
Volume to Capacity	0.01	0.18	0.00	0.32	0.09							
Queue Length 95th (ft)	0	17	0	0	0							
Control Delay (s)	15.1	12.4	0.0	0.0	0.0							
Lane LOS	C	B										
Approach Delay (s)	15.1	12.4	0.0									
Approach LOS	C	B										
<b>Intersection Summary</b>												
Average Delay			1.3									
Intersection Capacity Utilization			41.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis  
8: Site Driveway & Graham Park Rd

2020 Total (Alt 1)  
Weekday PM Peak Hour

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘	
Traffic Volume (veh/h)	528	20	0	511	77	0
Future Volume (Veh/h)	528	20	0	511	77	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	574	22	0	555	84	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)	693					
pX, platoon unblocked						
vC, conflicting volume			596		862	298
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			596		862	298
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		71	100
cM capacity (veh/h)			976		294	698
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	383	213	185	370	84	
Volume Left	0	0	0	0	84	
Volume Right	0	22	0	0	0	
cSH	1700	1700	976	1700	294	
Volume to Capacity	0.23	0.13	0.00	0.22	0.29	
Queue Length 95th (ft)	0	0	0	0	29	
Control Delay (s)	0.0	0.0	0.0	0.0	22.1	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		22.1	
Approach LOS					C	
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			26.2%		ICU Level of Service	A
Analysis Period (min)			15			

**Appendix H**  
2020 Background & Total Traffic  
Conditions SimTraffic

Queuing and Blocking Report  
Weekday AM Peak Hour

3/15/2016

Intersection: 1: Jefferson Davis Hwy & Possum Point Rd

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	L	T	T	R	L	T	T	R
Maximum Queue (ft)	16	90	44	260	263	6	120	204	190	25
Average Queue (ft)	1	33	12	110	113	0	49	62	48	2
95th Queue (ft)	9	75	36	208	210	6	91	144	128	12
Link Distance (ft)	1188	1396		449	449			1375	1375	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			85			440	335			250
Storage Blk Time (%)		2		9					0	
Queuing Penalty (veh)		2		1					0	

Intersection: 2: Main St & Curtis Dr/Graham Park Rd

Movement	EB	EB	WB	SB	SB	SB	B363	B363
Directions Served	LT	R	LTR	LT	T	R	T	T
Maximum Queue (ft)	209	49	229	1971	1974	35	1183	1186
Average Queue (ft)	71	5	137	1542	1398	3	370	370
95th Queue (ft)	182	44	249	2451	2486	18	1248	1252
Link Distance (ft)	971		214	1902	1902		1592	1592
Upstream Blk Time (%)			9	44	38		3	3
Queuing Penalty (veh)			30	223	193		14	14
Storage Bay Dist (ft)		90				200		
Storage Blk Time (%)	14				1			
Queuing Penalty (veh)	1				0			

Intersection: 3: Fraley Blvd & Graham Park Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB
Directions Served	LT	T	T	R	L	T	T	R
Maximum Queue (ft)	238	251	356	112	164	165	186	72
Average Queue (ft)	218	210	178	56	57	73	84	15
95th Queue (ft)	244	256	339	89	129	145	157	50
Link Distance (ft)	214	214	1187	1187		784	784	
Upstream Blk Time (%)	47	30						
Queuing Penalty (veh)	129	82						
Storage Bay Dist (ft)					710		330	
Storage Blk Time (%)								
Queuing Penalty (veh)								

Queuing and Blocking Report  
Weekday AM Peak Hour

3/15/2016

Intersection: 4: Old Triangle Rd & Graham Park Rd

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	TR	LT	TR	LT	R	LTR
Maximum Queue (ft)	162	177	91	108	91	69	87
Average Queue (ft)	76	86	48	48	43	29	39
95th Queue (ft)	133	145	78	83	74	52	67
Link Distance (ft)	1187	1187	441	441	855		859
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)						100	
Storage Blk Time (%)					0	0	
Queuing Penalty (veh)					0	0	

Intersection: 5: SB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	NB	SB	SB	SB
Directions Served	T	R	L	LT	T	R
Maximum Queue (ft)	81	44	57	134	142	52
Average Queue (ft)	26	10	17	44	55	15
95th Queue (ft)	58	31	43	109	120	40
Link Distance (ft)	1333		212	1044	1044	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		300			275	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: NB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	NB	NB
Directions Served	L	LT	T	T
Maximum Queue (ft)	64	38	150	153
Average Queue (ft)	15	3	63	63
95th Queue (ft)	48	20	124	118
Link Distance (ft)	60	60	242	242
Upstream Blk Time (%)	1	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				1
Queuing Penalty (veh)				0

Zone Summary

Zone wide Queuing Penalty: 689

Queuing and Blocking Report  
Weekday PM Peak Hour

3/15/2016

Intersection: 1: Jefferson Davis Hwy & Possum Point Rd

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	65	114	32	84	345	373	88	148	309	303	62
Average Queue (ft)	21	51	1	12	151	164	3	63	147	139	5
95th Queue (ft)	51	96	23	50	281	302	64	119	266	265	42
Link Distance (ft)	821	1018			449	449			1493	1493	
Upstream Blk Time (%)							0				
Queuing Penalty (veh)							0				
Storage Bay Dist (ft)			70	85			455	335			250
Storage Blk Time (%)		6			14		0		0	1	
Queuing Penalty (veh)		7			1		0		0	0	

Intersection: 2: Main St & Curtis Dr/Graham Park Rd

Movement	EB	EB	WB	SB	SB	SB	B363
Directions Served	LT	R	LTR	LT	T	R	T
Maximum Queue (ft)	274	82	237	970	816	297	2
Average Queue (ft)	102	5	187	395	281	34	0
95th Queue (ft)	238	42	284	812	635	166	2
Link Distance (ft)	1114		220	1902	1902		1592
Upstream Blk Time (%)			20				
Queuing Penalty (veh)			63				
Storage Bay Dist (ft)		90				200	
Storage Blk Time (%)	22				8		
Queuing Penalty (veh)	3				5		

Intersection: 3: Fraley Blvd & Graham Park Rd

Movement	EB	EB	WB	WB	B260	NB	NB	NB	NB	B132	B7	B7
Directions Served	LT	T	T	R	T	L	T	T	R	T	T	T
Maximum Queue (ft)	233	237	273	95	106	451	422	425	128	13	13	11
Average Queue (ft)	187	171	178	55	13	213	197	204	21	1	0	0
95th Queue (ft)	260	261	292	83	72	490	404	390	79	19	6	0
Link Distance (ft)	220	220	204	204	209		783	783		54	1813	1813
Upstream Blk Time (%)	14	8	19		0	0	1	0		0		
Queuing Penalty (veh)	57	32	43		0	0	2	0		1		
Storage Bay Dist (ft)						710			285			
Storage Blk Time (%)						1	0	3				
Queuing Penalty (veh)						4	1	1				

Queuing and Blocking Report  
Weekday PM Peak Hour

3/15/2016

Intersection: 4: Old Triangle Rd & Graham Park Rd

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	TR	LT	TR	LT	R	LTR
Maximum Queue (ft)	194	224	69	91	77	45	87
Average Queue (ft)	98	105	36	43	41	21	39
95th Queue (ft)	168	185	57	72	64	39	69
Link Distance (ft)	678	678	380	380	505		470
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)						100	
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Intersection: 5: SB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	WB	NB	SB	SB	SB
Directions Served	T	R	LT	L	LT	T	R
Maximum Queue (ft)	90	54	8	60	245	256	55
Average Queue (ft)	31	18	1	21	83	100	18
95th Queue (ft)	67	41	7	50	181	196	47
Link Distance (ft)	1167		60		1044	1044	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	300					275	
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Intersection: 6: NB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	LT	TR	LT	T	R
Maximum Queue (ft)	33	18	45	146	117	10
Average Queue (ft)	8	1	5	100	40	0
95th Queue (ft)	27	10	26	158	94	4
Link Distance (ft)	60	60	225			
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)					100	
Storage Blk Time (%)				1		
Queuing Penalty (veh)				0		

Zone Summary

Zone wide Queuing Penalty: 220

Queuing and Blocking Report  
Weekday AM Peak Hour

3/15/2016

Intersection: 1: Jefferson Davis Hwy & Possum Point Rd

Movement	EB	WB	WB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	L	T	T	R
Maximum Queue (ft)	18	113	16	60	292	288	133	198	187	23
Average Queue (ft)	1	36	1	12	131	136	51	75	58	3
95th Queue (ft)	9	85	17	42	241	242	101	168	147	16
Link Distance (ft)	1188	1396			449	449		1375	1375	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			70	85			335			250
Storage Blk Time (%)		4		0	12				0	
Queuing Penalty (veh)		3		0	1				0	

Intersection: 2: Main St & Curtis Dr/Graham Park Rd

Movement	EB	EB	WB	SB	SB	SB	B363	B363
Directions Served	LT	R	LTR	LT	T	R	T	T
Maximum Queue (ft)	159	40	235	1988	1998	89	1087	1094
Average Queue (ft)	57	4	222	1543	1363	6	343	342
95th Queue (ft)	122	25	251	2411	2425	50	1241	1247
Link Distance (ft)	971		220	1902	1902		1592	1592
Upstream Blk Time (%)			58	41	34		4	4
Queuing Penalty (veh)			243	205	170		21	21
Storage Bay Dist (ft)		90				200		
Storage Blk Time (%)	8				2			
Queuing Penalty (veh)	1				1			

Intersection: 3: Fraley Blvd & Graham Park Rd

Movement	EB	EB	WB	WB	NB	NB	NB	NB
Directions Served	LT	T	T	R	L	T	T	R
Maximum Queue (ft)	243	255	356	100	744	761	645	92
Average Queue (ft)	222	212	187	44	524	337	191	19
95th Queue (ft)	240	252	319	78	927	956	625	61
Link Distance (ft)	220	220	645	645		928	928	
Upstream Blk Time (%)	49	32				14	1	
Queuing Penalty (veh)	137	91				62	3	
Storage Bay Dist (ft)					710			330
Storage Blk Time (%)					29	1		
Queuing Penalty (veh)					89	2		



Queuing and Blocking Report  
Weekday AM Peak Hour

3/15/2016

Intersection: 4: Old Triangle Rd & Graham Park Rd

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	TR	LT	TR	LT	R	LTR
Maximum Queue (ft)	156	150	96	88	85	69	84
Average Queue (ft)	75	81	50	46	44	30	41
95th Queue (ft)	128	132	84	74	73	56	68
Link Distance (ft)	469	469	441	441	855		859
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)						100	
Storage Blk Time (%)					0	0	
Queuing Penalty (veh)					0	0	

Intersection: 5: SB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	NB	SB	SB	SB
Directions Served	T	R	L	LT	T	R
Maximum Queue (ft)	76	57	54	193	170	48
Average Queue (ft)	24	10	19	68	71	14
95th Queue (ft)	54	34	46	146	134	38
Link Distance (ft)	1333		212	1044	1044	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		300			275	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: NB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	NB	NB
Directions Served	L	LT	T	T
Maximum Queue (ft)	73	61	146	152
Average Queue (ft)	32	17	73	73
95th Queue (ft)	66	51	132	133
Link Distance (ft)	60	60	242	242
Upstream Blk Time (%)	2	0		
Queuing Penalty (veh)	1	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				2
Queuing Penalty (veh)				0

Queuing and Blocking Report  
 Weekday AM Peak Hour

3/15/2016

Intersection: 7: Fraley Blvd & VDOT Driveway/Site Driveway

Movement	EB	WB	NB	NB	NB
Directions Served	LT	R	LT	T	R
Maximum Queue (ft)	24	209	144	146	40
Average Queue (ft)	1	87	36	22	1
95th Queue (ft)	12	227	178	144	29
Link Distance (ft)	205	286	1702	1702	
Upstream Blk Time (%)		12			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)					100
Storage Blk Time (%)				0	
Queuing Penalty (veh)				1	

Intersection: 8: Site Driveway & Graham Park Rd

Movement	EB	EB	NB
Directions Served	T	TR	LR
Maximum Queue (ft)	5	4	29
Average Queue (ft)	0	0	6
95th Queue (ft)	5	4	26
Link Distance (ft)	645	645	268
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1050

Queuing and Blocking Report  
 Weekday PM Peak Hour

3/15/2016

Intersection: 1: Jefferson Davis Hwy & Possum Point Rd

Movement	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LT	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	64	176	84	86	428	421	5	170	396	385	59
Average Queue (ft)	21	63	2	13	192	198	0	75	167	161	4
95th Queue (ft)	53	132	35	56	357	361	5	141	314	305	41
Link Distance (ft)	821	1018			449	449			1493	1493	
Upstream Blk Time (%)					0	0					
Queuing Penalty (veh)					0	0					
Storage Bay Dist (ft)			70	85			455	335			250
Storage Blk Time (%)		12		0	20	0			1	2	
Queuing Penalty (veh)		15		0	2	0			1	0	

Intersection: 2: Main St & Curtis Dr/Graham Park Rd

Movement	EB	EB	WB	SB	SB	SB
Directions Served	LT	R	LTR	LT	T	R
Maximum Queue (ft)	213	75	240	1222	1168	252
Average Queue (ft)	88	5	222	529	404	27
95th Queue (ft)	182	33	258	1023	899	141
Link Distance (ft)	1114		220	1902	1902	
Upstream Blk Time (%)			34			
Queuing Penalty (veh)			133			
Storage Bay Dist (ft)		90				200
Storage Blk Time (%)	18				11	
Queuing Penalty (veh)	2				7	

Queuing and Blocking Report  
Weekday PM Peak Hour

3/15/2016

Intersection: 3: Fraley Blvd & Graham Park Rd

Movement	EB	EB	WB	WB	B260	B260	B142	NB	NB	NB	NB	B132
Directions Served	LT	T	T	R	T	T	T	L	T	T	R	T
Maximum Queue (ft)	235	237	307	174	306	213	147	783	852	792	153	120
Average Queue (ft)	193	174	273	66	243	52	89	656	631	327	23	53
95th Queue (ft)	267	263	307	135	378	195	179	953	1096	727	107	141
Link Distance (ft)	220	220	204	204	209	209	69		783	783		51
Upstream Blk Time (%)	16	8	91	1	75	0	61	34	46	0		42
Queuing Penalty (veh)	65	34	268	2	216	1	176	0	208	1		190
Storage Bay Dist (ft)								710				285
Storage Blk Time (%)								58	5	5		
Queuing Penalty (veh)								170	10	3		

Intersection: 3: Fraley Blvd & Graham Park Rd

Movement	B132
Directions Served	T
Maximum Queue (ft)	12
Average Queue (ft)	0
95th Queue (ft)	13
Link Distance (ft)	51
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Old Triangle Rd & Graham Park Rd

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	LT	TR	LT	TR	LT	R	LTR
Maximum Queue (ft)	233	226	171	182	197	88	119
Average Queue (ft)	99	103	60	59	78	25	48
95th Queue (ft)	185	188	150	159	250	64	109
Link Distance (ft)	552	552	380	380	505		470
Upstream Blk Time (%)			1	1	4		
Queuing Penalty (veh)			0	0	0		
Storage Bay Dist (ft)						100	
Storage Blk Time (%)					7	0	
Queuing Penalty (veh)					3	0	

Queuing and Blocking Report  
Weekday PM Peak Hour

3/15/2016

Intersection: 5: SB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	WB	NB	SB	SB	SB
Directions Served	T	R	LT	L	LT	T	R
Maximum Queue (ft)	102	62	6	63	348	318	91
Average Queue (ft)	32	20	0	23	144	134	21
95th Queue (ft)	71	47	4	54	293	257	66
Link Distance (ft)	1167		60		1044	1044	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		300					275
Storage Blk Time (%)						1	
Queuing Penalty (veh)						1	

Intersection: 6: NB Jefferson Davis Hwy & Quantico Gateway Dr

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	LT	TR	LT	T	R
Maximum Queue (ft)	76	75	27	165	149	5
Average Queue (ft)	45	32	2	109	61	0
95th Queue (ft)	77	72	16	169	128	3
Link Distance (ft)	60	60	225			
Upstream Blk Time (%)	9	3				
Queuing Penalty (veh)	7	2				
Storage Bay Dist (ft)						100
Storage Blk Time (%)					2	
Queuing Penalty (veh)					0	

Intersection: 7: Fraley Blvd & VDOT Driveway/Site Driveway

Movement	EB	WB	NB	NB	NB
Directions Served	LT	R	LT	T	R
Maximum Queue (ft)	28	338	567	551	40
Average Queue (ft)	2	131	161	145	4
95th Queue (ft)	15	400	517	491	52
Link Distance (ft)	223	475	1811	1811	
Upstream Blk Time (%)		13			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)					100
Storage Blk Time (%)				1	
Queuing Penalty (veh)				2	

Queuing and Blocking Report  
Weekday PM Peak Hour

3/15/2016

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Intersection: 8: Site Driveway & Graham Park Rd

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Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (ft)	383	368	346
Average Queue (ft)	185	126	193
95th Queue (ft)	508	458	428
Link Distance (ft)	552	552	352
Upstream Blk Time (%)	7	5	37
Queuing Penalty (veh)	16	11	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

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Zone Summary

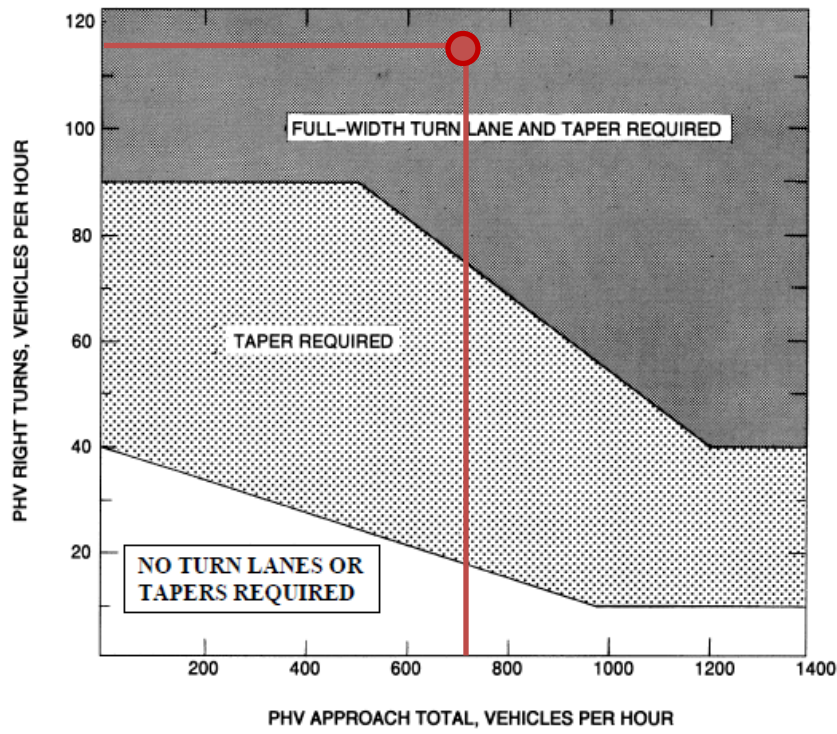
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Zone wide Queuing Penalty: 1548

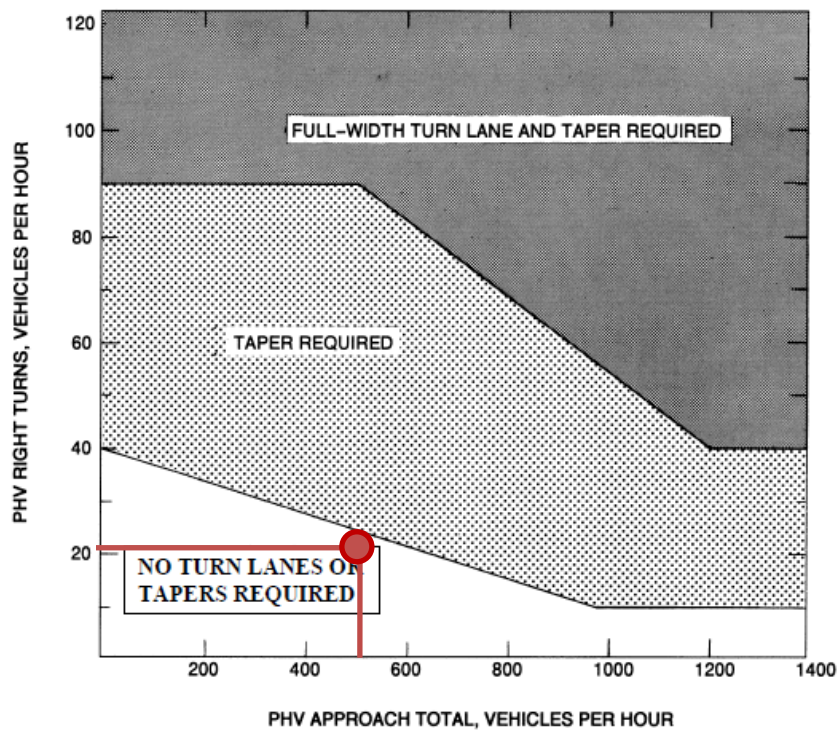
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**Appendix I**  
Turn Lane  
Warrant Analyses

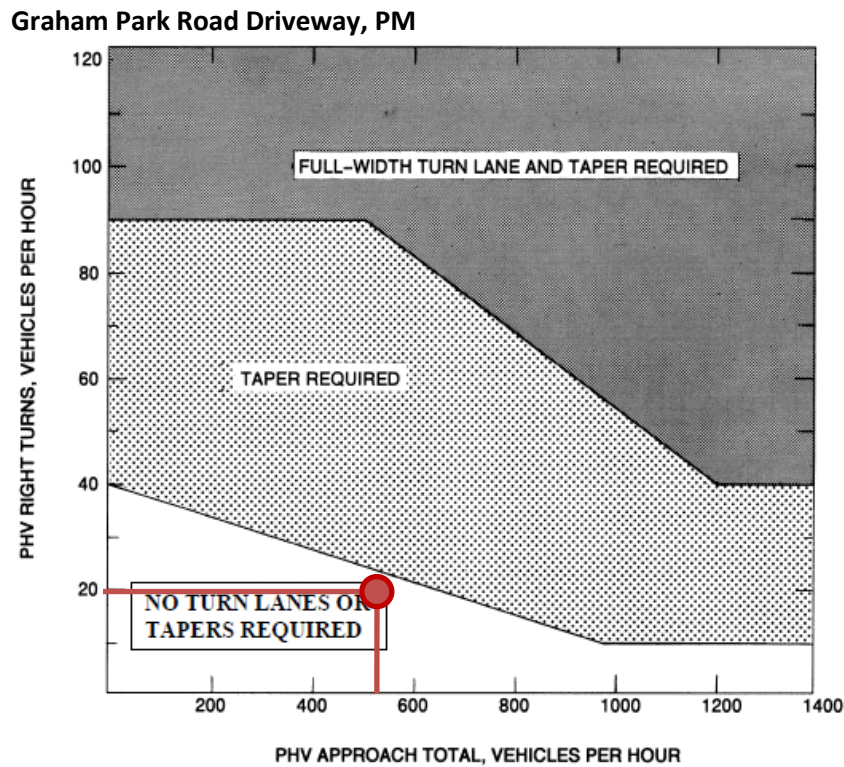
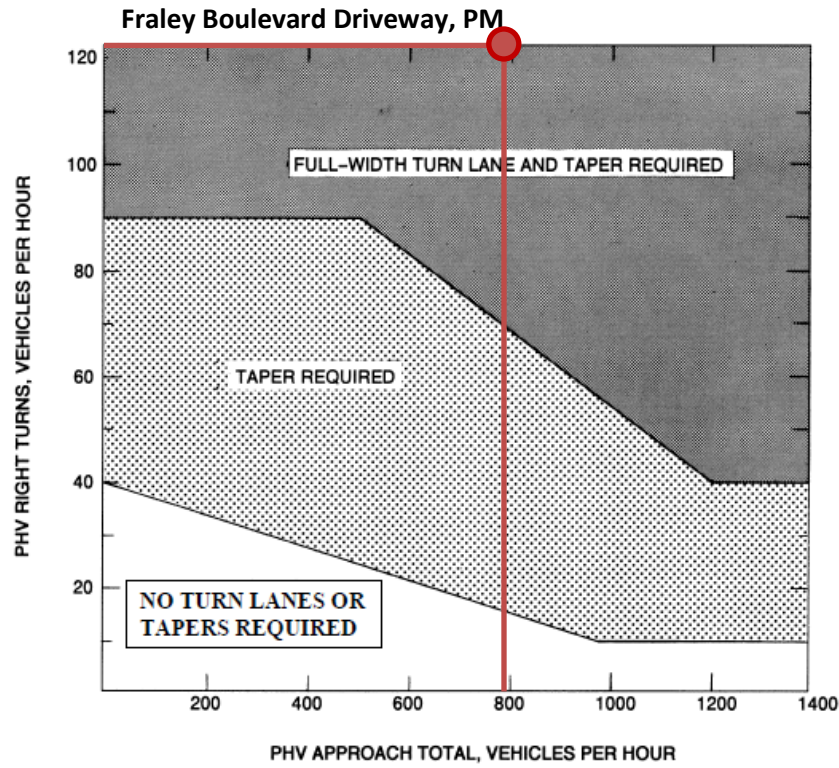
### Fraley Boulevard Driveway, AM



### Graham Park Road Driveway, AM







201811080080950

Prince William County, VA  
11/08/2018 10:11 AM Pgs: 6  
Jacqueline C Smith, Esq., Clerk

Document prepared by and  
when recorded return to:

Williams Mullen  
Attn: Lauren Nowlin, Esq.  
200 S. 10<sup>th</sup> Street, Suite 1600  
Richmond, Virginia 23219



PLAT IS RECORDED AS

INSTR. #2018 11080080951

GPIN Nos: 8188-77-5398; 8188-78-5384; 8188-78-8257; and 8188-78-8432

**NOTICE TO CLERK: No monetary consideration is being paid in connection with this Deed of Subdivision and title is not being transferred.**

**NOTICE TO TAX ASSESSOR: Each parcel hereby created shall constitute separate tax map parcels and shall be separately assessed and taxed by the applicable governmental authorities.**

### DEED OF SUBDIVISION

THIS DEED OF SUBDIVISION is made effective as of October \_\_, 2018, by TOWNSQUARE AT DUMFRIES, LLC, a Virginia limited liability company (hereinafter referred to as "Owner"), to be indexed as "Grantor" and "Grantee"; JAMES W. MCALISTER, JR., Trustee(s), (hereinafter referred to as "Trustee"); and THE FIRST BANK AND TRUST COMPANY (hereinafter referred to as "Lender").

#### RECITALS:

A. Owner is the owner of certain real property situated in Prince William County, Virginia, identified as Prince William County Tax Map Nos. 8188-77-5398; 8188-78-5384; 8188-78-8257; and 8188-78-8432 (the "Property"), as shown on the plat entitled "PLAT SHOWING CONSOLIDATION AND SUBDIVISION TOWNSQUARE TOWN OF DUMFRIES PRINCE WILLIAM COUNTY, VIRGINIA," dated August 27, 2018 and prepared by The Engineering Groupe Inc. (the "Plat"), attached hereto and incorporated herein as Exhibit A, being the property conveyed to Owner by Deed recorded in the Clerk's Office, Circuit Court, Prince William County, Virginia (the "Clerk's Office") as Instrument Number 201706220047468.

B. The Property is encumbered by the lien of that certain Deed of Trust made by Owner to Trustee and securing Lender, dated August 30, 2017 and recorded in the Clerk's Office as Instrument No. 201708310066417 (the "Deed of Trust").

C. Owner desires, with the consent and approval of the Trustee(s) and Lender, as evidenced by their signatures affixed hereto, to divide the Property into five (5) separate parcels, as shown on the Plat.

#### AGREEMENT:

NOW THEREFORE, in consideration of the premises and the sum of One Dollar (\$1.00), cash in hand paid, receipt and sufficiency of which are hereby acknowledged Owner hereby divides the Property into five (5) distinct parcels: (i) the first containing 8.9590 acres more or less and shown as "Parcel A" on the Plat, (ii) the second containing 13.7705 acres more or less

and shown as "Parcel B" on the Plat, (iii) the third containing 3.6431 acres more or less and shown as "Parcel C" on the Plat, (iv) the fourth containing 1.5207 acres more or less and shown as "Parcel D" on the Plat, and (v) the fifth containing 0.6847 acres more or less and shown as "Parcel E" on the Plat.

This Deed of Subdivision is made in accordance with the statutes made and provided in such cases, and is with the free consent and in accordance with the desire of Owner, the owner of the land within the bounds of the Property depicted on the Plat.

The Recitals are hereby incorporated into this Deed of Subdivision.

[Signature Page to Follow]

WITNESS the following signatures and seals:

**OWNER:**

TOWNSQUARE AT DUMFRIES, LLC  
a Virginia limited liability company

By: Community Housing Partners Corporation,  
a Virginia nonstock corporation,  
its Managing Member

By: [Signature] (SEAL)  
Name: SAMANTHA BROWN  
Title: ASSISTANT VICE PRESIDENT

STATE/COMMONWEALTH OF VIRGINIA

COUNTY/CITY OF HENRICO, to-wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that SAMANTHA BROWN, as ASSISTANT V.P. of Community Housing Partners Corporation, as the Managing Member of Townsquare at Dumfries, LLC, whose name is signed to the foregoing Deed dated October 24, 2018, has this date appeared before me, and acknowledged the same.

Given under my hand and seal this 24<sup>TH</sup> day of OCTOBER, 2018.

[Signature]  
Notary Public

My commission expires: 8/31/19.



[SIGNATURES CONTINUE ON THE FOLLOWING PAGE]  
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TRUSTEE:

By: James W. McAlister, Jr. (SEAL)  
James W. McAlister, Jr.

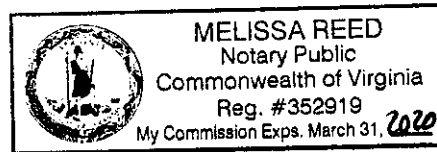
STATE/Commonwealth of Virginia  
CITY/COUNTY OF Montgomery, to wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that James W. McAlister, Jr., whose name is signed to the foregoing Deed, has this date appeared before me, and acknowledged the same, as Trustee.

Given under my hand this 24<sup>th</sup> day of October, 2018.

Melissa Reed  
Notary Public

My Commission Expires: 3/31/2020



[SIGNATURES CONTINUE ON THE FOLLOWING PAGE]  
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LENDER:

THE FIRST BANK AND TRUST COMPANY

By: Allan M. Bookout (SEAL)  
Name: Allan M. Bookout  
Title: Senior Vice President

STATE/Commonwealth of Virginia  
CITY/COUNTY OF Montgomery, to wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that Allan M. Bookout, as Senior Vice President of First Bank and Trust Company, whose name is signed to the foregoing Deed, has this date appeared before me, and acknowledged the same.

Given under my hand this 24<sup>th</sup> day of October, 2018.

Melissa Reed  
Notary Public

My Commission Expires: 3/31/2020

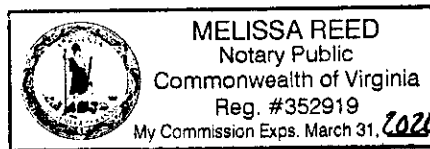


EXHIBIT A

THE PLAT

**201811140082209**

Prince William County, VA  
11/14/2018 03:07 PM Pages: 3  
Jacqueline C Smith, Esq., Clerk  
Grantor Tax: \$4,600.00

GPIN # A portion of: 8188-78-5384, 8188-78-8257, 8188-78-8432 & 8188-77-5298

Consideration: \$4,600,000.00  
Tax Assessed Value: \$ 3,351,843.20

Prepared by:  
Lauren D. Nowlin, Esq., VSB 74827  
200 South 10<sup>th</sup> Street, Suite 1600  
Richmond, VA 23219

Title Insurance Provided by:  
Stewart Title Guaranty Company

THIS DEED, made this 8<sup>th</sup> day of November, 2018, by and between **TOWNSQUARE AT DUMFRIES, LLC**, a Virginia limited liability company, to be indexed as grantor (the "Grantor"), and **TOWNSQUARE AT DUMFRIES BOND, LLC**, a Virginia limited liability company, to be indexed as grantee (the "Grantee"), provides as follows:

**WITNESSETH:**

THAT for and in consideration of the sum of Ten Dollars (\$10.00) cash in hand paid and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor does hereby grant and convey unto the Grantee, in fee simple, with SPECIAL WARRANTY, the real estate described in SCHEDULE A attached hereto and incorporated herein.

This conveyance is made expressly subject to such recorded restrictions, conditions and easements as may lawfully apply to the real estate.

[SIGNATURE PAGES FOLLOW]





**Exhibit A**

**Legal Description**

ALL that certain lot, piece or parcel of land, with the appurtenances thereunto belonging, lying and being in the Town of Dumfries, Prince William County, Virginia, designated as Parcel "B", containing 599,842 Sq. FT. or 13.7705 Acres, as shown on a plat of consolidation and subdivision made by The Engineering Groupe Inc., dated August 27, 2018, entitled "PLAT SHOWING CONSOLIDATION AND SUBDIVISION TOWNSQUARE TOWN OF DUMFRIES PRINCE WILLIAM COUNTY, VIRGINIA", which plat was recorded November 8, 2018 in the Clerk's Office, Circuit Court, Prince William County, Virginia as Instrument No. 201811080080951.

BEING a portion of the same real estate conveyed to Townsquare at Dumfries, LLC, a Virginia limited liability company, by deed from Orange Fields, LLC, a Virginia limited liability company, dated June 13, 2017, recorded June 20, 2017 in the Clerk's Office, Circuit Court, Prince William County, Virginia as Instrument No. 201706220047468

201811140082172

Prince William County, VA  
11/14/2018 02:03 PM Pgs: 6  
Jacqueline C Smith, Esq., Clerk

Document prepared by and  
when recorded return to:



Williams Mullen  
Attn: Lauren Nowlin, Esq. (VSB# 74827)  
200 S. 10<sup>th</sup> Street, Suite 1600  
Richmond, Virginia 23219

GPIN No.: A portion of: 8188-77-5398, 8188-78-5384, 8188-78-8251  
# 8188-78-8432

**THIS DEED IS EXEMPT FROM RECORDATION TAX PURSUANT TO  
SECTION 58.1-811(A)(3) OF THE CODE OF VIRGINIA, 1950, AS AMENDED**

**DEED OF DEDICATION**

**THIS DEED OF DEDICATION** made this 9<sup>th</sup> day of November, 2018, by TOWNSQUARE AT DUMFRIES, LLC, a Virginia limited liability company (“Grantor”), as grantor; the TOWN OF DUMFRIES, VIRGINIA, a body corporate and politic, (the “Town”) as grantee; JAMES W. MCALISTER, JR., Trustee(s), as a grantor (the “Trustee(s)"); and THE FIRST BANK AND TRUST COMPANY, as a grantor (the “Lender”).

**WITNESSETH:**

**WHEREAS**, Grantor is the owner of a certain parcel of land (the “Property”) situate in the Town of Dumfries, Virginia (the “Town”), more particularly shown and labeled as “PARCEL ‘D’” on the plat entitled “PLAT SHOWING CONSOLIDATION AND SUBDIVISION TOWNSQUARE TOWN OF DUMFRIES PRINCE WILLIAM COUNTY, VIRGINIA”, dated August 27, 2018, prepared by The Engineering Groupe Inc., and recorded November 8, 2018 in the Clerk’s Office, Circuit Court, Prince William County, Virginia (the “Clerk’s Office”) as Instrument No. 201811080080951 (the “Plat”);

**WHEREAS**, the Property is encumbered by the lien of that certain Deed of Trust made by Grantor to Trustee and securing Lender, dated August 30, 2017 and recorded in the Clerk’s Office as Instrument No. 201708310066417 (the “Deed of Trust”);

**WHEREAS**, Section VII of that certain Proffer Statement in connection with “REZONING #2016-001” for the Project “Townsquare at Dumfries” in the Town of Dumfries, Virginia, dated June 6, 2016 and revised September 22, 2016 (the “Proffer Statement”), requires that the Property be dedicated to the Town; and

**WHEREAS**, to satisfy the requirements of Section VII of the Proffer Statement, it is the desire and intent of the Owner, with the consent and approval of the Trustee(s) and Lender, as evidenced by their signatures affixed hereto, to dedicate, grant and convey the Property to the Town and to reserve unto itself, its successors and assigns, certain easements in accordance with this Deed of Dedication.

**NOW, THEREFORE**, in consideration of the premises and the sum of ONE DOLLAR (\$1.00), cash in hand paid, the receipt and sufficiency of which are hereby acknowledged, Grantor and Trustee, with the consent and approval of the Lender, as shown by Lender's signature affixed hereto, do hereby dedicate and convey the Property in fee simple with special warranty of title to the Town;

**TOGETHER WITH** all and singular the buildings and improvements thereon, rights and privileges, tenements, hereditaments, easements and appurtenances unto the Property belonging or in anywise appertaining;

**AND** Trustee, with the consent and approval of the Lender, as evidenced by Lender's signature affixed hereto, hereby releases and discharges from the lien of the Deed of Trust the Property, together with all buildings and improvements thereon, rights and privileges, tenements, hereditaments, easements and appurtenances unto the Property belonging or in anywise appertaining;

**AND** Grantor, with the consent and approval of the Trustee(s) and Lender, as evidenced by their signatures affixed hereto, does hereby reserve and retain unto itself, its successors and assigns, for the benefit of "PARCEL C" as shown on the Plat ("Parcel C"), perpetual non-exclusive easements for access to Graham Park Road and utilities necessary to develop Parcel C, as reasonably determined by Grantor and any future owner of Parcel C.

**AND** the Town and Grantor, with the consent and approval of the Trustee(s) and Lender, as evidenced by their signatures affixed hereto, hereby acknowledge and agree that this Deed of Dedication satisfies the Grantor's requirements set forth in Section VII of the Proffer Statement.

[Signature Pages to Follow]

WITNESS the following signatures and seals:

GRANTOR:

TOWNSQUARE AT DUMFRIES, LLC  
a Virginia limited liability company

By: Community Housing Partners Corporation,  
a Virginia nonstock corporation, its Managing Member

By: [Signature] (SEAL)  
Name: David Schultz  
Title: Senior Vice President

STATE/COMMONWEALTH OF VIRGINIA

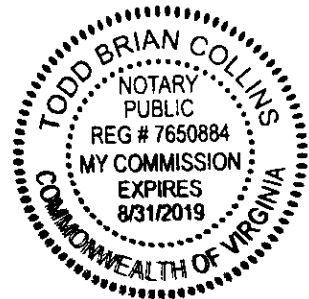
COUNTY/CITY OF HENRICO, to-wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that DAVID SCHULTZ, as SR VICE PRESIDENT of Community Housing Partners Corporation, as the Managing Member of Townsquare at Dumfries, LLC, whose name is signed to the foregoing Deed dated October 29<sup>TH</sup>, 2018, has this date appeared before me, and acknowledged the same.

Given under my hand and seal this 29<sup>TH</sup> day of OCTOBER, 2018.

[Signature]  
NOTARY PUBLIC

My commission expires: 8/31/19



37122467\_1

TOWN:

TOWN OF DUMFRIES, VIRGINIA

By: Gregory M Tkac (SEAL)  
Name: Gregory M. TKAC  
Title: ACTING TOWN MANAGER

COMMONWEALTH OF VIRGINIA

County of Prince William, to wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that Gregory M. Tkac, its authorized agent, Town of Dumfries, Virginia whose name is signed to the foregoing Deed dated November 9, 2018, has this date appeared before me, and acknowledged the same.

Given under my hand and seal this 9 day of NOVEMBER, 2018.

Lisa M Piarote  
NOTARY PUBLIC

My commission expires: APRIL 30, 2021.



TRUSTEE:

By: James W. McAlister, Jr. (SEAL)  
James W. McAlister, Jr.

STATE/Commonwealth of Virginia

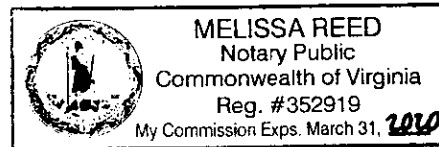
COUNTY/CITY OF Montgomery, to-wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that James W. McAlister, Jr., as Trustee, whose name is signed to the foregoing Deed dated October \_\_\_\_, 2018, has this date appeared before me, and acknowledged the same.

Given under my hand and seal this 26<sup>th</sup> day of October, 2018.

Melissa Reed  
NOTARY PUBLIC

My commission expires: 3/31/2020.



LENDER:

THE FIRST BANK AND TRUST COMPANY

By: Alan M. Bookout (SEAL)  
Name: Alan M. Bookout  
Title: Senior Vice President

STATE/Commonwealth of Virginia

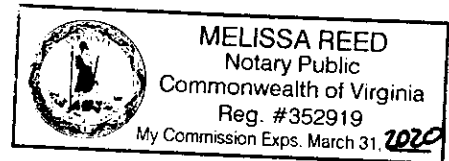
COUNTY/CITY OF Montgomery, to-wit:

I, the undersigned Notary Public of and for the jurisdiction aforesaid, do hereby certify that Allan M. Bookout, as Senior Vice President of The First Bank and Trust Company, whose name is signed to the foregoing Deed dated October 26, 2018, has this date appeared before me, and acknowledged the same.

Given under my hand and seal this 26<sup>th</sup> day of October, 2018.

Melissa Reed  
NOTARY PUBLIC

My commission expires: 3/31/2020.





# INTEREST DISCLOSURE AFFIDAVIT

STATE OF VIRGINIA,  
COUNTY OF PRINCE MONTGOMERY

This 23rd day of November, 2021,

David Schultz, Senior President of Development of Community Housing Partners, Managing I, Member of CHP Townsquare at Dumfries Bond, LLC, Managing Member of TOWNSQUARE AT DUMFRIES BOND,

LLC (Owner), hereby make oath that no member of the Town Council of the Town of Dumfries, Virginia, nor the Planning Commission of the Town of Dumfries, Virginia, has interest in such property, either individually, by ownership of stock in a corporation owning such land, or partnership, or as holder of ten (10) percent or more of the outstanding shares of stock in or as a director or officer of any corporation owning such land, directly or indirectly, by such member or members of his immediate household, except as follows:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TOWNSQUARE AT DUMFRIES BOND, LLC  
a Virginia limited liability company

By: CHP Townsquare at Dumfries Bond, LLC,  
a Virginia limited liability company,  
its Managing Member

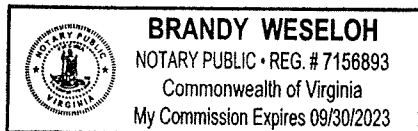
By: Community Housing Partners Corporation,  
a Virginia nonstock corporation, its Managing Member

By: David Schultz  
Name: David Schultz  
Title: Senior Vice President of Development

COMMONWEALTH OF VIRGINIA:  
County of Montgomery

Subscribed and sworn to before me this 23rd day of November, 2021 in my County and State aforesaid, by the aforementioned Principal.

Brandy Weeseleh  
NOTARY PUBLIC



My Commission Expires: Sept 30, 2023

INTEREST DISCLOSURE AFFIDAVIT

STATE OF VIRGINIA,
COUNTY OF MONTGOMERY

This 23rd day of November, 2021, I, David Schultz as Senior Vice President of Development of Community Housing Partners, Managing Member of TOWNSQUARE AT DUMFRIES, LLC (Owner), hereby make oath that no member of the Town Council of the Town of Dumfries, Virginia, nor the Planning Commission of the Town of Dumfries, Virginia, has interest in such property, either individually, by ownership of stock in a corporation owning such land, or partnership, or as holder of ten (10) percent or more of the outstanding shares of stock in or as a director or officer of any corporation owning such land, directly or indirectly, by such member or members of his immediate household, except as follows:

[Empty lines for disclosure details]

TOWNSQUARE AT DUMFRIES, LLC
a Virginia limited liability company

By: Community Housing Partners Corporation,
a Virginia nonstock corporation,
its Managing Member

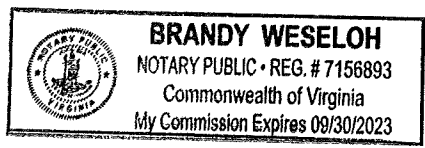
By: [Signature]
Name: David Schultz
Title: Senior Vice President of Development

COMMONWEALTH OF VIRGINIA:
County of Montgomery

Subscribed and sworn to before me this 23rd day of November, 2021 in my County and State aforesaid, by the aforementioned Principal.

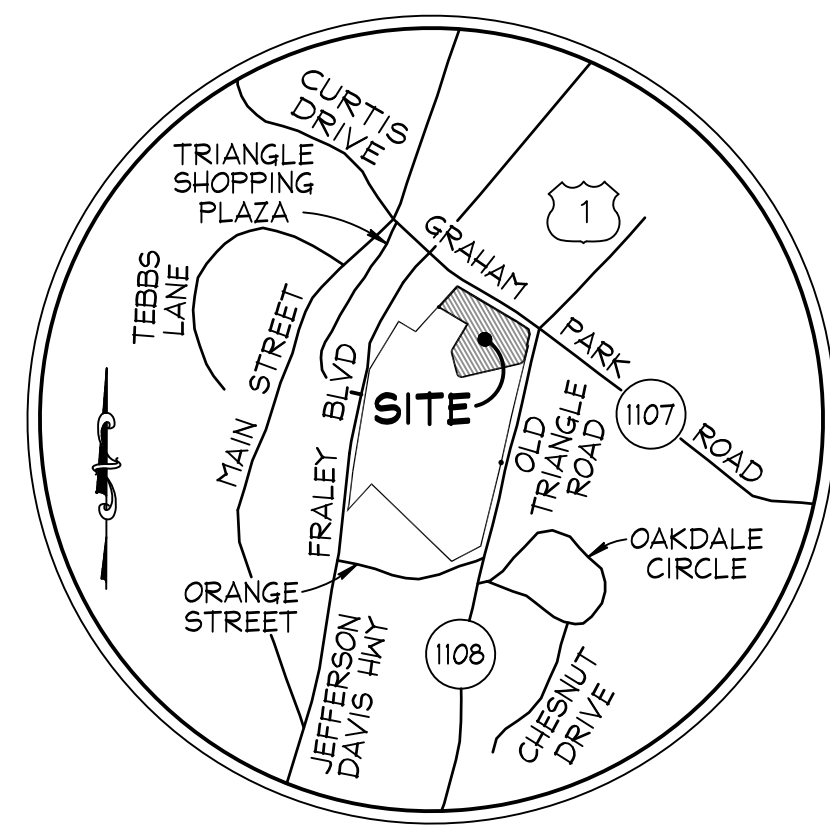
[Signature: Brandy Weasel]
NOTARY PUBLIC

My Commission Expires: Sept 30, 2023



## Appendix B

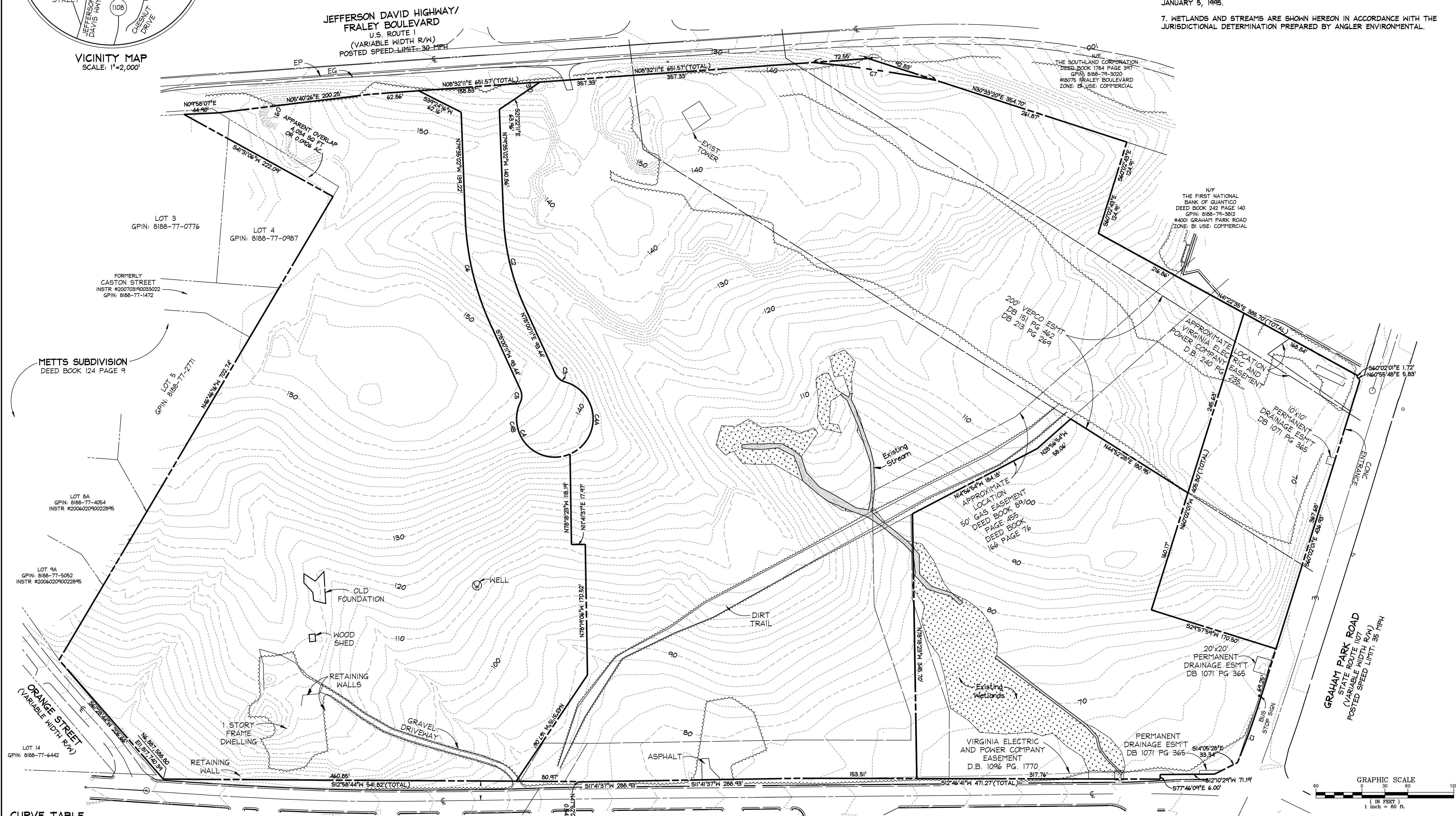




VICINITY MAP  
SCALE: 1"=2,000'

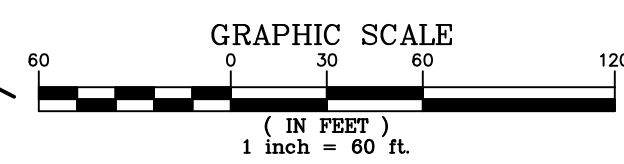


- NOTES:**
1. THE PROPERTIES DELINEATED ON THIS PLAN ARE REFERENCED ON THE PRINCE WILLIAM COUNTY TAX ASSESSMENT MAP DESIGNATED AS GPINS: 8188-79-6806, 8188-78-8078, 8188-78-4252, 8188-77-4490 AND 8188-78-2017 AND ARE ZONED: PMUD, PLANNED MIXED USE DISTRICT.
  2. TITLE COMMITMENT FURNISHED BY STEWART TITLE GUARANTY COMPANY, FILE NO. 00104-1087, EFFECTIVE DATE: APRIL 29, 2015, HOWEVER ALL EASEMENTS AND ENCUMBRANCES MAY NOT BE SHOWN ON THIS PLAN.
  3. THE EXISTING BOUNDARY INFORMATION, AS SHOWN HEREON, IS TAKEN FROM A PLAT PREPARED BY THE ENGINEERING GROUPE, INC., DATED AUGUST 27, 2018.
  4. OWNER/APPLICANTS:  
TOWNSQUARE AT DUMFRIES LLC  
4915 RADFORD AVE STE 300  
RICHMOND, VA 23230  
  
TOWNSQUARE AT DUMFRIES BOND LLC  
4915 RADFORD AVE STE 300  
RICHMOND, VA 23230  
  
TOWN OF DUMFRIES  
17755 MAIN ST  
DUMFRIES, VA 22026
  5. TOPOGRAPHIC INFORMATION, AS SHOWN HEREON, IS TAKEN FROM FIELD SHOT TOPOGRAPHY, AS PREPARED BY THE ENGINEERING GROUPE, INC., DATED OCTOBER 8, 2007.
  6. THE PROPERTY SHOWN HEREON IS LOCATED WITHIN ZONE "X" (OTHER AREAS) AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 51153C0312D, EFFECTIVE DATE JANUARY 5, 1995.
  7. WETLANDS AND STREAMS ARE SHOWN HEREON IN ACCORDANCE WITH THE JURISDICTIONAL DETERMINATION PREPARED BY ANGLER ENVIRONMENTAL.



**CURVE TABLE**

CURVE	RADIUS	ARC	DELTA	TANGENT	CHORD BEARING	CHORD
C2	315.00'	123.22'	22°24'47"	62.41'	N89°12'34"E	122.44'
C3	20.00'	17.45'	49°59'41"	9.33'	N53°00'20"E	16.90'
C4	50.00'	244.34'	279°59'23"	41.96'	S11°59'49"E	64.29'
C4A	50.00'	123.33'	141°19'18"	142.46'	S81°19'52"E	94.36'
C4B	50.00'	121.01'	138°40'05"	132.56'	S58°39'50"W	93.57'
C5	20.00'	17.45'	49°59'41"	9.33'	N76°59'59"W	16.90'
C6	365.00'	142.78'	22°24'47"	72.32'	S89°12'34"W	141.87'



OLD TRIANGLE ROAD  
STATE ROUTE 1108  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 25 MPH

**The Engineering Groupe Inc.**  
Engineers | Surveyors | Planners  
www.engineeringgroupe.com  
South Office: 10333 Swarthmore Blvd, Suite 121, Woodbridge, VA 22192, PH: 703.670.0985  
West Office: 42795 Gwynn Rd, Suite 200, Ashburn, VA 20147, PH: 703.670.0985

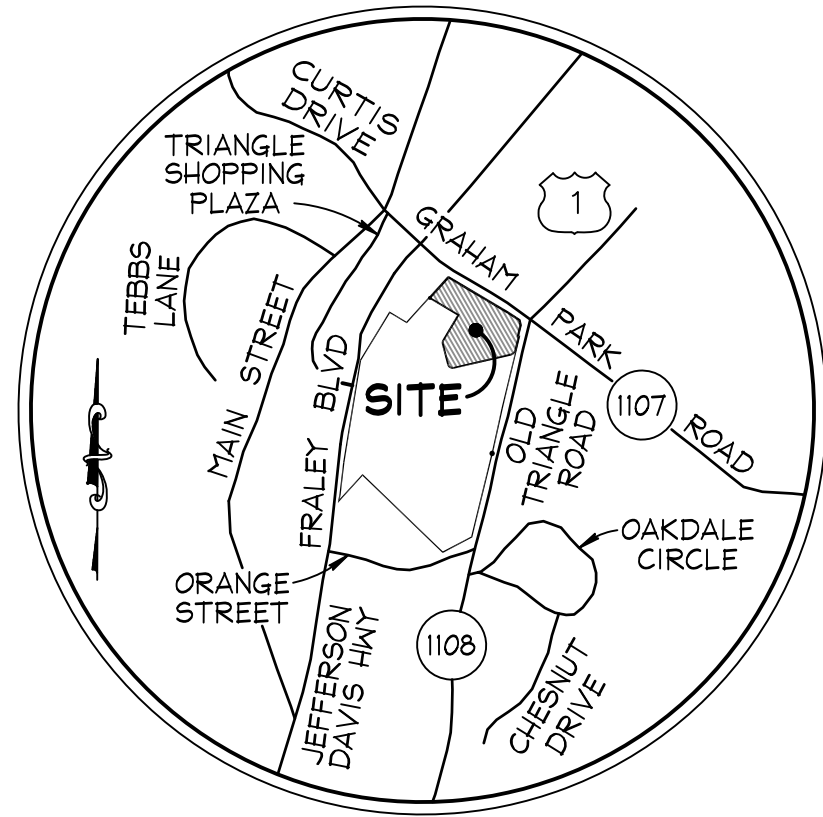
NO.	DATE	COUNTY REVISIONS

EXISTING CONDITIONS PLAN  
**TOWNSQUARE**  
MASTER ZONING PLAN AMENDMENT  
PCA 2016-001  
TOWN OF DUMFRIES, VIRGINIA

COMMONWEALTH OF VIRGINIA  
DENAR H. C. ANTELO  
Lic. No. 38680  
11/22/2021  
PROFESSIONAL ENGINEER

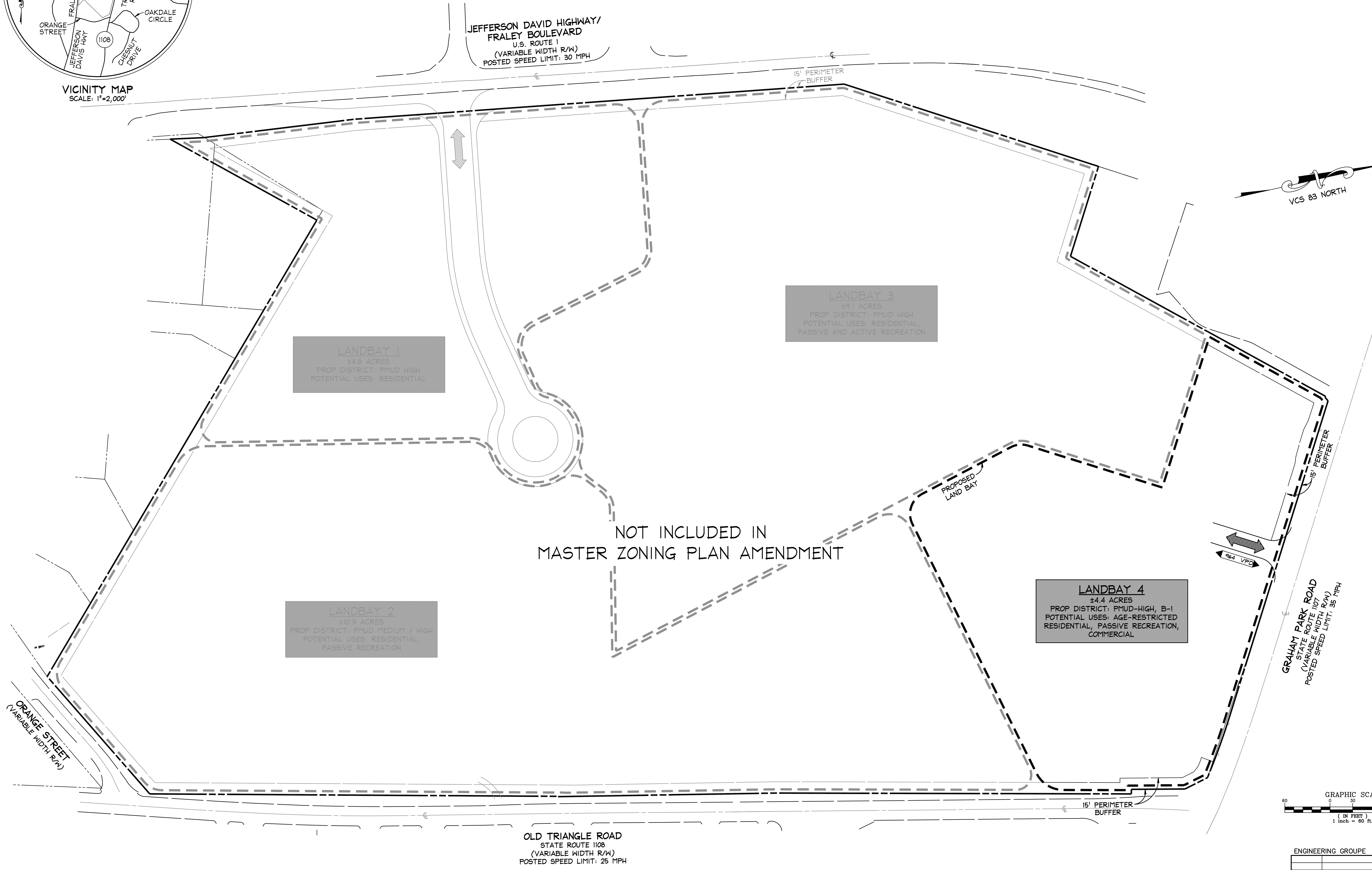
DATE	ACTION
11/30/20	REVISED PER COUNTY COMMENTS

ENGINEERING GROUPE PROJECT STATUS	DATE: OCT. 30, 2020
	SCALE: 1"=60'
	DESIGNER: DA/SO
	DRAFTSMAN: DMB
	FILE NO.: M-3209
	SHEET 2 OF 4



VICINITY MAP  
SCALE: 1"=2,000'

JEFFERSON DAVID HIGHWAY/  
FRALEY BOULEVARD  
U.S. ROUTE 1  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 30 MPH



**LANDBAY 1**  
±4.8 ACRES  
PROP DISTRICT: PMUD HIGH  
POTENTIAL USES: RESIDENTIAL

**LANDBAY 2**  
±10.3 ACRES  
PROP DISTRICT: PMUD MEDIUM / HIGH  
POTENTIAL USES: RESIDENTIAL,  
PASSIVE RECREATION

**LANDBAY 3**  
±4.1 ACRES  
PROP DISTRICT: PMUD HIGH  
POTENTIAL USES: RESIDENTIAL,  
PASSIVE AND ACTIVE RECREATION

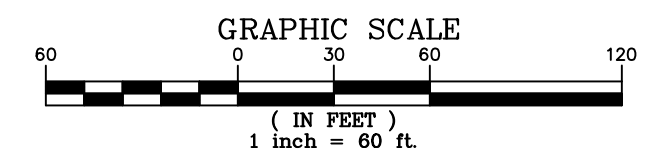
**LANDBAY 4**  
±4.4 ACRES  
PROP DISTRICT: PMUD-HIGH, B-1  
POTENTIAL USES: AGE-RESTRICTED  
RESIDENTIAL, PASSIVE RECREATION,  
COMMERCIAL

NOT INCLUDED IN  
MASTER ZONING PLAN AMENDMENT

ORANGE STREET  
(VARIABLE WIDTH R/W)

OLD TRIANGLE ROAD  
STATE ROUTE 1108  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 25 MPH

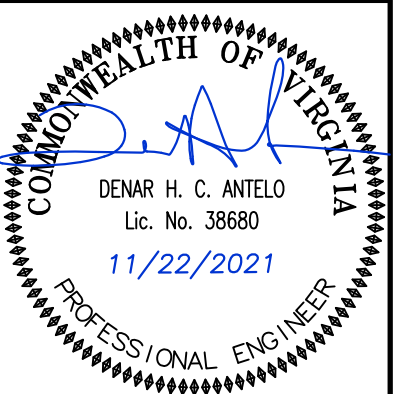
GRAHAM PARK ROAD  
STATE ROUTE 1107  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 35 MPH



**LAND BAY 4 DEVELOPMENT SUMMARY:**  
 PARCEL GPINS.....8188-79-6806,  
 8188-78-8078 (PART),  
 8188-78-4252 (PART)  
 TOTAL SITE AREA.....±4.38 AC  
 EXISTING ZONE.....PMUD  
 PROPOSED USES.....AGE-RESTRICTED MF,  
 COMMERCIAL

NO.	DATE	COUNTY REVISIONS

LAND BAY PLAN  
**TOWNSQUARE**  
MASTER ZONING PLAN AMENDMENT  
PCA 2016-001  
TOWN OF DUMFRIES, VIRGINIA



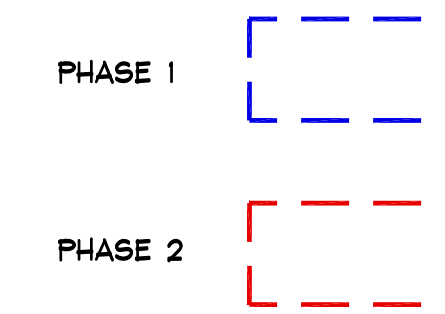
ENGINEERING GROUPE	PROJECT STATUS	DATE:
		OCT. 30, 2020
		SCALE: 1"=60'
		DESIGNER: DA/SO
		DRAFTSMAN: DMB
		FILE NO. M-3209
11/30/20	REVISED PER COUNTY COMMENTS	SHEET 3 OF 4
DATE	ACTION	

**The Engineering Groupe Inc.**  
 Engineers | Surveyors | Planners  
 www.engrgruope.com  
 South Office  
 10333 Southpoint Landing Blvd, Suite 121  
 42795 Germantown, TN 37034  
 PH: 703.670.0985  
 West Office  
 13860 Group Drive, Suite 200  
 47039 Nashville, TN 37212  
 PH: 703.670.0985

**GENERAL NOTES:**

1. THE PROPOSED LAYOUT, INCLUDING BUILDINGS, TRAVELWAYS, PARKING, AND SWM, ARE PRELIMINARY AND SUBJECT TO CHANGE WITH FINAL ENGINEERING.
2. PROPOSED LANDSCAPING SHOWN IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING. A LANDSCAPING PLAN WILL BE PROVIDED WITH THE FINAL SITE PLAN, WITH PLANTINGS SHOWN IN ACCORDANCE WITH TOWN OF DUMFRIES ORDINANCE STANDARDS. LANDSCAPED AREAS UNDER THE EXISTING POWER EASEMENT WILL BE PLANTED AS PERMITTED IN ACCORDANCE WITH THE APPROVED PLANT LIST FROM DOMINION.
3. DUMPSTERS, LOADING SPACES AND HANDICAP SPACES FOR THE OVERALL DEVELOPMENT WILL BE PROVIDED AT FINAL SITE PLAN. COMMERCIAL PARKING WILL BE SHARED WITH THE RESIDENTS.
4. SWM/BMP AREA, AS SHOWN HEREON, IS CONCEPTUAL AND SUBJECT TO CHANGE WITH FINAL ENGINEERING. ADDITIONAL AREAS OF SWM AND BMP MAY BE NECESSARY TO MEET CURRENT STORMWATER MANAGEMENT STANDARDS.

**PHASE LEGEND:**

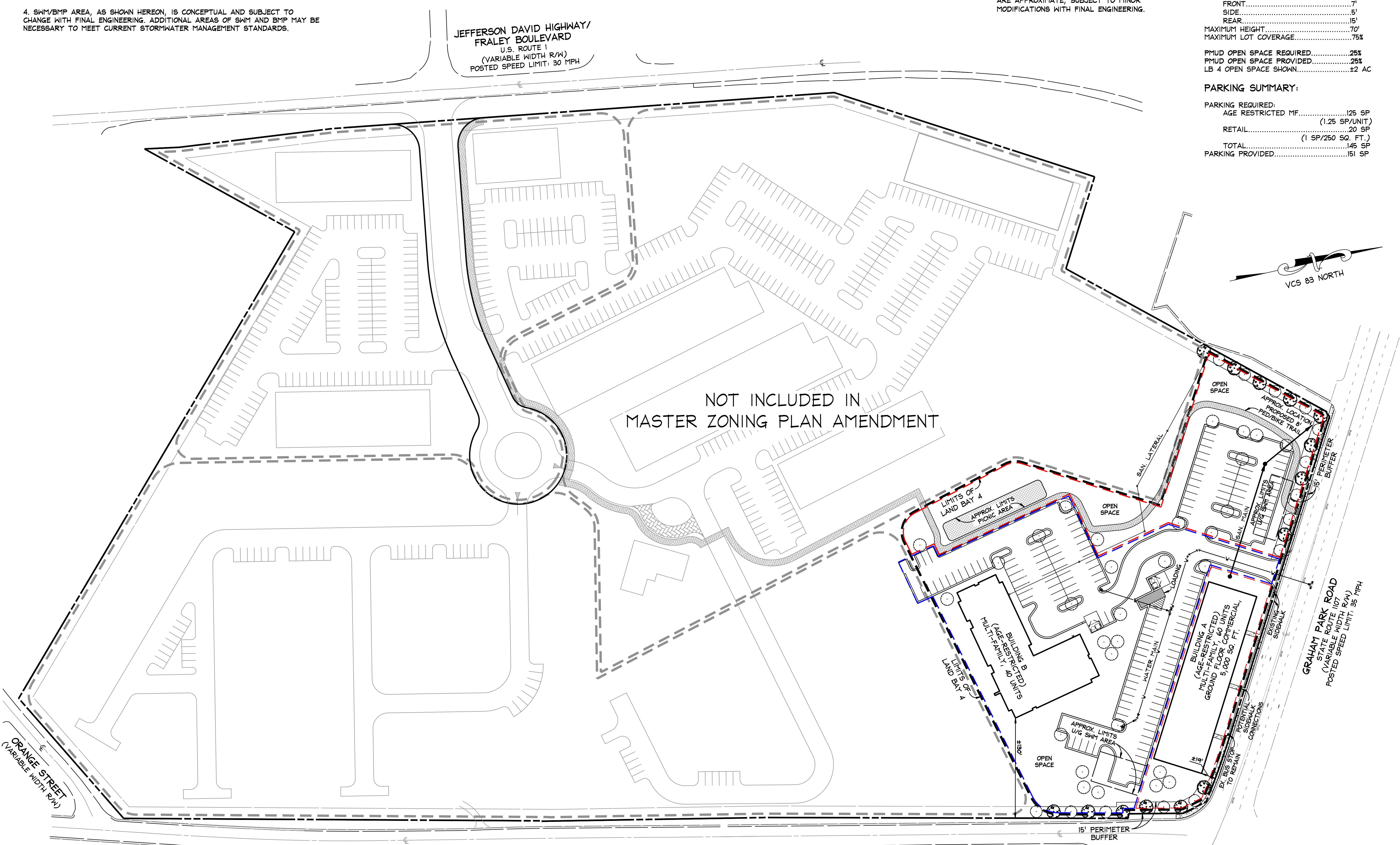


NOTE: LIMITS OF PHASES, AS SHOWN HEREON, ARE APPROXIMATE, SUBJECT TO MINOR MODIFICATIONS WITH FINAL ENGINEERING.

**LAND BAY 4 DEVELOPMENT SUMMARY:**

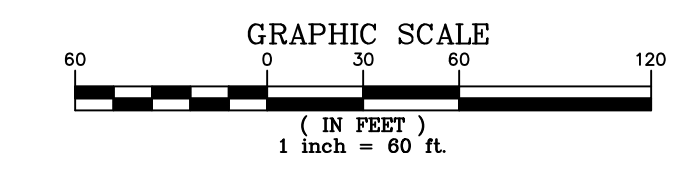
PARCEL GPINS.....	8188-79-6806, 8188-78-8078 (PART), 8188-78-4252 (PART)
TOTAL SITE AREA.....	14.38 AC
EXISTING ZONE.....	PMUD
PROPOSED USES.....	AGE-RESTRICTED MF, COMMERCIAL
TOTAL RESIDENTIAL UNITS.....	100 UNITS
APPROXIMATE COMMERCIAL AREA.....	5,000 SQ. FT.
<b>SETBACKS:</b>	
FRONT.....	7'
SIDE.....	5'
REAR.....	15'
MAXIMUM HEIGHT.....	70'
MAXIMUM LOT COVERAGE.....	75%
PMUD OPEN SPACE REQUIRED.....	25%
PMUD OPEN SPACE PROVIDED.....	25%
LB 4 OPEN SPACE SHOWN.....	12 AC
<b>PARKING SUMMARY:</b>	
PARKING REQUIRED:	
AGE RESTRICTED MF.....	125 SP (1.25 SP/UNIT)
RETAIL.....	20 SP (1 SP/250 SQ. FT.)
TOTAL.....	145 SP
PARKING PROVIDED.....	151 SP

JEFFERSON DAVID HIGHWAY/  
FRALEY BOULEVARD  
U.S. ROUTE 1  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 30 MPH



ORANGE STREET  
(VARIABLE WIDTH R/W)

OLD TRIANGLE ROAD  
STATE ROUTE 1109  
(VARIABLE WIDTH R/W)  
POSTED SPEED LIMIT: 25 MPH



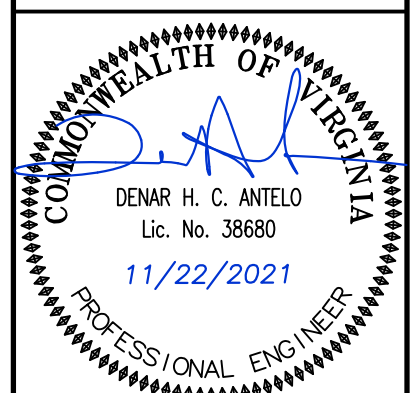
**The Engineering Group Inc.**  
Engineers | Surveyors | Planners  
www.theengineeringgroup.com  
13580 Grouse Drive, Suite 200  
Woodbridge, VA 22192  
PH: 703.670.0985

West Office  
42705 Generation Drive, Suite 200  
Ashburn, VA 20147  
PH: 703.670.0985

South Office  
10333 Southpoint Landing Blvd, Suite 121  
Fredericksburg, VA 22407  
PH: 703.670.0985

NO.	DATE	COUNTY REVISIONS

ILLUSTRATIVE / PHASING PLAN  
**TOWNSQUARE**  
MASTER ZONING PLAN AMENDMENT  
PCA 2016-001  
TOWN OF DUMFRIES, VIRGINIA



ENGINEERING GROUPE	PROJECT STATUS	DATE:	OCT. 30, 2020
		SCALE:	1"=60'
		DESIGNER:	DA/SO
		DRAFTSMAN:	DMB
11/22/21	REVISED COMMERCIAL AREA	FILE NO.:	M-3209
11/30/20	REVISED PER COUNTY COMMENTS		
DATE	ACTION	SHEET	4 OF 4

## Appendix C





## DUMFRIES, VIRGINIA

Virginia's Oldest Continuously Chartered Town  
CHARTERED 1749 INCORPORATED 1961

John Wilmer Porter Building  
17755 Main Street  
Dumfries, Virginia 22026-2386  
Tel: 703-221-3400 / Fax: 703-221-3544  
[www.dumfriesva.gov](http://www.dumfriesva.gov)

December 14, 2016

Orange Fields, LLC  
Attn: Marion Wall, Manager  
504 Broadway Street  
Quantico, VA 22134

RE: Rezoning REZ 2016-001

Dear Mr. Wall:

At a regular meeting of the Town Council on December 6, 2016, the Council **approved** Rezoning application REZ 2016-001 in the name of Orange Fields, LLC. The Council's action rezones certain property within the Town of Dumfries from the B-1 District to the PMUD (Planned Mixed Use District) to permit mixed use development. The subject properties are generally located at the southwest corner of Graham Park Road and Old Triangle Road (GPIN 8188-78-8257, 8188-77-5398, 8188-78-5384, and 8188-78-8432), on approximately 28.58 acres of land. The properties are subject to the use regulations of said PMUD, and further restricted by the conditions proffered on September 22, 2016, which are in addition to the Zoning Ordinance regulations applicable to said parcel.

Sincerely,

Nick Rogers, AICP  
Community Development Director

Enclosures

Cc: Dawn Hobgood, Town Clerk  
Gerald M. Foreman II, Acting Town Manager

Townsquare at Dumfries, LLC  
Attn: David Schultz  
4915 Radford Avenue, Suite #300  
Richmond, VA 23220

**AT A REGULAR MEETING OF THE DUMFRIES TOWN COUNCIL HELD ON DECEMBER 6, 2016, IN COUNCIL CHAMBERS, 17755 MAIN STREET, DUMFRIES, VIRGINIA: ON A MOTION DULY MADE BY MR. WOOD, AND SECONDED BY MR. FOREMAN, THE FOLLOWING ORDINANCES WAS ADOPTED BY THE FOLLOWING VOTE:**

Charles C. Brewer, yes;  
Brian K. Fields, yes;  
Gerald M. Foreman, II, yes;  
William A. Murphy, yes;  
Gwen P. Washington, absent;  
Melva P. Willis, yes;  
Derrick R. Wood, yes;

**ORDINANCE APPROVING REZONING APPLICATION REZ 2016-001, TO REZONE APPROXIMATELY 28.6 ACRES FROM R-2: GENERAL RESIDENTIAL DISTRICT TO PMUD: PLANNED MIXED USE DISTRICT**

**WHEREAS**, Orange Fields, LLC, submitted a request for a Rezoning on August 25, 2015 to rezone approximately 28.6 acres for a mixed use project of townhouses, apartments, and commercial square footage; and

**WHEREAS**, the applicant deferred review of the rezoning to allow for amendments to the Zoning Ordinance and Comprehensive Plan, which facilitated conformance with the applicant's development proposal and these important planning tools; and

**WHEREAS**, the Council amended the Comprehensive Plan's Future Land Use Map and the Zoning Ordinance on March 1, 2016 to add a Planned Mixed Use District (PMUD) that could be used by the applicant for the rezoning; and

**WHEREAS**, the Town of Dumfries Planning Commission reviewed the application at its May 9 and June 13, 2016 work sessions; and

**WHEREAS**, the Planning Commission held a duly advertised public hearing on July 11, 2016 and unanimously recommended that Town Council approve REZ 2016-001; and

**WHEREAS**, the Town Council reviewed REZ 2016-001 and the applicant's proffers as updated at its September 20, 2016 work session, and Town Council directed staff to move forward with scheduling a public hearing for the rezoning; and

**WHEREAS**, the applicant subsequently updated the proffers on September 22, 2016 with clarifying edits; and

**WHEREAS**, the Town Council held a duly advertised public hearing on November 1, 2016 on REZ 2016-001; and

**WHEREAS**, the Town Council desires to act on the basis of public necessity, convenience, general welfare, and good zoning practice.

**NOW, THEREFORE, BE IT ORDAINED** by the Council of the Town of Dumfries on November 1, 2016, that the certain parcels of land identified as GPIN 8188-78-8257, 8188-77-5398, 8188-78-5384, and 8188-78-8432 be, and hereby are, zoned to the Planned Mixed Use District (PMUD) and restricted by the conditions proffered on September 22, 2016 and accepted by the Council which conditions are in addition to the Zoning Ordinance regulations applicable to said parcel.

This ordinance shall become effective on December 6, 2016

**By Order of Council:**

  
\_\_\_\_\_  
Gerald M. Foreman, Mayor

**ATTEST:**

  
\_\_\_\_\_  
Dawn Hobgood, Town Clerk

Ordinance Number O-2016-014

**Proffer Statement**

**REZONING #2016-001**

**REZONING FROM R-2 TO PLANNED MIXED USE DISTRICT (PMUD)**

**PROJECT:** TOWNSQUARE AT DUMFRIES

**APPLICANT:** TOWNSQUARE OF DUMFRIES, LLC

**OWNER:** ORANGE FIELDS, LLC

**PROPERTY:** TAX MAP PARCELS 8188-78-5384, 8188-77-5398,  
8188-78-8432 and 8188-78-8257  
(The "Property")

**DATE:** June 6, 2016

**REVISED:** September 22, 2016

Townsquare of Dumfries, LLC (the "Applicant"), is seeking a rezoning of the above-referenced parcels (the "Property"), as further detailed in the plans described below, from the Town's R-2 zoning classification to Town's Planned Mixed Use District (PMUD) as further detailed herein. The development shall be known as **Townsquare at Dumfries** (the "Project").

The undersigned Owner of the Property, comprising approximately 28.6 acres (the "Property"), hereby proffers that the use and development of the property shall be in substantial conformance with the following conditions, which shall supersede all other proffers with respect to the Property made prior to this submission, if any. In the event this proffer statement is not accepted in connection with the rezoning as applied for by the Applicant, it shall be deemed withdrawn and void.

"Final Rezoning" as the term is used herein shall be defined as that zoning that is in effect on the day following the last day upon which the Dumfries Town Council (the "Council") decision approving this rezoning may be contested in the appropriate court or, if contested, the day following the entry of a final court order affirming the decision of the Council that has not been appealed, or, if appealed, the day following which the decision has been affirmed on appeal.

The headings on the proffers set forth below have been prepared for convenience and reference only and shall not control or affect the meaning or be taken as an interpretation of any provision of these proffers.

The term "Applicant" as referenced herein shall include Townsquare at Dumfries, LLC, and all future owners, and successors in interest to the Property that is subject to these Proffers.

**I. LAND USE, DEVELOPMENT, AND OPERATIONS:**

1. The Property shall be developed with a mix of residential and commercial uses, employing two separate and distinct entrances at Jefferson Davis Highway/Fraley Boulevard and the other from Graham Park Road, consistent with Sheet 3 of the Master PMUD Zoning Plan (“MZP”) as further proffered herein.
2. Commercial development on the Property shall be limited to a maximum of 20,000 gross square feet.
3. Not more than 105 townhouse units and 270 multifamily units, of which 40 of the multifamily units will be age-restricted to persons 55 and older may be constructed on the Property. Accessory uses and home occupations, including business centers inside the residential buildings, shall be permitted. The Applicant may construct service, resident amenity, and storage uses in the cellar space of each building, if provided, in multifamily buildings. In addition, the Applicant may construct accessory buildings (such as maintenance space) and dumpster locations.
4. The Applicant shall provide recreational facilities and amenities to serve the residents of homes constructed on the Property, including indoor and outdoor recreation facilities that may include exercise rooms, meeting rooms, and media centers, as generally shown on the MZP.
5. During the course of the development of the Property, the Applicant shall provide to the Town of Dumfries Zoning Administrator the contact information (i.e., telephone number or email address) of a developer's liaison. The role of the liaison will be to address potential citizen inquiries during site development.

**II. MASTER ZONING PLAN:**

1. Development of the Property shall be in substantial conformance with the Master PMUD Zoning Plan entitled “Master PMUD Zoning Plan for Townsquare,” prepared by The Engineering Groupe, dated March 25, 2016, as revised September 12, 2016 consisting of the following:
  - a. Land Bay Plan (sheet 3 of 4) (the “Land Bay Plan”) and
  - b. Illustrative Plan (sheet 4 of 4) (the “Illustrative Plan”)
2. Notwithstanding the foregoing, the proffered elements of the MZP shall be the entire plan set as it relates to (i) points of access, (ii) the maximum number and type of dwelling units that may be constructed, (iii) the square footage of non-residential

uses, (iv) building heights, (v) the amount and location of open space, (vi) the location of the limits of clearing and grading, (vii) uses, (viii) setbacks from peripheral lot lines, and (ix) the general location and arrangement of the buildings and parking.

3. The exact locations of buildings, amenities, road alignment, and the like are shown as general in nature and will be subject to final design and engineering criteria in concert with the Virginia Department of Transportation (“VDOT”) and any design elements required by Town or other agencies with jurisdiction. The Applicant may modify the physical layout of uses shown on the Illustrative Plan, but may not increase the total number of dwelling units or non-residential square footage authorized herein.
4. The Applicant shall maintain the existing landscaping as generally shown on the MZP along the northern boundary of the Property behind the rear lots of homes to be built. Such landscaping area may be variable in width, and tapered to conform to the lot plan at the northeast quadrant of the Property. Additional trees shall be planted within the naturally occurring open spaces along said boundary in areas adjacent to existing housing.

### III. DESIGN ELEMENTS OF THE PROJECT:

- a. **MIXED USE DESIGN:** The final building and site design (including but not limited to the total actual number of dwelling units, and the configuration of parking, landscaping, etc.) shall be determined at the time of final site/subdivision plan review. Apartment units in two, three, or four stories shall be permitted above commercial uses. Freestanding commercial and apartment uses shall also be permitted.
- b. **TOWNHOUSE DESIGN:** Townhouse units may or may not have garages. If they have garages, they may have either front or rear-entry garages. Two and three story townhouses shall be permitted. The number of floors in the townhomes shall be determined by the Applicant at the time of final building plan submittal.
- c. **FREE STANDING MULTIFAMILY DESIGN:** All multifamily buildings shall be developed as “garden-style” buildings either with or without corridors and/or elevators. Two, three, and four story apartment buildings shall be permitted. The final building and site design (including but not limited to the total number of dwelling units, number, and configuration of parking, landscaping, etc.) shall be determined at the time of final site/subdivision plan review.

- d. **SIDEWALK CONNECTIVITY:** All residential and commercial buildings will provide for interconnectivity between and among the buildings by means of sidewalks and for access to external sidewalks or trails.
- e. **ARCHITECTURAL ELEMENTS:** All buildings on the Property shall incorporate exterior front elevations that include a combination of brick and/or stone with vinyl and/or cementitious style siding or panels. All buildings featuring a front-siding elevation shall incorporate a water table of brick or stone across the front elevation, to include the area of the “return” of the side of the home, where the home is offset beyond the front plain of an adjacent unit. Any “box” or “bow” window structures shall be trimmed in a material other than siding and painted in the unit’s trim color(s) or a complimenting color(s). Flat and/or pitched roofs shall be permitted. All exterior mechanical units shall be screened from public roads with either landscaping materials or hardscape lattice made from durable materials unless the mechanical equipment is mounted on the roof of any multifamily building, in which case, the Applicant will make every effort to conceal their presence from the street view.
- f. **ENGINEERING DETAIL:** Subject to the cap on residential and non-residential development as proffered herein, the final building and site design (including but not limited to the total number of dwelling units, number, and configuration of parking, landscaping, etc.) for each residential unit type shall be determined at the time of final site/subdivision plan review.

#### IV. **CREATION OF PROPERTY AND HOMEOWNERS’ ASSOCIATIONS:**

- a. **PROPERTY OWNERS ASSOCIATION:** A community property owners’ association shall be created that shall be responsible for the operation and maintenance of the non-residential buildings, common area landscaping, recreational, and open space.
- b. **HOMEOWNERS’ ASSOCIATION:** A homeowner’s association shall be created for the townhome community that shall be responsible for the ownership, operation and maintenance aspects of the private roads, landscaping, hardscaping, and open space within the town home portion of the Townsquare community. The homeowner’s association shall be a member of the community property owners’ association.
- c. **MULTIFAMILY ASSOCIATION.** The multifamily rentals and multifamily buildings will be professionally managed and maintained. The ownership entity of the multifamily rentals shall be a member of the community property owners’ association.

- V. **CONSTRUCTION OF A BUS SHELTER:** No later than the issuance of the occupancy permit for the 200th residential unit in the Project, a three-sided public bus shelter will be constructed at the current bus stop location at the northern property line of the Property, along Graham Parkway and Old Triangle Road.
- VI. **TRANSPORTATION ACCESS:** The Project is designed to be accessed by two entrances, one from Jefferson Davis Highway/Fraley Boulevard (Route 1) as depicted on the Land Bay Plan and the second from Graham Park Road, also as depicted on the Land Bay Plan. These entrances shall be located and constructed in accordance with applicable Virginia Department of Transportation (“VDOT”) criteria for such entrances.
- a. A right turn lane from Jefferson Davis Highway (Route 1) shall be constructed in substantial conformance with the Land Bay Plan, or as may be determined at final engineering.
  - b. The entrance design from Jefferson Davis Highway/Fraley Boulevard shall include an entry boulevard, enhanced by trees to establish a sense of arrival for patrons, residents and their guests.
  - c. The entrance design from Jefferson Davis Highway/Fraley Boulevard will be a public street with five foot (5’) sidewalks and landscaping, aligned with Jefferson Davis Highway/Fraley Boulevard in accordance with proposed Richmond Highway improvements to be undertaken by the Virginia Department of Transportation (“VDOT”).
  - d. The second point of access to Land Bay 4 shall be on the northern side of the property and shall connect a portion of the property to Graham Park Road, generally as shown on the Land Bay Plan.
- VII. **LAND DEDICATION FOR A POLICE STATION:** At the time of approval of the first final subdivision or site plan for the development of the Property, the Applicant shall dedicate to the Town approximately 1.5 acres of the Property fronting Graham Park Road exclusively for the Town’s construction of a Police Station or other public facility as it may determine in its sole discretion, as generally depicted on the Illustrative Plan. The Applicant shall have no obligation to pay costs of design, site preparation, infrastructure, (including stormwater management facilities), or construction of a Police Station. The Town will not use any portion of the land so dedicated as a car or truck impound yard, jail, or gun range. A wall with landscaping shall be erected to surround and screen from public view any areas where vehicles or materials are stored. No outdoor speakers or heavy vehicle storage will be permitted.
- VIII. **EXTERIOR LIGHTING:** The development of the Property shall include street lighting along the Jefferson Davis Highway/Fraley Boulevard entrance that employs lighting



fixtures designed to project the light downward (“full cut-off” fixtures). Any pole-mounted fixtures installed within fifty (50) feet of adjacent residential properties or streets will incorporate fixtures with directional reflector systems to allow the lighting to be cast inward toward the Property.

- IX. **NOISE MITIGATION.** In order to reduce interior noise for residential dwellings anticipated to be impacted by traffic noise from Jefferson Davis Highway/Fraley Boulevard, residential dwellings located within 100 feet from Jefferson Davis Highway/Fraley Boulevard shall include sound attenuating construction methods and/or materials to help reduce interior noise to a one hour average level not to exceed 45 DBA.

X. **PROFFERS SPECIFICALLY APPLICABLE AGE-RESTRICTED HOUSING UNITS**

- a. The Applicant shall construct an age-restricted multifamily residence in the location generally shown on the MZP.
- b. Not more than 40 such residential units may be constructed.
- c. These residential units shall constitute an age-restricted community compliant with the requirements for Housing for Older Persons under federal and state law.
- d. For the purposes of these Proffers and in order to conform to the requirements of state and federal law with respect to age-restricted residential occupancy, such residential units shall be occupied in accordance with the following:
  - i. Except to the extent otherwise prohibited by the Virginia Fair Housing Law, the Federal Fair Housing Amendments Act, or other applicable federal, state, or local legal requirements, 100 percent of the age-restricted dwelling units designated on the MZP shall be restricted to “Housing for Older Persons” as defined in Va. Code Ann. § 36-96.7 and 42 U.S.C. § 3607 for persons aged 55 and older, or by a surviving spouse as provided herein, as those statutes are in effect or may be amended hereafter, and pursuant to any state or federal regulations promulgated thereunder,.
  - ii. All other residents of such dwellings than those specified above must be a spouse, a cohabitant, or one who provides primary physical or economic support to the person who is 55 years of age or older. No children under the age of 18 shall be permitted to reside permanently in such a home.
  - iii. Notwithstanding the foregoing limitation, any person hired to provide live-in, long term or terminal health care to a person 55 years of age or older for compensation may also occupy a dwelling during the time such person is actually providing such care.

- iv. Guests under the age of 55 are permitted to reside in a unit for periods not to exceed thirty (30) days total for each such guest in any rolling twelve-month period.
- v. If such units are subjected to a condominium regime under Virginia law and sold as opposed to rented, title to any lot or unit shall become vested in any person under the age of 55 by reason of descent, distribution, foreclosure, or operation of law, the age restriction covenant shall not work a forfeiture or reversion of title, but rather, such person thus taking title shall not reside in such unit until he or she shall have attained the age of 55. Notwithstanding this, the surviving spouse of a qualifying person shall be allowed to continue to occupy a dwelling unit without regard to age.
- vi. The homeowners' association for age-restricted dwellings shall have responsibility for the enforcement and administration of these requirements and for compliance with state and federal regulations pertaining thereto, without limitation as to the authority of the Town of Dumfries to enforce these proffers. These occupancy restrictions shall be deemed amended from time to time without further action by the Town, if required to conform to applicable state and federal law and regulations governing such age-restricted housing.

SIGNATURES APPEAR ON FOLLOWING PAGES

Orange Fields LLC

By: Marion Wall  
Name: Marion Wall  
Title: Manager

# MASTER PMUD ZONING PLAN

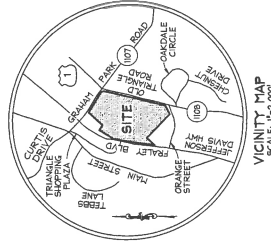
## FOR TOWNSQUARE THE TOWN OF DUMFRIES, VIRGINIA

### SUBJECT PROPERTIES TO BE REZONED:

THE SUBJECT PROPERTIES ARE IDENTIFIED BY THE FOLLOWING GPNS:

RECORD OWNER	AREA	CURRENT ZONING
8185-76-5384	10.16 AC	R-2
8185-77-5396	9.84 AC	R-2
8185-78-5357	4.81 AC	R-2

TOTAL AREA TO BE REZONED: **+28.57 AC**



### SHEET INDEX:

TITLE	SHEET NO.
COVER SHEET	1
EXISTING CONDITIONS PLAN	2
LAND BAY PLAN	3
ILLUSTRATIVE PLAN	4

### OWNER/APPLICANT:

ORANGE FIELDS LLC  
501 BROADWAY STREET  
QUANTICO, VA 22134  
  
COMMUNITY HOUSING PARTNERS  
4915 RADFORD AVENUE, SUITE 300  
RICHMOND, VA 23220  
(804) 948-7201

### LAND USE ATTORNEY:

WALSH, COLLUCCI  
LUBRELEY & WALSH, P.C.  
4810 PRINCE WILLIAM PARKWAY  
WOODBRIDGE, VA 22192  
(703) 690-4664  
(703) 690-6067 (FAX)

### ENGINEER:

THE ENGINEERING GROUPE, INC.  
13580 GROUPE DRIVE, SUITE 301  
WOODBRIDGE, VA 22152  
(703) 670-6985  
(703) 670-7769 (FAX)



COVER SHEET  
TOWNSQUARE  
ORANGE FIELDS PROPERTIES  
TOWN OF DUMFRIES  
VIRGINIA

NO.	DATE	COUNTY REVISIONS

**The Engineering Groupe, Inc.**  
Engineers | Surveyors | Planners  
General Office: www.enggroupe.com  
13580 Groupe Drive, Suite 301  
Woodbridge, VA 22152  
PH: 703.670.6985    FX: 703.670.7769  
South Office:  
4936 Southgate Parkway  
Ft. Belvoir, VA 22077  
PH: 540.710.5887    FX: 540.710.5988

ENGINEERING GROUPE PROJECT STATUS	DATE: MARCH 25, 2018
SCALE: 1"=60'	
DESIGNER: DAJ/SO	
DRAWN: DMG	
FILE NO.: 18-0209	
DATE:	
SHEET: 1 OF 4	

NO.	DATE	COUNTY REVISIONS

**TOWNSQUARE**  
 EXISTING CONDITIONS PLAN  
 ORANGE FIELDS PROPERTIES  
 EXISTING CONDITIONS PLAN  
 VIRGINIA



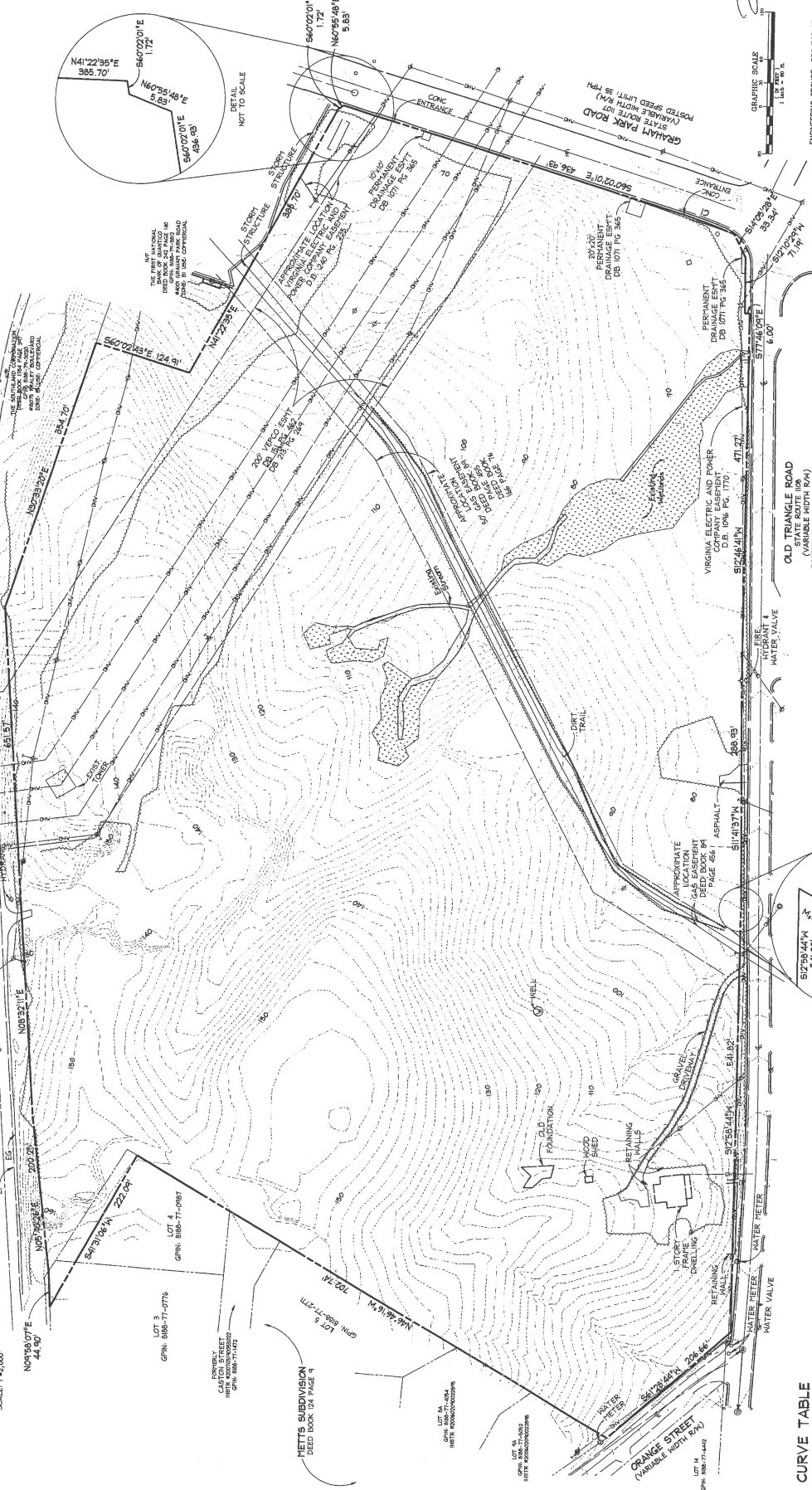
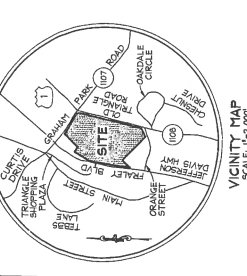
DATE	MARCH 25, 2016
SCALE	AS SHOWN
DRAWN	DMB
CHECKED	DMB
FILE NO.	M-3209
SHEET	2 OF 4

- NOTES:**
1. ALL PROPERTIES IDENTIFIED ON THIS PLAN ARE REFERENCED ON THE PRINCE WILLIAM COUNTY TAX ASSESSMENT MAP DESIGNATED AS SPIN 1884-77-8996, ZONED R-2, GENERAL RESIDENTIAL DISTRICT.
  2. OWNER: ORANGE FIELDS, LLC  
 504 BROADWAY STREET  
 SUITE 100  
 RICHMOND, VA 23220
  3. APPLICANT: CONANT, INC. (DRAINAGE PARTNERS)  
 400 RAINBOW AVENUE, SUITE 300  
 RICHMOND, VA 23220
  4. THE EXISTING BOUNDARY INFORMATION, AS SHOWN HEREON, IS BASED ON THE 2007 AERIAL PHOTOGRAPHY AND FIELD SURVEY CONDUCTED BY THE ENGINEERING GROUP, INC., DATED MAY 10, 2007.
  5. TOPOGRAPHIC INFORMATION, AS SHOWN HEREON, IS TAKEN FROM FIELD SHOT TOPOGRAPHY, AS PREPARED BY THE ENGINEERING GROUP, INC., DATED OCTOBER 6, 2007.
  6. THE PROPERTY SHOWN HEREON IS LOCATED WITHIN ZONE 100-YEAR FLOODPLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 580302D, EFFECTIVE DATE JANUARY 5, 1996.
  7. WETLANDS AND STREAMS ARE SHOWN HEREON IN ACCORDANCE WITH THE REGULATORY DETERMINATION PREPARED BY ANGLER ENVIRONMENTAL.

PROPERTY IDENTIFIED ON THIS PLAN ARE REFERENCED ON THE PRINCE WILLIAM COUNTY TAX ASSESSMENT MAP DESIGNATED AS SPIN 1884-77-8996, ZONED R-2, GENERAL RESIDENTIAL DISTRICT.

OWNER: ORANGE FIELDS, LLC  
 504 BROADWAY STREET  
 SUITE 100  
 RICHMOND, VA 23220

APPLICANT: CONANT, INC. (DRAINAGE PARTNERS)  
 400 RAINBOW AVENUE, SUITE 300  
 RICHMOND, VA 23220



**CURVE TABLE**

CURVE	RADIUS	ARC	DELTA	TAN	BEARING	CHORD
C1	986.50'	87.62'	5°05'19"	49.54'	55°72'22"E	87.59'









## **AGENDA ITEM REQUEST FORM**

### **Item Type**

Award     Proclamation     Resolution/Ordinance     Motion     Discussion

### **Statement of Purpose**

Consideration of a Resolution Amending Town Council Rules of Procedure Section 3-3

### **Background/References**

N/A

### **Fiscal Impact**

N/A

### **Suggested Motion**

Adoption of Resolution Amending Town Council Rules of Procedure Section 3-3

### **Requested Meeting Date**

March 1, 2022

### **Attachments**

- [DUMFRIES TOWN COUNCIL RULES OF PROCEDURE ADOPTED 11921 w. options for change 2.2.2022.pdf](#)



**RULES OF PROCEDURE**  
**TOWN COUNCIL – TOWN OF DUMFRIES, VIRGINIA**

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Town Council 2021-2023

Tyrone A. Brown

Brian K. Fields

Selonia B. Miles

Cydny A. Neville

Monae' S. Nickerson

Shaun R. Peet

Derrick R. Wood

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Adopted: January 19, 2021

## SECTION 1 - INTRODUCTION

The Rules of Procedure are intended to ensure that the Town of Dumfries Town Council can transact business in an efficient and expeditious manner, while providing means for citizens to observe and participate. Additionally, the Rules of Procedure seek to encourage the spirit of collaboration while protecting individual rights of members.

The Rules of Procedure are intended to be reviewed and adopted by each new Council following an election at the first meeting of Town Council in January.

*Nothing contained in the Rules of Procedure shall supersede the Town Charter, Town Code or applicable provisions of federal, state, and local law.*

## SECTION 2 – MEETINGS

### Section 2-1. Council Meeting Calendar

The Town Council gives notice of and holds meetings in accordance with the Virginia Freedom of Information Act (“FOIA”), Va. Code §§ 2.2-3700, *et seq.*

The Council shall adopt the Council Meeting schedule each year at the first meeting of the Council. Meetings of the Town Council are held on the first and third Tuesday of each month, at 7:00 p.m., except where otherwise noted.

Notice of Regular Meetings shall be posted three (3) working days prior to the meeting as required by FOIA.

All Meetings of Council, including Regular, Special and Emergency Meetings and work sessions, etc., are open to the public for observation and participation, in-person, on the local access PEG Channel, and/or accessible from the official Town website and official Town media outlets.

### Section 2-2. Special Meetings

Special Meetings may be scheduled by the Mayor or; any two (2) members of Town Council, upon written notice to the Town Manager. No business shall transacted during a special meeting other than that which is specifically called for in the notice, unless the Town Council agrees unanimously to consider such action.

Notice of Special Meetings shall be reasonable under the circumstance and be given contemporaneously with the notice provided to members of the Town Council.

### Section 2-3. Emergency Meetings

Emergency Meetings are those which are due to an unforeseen circumstance rendering the notice required by FOIA impossible or impracticable and which circumstance requires immediate action.

Emergency Meetings may be scheduled by the Mayor or; any two (2) members of Town Council, upon written notice to the Town Manager. No business shall be transacted during

an emergency meeting other than that which is specifically called for in the notice, unless the Town Council agrees unanimously to consider such action.

Notice of Emergency Meetings shall be reasonable under the circumstance and be given contemporaneously with the notice provided to members of the Town Council.

#### Section 2-4. Organizational Meeting

At the first meeting of a new Council following an election, Town Council shall select from its membership one member to serve as a Vice-Mayor.

Additionally, at this meeting, members shall be designated to serve as members of or liaisons to committees, boards and multi-jurisdictional entities.

### SECTION 3 – PRESERVATION OF ORDER, VOTING AND ELECTRONIC MEETINGS

#### Section 3-1. Preservation of Order

- A. At meetings of the Town Council, the Mayor (and the Vice Mayor in the absence of the Mayor) shall serve as the Presiding Officer and shall preserve order and decorum and decide on questions of order. Council members shall keep discussion germane to the subject. Points of clarification shall be limited to questions only. Members that transgress the Rules of Procedure shall be called to order by the Presiding Officer.
- B. The Town Attorney shall serve as Parliamentarian for meetings of the Town Council.
- C. The Presiding Officer has the authority to call a brief recess at any time. Unless there is an emergency, no member of the Town Council shall leave the Council Chamber while the Council is in regular meeting without the permission of the Presiding Officer, which permission shall not be unreasonably withheld.
- D. In an emergency, the Presiding Officer may adjourn the meeting without the Council's vote or appeal.
- E. Whenever a question arises as to the proper interpretation of a rule of procedure, or in the absence of a rule governing a point of procedure, the Presiding Officer shall consult with the Parliamentarian prior to ruling.
- F. No member of the Town Council shall speak more than once on the same question until every member choosing to speak shall have done so, or for a longer time than 10 minutes on any question, without the express permission of the Council.
- G. When two or more members of the Town Council wish to speak at the same time, the Presiding Officer shall name the member to speak first.
- H. The rules of parliamentary procedure set forth in the current edition of Robert's Rules of Order shall govern the conduct of meetings of Council, except where otherwise specified.
- I. All comments shall be directed to the Presiding Officer who shall first recognize the speaker before the speaker proceeds to make any comments.

### Section 3-2. Abstention from a Vote

If a member abstains from a vote, it shall be the responsibility of the Town Clerk to note the abstention.

Members abstaining due to a conflict of interest shall do so in accordance with the Virginia Conflict of Interests Act ("COIA"), Va. Code §§ 2.2-3100, *et seq.* The Town Attorney is available to assist members in complying; however, compliance responsibility remains that of the member.

### Section 3-3. Participation by Remote Electronic Communication

The Council believes that it is very important for Council members to attend Council meetings in person.

~~Pursuant to Va. Code § 2.2-3708.2 or as otherwise set forth in the Code of Virginia, members of Town Council may participate in a Town Council meeting through electronic means, subject to the conditions and requirements of this statute.~~

~~Any member seeking to participate electronically shall notify the Mayor and Town Attorney at least 24 hours in advance of the scheduled meeting to ensure compliance with applicable Virginia Code sections. The member shall be provided web-based access to the meeting or, if acceptable to the member, access by telephone. (moved to below)~~

Members individually or the Council itself under certain emergencies may participate in Council meetings through electronic communication means pursuant to the provisions of this section. In such cases, notice and public access shall be given in accordance with the respective provisions of the Virginia Freedom of Information Act ("FOIA").

#### A. Individual Member Requesting Remote Electronic Participation

Pursuant to Va. Code § 2.2-3708.2 or as otherwise set forth in the Code of Virginia, members of Town Council may participate in a Town Council meeting through electronic means, subject to the conditions and requirements of this statute.

Any member seeking to participate electronically shall notify the Mayor ~~and Town Attorney~~ at least 24 hours in advance of the scheduled meeting to ensure compliance with applicable Virginia Code sections.\* ~~The member shall be provided web-based access to the meeting or, if acceptable to the member, access by telephone.~~

In order to participate electronically, the member must be unable to attend the meeting due to:

1. A temporary or permanent disability or other medical condition that prevents the member's physical presence or a family member's medical condition that requires the member to provide care for such family member, thereby preventing the member's physical attendance; or

2. A personal matter and identifies with specificity the nature of the personal matter which shall be included in the meeting minutes. Participation by member pursuant to this subsection is limited to absence of two (2) meetings per calendar year or 25% of

the meetings held per calendar year rounded up to the next whole number, whichever is greater.

In addition for the foregoing electronic participation to occur, a physical quorum of Council shall otherwise be present, and Council shall make arrangements for the voice of the remote participating member to be heard by all persons at the Council meeting location.

This policy shall be applied strictly and uniformly, without exception, to the entire membership and without regard to the identity of the member requesting remote participation or the matters to be considered or voted on at the meeting. The Council members present at the subject meeting must approve or disapprove the member's request to participate remotely by a majority vote. Electronic participation from a remote location shall be approved unless such participation violates this section or Va. Code § 2.2-3708.2. If a request is disapproved because such participation would violate the policy or Va. Code § 2.2-3708.2, such disapproval shall be recorded in the meeting minutes with specificity.

If remote participation is approved, the member participating remotely shall be provided web-based access to the open meeting or, if acceptable to the member, access by telephone.\*\* The member participating remotely shall be provided access to closed meetings by telephone and only if the member certifies that the member is in a location that ensures that the confidentiality of closed meeting will not be breached or violated.

#### B. Meeting by Electronic Participation to Conduct Business During a Declared State of Emergency

Council may meet by electronic communication means without a quorum of the Council physically assembled in one location when the Governor, Prince William County or the Town has declared a State of Emergency in accordance with Va. Code § 44-146.17 or § 44-146.21, respectively, provided that:

1. The catastrophic nature of the declared emergency makes it impracticable or unsafe for the Council to assemble a quorum in a single location;
2. The purpose of the meeting is to provide for the continuity of operations of the Town or Council or the discharge of its lawful purposes, duties and responsibilities;
3. A recording or transcript of the meeting is available on the Council website in accordance with the timeframes in Va. Code § 2.2-3707; and
4. The Council makes arrangements for public access to such meeting through electronic communication means, including videoconferencing if used by the Council, and the Council provides the public with the opportunity to comment at those meetings, when public comment is customarily received, either virtually or in writing to be provided to the Council prior to or at the meeting.

#### C. Reflecting Remote Participation in the Meeting Minutes

1. Pursuant to Va. Code § 2.2-3708.2, the meeting minutes will reflect the member who participated remotely pursuant to subsection (A) above and the location of the remote participation. If the member participated remotely pursuant to subsection (A)(1) above, the fact that the member's physical attendance was prevented due to a temporary or permanent disability or other medical condition shall be noted in the meeting minutes. If the member participated remotely pursuant subsection (A)(2) above, the minutes shall also include the specific nature of the personal matter cited by the member.
2. In the instance of electronic participation during a Governor, County or Town Declared State of Emergency pursuant to subsection (B) above, the meeting minutes will also state the nature of the emergency, the fact that the meeting was held by electronic communication means and the type of electronic communication means by which the meeting was held.

#### SECTION 4 – THE AGENDA

##### Section 4-1. Publishing the Agenda and Meeting Materials

Under the direction of the Town Manager, the Town Clerk shall be responsible for the publication of agendas for all noticed and scheduled meetings of the Town Council pursuant to all applicable public notice laws, including but not limited to FOIA. Meeting agendas shall be published no less than three (3) business days in advance of the Council Meeting date.

##### Section 4-2. Requests for Legislation & Agenda Items

- A. The Town Manager shall prepare a proposed agenda to review with the Mayor prior to the scheduled Town Council meeting.
- B. Any Council Member who would like to request legislation and/or agenda items shall submit a completed Agenda Item Request Form (*Attachment A*). Requests for legislation shall be submitted at least 30 days prior to the advertised meeting date. Requests for Proclamations shall be submitted at least seven (7) days prior to the advertised meeting date.

When items requested by Council Members appear on the agenda, the agenda shall identify the Council Member making the request. Minutes and press releases about the agenda item shall also identify the Council Member who requested the item.

- C. The Town Manager shall create and maintain an Agenda Item Submission Calendar (*Attachment B*) to depict submission timeframes.

## SECTION 5 – ORDER OF BUSINESS FOR COUNCIL MEETINGS

### Section 5-1. Order of Business

A. The order of business for regular meetings of the Town Council shall be as follows:

- I. Call to Order  
The presiding officer calls the meeting to order to begin the meeting and directs the Town Clerk to call the roll of Council members.
- II. Prayer and Pledge of Allegiance  
The Prayer may be delivered by a named guest or the Council may pause for a moment of silent prayer and reflection. The Pledge of Allegiance to the flag of the United States of America shall immediately follow the Prayer.
- III. Adoption of the Agenda  
The Presiding Officer will call for a roll call vote to adopt the agenda before the Council. At this time, amendments may be proposed by members of Council and the Town Manager. The Presiding Officer shall make rulings on any requests for additional items in a manner that ensures order and successful transaction of business. Requests from Council Members to introduce legislation shall not be permitted at this time.
- IV. Awards & Proclamations  
Only awards and proclamations of the Mayor and Town Council shall be presented at this time. Recipients/ honorees shall be allowed to address the Council as part of the presentation. At their final meeting of service, members will be provided a proclamation and plaque.
- V. Approval of Minutes  
Minutes from previous meeting(s) will be before Council for a vote of approval.
- VI. Citizen Comment Period  
Citizens are allowed no more than three (3) minutes to speak on any topic not on the agenda. Citizens shall refrain from using threats, language of a personal nature which insults or demeans any person, Council and other elected officials and staff, acting in their official capacity. No response to Citizen Comments from Town Council or staff shall be provided at this time. The Town Clerk shall publish and maintain guidelines for Citizen Comment including advance sign-up procedures.
- VII. Mayor & Council Comments  
At the first meeting of the month, the Mayor and Council members are allowed no more than five (5) minutes, respectively, to make comments of personal privilege. Members shall refrain from using language of a personal nature

which insults or demeans any person, including other members of Council and staff, acting in their official capacity; campaigning for public office; and, debating action items.

VIII. Reports & Presentations

This portion of the agenda is reserved for Reports and Presentations from various groups, including but not limited to, regional partners, other government parties, boards, and commissions. At the second meeting of the month (where applicable), the Town Manager shall submit a *Town Manager's Report* to be included with the meeting materials. This portion of the agenda shall also be reserved for staff presentations on specific topic areas.

A Treasurer's report shall be provided to Council by the 15<sup>th</sup> of the month, and the Treasurer shall make a presentation to Council quarterly.

IX. Introduction Items

This portion of the agenda shall include ordinances or resolutions that are added to the public record for action and/or public hearing at a future meeting of the Council. At the time of introduction, these items may be referred to advisory bodies of the Council. Debate shall not be permissible for Introduction Items, other than Point of Order inquiries, and should be raised during Adoption of the Agenda. The Town Clerk shall read Introduction Items into the record, including public hearing dates and referrals when applicable.

X. Action Items

This portion of the agenda shall include items for public hearing and/or Council vote.

XI. Adjournment

Meeting may be adjourned by Presiding Officer or motioned by any member.

Section 5-2. Worksessions

Votes will not be taken at worksessions.

Section 5-3. Closed Meetings

- A. Generally, pursuant to FOIA, all meetings of public bodies must be open to the public. If the Council wants to hold a closed meeting, it must follow an established process to convene in closed meeting. Matters which qualify for closed meeting include, but are not limited to, the following:
- Personnel matters such as appointment and evaluation of performance of specific officers, appointees or employees of the Council;
  - Acquisition of real property for a public purpose or disposition of public property;



- A prospective business or industry or expansion of existing business or industry where no previous announcement has been made;
- Investment of public funds where competition or bargaining is involved;
- Consultation with legal counsel and staff pertaining to actual or probable litigation;
- Consultation with legal counsel regarding a specific legal matter requiring legal advice.

It is important that members who desire that a matter be discussed in closed meeting timely identify that matter to the Mayor and Town Attorney in advance of the Council meeting so that the Town Attorney can ascertain whether the matter qualifies for closed meeting and prepares the necessary language for the motion.

- B. The Council must pass a motion in open session that does the following:
1. Identifies the subject matter of the closed meeting;
  2. States the purpose of the closed meeting; and
  3. Makes specific reference to the FOIA statutory exemptions relied on to close the meeting.

Once in a closed meeting, only the matters stated in the motion shall be discussed. The Town Manager and Town Attorney shall convene with the Council in closed meeting unless their presence would adversely impact the discussion of the closed meeting matter(s).

- C. Following a closed meeting the Council must reconvene in open session and certify that only the matters identified in the motion were discussed.

#### Section 5-4. Quorum

- A. As provided by Va. Code § 15.2-1415, a majority of the members of the Council must be present to conduct business. “Quorum” refers to the number of members required to be present to conduct a Council meeting, not the number of members voting on an issue. If no quorum is present or if a quorum is lost, the Council can only (i) adjourn, (ii) recess, or (iii) take steps to obtain a quorum.
- B. For the transaction of business, a quorum shall constitute four (4) members of the Town Council.
- C. If a quorum is not present at any meeting, those attending may adjourn to such other time prior to the next regular meeting as they may determine, and the Town Clerk shall record such adjournment in the meeting minutes and shall notify absent members in the same manner as required for special meetings.

#### Section 5-5. Improper Conduct of Public

The Presiding Officer may call for the expulsion and subsequent banning from Council Chambers of persons for disruptive behavior or any works or action(s) which incite violence

or disorder, subject to appeal to Council. Any person so expelled shall not be readmitted for the remainder of the meeting from which they are expelled. Any person, who has been so expelled and who at a later meeting again engages in words or actions justifying expulsion, may also be barred from attendance at future meetings, subject to appeal to Council.

#### SECTION 6 – AMENDING THE RULES OF PROCEDURE

These rules of procedure shall be adopted by resolution. Subsequent amendments shall also be made by resolution of the Town Council.

Attachments:

Attachment A – Agenda Item Request Form

Attachment B – Agenda Item Submission Calendar



**ATTACHMENT A**  
**AGENDA ITEM REQUEST FORM**

Item Type

Award     Proclamation     Resolution/Ordinance     Motion     Discussion

Statement of Purpose

Background/References

Fiscal Impact

Suggested Motion

Requested Meeting Date

Attachments

- *For awards and proclamations, please attach desired language*

## **ATTACHMENT B**

### **Agenda Item Submission Calendar**

Meeting Date (Introduction Date*)	Agenda Advertisement Deadline	Legislation Submission Deadline	Proclamation Submission Deadline
January 5, 2021			
January 19, 2021	January 13, 2021	December 13, 2020	January 6, 2021
February 2, 2021	January 28, 2021	December 28, 2020	January 21, 2021
February 16, 2021	February 11, 2021	January 11, 2021	February 4, 2021
March 2, 2021	February 25, 2021	January 25, 2021	February 18, 2021
March 16, 2021	March 11, 2021	February 11, 2021	March 4, 2021
April 6, 2021	April 1, 2021	March 1, 2021	March 25, 2021
April 20, 2021	April 15, 2021	March 15, 2021	April 8, 2021
May 4, 2021	April 29, 2021	March 29, 2021	April 21, 2021
May 18, 2021	May 13, 2021	April 13, 2021	May 6, 2021
June 1, 2021	May 27, 2021	April 27, 2021	May 21, 2021
June 15, 2021	June 10, 2021	May 10, 2021	June 3, 2021
July 6, 2021	June 30, 2021	May 30, 2021	June 23, 2021
August 4, 2021 (Wednesday)	July 30, 2021	June 30, 2021	July 23, 2021
September 7, 2021	September 2, 2021	August 2, 2021	August 26, 2021
September 21, 2021	September 16, 2021	August 16, 2021	September 9, 2021
October 6, 2021 (Wednesday)	October 1, 2021	September 1, 2021	September 24, 2021
October 19, 2021	October 14, 2021	September 14, 2021	October 7, 2021
November 3, 2021 (Wednesday)	October 27, 2021	September 27, 2021	October 20, 2021
November 16, 2021	November 10, 2021	October 10, 2021	November 3, 2021
December 7, 2021	December 2, 2021	November 2, 2021	November 24, 2021

*\*Ordinances shall not be introduced and voted on at the same meeting, except for Emergency Ordinances.*



## **AGENDA ITEM REQUEST FORM**

### **Item Type**

Award     Proclamation     Resolution/Ordinance     Motion     Discussion

### **Statement of Purpose**

Resolution Authorizing the Town Manager to Advertise Public Hearing on the Conditional Use Application, CUP2022-001, Pooch Purrfect Pet Spa - Public Hearing Date: March 15, 2022

### **Background/References**

N/A

### **Fiscal Impact**

N/A

### **Suggested Motion**

Approve resolution to authorize Public Hearing for CUP2022-001

### **Requested Meeting Date**

March 1, 2022

### **Attachments**

- [2022-03-01 CUP22-001 Public Hearing Authorization.pdf](#)

**AT A REGULAR MEETING OF THE DUMFRIES TOWN COUNCIL HELD ON ON MARCH 1, 2022: ON A MOTION DULY MADE BY \_\_\_\_\_, AND SECONDED BY \_\_\_\_\_, THE FOLLOWING RESOLUTION WAS ADOPTED BY THE FOLLOWING VOTE:**

Tyrone A. Brown, \_\_\_\_\_;  
Brian K. Fields, \_\_\_\_\_;  
Selonia B. Miles, \_\_\_\_\_;  
Cydney A. Neville, \_\_\_\_\_;  
Monae S. Nickerson, \_\_\_\_\_;  
Shaun R. Peet, \_\_\_\_\_;  
Derrick R. Wood, \_\_\_\_\_;

**RESOLUTION AUTHORIZING THE TOWN MANAGER TO ADVERTISE PUBLIC HEARINGS ON CONDITIONAL USE APPLICATION, CUP2022-001, POOCH PURRFECT PET SPA, FILED FOR 17742 MAIN STREET.**

**WHEREAS**, a Conditional Use Permit (CUP2022-001) was filed by Pooch Purrfect Pet Spa and

**WHEREAS**, the Town Council desires the Department of Planning and Community Development to provide a staff report and recommendation to the Planning Commission and to the Town Council for CUP2022-001; and

**WHEREAS**, the Town Council desires CUP2022-001 be forwarded to the Planning Commission for public hearing, review and recommendation to Town Council; and

**WHEREAS**, pursuant to the requirements in the Town Code and all other applicable laws, the Town Council further desires to deliberate upon and review CUP2022-001 and provide the public the opportunity to be heard on the application.

**NOW, THEREFORE, BE IT RESOLVED** by Town Council that the Town Manager is authorized to advertise for public hearings to consider an action on conditional permit application CUP2022-001 before the Planning Commission and Town Council, respectively.

**By Order of Council:**

\_\_\_\_\_  
Derrick R. Wood, Mayor

**ATTEST:**

\_\_\_\_\_  
Tangi R. Hill, Town Clerk

**MOTION:**

**MEETING DATE: March 1, 2022**

**SECOND:**

**RE: AUTHORIZE CLOSED MEETING**

**WHEREAS**, the Town Council of the Town of Dumfries desires to discuss in closed meeting the following matter(s):

1. One personnel matter relating to the performance evaluation of the Town Manager (Va. Code §2.2-3711.A.1);

**WHEREAS**, pursuant to Va. Code §§2.2-3711.A.1, such discussion(s) may occur in closed meeting;

**NOW, THEREFORE, BE IT RESOLVED** that the Town Council of the Town of Dumfries does hereby authorize discussion of the aforestated matter(s) in closed meeting.

**VOTE**

**AYES:**

**NAYS:**

**ABSTAIN:**

**ABSENT:**

**MOTION:**

**MEETING DATE: March 1, 2021**

**SECOND:**

**RE: CERTIFICATION OF CLOSED MEETING**

**WHEREAS**, the Town Council of the Town of Dumfries has convened in closed meeting on this date pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

**WHEREAS**, Va. Code §2.2-3712 requires a certification by the Town Council that such closed meeting was conducted in conformity with Virginia law;

**NOW, THEREFORE, BE IT RESOLVED** that the Town Council of the Town of Dumfries hereby certifies that, to the best of each member's knowledge, (i) only public business matters lawfully exempted from open meeting requirements by Virginia law were discussed in the closed meeting to which this certification resolution applies, and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the Town Council.

**VOTE**

**AYES:**

**NAYS:**

**ABSTAIN:**

**ABSENT:**