BEAN KINNEY & KORMAN PC
ATTORNEYS

2311 WILSON BOULEVARD
5TH FLOOR
ARLINGTON, VA 22201
PHONE 703.525.4000
FAX 703.525.2207

Timothy Dugan
Admitted: VA, MD and DC
Mobile: 301-922-4504
Office: (703) 526-5583
tdugan@beankinney.com

June 29, 2022
MEMORANDUM

Hand Delivered[1]

TO:	Matt Arcieri	Greg Bokan
	Dorothy Baker	Christian Samples
CC:	Christian Engel	Josie Engel
	Maureen Wiechert	Saeed Dornajafi
	Mike Kitchen	Garrett Brown
	Eric Bogumil	Laurie Beth Donnachie
	Chris Lemon	Kevin Sitzman
	Niraja Chandrapu	
FROM:	Timothy Dugan TD	
RE:	Special Use Permit Application Applicant: Edugenius US Real Estate Group, LLC Tillett Hall, 9522 Fairview Avenue, City of Manassas, Virginia 20110	

On behalf of the Applicant, Edugenius US Real Estate Group, LLC, a Virginia limited liability company, the Applicant, and with the permission of the Owners, we are submitting the following materials in support of the Special Use Permit Application.

[1] Delivered to the temporary address at: 9800 Godwin Drive, Manassas, VA 20110.

Row #	Description	# hard Copies to Manassas
1)	$500 Application Fee	1
2)	Fee schedule	1
3)	Completed Special Use Permit Application Form (Original and one copy)	2
4)	Applicant's Notarized Conflict of Interest Affidavit (Original and one copy)	2
5)	Owners' Notarized Conflict of Interest Affidavit (Original and one copy)	2
6)	Owners' Special Limited Power of Attorney Appointing Timothy Dugan, Esq. (Original and one copy)	2
7)	Architectural renderings providing full-color, four-sided architecture and exterior finishes for any new construction or alteration, including building elevations, signage, fencing and dumpster enclosures. Note: The Applicant was advised that the City Planning Staff will provide the architectural renderings from the plans submitted in the course of the applications with the Architectural Review Board's considerations of the concept/massing and the materials applications for certificates of appropriateness. Please advise if we may provide any additional information.	From ARB files
8)	As for site features, *i.e.*, fencing, dumpster and signs, the Applicant's application for an ARB certificate of appropriateness has not been filed. The SUP Application plans: (1) include a notation about fencing, Sheet C300; (2) refer to the ARB COA for signage shown on the rendered elevations, Sheet C000; and (3) include a notation about the dumpster location to be determined, Sheet C300.	
9)	Traffic impact analysis, economic impact analysis, and environmental studies. • A traffic impact analysis will be submitted under a separate cover, after this initial application submittal, in early July 2022. The traffic counts have been submitted already. • There is no economic impact analysis. • Environmental studies associated with tree preservation and stormwater management are included among the Application materials within the GDP plans.	
10)	Generalized Development Plan (GDP) showing all existing and proposed improvements to demonstrate compliance with zoning and DCSM and mitigate negative impacts of the proposed use.	15
	C000 Cover Sheet	
	C100 Existing Conditions Plan	
	C200 Tree Preservation Plan	
	C300 Layout	
	C400 Conceptual Landscape Plan	
	C500 Utility Layout	
11)	11"x17" reductions of the GDP	1

Row #	Description	# hard Copies to Manassas
12)	A written narrative Statement of Justification describing: The proposed use as it relates to the Comprehensive Plan, Operational conditions and special conditions proposed to minimize the impact of the use on surrounding properties. Attachments are also included.	15
13)	Thumb drive containing electronic files of all documents included in the submission	1
14)	Requests for waivers or modifications from the City's Design and Construction Standards Manual (DCSM) must be filed, including filing fee, with the Development Services Division concurrent with the submission of a special use permit application and approved prior to the case being scheduled for public hearing. = None noted.	
15)	April 19, 2022 Architectural Review Board Concept/Massing Certificate of Appropriateness and Supporting Materials	15
16)	May 19, 2022 Architectural Review Board Materials Certificate of Appropriateness and Supporting Materials	15

Thank you for your consideration. Please call with your comments, questions and instructions. Thank you.

CITY OF
MANASSAS, VIRGINIA

Community Development · 9800 Godwin Drive, Manassas, VA 20110 · 703-257-8223

SUP #: 2023-0001

DATE: 6/30/2022
(Completed by City Staff)

SPECIAL USE PERMIT APPLICATION

Site Address: 9522 Fairview Ave. Manassas, VA 20110
Street

Tax Map No(s): 100-01-00-202

Site Acreage: _____ Zoning District: R-1

Comprehensive Plan Designation: _____

Proposed Use: Please see attached.

☐ This is an amendment to existing SUP #: _____

APPLICANT

Please see attached.
Name (Please Print)

Signature

Address

City State Zip Code

Phone # Fax #

E-mail Address

OWNER

(Leave Blank if Same as Applicant)

Please see attached.
Name

Company

Address

City State Zip Code

Phone # Fax #

E-mail Address

ATTACHMENT TO SPECIAL USE PERMIT

Description of Proposed Work
The Applicant wishes to develop a child care center in Phase 1 and an elementary school in Phase 2. Tillet Hall would be used for the school's administrative offices.

OWNER:

Karen E Phillips, Trustee

Karen E. Phillips, Trustee of the Kenneth F. Parsons Revocable Trust under agreement
dated August 9, 2011, as amended on
February 24, 2015 and on January 1, 2021

Karen E Phillips, Trustee

Karen E. Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement
dated August 9, 2011, as amended on
February 24, 2015

R. Scott Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement
dated August 9, 2011, as amended on
February 24, 2015

Please contact the agent for the Owners:
Christopher M. Malone, Esq.
Thompson McMullan P.C.
100 Shockoe Slip, Third Floor
Richmond, Virginia 23219
email: cmalone@t-mlaw.com
Office: (804) 698-6231
Fax: (804) 780-1813

APPLICANT:

EDUGENIUS US REAL ESTATE GROUP, LLC, a Virginia limited liability company

By: _____
Josefine Engel-Banks, Manager

Please contact the agent for the Applicant:
Timothy Dugan, Esq.
Bean, Kinney & Korman, P.C.
2311 Wilson Boulevard, 5th Floor
Arlington, VA 22201
email: tdugan@beankinney.com
Office: 703-526-5583
Fax: 703-525-2207

County of Arlington
Commonwealth of Virginia
This foregoing instrument was acknowledged before me
this 24 day of June, 2022
by Ja'Naiya Augustus
_____ Notary Public
Commission Exp. 07/31/2026 Registration # 7996367

JA'NAIYA LASHAE AUGUSTUS
Notary Public
Commonwealth of Virginia
My Comm. Expires 07/31/2026
Reg. #7996367

CASE #__2023-0001___
(Completed by City Staff)

CITY OF MANASSAS, VIRGINIA

Community Development · 9800 Godwin Drive, Manassas, VA 20110 · 703-257-8223

CONFLICT OF INTEREST AFFIDAVIT

STATE OF _____

_____ of _____, to wit:

Tax Map No. 100-01-00-202

Property Address: 9522 Fairview Avenue, City of Manassas, Virginia 20110

I hereby certify that no member of the City Council or the Planning Commission of the City of Manassas, Virginia, has any interest in the above property, either individually, by ownership of stock in a corporation owning such land, or partnership, or as a holder of ten percent (10%) 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.

Josefine Engel-Banks, Manager	APPLICANT, EDUGENIUS US REAL ESTATE GROU PLLC, a Virginia limited liability company
Name of Representative	Company Name
434-466-2212	2319 S. Joyce Street Arlington, Virginia 22202
Telephone	Address

Signature of Representative

STATE OF Virginia

COUNTY OF Arlington

I, Ja'Naiya Augustus, a Notary Public in and for the State and County aforesaid, do hereby certify that Josefine Engel-Banks, Manager whose name is signed to the foregoing, this day personally appeared before me in my State and County aforesaid and acknowledged the same.

Given under my hand this 24 day of June, 2022.

Ja'naiya Augustus
Notary Public

My Commission expires: 07/31/2026 ID: 7996367

JA'NAIYA LASHAE AUGUSTUS
Notary Public
Commonwealth of Virginia
My Comm. Expires 07/31/2026
Reg. #7996367

Revised December 2021

CASE #2023-0001__
(Completed by City Staff)

CITY OF
MANASSAS, VIRGINIA

Community Development · 9800 Godwin Drive, Manassas, VA 20110 · 703-257-8223

CONFLICT OF INTEREST AFFIDAVIT

STATE OF _____

_____ of _____, to wit:

Tax Map No. 100-01-00-202

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Please see attached.
Name of Representative

Trustees of the Kenneth F. Parsons Revocable Trust and the Kathleen E. Parsons Revocable Trust. Please see attached.
Company Name

_____
Telephone

_____
Address

_____
Signature of Representative

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public in and for the State and County aforesaid, do hereby certify that _____ whose name is signed to the foregoing, this day personally appeared before me in my State and County aforesaid and acknowledged the same.

Given under my hand this _____ day of _____, 20____.

_____
Notary Public

My Commission expires: _____ ID: _____

ATTACHMENT TO OWNERS' CONFLICT OF INTEREST AFFIDAVIT
SPECIAL USE PERMIT
OWNERS SIGNATURES
Tax Map Number: 100-01-00-202

OWNER:

Karen E Phillips, Trustee

Karen E. Phillips, Trustee of the Kenneth F. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015 and on January 1, 2021

STATE OF VIRGINIA
CITY ~~COUNTY~~ OF RICHMOND

I, Patricia Femiani, a Notary Public in and for the State and County aforesaid, do hereby certify that KAREN E. PHILLIPS whose name is signed to the foregoing, this day personally appeared before me in my State and County aforesaid and acknowledged the same.

Given under my hand this 15th day of June, 2022.

Patricia Femiani
Notary Public

My Commission expires: 4/30/2023 ID: 274952

PATRICIA FEMIANI
NOTARY PUBLIC
REG #274952
MY COMMISSION EXPIRES
4/30/2023
COMMONWEALTH OF VIRGINIA

Karen E Phillips, Trustee

Karen E. Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015

STATE OF VIRGINIA
CITY ~~COUNTY~~ OF RICHMOND

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Notary Public

My Commission expires: 4/30/2023 ID: 274952

PATRICIA FEMIANI
NOTARY PUBLIC
REG #274952
MY COMMISSION EXPIRES
4/30/2023
COMMONWEALTH OF VIRGINIA

R. Scott Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015

STATE OF VIRGINIA
CITY/~~COUNTY~~ OF RICHMOND

I, Patricia Femiani, a Notary Public in and for the State and County aforesaid, do hereby certify that R. SCOTT PHILLIPS whose name is signed to the foregoing, this day personally appeared before me in my State and County aforesaid and acknowledged the same.

Given under my hand this 15th day of June, 2022.

Patricia Femiani
Notary Public

My Commission expires: 4/30/2023 ID: 274952

PATRICIA FEMIANI
NOTARY PUBLIC
REG. #274952
MY COMMISSION EXPIRES
4/30/2023
COMMONWEALTH OF VIRGINIA

CASE #__2022-0001___
(Completed by City Staff)

CITY OF
MANASSAS, VIRGINIA

Community Development · 9800 Godwin Drive, Manassas, VA 20110 · 703-257-8223

SPECIAL/LIMITED POWER OF ATTORNEY

THIS _____ day of _____, 20 22, I, Please see attached., the owner of Tax Map Number 100-01-00-202, make, constitute and appoint Timothy Dugan, my true and lawful attorney-in-fact, and in my name, place and stead giving unto said Timothy Dugan full power and authority to do and perform all acts and make all representation necessary, without any limitation whatsoever, to make application for **(circle one) (Special Use Permit), (Rezoning), (Architectural Review Board), (Board of Zoning Appeals)** in connection with the above described real property.

The right, powers and authority of said attorney-in-fact herein granted shall commence and be in full force and effect on _____, 20_____, and shall remain in full force and effect thereafter until actual notice, by certified mail, return receipt requested is received by the Office of Community Development of the City of Manassas stating that the terms of this power have been revoked or modified.

Owner's Name (Please Print)

Please see the attached owner's signature pages.

Owner's Signature

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public in and for the State and County aforesaid, do hereby certify that _____ whose name is signed to the foregoing, this day personally appeared before me in my State and County aforesaid and acknowledged the same.

Given under my hand this _____ day of _____, 20_____.

_____

Notary Public

My Commission expires: _____ ID: _____

ATTACHMENT TO SPECIAL/LIMITED POWER OF ATTORNEY
SPECIAL USE PERMIT
OWNERS SIGNATURES
Tax Map Number: 100-01-00-202

OWNER:

Karen E Phillips, Trustee

Karen E. Phillips, Trustee of the Kenneth F. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015 and on January 1, 2021

STATE OF VIRGINIA
CITY ~~COUNTY~~ OF RICHMOND

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Patricia Femiani
Notary Public

My Commission expires: 4/30/2023 ID: 274952

PATRICIA FEMIANI
NOTARY PUBLIC
REG. #274952
MY COMMISSION EXPIRES
4/30/2023
COMMONWEALTH OF VIRGINIA

ATTACHMENT TO SPECIAL/LIMITED POWER OF ATTORNEY
SPECIAL USE PERMIT
OWNERS SIGNATURES
Tax Map Number: 100-01-00-202

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4/30/2023
COMMONWEALTH OF VIRGINIA

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4/30/2023
COMMONWEALTH OF VIRGINIA

R. Scott Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015

STATE OF VIRGINIA
CITY ~~COUNTY~~ OF RICHMOND

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Notary Public

My Commission expires: 4/30/2023 ID: 274952

PATRICIA FEMIANI
NOTARY PUBLIC
REG. #274952
MY COMMISSION EXPIRES
4/30/2023
COMMONWEALTH OF VIRGINIA

GENERAL DEVELOPMENT PLAN
CASE #: TBD

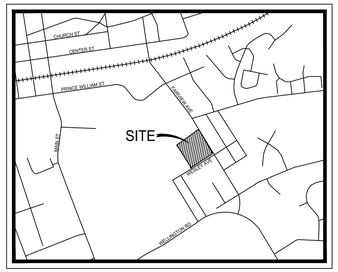
EDUGENIUS
CITY OF MANASSAS, VIRGINIA

NOTES

THIS IS A SUP FOR A CHILD CARE CENTER AND ELEMENTARY SCHOOL. THE SUBMISSION PACKAGE CONTAINED HEREIN INCLUDES A GENERAL DEVELOPMENT PLAN (GDP).

NOTES

1. THE PROPERTIES SHOWN HEREON ARE IDENTIFIED ON THE CITY OF MANASSAS, VIRGINIA GEOGRAPHIC INFORMATION SYSTEM, AS MAP:#100-01-00-202.
2. THE PROPERTIES SHOWN HEREON ARE CURRENTLY IN THE NAMES OF KENNETH F PARSONS AND KAREN E PHILLIPS TRUSTEES, RECORDED AT INSTRUMENT #2015052600040422 AMONG THE LAND RECORDS OF PRINCE WILLIAM COUNTY.
3. GROSS SITE AREA: 145,055 SQ. FT. OR 3.33 ACRES.
4. CURRENT ZONING R-1: LOW DENSITY. THE SUBJECT PROPERTY IS WITHIN THE HISTORIC OVERLAY DISTRICT.
5. EXISTING USE: MIXED USES MDL-94
6. THE BOUNDARY AND TOPOGRAPHICAL INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY BY christopher consultants ON NOVEMBER 23, 2021.
7. TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THERE ARE NO GRAVES OR BURIAL SITES LOCATED ON THE PROPERTY.
8. TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THERE ARE NO HAZARDOUS OR TOXIC SUBSTANCES ON THE PROPERTY.
9. THE PROPERTY SHOWN HEREON LIES WITHIN A ZONE 'X', AN AREA TO BE DETERMINED TO BE OUTSIDE A 500 YEAR FLOODPLAIN, AS DELINEATED ON FLOOD INSURANCE RATE MAP NO. 51153C0177D, DATED JANUARY 5, 1995.
10. TO THE BEST KNOWLEDGE OF THE ENGINEER AND DEVELOPER, THIS GDP CONFORMS TO APPLICABLE ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, UNLESS OTHERWISE SPECIFICALLY NOTED.
11. NO ADVERSE EFFECTS TO NEIGHBORING PROPERTIES ARE ANTICIPATED WITH THIS DEVELOPMENT.
12. PROPOSED SIGNAGE WILL CONFORM TO ARTICLE IV OF THE ZONING ORDINANCE AND THE HISTORIC DISTRICT DESIGN GUIDELINES PURSUANT TO THE ARCHITECTURAL REVIEW BOARD'S CERTIFICATE OF APPROPIATENESS FOR SITE FEATURES.
13. THE SUBJECT PROPERTY IS WITHIN ONE-HALF MILE OF AN ACTIVE RAILROAD LINE. THIS WILL BE DISCLOSED TO FUTURE PROPERTY OWNERS.
14. ALL LIGHTING ALONG PUBLIC STREETS WILL BE IN CONFORMANCE WITH THE DCSM, THE COMPREHENSIVE PLAN AND THE HISTORIC DISTRICT DESIGN GUIDELINES.



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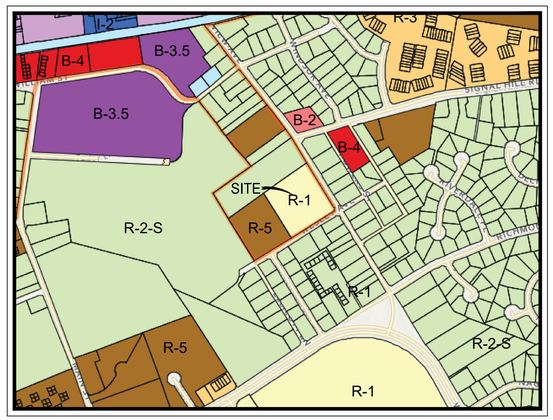
GRAPHIC SCALE
1" = 1000'



500 250 0 500 1000
GRAPHIC SCALE
1"=500'

SHEET INDEX	
C000	COVER SHEET
C100	EXISTING CONDITIONS
C200	TREE CONSERVATION PLAN
C300	LAYOUT
C400	CONCEPTUAL LANDSCAPE PLAN
C500	UTILITY LAYOUT

OWNER
KENNETH F PARSONS, TRUSTEE AND KAREN E PHILLIPS, TRUSTEES
14319 DUMFRIES ROAD
MANASSAS, VA 20112

APPLICANT
EDUGENIUS US REAL ESTATE GROUP LLC
2319 S JOYCE STREET
ARLINGTON, VA 22202

ATTORNEY
BEAN KINNEY & KORMAN
C/O TIMOTHY DUGAN
2311 WILSON BLVD., SUITE 500
ARLINGTON, VIRGINIA 22201

CIVIL ENGINEER / LAND PLANNING
christopher consultants, ltd.
C/O CHRIS LEMON, P.E.
9301 INNOVATION DRIVE, SUITE 150
MANASSAS, VIRGINIA 20110

christopher consultants
9301 innovation dr suite 150 manassas, va 20110
p 703.393.9887
engineering • surveying • land planning

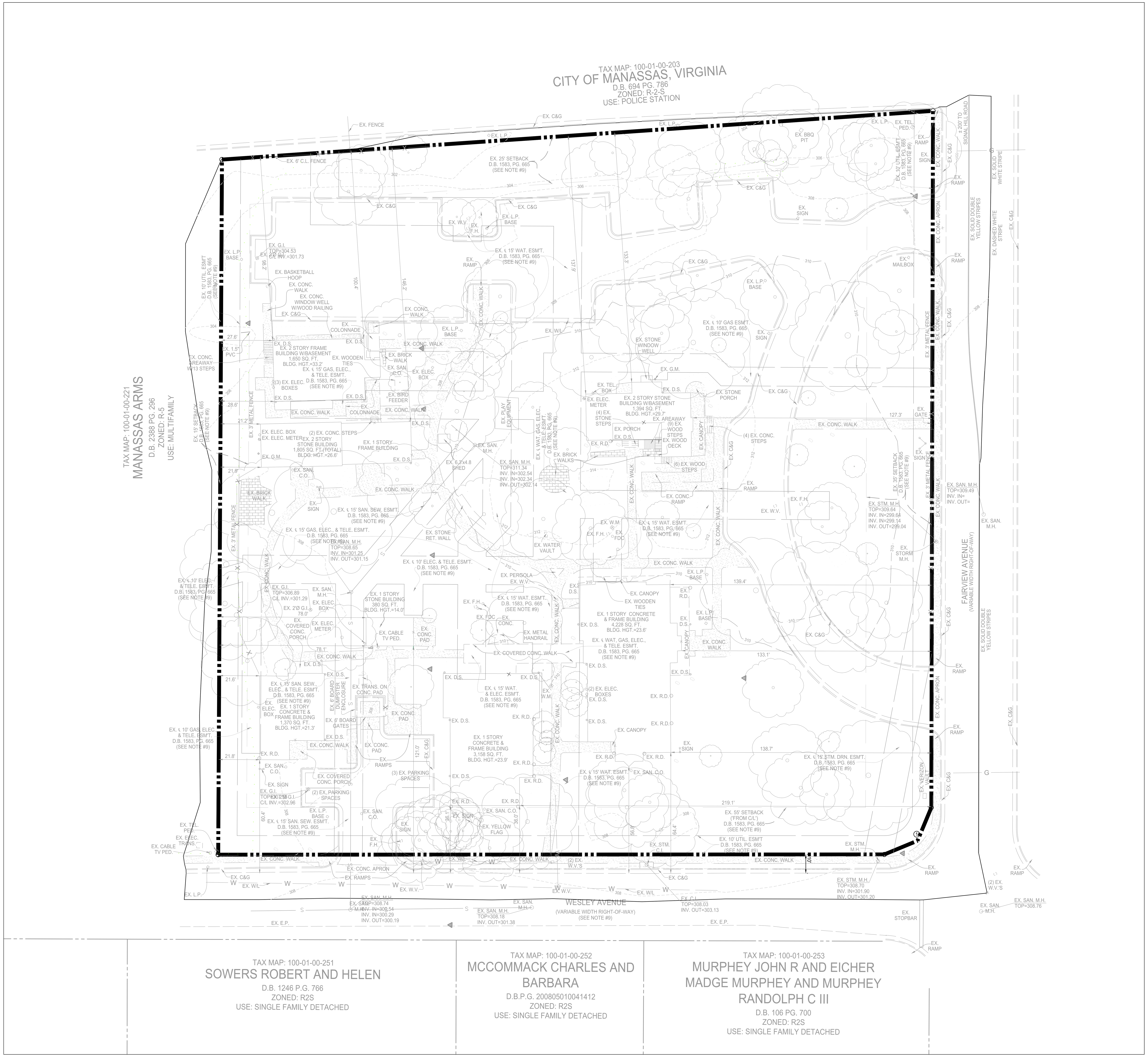
EDUGENIUS
GENERAL DEVELOPMENT PLAN
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 21361.001.00
DRAWING No.: 111720
DATE: 6/28/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:
COVER SHEET

SHEET No.
C000



LEGEND

- PROPERTY BOUNDARY / AREA OF APPLICATION
- EXISTING CONTOUR
- EXISTING FENCING
- EXISTING ADJACENT BOUNDARIES
- EXISTING SIGN
- EXISTING CURB
- EXISTING WATER LINE
- EXISTING SEWER LINE

NOTES:

1. SEE TREE PRESERVATION PLAN FOR MORE DETAIL OF SPECIMEN TREES ON SITE.

OWNERSHIP TABLE

TAX MAP	OWNER	ADDRESS	INSTRUMENT NUMBER	ZONING	ACREAGE
100-01-00-202	KENNETH AND KAREN PARSONS	9522 FAIRVIEW AVENUE	201505260040422	R1	3.33

VIRGINIA STATE GRID NORTH
NAD 83

25 12.5 0 25 50
GRAPHIC SCALE
1" = 25'

christopher consultants
9301 innovation dr
suite 150
manassas, va 20110
p 703.393.9887
engineering • surveying • land planning

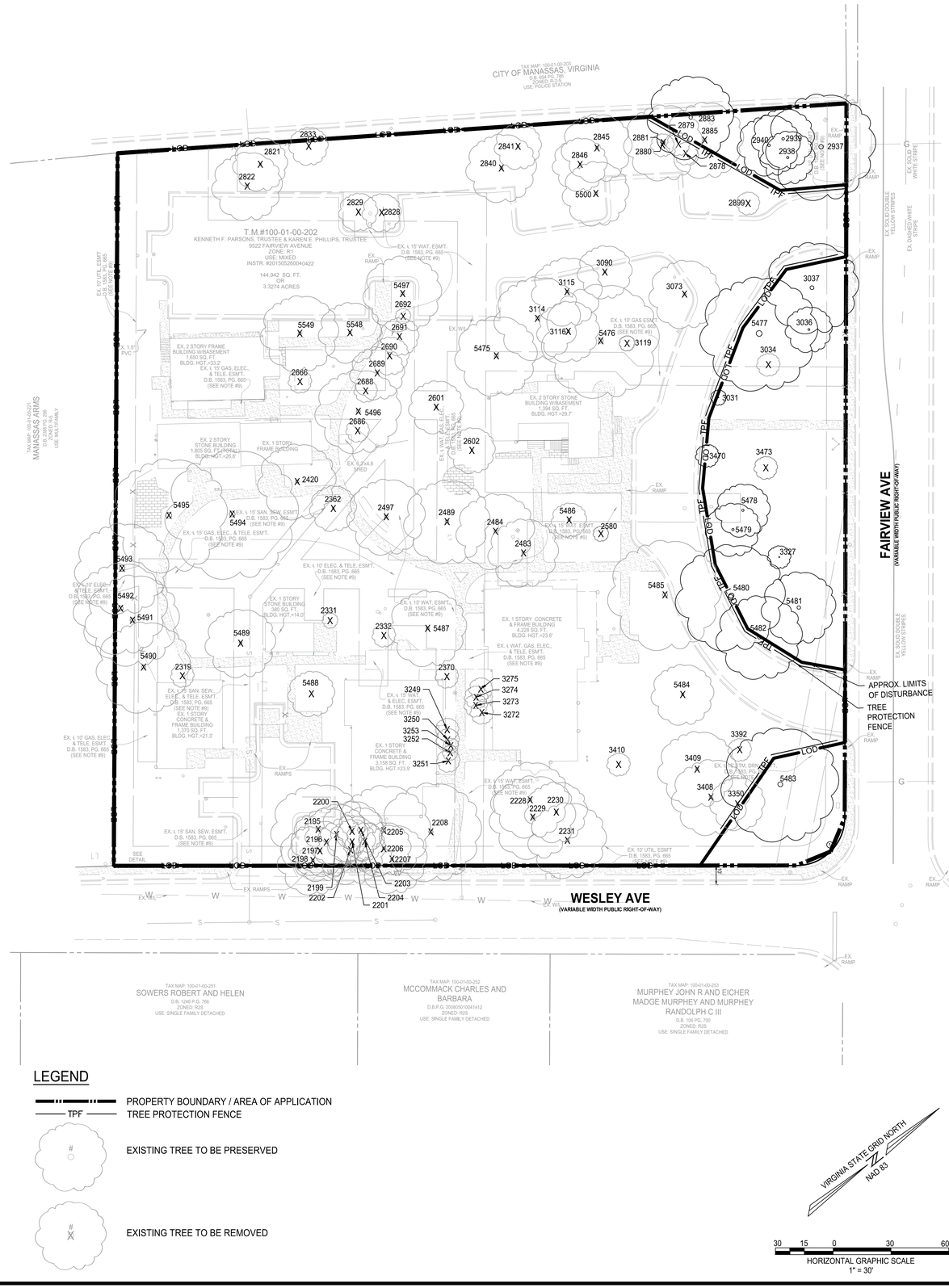
EDUGENIUS
GENERAL DEVELOPMENT PLAN
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 21361.001.00
DRAWING No.: 111720
DATE: 6/28/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:
EXISTING CONDITIONS PLAN

SHEET No.
C100



LEGEND

PROPERTY BOUNDARY / AREA OF APPLICATION

TPF — TREE PROTECTION FENCE

EXISTING TREE TO BE PRESERVED

EXISTING TREE TO BE REMOVED

VIRGINIA STATE GRID NORTH
NAD 83

30 15 0 30 60
HORIZONTAL GRAPHIC SCALE
1" = 30'

TREE PRESERVATION SCHEDULE

TREE TAG #	SURVEY TREE #	BOTANICAL NAME	COMMON NAME	CRITICAL ROOT ZONE RADIUS (FEET)	TRUNK DIAMETER (INCHES)	CONDITION RATING	PROCEDURE
	2195	*PINUS STROBUS*	WHITE PINE	24	24	71	REMOVE
	2196	*PINUS STROBUS*	WHITE PINE	18	18	73	REMOVE
	2197	*PINUS STROBUS*	WHITE PINE	16	16	68	REMOVE
	2198	*PINUS STROBUS*	WHITE PINE	18	18	71	REMOVE
	2199	*PINUS STROBUS*	WHITE PINE	16	16	74	REMOVE
	2200	*PINUS STROBUS*	WHITE PINE	16	16	68	REMOVE
	2201	*PINUS STROBUS*	WHITE PINE	12	12	74	REMOVE
	2202	*PINUS STROBUS*	WHITE PINE	18	18	70	REMOVE
	2203	*PINUS STROBUS*	WHITE PINE	12	12	74	REMOVE
	2204	*PINUS STROBUS*	WHITE PINE	10	10	75	REMOVE
	2205	*PINUS STROBUS*	WHITE PINE	24	24	75	REMOVE
	2206	*PINUS STROBUS*	WHITE PINE	14	14	75	REMOVE
	2207	*PINUS STROBUS*	WHITE PINE	18	18	74	REMOVE
	2208	*PINUS STROBUS*	WHITE PINE	26	26	74	REMOVE
	2228	*PINUS STROBUS*	WHITE PINE	20	20	74	REMOVE
	2229	*PINUS STROBUS*	WHITE PINE	22	22	72	REMOVE
	2230	*PINUS STROBUS*	WHITE PINE	16	16	71	REMOVE
	2231	*PICEA ABIES*	NORWAY SPRUCE	4	4	75	REMOVE
5488	2314	*ACER PALMATUM*	JAPANESE MAPLE	12	12	68	REMOVE
5489	2318	*ACER SACCHARUM*	SUGAR MAPLE	19	19	74	REMOVE
	2319	*ILEX OPACA*	AMERICAN HOLLY	6	6	72	REMOVE
	2331	*PRUNUS SEROTINA*	BLACK CHERRY	4	4	70	REMOVE
	2332	*PRUNUS SEROTINA*	BLACK CHERRY	8	8	70	REMOVE
5487	2333	*ACER SACCHARUM*	SUGAR MAPLE	20	20	70	REMOVE
	2362	*CEDRUS ATLANTICA*	ATLAS CEDAR	12	12	73	REMOVE
5494	2363	*ACER SACCHARUM*	SUGAR MAPLE	34	34	65	REMOVE
	2370	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	2420	*PYRUS CALLERYANA*	CALLERY PEAR	20	20	65	REMOVE
5495	2426	*ACER SACCHARUM*	SUGAR MAPLE	30	30	73	REMOVE
	2483	*CERCIS CANADENSIS*	EASTERN REDBUD	18	18	65	REMOVE
	2484	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	20	20	71	REMOVE
	2489	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	22	22	72	REMOVE
	2497	*PYRUS CALLERYANA*	CALLERY PEAR	20	20	70	REMOVE
	2580	*ACER PALMATUM*	JAPANESE MAPLE	4	4	74	REMOVE
5486	2581	*ACER PALMATUM*	JAPANESE MAPLE	9	9	80	REMOVE
	2601	*MAGNOLIA GRANDIFLORA*	SOUTHERN MAGNOLIA	14	14	74	REMOVE
	2602	*PICEA ABIES*	NORWAY SPRUCE	12	12	73	REMOVE
	2666	*LAGERSTROEMIA INDICA*	CREPE MYRTLE	6	6	70	REMOVE
	2686	*PYRUS CALLERYANA*	CALLERY PEAR	8	8	74	REMOVE
5496	2687	*PLATANUS OCCIDENTALIS*	SYCAMORE	22	22	75	REMOVE
	2688	*PLATANUS OCCIDENTALIS*	SYCAMORE	8	8	75	REMOVE
	2689	*PLATANUS OCCIDENTALIS*	SYCAMORE	14	14	75	REMOVE
	2690	*PLATANUS OCCIDENTALIS*	SYCAMORE	10	10	73	REMOVE
	2691	*PLATANUS OCCIDENTALIS*	SYCAMORE	10	10	73	REMOVE
	2692	*PLATANUS OCCIDENTALIS*	SYCAMORE	4	4	75	REMOVE
5497	2693	*PLATANUS OCCIDENTALIS*	SYCAMORE	18	18	76	REMOVE
5549	2719	*PLATANUS OCCIDENTALIS*	SYCAMORE	20	20	85	REMOVE
5548	2720	*PLATANUS OCCIDENTALIS*	SYCAMORE	15	15	76	REMOVE
5490	2806	*PINUS STROBUS*	WHITE PINE	24	24	67	REMOVE
5491	2807	*PINUS STROBUS*	WHITE PINE	24	24	74	REMOVE
5493	2808	*PINUS STROBUS*	WHITE PINE	24	24	72	REMOVE
5492	2809	*PINUS STROBUS*	WHITE PINE	24	24	74	REMOVE
	2821	*JUGLANS NIGRA*	BLACK WALNUT	14	14	72	REMOVE
	2822	*PINUS STROBUS*	WHITE PINE	18	18	75	REMOVE
	2828	*PRUNUS SEROTINA*	BLACK CHERRY	10	10	60	REMOVE
	2829	*PRUNUS SEROTINA*	BLACK CHERRY	10	10	70	REMOVE
	2833	*PRUNUS SEROTINA*	BLACK CHERRY	10	10	71	REMOVE
	2840	*MORUS ALBA*	WHITE MULBERRY	18	18	65	REMOVE
	2841	*MORUS ALBA*	WHITE MULBERRY	12	12	65	REMOVE
	2845	*PINUS STROBUS*	WHITE PINE	18	18	71	REMOVE
	2846	*PINUS STROBUS*	WHITE PINE	14	14	71	REMOVE
5500	2853	*JUGLANS NIGRA*	BLACK WALNUT	17	17	74	REMOVE
	2878	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	2879	*PINUS STROBUS*	WHITE PINE	8	8	50	REMOVE
	2880	*PINUS STROBUS*	WHITE PINE	8	8	72	REMOVE
	2881	*JUGLANS NIGRA*	BLACK WALNUT	20	20	72	REMOVE
	2883	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	22	22	75	PRESERVE
	2885	*PINUS STROBUS*	WHITE PINE	20	20	73	REMOVE
	2899	*ACER PLATANOIDES*	NORWAY MAPLE	6	6	75	REMOVE
	2937	*PINUS STROBUS*	WHITE PINE	28	28	73	PRESERVE
	2938	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	14	14	75	PRESERVE
	2939	*PINUS STROBUS*	WHITE PINE	16	16	75	PRESERVE
	2940	*PINUS STROBUS*	WHITE PINE	16	16	75	PRESERVE
	3031	*LAGERSTROEMIA INDICA*	CREPE MYRTLE	4	4	80	REMOVE
	3034	*CORNUS FLORIDA*	FLOWERING DOGWOOD	6	6	65	REMOVE
5477	3035	*PINUS STROBUS*	WHITE PINE	30	30	80	PRESERVE
	3036	*CERCIS CANADENSIS*	EASTERN REDBUD	12	12	70	PRESERVE
	3037	*PINUS STROBUS*	WHITE PINE	24	24	74	PRESERVE
	3073	*ACER RUBRUM*	RED MAPLE	18	18	67	REMOVE
	3090	*JUGLANS NIGRA*	BLACK WALNUT	14	14	74	REMOVE
5475	3113	*ACER SACCHARUM*	SUGAR MAPLE	21	21	73	REMOVE
	3114	*JUGLANS NIGRA*	BLACK WALNUT	22	22	76	REMOVE
	3115	*PINUS STROBUS*	WHITE PINE	18	18	72	REMOVE
	3116	*JUGLANS NIGRA*	BLACK WALNUT	16	16	74	REMOVE
5476	3117	*QUERCUS ALBA*	WHITE OAK	29	29	73	REMOVE
	3119	*CORNUS FLORIDA*	FLOWERING DOGWOOD	4	4	75	REMOVE
	3249	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	3250	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	3251	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	3252	*ILEX OPACA*	AMERICAN HOLLY	4	4	75	REMOVE
	3253	*ILEX OPACA*	AMERICAN HOLLY	4	4	75	REMOVE
	3272	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	3273	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	3274	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
	3275	*ILEX OPACA*	AMERICAN HOLLY	6	6	75	REMOVE
5478	3321	*ILEX OPACA*	AMERICAN HOLLY	15	15	80	PRESERVE
5479	3322	*ILEX OPACA*	AMERICAN HOLLY	14	14	78	PRESERVE
	3327	*CERCIS CANADENSIS*	EASTERN REDBUD	8	8	70	PRESERVE
5480	3328	*PINUS STROBUS*	WHITE PINE	28	28	78	PRESERVE
5482	3329	*PINUS STROBUS*	WHITE PINE	22	22	78	PRESERVE
5481	3330	*GINKGO BILOBA*	GINKGO	19	19	82	PRESERVE
	3350	*PICEA ABIES*	NORWAY SPRUCE	14	14	75	REMOVE
5483	3351	*PINUS STROBUS*	WHITE PINE	31	31	74	PRESERVE
	3392	*CERCIS CANADENSIS*	EASTERN REDBUD	8	8	65	REMOVE
5484	3396	*CEDRUS ATLANTICA*	ATLAS CEDAR	15	15	74	REMOVE
	3408	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	20	20	75	REMOVE
	3409	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	20	20	75	REMOVE
	3410	*JUNIPERUS VIRGINIANA*	EASTERN REDCEDAR	6	6	76	REMOVE
5485	3450	*CARYA ILLINOISNENSIS*	PECAN	29	29	74	REMOVE
	3470	*LAGERSTROEMIA INDICA*	CREPE MYRTLE	6	6	80	PRESERVE
	3473	*CORNUS FLORIDA*	FLOWERING DOGWOOD	8	8	65	REMOVE

NOTE: CONDITION RATINGS ARE BASED ON ISA EVALUATION SYSTEM. EXCELLENT (81-100), GOOD (61-80), FAIR (41-60), POOR (21-40), VERY POOR (6-20), DEAD (0-5).

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EDUGENIUS
GENERAL DEVELOPMENT PLAN
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 21361.001.00
DRAWING No.: 111720
DATE: 6/28/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED: LBD

SHEET TITLE:

TREE PRESERVATION PLAN

SHEET No.

C200

TAX MAP: 100-01-00-203
CITY OF MANASSAS, VIRGINIA
D.B. 694 PG. 786
ZONED: R-2-S
USE: POLICE STATION

TAX MAP: 100-01-00-221
MANASSAS ARMS LLC
D.B. 2388 P.G. 296
ZONED: R5
USE: MULTIFAMILY

ELEMENTARY SCHOOL
BIKE RACK
PLAY AREA
EX. CARRIAGE HOUSE
PLAY AREA
EX. TILLET HALL
SW 5' TYP.
EX. FENCE
CHILDCARE CENTER
PLAY AREA
BIKE RACK

22' TYP.
9' TYP.
24' TYP.
18' TYP.
9' TYP.
24' TYP.
12'

FAIRVIEW AVE
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)

WESLEY AVE
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)

LEGEND

- PROPERTY BOUNDARY / AREA OF APPLICATION
- 11 — PROPOSED STANDARD PARKING SPACE COUNT
- VEHICLE TRAFFIC CIRCULATION

CHILD CARE CENTER
HEIGHT REQUIREMENTS
MAXIMUM: 35' MAXIMUM
PROVIDED: 35' MAXIMUM
PARKING TABULATIONS
REQUIREMENTS: 38 SPACES (1/250 sq.ft. OF CONVENTIONAL CLASSROOM SPACE, 9,500 SQ.FT.)
PROVIDED: 46 SPACES

ELEMENTARY SCHOOL
HEIGHT REQUIREMENTS
MAXIMUM: 35' MAXIMUM
PROVIDED: 35' MAXIMUM
PARKING TABULATIONS
REQUIREMENTS: 1/ non-instructional staff 1/20 students
PROVIDED: 2 Non-Instructional Staff 120 Students Total: 8 Spaces

NOTES:

1. THE PROPOSED STREETS AND CURBS RADII ARE SUFFICIENT TO HANDLE FIRETRUCK ACCESS.
2. ALL PLAY AREAS WILL BE FENCED IN ACCORDANCE WITH ARTICLE III OF THE ZONING ORDINANCE.

VIRGINIA STATE GRID NORTH
NAD 83

20 10 0 20 40
GRAPHIC SCALE
1" = 20'

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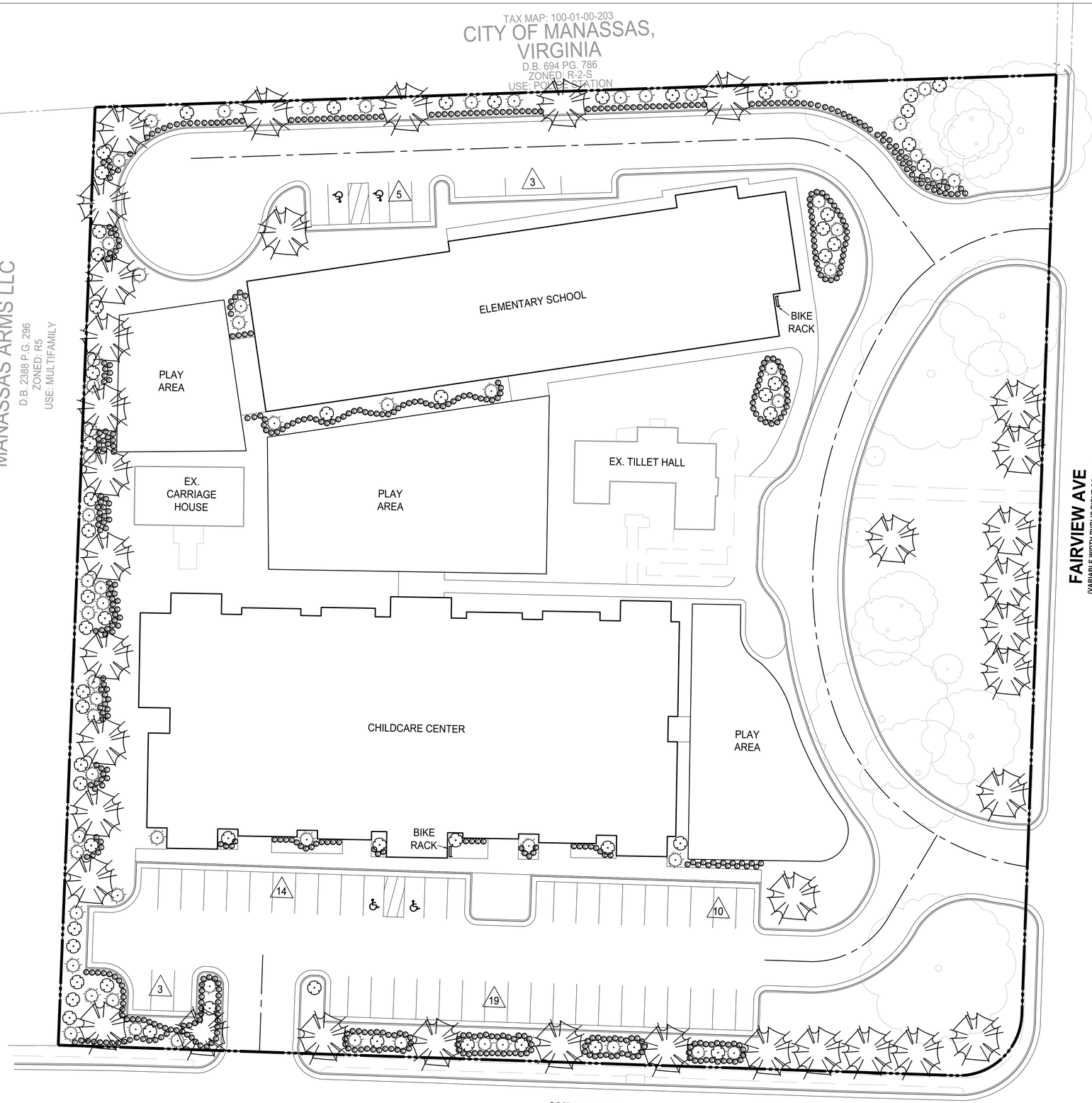
EDUGENIUS
GENERAL DEVELOPMENT PLAN
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 21361.001.00
DRAWING No.: 111720
DATE: 6/23/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:
LAYOUT

SHEET No.
C300



LEGEND

- PROPERTY BOUNDARY / AREA OF APPLICATION
- PROPOSED STANDARD PARKING SPACE COUNT (11)
- EXISTING TREE TO BE PRESERVED

PLANT LEGEND:

(not drawn to scale)

- STREET TREES
- PROPOSED MEDIUM / SMALL DECIDUOUS TREES
- PROPOSED MEDIUM / SMALL EVERGREEN TREES
- PROPOSED SHRUBS

NOTES:

1. THIS PLAN IS PRELIMINARY AND SUBJECT TO MINOR MODIFICATION WITH FINAL ENGINEERING.
2. STREET TREES SHALL BE PROVIDED ON ALL PUBLIC STREETS WITH A MINIMUM OF ONE TREE FOR EVERY 35 FEET.
3. ALL UTILITIES SHALL BE LOCATED PRIOR TO CONSTRUCTION AND PLANTING.
4. TREE COVER CALCULATIONS SHALL BE SHOWN AT THE TIME OF FINAL SITE PLAN AND ARE SUBJECT TO CHANGE BASED ON FINAL ENGINEERING. THE PROPOSED LANDSCAPING AREA HAS BEEN CALCULATED USING APPROXIMATE CANOPY VALUES AND IS SUBJECT TO CHANGE AT THE TIME OF FINAL SITE PLAN ONCE SPECIFIC SPECIES HAVE BEEN CHOSEN.

TREE COVER REQUIREMENTS
GROSS SITE AREA: 145,055 SQ. FT.
PERCENT OF TREE COVER REQUIRED: 20%
TOTAL AREA OF TREE COVER REQUIRED: 29,011 SQ. FT.
TREE COVER PROVIDED
EXISTING TREE COVER: 19,665 SQ. FT.
AREA OF TREE COVER PROVIDED: 21,100 SQ. FT.
TOTAL PERCENT OF TREE COVER PROVIDED: 28%
TOTAL TREE COVER PROVIDED: 40,765 SQ.FT.
STREET TREE TABULATION
1 STREET TREE PER 35' R.O.W.
FAIRVIEW AVENUE R.O.W.: 395'
STREET TREES REQUIRED: 12
STREET TREES PROVIDED: 12
WESLEY AVENUE R.O.W.: 378'
STREET TREES REQUIRED: 11
STREET TREES PROVIDED: 11

VIRGINIA STATE GRID NORTH
NAD 83

20 10 0 20 40
GRAPHIC SCALE
1" = 20'

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GENERAL DEVELOPMENT PLAN
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 21361.001.00
DRAWING No.: 111720
DATE: 6/28/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:

CONCEPTUAL LANDSCAPE PLAN

SHEET No.

C400

TAX MAP: 100-01-00-203
CITY OF MANASSAS, VIRGINIA
D.B. 694 PG. 786
ZONED: R-2-S
USE: POLICE STATION

TAX MAP: 100-01-00-221
MANASSAS ARMS LLC
D.B. 2388 P.G. 296
ZONED: R5
USE: MULTIFAMILY

UNDERGROUND SWM SYSTEM
ELEMENTARY SCHOOL
PLAY AREA
EX. CARRIAGE HOUSE
EX. TILLET HALL
PLAY AREA
CHILDCARE CENTER
PLAY AREA
UNDERGROUND SWM SYSTEM
PROPOSED WATER CONNECTION
PROPOSED SEWER CONNECTION TO EXISTING SEWER PIPE
PROPOSED WATER CONNECTION
PROPOSED SEWER CONNECTION
EX. F.H.
EX. F.H.
EX. W/L
EX. W/L
EX. W.V.
EX. W.V.
EX. W/L
(2) EX. W.V.'S
(2) EX. W.V.'S

FAIRVIEW AVE
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)

WESLEY AVE
(VARIABLE WIDTH PUBLIC RIGHT-OF-WAY)

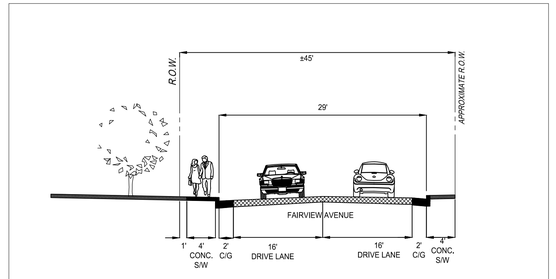
A
A
B
B

LEGEND

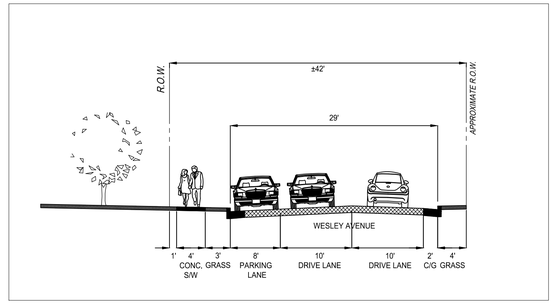
- PROPERTY BOUNDARY / AREA OF APPLICATION
- PROPOSED WATER MAIN
- PROPOSED SEWER MAIN
- EXISTING WATER LINE
- EXISTING SEWER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED STORMWATER PIPE
- EXISTING FIRE HYDRANT

NOTES:

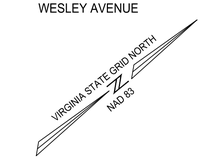
1. SWM AND BMP WILL BE HANDLED BY CONTRIBUTING TO THE CITY'S PRO-RATA SHARE OR WILL BE PROVIDED ON SITE GENERALLY AS SHOWN. THE DRAINAGE FOR THIS SITE OUTFALLS INTO THE WINTER'S BRANCH POND.
2. THE PROPOSED WATER AND SEWER SHALL BE CONNECTED TO EXISTING PUBLIC WATER AND SEWER.
3. THERE ARE CURRENTLY EASEMENTS ON THE PROPERTY AS CERTIFIED BY christopher consultants ON NOVEMBER 23, 2021.



STREET SECTION A-A
FAIRVIEW AVENUE



STREET SECTION B-B
WESLEY AVENUE



GRAPHIC SCALE
1" = 20'

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EDUGENIUS
GENERAL DEVELOPMENT PLAN
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

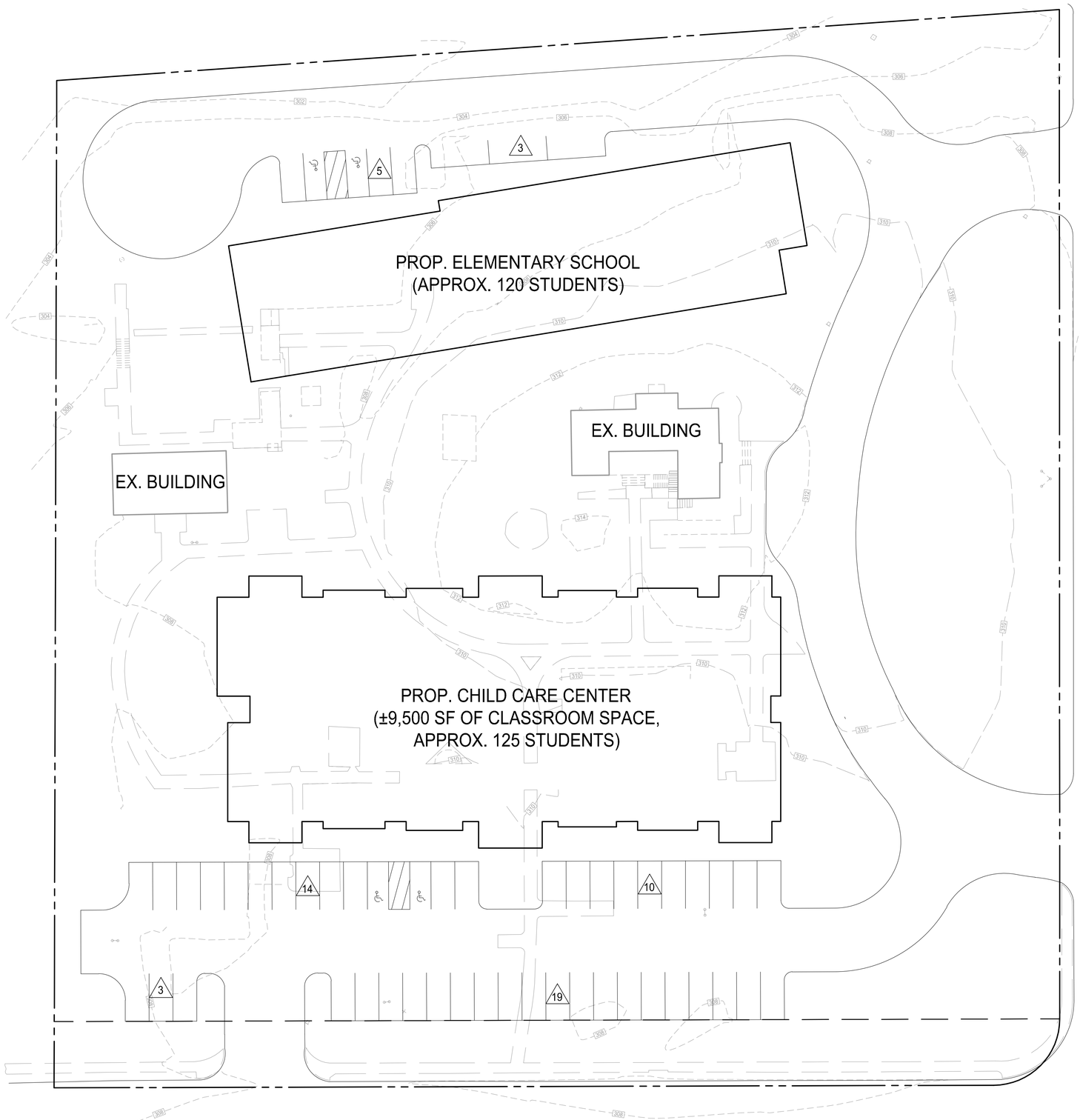
PROJECT No.: 21361.001.00
DRAWING No.: 111720
DATE: 6/28/2022
SCALE: SEE SHEET
DESIGN: GB
DRAWN: GB
CHECKED:

SHEET TITLE:

UTILITY LAYOUT

SHEET No.

C500



PARKING TABULATION

ELEMENTARY SCHOOL

REQUIREMENT: 8 SPACES
(1 SPACE PER NON-INSTRUCTIONAL STAFF, PLUS 1 PER 20 STUDENTS)

PROPOSED: 8 SPACES
(2 NON-INSTRUCTIONAL STAFF, 120 STUDENTS)

CHILD CARE CENTER

REQUIREMENT: 38 SPACES
(1 PER 250 SF OF CLASSROOM SPACE)

PROPOSED: 46 SPACES

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EDUGENIUS
9522 FAIRVIEW AVENUE
CITY OF MANASSAS, VIRGINIA

MARK	DATE	DESCRIPTION

PROJECT No.: 21361.001.00
DRAWING No.: 111455
DATE: 1/27/2022
SCALE: 1" = 80'
DESIGN: DL
DRAWN: DL
CHECKED: MK

SHEET TITLE:

CONCEPTUAL PARKING LAYOUT

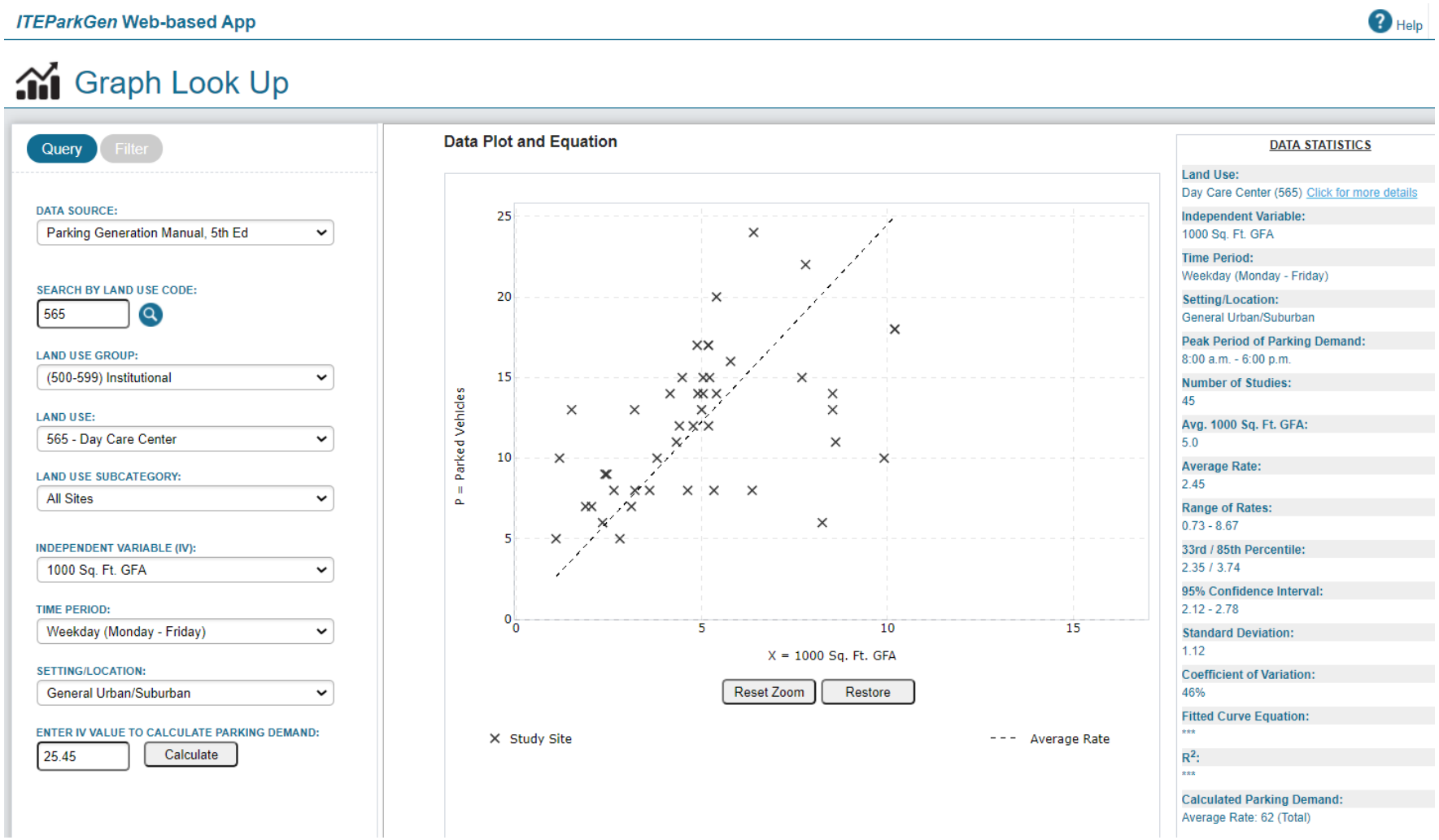
SHEET No.

1

ATTACHMENT TO SOJ

Tillet Hall Parking

Day Care = ITE Parking Generation Based On Square Feet



ATTACHMENT TO SOJ

Tillet Hall Parking

Day Care = ITE Parking Generation Based On Number of Students

ITEParkGen **Web-based App** Help

Graph Look Up

Query | Filter

DATA SOURCE: Parking Generation Manual, 5th Ed

SEARCH BY LAND USE CODE: 565

LAND USE GROUP: (500-599) Institutional

LAND USE: 565 - Day Care Center

LAND USE SUBCATEGORY: All Sites

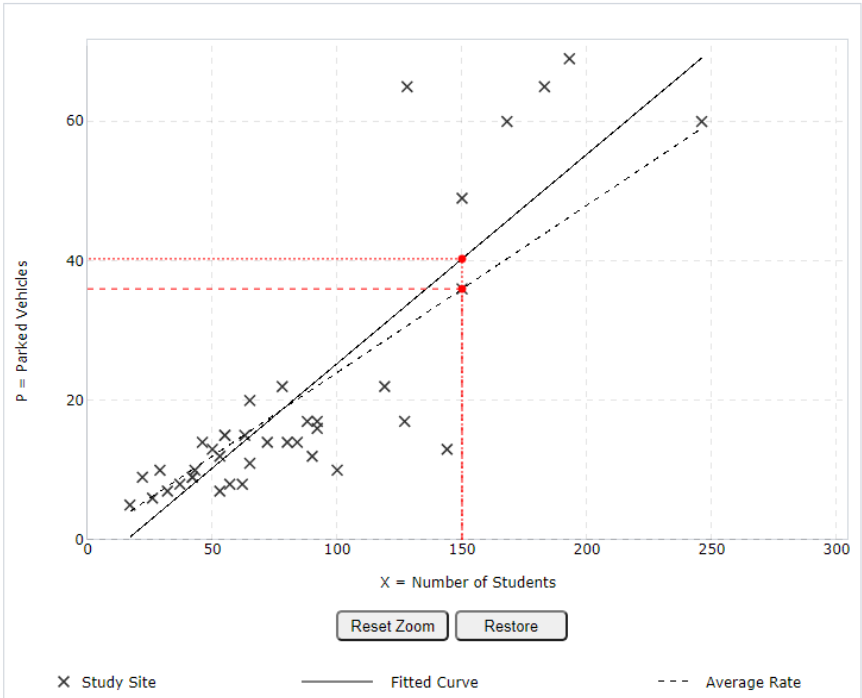
INDEPENDENT VARIABLE (IV): Students

TIME PERIOD: Weekday (Monday - Friday)

SETTING/LOCATION: General Urban/Suburban

ENTER IV VALUE TO CALCULATE PARKING DEMAND: 150 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Day Care Center (565) Click for more details

Independent Variable:
Students

Time Period:
Weekday (Monday - Friday)

Setting/Location:
General Urban/Suburban

Peak Period of Parking Demand:
8:00 a.m. - 6:00 p.m.

Number of Studies:
39

Avg. Num. of Students:
85

Average Rate:
0.24

Range of Rates:
0.09 - 0.51

33rd / 85th Percentile:
0.19 / 0.34

95% Confidence Interval:
0.21 - 0.27

Standard Deviation:
0.10

Coefficient of Variation:
42%

Fitted Curve Equation:
P = 0.30(X) - 4.69

R^2:
0.72

Calculated Parking Demand:
Average Rate: 36 (Total)
Fitted Curve: 40 (Total)

SPECIAL USE PERMIT APPLICATION FOR
CHILD CARE CENTER[1] AND ELEMENTARY SCHOOL[2]
Applicant: Edugenius US Real Estate Group, LLC[3]
Tax Map Number: 100-01-00-202
Tillet Hall,[4] 9522 Fairview Avenue, City of Manassas, Virginia 20110
Zoned: R-1
Land Area: Approx. 145,055 SF or 3.33 acres (the "Property")
STATEMENT OF JUSTIFICATION ("SOJ")
June 29, 2022

CONTENTS

[1] Definition: Child care center means the use of land for any facility operated for the purpose of providing care, protection, and guidance for two or more children separated from their parents or guardians during a part of a day, but excluding a family day home as defined by this chapter. Source: Section 130-42 Definitions, Manassas Zoning Ordinance. The term "daycare," "day care" and other permutations are sometimes used among the Application materials in lieu of child care, but "daycare," "day care" etc. are intended to mean the same use as child care.

[2] Definition: For brevity in this SOJ, "Elementary School" means "Educational facility, primary or secondary and means the use of land for a public, private, religious, or parochial school offering instruction for grades prekindergarten through, but not beyond, the 12th grade, and facilities that provide special educational and related services to children with disabilities. Source: Section 130-42 Definitions, Manassas Zoning Ordinance.

[3] The Applicant and contract purchaser is Edugenius US Real Estate Group, LLC, a Virginia limited liability company. The fee simple owners are: (1) Karen E. Phillips, Trustee of the Kenneth F. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015 and on January 1, 2021; (2) Karen E. Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015; and (3) R. Scott Phillips, Trustee of the Kathleen E. Parsons Revocable Trust under agreement dated August 9, 2011, as amended on February 24, 2015.

[4] Unless explicitly indicated to the contrary, the term "Tillet Hall" means both Tillet Hall and the Carriage House.

1. Introduction/Proposal/Proposed Use

The Special Use Permit Application involves the development of:

(1) Phase 1: a child care center of approximately 125 students and the preservation of the historic Tillet Hall and the Carriage House;[5] and

(2) Phase 2: an elementary school of approximately 120 students.

The development is collectively referred to as the "Edugenius Project."

The Property is generally oriented north to south. Fairview Avenue borders the Property's east side. Wesley Avenue borders the Property's south side. Immediately to the north is the City-owned property, currently used as Police Headquarters. Immediately to the west of the Property is the Manassas Arms L.L.C. apartments.

Phase 1, the child care center, will be developed on the Property's south side. The building footprint will run east to west near and parallel to Wesley Avenue.

Phase 2, the elementary school, will be developed on the Property's north side. Its building footprint will run east to west near and parallel to the Property's northern common property line with the Police Headquarters.

The Special Use Permit Application is required because the two uses are allowed in the R-1 zone but are subject to a Special Use Permit approval. Please see Section 130-241 of the Zoning Ordinance.

[5] By way of emphasis, it is repeated that unless explicitly indicated to the contrary, the term "Tillet Hall" means both Tillet Hall and the Carriage House. Thus, "Carriage House" will no longer be repeated throughout this SOJ.

The Edugenius Project will complement the character and development of the Downtown's traditional neighborhood. It will be in harmony with the purposes of the City of Manassas' plan of land use.[6]

2. **About Edugenius Child Care Center and Elementary School**

2.1 Phase 1 Child Care Center "miniGenius"

The child care center program, also known as "miniGenius," is a Montessori self-directed learning concept that is integrated with additional pedagogical approaches. Edugenius considers every child as unique and that each child should be its own teacher. Special developmental phases of a child are perceived. Edugenius corresponds to these phases of development in which education takes place with a special "prepared environment" designed according to scientific standards. Each child's development is documented. If necessary, a child is helped to "make it on his own." Clear rules are developed. Good values are conveyed, especially through credible examples. The physical educational environment includes a diverse set of learning spaces and tools available inside the classrooms and outdoors on the playgrounds, where they play and learn through hands-on tasks such as growing plants. Edugenius also will offer German-language immersion to first expose the child care children to different languages and cultures.

2.2 Phase 2 Elementary School "poliGenius"

Similarly, the elementary school program, also known as "poliGenius," is a Montessori self-directed learning concept that is integrated with additional pedagogical approaches. Parents and caregivers are attracted to the education because of its comprehensive promotion of the children's uniqueness and individual abilities. The goal is to provide an extended general education that enables individual focus and enables children and young people to continue their education according to their talents and abilities. In addition, the goal emphasizes the

[6] Please see Article IX, Division 1, Section 130-501 Special Use Permits of the City of Manassas Zoning Ordinance.

importance of facilitating the broadest possible promotion of the children's diverse talents and creative powers. The physical educational environment includes a diverse set of learning spaces and tools available inside the classrooms and outdoors on the playgrounds where the play and learn. Edugenius will offer German-language immersion to first expose the elementary school children to different languages and cultures.

3. **Architectural Review Board Certificates of Appropriateness**

The Property is located within the City of Manassas Historic Overlay District. The Architectural Review Board ("ARB") approved the Edugenius Project's concept/massing and materials and issued Certificates of Appropriateness. The Certificates of Appropriateness and the supporting illustrations and pictures of the concept/massing and materials are included among the SUP Application materials. The ARB's approvals are evidence of the Application meeting the City's Historic District Guidelines and the Comprehensive Plan objectives.

4. **Compliance with the Manassas 2040 Comprehensive Plan[7]**

At Chapter 1, the Manassas 2040 Comprehensive Plan begins with a heading that reads, "Manassas 2040 - Historic Heart. Modern Beat." The Edugenius Project proposes the preservation of Tillet Hall and the development of a modern and compatible facility, offering child care and elementary school education. The Edugenius Project's respect for the City's history and harkening to the City's future will implement the Plan's aspirations.

4.1 Chapter 2, Community Overview, Forces and Trends Shaping Manassas City

Providing a new project offering child care and elementary school education responds to the City's recent population growth. More children will be in need of quality educational facilities. The project is an example of balancing: (1) the need to preserve the community's history, with respect to Tillet Hall; and (2) the need to adapt and to serve the needs of a growing population.

[7] The Comprehensive Plan means the Adopted 2040 Comprehensive Plan. Subsequently, for brevity, it is referred to as the "Plan."

The Edugenius Project will be a compact, urban infill and revitalization project. It will provide a new education facility. By preserving Tillet Hall, the project upholds the neighborhood's integrity and character. The proposed steps are consistent with the Housing and Neighborhoods objectives at Chapter 2, Page 17.

Please also see the discussion about how the Edugenius Project meets the objectives of Chapter 4, Housing & Neighborhoods, of the Plan at Section 4.3, beginning at Page 11 of this SOJ.

The Edugenius Project will foster economic development directly and indirectly. The physical site development and construction of the Edugenius Project will directly generate work for those responsible for developing the site and constructing the school buildings. The operations of the schools will directly provide jobs for teachers and administrators. Indirectly, the availability of the Edugenius Project's high quality education will reinforce the decisions of the City's educated workforce to live, work, play, and raise a family in Manassas. It will contribute to attracting others living outside the City to join the ranks of the City's educated workforce. The intended outcomes are consistent with the Plan's discussions of both: (1) Housing and Neighborhoods objectives at Chapter 2, Page 18; and (2) Economic Development objectives at Chapter 5, Page 75.

If there is a legal nexus and it is proportional to its impact on public facilities,[8] the Edugenius Project will undertake to install public infrastructure, which would contribute to enhancing mobility and other community facilities and infrastructure, as applicable, consistent with the Housing and Neighborhoods objectives at Chapter 2, Pages 19-20.

The Edugenius Project is consistent with the overarching themes expressed at Chapter 2, Pages 22-23.

The Edugenius Project will reinvigorate the neighborhood while preserving Tillet Hall, a part of the City's history.

[8] Please see generally, *Dolan v. City of Tigard*, 512 U.S. 374 (1994) and *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987) and their progeny.

4.2 Chapter 3, Land Use

4.2.1 Chapter 3 Goal, Objectives and Strategies

Page 27 of the Plan identifies the "balanced land use" objective.

The most pertinent strategy concerns "Preserving and enhancing existing residential areas while promoting infill development that is consistent with and contributes to that neighborhood's character" as L.U. 3.1.3. The Architectural Review Board ("ARB") analyzed the Edugenius Project as an infill development. Most particularly, the ARB considered the compatibility of its massing and materials with the neighborhood and with the buildings and setting of Tillet Hall. As evidenced by the ARB's approvals, the Edugenius Project meets such objective of retaining the neighborhood's character. It will preserve Tillet Hall. The new buildings are designed to be compatible with Tillet Hall.

At Page 28, the Plan addresses "Redevelopment." The Edugenius Project will be one step toward accomplishing L.U. 3.2.2, by elevating the community's appearance and contributing to the area's character by virtue of its investment in the long standing established neighborhood.

At Page 29, the Plan encourages an update of the Architectural Review and Historic Overlay regulations, L.U.3.3.1. , which undertaking was concluded in time for the filing of this Statement of Justification. The Applicant explains how the Edugenius Project has followed the newly adopted "Historic District Design Guidelines" through its application with the Architectural Review Board.

4.2.2 Chapter 3 Character Areas and Design

With respect to the discussions in the Plan concerning: (1) the Downtown Area's design principles for residential areas, beginning at Page 46 of the Plan; (2) the Downtown Opportunity Areas, beginning at Page 51 of the Plan; and (3) the cross-reference to the Traditional Neighborhoods design principles, beginning at Page 37 of the Plan, the Applicant first

incorporates by reference the deliberations of the ARB involving the Certificates of Appropriateness as the most pertinent evidence and explanation of how the Application meets the Plan recommendations. By way of emphasis, this SOJ includes a discussion about the Downtown Character Area in Section 4.2.3, which also references the Traditional Neighborhoods and the Tillet Hall property along Fairview Avenue.

4.2.3 Chapter 3 Downtown Character Area

4.2.3.1 The Project meets the Appropriate Land Use Recommendations, Focus Priorities, Downtown Neighborhood Design Principles, and the overall Objective for Design Principles.

At Page 46 of the Plan, the Downtown Character area identifies institutional uses such as child care and elementary school as appropriate land uses.

At Page 46-47 of the Plan, under "Focus Priorities," and "Objective," the applicable language reads as follows:

(From "Focus Priorities")

Encourage historic patterns of development to retain historic charm.

Maintain harmony and compatibility by evaluating the appropriateness of architectural features, materials, scale, size, height, and placement of new structures in relationship to existing structures and to the setting.

Support the existing historic district and explore the expansion or creation of new historic districts with additional structures.

. . .

> Preserve, protect, and enhance residential neighborhoods within and around the commercial core.
>
> (From "Objective")
>
> . . .
>
> Existing residential neighborhoods should be preserved and protected, while allowing new residential infill and supportive retail services that enhance the character and quality of the district.

At Page 47-49, of the Plan, under Design Principles, the applicable language for "Downtown Neighborhoods" at Page 49, reads as follows:

> Development and redevelopment within the Downtown Neighborhoods should follow the design principles of the Traditional Neighborhood character area. [Note: Please see the discussion about how the Application meets the design principles of the Traditional Neighborhood character area at Section 4.2.4, beginning at Page 11.] New neighborhood development should be connected to and integrated with the Downtown Core in accordance with the recommendations of the Mobility chapter. [Note: Please see the discussion about how the Application addresses the recommendations of Chapter 6, the Plan's Mobility Chapter at Section 4.4, beginning at Page 12.]
>
> New development should respect the Downtown's historic context through the use of historic Manassas materials and architectural styles, consistent streetscape

> treatments, and pedestrian amenities. New development may incorporate a mix of modern and historic components with context-sensitive review, per the Infill Development Guidelines, 2006, as amended.

The Applicant notes that the Certificates of Appropriateness are evidence that the above recommendations have been addressed satisfactorily.

4.2.3.2 Chapter 3 Tillet Hall Is One of the Opportunity Areas

Tillet Hall is among the 12 properties listed as "Downtown Opportunity Areas" on Map 3.2, at page 50 of the Plan, concerning Chapter 3, Land Use. The Property is included in "Circle 8" of the Opportunity Areas. The comment reads as follows:

> The relocation of the Police Headquarters, the existence of underutilized parcels along Fairview Avenue, and redevelopment potential of the Head Trauma site provide an opportunity to undertake a small master plan of this area, preserving the existing historic structures, and incorporating a range of residential densities that transition to the surrounding neighborhoods and provide high-quality amenities and open space. *The viewshed and historic site features surrounding Tillett Hall should be protected.*

(*Emphasis added*.)

The ARB granted Certificate of Appropriateness for concept/massing and materials. The Applicant refers to the ARB's decisions as evidence that the Application

adequately protects the historic site features surrounding Tillet Hall.

4.2.4 Chapter 3 Design Principles Of The Traditional Neighborhood

The Plan's section concerning the Character Area "Traditional Neighborhood" begins at Page 37. The appropriate land uses include "institutional." The relevant focus priorities read as follows:

> Preservation of urban form, historic structures, and landmarks.
>
> Preservation of traditional scale and architectural styles.
>
> Maintenance of a balanced mix of housing types.
>
> Maintenance and upkeep of existing property.
>
> Compatibility of infill development and redevelopment.
>
> Walkability and connectivity for pedestrians and cyclists.

Because the above design related objectives are so similar to the ones in the Downtown Area of the Plan, we avoid redundancy by referring to the earlier discussion at Section 4.2.3 beginning at Page 8 of this SOJ.

4.3 Chapter 4 Housing & Neighborhoods

The Edugenius Project meets important goals addressed in Chapter 4, by being sensitive to the preservation of Tillet Hall, which in turn aids in the preservation of the caliber of the neighborhood. Even though housing is not being provided on site child care and elementary schools support vibrant housing. Because the Edugenius Project is architecturally compatible with Tillet Hall and operationally compatible with the neighborhood, it enhances the long term quality and character of the

> neighborhood, consistent with the language at Chapter 4, Page 68 of the Plan. The Edugenius Project supports and reinforces the neighborhood through its revitalization of the Tillet Hall campus. See Chapter 4, Page 69.

Other objectives:

> **Chapter 4, Page 69, HOU 4.1.2** Improve pedestrian and bike mobility within and across neighborhoods by providing safe and comfortable connections to key activity areas, such as Downtown, schools, and parks.

Please see the discussion about public facilities at Section 4.6 beginning at Page 14 of this SOJ.

> **Chapter 4, Page 71, HOU 4.3.5** Implement character area design principles to ensure that infill, rebuilds, and expansions are compatible with, and enhance, neighborhood character. Use guidelines to encourage the use of contextual building materials, establish uniform build-to lines for consistent setbacks, ensure that building heights and upper floor step backs are compatible with existing structures, discourage dead-end streets and cul-de-sacs to facilitate neighborhood connectivity, encourage short blocks for improved walkability, allow on-street parking, and locate parking lots behind buildings to improve aesthetics and walkability.

Please see the discussion about public facilities at Section 4.6 beginning at Page 14 of this SOJ. Please also see the discussion concerning the Downtown Area of the Plan at Section 4.2.3 beginning at Page 8 of this SOJ.

4.4 Chapter 5 Economic Development

Chapter 5 begins with the following observation that well-suited for the Edugenius Project:

> A strong local economy is intrinsically tied to a high quality of life. Businesses make location

> and expansion decisions based not only on the local workforce and business environment, but also on the community's ability to offer employees the lifestyle they desire. In addition to workforce availability and the costs of doing business in a community, employers are increasingly interested in the quality of schools, range of housing options, and availability of recreation and cultural amenities.

The quality of the child care and elementary school education to be offered at the Edugenius Project will contribute to the City's inventory of schools and foster the City being attractive to an educated workforce and to employers interested in locating in a community that helps attract a talented workforce.

The Economic Development chapter describes steps that can be accomplished by the City. The Edugenius Project will be a type of redevelopment project that advances the City's goal to preserve an existing historic asset, Tillet Hall, and to revitalize the property by introducing a new child care center and elementary school. See Pages 76-78 of Chapter 5 of the Plan. Also, although the Edugenius Project will not be a part of the public school system, it will contribute to "providing an educated, skilled workforce to fill the community's needs" by affording quality child care and elementary school instruction which will be a foundation or stepping stone for students excelling in academic pursuits at their current level and at even higher levels of education.

4.5 Chapter 6 Mobility, Comprehensive Plan

Recommended Transportation Projects are included in Chapter 6, Mobility, beginning at Page 85 of the Plan. On Page 86, Map 6.1 and Table 6.1 identify Fairview Avenue as an area for improving pedestrian safety. Note 16, of Table 6.1, Page 87, reads as follows:

Improve pedestrian safety and access along the Fairview Ave. corridor.

The stretch of Fairview Avenue along the Property is improved with a sidewalk on both sides and street lighting. The posted speed limit is 25 MPH.

Map 6.2 at Page 9 of Chapter 6 of the Plan appears to list Fairview Avenue as a "Neighborhood Connector." The Transportation and Mobility Master Plan appears to classify Fairview Avenue as a "Neighborhood Connector" and Wesley Avenue as a "Local Road."

The cross section narrative for the "neighborhood connector street," in the Transportation and Mobility Master Plan reads as follows:

> DESCRIPTION These are the more heavily-trafficked streets within neighborhoods, which provide important connections to major streets. These streets typically are wider than neighborhood streets, with a marked center line. While speeds are relatively low, they require some additional protection for cyclists (bike lanes or sharrows[9]).
>
> VEHICLE PROVISION: 10' Travel Lanes 7' Parking Lanes BICYCLE PROVISIONS: 5' Bike Lane PEDESTRIAN PROVISION: 5' Minimum Sidewalk, both sides of street EXAMPLE STREETS: Stonewall Road Cloverhill Road.

The Comprehensive Plan rights of way recommendations are part of the Application's considerations. Please refer to Section 4.6 beginning at Page 14.

4.6 Chapter 7 Community Facilities and Infrastructure

At Page 100, Chapter 7, Community Facilities and Infrastructure, the Plan acknowledges the City's responsibility to provide services but also the responsibility of applicants to

[9] A "sharrow" is a roadway marker indicating a lane area to be shared by autos and bicycles.

mitigate its impact on capital costs, if applicable. It reads as follows:

> It is Manassas' responsibility to provide services in conformance with the adopted standard. In addition, applications for land use decisions are expected to provide reasonable mitigation to offset the capital cost associated with additional demand, as allowed by the Code of Virginia.

The Applicant will consider what, if any, capital costs might be associated with the Edugenius Project.

It should be noted that the Edugenius Project will contribute toward the City having more available capacity in its public schools to the extent that the students at the Edugenius Project will not be using capacity in the public schools. At Page 109, Table 7.1, Level of Service, the Plan lists a school level of service goal of having no more than 100% utilization of facilities for pre-kindergarten, elementary, intermediate, middle and high school. The Edugenius Project is planned to have a child care center of approximately 125 students and an elementary school of approximately 120 students.

4.7 Chapter 8 Environmental Sustainability and Health

4.7.1 Objectives and Strategies

4.7.1.1 ESH 8.1, Adopt a Broad-Based Sustainability Ethic That Incorporates Best Practices and Modern Approaches

At Page 113 of the Plan, Objective EHS 8.1.1 recommends establishing a holistic sustainability plan and consideration of implementing Leadership in Energy and Environmental Design (LEED).

The Edugenius Project is expected to meet the appropriate green building standards customarily applied for similar forms of developments and uses.

4.7.1.2 ESH 8.2, Vegetation and Tree Canopy. Support diverse native vegetation as a core function of the urban landscape to boost property values, cut energy consumption, reduce costs for stormwater management and erosion control, and make the City a more beautiful place.

Page 114 of the Plan includes multiple objectives that are implemented and reflected in the Edugenius Project.

The Application includes plans to preserve trees including those growing near Tillet Hall, through the layout of the improvements, as shown on the Plans.

4.7.1.3 ESH 8.3, Green Infrastructure, Create a green infrastructure network (see Map 8.1) of interconnected natural areas, parks, and green streets, recognizing the value of nature for a healthy, resilient, and prosperous community.

The Applicant's plans reflect how the Edugenius Project can contribute to fostering such objective.

4.7.1.4 ESH 8.4, Water Resources, Protect, enhance, and restore the integrity of the City's water resources.

Objective/Strategy ESH 8.4.4 reads:

> Encourage developers to incorporate environmentally-sensitive approaches to stormwater management into site planning, including low impact development techniques and preservation and restoration of natural land forms.

As noted above, the Applicant's stormwater management plans reflect how the Edugenius Project can contribute to the establishment of such objective. Stormwater quality and quantity controls will be provided on-site to reduce runoff volume and nonpoint source pollution.

4.7.1.5 Air Quality and Emissions. ESH 8.5 Create a more safe and secure future by encouraging the reduction of fossil fuel consumption and emissions that are harmful to human health and the environment.

As noted above, the Applicant can consider the implementation of green building standards to design, construct, and operate the project with a reduced emissions footprint.

4.7.1.6 Noise and Light Pollution. ESH 8.6 Promote efforts to reduce the impact of noise and light pollution.

ESH 8.6.1 Apply special use permit conditions and accept rezoning proffers that limit lighting and noise impacts on adjacent properties and the City as a whole. Support development standards that address lighting and noise pollution.

When filed in the course of the site plan application following the Special Use Permit Application, the Applicant's lighting plan would demonstrate that the proposed lighting would cut off significant glare onto adjacent properties.

The only significant sounds will be from children playing outdoors.

4.8 Chapter 9 Parks, Culture, & Recreation

In addition to the resources offered on campus at the Edugenius Project, the City's parks, culture, and recreation resources will be available to the children. The Edugenius Project school would determine which parks and activities are suitable for the different ages of the children. As examples, Oakenshaw Park is located less than 1 mile away. It offers playgrounds, basketball and a ("baseball" "softball" "t-ball") diamond field. Kinsley Mill Park is located slightly over 1 mile away. It offers picnic tables

and grills, playground, climbing wall, and a roller hockey and basketball court. The Manassas Museum renovation will likely be completed before the child care center is operating and certainly before the phase 2 elementary school is operating. The Museum has programs and events for all ages and likely will be one of the places where the children will visit.

As noted in numerous sections of this Statement of Justification, historic preservation is also noted as an important goal in Chapter 9, which reads as follows:

> PCR 9.2 Conserve and enhance the City's historically-significant sites and structures for the cultural, educational, and economic benefits they provide to City residents and visitors.

Further, PCR 9.2.4 acknowledges the contribution of private historic preservation. It reads:

> PCR 9.2.4 Continue to work with, support, and provide incentives for private-sector investment and use of historic properties

The Edugenius Project will not be public open space. Tillet Hall will remain visible from the perimeter. Tillet Hall has been private property for most, if not all, of its existence. It will continue to be viewed and enjoyed by the public from such vantage point.

5. Operational Conditions

5.1 Expected Numbers of Students, Faculty and Administrative Staff

5.1.1 Child Care Center

As noted, the Applicant will develop the child care center as the Edugenius Project's first phase. The child care center's population is expected to be comprised generally as follows:

Description	Number of Individuals
Students	125

Description	Number of Individuals
Instructional Faculty	22
Non-instructional Staff (Examples: Executive Director, Educational Director, Administrative Support Staff, Nurse)	6

5.1.2 Elementary School

The Applicant will develop the elementary school as the Edugenius Project's second phase. The elementary school's population is expected to be comprised generally as follows:

Description	Number of Individuals
Students	120
Instructional Faculty	12
Non-instructional Staff (Examples: Executive Director, Educational Director, Administrative Support Staff, Nurse)	3

5.2 Hours and Days of Operations

5.2.1 Child Care Center

Child Care Center Description	Hours
Drop off	6:30AM-9AM
Drop off: A receptionist and the instructional faculty will be on campus at 6:30AM in order to check in and care for the students as they arrive. Every student is expected to have been dropped off by 9AM, when the day's educational activities are scheduled to begin.	
Pick Up	12:00PM (latest 6PM)

Child Care Center Description	Hours
Pick Up: Pick up's are expected to begin at 12:00PM, with care givers arriving over the course of the afternoon. The latest pick up is expected to be 6PM.	

Summer operations are expected to be programmed as well.

Days of Operations: The child care center generally will be open and operating weekdays during the hours indicated above. Other events, such as open houses, parent-teacher conferences, holiday parties, plays, and possibly graduation ceremonies, may occur on weekday or weekends during the day or evenings. As for evening events, they are expected to generally conclude no later than 10 PM.

5.2.2 Elementary School

Elementary School Description	Hours
Drop off	7AM-8AM
Drop off: A receptionist and some of the instructional faculty will be on campus at 7AM in order to check in and care for the students as they arrive. Every student is expected to have been dropped off by 8AM, when the day's educational activities are scheduled to begin.	
Pick Up Day Program	3PM
Pick Up: Pick up's are expected to occur at 3PM.	
Pick Up After School	3PM-6PM
Pick Up After School: The elementary school will have post 3PM afternoon programs for curriculum instruction and to accommodate later arrivals for pick up by caregivers.	

Summer operations are expected to be programmed as well.

Days of Operations: Similarly, the elementary school generally will be open and operating weekdays during the hours indicated above. Similarly, other events, such as open houses, parent-teacher conferences, holiday parties, plays, and possibly graduation ceremonies, may occur on weekday or weekends

during the day or evenings. As for evening events, they are expected to generally conclude no later than 10 PM.

5.3 Parking

Elementary School

The Applicant bases the elementary school parking spaces based upon the Zoning Ordinance's standard based on the number of elementary school children, as reflected in the Application plans and materials.

Child Care Center

Below, the Applicant explains the reasons underlying the determination to calculate the number of parking spaces by using conventional classroom space and excluding common areas such as movement rooms and "Kinderkitchen," in lieu of simply multiplying the Zoning Ordinance's parking rate by the child care center's gross floor area.

5.3.1 Planning and Community Development Department's February 2022 Determination:

During the winter of 2021-2022, before submitting the concept/massing and materials Applications to the Architectural Review Board, and before preparing and filing the Special Use Permit Application, the Applicant corresponded with the Planning and Community Development Department. The purpose was to determine what child care center space should be used to calculate the number of parking spaces. As noted, above, it was determined that the number of parking spaces is to be calculated by using conventional classroom space and excluding common areas such as movement rooms and "Kinderkitchen." Included among the Application materials is the February 28, 2022 Planning and Community Development Department's determination letter. A copy of the letter also is attached to this SOJ as Attachment 1). For convenience, please also read a quotation of such determination letter immediately below.

Per our conversation on February 14, 2022, you have requested written determination to a question on the property listed above (hereinafter the "Property"). The following determination was based on the review of the information in your correspondence dated, February 9, 2022. In response, I provide the following information:

1. The parking requirement for an Educational Facility, Primary or Secondary, pursuant to section 130-204 of the City of Manassas Zoning Ordinance is: 1 space for each non-instructional staff and 1 space for every 20 students.

2. Based on the proposal for an Elementary School on the property with 2 non-instructional staff and 120 students a total 8 parking spaces would be required.

3. The parking requirement for a Day Care, pursuant to section 130-204 of the City of Manassas Zoning Ordinance is: 1 space per 250 Square Feet of Gross Building area.

4. Based on the proposal for a 17,898 square foot Day Care on the property a total of 72 parking spaces would be required.

5. However, the proposed Day Care includes several non-traditional spaces (larger corridors, movement rooms, and a "Kinderkitchen") which overlap with instructional space typically found in a conventional educational facility classroom.

6. Considering the parking standard applied to a Day Care use is typically applied to a traditional Day Care which includes predominantly conventional classroom space, it would be reasonable to evaluate the parking for

> the proposed Day Care based on the amount of conventional classroom space, excluding common areas such as movement rooms and "Kinderkitchen."
>
> 7. Based on the information submitted in your February 9, 2022 correspondence a Day Care with 9,500 square feet of conventional classroom space would require a total of 38 parking spaces. This calculation should be reflected as part of the SUP plan required for approval by City Council of a Day Care and Educational Facility in this zoning district.

(End of quotation.)

The Applicant is following the above determination of what child care center space should be used to calculate the number of parking spaces; that is, calculate the number of parking spaces by using conventional classroom space and excluding common areas such as movement rooms and "Kinderkitchen."

5.3.2 The Applicant's Explanation In Support of the Planning and Community Development Determination

As the Planning and Community Development Department recommended, this Statement of Justification includes the Applicant's explanation in support of using the square footage of the conventional classroom space.

Parking is one of the project's threshold considerations because parking horizontal demands cause a significant ripple effect through, among other considerations: (1) the project's layout; (2) the design of the new buildings; (3) the planned educational programming for the children; (4) the preservation of Tillet Hall and the Carriage House; and (5) tree preservation.

The project is expected to be developed in two phases. The child care center would be the first phase.

A parking concept layout is included among the Application materials. It shows the proposed new school buildings and the

locations of the parking spaces. As also shown on the plan, the historic Tillet Hall and Carriage House are intended to be preserved. Tillet Hall is to be used by the non-educational elementary school administration staff. No plans exist for the use of the Carriage House, other than its preservation.

The parking spaces calculations are based on two land use categories from Sec. 130-204, Table 1, under "Assembly and Institutional Uses." The land uses are "Educational Facility, Primary or Secondary" for the elementary school and "Child Care Center" for the child care center.

Elementary School

The elementary school requirements are:

(1) one (1) space for every non-instructional staff; and

(2) one (1) space for every twenty (20) students.

The elementary school will include two (2) administrative, non-instructional, staff members. There will be 120 elementary school students. Eight (8) spaces are planned for the elementary school as follows:

Description	Rate	Spaces
Two (2) non-educational staff	one (1) space for each	2
120 students	one (1) space for every twenty (20) students	6
Total		8

The Application elementary school parking layout plan shows eight (8) spaces, including two (2) handicapped spaces, located along the north side of the elementary school.

Child Care Center

As the City's determination letter notes, the parking rate requirement for a conventional child care center is one (1) space for every 250 square feet of building gross square feet. The Planning and Community Development Department letter observed that the proposed child care center will provide significant additional space not found in a conventional child care center. The additional space causes the building to be larger than a typical child care center. Consequently, the zoning ordinance's standard parking space rate for a child care center yield would be excessive, because it would be based upon the child care center's gross square feet. It was determined that the Applicant calculate the parking spaces should be based only on the gross square feet of the conventional classroom space. Accordingly, the number of parking spaces is calculated as shown below:

Description	Rate	Spaces
9,500 SF of conventional classroom space	one (1) space for every 250SF	38
Additional parking spaces		8
Total Child Care Center (including 2 handicapped spaces)		46

The Applicant's parking plan spaces located near the child care center area equals a total of 46 spaces which includes eight (8) extra spaces, based upon the above calculation.

ITE-Calculated Parking Spaces Based on the 2.45 Spaces Per 1,000 SF GFA

The proposed provision of 46 spaces is consistent with the empirical data collected nationwide by the Institute of Transportation Engineers ("ITE") and published in its manual.

The ITE Manual reports that an average of only 2.45 spaces for every 1,000SF of gross floor area are provided for day care centers (also known as "child care"). Please see the excerpt from the ITE Manual attached to this Statement of Justification as Attachment 2). For the Edugenius child care center, the ITE Manual's rate would generate about 44 parking spaces, approximately the same number of spaces as the 46 spaces calculated above, as follows:

Description	Current Estimate of SF of Gross Floor Area	ITE Manual Rate ("day care")	Spaces
Child Care Center's Current Estimate of Gross Floor Area for the Entire Child Care Center	17,898 SF	2.45 spaces for every 1,000SF of gross floor area	43.85

Parking Spaces Based on the Number of Students in the Child Care ("Day Care") Center

Also, the ITE Manual includes an empirically-derived parking space rate based on the number of students in a day care center ("child care"), in addition to its rate based on gross floor area. The student-based rate yields an even lower number of parking spaces than the rate based on gross square footage. The student-based ITE rate is 0.24 spaces for every day care student. In the case of Edugenius, the ITE rate would generate only 30 spaces. (0.24 spaces/student times 125 students). Please see the excerpt from the ITE Manual attached to this Statement of Justification as Attachment 3).

5.3.3 Request the Mayor and City Council To Exercise Its Authority Under Zoning Code Section 130-501

Avoiding the unnecessary imposition of excessive parking spaces requires relief through the City Council's exercise of its authority

to mitigate impacts under Section 130-504(c)(3), "Review Procedure," which reads as follows:

> If the city council approves the special use permit request, it may impose reasonable conditions to mitigate the impacts of the proposed use, as permitted by applicable law. All such conditions shall be reasonably related both in nature and extent to the impact of the proposed development. At least one week prior to the city council public hearing, the city shall provide in writing to the applicant the proposed conditions. The applicant shall advise the city, in writing prior to the public hearing, that (i) the applicant agrees to the conditions and stipulates that they are reasonable under applicable law, including a statement that each condition is reasonably related both in nature and extent to the impact of the proposed development, or (ii) that the applicant objects to one or more proposed condition and the reason for said objection.

Without the City Council's exercise of its authority to mitigate impacts arising from a strict reading of the Zoning Ordinance, the number of parking spaces for the Edugenius Project would far exceed the appropriate number for a well-functioning child care center and impose deleterious consequences.

The Applicant asks the City Council to exercise its authority to establish a reasonable condition. That is, to calculate the number of parking spaces by using conventional classroom space and excluding common areas such as movement rooms and "Kinderkitchen."

It is reasonable to exclude the Edugenius educational space that is *not* found in typical child care centers. The ITE Manual provides national empirical evidence that supports a finding that

it is reasonable to impose a number of spaces based on the dedicated conventional classroom space.

Such a condition, child care parking based on the conventional classroom space, would not only mitigate but also avoid the negative impacts of an unnecessary sea of asphalt parking.

Based upon a strict application of the zoning ordinance, the estimated number of child care spaces would be close to double the above-calculated amount (Currently estimated: 17,898SF GFA/250SF = 72 spaces). The excessive spaces are unnecessary to accommodate the new project, because the same number of child care students could fit within a smaller building, but at the expense of forfeiting the educational benefits and related development programming that can be provided with the greater common area space and a higher caliber educational experience.

The proposed large corridors, movement room and "Kinderkitchen" are important spaces and integral to the curriculum. Areas for movement are fundamental to the Montessori school of thought. Although not present in conventional educational settings, likely due to cost and other considerations, research has shown that such areas foster social development. They afford opportunities for children from different ages and classrooms to interact. Children learn through play and movement, for example, by walking around and counting objects, dancing, listening to and playing instruments, and touching different materials, all of which activities are valued and better cultivated within the extra area provided for the children's development.

The proposed child care building also includes extra square footage for the "Kinderkitchen" - another space grounded in Montessori principles. Children learn through activities from everyday life. Through small kitchen tasks such as peeling vegetables, cleaning dishes, measuring and transferring liquids or food, children learn, first of all, fine motor skills and being focused, and, second of all, how to take care of objects and spaces.

These are examples of how providing the atypical additional square footage is planned for the benefit of the children at the child care center.

Fundamentally, the child care children are afforded greater indoor space than the usual child care center, but the greater indoor space does not generate the need for additional parking spaces.

Again, the number of parking spaces generated by the empirical information from the Institute of Traffic Engineering is very close to the proposed number of Edugenius parking spaces. ITE's findings support the reasonableness of basing the parking spaces only on the conventional classroom space.

Other grounds support the City Council exercising its authority to impose reasonable conditions and mitigate the impact of excessive parking. Excessive parking spaces would encroach physically upon important objectives of the project's design: (1) tree preservation; (2) stormwater management; (3) heat island effect; (4) massing and spacing; and (5) the aesthetic and historic preservation of the Tillet Hall and the Carriage House setting.

The City Council can impose a reasonable condition, basing the parking space calculation on conventional classroom space. The condition will mitigate the impact of what would otherwise be an unnecessary sea of parking, less space for outdoor recreation, less space for tree preservation, and less space for stormwater management facilities, as examples. The City Council's condition would be reasonably related both in nature and extent to lessening the impact of excess surface parking on the proposed development and on the nearby neighborhood, for the reasons noted.

5.3.4 No Permanent School Bus Parking on Campus

In cases where the elementary school conducts off campus outings and the children do not walk to the outing, it will rent a small bus to accommodate approximately 10 students, with an appropriate number of chaperones/teachers. The semi-circular

driveway leading up to Tillet Hall is wide enough to accommodate a school bus pick up and drop off and is wide enough to allow for adequate space for other vehicles to pass by safely. Using the driveway avoids the rental school bus interfering with the parking spaces to the north and south. Renting a school bus as needed avoids the need for a permanent parking space.

The child care center does not conduct school bus outings for the small children in child care.

6. **Proposed Conditions to Minimize the Impact of the Use on Surrounding Properties**

The Applicant anticipates developing the conditions through conferences with the Planning and Development Staff and other sources. The conditions may include, without limitation, the following topics:

Compliance with the Comprehensive Plan and the Zoning Ordinance

Traffic and circulation.

Numbers of students, faculty and administrative staff.

Hours and days of operations.

Parking

Dumpster operations

Massing and materials and site features to comply with the Architectural Review Board's Certificates of Appropriateness

Compliance with the approved Special Use Permit plans.

Establish a Community Liaison contact.

Construction activity.

Compliance with applicable licensing and permits.

7. **Fiscal Impact**

The new child care and elementary school will be an economic benefit for the City and its residents for the reasons described.

8. **Public Utilities**

The Applicant's plans show that the Edugenius Project will be served by available, existing public utilities.

9. **Environmental**

The Applicant will comply with applicable environmental regulations. More particularly, please see the plans included among the Special Use Permit Application materials that address trees and stormwater management.

10. **Traffic Impact Analysis**

As noted earlier, the traffic consulting firm of Gorove Slade already provided traffic counts to Transportation. Gorove Slade is scheduled to provide their Traffic Impact Study in July 2022. It is incorporated by reference into this Statement of Justification.

11. **Conclusion**

For all of the above reasons, the Applicant respectfully requests approval of its Special Use Permit Application and looks forward to working with the City.

We look forward to working with you. Thank you for your consideration.

Timothy Dugan

Timothy Dugan
Bean Kinney & Korman, P.C.
2311 Wilson Blvd.
5th Floor
Arlington, VA 22201
tdugan@beankinney.com
703-526-5583

Attachments List	
No.	Description
1)	February 28, 2022 Manassas City Planning Department determination letter about parking spaces
2)	Excerpt from empirical data collected nationwide by the Institute of Transportation Engineers ("ITE") ITE Manual Excerpt About Parking Rate for Child Care Center Based on Gross Floor Area
3)	ITE Manual Excerpt About Parking Rate for Child Care Center Based on the Number of Students

Department of Community Development
Planning & Development

February 28, 2022

Bean, Kinney & Korman, PC
Attn: Timothy Dugan
2311 Wilson Blvd., Suite 500
Arlington, VA 22201

Parsons Kenneth F and Phillips Karen E Trustees
14319 Dumfries Road
Manassas, VA 20112

Re: 9522 Fairview Avenue, Manassas, VA 20110
Tax Map #: 100/01 00/ 202/ /
ZAOI #2022-0031

Per our conversation on February 14, 2022 you have requested written determination to a question on the property listed above (hereinafter the "Property"). The following determination was based on the review of the information in your correspondence dated, February 9, 2022. In response, I provide the following information:

1. The parking requirement for an Educational Facility, Primary or Secondary, pursuant to section 130-204 of the City of Manassas Zoning Ordinance is: 1 space for each non-instructional staff and 1 space for every 20 students.
2. Based on the proposal for an Elementary School on the property with 2 non-instructional staff and 120 students a total 8 parking spaces would be required.
3. The parking requirement for a Day Care, pursuant to section 130-204 of the City of Manassas Zoning Ordinance is: 1 space per 250 Square Feet of Gross Building area.
4. Based on the proposal for a 17,898 square foot Day Care on the property a total of 72 parking spaces would be required.
5. However, the proposed Day Care includes several non-traditional spaces (larger corridors, movement rooms, and a "Kinderkitchen") which overlap with instructional space typically found in a conventional educational facility classroom.
6. Considering the parking standard applied to a Day Care use is typically applied to a traditional Day Care which includes predominantly conventional classroom space, it would be reasonable to evaluate the parking for the proposed Day Care based on the amount of conventional classroom space, excluding common areas such as movement rooms and "Kinderkitchen."
7. Based on the information submitted in your February 9, 2022 correspondence a Day Care with 9,500 square feet of conventional classroom space would require a total of 38 parking spaces. This calculation should be reflected as part of the SUP plan required for approval by City Council of a Day Care and Educational Facility in this zoning district.

I trust that this information, which reflects the status of the parcel on this date, addresses your inquiry. Unless otherwise stated, this verification shall supersede any prior zoning interpretation or verification for this property. If you have any questions relating to this information, please contact me at (703) 257-8223.

You have a right to appeal this decision of the Zoning Administrator within thirty days in accordance with Virginia Code §15.2-2311. This decision shall be final and unappealable if not appealed within thirty days. You may appeal by filing a notice of appeal, specifying the grounds thereof, with the Zoning Administrator at the address given in this letter. You can also obtain additional information regarding the filing of an appeal from the office of the Zoning Administrator. The fee for an appeal is $500, plus the cost of advertising.

Sincerely,

Gregory J. Bokan, AICP
Land Development Manager
Zoning Administrator

CITY OF MANASSAS ARCHITECTURAL REVIEW BOARD
CERTIFICATE OF APPROPRIATENESS
Issued Date: April 19, 2022
Expires: April 19, 2024

ARB CASE #2022-0029

Owner(s): Kenneth and Karen Parsons
Applicant(s): Timothy Dugan
Site Address: 9522 Fairview Ave.
Tax Map #: 101/01 00/202//

Motion: Mr. Hersch, Vice-Chair Carter
Ayes: Mr. Hersch, Vice-Chair Carter, Chairperson Alten, Ms. Settle
Nays: Ms. Brent, Mr. Pires, Mr. Porter

Approved Activity:

New Construction (Concept): The schematic design including the height, mass, scale, form, and placement of two new construction buildings. The elevation facing 9518 Fairview Avenue will have a gable roof as depicted in the attachments.

Demolition of addition to a Landmark Structure: A one-story wood-frame addition on the Carriage House will be demolished.

Jan Alten, Chairperson

Christen Miller, Clerk

Attachments Enclosed: Site Layout and Elevations

APPROVED DESIGN
ARB CASE #: 2023-0029
SIGNED:
DATE: 4/19/2023
OFFICE OF COMMUNITY DEVELOPMENT

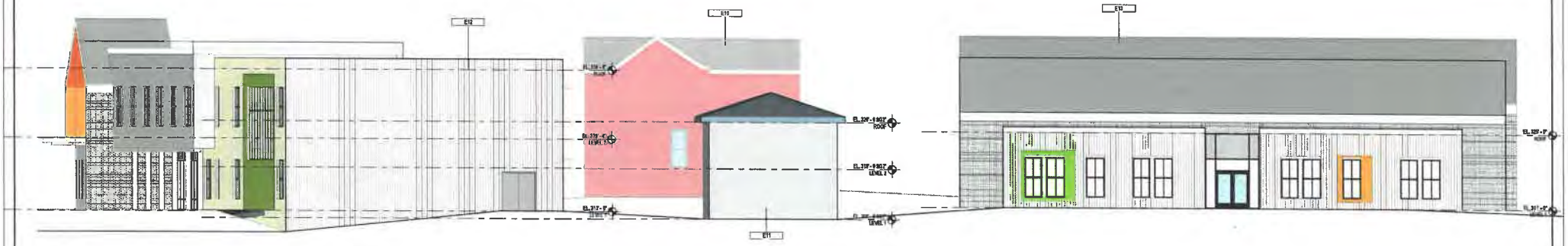
ARCHITECTURAL SITE PLAN
ENGEL EDUCATION GROUP FEASIBILITY STUDY
9322 FAIRVIEW AVE, MANASSAS, VA 20110
COOPER CARRY

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

PROJECT# 20210193 | 04/19/22

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: CMcL
DATE: 4/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

ELEVATION LEGEND	
Key Value	Keynote Text
E10	EXISTING TILLET HALL
E11	EXISTING CARRIAGE HOUSE
E12	PROPOSED ELEMENTARY SCHOOL
E13	PROPOSED DAYCARE



2 A2.2 M WEST ELEVATION - MASSING
SCALE: 1/8" = 1'-0"

1 A2.2 M NORTH ELEVATION - MASSING
SCALE: 1/8" = 1'-0"

PROJECT# 20210195 | 04/19/22

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

EXTERIOR ELEVATIONS

ENGEL EDUCATION GROUP FEASIBILITY STUDY
9322 FAIRVIEW AVE, MANASSAS, VA 20110

COOPER CARRY

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 4/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

1 A0.1/A3.0 CONCEPT RENDERING - VIEW FROM CORNER OF WESLEY + FAIRVIEW
NOT TO SCALE

PROJECT#: 20210191 | | 04/19/22

RENDERINGS

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

ENGEL EDUCATION GROUP FEASIBILITY STUDY
9523 FAIRVIEW AVE. MANASSAS, VA 20110

COOPER CARRY

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 4/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

ELEVATION LEGEND	
Key Value	Keynote Text
E10	EXISTING TILLET HALL
E11	EXISTING CARRIAGE HOUSE
E12	PROPOSED ELEMENTARY SCHOOL
E13	PROPOSED DAYCARE

2 A2.1M EAST ELEVATION - MASSING
SCALE: 1/8" = 1'-0"

1 A2.1M SOUTH ELEVATION - MASSING
SCALE: 1/8" = 1'-0"

PROJECT #: 20210195 | 04/04/22

EXTERIOR ELEVATIONS

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

ENGEL EDUCATION GROUP FEASIBILITY STUDY
9322 FAIRVIEW AVE, MANASSAS, VA 20110

COOPER CARRY

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: CMiller
DATE: 4/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

1 A0.1A1.2 CONCEPT RENDERING - VIIEW FROM WESLEY
NOT TO SCALE

PROJECT# 20210105 | | 04/19/22

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

RENDERINGS

ENGEL EDUCATION GROUP FEASIBILITY STUDY
9322 FAIRVIEW AVE, MANASSAS VA 20110

COOPER CARRY

ARB CASE #: 2022-0029
SIGNED: CMuller
DATE: 4/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

1 A0.3/A3.1 CONCEPT RENDERING - VIEW FROM NE CORNER OF THE SITE
NOT TO SCALE

PROJECT #: 20210193 | | 04/19/22

RENDERINGS

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

ENGEL EDUCATION GROUP FEASIBILITY STUDY
9522 FAIRVIEW AVE, MANASSAS, VA 20110

COOPER CARRY

CITY OF MANASSAS ARCHITECTURAL REVIEW BOARD
CERTIFICATE OF APPROPRIATENESS
Issued Date: May 19, 2022
Expires: May 19, 2024

ARB CASE #2022-0029

Owner(s): Kenneth and Karen Parsons
Applicant(s): Timothy Dugan
Site Address: 9522 Fairview Ave.
Tax Map #: 101/01 00/202//

Motion: First: Ms. Brent; Second: Vice-Chair Carter
Ayes: Ms. Brent, Vice-Chair Carter, Chairperson Alten, Mr. Hersch, Mr. Pires, Mr. Porter, Ms. Settle

Approved Activity: Materials for New Construction Buildings

1. Brick: Glen Gery Georgian, and Belden Winter Mist.
2a. Simulated Wood Panel: Trespa Meteon Decorative High-Pressure in the color Elegant Oak with a matt finish.
2b. Trim: Trespa Meteon Decorative High-Pressure Laminate in the color Pure White with a matt finish.
2c. Colored Accent Panels: Trespa Meteon Decorative High-Pressure Laminate in the colors Royal Blue, Red Orange, and Lime Green with a matt finish.
3a. Double-hung Window: Pella 2/2, double-hung aluminum clad wood window in the color Iron Ore with a simulated divided light with spacer.
3b. Store-front windows: Aluminum-frame windows with the Trifab VersaGlaze 451T in a color to match Iron Ore.
3c. Doors: 500 Wide Stile Entrance aluminum-frame in a color to match Iron Ore.
3d. Curtainwall: Kaawneer 1600, 2 ½ aluminum-frame in a color to match Iron Ore.
4a. Glazing for windows and doors: Guardian Glass SN62 clear, insulated, low-e glass.
4b. Glazing for select windows: Guardian SunGuard Spandrel HT glazing in an opaque black color.
5. Roof: Snap-lock metal seam roof with a 1 ¾ inch seam in the color graphite.
6. Brick Mortar: Holcim Satin color

Jan Alten, Chairperson

Christen Miller, Clerk

Attachments Enclosed: Material Details

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

9522 FAIRVIEW AVE

ARCHITECTURAL REVIEW BOARD MATERIALS

New Construction Only
MANASSAS, VA

May 17, 2022

miniGenius
Private Kindertagesstätten

kinder GENIUS

COOPER CARRY

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

TABLE OF CONTENTS

Match to Tillet Hall Brick

Brick

Roofing & Window Frame Color

Simulated Wood Panel

SAMPLES IN SUN

Match to Tillet Hall Brick

Brick

Roofing & Window Frame Color

Simulated Wood Panel

SAMPLES IN SHADE

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

COOPER CARRY

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: Miller
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

1. BRICK

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: [signature]
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

1. BRICK

- Material: Modular Face Brick
- Basis-of-Design Product: Belden White Mist
- The brick proposed on the new construction was selected to compliment the existing red brick and avoid completing with the historic structures.

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: Miller
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

2. SIMULATED WOOD PANELS + TRIM

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

2.A - SIMULATED WOOD PANELS

- Material: Decorative High-Pressure Laminate (DHPL)
- Basis-of-Design Product: Trespa Meteon; Elegant Oak
- The panels have a wood appearance that are also sustainable, durable, and weather resistant.
- The material will be cut in long, linear boards and installed a vertical pattern.

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

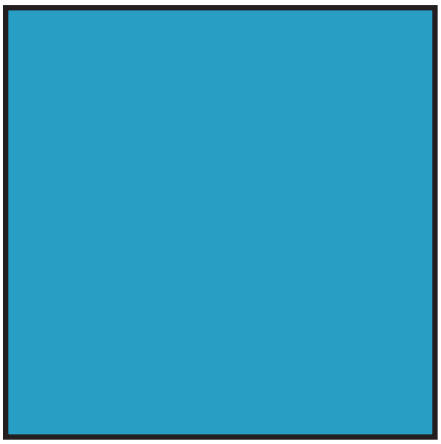
2.B - TRIM

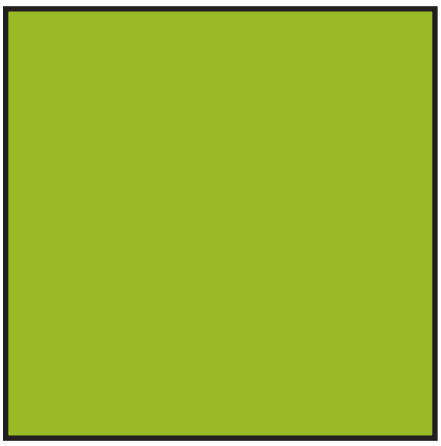
- Material: Decorative High-Pressure Laminate (DHPL)
- Basis-of-Design Product: Trespa Meteon; Pure White
- The panels have a solid color finish that are also sustainable, durable, and weather resistant.

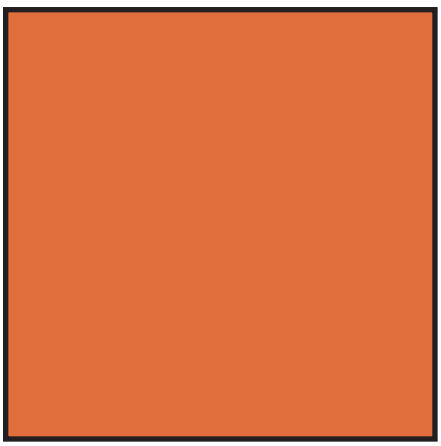
APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

2.C - COLORED PANELS

- Material: Decorative High-Pressure Laminate (DHPL)
- Basis-of-Design Product: Trespa Meteon; Blue, Orange, Green
- The panels have a solid color finish that are also sustainable, durable, and weather resistant.







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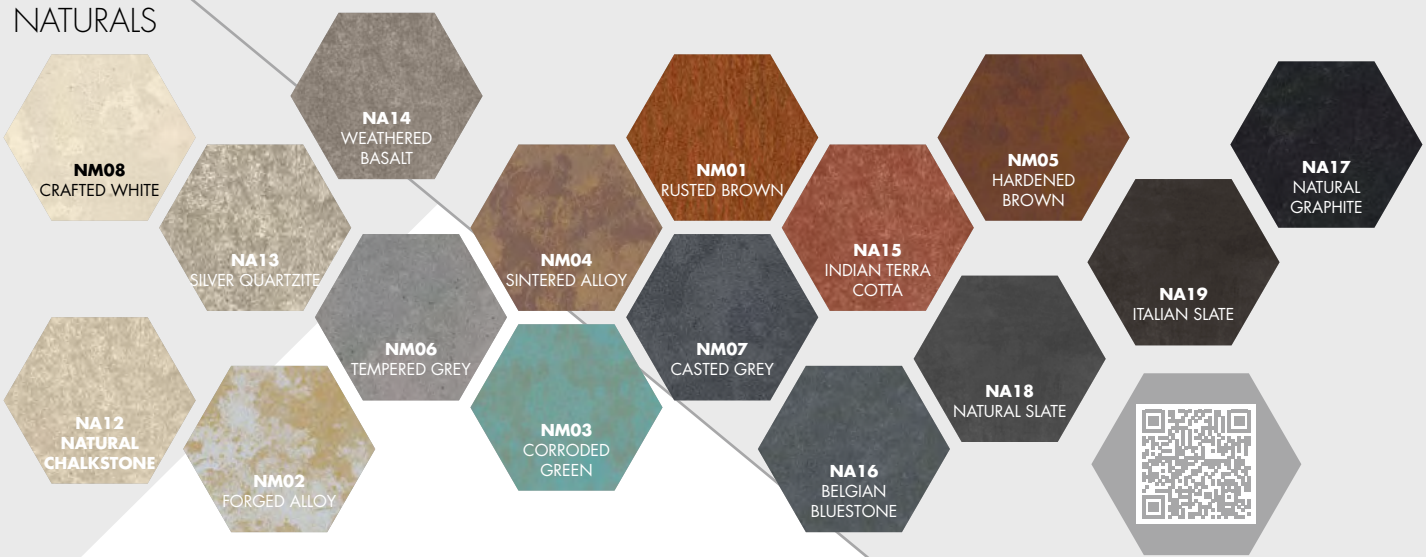
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

WOOD DECORS

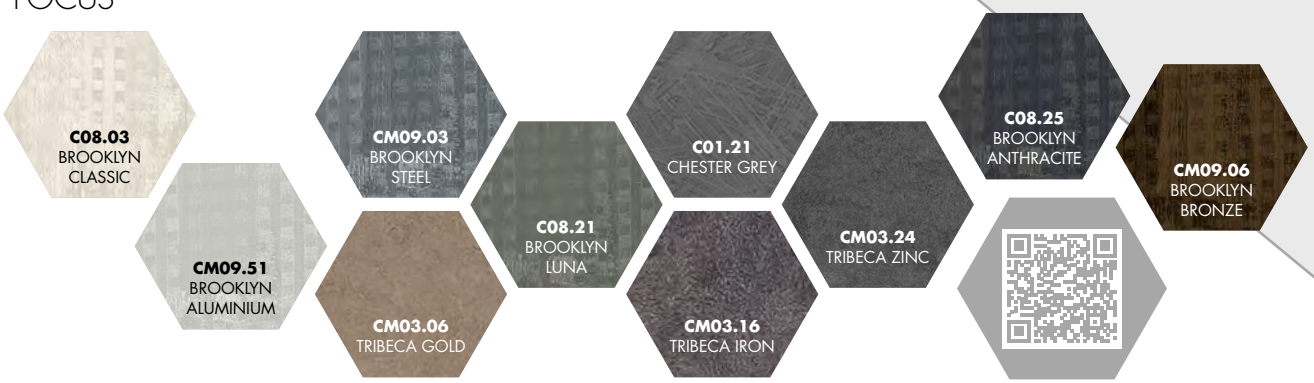
ORDER YOUR SAMPLES

NATURALS



ORDER YOUR SAMPLES

FOCUS



ORDER YOUR SAMPLES

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

UNI COLOURS

ORDER YOUR SAMPLES

LUMEN

Colour code	Colour name	Diffuse			Oblique			Specular		
		■	■*	■	■	■*	■	■	■*	■
L0500	Athens White	▪	▪	▪	▪	▪	▪	▪	▪	▪
L0651	Italian Greige	▪	▪	▪						
L1971	Iceland Grey	▪	▪	▪						
L2151	London Grey	▪	▪	▪	▪	▪	▪	▪	▪	▪
L2581	New York Grey	▪	▪	▪	▪	▪	▪	▪	▪	▪
L3673	Olive Green	▪	▪	▪						
L9000	Metropolis Black	▪	▪	▪	▪	▪	▪	▪	▪	▪
With metallic effect										
LM0561	Roman Bronze	▪	▪	▪	▪	▪	▪			
LM0641	China Gold	▪	▪	▪	▪	▪	▪			
LM1055	Persian Copper	▪	▪	▪	▪	▪	▪			
LM2181	Siberian Platinum	▪	▪	▪	▪	▪	▪			
LM5101	Paris Silver	▪	▪	▪	▪	▪	▪			

TRESPA® METEON® LUMEN DIFFUSE, LUMEN OBLIQUE AND ALL LUMEN WITH METALLIC EFFECT (PRODUCTS WITH LM CODE) FEATURE A DIRECTIONAL COLOURED SURFACE.
* WITH SATIN REVERSE.

METALLICS

Colour code	Colour name	Satin			Rock*		
		■	■	■	■	■	■
M04.4.1	Titanium Silver	▪	▪	▪	▪	▪	▪
M05.5.1	Titanium Bronze	▪	▪	▪	▪	▪	▪
M05.6.1	Urban Brown	▪	▪	▪	▪	▪	▪
M06.4.1	Amber	▪	▪	▪	▪	▪	▪
M21.3.4	Azurite Blue	▪	▪	▪	▪	▪	▪
M21.8.1	Graphite Grey	▪	▪	▪	▪	▪	▪
M51.0.1	Aluminium Grey	▪	▪	▪	▪	▪	▪
M51.0.2	Urban Grey	▪	▪	▪	▪	▪	▪
M53.0.1	Copper Red	▪	▪	▪	▪	▪	▪
M53.0.2	Copper Yellow	▪	▪	▪	▪	▪	▪

TRESPA® METEON® METALLICS PANELS FEATURE A DIRECTIONAL COLOURED SURFACE.
* WITH SATIN REVERSE.

FOCUS

Colour code	Colour name	Diffuse	
		■	■
C08.03	Brooklyn Classic	▪	▪
C08.21	Brooklyn Luna	▪	▪
C08.25	Brooklyn Antracite	▪	▪
C01.21	Chester Grey	▪	▪

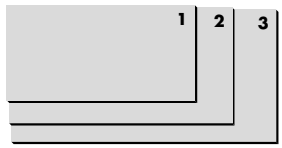
Colour code	Colour name	Diffuse	
		■	■
With metallic effect			
CM03.06	Tribeca Gold	▪	▪
CM03.16	Tribeca Iron	▪	▪
CM03.24	Tribeca Zinc	▪	▪
CM09.03	Brooklyn Steel	▪	▪
CM09.06	Brooklyn Bronze	▪	▪
CM09.51	Brooklyn Aluminium	▪	▪

TRESPA® METEON® FOCUS PANELS FEATURE A DIRECTIONAL COLOURED SURFACE.

TYPES

- **SINGLE SIDED DECORATIVE** DECORATIVE SIDE WITH NON DECORATIVE BLACK REVERSE
- **DOUBLE SIDED DECORATIVE** SAME COLOUR FOR FRONT AND REVERSE SIDE OF THE PANEL
- **VARITOP** DECORATIVE SIDE WITH STANDARD WHITE DECORATIVE SATIN REVERSE (A03.0.0)
- **DUOCOLOUR** DIFFERENT COLOUR FOR FRONT AND REVERSE SIDE OF THE PANEL

SIZES



1 3050 x 1530 mm (≈ 120 x 60 inch)
2 3650 x 1860 mm (≈ 143 x 73 inch)
3 4270 x 2130 mm (≈ 168 x 83 inch)*

* THE LARGE SIZE OF THIS PANEL ALLOWS AN EFFICIENT MACHINING OF THE PRODUCT.

THICKNESSES

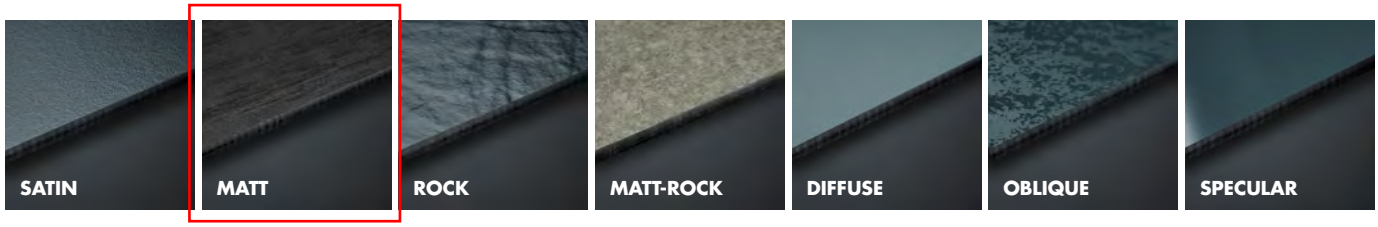
6 mm (≈ 1/4 inch)
8 mm (≈ 5/16 inch)
10 mm (≈ 3/8 inch)
13 mm (≈ 1/2 inch)

NOTE

PLEASE BE AWARE THAT NOT ALL PRODUCT-FINISH COMBINATIONS ARE POSSIBLE. FOR AVAILABLE SHEET SIZES, THICKNESSES AND FINISHES IN YOUR COUNTRY, PLEASE CHECK **TRESPA.INFO** FOR THE DETAILED AND UP TO DATE DELIVERY PROGRAMME AND MATERIAL PROPERTY DATASHEET. ALTERNATIVELY YOU CAN USE THE PRODUCT SELECTOR ON **TRESPA.COM** (AFTER CHOOSING THE COUNTRY WHERE THE PROJECT IS LOCATED).

ORDER SAMPLES AT TRESPA.COM

FINISHES



NEW

NW31
WESTERN
RED CEDAR

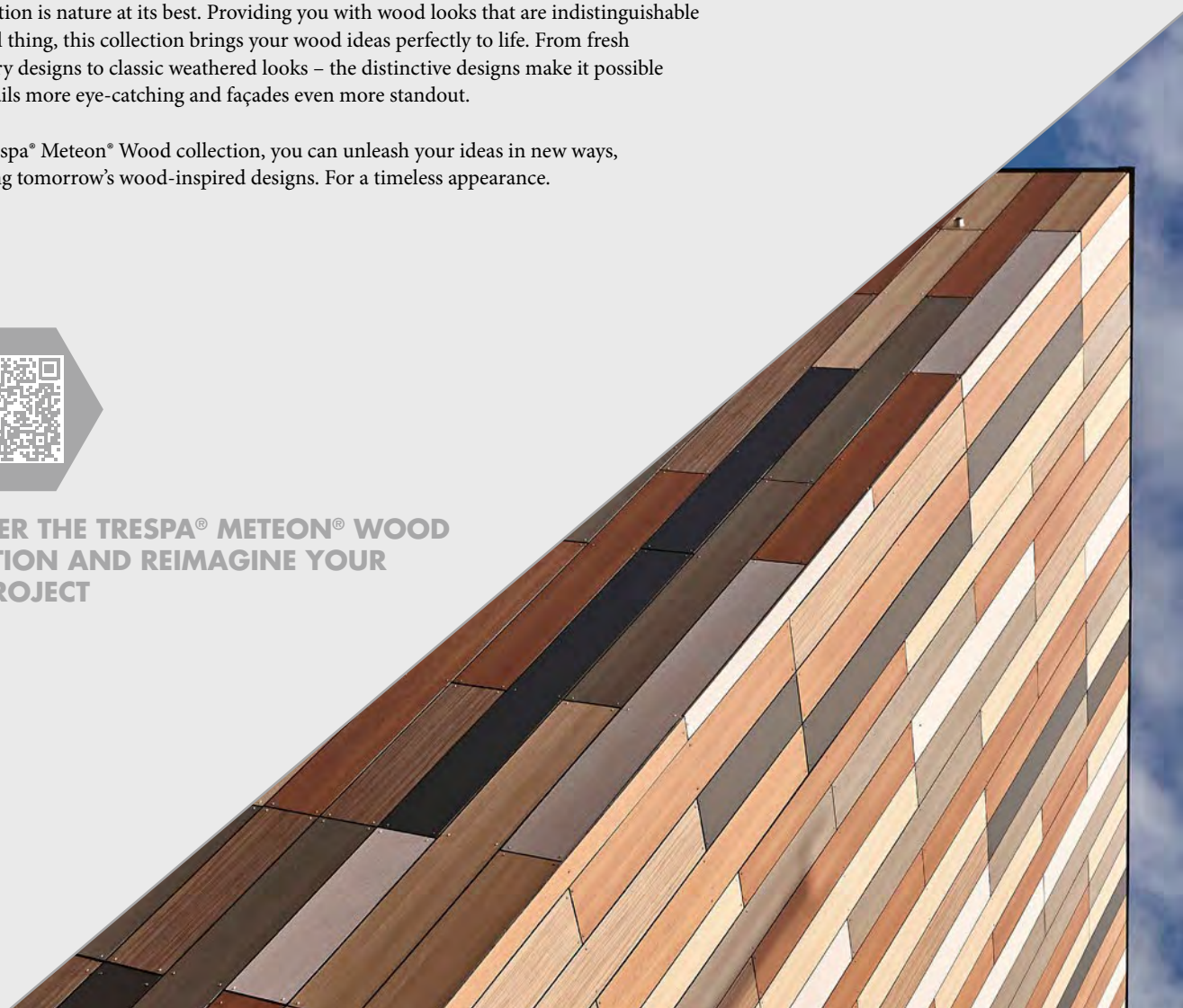
METEON® WOOD

NATURE AT ITS BEST

Wood structures that tell a story. Tones that either breathe more warmth or convey coolness. And endless possibilities that bring natural textures (or finishes) to life. The Trespa® Meteon® Wood collection is nature at its best. Providing you with wood looks that are indistinguishable from the real thing, this collection brings your wood ideas perfectly to life. From fresh contemporary designs to classic weathered looks – the distinctive designs make it possible to make details more eye-catching and façades even more standout.

With the Trespa® Meteon® Wood collection, you can unleash your ideas in new ways, while creating tomorrow's wood-inspired designs. For a timeless appearance.

DISCOVER THE TRESPA® METEON® WOOD COLLECTION AND REIMAGINE YOUR NEXT PROJECT



FINISHES

For more information on the finishes please see page 18

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: [signature]
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

3. WINDOWS + DOORS

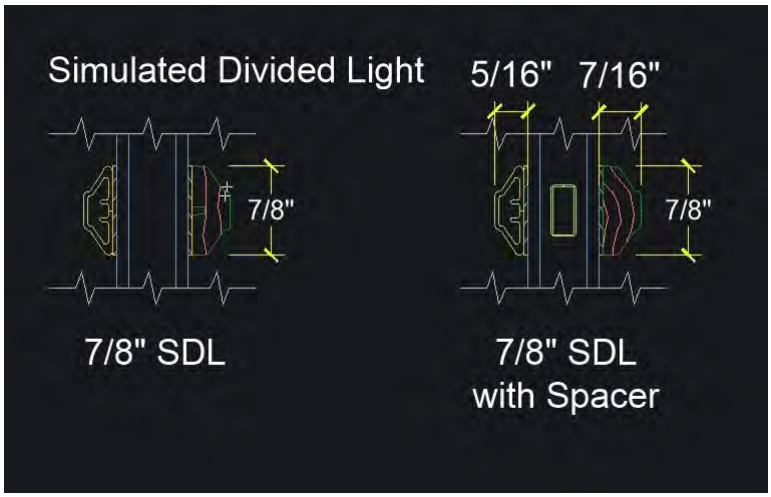
APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

3.A - DOUBLE-HUNG WINDOWS

- Material: Aluminum-Clad Wood Windows
- Basis-of-Design Product: Pella, Lifestyle Series
- Finish: Iron Ore
- 2/2 Double-hung windows are proposed at all punched openings.

Iron Ore

Mullion Dimensions



APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: [signature]
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

Pella® Lifestyle Series

Clad/Wood

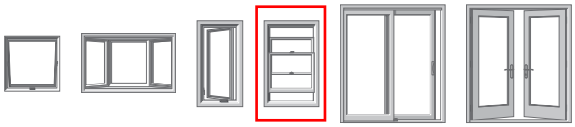
#1 performing wood window and patio door for the combination of energy, sound and value.[1]

Triple-pane casement

Dual-pane casement

- **Performance redefined**
  You don't have to compromise on any aspect of performance. Available performance solutions offer an unbeatable combination of energy efficiency, sound control and value.[1]
- **ENERGY STAR® certified[2]**
  Pella products offer energy-efficient options that will meet or exceed ENERGY STAR guidelines in all 50 states. Pella Lifestyle Series products with triple-pane glass have been awarded ENERGY STAR Most Efficient Mark in 2022.
- **Enhanced sound control**
  Our patented, triple-pane design with Advanced Low-E glass allows for mixed glass thickness for enhanced sound dampening resulting in an average 52% noise reduction versus single-pane windows.[3]
- **Popular features and options**
  Low-maintenance aluminum-clad exteriors. Factory prefinish with a choice of several paints and stains, or choose primed or unfinished. Several grille types and patterns and high-transparency screens are also available.
- **Intentional design for improved durability**
  Intentional jamb/sill design helps seal the end grain of the wood and elevates it off the rough opening, reducing the potential for moisture.
- **Durable 3-way corner joint**
  Three-way corner joints are made up of mortise-and-tenon, metal fasteners and commercial adhesive for added strength and durability.
- **Low-maintenance exteriors**
  Aluminum-clad exteriors with EnduraClad® finish resists fading and chalking. It is applied in an overlapping fashion for exceptional protection.
- **Exclusive wood protection**
  Pella's exclusive EnduraGuard® wood protection is applied after the pieces have been cut and milled, but prior to final assembly. It provides advanced protection against the effects of moisture, decay, stains from mold and mildew – as well as termite damage.
- **Best limited lifetime warranty[4]**
  Pella Lifestyle Series products are covered by the best limited lifetime warranty in the industry for wood windows and patio doors.[4]
- **Testing beyond requirements**
  At Pella, our products are tested beyond requirements to help ensure they have long-lasting performance and reduce call-backs for you.

Available in these window and patio door styles:[5]



Special shape windows also available.

[1,2,3,4,5] See back cover for disclosures.

Product Specifications

Window & Patio Door Styles	Min. Width	Min. Height	Max. Width	Max. Height	Performance Class & Grade	Performance Values U-Factor	SHGC	STC
Awning Dual-pane vent	21"	17"	59"	59"	LC30	0.25-0.35	0.19-0.51	25-28
Awning Triple-pane vent	21"	17"	59"	59"	LC25-CW50	0.12-0.19	0.24-0.56	31-37
Casement Dual-pane vent	17"	17"	35"	73"	LC30-LC50	0.25-0.35	0.19-0.51	25-31
Casement Triple-pane vent	17"	17"	35"	73"	R20-CW50	0.20-0.25	0.17-0.46	31-37
Fixed Casement Dual-pane	17"	17"	73"	73"	LC30-LC50	0.23-0.50	0.19-0.66	29-32
Fixed Casement Triple-pane	17"	17"	73"	73"	R20-CW50	0.19-0.24	0.17-0.46	33-37
Double-Hung Dual-pane vent	21"	35"	41.5"	77"	LC30-LC50	0.19-0.66	0.20-0.56	27-31
Hinged Patio Door Dual-pane single door	30"	80"	38"	96"	LC50	0.25-0.29	0.18-0.48	31
Hinged Patio Door Triple-pane single door	30"	80"	38"	96"	LC55	0.22-0.26	0.14-0.38	34-36
Hinged Patio Door Dual-pane double door	60"	80"	75"	96"	LC50	0.25-0.29	0.18-0.48	30-32
Hinged Patio Door Triple-pane double door	50"	80"	75"	96"	LC55	0.22-0.26	0.14-0.38	34-36
Sliding Patio Door Dual-pane single-door fixed (O)	31"	80"	49"	96"	CW50	0.24-0.33	0.18-0.51	27
Sliding Patio Door Triple-pane single-door fixed (O)	31"	80"	49"	96"	CW60	0.21-0.27	0.17-0.45	33-36
Sliding Patio Door Dual-pane double-door vent (OX or XO)	60"	80"	96"	96"	R20-LC50	0.24-0.33	0.18-0.51	29-32
Sliding Patio Door Triple-pane double-door vent (OX or XO)	60"	80"	96"	96"	R25-LC60	0.21-0.27	0.17-0.45	33-36

Window sizes available in 1/4" increments
Special sizes available in triple-pane patio doors. For more information regarding performance, visit pella.com/performance. For more information regarding frame and installation types, visit installpella.com.

Window Hardware

Essential Collection

Select from popular designs and finishes to suit every style.

Fold-away Crank

Cam-Action Lock

Finishes:

Champagne

White

Brown

Matte Black

Satin Nickel

Satin Brass

Patio Door Hardware

Essential Collection

Elevate your style and transform a home with elegant selections.

Hinged Patio Door Handle

Sliding Patio Door Handle

Finishes:

Champagne

White

Brown

Matte Black

Satin Nickel

Satin Brass

Colors

Prefinished Pine Interior Colors

We can prefinish pine in your choice of several paint and stain colors. Unfinished or primed and ready-to-paint are also available.

White

Bright White

Linen White

Golden Oak Stain

Early American Stain

Provincial Stain

Black Stain

Aluminum-Clad Exterior Colors

Our low-maintenance EnduraClad® exterior finish resists fading and helps protect windows and patio doors for years. Seacoast EnduraClad protective finish for coastal projects with high salt exposure is also available.

Black

White

Brown

Fossil

Iron Ore

Portobello

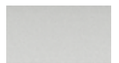
Putty

Almond

Classic White

Brick Red

Hartford Green



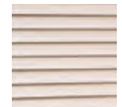
Wolf Gray

Integrated Blinds[6]

Raise blinds up for an unobstructed view or tilt to let in just the right amount of light. Our best integrated and accessible blinds are available manual or motorized with Pella® Insynctive® technology.

White

Poplar White



Bisque

Storm

Golden

Mocha

Black

Integrated Shades[6]

Our best integrated fabric shades feature a white exterior fabric for a uniform look from the street. Integrated and accessible shades are available manual or motorized with Pella Insynctive technology.

Light-Filtering:

White

Silver

Maize

Room-Darkening:

Cotton

Bamboo

Ash

Haven't landed on the final blind or shade color selection? No problem. With our patented triple-pane design, you and your customer can make those decisions later in the schedule. Our triple-pane products come with all of the hardware to add a blind or shade straight from the factory or at a later time in the building or remodeling process.

Added Peace of Mind

Integrated Security Sensors

Integrated wireless security sensors maintain aesthetics, streamline security installation and ensure no warranty loss is caused by post-installation drilling. Sensors can be monitored via the free Pella® Insynctive® App and are compatible with major security panel systems.[7] For more information, go to connectpella.com.

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OFFICE OF COMMUNITY DEVELOPMENT

[6,7] See back cover for disclosures.

Performance Packages

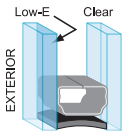
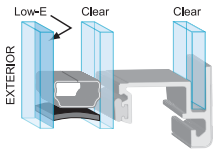
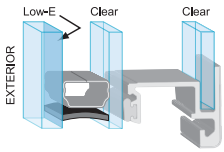
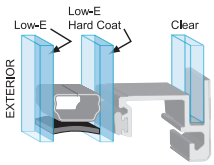
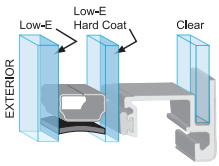
To make things easier, we've created performance packages.

Performance solutions offer an unbeatable combination of energy efficiency, sound control and value.[1] Create room-by-room solutions with the upgraded triple-pane glass design.

All values below are averages compared with single-pane windows.

Most Efficient 2022 www.energystar.gov

Pella® Lifestyle Series offers products awarded ENERGY STAR® Most Efficient for 2022.[2]

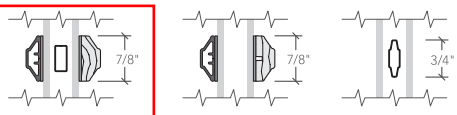
Base	Performance	Sound Control	Energy Efficiency	Ultimate Performance
	71% More Energy Efficient[8] + 34% Noise Reduction[3]	52% Noise Reduction[3]	83% More Energy Efficient[8]	79% More Energy Efficient[8] + 52% Noise Reduction[3]
				
Advanced Low-E	**Advanced Low-E SunDefense Low-E or NaturalSun Low-E**	**Advanced Low-E Sound-reduction glazing**	**AdvancedComfort**	**AdvancedComfort Sound-reduction glazing**
Two panes of insulating, energy-efficient glass and our most popular features and options.	A triple-pane glass design for a combination of both improved energy efficiency and sound performance.	Triple-pane glass design featuring mixed glass thicknesses for enhanced sound dampering.	A triple-pane glass design with upgraded AdvancedComfort Low-E glass for enhanced energy efficiency.	A triple-pane glass design featuring mixed glass thicknesses with upgraded AdvancedComfort Low-E glass for enhanced energy efficiency.

Patented triple-pane glass design gives flexibility to add integrated blinds or shades without impacting performance.

Grilles

Choose the look of true divided light, removable roomside grilles or make cleaning easier by selecting grilles-between-the-glass.

Dual-Pane

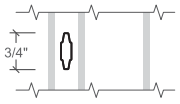


Simulated-Divided-Light with Spacer 7/8"

Simulated-Divided-Light without Spacer 7/8"

Contoured Aluminum Grilles-Between-the-Glass 3/4"[9]

Triple-Pane



Contoured Aluminum Grilles-Between-the-Glass 3/4"[9]

The Best Limited Lifetime Warranty in the Industry

We know your reputation matters and you stake your reputation on quality, dependable products. That's why we have the best limited lifetime warranty in the industry for wood windows and patio doors.[4]

[1] Performance solutions require upgrades to triple-pane, AdvancedComfort Low-E and mixed glass thickness. Based on comparing product quotes and published STC/OITC and U-Factor ratings of leading national wood window and patio door brands.

[2] Some Pella products may not meet ENERGY STAR certification in Canada. For more information, contact your local Pella sales representative or go to nrcan.gc.ca/energy/products/categories/fenestration/13739.

[3] Reduction in sound based on OITC ratings of Pella Lifestyle Series windows with respective performance package compared to a single-pane wood or vinyl window with an OITC of 19. Calculated by using the sound transmission loss values in the 80 to 4000 Hz range as measured in accordance with ASTM E-90(09). Actual results may vary.

[4] Based on comparing written limited warranties of leading national wood window and wood patio door brands. See written limited warranty for details, including exceptions and limitations, at pella.com/warranty.

[5] Double-hung windows available in dual-pane only.

[6] Available with triple-pane products only.

[7] Requires the Insynctive App on a smart device, an Insynctive Bridge and a wireless home router with internet connection.

[8] Window energy efficiency calculated in a computer simulation using RESFEN 6.0 default parameters for a 2000 sq. foot new construction single-story home when Pella Lifestyle Series windows with the respective performance package are compared to a single-pane wood or vinyl window. The energy efficiency and actual savings will vary by location. The average window energy efficiency is based on a national average of 94 modeled cities across the country and weighting based on population. For more details see pella.com/methodology.

[9] Appearance of exterior grille color may vary depending on the Low-E insulating glass selection.

APPROVED DESIGN
ARB CASE #: 2022-0029
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DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

3.B - STOREFRONT WINDOWS

- Material: Aluminum-Framed Storefront
- Basis-of-Design Product: Kawneer Trifab 451T, 2” sight-line
- Storefront window system is proposed at the large window openings.
- The aluminum will be painted with the manufacturer’s fluoropolymer finish in a custom gray color to match the double-hung windows.

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DATE: 5/19/2022
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TRIFAB® VG (VERSAGLAZE®)
TRIFAB® VG 450, 451 & 451T (THERMAL) FRAMING SYSTEMS &
TRIFAB® 451UT (ULTRA THERMAL) FRAMING SYSTEM

KAWNEER

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: [signature]
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

Design + Performance Versatility with Unmatched Fabrication Flexibility

Geisinger Professional Building
Jenkins Township, Pennsylvania
ARCHITECT
Mericle Commercial Real Estate Services
Wilkes-Barre, Pennsylvania
GLAZING CONTRACTOR
Sterling Glass, Inc., Scranton, Pennsylvania
PHOTOGRAPHER
© Perzel Photography Group

Trifab® VersaGlaze® is built on the proven and successful Trifab® platform – with all the versatility its name implies. There are enough framing system choices, fabrication methods, design options and performance levels to please the most discerning building owner, architect and installer. The 4.5" depth Trifab® VersaGlaze® Framing System family is available with non-thermal, thermal and ultra-thermal performance levels. The ultra-thermal Trifab® 451UT Framing System, is designed for the most demanding thermal performance and employs a dual Isolock® thermal break.

AESTHETICS

Trifab® VersaGlaze® Framing Systems offer designers a choice of front-, center-, back- or multi-plane glass applications. Structural silicone glazing (SSG) and weatherseal glazing options further expand designers' choices, allowing for a greater range of possibilities for specific project requirements and architectural styles. All systems have a 4-1/2" frame depth; Trifab® VersaGlaze® 450 has 1-3/4" sightlines, while Trifab® VersaGlaze® 451/451T and Trifab® 451UT have 2" sightlines.

With seamless incorporation of Kawneer entrances or windows, including GLASSvent® visually frameless ventilators, Trifab® framing can be used on almost any project. These framing systems can also be packaged with Kawneer curtain walls and overhead glazing, thereby providing a full range of proven, and tested, quality products for the owner, architect and installer from a single-source supplier.

ECONOMY

Trifab® VersaGlaze® 450/451/451T/451UT Framing Systems offer a variety of fabrication choices to suit your project:

- **Screw Spline** – for economical continuous runs utilizing two-piece vertical members that provide the option to pre-assemble units with controlled shop labor costs and smaller field crews for handling and installation. (available for all systems)
- **Shear Block** – for punched openings or continuous runs using tubular moldings with shear block clips that provide tight joints for transporting large pre-assembled multi-lite units. (available for 450/451/451T systems)
- **Stick** – for fast, easy field fabrication. Field measurements and material cuts can be done when metal is on the jobsite. (available for 450/451/451T systems)
- **Pre-glazed** – The combination of screw spline construction with pre-glazing in the shop accelerates installation and reduces field labor time while minimizing disruption to the surrounding area or existing tenants. Making it an exceptional choice for new or retrofit applications, particularly in urban areas or where space is limited. (available for 451/451T/451UT framing)

Brighton Landing
Cambridge, Massachusetts
ARCHITECT
ADD Inc., Cambridge, Massachusetts
GLAZING CONTRACTOR
Ipswich Bay Glass Company,Inc., Rowley, Massachusetts
PHOTOGRAPHER
© Gordon Schenck, Jr.

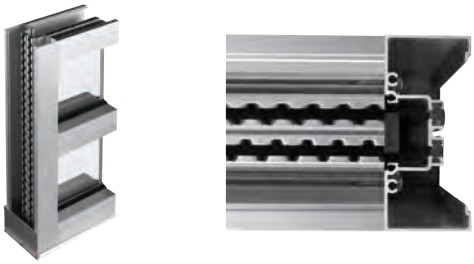
All systems can be flush glazed from either the inside or outside. The weatherseal option provides an alternative to SSG vertical mullions for Trifab® VersaGlaze® 450/451/451T. This ABS/ASA rigid polymer extrusion allows complete inside glazing and creates a flush glass appearance on the building exterior without the added labor of scaffolding or swing stages. Additionally, high-performance flashing options are engineered to eliminate perimeter sill fasteners and associated blind seals.

FOR THE FINISHING TOUCH

Architectural Class I anodized aluminum and painted finishes in fluoropolymer (AAMA 2605) and solvent-free powder coatings (AAMA 2604) offer a variety of color choices.

PERFORMANCE

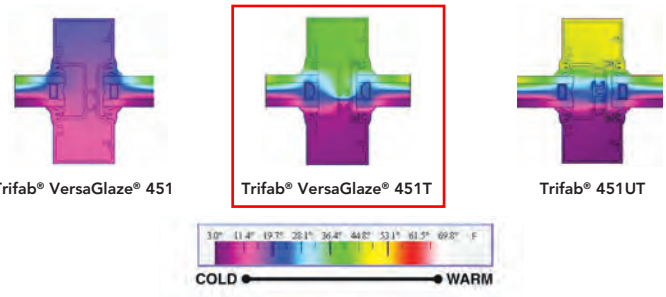
Kawneer's Isolock® thermal break technology creates a composite section, prevents dry shrinkage and is available on Trifab® VersaGlaze® 451T. For even greater thermal performance, a dual Isolock® thermal break is used on Trifab® 451UT.



Trifab® 451UT uses a dual Isolock® thermal break (right) and features a new high-performance sill design, which incorporates a screw-applied end dam (left), ensuring positive engagement and tight joints between the sill flashing and end dam.

U-factor, CRF values and STC ratings for Trifab® framing systems vary depending upon the glass plane application. Project-specific U-factors can be determined for each individual project. (See the Kawneer Architectural Manual or Kawneer.com for additional information.)

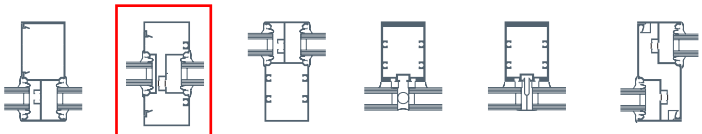
Thermal simulations showing temperature variations from exterior/cold side to interior/warm side.



Trifab® VersaGlaze® 451 | **Trifab® VersaGlaze® 451T** | **Trifab® 451UT**

PERFORMANCE TEST STANDARDS

Air Infiltration	ASTM E283
Water	AAMA 501, ASTM E331
Structural	ASTM E330
Thermal	AAMA 1503
Thermal Break	AAMA 505, AAMA TIR-A8
Acoustical	AAMA 1801, ASTM E1425



Front | **Center** | **Back** | **SSG** | **Weatherseal** | **Multi-Plane**

Kawneer Company, Inc.
Technology Park / Atlanta
555 Guthridge Court
Norcross, GA 30092
770.449.5555
kawneer.com

KAWNEER

ARCHITECTURAL SYSTEMS | ENTRANCES + FRAMING | CURTAIN WALLS | WINDOWS

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ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

3.C - STOREFRONT ENTRANCE DOORS

- Material: Aluminum-Framed Storefront Doors
- Basis-of-Design Product: 500 Wide Stile Entrance
- Storefront doors are proposed at all ground level entrances, except where shown as solid hollow metal doors on the west elevation.
- The aluminum will be painted with the manufacturer's fluoropolymer finish in a custom gray color to match the double-hung windows.

190, 350 AND 500 STANDARD ENTRANCES

Single-Source Packages Generate Versatile First Impressions

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APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED: Miller
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

Curtis Culwell Center
Garland, Texas
ARCHITECT
HKS, Inc., Dallas, Texas
GLAZING CONTRACTOR
B & B Glass, Inc., Dallas, Texas
PHOTOGRAPHER
© Blake Marvin – HKS

Tough yet attractive, Kawneer's Standard Entrances are designed as a single-source package of door, door frame and hardware that is easily adaptable to custom requirements. Designed to complement new or remodel construction as well as modern or traditional architecture, they are engineered, constructed and tested to make a good first impression while withstanding the rigors of constant use by occupants and visitors.

PERFORMANCE

To resist both lever arm and torsion forces that constantly act on any door, all three entrances feature welded corner construction with Sigma deep penetration and fillet welds plus mechanical fastenings at each corner – a total of 16 welds per door. Each door corner comes with a limited lifetime warranty, good for the life of the door under normal use. It is transferable from building owner to owner and is in addition to the standard two-year warranty covering material and workmanship of each Kawneer door.

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1. Thermoplastic elastomer weatherstrip in blade stop of frame jambs, header or transom bar.
2. Integral polymeric fin attached to adjustable astragal, creating an air barrier between pairs of doors.
3. Optional surface-applied bottom weatherstrip with flexible blade gasket. Extruded raised lip on threshold to provide continuous contact for bottom weatherstrip.
4. Standard 1/4" beveled glass stops to sheet water and dirt off without leaving residue.
5. Available in all finishes offered by Kawneer.

ECONOMY

Kawneer's bulb neoprene weatherstripping forms a positive seal around the door frame and provides a substantial reduction in air infiltration, resulting in improved comfort and economies in heating and cooling costs. The system is wear- and temperature-resistant and replaces conventional weatherproofing. The bottom weatherstrip at the interior contains a flexible blade gasket to meet and contact the threshold, enhancing the air and water infiltration performance characteristics.

190 NARROW STILE ENTRANCE

- Is engineered for moderate traffic in applications such as stores, offices and apartment buildings
- Vertical stile measures 2-1/8", top rail 2-1/4" and bottom rail 3-7/8"
- Results in a slim look that meets virtually all construction requirements

350 MEDIUM STILE ENTRANCE

- Provides extra strength for applications such as schools, institutions and other high-traffic applications
- Vertical stiles and top rails measure 3-1/2"
- Bottom rail measures 6-1/2" for extra durability

500 WIDE STILE ENTRANCE

- Creates a monumental visual statement for applications such as banks, libraries and public buildings
- Vertical stiles and top rail measures 5"; bottom rail measures 6-1/2"
- Results in superior strength for buildings experiencing heavy traffic conditions

GENERAL

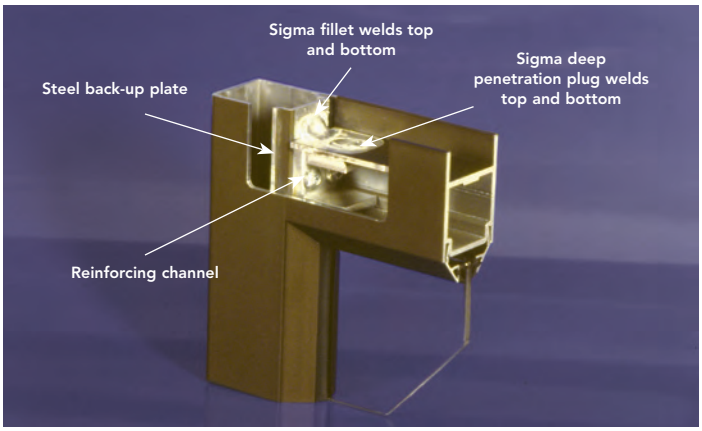
- Heights vary up to 10'; widths range from approximately 3' to 4'
- Door frame face widths range to a maximum of 4", while depths range to 6"
- Door operation is single- or double-acting with maximum security locks or touch bar panics standard
- Architect's classic 1" round, bent bar push/pull hardware is available in various finishes and sizes
- Infills range from 1/4" to 1"

FOR THE FINISHING TOUCH

Architectural Class I anodized aluminum finishes are available in clear and Permanodic® color choices.

Painted finishes, including fluoropolymer, that meet AAMA 2605 are offered in many standard choices and an unlimited number of specially designed colors.

Solvent-free powder coatings add the "green" element with high performance, durability and scratch resistance that meet the standards of AAMA 2604.



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Technology Park / Atlanta
555 Guthridge Court
Norcross, GA 30092
770.449.5555
kawneer.com

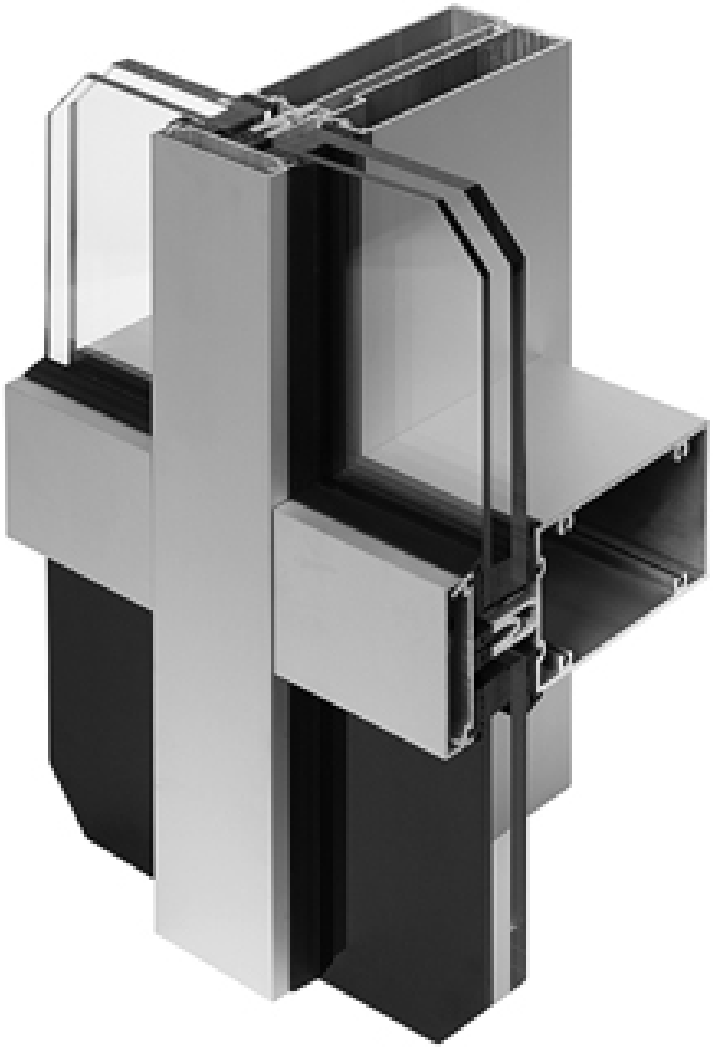
KAWNEER

ARCHITECTURAL SYSTEMS | ENTRANCES + FRAMING | CURTAIN WALLS | WINDOWS

APPROVED DESIGN
ARB CASE #: 2022-0029
SIGNED:
DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

3.D - CURTAINWALL

- Material: Aluminum-Framed Curtainwall
- Basis-of-Design Product: Kawneer 1600, 2 1/2” sightline
- The aluminum will be painted with the manufacturer’s fluoropolymer finish in a custom gray color to match the double-hung windows.



IMPOSING STATEMENTS USED TOGETHER OR INDEPENDENTLY

1600 Wall System®1 / System®2 Curtain Wall

Building on the proven success of Kawneer's 1600 Wall System® that set the standard for curtain wall engineering, 1600 Wall System®1 Curtain Wall and 1600 Wall System®2 Curtain Wall provide reliability with versatile features.

Both are stick-fabricated, pressure-glazed curtain walls for low- to mid-rise applications and are designed to be used independently or as an integrated system to provide visual impact for almost any type of building.

- 1600 Wall System®1 is an outside-glazed, captured curtain wall.
- 1600 Wall System®2 is a structural silicone glazed (SSG) curtain wall.

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DATE: 5/19/2022
OFFICE OF COMMUNITY DEVELOPMENT

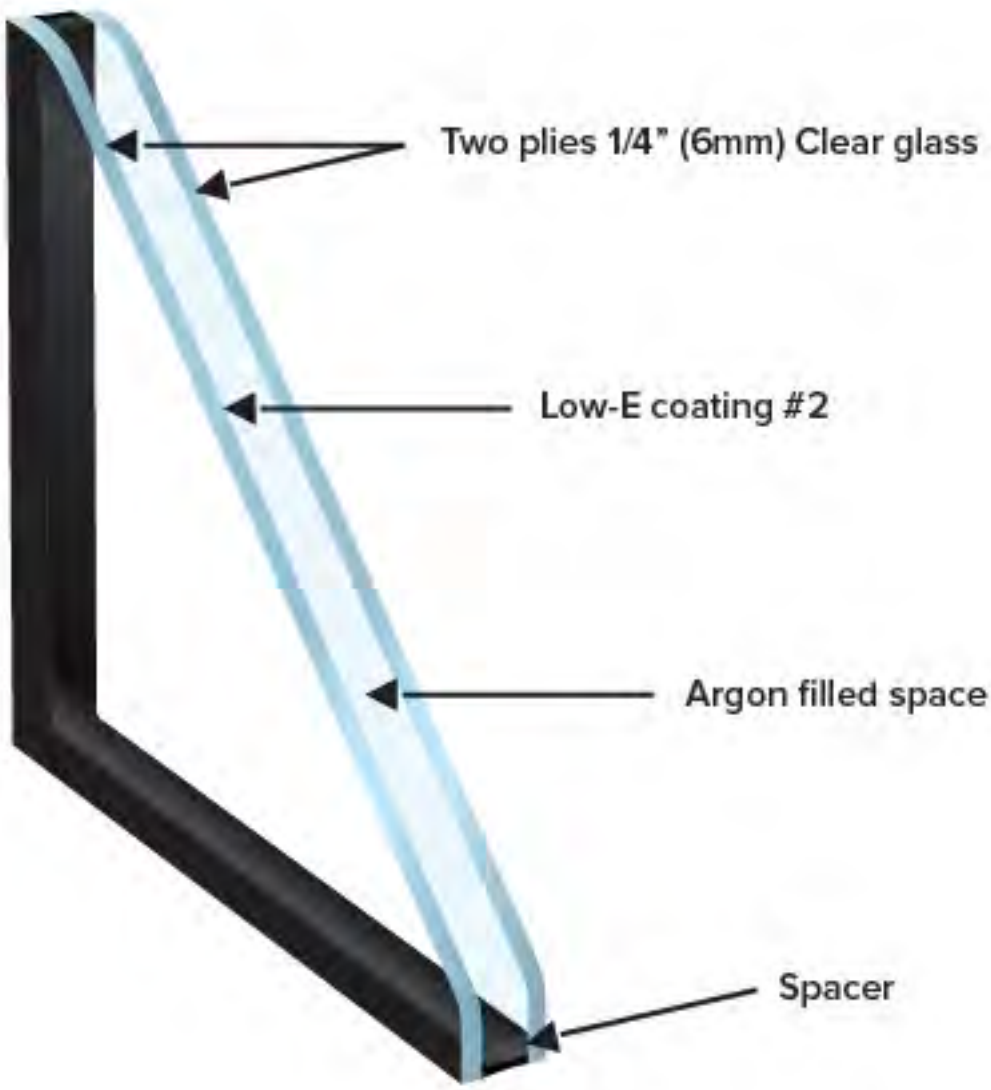
Building Legacies

KAWNEER

4. GLAZING

4.A - CLEAR VISION GLAZING

- Material: Clear, insulated, low-e glass
- Basis-of-Design Product: Guardian Glass SN62
- Clear vision glazing will be used at all double hung-windows and at storefront system locations adjacent to interior occupied spaces as noted on the elevations.



GUARDIAN GLASS
See what's possible™

SunGuard® eXtraSelective

SNX 62/27

More natural light, less heat gain, greater energy savings

Let natural light do what it does best with SunGuard SNX 62/27 coated glass. SNX 62/27 coated glass product offers the highest light-to-solar-gain ratio of all SunGuard coated glass. This triple silver coating is an excellent option for daylighting—making it easy to create more inviting spaces, increase occupant comfort and help achieve LEED® credits. Its neutral/green appearance stays true to your design vision while helping to gain the energy-saving performance you desire.

Product Information

Substrate **Base Glass/Thickness**	Clear Float/5-12 mm Guardian UltraClear/6-10 mm	Guardian CrystalBlue/6 mm Guardian CrystalGray/6-10 mm	Gray/6 mm Green/6 mm
Applications	Facades / Windows / Doors / Curtain Walls / Roofs / Skylights		
Manufacturing options	Tempered / Laminated (not embedded) / Heat Soaked / Bent / Heat Strengthened / Annealed		
Recommended Coating Positions	Double glazed: #2 or #3 surface (restrictions apply) Triple Glazed: #2 surface		
Maximum Size	130"x240"		
Edge Deletion	Yes		
Glass type	Low E		
Glass functions	Solar Control U-Value Benefit		
Fabrication options	Must be used in Insulating Glass Units		
Appearance	Clear		

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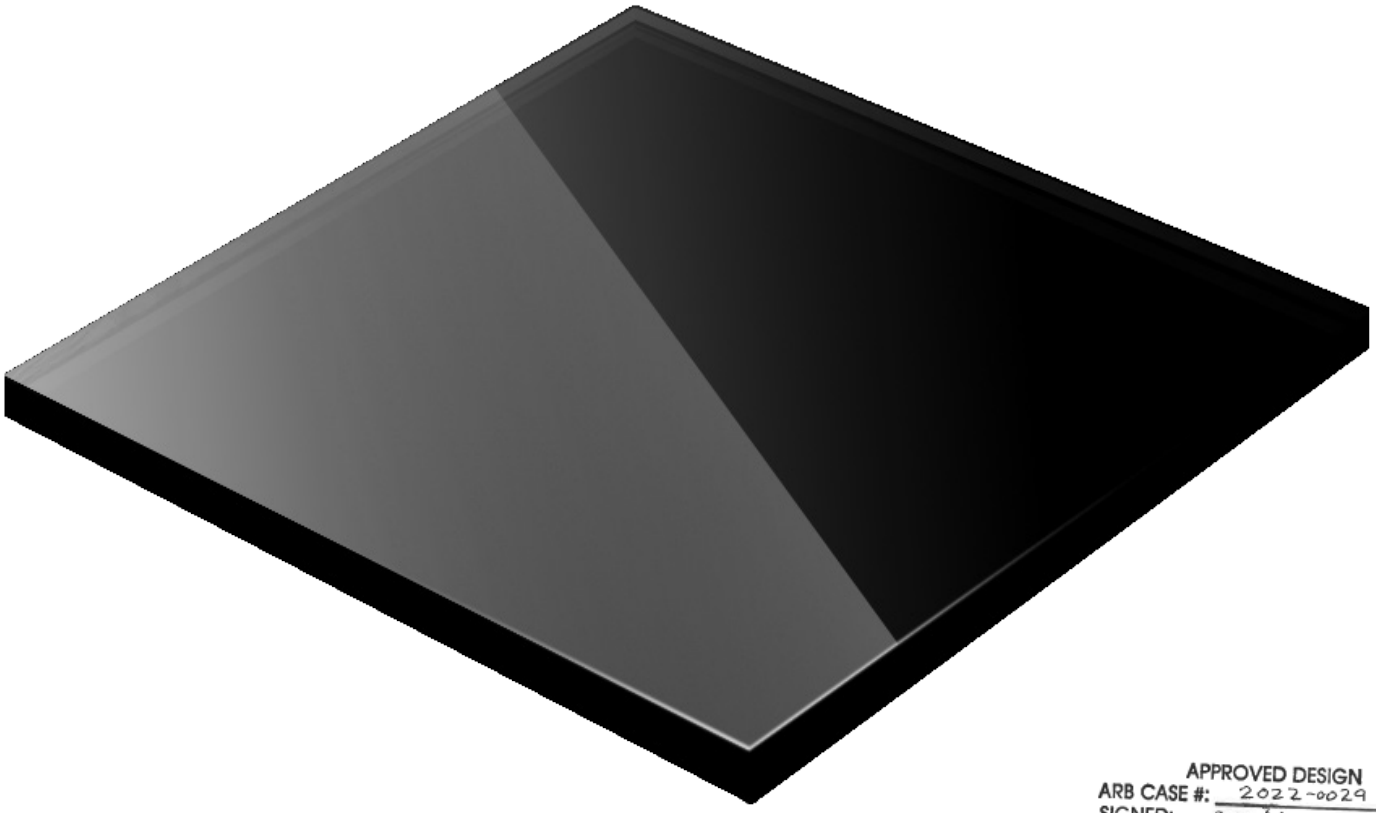
4.B - SPANDREL GLAZING

- Material: Opaque, insulated, low-e glass with ceramic frit coating
- Basis-of-Design Product: Guardian SunGuard Spandrel HT
- Color: Black
- Spandrel glass will be used in limited areas to block plenum spaces or structure from view when the storefront system extends above or below occupied spaces.
- The ceramic frit will be a black color applied to the #2 surface of the insulated glazing unit.



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GLAZ-TECH INDUSTRIES INTRODUCES

SUNGUARD® SPANDREL HT

COATED SPANDREL STOCK SHEETS THAT ARE EASILY CUT TO SIZE & HEAT TREATED NOW AVAILABLE IN WARM GRAY, BLACK AND WHITE

SunGuard® Spandrel HT

Heat-Treatable Back-Painted Glass from Guardian

Glaz-Tech Industries offers a diverse and alternate solution for exterior applications with Guardian's **SunGuard® Spandrel HT**. Guardian's proprietary coatings allow for a more durable, uniform and ideal application where structural concealment is required. Available in three commonly specified colors, SunGuard Spandrel HT is perfect for harmonizing or giving your project a desired contrast against the vision glass area.

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DESIGN THROUGH GLASS

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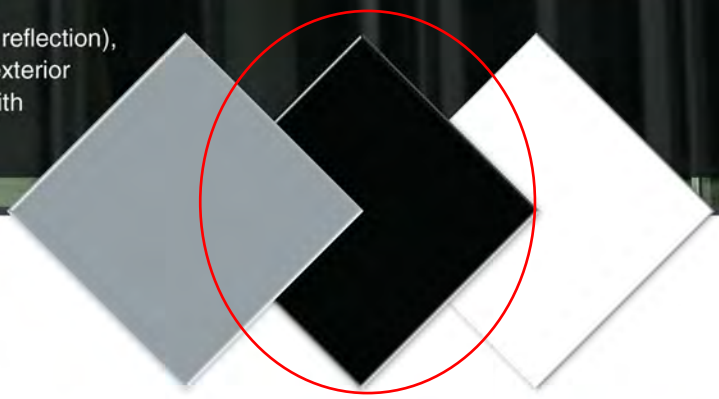
COMPLEMENTING THE VISION GLASS

For best results complementing or harmonizing appearance (color & reflection), the insulating glazing make-up should remain consistent (the same exterior glass color, SunGuard coating, etc.) and substitute the inboard lite with warm gray SunGuard Spandrel HT. - *Guardian Industries*



Characteristics of SunGuard® Spandrel HT

- Proprietary coated stock sheets are easy to cut into final sizes.
- Available standard stock sheet size, 96" x 130" for ease of fabrication.
- Colors available: Warm Gray, Black and White.
- Superior durability to conventional frits prior to heat treating.
- Coating permanently bonds to glass and has the characteristics of ceramic frit after post heat treatment.
- Conceals structural building components such as columns, floors, HVAC systems, electrical wiring and plumbing.
- Can be utilized for monolithic applications (#2 surface) or for insulating glazing units.
- Heat-treatment fuses coating to the glass surface while reducing the risk of thermal stress breakage.
- Spandrel HT is not intended for interior applications.

Recommended Applications

- Storefronts
- Wall Cladding
- Custom Color Applications
- Hide Structural Utilities
- Curtain Walls
- Nonvision Areas
- Commercial Fixed Windows
- Security for Fallout Protection

Contact Us for Availability

TUCSON OFFICE
Ph : (520) 629-0268

SANTA TERESA OFFICE
Ph : (575) 589-4970

BOISE OFFICE
Ph : (208) 389-1080

PHOENIX OFFICE
Ph : (602) 272-1544

DENVER OFFICE
Ph : (303) 399-8587

BATON ROUGE OFFICE
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5. ROOFING

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5.A - STANDING SEAM METAL ROOF

- Material: Pre-finished Aluminum Standing Seam Metal Roofing
- Basis-of-Design Product: Pac-Clad Snap-Loc
- Color: Graphite
- Standing seam metal roof will be used on all steep slope gable roofs (greater than 2”/Ft)

Graphite

Standard Colors

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PAC-CLAD
PETERSEN
A CARLISLE COMPANY

PAC-CLAD.COM

IL: 800 PAC CLAD **TX:** 800 441 8661 **MD:** 800 344 1400
AZ: 833 750 1935 **GA:** 800 272 4482 **MN:** 877 571 2025

SNAP-CLAD PANEL

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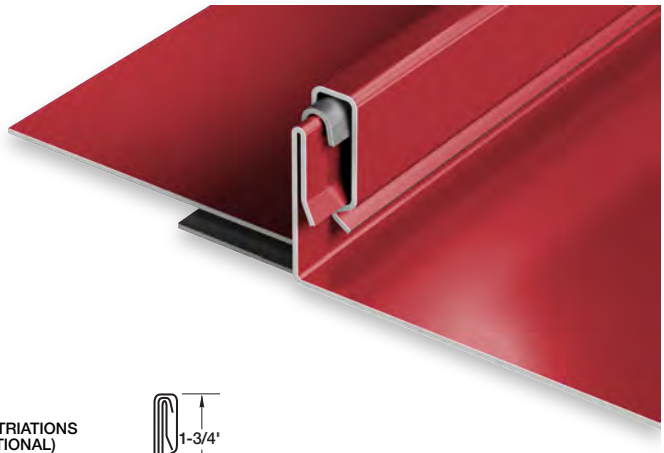
MATERIALS

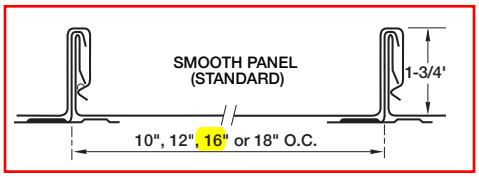
.032 aluminum	24 gauge steel
.040 aluminum	22 gauge steel

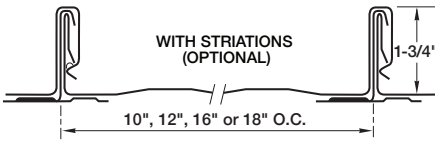
SPECS

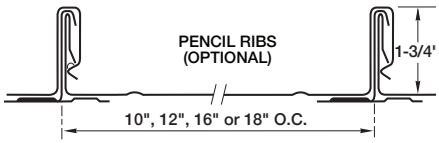
10", 12", 16" or 18" O.C. 1-3/4" High

UL-90









PRODUCT FEATURES

- Architectural/structural panel
- Factory-applied sealant available
- Continuous interlock
- Labor-saving one-piece design
- Pencil ribs upon request
- Striations upon request
- Factory eave notching available
- 30-year-non-prorated finish warranty
- Maximum factory-produced panel length is 64' (check w/factory for longer lengths)
- Weathertightness warranty available
- 43 stocked colors (24 gauge steel)
- 16 Stocked colors (22 gauge steel)
- 36 stocked colors (.032 aluminum)
- 22 stocked colors (.040 aluminum)
- Panels available in Galvalume Plus

UL CLASSIFICATION

- UL-580 Class 90 wind uplift
- UL-1897 wind uplift
- UL-790 Class A fire rated
- UL-263 fire resistance rated
- UL-2218 impact resistance rated
- UL-90 rated aluminum panel up to 16" O.C.
- UL-90 rated steel panel up to 18" O.C.

ASTM TESTS

- ASTM E1592 tested
- ASTM E283/1680 tested
- ASTM E331/1646 tested

FLORIDA BUILDING & MIAMI-DADE PRODUCT APPROVALS

Please refer to pac-clad.com or your local factory for specific product approval numbers for Snap-Clad.

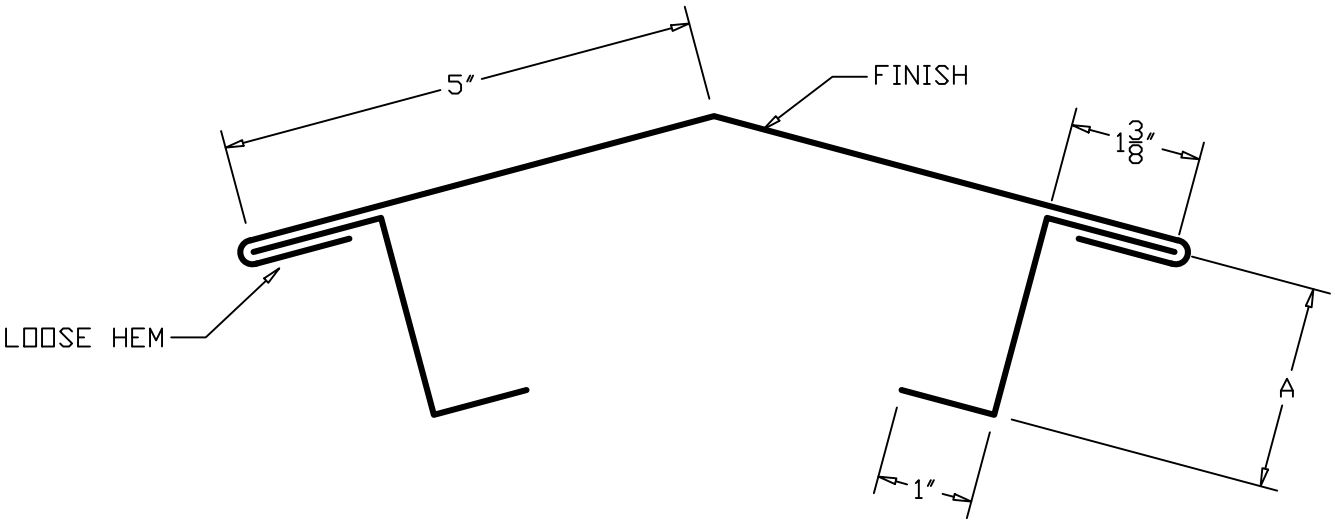
Note: UL 90 is available on steel panels up to 18" on center, and on aluminum panels up to 16" on center.

January 2013

PETERSEN ALUMINUM CORPORATION

9060 JUNCTION DRIVE
ANNAPOLIS JUNCTION, MD 20701
PHONE: 800-344-1400 FAX: 301-953-7627

PAC-CLAD STANDARD DETAILS



"A" DIMENSION = _____
_____ PCS @ _____

NOTE: "A" DIMENSION EQUALS PANEL HEIGHT PLUS 1/8"

PA-101 HIP / RIDGE

APPROVAL	CUSTOMER:	GUAGE:
	JOB NAME:	ANGLE / SLOPE:
	PANEL TYPE:	PO#:
	COLOR / FINISH:	DATE:

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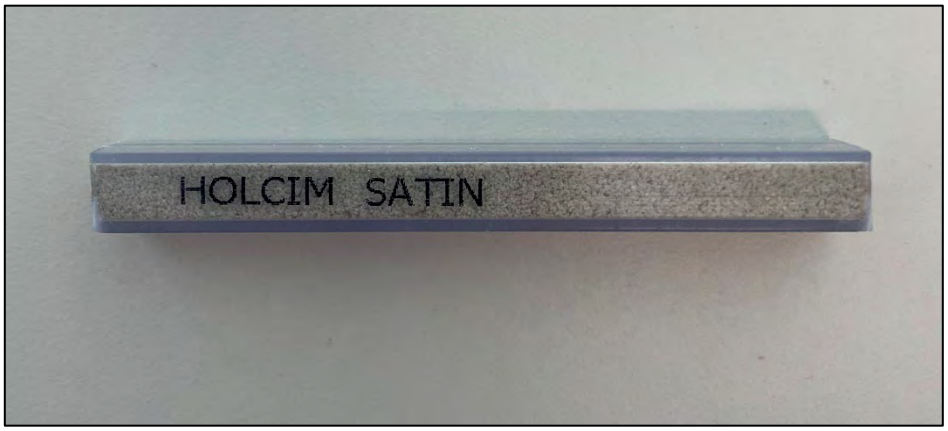
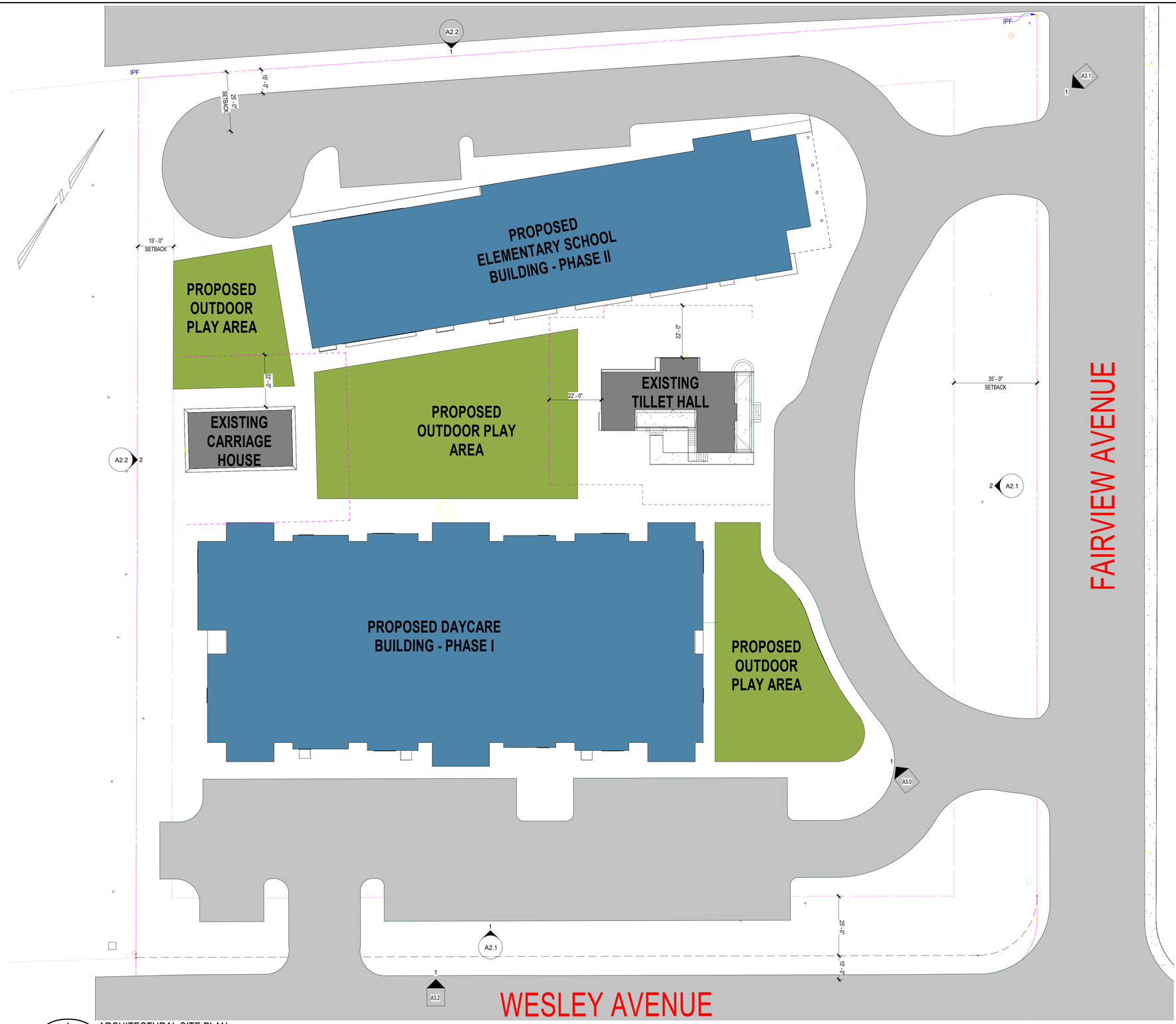
Brick Mortar:





1 A0.0 ARCHITECTURAL SITE PLAN
SCALE: 1" = 20'-0"

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PROJECT N° 20210195 | 04/19/22

ARCHITECTURAL SITE PLAN

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

ENGEL EDUCATION GROUP FEASIBILITY STUDY
9522 FAIRVIEW AVE, MANASSAS, VA 20110

COOPER CARRY

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ELEVATION LEGEND	
Key Value	Keynote Text
E1	FACE BRICK
E2	DOUBLE-HUNG WINDOW
E3	DECORATIVE HIGH-DENSITY LAMINATE PANEL - WOOD-LOOK FINISH
E4	DECORATIVE HIGH-DENSITY LAMINATE PANEL - CUSTOM COLOR
E5	DECORATIVE HIGH-DENSITY LAMINATE PANEL - WHITE
E6	ALUMINUM STOREFRONT SYSTEM
E7	STANDING SEAM METAL ROOF
E8	HORIZONTAL SUNSHADES
E9	BUILDING MOUNTED SIGNAGE
E10	EXISTING TILLET HALL
E11	EXISTING CARRIAGE HOUSE
E12	PROPOSED ELEMENTARY SCHOOL
E13	PROPOSED DAYCARE
E14	PAINTED STEEL COLUMN
E15	CANOPY
E16	ALUMINUM STOREFRONT ENTRY DOOR
E17	ALUMINUM CURTAINWALL SYSTEM
E18	CLEAR VISION GLASS
E19	SPANDREL GLASS

2 EAST ELEVATION
A2.1 SCALE: 1/8" = 1'-0"

1 SOUTH ELEVATION
A2.1 SCALE: 1/8" = 1'-0"

PROJECT N° 20210195 | 04/19/22

EXTERIOR ELEVATIONS

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

ENGEL EDUCATION GROUP FEASIBILITY STUDY
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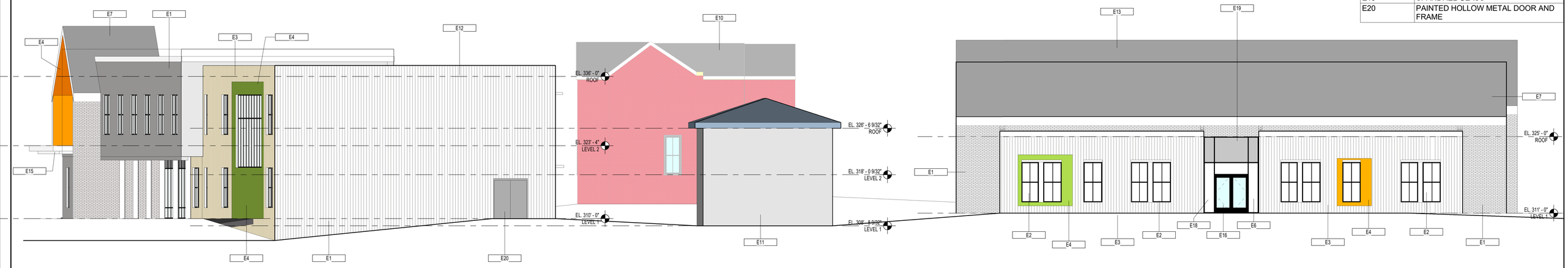
ELEVATION LEGEND	
Key Value	Keynote Text
E1	FACE BRICK
E2	DOUBLE-HUNG WINDOW
E3	DECORATIVE HIGH-DENSITY LAMINATE PANEL - WOOD-LOOK FINISH
E4	DECORATIVE HIGH-DENSITY LAMINATE PANEL - CUSTOM COLOR
E5	DECORATIVE HIGH-DENSITY LAMINATE PANEL - WHITE
E6	ALUMINUM STOREFRONT SYSTEM
E7	STANDING SEAM METAL ROOF
E9	BUILDING MOUNTED SIGNAGE
E10	EXISTING TILLET HALL
E11	EXISTING CARRIAGE HOUSE
E12	PROPOSED ELEMENTARY SCHOOL
E13	PROPOSED DAYCARE
E14	PAINTED STEEL COLUMN
E15	CANOPY
E16	ALUMINUM STOREFRONT ENTRY DOOR
E17	ALUMINUM CURTAINWALL SYSTEM
E18	CLEAR VISION GLASS
E19	SPANDREL GLASS
E20	PAINTED HOLLOW METAL DOOR AND FRAME



2 A2.2 WEST ELEVATION
SCALE: 1/8" = 1'-0"

1 A2.2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

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EXTERIOR ELEVATIONS

CITY OF MANASSAS
ARCHITECTURAL REVIEW BOARD SUBMISSION

ENGEL EDUCATION GROUP FEASIBILITY STUDY
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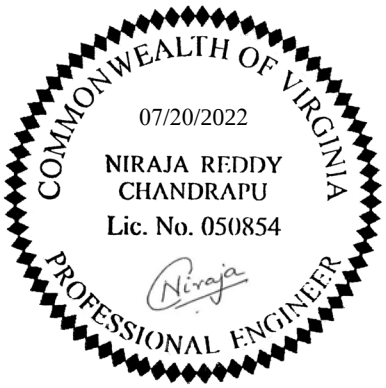
COOPER CARRY

Traffic Impact Study

Edugenius Development

City of Manassas, Virginia



July 20, 2022

Prepared for:

Edugenius US Real Estate Group LLC
2319 S. Joyce Street
Arlington, Virginia 22202

GOROVE SLADE
Transportation Planners and Engineers

Prepared by:

GOROVE SLADE
Transportation Planners and Engineers

1140 Connecticut Ave NW	4114 Legato Road	225 Reinekers Lane	4951 Lake Brook Drive
Suite 1010	Suite 650	Suite 750	Suite 250
Washington, DC 20036	Fairfax, VA 22033	Alexandria, VA 22314	Glen Allen, VA 23060
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Appendix C – VDOT Crash Data

Appendix D – HCM Level of Service Definitions

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Appendix F – Intersection Capacity Analysis Worksheets – 2027 Future without Development

Appendix G – Intersection Capacity Analysis Worksheets – 2027 Future with Development

Appendix H – Peer Child Care Center Site Data

Executive Summary

Purpose of Report and Study Objectives

This report presents the findings of a Traffic Impact Study (TIS) conducted for the proposed Edugenius Development (the Site / the Development / the Property), situated in the City of Manassas (the City), Virginia.

This TIS was conducted in conjunction with the guidelines presented in the City of Manassas Design and Construction Standards Manual (DCSM). The document was prepared in accordance with best professional practices and standards that assess the impact of a proposed development on the transportation system. Traffic operational analyses, as presented in this TIS, involves the evaluation of anticipated roadway conditions with and without the proposed development. The analysis assists public officials and developers to balance the interrelations between efficient traffic movements with necessary lane access.

Based on the analysis, the proposed Edugenius Development is anticipated to have minimal impact on delays and queues at the existing study intersections, and no mitigations would be required per the analysis results. The following major conclusions are discussed below:

Site Location and Study Area

The Edugenius Development is proposed to be located along the western edge of Fairview Avenue (Route 4353) and northern edge of Wesley Avenue, south of Signal Hill Road (City Route 8) within the City of Manassas, Virginia. The vehicular study area includes five (5) existing intersections and two (2) future intersections.

Description of Proposed Development

The Edugenius Development is proposed to be situated on an approximately 3.3-acre single parcel of land, which can be identified on Manassas City GIS with the following Tax Map ID #: 100-01-00-202. The site is currently zoned as R-1 (Low Density, Single-Family Residential), with a Comprehensive Plan Land Use of Downtown.

The Applicant is proposing to redevelop the parcel with an approximately 120-student capacity elementary school and 125-student capacity day care / childcare facility. The Edugenius Development in full is anticipated to be constructed and in operation by 2027.

Principal Findings, Conclusions, and Proposed Mitigations

Discussions regarding the study assumptions and relevant background information occurred with the City of Manassas staff during May, June and July, 2022, and a scoping document was agreed to. A copy of the agreed-upon scoping document is included in Appendix A.

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

Analysis Components

- As determined based on discussions with City staff, a growth rate of one-percent (1.0%) per year was applied to all movements at the intersection of Fairview Avenue (Route 4353) at Wellington Road (Route 4352), and propagated as mainline through movements at subsequent study intersections along the road network where applicable, to account for a regional increase in background traffic.
- The total Site is anticipated to generate approximately 152 new trips during the AM peak hour, 80 new trips during the PM peak hour, and 818 new daily trips on a typical weekday, after reductions.

Non-SOV Elements

- Various biking infrastructure exists along Tudor Lane, Signal Hill Road, and Richmond Avenue within the vicinity of the site; a shared use path exists along Wellington Road.

- No bus routes currently provide service within the vicinity of the site.
- The site is located within a 0.55-mile radius of the Manassas Train Station, which serves the Virginia Railway Express (VRE) and Amtrak, and within a 3.0-mile radius of the Manassas Regional Airport (HEF).

Infrastructure

- Currently, it is anticipated that the Edugenius Development will be accessed via one full-movement entrance along Wesley Avenue and one full-movement entrance along with one-partial movement entrance along Fairview Avenue.

Analysis Results

- The proposed Edugenius Development has minimal impact on delays and queues at the existing intersections.
- No mitigations are required as per the analysis results.
- One (1) existing study intersection (Fairview Avenue at Richmond Avenue) has one approach that operates at unacceptable levels of service (LOS) during one of the existing peak hours (PM peak hour only). The same approach is anticipated to continue to operate similarly at unacceptable LOS under all scenarios during the same peak hour.
- With the Edugenius Development in place (built and in operation), the LOS and delays are anticipated to remain similar as compared to future conditions without development; furthermore, with the addition of the Edugenius Development traffic, the increase in 95th percentile queue lengths is anticipated to be two standard car lengths (25 feet each) or less during either peak hour at any of the applicable lane groups of the study intersections, as compared to future conditions without development.
- The northbound through/right lane group of the signalized study intersection of Fairview Avenue at Manassas Police Department Entrance / Signal Hill Road has existing 95th percentile queue lengths that would spill past the proposed site entrances on Fairview Avenue; this is an existing condition and as noted above, the Edugenius Development traffic is anticipated to add only two standard car lengths or less during either peak hour as compared to future conditions without development. In addition, users of the proposed Development would have an alternative access point along Wesley Avenue with the ability to accommodate additional volumes.
- The remaining 95th percentile queue lengths are anticipated to be accommodated within the various storage bays under all scenarios.
- Based on a comparison with the number of parking spaces for peer child care center sites in the City of Manassas, the parking rate for the child care center portion of the proposed Edugenius Development, whether from a square footage (for conventional classroom space) or capacity perspective, is consistent with the parking rates for other peer child care center sites throughout the City, and would provide a practical and adequate amount of parking spaces.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed Edugenius Development will not have a substantial impact to the surrounding transportation and roadway network.

Introduction

This report presents the findings of a Traffic Impact Study (TIS) conducted for the proposed Edugenius Development (the Site / the Development / the Property), situated in the City of Manassas (the City), Virginia.

The Applicant is proposing to redevelop the site with an approximately 120-student capacity elementary school and 125-student capacity day care / childcare facility. The Edugenius Development in full is anticipated to be constructed and in operation by 2027.

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

- Discussions regarding the study assumptions and relevant background information occurred with the City of Manassas staff during May, June and July, 2022, and scoping document was agreed to. A copy of the agreed-upon scoping document is included in Appendix A.
- Existing conditions were observed in the field to verify roadway geometry, pedestrian and bicycle infrastructure, and traffic flow characteristics.
- Traffic counts were collected at the existing study intersections on Tuesday, May 24, 2022, during the weekday morning and afternoon peak periods, from the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM. These counts were cross verified with 2016 counts at the same intersections and were determined to be consistent with pre-Covid conditions.
- The anticipated build-out year of the Edugenius Development was projected to be 2027 (as ultimately determined following distribution of the scoping document), as such 2027 future conditions were analyzed.
- The Future Conditions without Development scenario was projected based on the existing traffic volumes and an inherent growth to account for regional growth on the roadway network, as determined based on discussions with City staff. Following distribution of the scoping document, one (1) background development – arising from the conversion of the existing City of Manassas Police Department building into City government offices – was identified for inclusion in the study per City staff.
- Proposed site traffic volumes were derived based on the methodology outlined in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication, and were assigned to the road network based on the agreed upon direction of approach discussed during the aforementioned scoping discussions.
- The Future Conditions with Development scenario was projected based on the existing traffic volumes, regional growth, one (1) background development arising from the conversion of the existing City of Manassas Police Department building into City government offices (as identified for inclusion following distribution of the scoping document), and plans for the proposed Edugenius Development and surrounding vicinity.
- Intersection capacity and queueing analyses were performed for the identified study intersections for the 2022 Existing Conditions, 2027 Future Conditions without Development, and 2027 Future Conditions with Development scenarios during the weekday morning (AM), and weekday afternoon (PM) peak hours.
- Intersection capacity and queuing analyses were performed using *Synchro*, version 10, with results based on the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) methodology and in following the City's Design and Construction Standards Manual (DCSM).

Sources of data for this study include information provided by the Institute of Transportation Engineers (ITE), the Virginia Department of Transportation (VDOT), the City of Manassas, and the office files and field reconnaissance efforts of Gorove Slade.

Background Information: Proposed Edugenius Development (Site & Nearby)

Description of the Existing Site

Site Location

The site is located in the City of Manassas, Virginia. It is situated along the western edge of Fairview Avenue (Route 4353) and northern edge of Wesley Avenue, south of Signal Hill Road (City Route 8). An aerial of the study area is provided in Figure 1.

A description of the proposed Edugenius Development is provided in the *Introduction* section of this report.

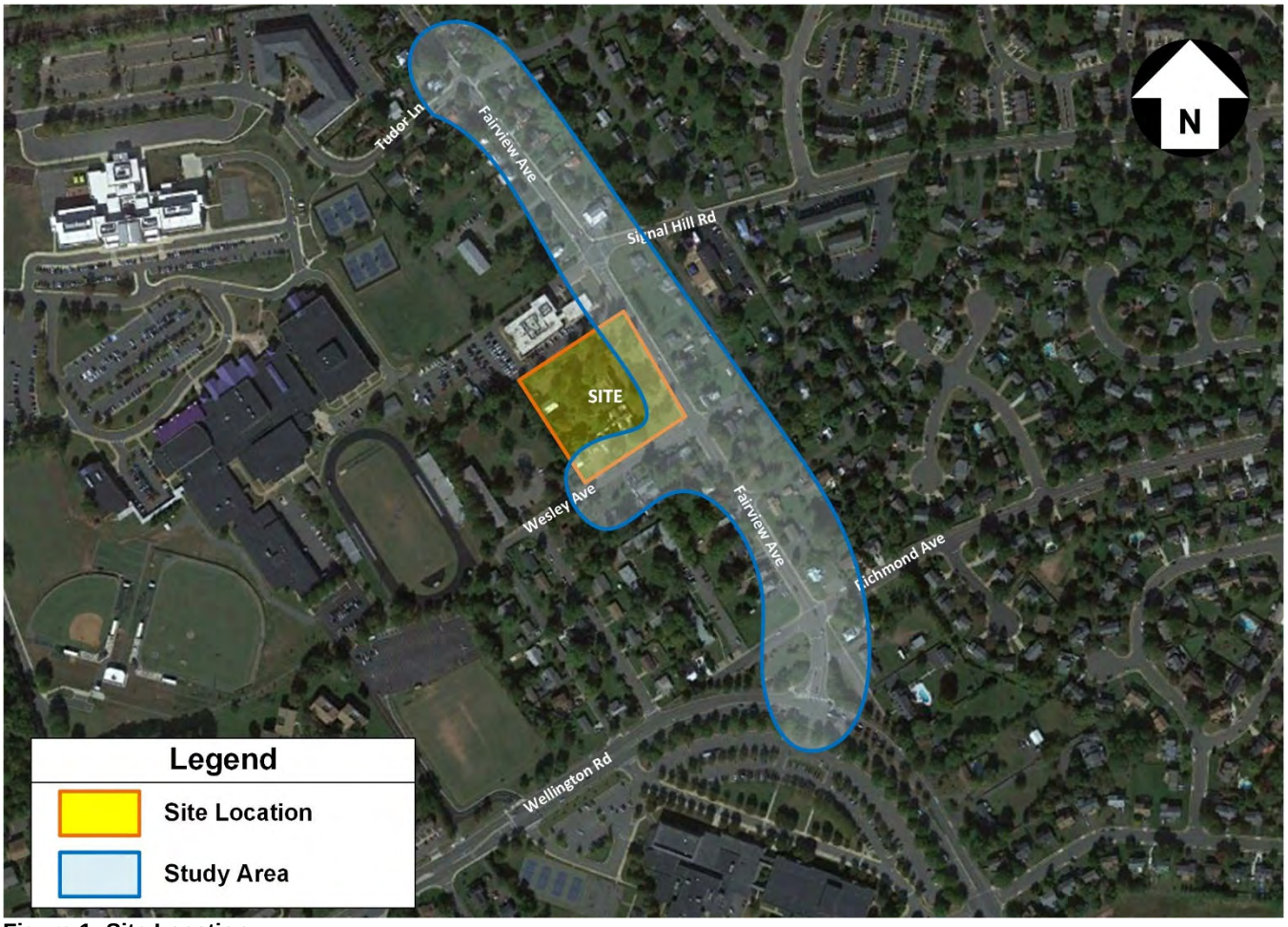


Figure 1: Site Location

Location within Jurisdiction and Region

The site is located at the southeastern edge of Old Town (Downtown) Manassas.

A regional aerial of the site is provided in Figure 2.

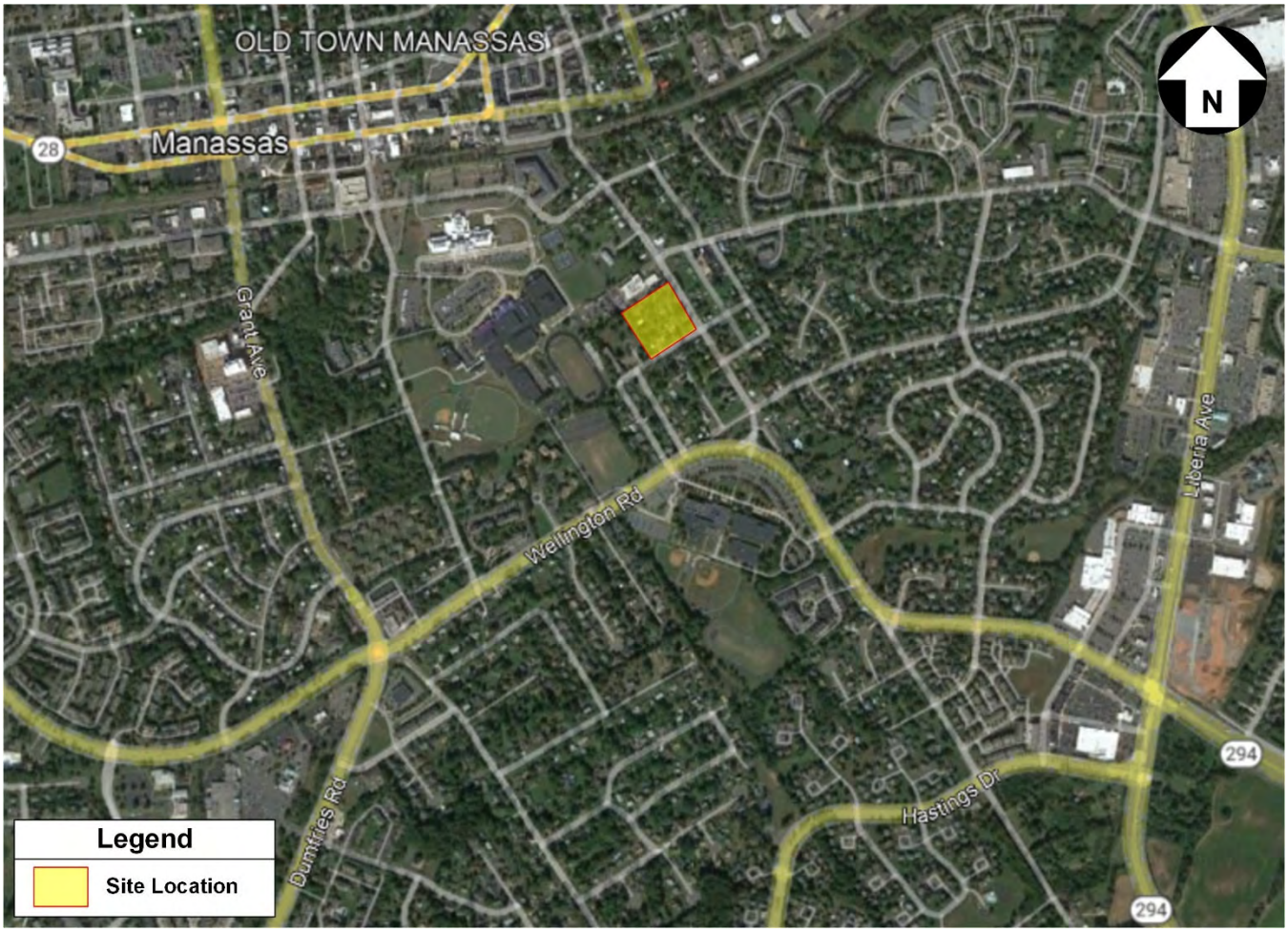


Figure 2: Regional Location

Description of the Parcel(s)

The site will be situated on an approximately 3.3-acre single parcel of land, that can be identified with the following Tax Map ID #: 100-01-00-202, as illustrated in Figure 3.

Figure 3: City of Manassas Parcel Map
(Parcels source: Manassas Zoning and Parcel Mapping App, https://cityofmanassas.maps.arcgis.com/apps/webappviewer/index.html?id=5435b6acfd274042a95914ad9ae97660)

Existing Zoning and Long-Range Land-Use

The parcel is currently zoned as R-1 (Low Density, Single-Family Residential), with a Comprehensive Plan Land Use of Downtown. Of note, the parcel is a part of the Historic Overlay District. The existing zoning is presented in Figure 4; the Comprehensive Plan Land Use is presented in Figure 5.

The Character Areas graphic from the City of Manassas Comprehensive Plan, which includes the Land Use, Gateways and Corridors is illustrated in Figure 6.

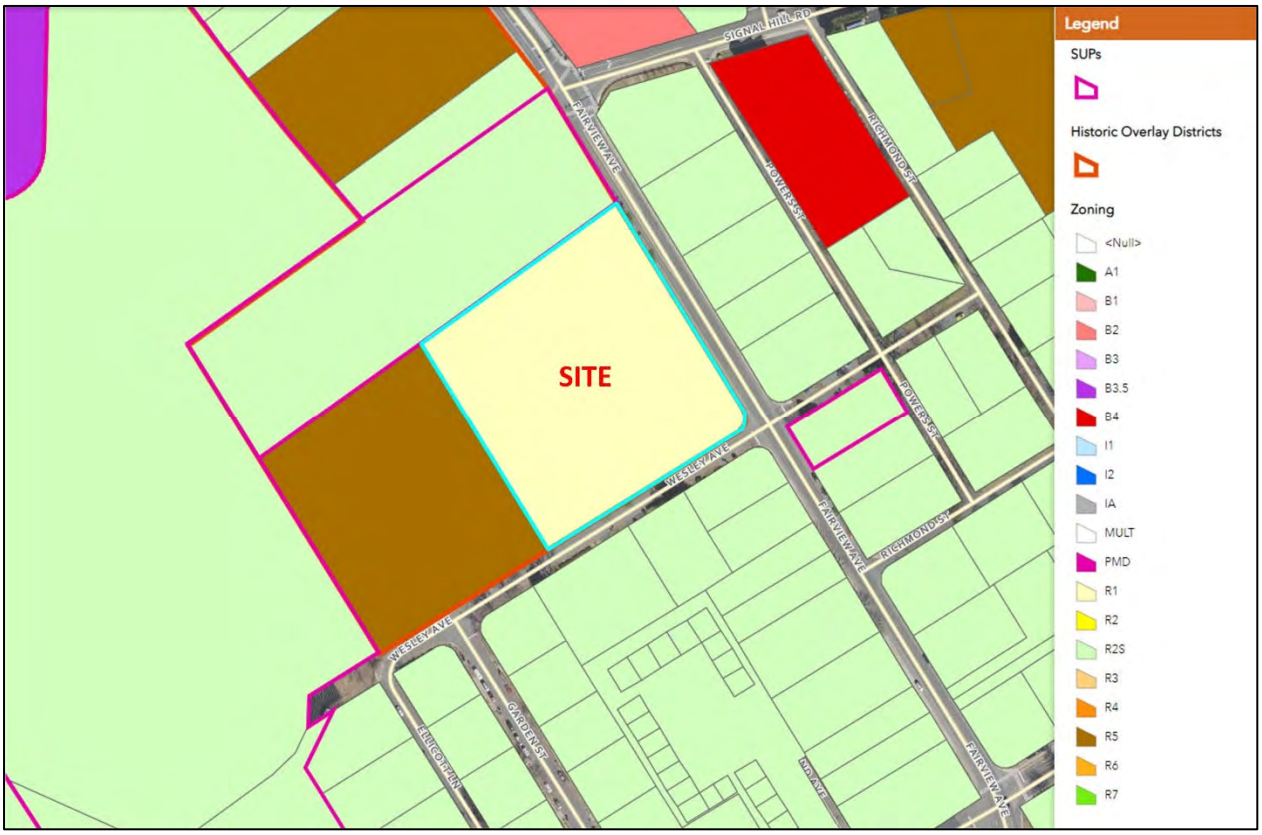


Figure 4: City of Manassas Zoning Map
(Base zoning source: Manassas Zoning and Parcel Map App,
https://cityofmanassas.maps.arcgis.com/apps/webappviewer/index.html?id=5435b6acfd274042a95914ad9ae97660)

Figure 5: City of Manassas Comprehensive Plan Land Use Map
(Base land use source: Manassas Zoning and Parcel Map App,
https://cityofmanassas.maps.arcgis.com/apps/webappviewer/index.html?id=5435b6acfd274042a95914ad9ae97660)

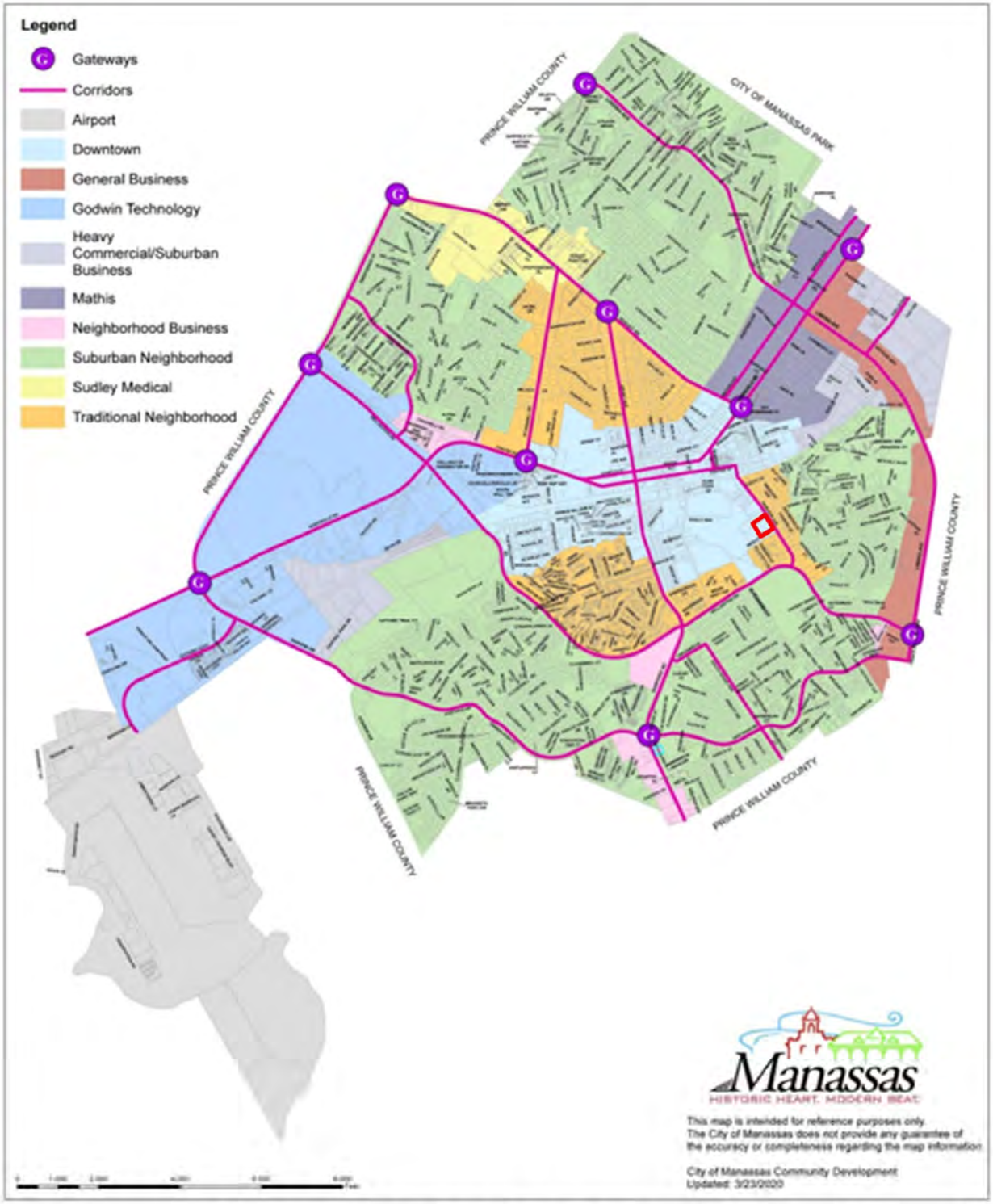


Figure 6: City of Manassas Character Areas Map
(Base area source: City of Manassas 2040 Comprehensive Plan, https://www.manassasva.gov/Community%20Development/Comp%20Plan/2020%20Comprehensive%20Plan%20Character%20Areas%20Map.pdf)

Comprehensive Plan Transportation Recommendations

The proposed Edugenius Development is located on the western edge of Fairview Avenue and northern edge of Wesley Avenue. According to the City of Manassas 2040 Comprehensive Plan (The Comprehensive Plan), as adopted February 24, 2020, in particular the Mobility Chapter 6, there are no current recommendations to widen Fairview Avenue (nor any street) within the vicinity of the site.

Per the 2022 Five-Year Capital Improvement Program, Fairview Avenue is proposed to be improved by the City (Project T-075: Fairview Avenue / Tudor lane Signal Project) with a signal at Tudor Lane once a signal is warranted. Of note, it is anticipated that a signal would not be warranted in the current time frame of this Edugenius Development. The undergrounding of utilities and historic streetlight installation portion of the City project was completed in 2016.

A map of the Comprehensive Plan City-wide Transportation Recommendations is depicted in Figure 7.

Additionally, per Chapter 6 of the Plan, the following bicycle facility recommendations are planned or funded:

- Bike Lanes are planned along Signal Hill Road / Windsor Avenue / Tudor Lane / Prince William Street between the eastern City corporate limits and Grant Avenue. As will be depicted in the *Existing Bicycle and Pedestrian Facilities* section of the report, the roadway within the vicinity of the site currently includes a signed-on street bicycle route along one portion and shared lane markings (sharrows) along other portions.
- Shared lane markings are planned along the entirety of Fairview Avenue from the road terminus of Quarry Road to Wellington Road.
- The existing shared use path along Wellington Road is planned to gain a shared use path connection to the existing bike lanes along Richmond Avenue, and connecting to the ultimate shared lane markings along Fairview Avenue (the Richmond Avenue bike lanes are referenced in the *Existing Bicycle and Pedestrian Facilities* section of the report as well).

The bicycle facility recommendations City-wide are depicted in Figure 8.

Chapter 6 of the Plan also provides the following pedestrian facility recommendations:

- Connect the existing sidewalks and provide an off-street path connection between Fairview Avenue and Osbourn High School / Baldwin Elementary School. Note, a portion of this project was recently completed.
- Similarly, connect the existing sidewalks along Fairview Avenue and along Signal Hill Road with sidewalk gap connections along Tudor Lane and Windsor Avenue
- Intersection Safety Improvements are recommended at the intersection of Fairview Avenue and Wellington Road (northeast of Metz Middle School).
- In addition, it is recommended to improve pedestrian safety and access along the entirety of the Fairview Avenue corridor (as part of the overall Transportation Recommendations)

The pedestrian facility recommendations City-wide are depicted in Figure 9.

Figure 7: Comprehensive Plan – Transportation Recommendations
(Source: City of Manassas 2040 Comprehensive Plan, Chapter 6: Mobility, https://www.manassasva.gov/community_development/planning_and_zoning/comprehensive_plan_update.php)

Figure 8: Comprehensive Plan – Bicycle Network and Facility Recommendations
(Source: City of Manassas 2040 Comprehensive Plan, Chapter 6: Mobility, https://www.manassasva.gov/community_development/planning_and_zoning/comprehensive_plan_update.php)

Figure 9: Comprehensive Plan – Pedestrian Network and Facility Recommendations
(Source: City of Manassas 2040 Comprehensive Plan, Chapter 6: Mobility, https://www.manassasva.gov/community_development/planning_and_zoning/comprehensive_plan_update.php)

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

The site is located in the City of Manassas, Virginia. The Edugenius Development is proposed to be situated along the western edge of Fairview Avenue (Route 4353) and northern edge of Wesley Avenue, south of Signal Hill Road (City Route 8).

The vehicular study area includes five (5) existing intersections as well as two (2) future intersections. The existing study intersections are as follows:

Intersection 1: Fairview Avenue (Route 4353) at Tudor Lane (Route 9528) [four-legged, unsignalized],

Intersection 2: Fairview Avenue (Route 4353) at Manassas Police Department Entrance/Signal Hill Road (City Route 8) [four-legged, signalized],

Intersection 3: Fairview Avenue (Route 4353) at Wesley Avenue [four-legged, unsignalized],

Intersection 4: Fairview Avenue (Route 4353) at Richmond Avenue (City Route 9) [four-legged, unsignalized], and

Intersection 5: Fairview Avenue (Route 4353) at Wellington Road (Route 4352) [three-legged, signalized].

The future study intersection is as follows:

Intersection 6: Fairview Avenue (Route 4353) at Site Entrance 1 [three-legged, anticipated to be unsignalized],

Intersection 7: Fairview Avenue (Route 4353) at Site Entrance 2 [three-legged, left-ins restricted, anticipated to be unsignalized], and

Intersection 8: Wesley Avenue at Site Entrance 3 [three-legged, anticipated to be unsignalized].

The future study intersections will provide access to the Site. An aerial of the study intersections is provided in Figure 10.

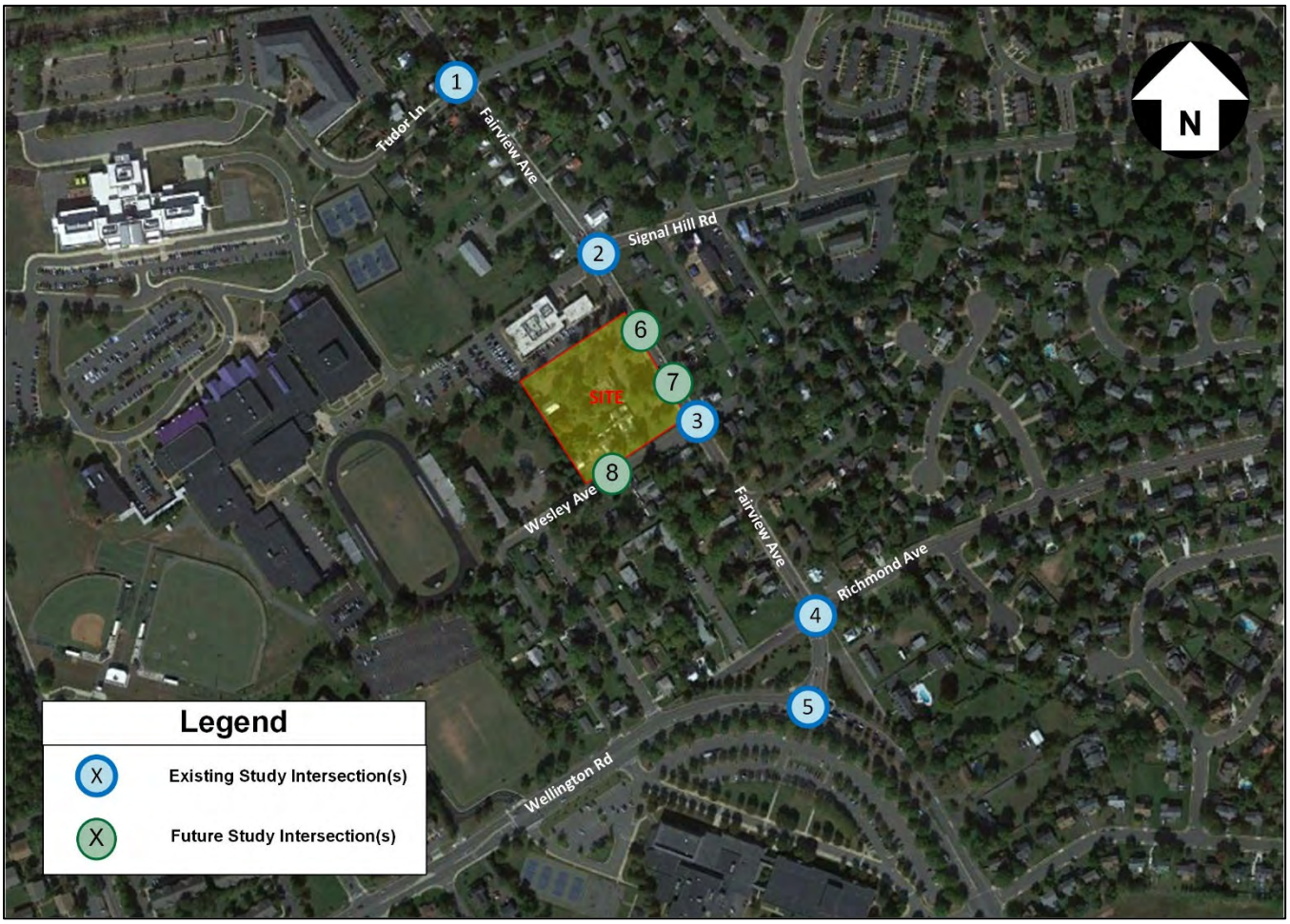


Figure 10: Study Intersections Map

Existing Roadway Network

A description of the major roadways within the immediate vicinity of the site is summarized in Table 1. Of note, for the purposes of this analysis, Fairview Avenue is assumed to run north to south, and the other study roadways, east to west.

Table 1: Summary of Existing Road Network

Roadway	RTE #	Manassas City Classification	Lanes	Posted/Legal Speed Limit (mph)	On-Street Parking	AADT* (vpd)	Road Segment Between:		k-factor
Fairview Avenue	4353	Minor Arterial	2-Lane Undivided	25	No	13,000	Wellington Ave	SR 28 Center St	8.4%
Wellington Road	4352	Minor Arterial	4-Lane Divided	25	No	18,000	BUS SR 234 Dumfries Rd	Fairview Ave	9.5%
Signal Hill Road	8	Major Collector	2-Lane Undivided	25	Yes	6,100	Richmond Ave	Liberia Ave	8.7%
Tudor Lane	9528	-	2-Lane Undivided	25	Yes (E of Fairview Ave)	2,500	Osbourn High School	Cul de sac	10.0%
Wesley Avenue	-	-	2-Lane Undivided	25	Yes	-	-	-	-
Richmond Avenue	9	Minor Collector	2-Lane Undivided	25	Yes	3,500	Fairview Ave	Liberia Ave	10.3%

Planned Future Transportation Improvements

Roadway Improvements

There are currently no planned nor funded road improvements adjacent to nor within the vicinity of the site. A City-wide signal optimization was recently completed.

Bicycle and Pedestrian Improvements

There are currently no funded bicycle and pedestrian improvements adjacent to nor within the vicinity of the site.

Analysis of 2022 Existing Conditions

In order to project future traffic conditions, it was necessary to create an existing scenario.

Existing Transit Services

No bus routes currently provide service within the vicinity of the site, though bus routes service the Manassas Train Station.

The site is located within a 0.55-mile radius of the Manassas Train Station, which serves the VRE Manassas Line, which primarily provides commuter service to and from Broad Run Station to the west, and to and from Union Station in Washington, D.C. to the east, with a connection to the VRE Fredericksburg Line at the Alexandria Station. The station is served by Amtrak as well.

The site is also located within a 3.0-mile radius of the Manassas Regional Airport (HEF).

Existing Bicycle and Pedestrian Facilities

Dedicated bicycle infrastructure exists along roadways in the site, as follows:

- The northside of Wellington Road contains an off-street shared use path.
- On-Street bike lanes are striped in each direction along Richmond Avenue, generally east of Fairview Avenue.
- Shared lane markings (sharrows) exist along Tudor Lane and Signal Hill Road in the vicinity of the site; the two sections are connected via a signed shared roadway along a portion of Tudor Lane and Windsor Avenue.

The existing bicycle facilities are depicted in Figure 11.

Sidewalks and curb ramps generally exist along the corridors adjacent to and within the vicinity of the site. Adequate sidewalks and curb ramps exist along Fairview Avenue, Tudor Lane west of Fairview Avenue, Signal Hill Road, Wesley Avenue west of Fairview Avenue (one side), Richmond Avenue (one side west of Fairview Avenue), and Wellington Road (southside; the north side containing the aforementioned off-street shared use path). Marked striped crosswalks currently exist on at least one leg at all signalized intersections, while some unsignalized intersections include a marked striped crosswalk on at least one leg. Given the residential nature of the area, some of the lower speed roadways do not contain sidewalks through the neighborhoods, although, as mentioned previously, the Comprehensive Plan calls for some sidewalk gap connections through the neighborhoods.

A raised curb bump out and raised median exist on the east leg of Richmond Avenue at its intersection with Fairview Avenue as a traffic calming measure.

The existing pedestrian facilities are depicted in Figure 12, while Figure 14 depicts the existing pedestrian peak hour volumes, and Figure 13 the existing bicyclist peak hour volumes, based on the existing counts collected at the study intersections (as further described in the *Existing Traffic Volumes* subsection). For the purposes of this analysis, no inherent growth is assumed for pedestrian and cycling trips, and the pedestrians and cyclists are assumed to carry through to the study intersections to the south and north, as applicable.

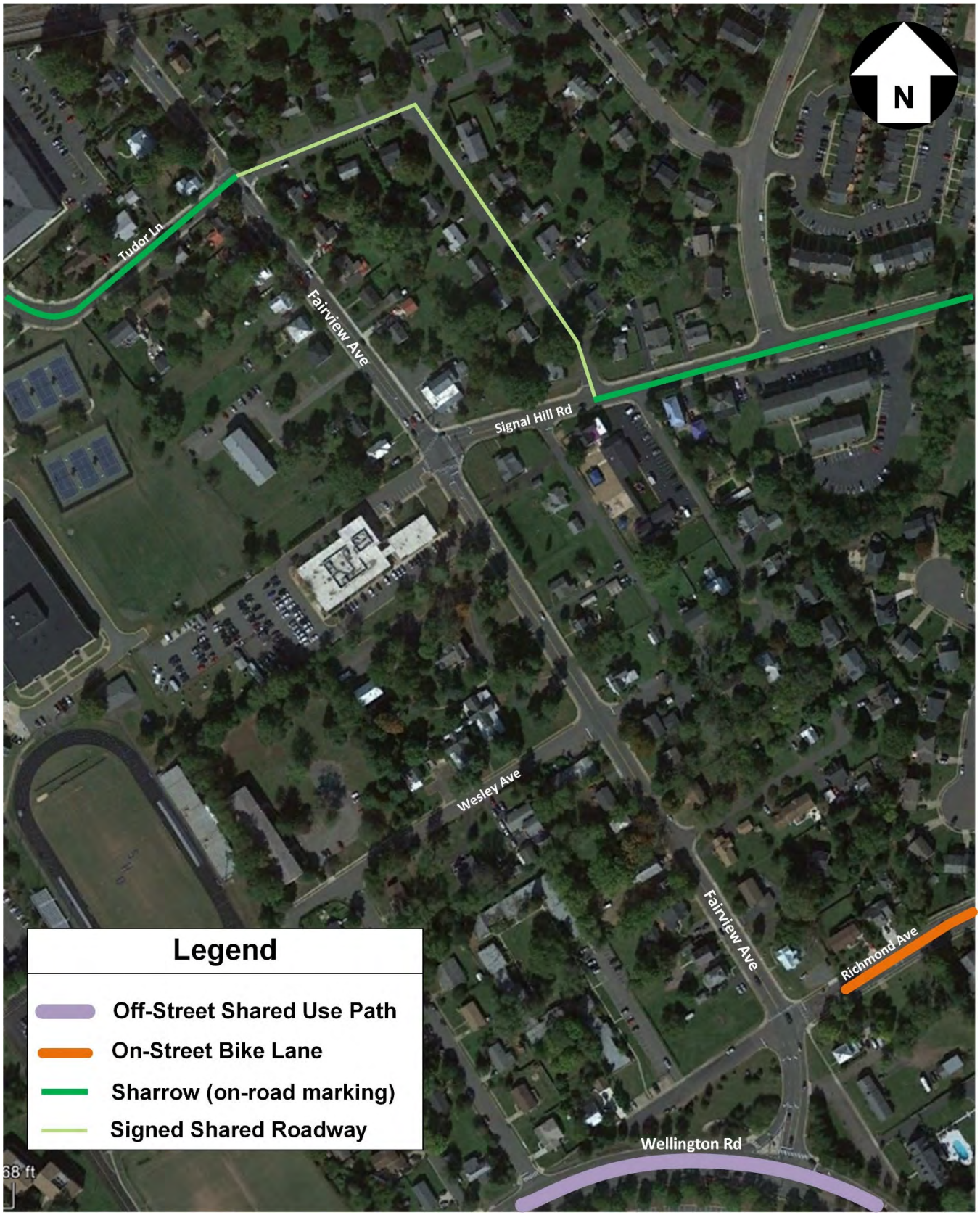


Figure 11: Existing Bicycle Facilities

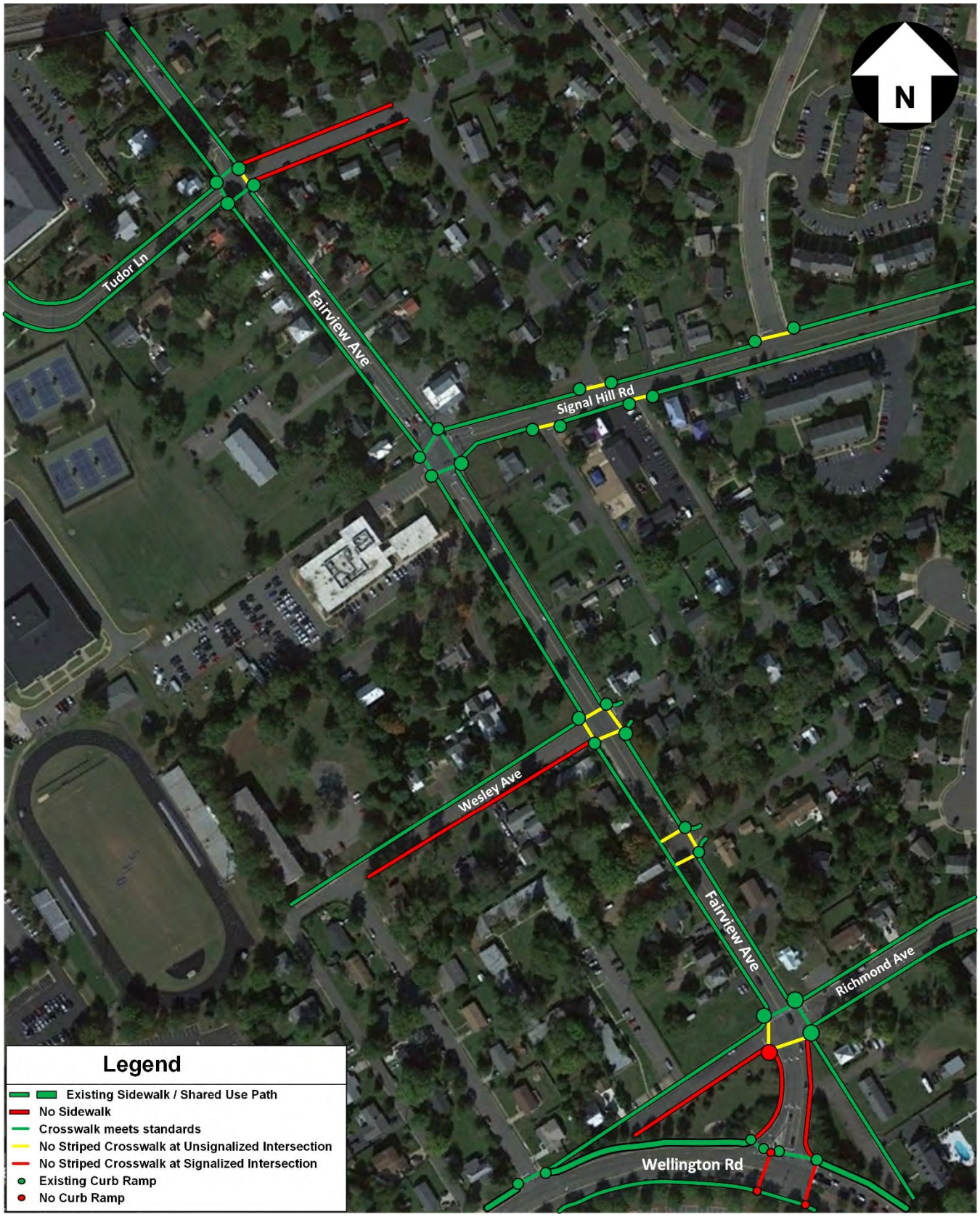


Figure 12: Existing Pedestrian Facilities

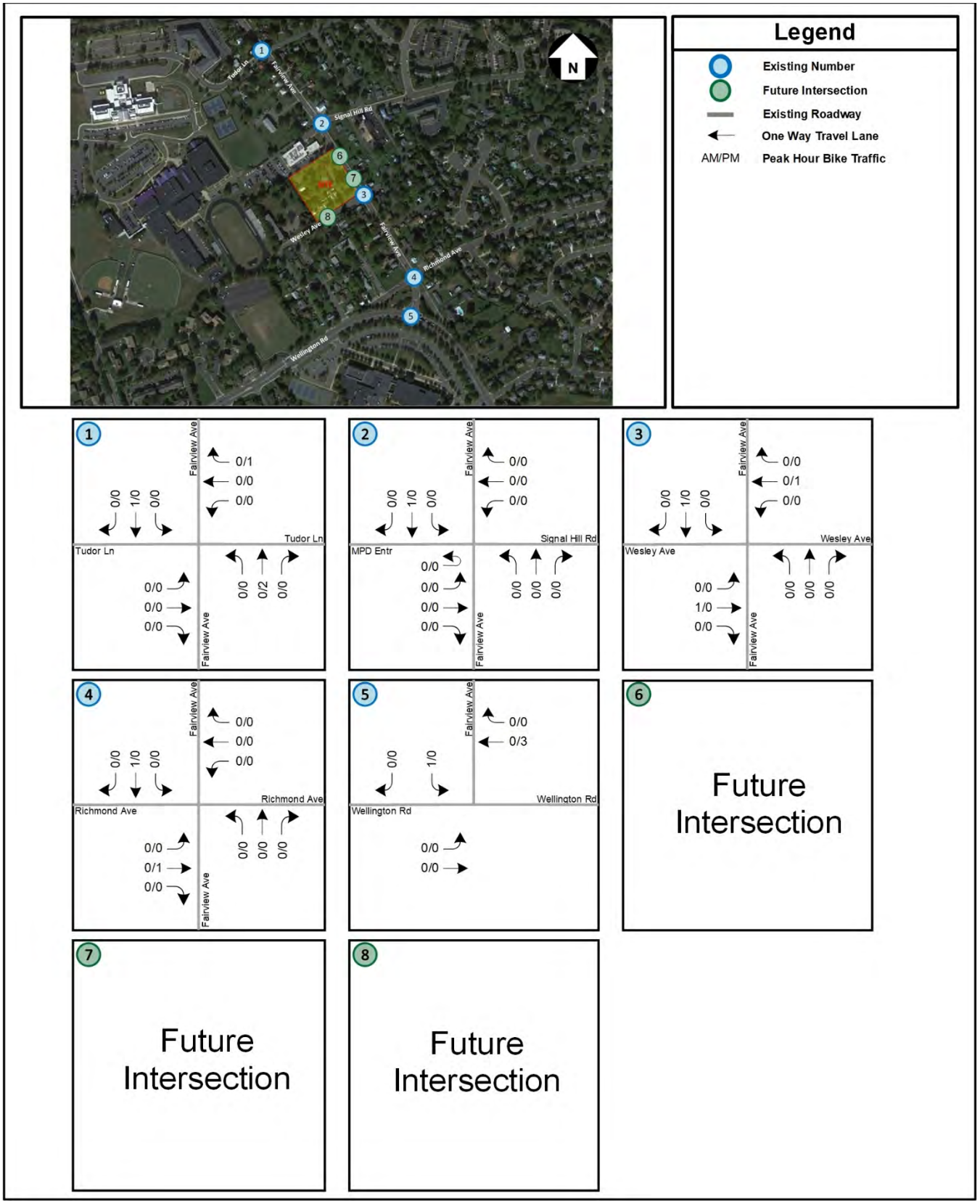


Figure 13: 2022 Existing Conditions – Peak Hour Bicyclist Volumes

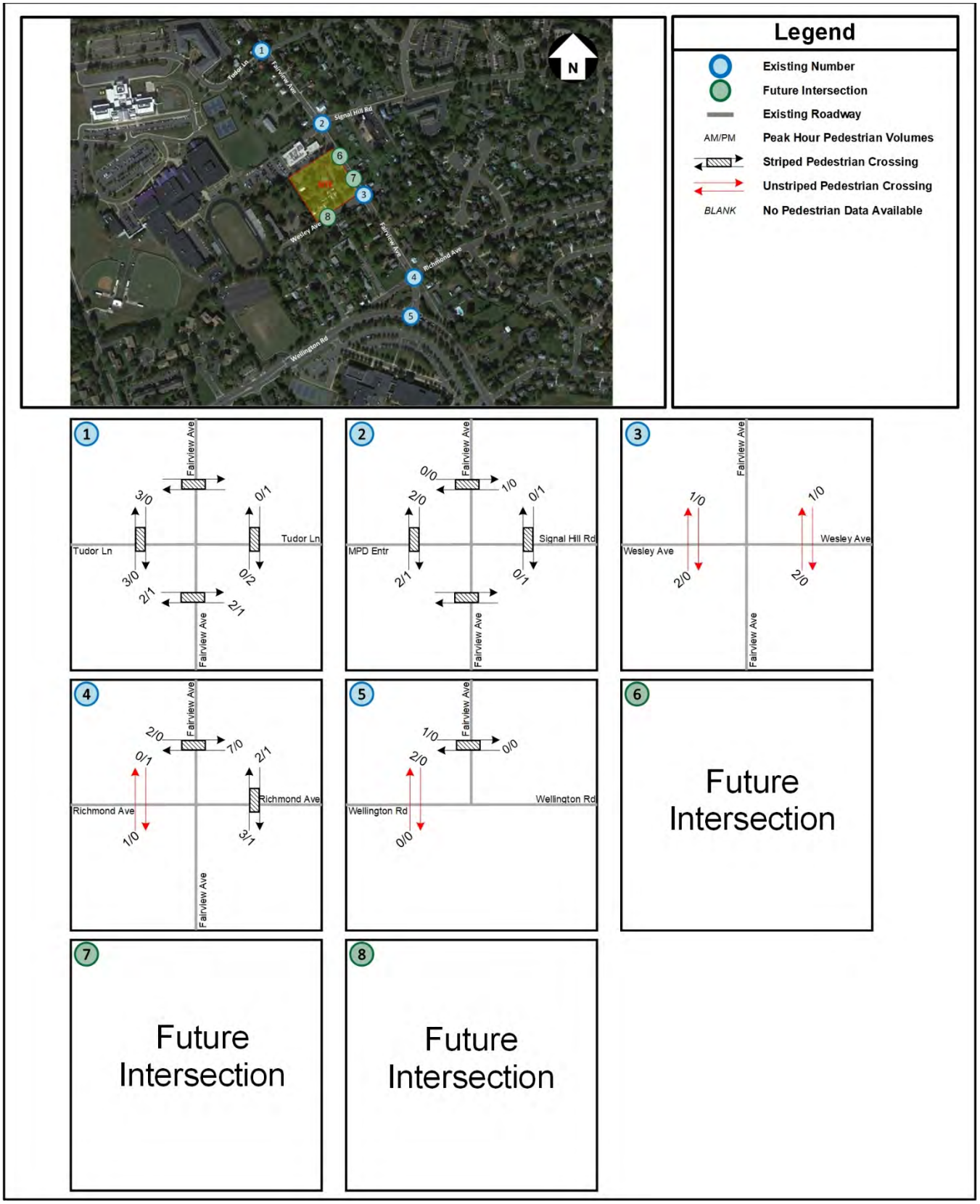


Figure 14: 2022 Existing Conditions – Peak Hour Pedestrian Volumes

Existing Roadway Safety Assessment

Historical crash data was obtained from the VDOT's Crash Analysis Tool for the existing study intersections for a six-year period between January 2014 through December 2019, as more recent data may be influenced by the COVID-19 pandemic. A summary of the reported crashes for the study area intersections by severity is provided in Table 2. As based on the summary, a total of 25 crashes were reported for the study area intersections during the six-year period, with a majority being classified with a severity of Injury Collision (IC).

Table 2: Study Area Historical Crash Summary (January 2014 – December 2019)

Intersection	PDO	IC	Fatality	Total	Crash Rate (Per MEV)
1 Fairview Avenue at Tudor Lane	3	1	0	4	0.12
2 Fairview Avenue at Signal Hill Road	2	1	0	3	0.09
3 Fairview Avenue at Wesley Street	0	1	0	1	0.05
4 Fairview Avenue at Richmond Avenue	0	2	0	2	0.07
5 Fairview Avenue at Wellington Road	4	11	0	15	0.31
Total Reported Crashes Analyzed	**9**	**16**	**0**	**25**	**-**
Percentages	**36.0%**	**64.0%**	**0.0%**	**100.0%**	**-**

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

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

It should be noted that according to the Institute of Transportation Engineers' (ITE) Transportation Impact Analysis for Site Development, a crash rate of 1.0 MEV or higher is an indication that further study is required. A rate over 1.0 MEV does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have an elevated crash rate due to operational, geometric, or other deficiencies. Based on the crash rates, none of the existing study intersections were high crash locations.

A map of the study area showing the recorded and related intersection crashes that occurred during the study period and their recorded severity is presented in Figure 15. Detailed reported crash data is presented in the following tables by study intersection. The raw crash data by intersections is provided in Appendix C.

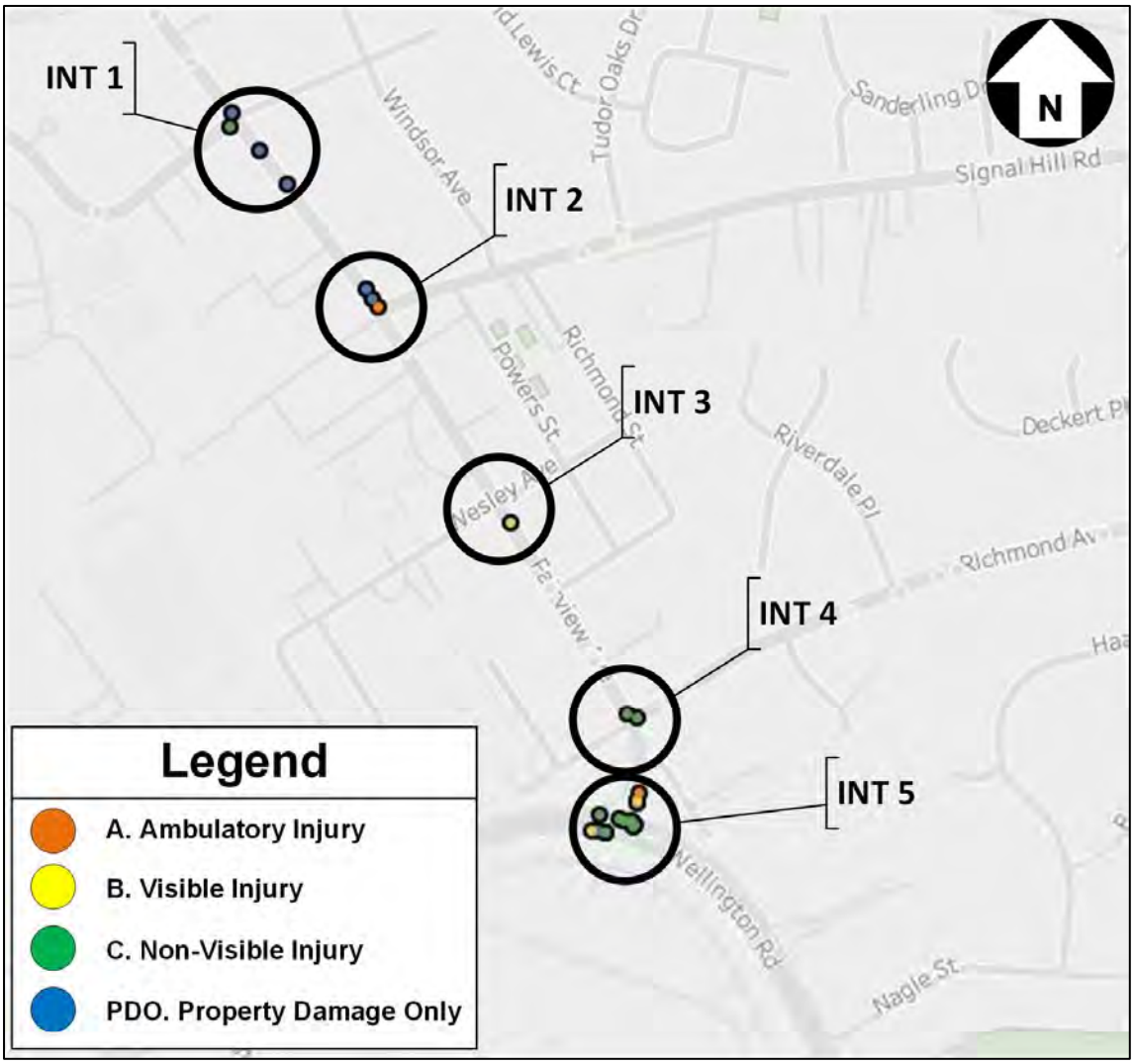


Figure 15: Reported Collision Map for Existing Study Area Intersections (January 2014 – December 2019)

Table 3: VDOT Crash Data at Fairview Avenue and Tudor Lane (Study Intersection 1)

Intersection Crash Analysis	Crash Data for the Intersection of Fairview Avenue and Tudor Lane (2014 - 2019)							
	2014	2015	2016	2017	2018	2019	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)					1		1	25.00%
Type A								
Type B								
Type C					*1*		*1*	
Property Damage Only (Type PDO)			1		2		3	75.00%
TOTAL*			***1***		***3***		***4***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash					1		1	25.00%
Head-On								0.00%
Sideswipe / Same Direction								0.00%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision					1		1	25.00%
Angle Collision			1				1	25.00%
Backed Into								0.00%
Pedestrian Collision					1		1	25.00%
Deer/Animal								0.00%
Other								0.00%
TOTAL*			***1***		***3***		***4***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**					1		1	25.00%
Work-Zone					1		1	25.00%
Inclement Weather (Non-Dry)					1		1	25.00%
Speeding								0.00%
Disregard of Traffic Control Device								0.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)					*1*		*1*	*25.00%*
Off Peak - Daytime (10 AM - 3 PM)					*1*		*1*	*25.00%*
PM Peak Period (3 - 7 PM)			*1*				*1*	*25.00%*
Off Peak - Nighttime (7 PM - 6 AM)					*1*		*1*	*25.00%*
CALCULATED CRASH RATE							***0.12***	***Crashes per MEV***

* It should be noted that an intersection radius of 200 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

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

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

Table 4: VDOT Crash Data at Fairview Avenue and Signal Hill Road (Study Intersection 2)

Intersection Crash Analysis	Crash Data for the Intersection of Fairview Avenue and Signal Hill Road (2014 - 2019)							
	2014	2015	2016	2017	2018	2019	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	1						1	33.33%
Type A	*1*						*1*	
Type B								
Type C								
Property Damage Only (Type PDO)	1		1				2	66.67%
TOTAL*	***2***		***1***				***3***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash			1				1	33.33%
Head-On								0.00%
Sideswipe / Same Direction								0.00%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision	1						1	33.33%
Angle Collision	1						1	33.33%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other								0.00%
TOTAL*	***2***		***1***				***3***	***100.00%***
Other Factors								
Distracted Driver	1						1	33.33%
Alcohol**								0.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)								0.00%
Speeding								0.00%
Disregard of Traffic Control Device								0.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)	*2*						*2*	*66.67%*
Off Peak - Daytime (10 AM - 3 PM)								*0.00%*
PM Peak Period (3 - 7 PM)								*0.00%*
Off Peak - Nighttime (7 PM - 6 AM)			*1*				*1*	*33.33%*
CALCULATED CRASH RATE							***0.09***	***Crashes per MEV***

* It should be noted that an intersection radius of 200 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

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

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

Table 5: VDOT Crash Data at Fairview Avenue and Wesley Avenue (Study Intersection 3)

Intersection Crash Analysis	Crash Data for the Intersection of Fairview Avenue and Wesley Avenue (2014 - 2019)							
	2014	2015	2016	2017	2018	2019	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	1						1	100.00%
Type A								
Type B	*1*						*1*	
Type C								
Property Damage Only (Type PDO)								0.00%
TOTAL*	***1***						***1***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash								0.00%
Head-On								0.00%
Sideswipe / Same Direction								0.00%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision								0.00%
Angle Collision								0.00%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other	1						1	100.00%
TOTAL*	***1***						***1***	***100.00%***
Other Factors								
Distracted Driver	1						1	100.00%
Alcohol**								0.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)	1						1	100.00%
Speeding								0.00%
Disregard of Traffic Control Device								0.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)								*0.00%*
Off Peak - Daytime (10 AM - 3 PM)								*0.00%*
PM Peak Period (3 - 7 PM)	*1*						*1*	*100.00%*
Off Peak - Nighttime (7 PM - 6 AM)								*0.00%*
CALCULATED CRASH RATE							***0.05***	***Crashes per MEV***

* It should be noted that an intersection radius of 200 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

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

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

Table 6: VDOT Crash Data at Fairview Avenue and Richmond Avenue (Study Intersection 4)

Intersection Crash Analysis	Crash Data for the Intersection of Fairview Avenue and Richmond Avenue (2014 - 2019)							
	2014	2015	2016	2017	2018	2019	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)				1	1		2	100.00%
Type A								
Type B								
Type C				*1*	*1*		*2*	
Property Damage Only (Type PDO)								0.00%
TOTAL*				***1***	***1***		***2***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash								0.00%
Head-On								0.00%
Sideswipe / Same Direction								0.00%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision								0.00%
Angle Collision				1	1		2	100.00%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other								0.00%
TOTAL*				***1***	***1***		***2***	***100.00%***
Other Factors								
Distracted Driver								0.00%
Alcohol**								0.00%
Work-Zone								0.00%
Inclement Weather (Non-Dry)					1		1	50.00%
Speeding								0.00%
Disregard of Traffic Control Device								0.00%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)				*1*			*1*	*50.00%*
Off Peak - Daytime (10 AM - 3 PM)								*0.00%*
PM Peak Period (3 - 7 PM)								*0.00%*
Off Peak - Nighttime (7 PM - 6 AM)					*1*		*1*	*50.00%*
CALCULATED CRASH RATE							***0.07***	***Crashes per MEV***

* It should be noted that an intersection radius of 200 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

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

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

Table 7: VDOT Crash Data at Fairview Avenue and Wellington Road (Study Intersection 5)

Intersection Crash Analysis	Crash Data for the Intersection of Fairview Avenue and Wellington Road (2014 - 2019)							
	2014	2015	2016	2017	2018	2019	Total	Relative Frequency
Crash Severity								
Fatal Collision (Type K)								0.00%
Injury Collision (Type A, B, and C)	2	4	2	1	1	1	11	73.33%
Type A		*1*					*1*	
Type B					*1*	*1*	*2*	
Type C	*2*	*3*	*2*	*1*			*8*	
Property Damage Only (Type PDO)		2	1	1			4	26.67%
TOTAL*	***2***	***6***	***3***	***2***	***1***	***1***	***15***	***100.00%***
Crash Type								
Fixed Object/ Single-Vehicle Crash	1						1	6.67%
Head-On				1			1	6.67%
Sideswipe / Same Direction								0.00%
Sideswipe / Opposite Direction								0.00%
Rear-End Collision		4	1		1	1	7	46.67%
Angle Collision	1	2	1	1			5	33.33%
Backed Into								0.00%
Pedestrian Collision								0.00%
Deer/Animal								0.00%
Other			1				1	6.67%
TOTAL*	***2***	***6***	***3***	***2***	***1***	***1***	***15***	***100.00%***
Other Factors								
Distracted Driver			1				1	6.67%
Alcohol**				1	1		2	13.33%
Work-Zone								0.00%
Inclement Weather (Non-Dry)	2	2	1				5	33.33%
Speeding								0.00%
Disregard of Traffic Control Device	1	1					2	13.33%
Pedestrian Injury***								N/A
Time of Day								
AM Peak Period (6 - 10 AM)								*0.00%*
Off Peak - Daytime (10 AM - 3 PM)		*1*	*1*		*1*		*3*	*20.00%*
PM Peak Period (3 - 7 PM)	*2*	*4*	*1*	*1*		*1*	*9*	*60.00%*
Off Peak - Nighttime (7 PM - 6 AM)		*1*	*1*	*1*			*3*	*20.00%*
CALCULATED CRASH RATE							***0.31***	***Crashes per MEV***

* It should be noted that an intersection radius of 200 feet was used in this analysis. Crashes also thought to be caused by the intersection may have been added based on the description of the crash and engineering judgement.

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

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

Existing Traffic Volumes

In order to determine the weekday morning (AM) and weekday afternoon (PM) peak hour turning movement traffic volumes, turning movement counts (TMC) were collected at the existing study intersections on Tuesday, May 24, 2022, during AM and PM peak periods (a total of six (6) hours), or from the hours of 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM. These counts were appropriate balanced and cross verified with 2016 counts at the same intersections and were determined to be consistent with pre-Covid conditions, as per the scoping discussions.

From the turning movement counts, the following system peak hours were determined.

- AM Peak Hour: 7:30 AM to 8:30 AM
- PM Peak Hour: 4:15 PM to 5:15 PM

The 2022 existing road network configuration is presented in Figure 16. The existing peak hour traffic volumes for the intersections within the study area are illustrated in Figure 17. The average daily traffic (ADT) volumes, depicted in this figure and in subsequent volume graphics, were calculated based on the PM peak hour turning movement volumes and multiplied by the historic VDOT k-factors from 2019. If the historic data was not available for a given roadway or roadway segment, then a k-factor of 0.10 was assumed. The raw traffic counts are provided in Appendix B.

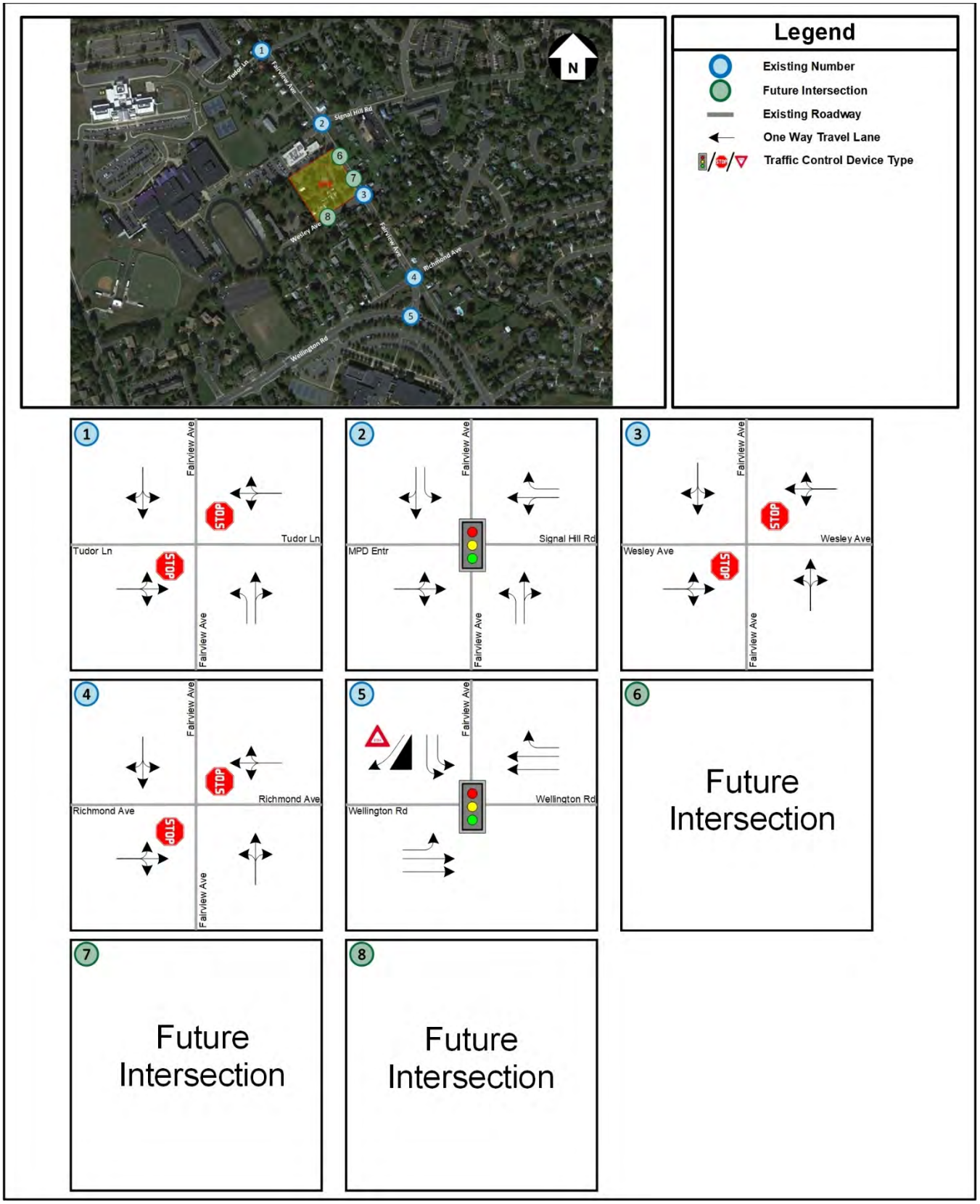


Figure 16: 2022 Existing Conditions – Roadway Network Geometric Configuration and Traffic Control Devices

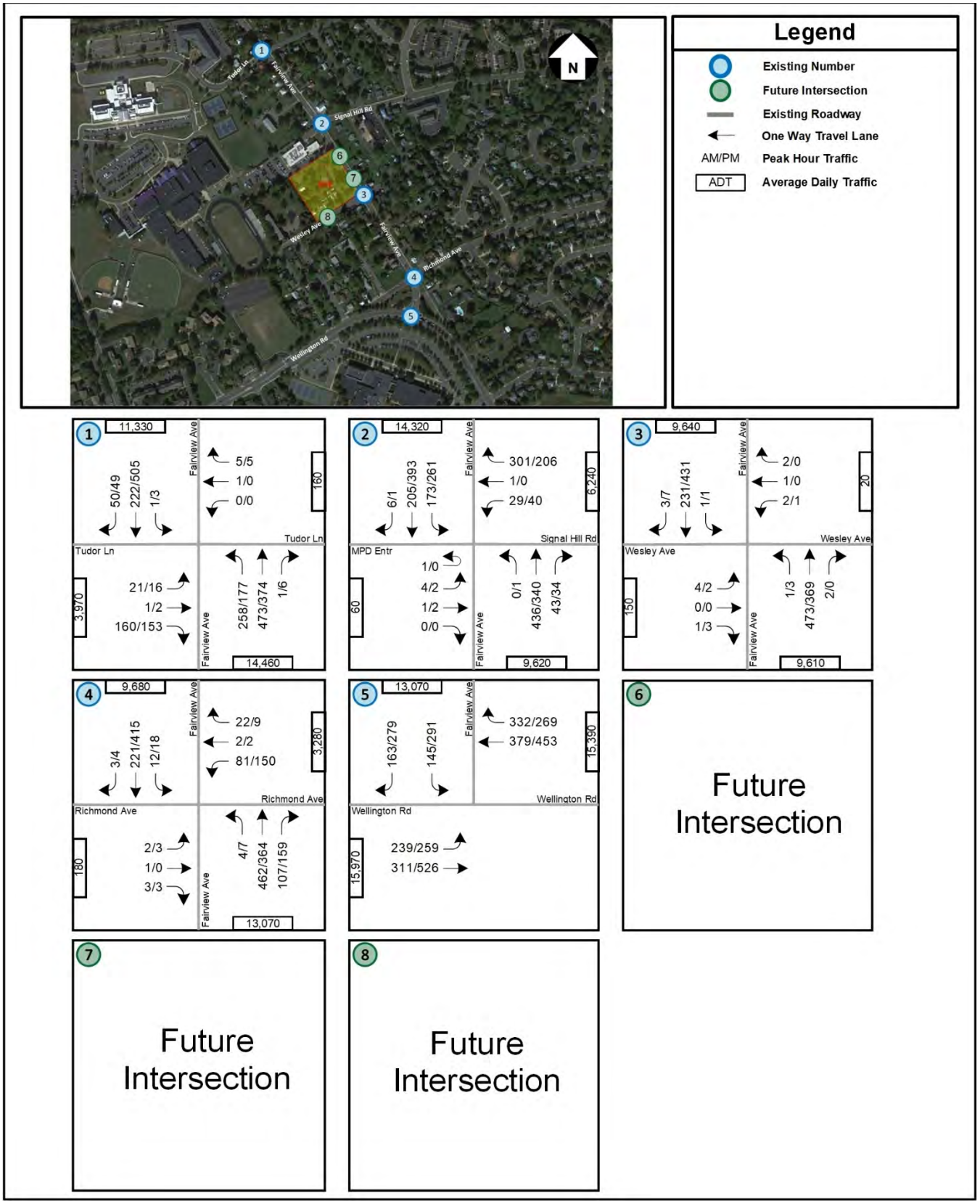


Figure 17: 2022 Existing Conditions – Vehicular Traffic Volumes

Existing Intersection Capacity and Queueing Analysis

Intersection capacity and queuing analyses were performed for the 2022 Existing Conditions scenario at the study area intersections during AM and PM peak hours. *Synchro,* version 10, was used to analyze the study intersections with results based on the 2010 methodology[1] presented in the Transportation Research Board's (TRB) Highway Capacity Manual (HCM) and analysis guidelines provided in the City of Manassas' DCSM. The analysis herein includes level of service (LOS), delay, and queue length comparisons for the turning movements analyzed.

Signal timings for Study Intersection 2: Fairview Avenue at Manassas Police Department Entrance/Signal Hill Road and Study Intersection 5: Fairview Avenue at Wellington Road were obtained from the City and were utilized in the analysis models based in *Synchro*. Traffic operation conditions as well as lane configurations were field verified. The existing traffic volumes discussed in the aforementioned section as well as other relevant data were entered into the analysis models. For the purposes of this analysis, the existing peak hour factors (PHF) were based on the traffic count data and utilized on a by-intersection basis; PHF in the range of 0.85 to 1.00 were used for the existing scenario, consistent with the scoping discussions. As discussed in the scope, the heavy vehicle percentages (HV%) are based on the existing counts per movement.

Per the scoping discussions with City staff, it would be considered acceptable and/or desirable to achieve an approach LOS D or better for traffic operations using HCM methodology. The results of the intersection capacity analyses from *Synchro* are presented in Table 8 and graphically in Figure 18. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections, and any approaches, that operate at LOS E, or F are displayed in red.

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

The description of different LOS and delay are included in Appendix D. The detailed analysis worksheets of 2022 Existing Conditions are contained in Appendix E.

Based on the capacity analysis of existing conditions, the signalized study intersections operate at an acceptable overall level of service during both peak hours. Similarly, the remaining existing study intersections operate at acceptable approach levels of service during both peak hours, except for the westbound approach of Study Intersection 4: Fairview Avenue at Richmond Avenue, which operates at an unacceptable level of service during the PM peak hour only.

Based on the queuing analysis performed for existing conditions, all turning movements at the study intersections had 95th percentile queue lengths that were accommodated within the available storage lengths of the turn bays.

[1] It should be noted that HCM 2000 methodology was used in lieu of HCM 2010 if the HCM 2010 methodology was not applicable. HCM 2010 could not be applicable in such cases as nonstandard National Electrical Manufacturers Association (NEMA) configurations, shared lane configurations, placement of loop detectors, U-turns, etc.

Table 8: 2022 Existing Conditions – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue (ft.) [2]
			Synchro			Synchro		
1	Tudor Lane (E/W) & Fairview Avenue (N/S)							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***20.0***		***C***	***20.1***	
	Eastbound Left/Thru/Right		C	20.0	58	C	20.1	50
	Westbound Approach		***C***	***16.2***		***B***	***10.7***	
	Westbound Left/Thru/Right		C	16.2	3	B	10.7	0
	Northbound Approach							
	Northbound Left	280	A	8.7	23	A	9.3	15
	Southbound Approach							
	Southbound Left/Thru/Right		A	8.4	0	A	8.0	0
2	Manassas PD Entr / Signal Hill Road (E/W) & Fairview Avenue (N/S)							
	Overall Intersection (Signalized)		C	20.3		B	17.9	
	Eastbound Approach		***D***	***41.4***		***D***	***37.7***	
	Eastbound Left/Thru/Right		D	41.4	16	D	37.7	13
	Westbound Approach		***C***	***30.9***		***C***	***28.6***	
	Westbound Left/Thru		C	30.4	43	C	28.6	53
	Westbound Right	110	C	30.9	75	B	14.6	63
	Northbound Approach		***C***	***22.4***		***C***	***21.8***	
	Northbound Left	260	0	0.0	0	B	14.6	0
	Northbound Thru/Right		C	22.4	#445	C	21.8	282
	Southbound Approach		***A***	***8.1***		***B***	***11.5***	
	Southbound Left	260	A	9.7	89	A	9.5	123
	Southbound Thru/Right		A	6.7	106	B	12.8	271
3	Wesley Avenue (E/W) & Fairview Avenue (N/S)							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***16.6***		***B***	***13.7***	
	Eastbound Left/Thru/Right		C	16.6	3	B	13.7	0
	Westbound Approach		***C***	***15.2***		***C***	***17.8***	
	Westbound Left/Thru/Right		C	15.2	3	C	17.8	0
	Northbound Approach							
	Northbound Left/Thru/Right		A	7.8	0	A	8.2	0
	Southbound Approach							
	Southbound Left/Thru/Right		A	8.5	0	A	8.0	0
4	Richmond Avenue (E/W) & Fairview Avenue (N/S)							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***16.0***		***C***	***16.0***	
	Eastbound Left/Thru/Right		C	16.0	3	C	16.0	3
	Westbound Approach		***C***	***22.4***		***E***	***48.3***	
	Westbound Left/Thru/Right		C	22.4	38	E	48.3	115
	Northbound Approach							
	Northbound Left/Thru/Right		A	8.0	0	A	8.2	0
	Southbound Approach							
	Southbound Left/Thru/Right		A	9.0	0	A	8.5	3
5	Wellington Road (E/W) & Fairview Avenue (N/S)							
	Overall Intersection (Signalized)		B	11.7		B	12.5	
	Eastbound Approach		***A***	***6.0***		***A***	***5.6***	
	Eastbound Left	225	A	8.1	73	A	7.7	93
	Eastbound Thru		A	4.4	42	A	4.5	84
	Westbound Approach		***B***	***13.5***		***B***	***11.4***	
	Westbound Thru		B	14.5	97	B	13.1	124
	Westbound Right	235	B	12.4	27	A	8.6	21
	Southbound Approach		***C***	***24.8***		***C***	***33.6***	
	Southbound Left		C	24.8	46	C	33.6	94
	Southbound Right		A	0.0	0	A	0.0	0

NOTES:

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

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

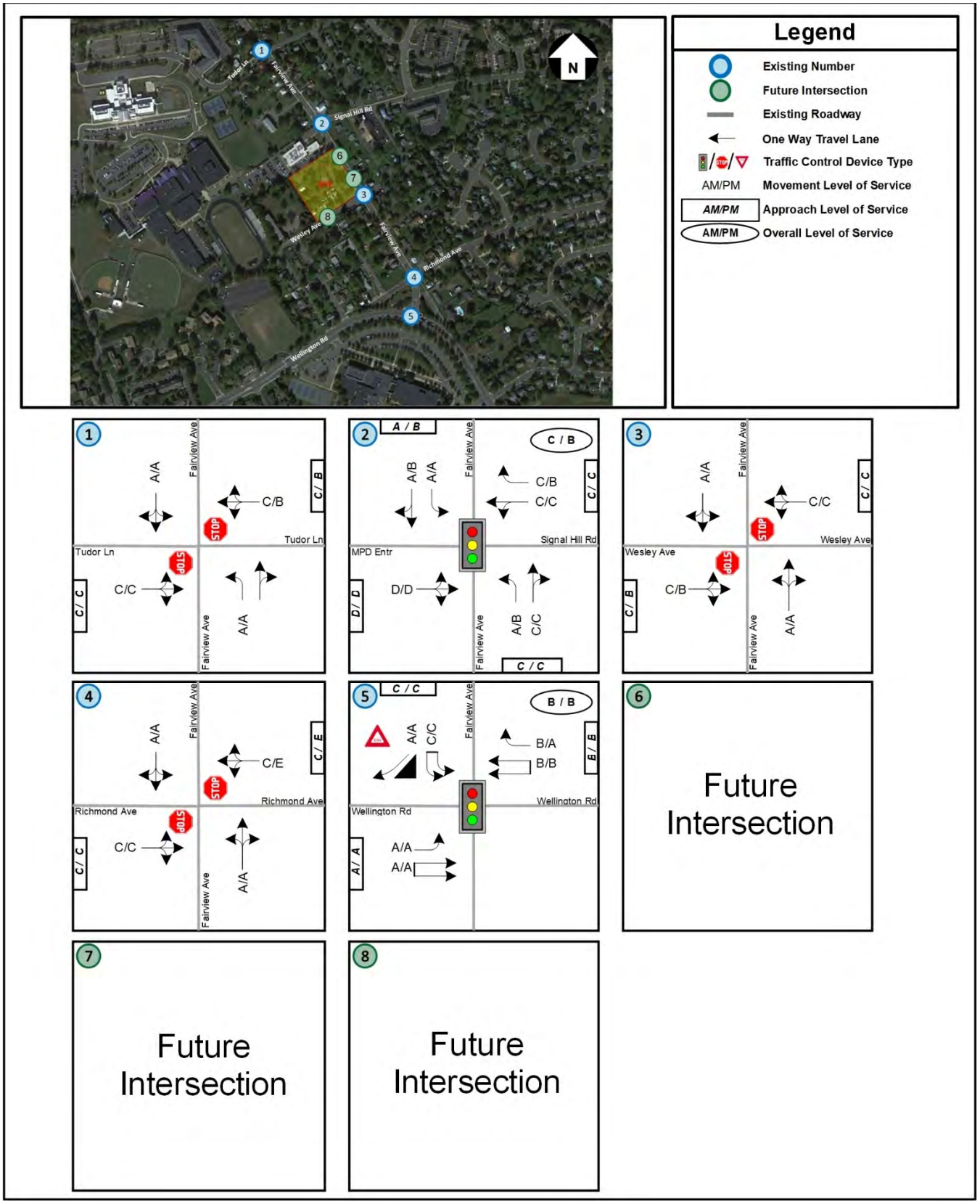


Figure 18: 2022 Existing Conditions – Level of Service Results

Analysis of 2027 Future Conditions without Development

For the purposes of this study, the Edugenius Development in full is anticipated to be constructed by 2027, as ultimately determined following distribution of the scoping document; this scenario analyzes the future without development conditions for the year 2027.

Future without Development Traffic Volumes

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

Inherent Regional Growth

The Edugenius Development in full is anticipated to be complete in 2027, as ultimately determined following distribution of the scoping document.

In order to account for increased demand on the traffic network between 2022 and 2027, an inherent growth rate was applied to the future scenarios. This "inherent" growth was anticipated to account for regional development within the at-large area, which would ultimately result in increased roadway demand. Furthermore, the inherent growth was anticipated to account for any potential background developments unaccounted for within the vicinity of the study area. According to historical VDOT AADT data (as shown in Table 9), there has been slight to moderate growth along the major road network within the study area in recent years.

Table 9: Historical Regional Growth within Vicinity of the Road Network

			Published VDOT AADT					Growth Rate / Year			
Road Segment	From	To	2015	2016	2017	2018	2019	2015-2019	2016-2019	2017-2019	2018-2019
Fairview Avenue	Wellington Ave	SR 28 Center St	13,000	13,000	13,000	13,000	13,000	0%	0%	0%	0%
Wellington Rd	BUS SR 234 Dumfries Rd	Fairview Ave	14,000	16,000	17,000	16,000	18,000	6%	4%	3%	13%
Signal Hill Rd	Richmond Ave	Liberia Ave	6,200	6,100	6,200	6,000	6,100	0%	0%	-1%	2%
Tudor Ln	Osbourn High School	Cul de sac	2,500	2,500	2,500	2,500	2,500	0%	0%	0%	0%
Richmond Avenue	Fairview Ave	Liberia Ave	2,700	3,300	3,400	3,300	3,500	7%	2%	1%	6%

As agreed upon in the scope for this study, to account for 2027 future conditions (as ultimately determined following distribution of the scoping document), an inherent growth rate of one-percent (1.0%), compounded annually over a three-year period, between 2022 to 2027 (and totaling 5.10% growth of the existing volumes) was applied to all turning movements at Study Intersection 5: Fairview Avenue at Wellington Road. The growth volumes were propagated as mainline through movements at subsequent study intersections along the road network where applicable.

The inherent regional growth volumes (for the period between 2022 and 2027) are illustrated in Figure 19.

Potential Background Development(s)

In addition to the inherent regional growth reflecting increased traffic demand, one (1) background development in the vicinity of the site was identified for inclusion in this study to be conservative under 2027 future conditions as based on discussions during the scoping process with the City (and identified for inclusion in the study following distribution of the scoping document).

The background development includes the potential conversion of the existing City of Manassas Police Department building, located adjacent to Study Intersection 2: Fairview Avenue at Manassas Police Department/Signal Hill Road, into City government offices. This conversion is referenced and recommended per Chapter 7 of the City's Comprehensive Plan. Of note, per the City's 2023 Five-Year Capital Improvement Program, the Police Department functions will be relocated to a planned public safety facility along Grant Avenue, west of the site.

Given that the police department building is currently operating under existing conditions, trips associated with the use are included in the existing counts. The police station trips are found to be similar and consistent with trips for a similar use under

ITE's Trip Generation Manual, 11th edition, publication. Therefore, with the proposed higher density under the conversion to City government offices, the delta, or difference, in trips between the existing use and proposed use was added to the road network, under a routing consistent with the direction of approach for the proposed Edugenius Development, and as based on existing traffic flows and engineering judgment. The delta in trips for the background development is depicted in Table 10.

Table 10: Police Station to City Government Offices Conversion – Site Trip Generation (Difference in Trips from Existing Conditions)

Land Use	ITE Code	Size	------ Weekday ------						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Proposed Use									
Government Office Building	730	36.376 kSF of GFA	91	30	121	15	47	62	822
Existing Use									
Police Station [1][2]	575	36.376 kSF of GFA	12	5	17	5	12	17	170
Notes									
[1]: As no LUC exists for Police Station in ITE 11, the similar ITE LUC 575 (Fire and Rescue Station) was used. The associated trips are consistent with existing conditions in the field.									
[2]: ITE LUC 575 (Fire and Rescue Station) does not have data for the AM peak hour nor weekday daily period in ITE 11. The AM peak hour was assumed to be similar to the PM peak hour while the weekday daily trips were assumed to be 10 times the PM peak hour. The associated trips are consistent with existing conditions in the field.									
Difference (Proposed Minus Existing)			**79**	**25**	**104**	**10**	**35**	**45**	**652**

The assignment of the delta in trips for the background development is illustrated in Figure 20.

Potential Roadway Improvement(s)

No major roadway improvements, near or within the vicinity of the site, were anticipated to significantly affect future roadway conditions on the road network by 2027, nor were any identified in the scoping discussions for inclusion in this study under the 2027 Future Conditions without Development scenario. As such, no roadway improvements were included in the 2027 future scenarios. The 2027 Future Conditions without Development road network configuration will remail the same as the existing network configuration (Figure 16). Of note, a City-wide signal optimization was recently completed.

Future without Development Traffic Volumes

In order to forecast future roadway traffic volumes for the year 2027, the 2022 existing traffic volumes were combined with the inherent growth traffic volumes and background site traffic (difference from existing conditions). The 2027 Future Conditions without Development traffic volumes are illustrated in Figure 21.

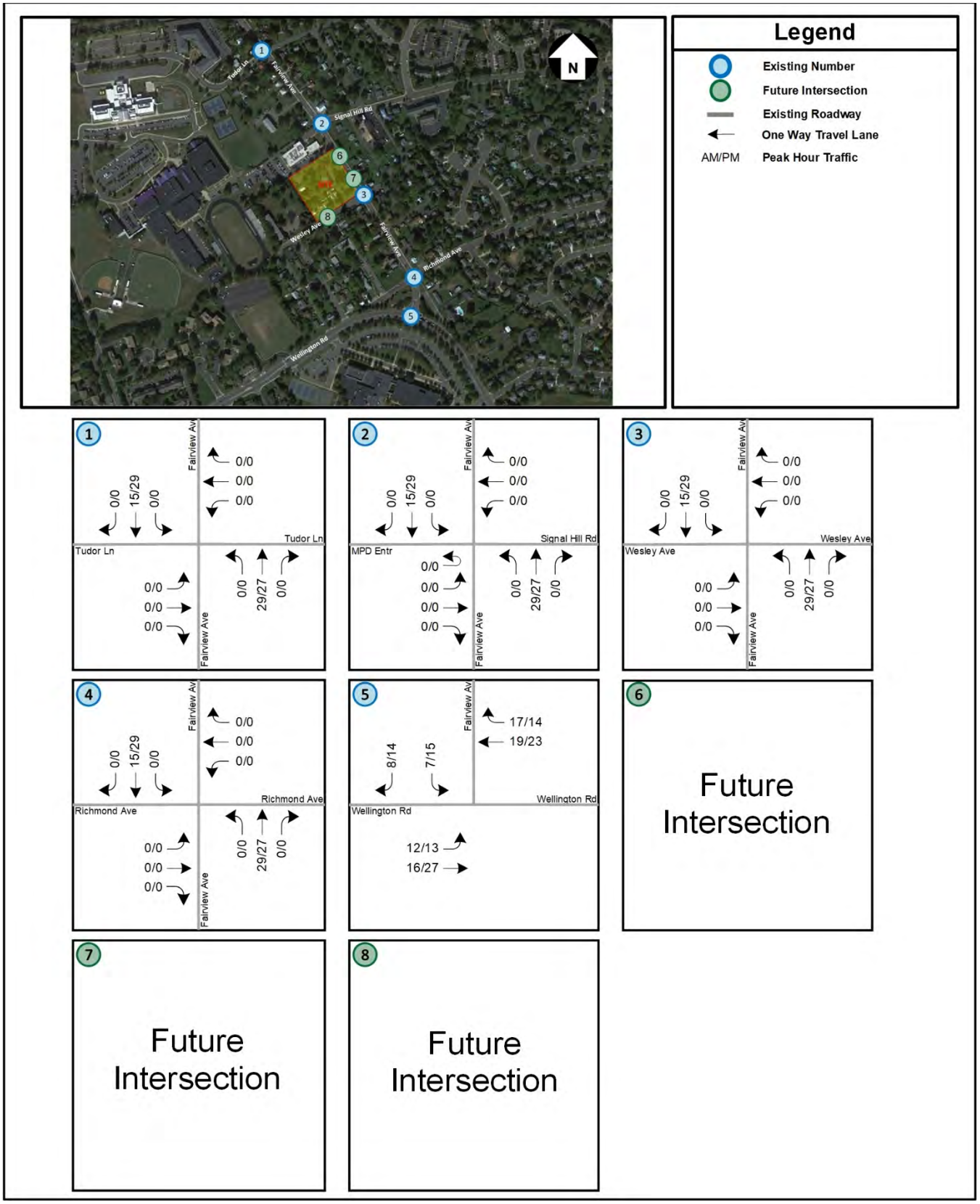


Figure 19: Projected Inherent Regional Growth Traffic Volumes (2022 to 2027)

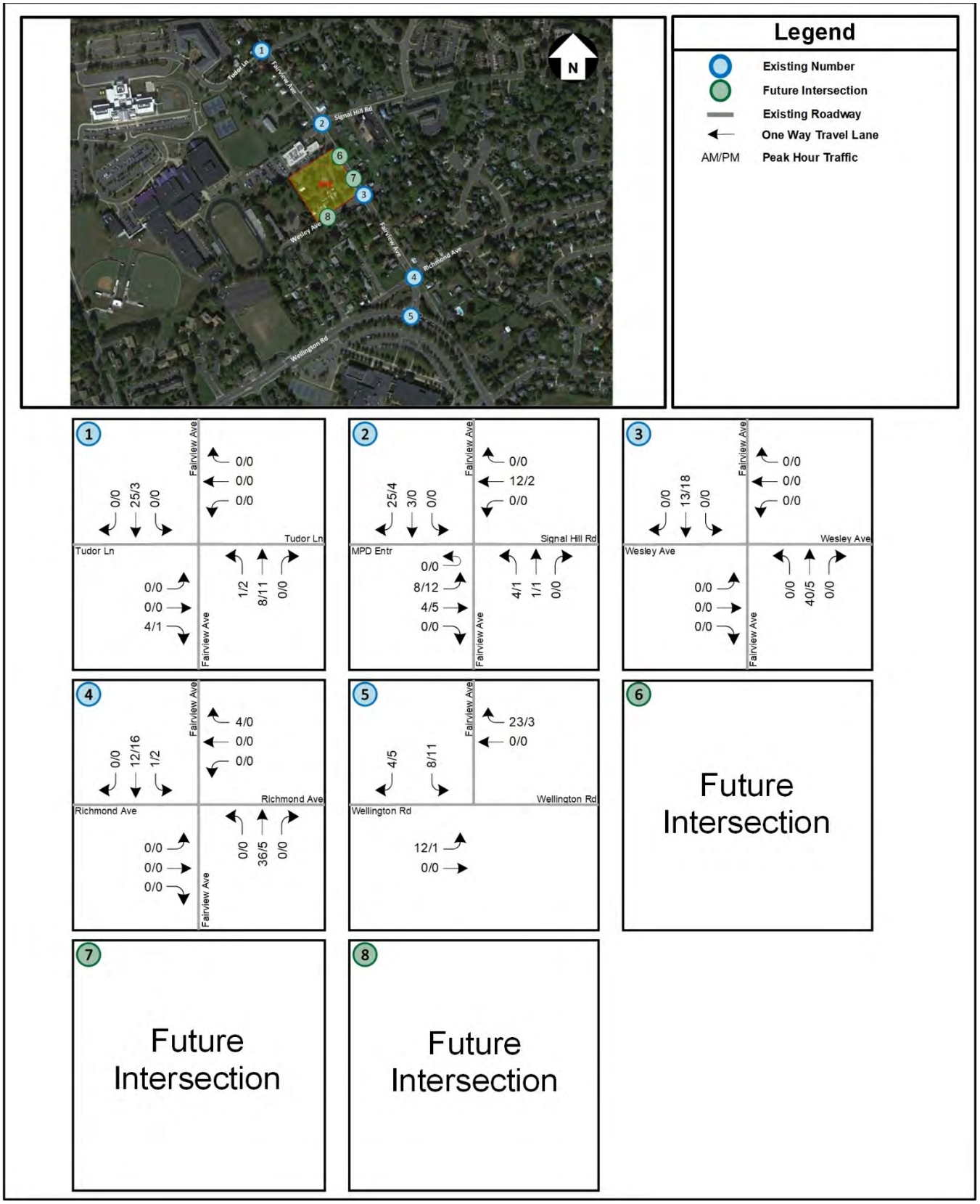


Figure 20: Background Development Traffic Assignment – Police Station to City Government Offices Conversion (Difference in Trips from Existing Conditions)

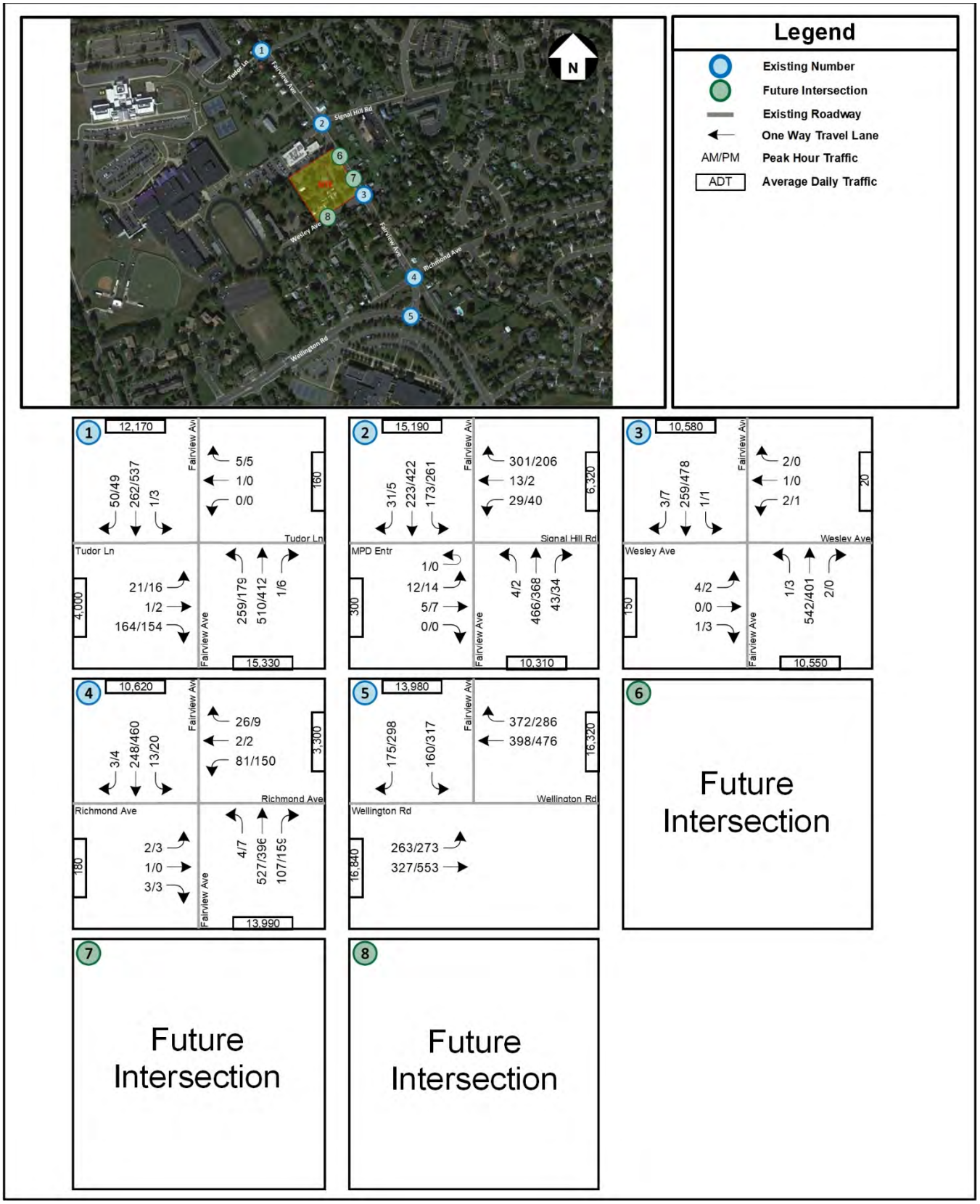


Figure 21: 2027 Future Conditions without Development – Vehicular Traffic Volumes

Future without Development Intersection Capacity and Queueing Analysis

Intersection capacity analyses were performed for the 2027 Future Conditions without Development scenario at the study area intersections during the AM and PM peak hours. *Synchro,* version 10, was used to analyze the study intersections with results based on the methodology presented in TRB's HCM and analysis guidelines provided in the City of Manassas' DCSM. The analysis herein includes LOS, delay, and queue length comparisons for the turning movements analyzed.

For the purposes of this analysis, the future PHF were based on the traffic counts and utilized on a by-intersection basis; PHF in the range of 0.92 to 1.00 were used for the future scenario, consistent with the agreed-upon scope. The heavy vehicle percentages (HV%) were the same as those used in the 2022 Existing Conditions scenario analysis.

Per the scoping discussions with City staff, it would be considered acceptable and/or desirable to achieve an approach and a lane group LOS D or better for traffic operations using HCM methodology. The results of the intersection capacity analyses from *Synchro* are presented in Table 11 and graphically in Figure 22. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections, and any approaches, that operate at LOS E, or F are displayed in red.

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

The detailed analysis worksheets of the 2027 Future Conditions without Development are contained in Appendix F.

Based on the capacity analysis of future without development conditions, the signalized study intersections are anticipated to continue to operate at an acceptable overall level of service during both peak hours. Similarly, the remaining study intersections are anticipated to continue to operate at acceptable approach levels of service during both peak hours, except for the westbound approach of Study Intersection 4: Fairview Avenue at Richmond Avenue, which is anticipated to continue to operate at an unacceptable level of service (dropping from LOS E to LOS F under this scenario) during the PM peak hour only.

Based on the queuing analysis performed for this scenario, all turning movements at the study intersections are anticipated to continue to have 95th percentile queue lengths that would continue to be accommodated within the available storage lengths of the turn bays.

Table 11: 2027 Future Conditions without Development – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue (ft.) [2]
			Synchro			Synchro		
1	**Tudor Lane (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***23.3***		***C***	***22.0***	
	Eastbound Left/Thru/Right		C	23.3	70	C	22.0	58
	Westbound Approach		***C***	***17.3***		***B***	***11.0***	
	Westbound Left/Thru/Right		C	17.3	3	B	11.0	0
	Northbound Approach							
	Northbound Left	280	A	8.9	23	A	9.4	18
	Southbound Approach							
	Southbound Left/Thru/Right		A	8.5	0	A	8.1	0
2	**Manassas PD Entr / Signal Hill Road (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (Signalized)		**C**	**21.9**		**B**	**19.4**	
	Eastbound Approach		***D***	***45.3***		***D***	***41.4***	
	Eastbound Left/Thru/Right		D	45.3	34	D	41.4	36
	Westbound Approach		***D***	***36.0***		***C***	***31.3***	
	Westbound Left/Thru		D	36.1	55	C	31.2	56
	Westbound Right	110	D	36.0	75	B	15.3	63
	Northbound Approach		***C***	***21.2***		***C***	***23.4***	
	Northbound Left	260	B	12.5	6	B	15.3	3
	Northbound Thru/Right		C	21.2	#494	C	23.4	309
	Southbound Approach		***B***	***10.4***		***B***	***12.2***	
	Southbound Left	260	A	10.0	90	B	10.3	123
	Southbound Thru/Right		B	10.6	176	B	13.4	300
3	**Wesley Avenue (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***17.2***		***B***	***14.7***	
	Eastbound Left/Thru/Right		C	17.2	3	B	14.7	0
	Westbound Approach		***C***	***15.8***		***C***	***19.6***	
	Westbound Left/Thru/Right		C	15.8	0	C	19.6	0
	Northbound Approach							
	Northbound Left/Thru/Right		A	7.8	0	A	8.4	0
	Southbound Approach							
	Southbound Left/Thru/Right		A	8.6	0	A	8.1	0
4	**Richmond Avenue (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***17.9***		***C***	***17.3***	
	Eastbound Left/Thru/Right		C	17.9	3	C	17.3	3
	Westbound Approach		***D***	***27.0***		***F***	***67.5***	
	Westbound Left/Thru/Right		D	27.0	50	F	67.5	143
	Northbound Approach							
	Northbound Left/Thru/Right		A	8.1	0	A	8.3	0
	Southbound Approach							
	Southbound Left/Thru/Right		A	9.3	3	A	8.7	3
5	**Wellington Road (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (Signalized)		**B**	**12.2**		**B**	**12.9**	
	Eastbound Approach		***A***	***6.3***		***A***	***6.0***	
	Eastbound Left	225	A	8.6	85	A	8.4	101
	Eastbound Thru		A	4.5	46	A	4.8	91
	Westbound Approach		***B***	***14.1***		***B***	***11.8***	
	Westbound Thru		B	14.8	105	B	13.6	132
	Westbound Right	235	B	13.3	40	A	8.8	26
	Southbound Approach		***C***	***24.8***		***C***	***33.2***	
	Southbound Left		C	24.8	48	C	33.2	102
	Southbound Right		A	0.0	0	A	0.0	0

NOTES:

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

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

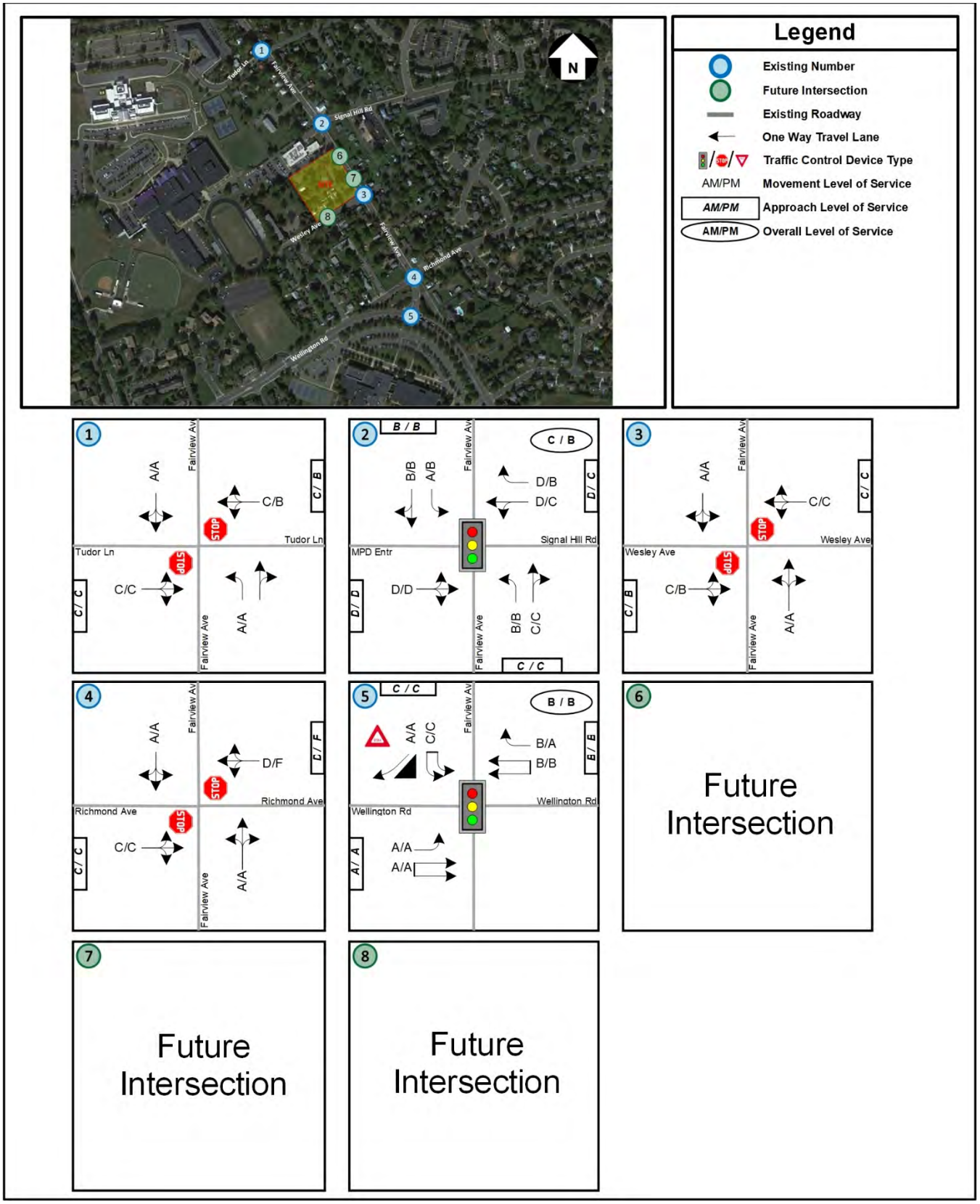


Figure 22: 2027 Future Conditions without Development – Level of Service Results

Analysis of 2027 Future Conditions with Development

For the purposes of this study, the Edugenius Development in full is anticipated to be constructed and in operation by 2027, as ultimately determined following distribution of the scoping document; this scenario analyzes the future with development conditions for the year 2027.

Site Description

The Applicant is proposing to redevelop the site with an approximately 120-student capacity elementary school and 125-student capacity day care / childcare facility. A conceptual plan for the Site is illustrated in Figure 23.

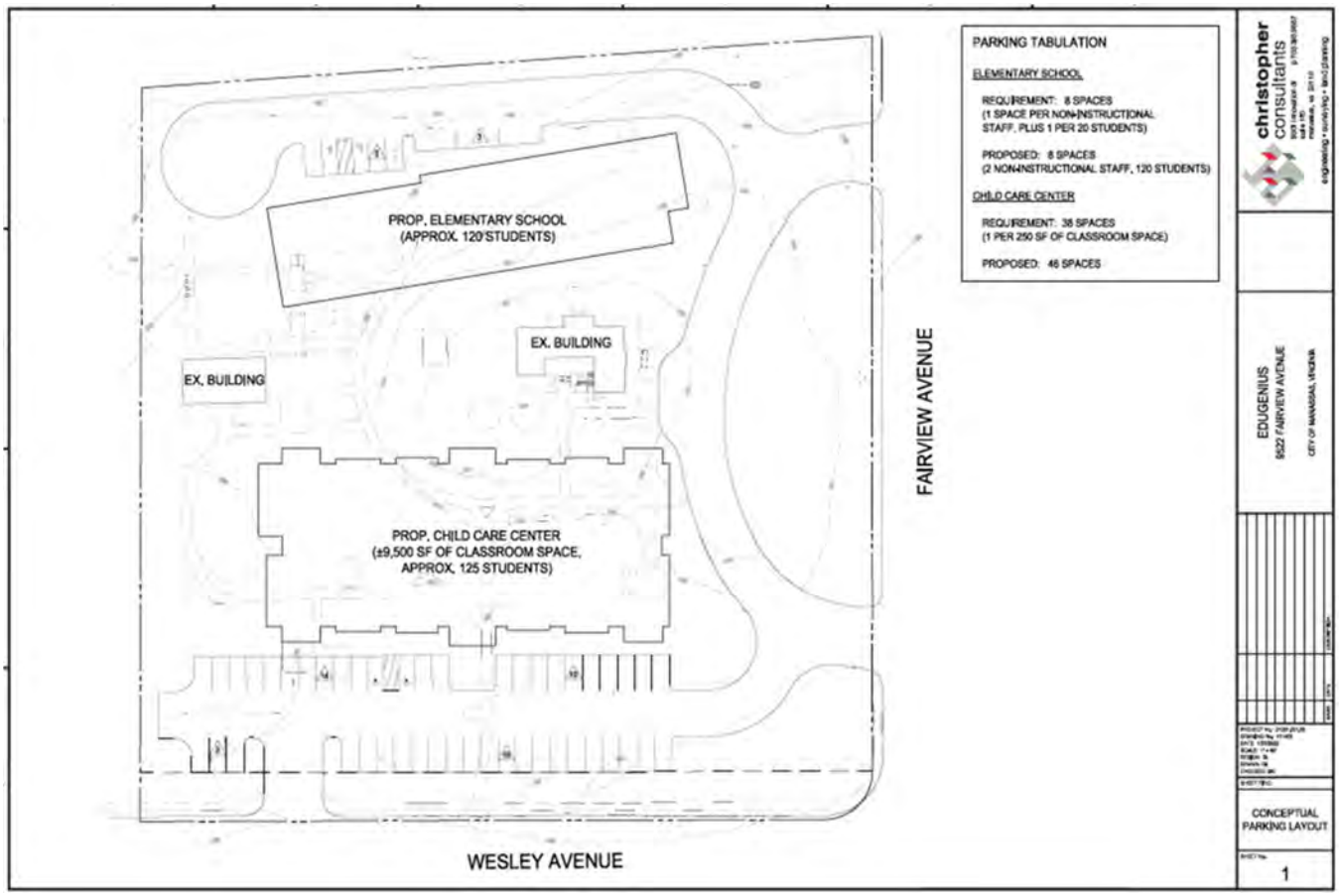


Figure 23: Conceptual Development Plan
For conceptual purposes only.

Proposed Site Access

Currently, it is anticipated that the Edugenius Development will be accessed via one full-movement entrance along Wesley Avenue and one full-movement entrance along with one-partial movement entrance along Fairview Avenue.

For Study Intersection 7: Fairview Avenue at Site Entrance 2, it is anticipated that, due to its proximity to the existing Study Intersection 3: Fairview Avenue at Wesley Avenue, it will be preferred by City staff to not allow for left-in movements at this location; Therefore, it is anticipated that users of the site (employees and individuals dropping off/picking up students and/or children) will be informed not to turn in from the left at this site entrance.

Proposed Site Circulation

Currently, the Site is planned to consist of both an elementary school building and a separate child care center building on the same parcel. In order to consider the anticipated vehicular circulation for the Site, and identify any potential conflicts, this subsection discusses the conceptual layout of the Site in more detail, drop off and pick up times (and implied hours of operation) for each facility and different anticipated user groups for each, and their respective arrival and departure times. Of note, all of these items are subject to change during the Application process.

As per Figure 23, a parking lot and cul-de-sac in the northern section of the Site will serve the elementary school faculty and staff, and pick up and drop off operations for the students, while a parking lot in the southern section of the Site will serve the child care facility faculty and staff, and pick up and drop off operations for the children. An on-site driveway will connect these two parking lot areas (and Study Intersection 6 and Study Intersection 7), while the child care center parking lot will also be served by Study Intersection 8 along Wesley Avenue; the multiple entrances to the site will be interconnected.

The elementary school portion of the Site is anticipated to have drop off times of 7:00 AM to 8:00 AM in the morning during the weekdays (non-holiday), and pick up beginning at 3:00 PM in the afternoon during the weekdays (non-holiday), running up until 6:00 PM, including after-school care and planned activities. Of note, these anticipated drop off and pick up times are earlier than the respective hours for the surrounding elementary schools in the vicinity of the Site, including the nearby Baldwin Elementary School along Prince William Street / Tudor Lane.

The child care center portion of the Site is anticipated to have drop off times of 6:30 AM to 9:00 AM in the morning during the weekdays, and the latest pick up time of 6:00 PM in the afternoon during the weekdays. These anticipated drop off and pick up times are consistent with surrounding child care centers in the vicinity of the Site.

The user groups include faculty and staff for both the elementary school and child care center, respectively, who would arrive prior to students and children of the respective buildings. For the elementary school, following the arrival of faculty and staff, those students being dropped off would be anticipated to arrive next. Similarly, the child care center would have a drop off period for the children (over a longer period) following arrival of staff.

For the afternoon, it is anticipated that elementary school students would be released first, utilizing pick up lines to depart. Pick up times for the child care center users would occur over a longer period (up until 6:00 PM) and generally apart from the anticipated general release of elementary school students. It should be noted that after school pick up hours for the school would continue up until 6:00 PM. Remaining faculty and staff would then be anticipated to be the last ones to leave each weekday.

It should be noted that there would be split vehicular traffic flows generally serving the elementary school and child care facility separately, and that the projected site trip generation, discussed in the next subsection, considers the maximum number of trips of each use, spread across a peak hour. During the AM peak hour, both the elementary school and child care center, on average, each would be anticipated to have a car enter or exit once every 39 seconds between each car over the hour. During the PM peak hour, while the child care center, on average, would be anticipated to have a car enter or exit once every 40 seconds between each car over the hour (similar to AM peak hour), the elementary school, on average would be anticipated to have a car enter or exit once approximately every two minutes (116 seconds) between each car over the hour. All other hours of the day would be expected to have even longer time spans between each vehicle.

Thus, while some overlap may occur between the uses of the Site in terms of vehicular site circulation, the user groups will be spread out over the morning and afternoon periods, and the AM and PM peak hours will not be anticipated to experience a high number of vehicles arriving and departing during the respective hour. Therefore, that these user groups would be spread across the multiple access points, no significant issues are expected with the proposed Site circulation.

A graphic of the site circulation is included in Figure 24.

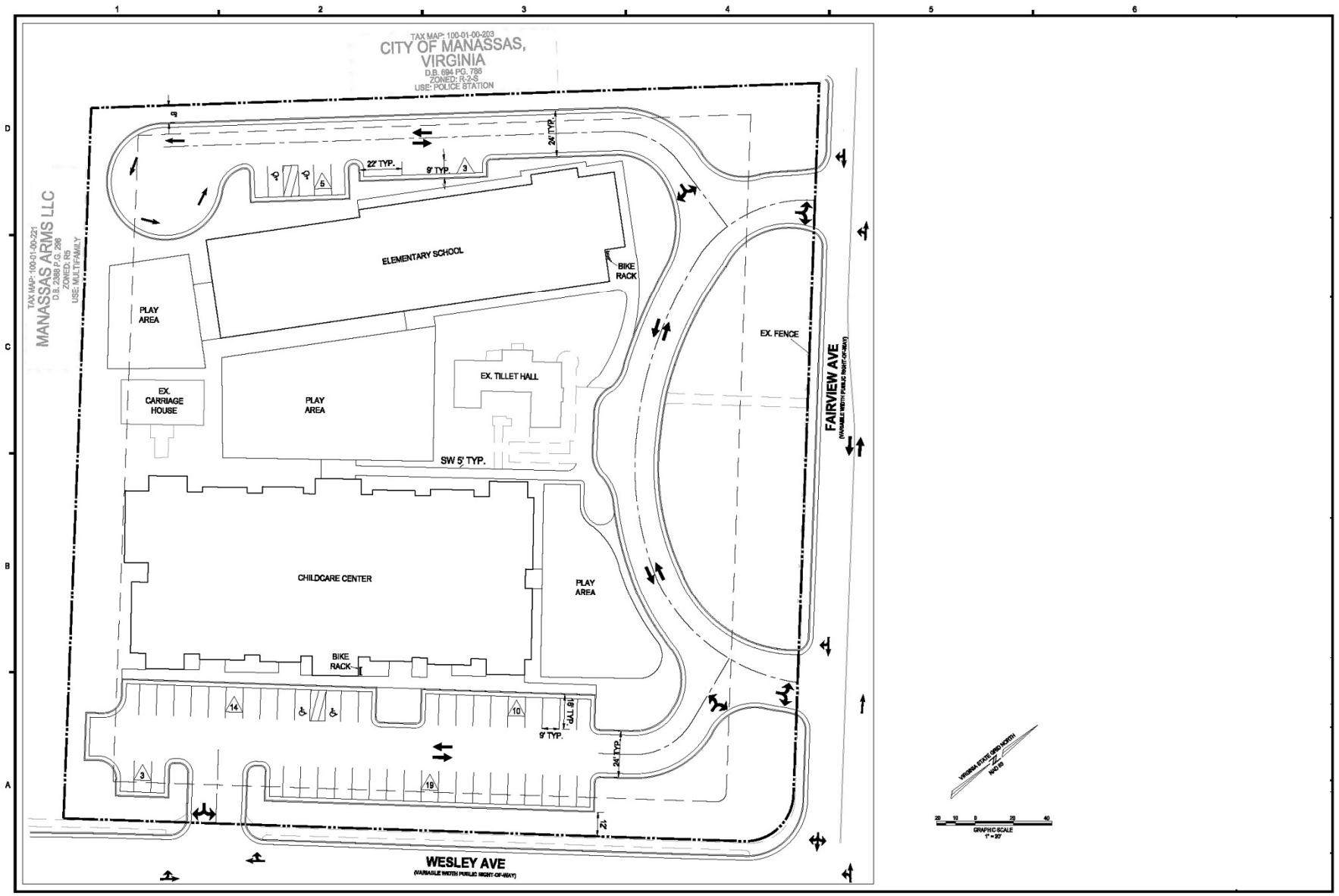


Figure 24: Proposed Site Circulation
For conceptual purposes only.

Projected Site Trip Generation

In order to calculate the total trips generated by the proposed Edugenius Development, the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, publication was used to determine the total trips going into and out of the subject study site during the AM and PM peak hours as well as the typical number of weekday daily trips. The projected trip generation for the proposed Edugenius Development is depicted in Table 12.

As per the scoping discussions, a pass-by trip reduction of 44% during the PM peak hour and of an assumed 34% during the AM peak hour and weekday daily period were included in the trip generation for the trips generated by the Day Care Center (ITE Land Use Code 565); these pass-by trip reduction rates are based on the ITE Trip Generation Manual, 11th Edition, publication. Of note, this publication does not include pass-by trip reduction rates for elementary school/private school uses; therefore, and as agreed to in the scoping discussions, no pass-by trip reductions were included for the elementary/private school use. No other trip reductions were included in the trip generation.

Table 12: Projected Site Trip Generation (Peak Hour of the Adjacent Street; ITE 11th Ed.)

Land Use	ITE Code	Size	Weekday						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Proposed Development									
Private School (K-8)	530	120 Students	52	40	92	14	17	31	493
Day Care Center	565	125 Students	48	43	91	42	47	89	492
*Pass-By Reduction**		34% / 44%	-16	-15	-31	-19	-21	-40	-167
Subtotal without Reductions / Driveway Trips			**100**	**83**	**183**	**56**	**64**	**120**	**985**
Net new site trips (Proposed)			**84**	**68**	**152**	**37**	**43**	**80**	**818**

**Pass-By reduction for ITE LUC 565 for the PM peak hour was based on ITE's TGM 11th ED (44%). No data was available for the AM and Daily periods, as such 34% was assumed (PM minus 10%).*

As illustrated in the table above, the Site is expected to generate approximately 152 new total trips during the AM peak hour, 80 new total trips during the PM peak hour, and 818 new total daily trips on a typical weekday, after reductions.

Distribution and Assignment of Site Traffic

The distribution and assignment of the site generated trips were based on the existing traffic patterns, engineering judgement, the nature of the proposed Edugenius Development, and with the guidance and input from City staff. The site direction of approach for the peak hour trips is presented in Figure 25.

Using the direction of approach, the nature of the proposed Edugenius Development, and the location of the proposed site entrance per current plans for the Edugenius Development, the site generated trips were assigned to the road network, as illustrated in Figure 26. The associated pass-by trip assignment is illustrated in Figure 27.

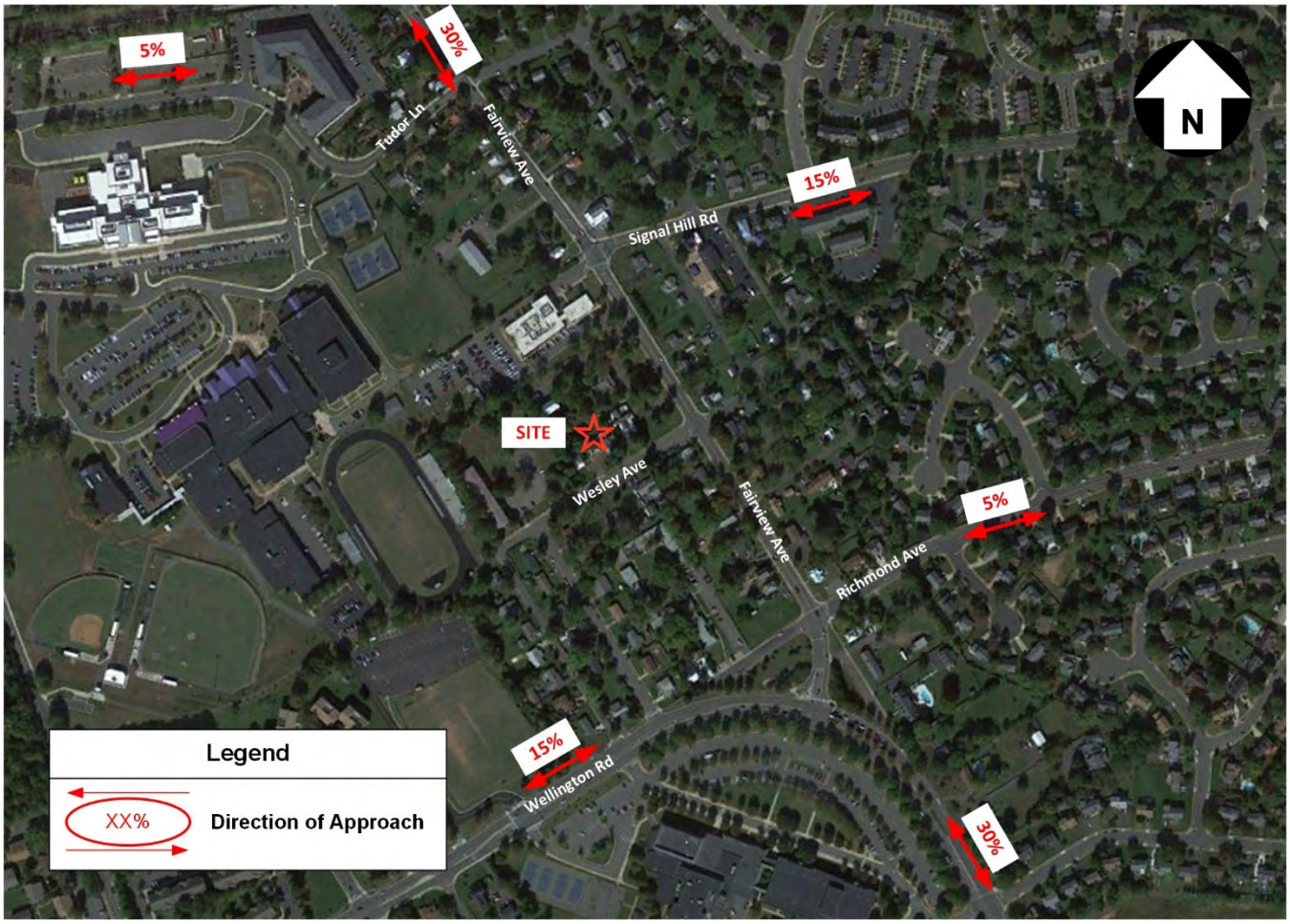


Figure 25: Global Vehicular Direction of Approach (Site Trip Distribution)

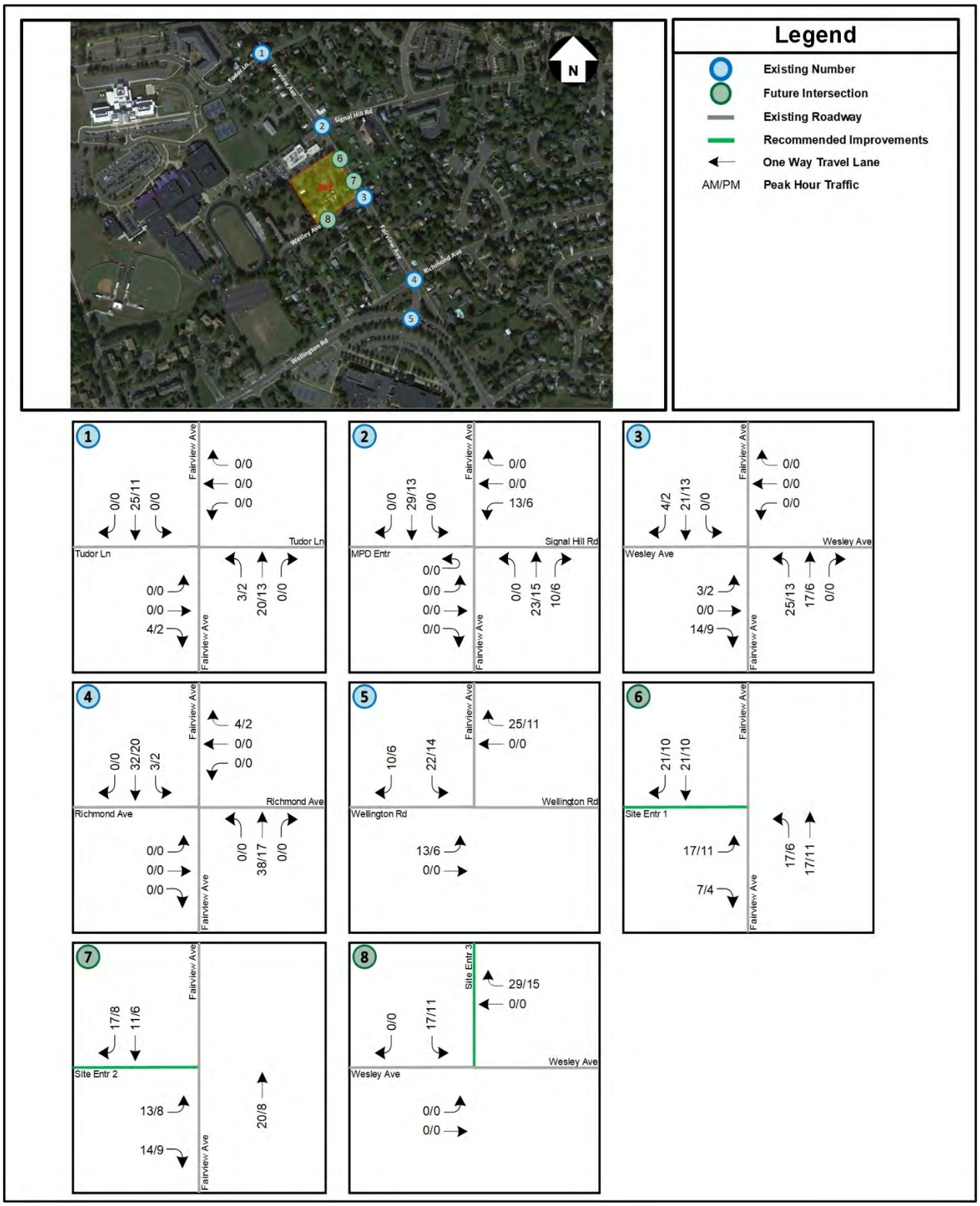


Figure 26: Site Generated Trip Assignment

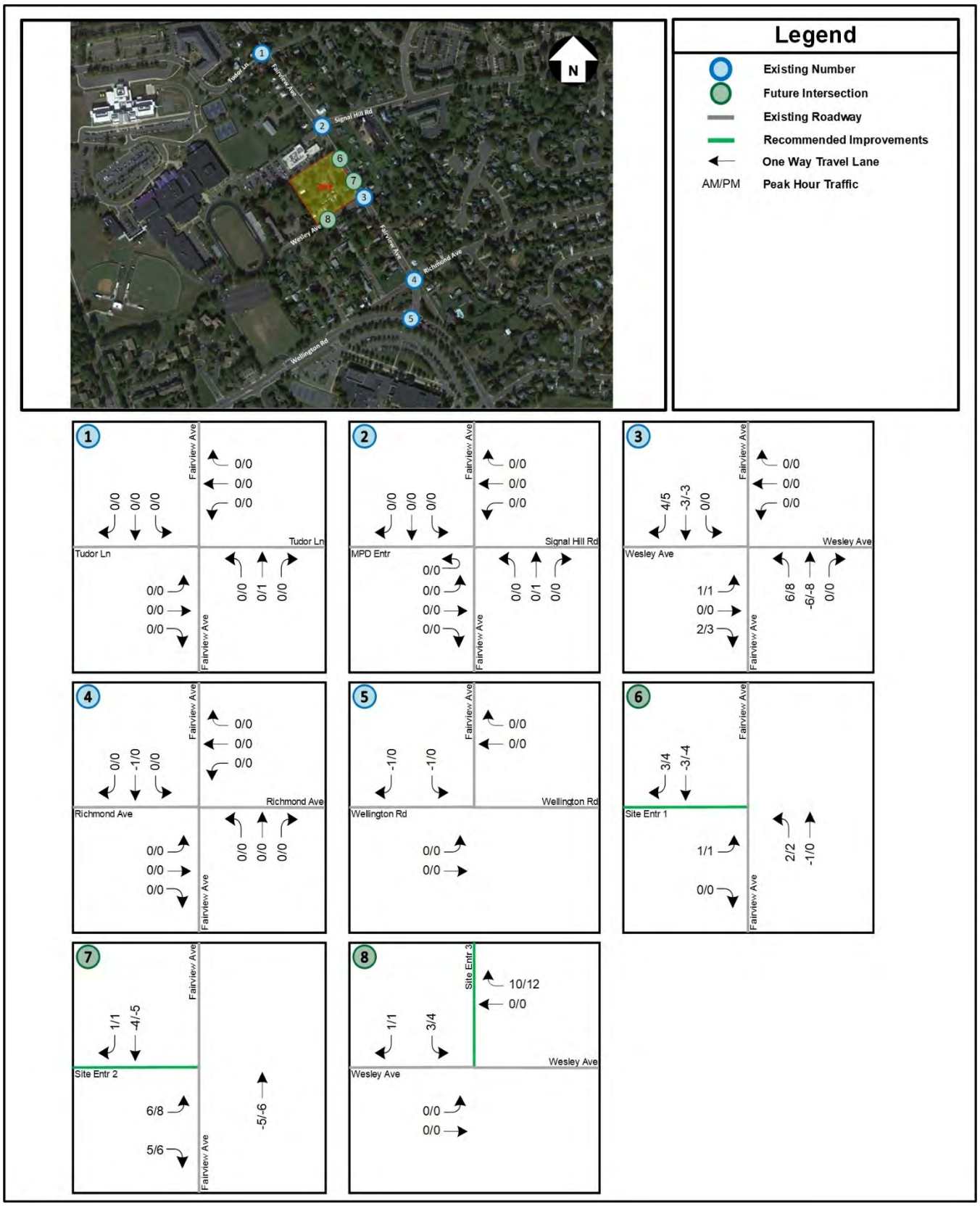


Figure 27: Associated Pass-by Trip Assignment

Future with Development Traffic Volumes

The future with development traffic volumes were determined by adding the assigned site generated traffic volumes to the 2027 Future without Development traffic volumes. The proposed future lane configuration is illustrated in Figure 28. The 2027 Future Conditions with Development vehicular traffic volumes are depicted in Figure 29.

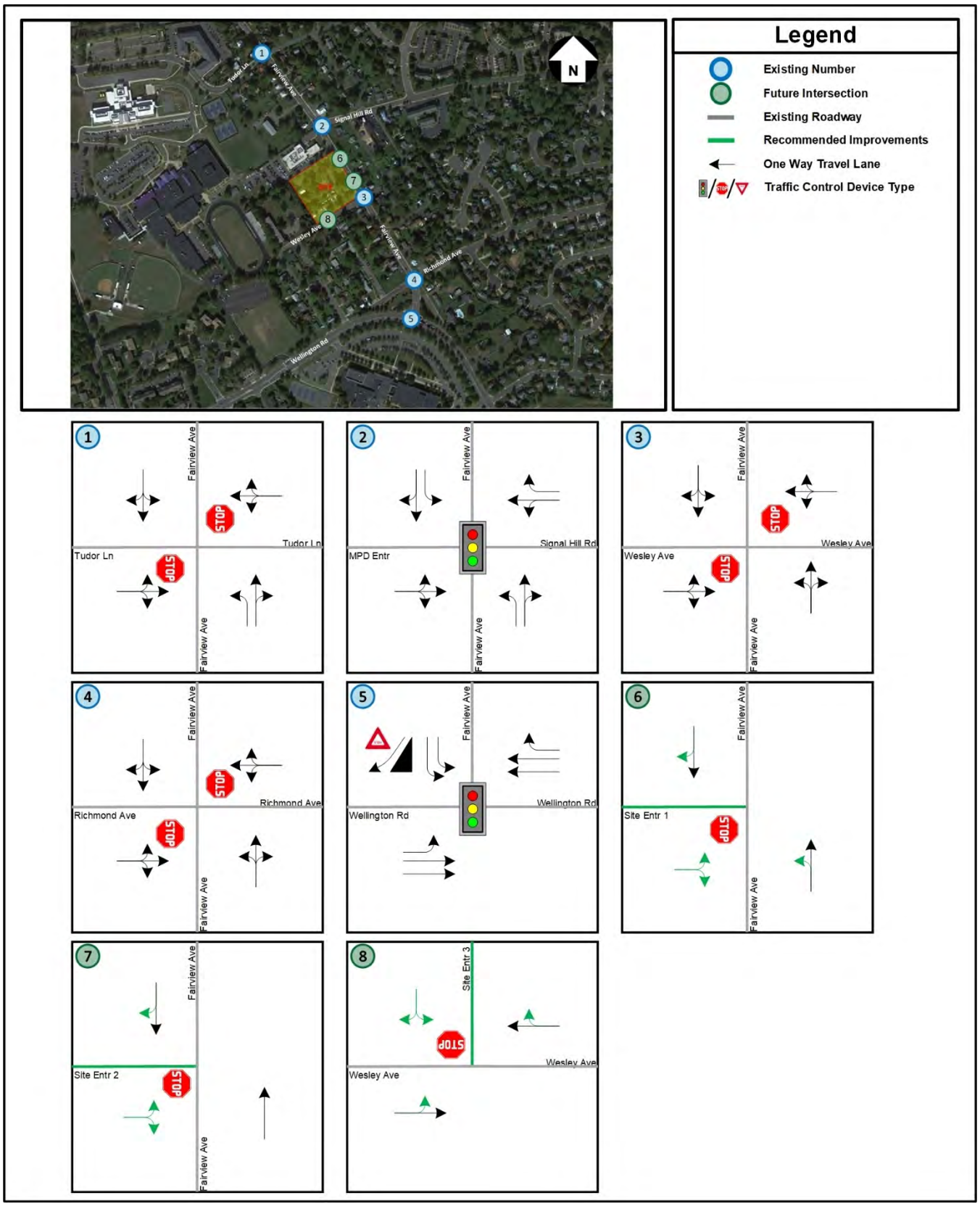


Figure 28: 2027 Future Conditions with Development – Proposed Roadway Network Geometric Configuration and Traffic Control Devices

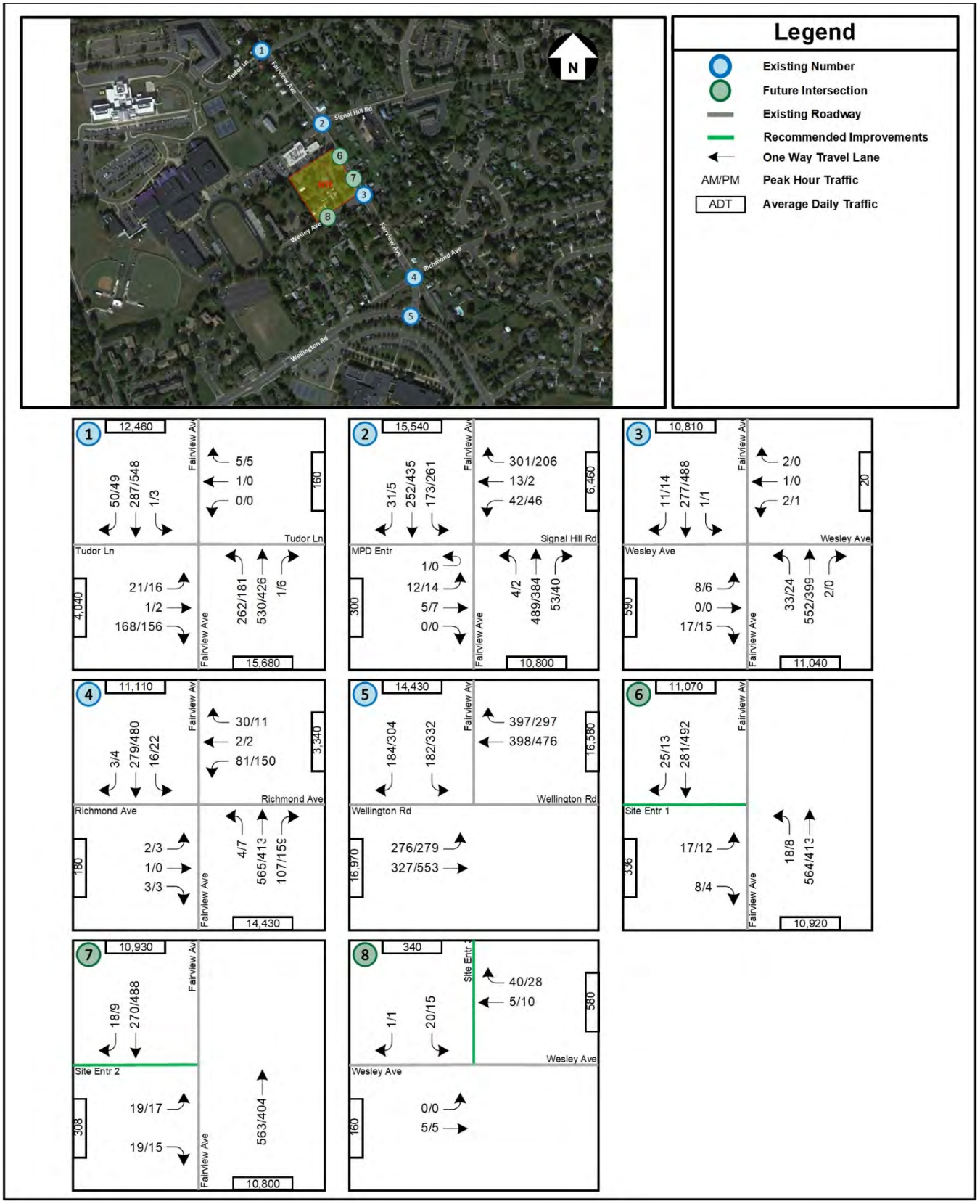


Figure 29: 2027 Future Conditions with Development – Vehicular Traffic Volumes

Future with Development Intersection Capacity and Queueing Analysis

Intersection capacity analyses were performed for the 2027 Future Conditions with Development scenario at the study area intersections during the AM and PM peak hours. *Synchro,* version 10, was used to analyze the study intersections with results based on the methodology presented in the TRB's HCM and analysis guidelines provided in City of Manassas' DCSM. The analysis herein includes LOS, delay, and queue length comparisons for the turning movements analyzed.

For the purposes of this analysis, the future PHF were based on the traffic counts and utilized on a by-intersection basis; PHF in the range of 0.92 to 1.00 were used for the future scenario, consistent with the agreed-upon scope. The heavy vehicle percentages (HV%) were the same as those used in the 2022 Existing Conditions and 2027 Future Conditions without Development scenario analysis.

The results of the intersection capacity analyses from *Synchro* are presented in Table 13 and graphically in Figure 30. The results are expressed in LOS and delay (seconds per vehicle) for overall signalized intersections and per approach and lane group for all study intersections. The overall signalized intersections, and any approaches, that operate at LOS E, or F are displayed in red.

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

The detailed analysis worksheets of the 2027 Future Conditions with Development are contained in Appendix G.

As mentioned previously, it would be considered acceptable and/or desirable to achieve an approach and a lane group LOS D or better for traffic operations using HCM methodology. Furthermore, if an overall signalized, or any approach, was operating at an unacceptable LOS under future without development conditions, it was assumed acceptable to achieve non-degradation.

Based on the capacity analysis of future with development conditions, with the addition of Site traffic volumes and associated pass-by volumes, the signalized study intersections are anticipated to continue to operate at an acceptable overall level of service during both peak hours. Similarly, the remaining study intersections are anticipated to continue to operate at acceptable approach levels of service during both peak hours, except for the westbound approach of Study Intersection 4: Fairview Avenue at Richmond Avenue, which is anticipated to continue to operate at an unacceptable level of service during the PM peak hour only. It should be noted that this approach's result is an existing and future without development condition, with which the Edugenius Development adds less than one car length of queue added compared to future conditions without development; moreover, the Edugenius Development generally only adds mainline through traffic at the intersection. As previously mentioned, raised curb bump outs and a raised median are in place on the east leg of the intersection.

Based on the queuing analysis performed for this scenario, all turning movements at the study intersections are anticipated to continue to have 95th percentile queue lengths that would continue to be accommodated within the available storage lengths of the turn bays. While the northbound through/right lane group of Study Intersection 2: Fairview Avenue at Manassas Police Department Entrance / Signal Hill Road is anticipated to have 95th percentile queue lengths that would spill past the site entrances on Fairview Avenue during both peak hours, this result is an existing condition, and compared to future conditions without development, the Site adds approximately two standard car lengths or less during either peak hour. Of note, Site users have an alternative entrance/exit along Wesley Avenue which could accommodate additional volumes per the analysis results.

The site entrances are anticipated to operate at acceptable levels of service during both peak hours, with 95th percentile queue lengths anticipated to be less than one standard car length during either peak hour. There is no anticipated queue overlap between Study Intersection 6, Study Intersection 7, nor Study Intersection 3 (nor Study Intersection 8) under these conditions (the aforementioned overlap with Study Intersection 2 is described in the previous paragraph).

Based on the capacity and queueing analysis results, the proposed Edugenius Development will not have a substantial impact to the surrounding transportation and roadway network.

Table 13: 2027 Future Conditions with Development – Intersection Capacity and Queuing Analysis Results

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue (ft.) [2]
			Synchro			Synchro		
1	**Tudor Lane (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***D***	***25.9***		***C***	***23.0***	
	Eastbound Left/Thru/Right		D	25.9	80	C	23.0	60
	Westbound Approach		***C***	***18.0***		***B***	***11.2***	
	Westbound Left/Thru/Right		C	18.0	3	B	11.2	0
	Northbound Approach							
	Northbound Left	280	A	9.0	23	A	9.5	18
	Southbound Approach							
	Southbound Left/Thru/Right		A	8.6	0	A	8.2	0
2	**Manassas PD Entr / Signal Hill Road (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (Signalized)		**C**	**22.6**		**C**	**20.0**	
	Eastbound Approach		***D***	***45.4***		***D***	***42.6***	
	Eastbound U-Turn/Left/Thru/Right		D	45.4	34	D	42.6	36
	Westbound Approach		***D***	***36.0***		***C***	***32.6***	
	Westbound Left/Thru		D	36.6	67	C	33.3	61
	Westbound Right	110	D	36.0	75	C	32.5	63
	Northbound Approach		***C***	***22.7***		***C***	***24.4***	
	Northbound Left		B	12.5	6	B	15.5	3
	Northbound Thru/Right		C	22.8	#544	C	24.5	330
	Southbound Approach		***B***	***10.9***		***B***	***12.2***	
	Southbound Left	260	B	10.8	90	B	10.5	123
	Southbound Thru/Right		B	11.0	198	B	13.1	312
3	**Wesley Avenue (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***15.4***		***B***	***14.7***	
	Eastbound Left/Thru/Right		C	15.4	5	B	14.7	5
	Westbound Approach		***C***	***17.9***		***C***	***21.8***	
	Westbound Left/Thru/Right		C	17.9	3	C	21.8	0
	Northbound Approach							
	Northbound Left/Thru/Right		A	7.9	3	A	8.5	3
	Southbound Approach							
	Southbound Left/Thru/Right		A	8.7	0	A	8.1	0
4	**Richmond Avenue (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach		***C***	***19.7***		***C***	***18.2***	
	Eastbound Left/Thru/Right		C	19.7	3	C	18.2	3
	Westbound Approach		***D***	***31.9***		***F***	***80.8***	
	Westbound Left/Thru/Right		D	31.9	60	F	80.8	160
	Northbound Approach							
	Northbound Left/Thru/Right		A	8.2	0	A	8.4	0
	Southbound Approach							
	Southbound Left/Thru/Right		A	9.5	3	A	8.7	3
5	**Wellington Road (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (Signalized)		**B**	**12.6**		**B**	**13.1**	
	Eastbound Approach		***A***	***6.5***		***A***	***6.2***	
	Eastbound Left	225	A	8.9	92	A	8.7	105
	Eastbound Thru		A	4.5	47	A	5.0	93
	Westbound Approach		***B***	***14.5***		***B***	***12.0***	
	Westbound Thru		B	15.0	106	B	13.9	134
	Westbound Right	235	B	14.0	50	A	8.9	29
	Southbound Approach		***C***	***25.0***		***C***	***33.0***	
	Southbound Left		C	25.0	53	C	33.0	105
	Southbound Right		A	0.0	0	A	0.0	0

NOTES:

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

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

Table 13: 2027 Future Conditions with Development – Intersection Capacity and Queuing Analysis Results (Continued)

No.	Intersection (Movement)	Effective Storage Length (ft.) [1]	AM Peak Hour			PM Peak Hour		
			LOS	Delay (sec/veh)	95th % Queue (ft.) [2]	LOS	Delay (sec/veh)	95th % Queue (ft.) [2]
			Synchro			Synchro		
6	**Site Entrance 1 (E/W) & Fairview Avenue (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach		***B***	***13.2***		***C***	***15.1***	
	Eastbound Left/Right		B	13.2	5	C	15.1	3
	Northbound Approach							
	Northbound Left/Thru		A	8.0	0	A	8.6	0
7	**Site Entrance 2 (E/W) & Fairview Avenue (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach		***B***	***14.3***		***C***	***16.0***	
	Eastbound Left/Right		B	14.3	8	C	16.0	8
8	**Wesley Avenue (E/W) & Site Entrance 3 (N/S) Overall Intersection (TWSC)**							
	Eastbound Approach							
	Eastbound Left/Thru		A	0.0	0	A	0.0	0
	Southbound Approach		***A***	***8.7***		***A***	***8.7***	
	Southbound Left/Right		A	8.7	3	A	8.7	3

NOTES:

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

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

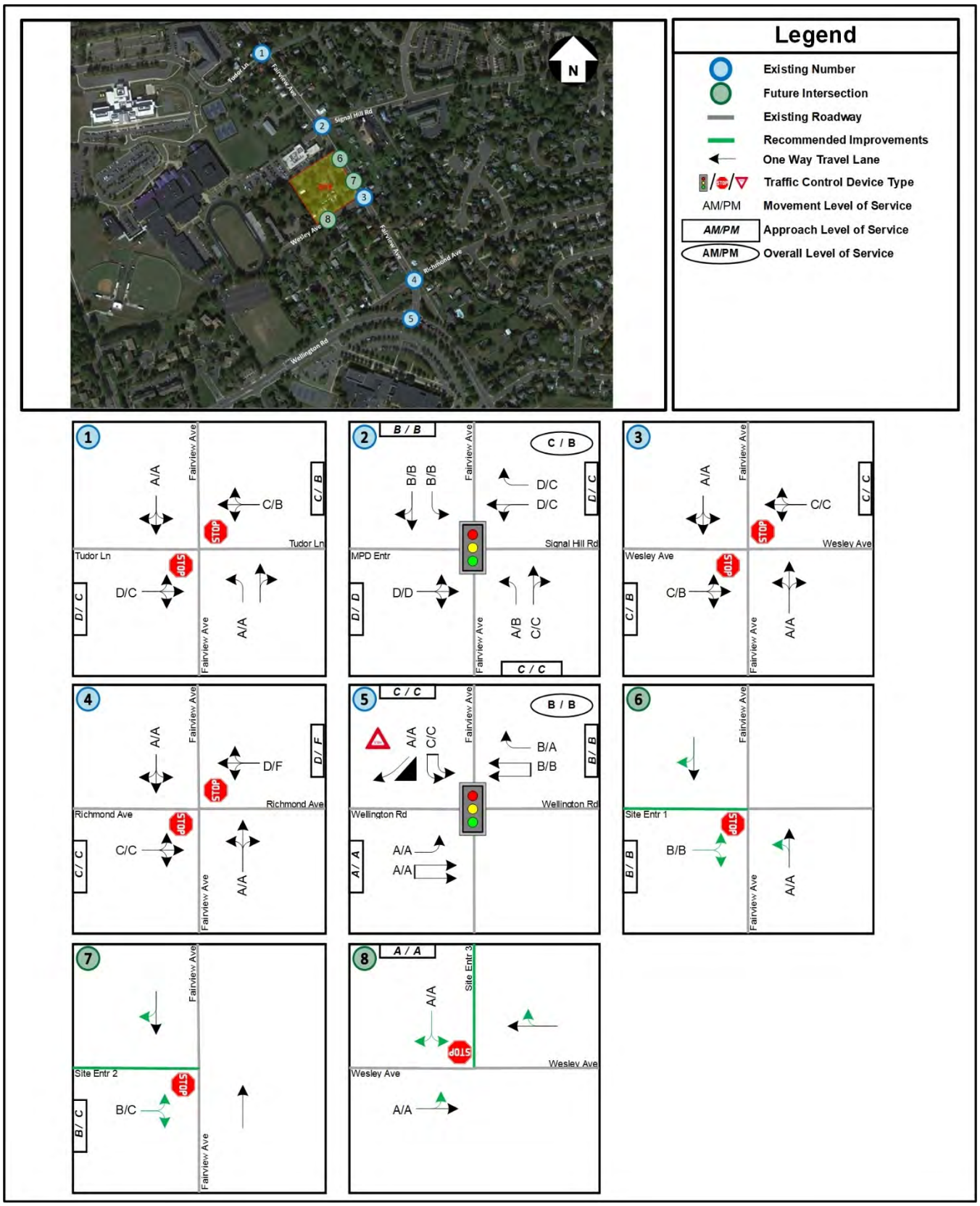


Figure 30: 2027 Future Conditions with Development - Level of Service Results

Overall Comparison of Analysis Scenarios

A level of service and delay comparison for all planning scenarios is presented in Table 14. The 95th percentile queue length comparison is presented in Table 15.

Table 14: Intersection Level of Service and Delay Comparison (2027)

No.	Intersection (Movement)	Level of Service (LOS) (Sec./Veh.)					
		AM Peak Hour			PM Peak Hour		
		2022 Existing	2027 Future Background	2027 Total Future	2022 Existing	2027 Future Background	2027 Total Future
1	**Tudor Lane (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*C (20)*	*C (23.3)*	*D (25.9)*	*C (20.1)*	*C (22)*	*C (23)*
	Eastbound Left/Thru/Right	C (20)	C (23.3)	D (25.9)	C (20.1)	C (22)	C (23)
	Westbound Approach	*C (16.2)*	*C (17.3)*	*C (18)*	*B (10.7)*	*B (11)*	*B (11.2)*
	Westbound Left/Thru/Right	C (16.2)	C (17.3)	C (18)	B (10.7)	B (11)	B (11.2)
	Northbound Approach						
	Northbound Left	A (8.7)	A (8.9)	A (9)	A (9.3)	A (9.4)	A (9.5)
	Southbound Approach						
	Southbound Left/Thru/Right	A (8.4)	A (8.5)	A (8.6)	A (8)	A (8.1)	A (8.2)
2	**Manassas PD Entr / Signal Hill Road (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (Signalized)	**C (20.3)**	**C (21.9)**	**C (22.6)**	**B (17.9)**	**B (19.4)**	**C (20)**
	Eastbound Approach	*D (41.4)*	*D (45.3)*	*D (45.4)*	*D (37.7)*	*D (41.4)*	*D (42.6)*
	Eastbound U-Turn/Left/Thru/Right	D (41.4)	D (45.3)	D (45.4)	D (37.7)	D (41.4)	D (42.6)
	Westbound Approach	*C (30.9)*	*D (36)*	*D (36)*	*C (28.6)*	*C (31.3)*	*C (32.6)*
	Westbound Left/Thru	C (30.4)	D (36.1)	D (36.6)	C (28.6)	C (31.2)	C (33.3)
	Westbound Right	C (30.9)	D (36)	D (36)	B (14.6)	B (15.3)	C (32.5)
	Northbound Approach	*C (22.4)*	*C (21.2)*	*C (22.7)*	*C (21.8)*	*C (23.4)*	*C (24.4)*
	Northbound Left	A (0)	B (12.5)	B (12.5)	B (14.6)	B (15.3)	B (15.5)
	Northbound Thru/Right	C (22.4)	C (21.2)	C (22.8)	C (21.8)	C (23.4)	C (24.5)
	Southbound Approach	*A (8.1)*	*B (10.4)*	*B (10.9)*	*B (11.5)*	*B (12.2)*	*B (12.2)*
	Southbound Left	A (9.7)	A (10)	B (10.8)	A (9.5)	B (10.3)	B (10.5)
	Southbound Thru/Right	A (6.7)	B (10.6)	B (11)	B (12.8)	B (13.4)	B (13.1)
3	**Wesley Avenue (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*C (16.6)*	*C (17.2)*	*C (15.4)*	*B (13.7)*	*B (14.7)*	*B (14.7)*
	Eastbound Left/Thru/Right	C (16.6)	C (17.2)	C (15.4)	B (13.7)	B (14.7)	B (14.7)
	Westbound Approach	*C (15.2)*	*C (15.8)*	*C (17.9)*	*C (17.8)*	*C (19.6)*	*C (21.8)*
	Westbound Left/Thru/Right	C (15.2)	C (15.8)	C (17.9)	C (17.8)	C (19.6)	C (21.8)
	Northbound Approach						
	Northbound Left/Thru/Right	A (7.8)	A (7.8)	A (7.9)	A (8.2)	A (8.4)	A (8.5)
	Southbound Approach						
	Southbound Left/Thru/Right	A (8.5)	A (8.6)	A (8.7)	A (8)	A (8.1)	A (8.1)
4	**Richmond Avenue (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach	*C (16)*	*C (17.9)*	*C (19.7)*	*C (16)*	*C (17.3)*	*C (18.2)*
	Eastbound Left/Thru/Right	C (16)	C (17.9)	C (19.7)	C (16)	C (17.3)	C (18.2)
	Westbound Approach	*C (22.4)*	*D (27)*	*D (31.9)*	*E (48.3)*	*F (67.5)*	*F (80.8)*
	Westbound Left/Thru/Right	C (22.4)	D (27)	D (31.9)	E (48.3)	F (67.5)	F (80.8)
	Northbound Approach						
	Northbound Left/Thru/Right	A (8)	A (8.1)	A (8.2)	A (8.2)	A (8.3)	A (8.4)
	Southbound Approach						
	Southbound Left/Thru/Right	A (9)	A (9.3)	A (9.5)	A (8.5)	A (8.7)	A (8.7)
5	**Wellington Road (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (Signalized)	**B (11.7)**	**B (12.2)**	**B (12.6)**	**B (12.5)**	**B (12.9)**	**B (13.1)**
	Eastbound Approach	*A (6)*	*A (6.3)*	*A (6.5)*	*A (5.6)*	*A (6)*	*A (6.2)*
	Eastbound Left	A (8.1)	A (8.6)	A (8.9)	A (7.7)	A (8.4)	A (8.7)
	Eastbound Thru	A (4.4)	A (4.5)	A (4.5)	A (4.5)	A (4.8)	A (5)
	Westbound Approach	*B (13.5)*	*B (14.1)*	*B (14.5)*	*B (11.4)*	*B (11.8)*	*B (12)*
	Westbound Thru	B (14.5)	B (14.8)	B (15)	B (13.1)	B (13.6)	B (13.9)
	Westbound Right	B (12.4)	B (13.3)	B (14)	A (8.6)	A (8.8)	A (8.9)
	Southbound Approach	*C (24.8)*	*C (24.8)*	*C (25)*	*C (33.6)*	*C (33.2)*	*C (33)*
	Southbound Left	C (24.8)	C (24.8)	C (25)	C (33.6)	C (33.2)	C (33)
	Southbound Right	A (0)	A (0)	A (0)	A (0)	A (0)	A (0)
6	**Site Entrance 1 (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach			*B (13.2)*			*C (15.1)*
	Eastbound Left/Right			B (13.2)			C (15.1)
	Northbound Approach						
	Northbound Left/Thru			A (8)			A (8.6)
7	**Site Entrance 2 (E/W) & Fairview Avenue (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach			*B (14.3)*			*C (16)*
	Eastbound Left/Right			B (14.3)			C (16)
8	**Wesley Avenue (E/W) & Site Entrance 3 (N/S)**						
	Overall Intersection (TWSC)						
	Eastbound Approach						
	Eastbound Left/Thru			A (0)			A (0)
	Southbound Approach			*A (8.7)*			*A (8.7)*
	Southbound Left/Right			A (8.7)			A (8.7)

Notes:

[1]: 2027 Future Background is 2027 Future Conditions without Development scenario, which includes inherent growth plus one background development, in addition to existing conditions.

[2] 2027 Total Future is 2027 Future Conditions with Development scenario, which includes Future Background conditions plus Edugenius Development.

Table 15: Intersection 95th Percentile Queue Length Comparison (2027)

No.	Intersection (Movement)	95th Percentile Queues (ft.)						
		Effective Storage Length (ft.)	AM Peak Hour			PM Peak Hour		
			2022 Existing	2027 Future Background	2027 Total Future	2022 Existing	2027 Future Background	2027 Total Future
1	**Tudor Lane (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right		58	70	80	50	58	60
	Westbound Approach							
	Westbound Left/Thru/Right		3	3	3	0	0	0
	Northbound Approach							
	Northbound Left	280	23	23	23	15	18	18
	Southbound Approach							
	Southbound Left/Thru/Right		0	0	0	0	0	0
2	**Manassas PD Entr / Signal Hill Road (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound U-Turn/Left/Thru/Right		16	34	34	13	36	36
	Westbound Approach							
	Westbound Left/Thru		43	55	67	53	56	61
	Westbound Right	110	75	75	75	63	63	63
	Northbound Approach							
	Northbound Left		0	6	6	0	3	3
	Northbound Thru/Right		#445	#494	#544	282	309	330
	Southbound Approach							
	Southbound Left	260	89	90	90	123	123	123
	Southbound Thru/Right		106	176	198	271	300	312
3	**Wesley Avenue (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right		3	3	5	0	0	5
	Westbound Approach							
	Westbound Left/Thru/Right		3	0	3	0	0	0
	Northbound Approach							
	Northbound Left/Thru/Right		0	0	3	0	0	3
	Southbound Approach							
	Southbound Left/Thru/Right		0	0	0	0	0	0
4	**Richmond Avenue (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru/Right		3	3	3	3	3	3
	Westbound Approach							
	Westbound Left/Thru/Right		38	50	60	115	143	160
	Northbound Approach							
	Northbound Left/Thru/Right		0	0	0	0	0	0
	Southbound Approach							
	Southbound Left/Thru/Right		0	3	3	3	3	3
5	**Wellington Road (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (Signalized)							
	Eastbound Approach							
	Eastbound Left	225	73	85	92	93	101	105
	Eastbound Thru		42	46	47	84	91	93
	Westbound Approach							
	Westbound Thru		97	105	106	124	132	134
	Westbound Right	235	27	40	50	21	26	29
	Southbound Approach							
	Southbound Left		46	48	53	94	102	105
	Southbound Right		0	0	0	0	0	0
6	**Site Entrance 1 (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Right				5			3
	Northbound Approach							
	Northbound Left/Thru				0			0
7	**Site Entrance 2 (E/W) & Fairview Avenue (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Right				8			8
8	**Wesley Avenue (E/W) & Site Entrance 3 (N/S)**							
	Overall Intersection (TWSC)							
	Eastbound Approach							
	Eastbound Left/Thru				0			0
	Southbound Approach							
	Southbound Left/Right				3			3

Notes:
[1]: 2027 Future Background is 2027 Future Conditions without Development scenario, which includes inherent growth plus one background development, in addition to existing conditions.
[2] 2027 Total Future is 2027 Future Conditions with Development scenario, which includes Future Background conditions plus Edugenius Development.

Based on the capacity and queueing analysis results, the LOS with development is anticipated to remain similar as compared to future conditions without development; furthermore, with the addition of the proposed Edugenius Development traffic, the increase in 95th percentile queue lengths is anticipated to be two standard car lengths (25 feet each) or less during either peak hours at any of the applicable lane groups of the study intersections as compared to future conditions without development

Therefore, the proposed Edugenius Development will not have a substantial impact to the surrounding transportation and roadway network.

Peer Child Care Center Site Parking Comparison

To consider the adequacy of the proposed number of parking spaces to be provided for the child care center portion of the proposed Edugenius Development, a comparison analysis of the number of parking spaces for peer child care center sites in the City of Manassas was conducted for this study.

Relevant data discussed in the subsections below is included in Appendix H. Appropriate waivers to the parking requirement, if required, will be submitted as necessary.

Square Footage Comparison

The 46 parking spaces[2] for the child care center of the proposed Edugenius Development are depicted on the conceptual plan illustrated in Figure 23 and in Figure 24. Per the City's Zoning Ordinance minimum off-street parking requirements (and per the Downtown Special District requirements as well) for child care center uses, a minimum of 1 off-street parking space is required per 250 square feet of a building's gross square feet (SF). As described below, utilizing such a rate would yield an impractical and excessive amount of parking spaces.

The total building square footage of the child care center portion of the proposed Edugenius Development is approximately 17,898 square feet. Of note, only approximately 9,500 square feet of the total is proposed to be utilized for conventional classroom space. As noted in the City's Planning Department Determination Letter, dated February 28, 2022, the remaining square footage would be dedicated to "non-traditional spaces such as larger corridors, movement rooms and a '"Kinderkitchen"' which overlap with instructional space typically found in a conventional educational facility."

The selected peer child care center sites analyzed are assumed to consist of predominantly conventional classroom space. Non-traditional spaces, if any, present in the selected peer child care center sites analyzed were not measured nor considered. It is assumed that the peer child care center sites consist of conventional classroom space in their entirety.

Sources of information for the peer locations include the City of Manassas Commissioner of the Revenue's Real Estate Assessment Information Site (for the year built, square footage, and number of parking spaces for each location) and the Virginia Department of Social Services (which lists capacity and hours of operation for each location). Table 16 presents the results of the peer site parking rate comparison, with the building square footage, the year built and location of each peer site. Of note as well, for this portion of the proposed Edugenius Development, the Applicant's proposed child care center operating hours and capacity are consistent with other child care centers in the City of Manassas.

More specifically, Table 16 includes a column that lists the total building square footage of the peer child care center sites. The table also includes columns that list the peer child care center sites' capacity (students, faculty, and staff) and the number of parking spaces provided.

[2] It should be noted that the 46 parking spaces described in this peer comparison analysis are preliminary in nature and subject to modifications based on final engineering associated with the Special Use Permit Application and other subsequent entitlements.

Table 16: Peer City of Manassas Child Care Center Site Parking Comparison

#	Year Built*	Name	Address / Location	Hours of Operation		Capacity***	Square Feet (SF)*	Parking Spaces*	Accessible Spaces*	Total Spaces	Parking Spaces per SF (SF / Total Spaces)	Parking Spaces per Person (Total Spaces / Capacity)
				Open**	Close**							
	Proposed	**CHILD CARE CENTER**	**9522 Fairview Avenue**	**6:30 (Proposed)**	**18:00 (Proposed)**	**153 (Proposed)**	**9,500 (Proposed)**	**44**	**2**	**46**	**207**	**0.30**
1	2019	The Goddard School	10405 Dumfries Road	7:00	18:00	158	10,371	47	3	50	207	0.32
2	1988	La Petite Academy of Manassas	10023 Dumfries Road	6:30	18:30	160	6,874	25	3	28	246	0.18
3	1988	Minnieland Academy	9511 Technology Drive	6:30	18:00	130	6,300	19	1	20	315	0.15
4	2005	The Compass School	9811 Godwin Drive	6:30	18:00	248	14,589	49	2	51	286	0.21
5	2003	Merit Wellington	10249 Hendley Road	6:00	18:00	300	9,866	53	4	57	173	0.19
6	1982	Merit Manassas	8485 Plantation Lane	6:30	18:00	341	14,304	47	0	47	304	0.14
7	1900/1950/1995	Merit Old Town	8757 Signal Hill Road	6:30	18:00	142	8,846	29	0	29	305	0.20
8	1994	Childtime of Manassas	8461 Signal Hill Road	6:00	18:00	214	8,880	44	2	46	193	0.21
9	1985	Learning Tree	9840 Grant Avenue	6:00	18:30	100	4,408	15	0	15	294	0.15
10	1955/1995	Robert Day Child Care Center	9208 Centreville Road	6:00	18:30	25	2,500	8	0	8	313	0.32
11	1999	Carousel Children's Academy	9151 Centreville Road	6:00	18:45	150	6,000	18	2	20	300	0.13

Notes:

**Source: City of Manassas Commissioner of the Revenue's Real Estate Assessment Information Site, https://gis.vgsi.com/manassasva/*

***Per Virginia Department of Social Services (VDSS), Child Care Center website, or Google, as applicable.*

****Assumed to include combined total number of children and faculty/staff. Source: Virginia Department of Social Services (VDSS), https://www.dss.virginia.gov/facility/search/cc2.cgi*

As presented in the table above, the peer child care center sites have substantially less overall building square footage that the overall building square footage of the proposed Edugenius Development (which is approximately 17,898 square feet as mentioned above) and yet, they have closely comparable capacity numbers (i.e., children, faculty, and staff) with the proposed Edugenius Development. Further, their number of parking spaces are closely comparable with the proposed Edugenius Development.

Notwithstanding the substantially greater building square footage of the proposed Edugenius Development, it is reasonable for the proposed Edugenius Development to provide only the number of parking spaces based on the proposed approximately 9,500 square feet of conventional classroom space, rather than the total building square footage of approximately 17,898 square feet. As noted, the proposed Edugenius Development child care parking space yield (based on 9,500 square feet) is closely comparable to the other peer child care center sites. These sites generally are operating within smaller buildings but have similar capacity. Therefore, it is reasonable to conclude that, by using the square footage of conventional classroom space, the 46 parking spaces provided for the child care center portion of the proposed Edugenius Development would yield an acceptable number of parking spaces. In fact, providing additional parking spaces from what is currently proposed (based on total building square footage) would result in the provision of excessive parking spaces. These additional parking spaces could alter the effective layout of the Site and could cause impacts beyond those ones related strictly to transportation concerns.

Such negative consequences, with the provision of excess parking spaces (and asphalt), include an increase of the heat island effect (affecting quality of life for residents and visitors to the City), unnecessary destruction of trees and areas for new plantings (also affecting quality of life), excessive stormwater management to accommodate the increased impervious area (affecting costs and the environment), less green areas for playground spaces for children, a less aesthetically pleasing campus within the Manassas Historic Overlay District, and smaller building footprints for the elementary school and child care center, which would ultimately eliminate the ability to provide the extra space that is fundamental to this particular program of education.

Building Capacity Comparison

In addition, an alternative analysis approach also supports the practicability and adequacy of the proposed number of parking spaces provided for the child care center portion of the proposed Edugenius Development. Parking demand based on person capacity (i.e., children, faculty and staff) closely compares with peer child care center sites. Existing peer child care centers, primarily within the City of Manassas, also were assessed based on their total capacity (which is assumed to include the combined total number of enrolled children and faculty/staff, for consistency) and their parking provided (along with hours of operation) in order to provide a consistent comparison of parking rates (number of spaces per person) for the child care center portion of the proposed Edugenius Development (which, of note, would include the 125-student capacity plus additional faculty and staff for a total of approximately 153-person capacity for this alternative comparison).

Based on the results of this alternative comparison analysis, also depicted in Table 16, the parking rate for the child care center portion of the proposed Edugenius Development is approximately 0.30 of a space per person. The rate is nearly identical to the estimated approximate parking rate for The Goddard School on Dumfries Road (0.32 of a parking space per person), which was recently approved and constructed in 2019. The child care center portion of the proposed Edugenius Development and the Goddard School have similar capacity, number of parking spaces, and hours of operation. Of important note also, the estimated parking rates for the existing child care center facilities in the City vary but average below 0.20 spaces per person.

Based on the results of this alternative comparison analysis based on capacity, the parking rate (number of spaces per person) for the child care center of the proposed Edugenius Development is consistent with the parking rates for other peer child care center sites throughout the City.

Conclusion

This report presents findings of a Traffic Impact Study (TIS) conducted for the proposed Edugenius Development (the Site / the Development / the Property), situated in the City of Manassas (the City), Virginia.

The Edugenius Development is proposed to be situated on an approximately 3.3-acre single parcel of land, which can be identified on Manassas City GIS with the following Tax Map ID #: 100-01-00-202. The site is currently zoned as R-1 (Low Density, Single-Family Residential), with a Comprehensive Plan Land Use of Downtown.

The Applicant is proposing to redevelop the parcel with an approximately 120-student capacity elementary school and 125-student capacity day care / childcare facility. The Edugenius Development in full is anticipated to be constructed and in operation by 2027.

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

Analysis Components

- As determined based on discussions with City staff, a growth rate of one-percent (1.0%) per year was applied to all movements at the intersection of Fairview Avenue (Route 4353) at Wellington Road (Route 4352), and propagated as mainline through movements at subsequent study intersections along the road network where applicable, to account for a regional increase in background traffic.
- The total Site is anticipated to generate approximately 152 new trips during the AM peak hour, 80 new trips during the PM peak hour, and 818 new daily trips on a typical weekday, after reductions.

Non-SOV Elements

- Various biking infrastructure exists along Tudor Lane, Signal Hill Road, and Richmond Avenue within the vicinity of the site; a shared use path exists along Wellington Road.
- No bus routes currently provide service within the vicinity of the site.
- The site is located within a 0.55-mile radius of the Manassas Train Station, which serves the Virginia Railway Express (VRE) and Amtrak, and within a 3.0-mile radius of the Manassas Regional Airport (HEF).

Infrastructure

- Currently, it is anticipated that the Edugenius Development will be accessed via one full-movement entrance along Wesley Avenue and one full-movement entrance along with one-partial movement entrance along Fairview Avenue.

Analysis Results

- One (1) existing study intersection (Fairview Avenue at Richmond Avenue) has one approach that operates at unacceptable levels of service (LOS) during one of the existing peak hours (PM peak hour only). The same approach is anticipated to continue to operate similarly at unacceptable LOS under all scenarios during the same peak hour.
- With the Edugenius Development in place (built and in operation), the LOS and delays are anticipated to remain similar as compared to future conditions without development; furthermore, with the addition of the Edugenius Development traffic, the increase in 95th percentile queue lengths is anticipated to be two standard car lengths (25 feet each) or less during either peak hour at any of the applicable lane groups of the study intersections, as compared to future conditions without development.
- The northbound through/right lane group of the signalized study intersection of Fairview Avenue at Manassas Police Department Entrance / Signal Hill Road has existing 95th percentile queue lengths that would spill past the proposed site entrances on Fairview Avenue; this is an existing condition and as noted above, the Edugenius Development traffic is

anticipated to add only two standard car lengths or less during either peak hour as compared to future conditions without development. In addition, users of the proposed Development would have an alternative access point along Wesley Avenue with the ability to accommodate additional volumes.

- The remaining 95th percentile queue lengths are anticipated to be accommodated within the various storage bays under all scenarios.
- The proposed Edugenius Development has minimal impact on delays and queues at the existing intersections.
- No mitigations are required as per the analysis results.
- Based on a comparison with the number of parking spaces for peer child care center sites in the City of Manassas, the parking rate for the child care center portion of the proposed Edugenius Development, whether from a square footage (for conventional classroom space) or capacity perspective, is consistent with the parking rates for other peer child care center sites throughout the City, and would provide a practical and adequate amount of parking spaces.

Overall Conclusion

Based on the capacity and queueing analysis results, the proposed Edugenius Development will not have a substantial impact to the surrounding transportation and roadway network.

Transportation Technical Appendix

Edugenius Development

City of Manassas, Virginia

July 20, 2022

GOROVE SLADE
Transportation Planners and Engineers

CONTENTS

A. Scoping Document

PRE-SCOPE OF WORK MEETING FORM

Information on the Project
Traffic Impact Analysis Base Assumptions

The applicant is responsible for entering the relevant information and submitting the form to VDOT and the locality no less than three (3) business days prior to the meeting. If a form is not received by this deadline, the scope of work meeting may be postponed.

Contact Information				
Consultant Name: Tele: E-mail:	Kevin Sitzman, Gorove Slade Associates, Inc. 571-248-0992 kds@goroveslade.com			
Developer/Owner Name: Tele: E-mail:	Josie Engel josefinengel@gmail.com			
Project Information				
Project Name:	9522 Fairview Avenue	Locality/County:	City of Manassas	
Project Location: (Attach regional and site specific location map)	The proposed development will be located west of Fairview Avenue, north of Wesley Avenue, and south of Signal Hill Road in the City of Manassas, Virginia.			
Submission Type	Comp Plan ☐	REZ/SUP ☒	Site Plan ☐	Subd Plat ☐
Project Description: (Including details on the land use, acreage, phasing, access location, etc. Attach additional sheet if necessary)	The development will be situated on one parcel of land that can be identified on City's Tax Mapper with the following Tax Map #'s: 100/01 00/ 202. The approximately 3.3-acre property is currently zoned as R-1 (Residential). The site is anticipated to consist of an elementary school with an approximately 120-student capacity and a 125-student capacity day care. The development is anticipated build out and in operation by 2025. Access to the site will be provided by one full access entrance on Wesley Avenue and two full access entrances on Fairview Avenue.			
Proposed Use(s): (Check all that apply; attach additional pages as necessary)	Residential ☐	Commercial ☐	Mixed Use ☐	Other ☒
	Other Use(s): **Institutional Uses** ITE LU Code(s): 530 – Private School (K-8) Square Ft or Other Variable: 120 Students ITE LU Code(s): 565 – Day Care Center Square Ft or Other Variable: 125 Students		**Commercial Use(s)** ITE LU Code(s): n/a Square Ft or Other Variable: n/a	
Total Peak Hour Trip Projection:	Less than 100 ☐	100 – 499 ☒	500 – 999 ☐	1,000 or more ☐

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.

Traffic Impact Analysis Assumptions					
Study Period	Existing Year: 2022		Build-out Year: 2025		Design Year: N/A
Study Area Boundaries (Attach map)	North: Tudor Lane			South: Wellington Road	
	West: Fairview Avenue			East: Ellicott Lane	
External Factors That Could Affect Project (Planned road improvements, other nearby developments)	None.				
Consistency With Comprehensive Plan (Land use, transportation plan)	Yes.				
Available Traffic Data (Historical, forecasts)	VDOT Historical AADT Data (2015-2019) 2022 Turning Movement Counts (TMCs)				
Trip Distribution **(Please refer to attached Figure 2 in Supplement)**	Road Name: Fairview Avenue (to/from the North) – 30%			Road Name: Wellington Road (to/from the Southeast) – 30%	
	Road Name: Richmond Avenue (to/from the East) – 5%			Road Name: Wellington Road (to/from the Southwest) – 15%	
	Road Name: Tudor Lane (to/from the Northwest) – 5%			Road Name: Signal Hill Road (to/from the East) – 15%	
Annual Vehicle Trip Growth Rate: (See Note 5.)	1.0%/year (2022-2025)		Peak Period for Study (check all that apply)	☒ AM ☒ PM ☐ SAT	
			Peak Hour of the Adj. (with reductions)	AM: 152 / PM: 80 / Daily: 818	
Study Intersections and/or Road Segments (Attach additional sheets as necessary) **(Please refer to attached Figure 1.)**	1.	Fairview Avenue and Tudor Lane		7.	Fairview Avenue and Site Entrance 2 (Future Intersection)
	2.	Fairview Avenue and Signal Hill Road		8.	Wesley Avenue and Site Entrance 3 (Future Intersection)
	3.	Fairview Avenue and Wesley Avenue		9.	
	4.	Fairview Avenue and Richmond Avenue		10.	
	5.	Fairview Avenue and Wellington Road		11.	
	6.	Fairview Avenue and Site Entrance 1 (Future Intersection)		12.	
Trip Adjustment Factors	Internal allowance Reduction: ☐ Yes ☒ No			Pass-by allowance Reduction: ☒ Yes ☐ No ITE LUC 565: 44% (PM), assumed 34% (AM/DAY) Based on Trip Generation Manual 11th Ed.	
Software Methodology	☒ Synchro ☐ HCS (v.2000/+) ☐ SIDRA ☐ CORSIM ☐ 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.

Traffic Signal Proposed or Affected (Analysis software to be used, progression speed, cycle length)	Existing traffic signals that could be affected: 1. Fairview Avenue and Signal Hill Road 2. Fairview Avenue and Wellington Analysis Software: Synchro, version 10 Results: HCM 2010 Methodology (See Note 9) Queue Lengths to be Reported: 95th Percentile from Synchro
Improvement(s) Assumed or to be Considered	None.
Background Traffic Studies Considered	None.
Plan Submission	☐ Master Development Plan (MDP) ☒ Generalized Development Plan (GDP) ☐ Preliminary/Sketch Plan ☐ Other Plan type (Final Site, Subd. Plan)
Additional Issues to be Addressed	☒ Queuing analysis ☐ Actuation/Coordination ☐ Weaving analysis ☐ Merge analysis ☐ Bike/Ped Accommodations ☒ Intersection(s) ☐ TDM Measures ☐ Other (_____)

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.

NOTES on ASSUMPTIONS:

1. Signal timings will be obtained from the City.
2. The scenarios to be included in the study are Existing Conditions (2022), Future without Development (2025) and Future with Development (2025). The study will analyze AM and PM peak hours.
3. Turning movement counts (TMCs) that were collected in 2022 will be used as the base for existing conditions.
    a. Note, these turning movement counts were cross verified with 2016 counts at the same intersections and were determined to be consistent with pre-Covid conditions.
4. Existing peak hour factors will be based on the traffic counts and utilized on a by-intersection basis. Peak hours factors by intersection in the range of 0.85 to 1.00 will be used for existing scenario. Peak hour factors of 0.92 will be used for all future scenarios if the existing peak hour factor by intersection is less than 0.92.
5. Heavy vehicle percentages (HV%) will be based on count data. For any new intersection, the HV% will be based on a default *Synchro* value of 2.0% per movement.
6. To account for 2025 future conditions, an inherent growth of 1.0% per year (between 2022 and 2025) will be applied to all movement at the intersection of Fairview Avenue and Wellington Road. In order to balance the network, the growth volumes will be propagated to other study intersections as mainline through volumes, as applicable.
7. For any approach, a level of service (LOS) D or better, or non-degradation, will be considered as acceptable/desirable for traffic operations. For all approaches, the projected future conditions without development LOS and delay should be maintained or comparable to future with development conditions, if possible. Will show intersection, approach, and movement LOS.
8. Will provide 95th percentile queues from Synchro.
9. HCM 2010 methodology will be utilized where applicable; HCM 2000 methodology will be utilized if HCM 2010 methodology is not applicable.
10. Crash data obtained from VDOT's Crash Analysis Tool will be analyzed at existing study intersections (2014-2019, as more recent data may be influenced by the COVID-19 pandemic).

SIGNED: _____ DATE: 6/14/2022
Applicant or Consultant

PRINT NAME: Kevin Sitzman, PE
Applicant or Consultant

SIGNED: _____ DATE: _____
City of Manassas Representative

PRINT NAME: _____
City of Manassas Representative

Table 1: Historic Growth (Based on VDOT Traffic Data)

Road Segment	From	To	Published VDOT AADT					Growth Rate / Year			
			2015	2016	2017	2018	2019	2015-2019	2016-2019	2017-2019	2018-2019
Fairview Avenue	Wellington Ave	SR 28 Center St	13,000	13,000	13,000	13,000	13,000	0%	0%	0%	0%
Wellington Rd	BUS SR 234 Dumfries Rd	Fairview Ave	14,000	16,000	17,000	16,000	18,000	6%	4%	3%	13%
Signal Hill Rd	Richmond Ave	Liberia Ave	6,200	6,100	6,200	6,000	6,100	0%	0%	-1%	2%
Tudor Ln	Osbourn High School	Cul de sac	2,500	2,500	2,500	2,500	2,500	0%	0%	0%	0%
Richmond Avenue	Fairview Ave	Liberia Ave	2,700	3,300	3,400	3,300	3,500	7%	2%	1%	6%

Figure 1: Site Location and Study Intersections

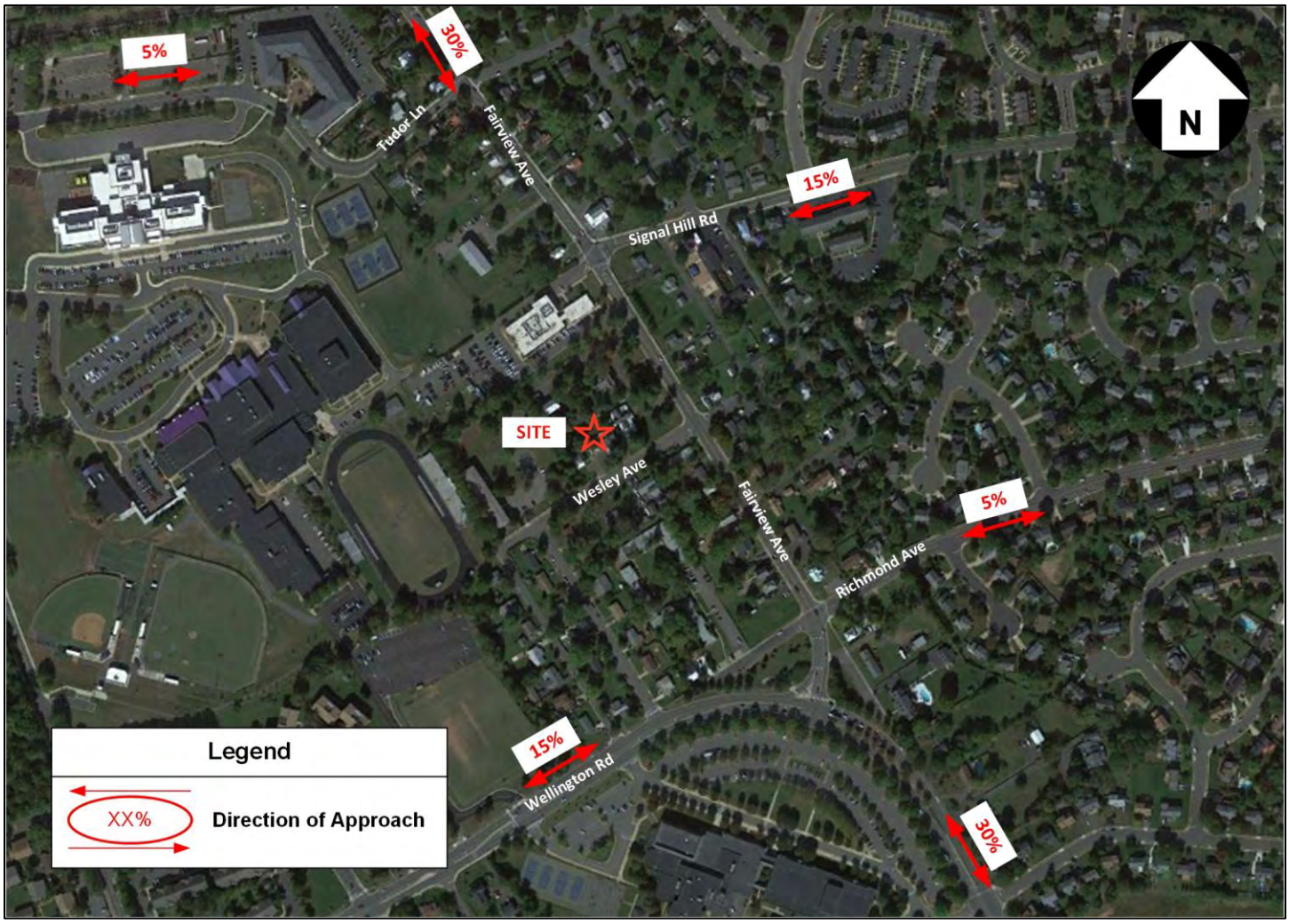


Figure 2: Direction of Approach

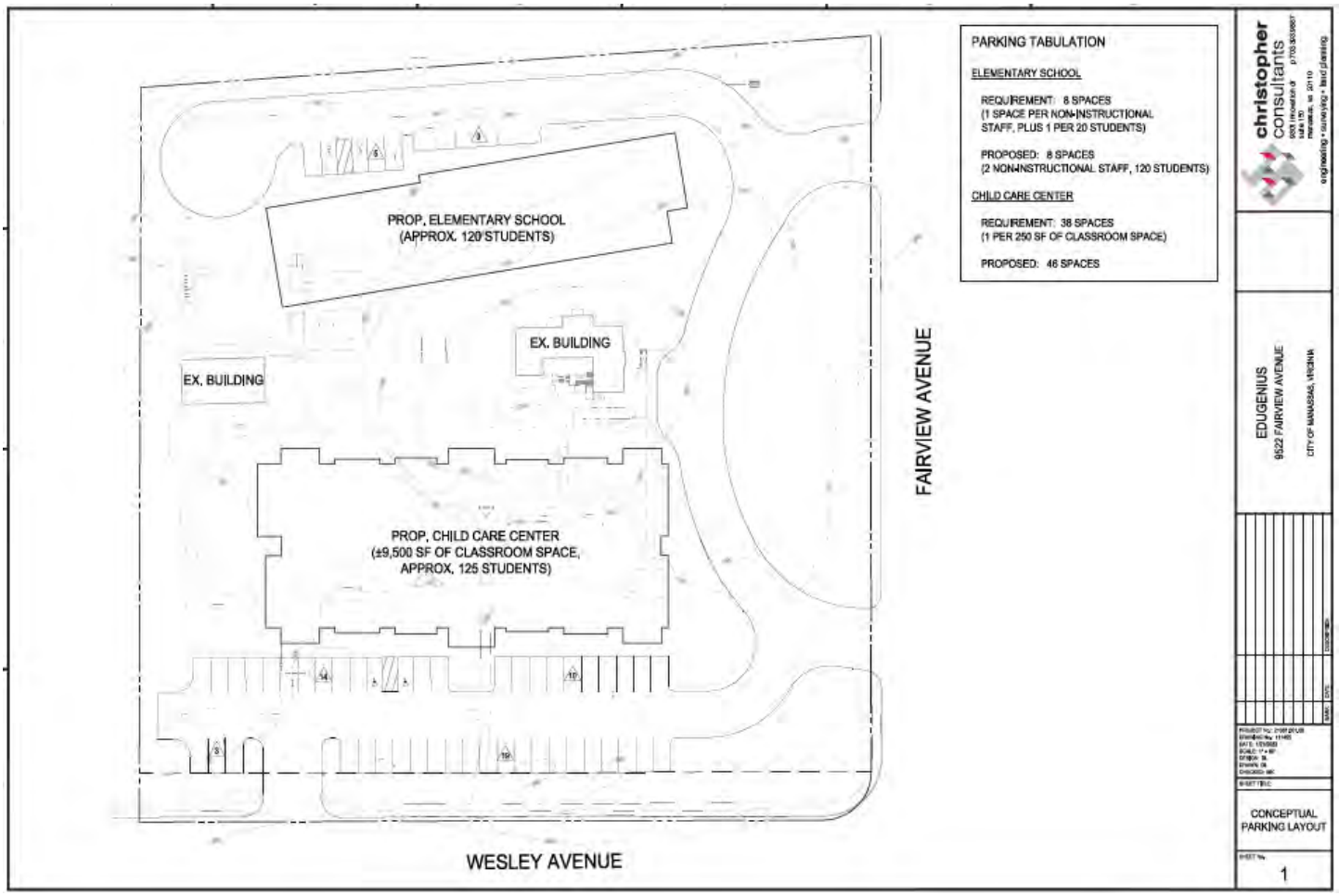


Figure 3: Concept Plan

Table 2: Trip Generation – Peak Hour of the Adjacent Street (ITE 11th Edition)

Land Use	ITE Code	Size	Weekday						
			AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Proposed Development									
Private School (K-8)	530	120 Students	52	40	92	14	17	31	493
Day Care Center	565	125 Students	48	43	91	42	47	89	492
*Pass-By Reduction**		34% / 44%	-16	-15	-31	-19	-21	-40	-167
Subtotal without Reductions / Driveway Trips			**100**	**83**	**183**	**56**	**64**	**120**	**985**
Net new site trips (Proposed)			**84**	**68**	**152**	**37**	**43**	**80**	**818**

**Pass-By reduction for ITE LUC 565 for the PM peak hour was based on ITE's TGM 11th ED (44%). No data was available for the AM and Daily periods, as such 34% was assumed (PM minus 10%).*

Subject: FW: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]Barracuda Networks' Email Gateway Defense Quarantine Notification

From: Nyika Roberson-Ramos <nroberson-ramos@ci.manassas.va.us>
Sent: Thursday, July 7, 2022 4:03 PM
To: Niraja Chandrapu <niraja.chandrapu@goroveslade.com>
Subject: RE: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]Barracuda Networks' Email Gateway Defense Quarantine Notification

Hello Niraja,

Yes, will be converted to city or school board offices by end of 2023.

Please let me know if I may be of further assistance.

Thank you,
Nyika Roberson-Ramos, PE
Senior Engineer
(o) 703-257-8397 |(c) 571-208-4832
nroberson-ramos@ci.manassas.va.us

Manassas
HISTORIC HEART. MODERN BEAT.

From: Niraja Chandrapu <niraja.chandrapu@goroveslade.com>
Sent: Thursday, July 7, 2022 2:21 PM
To: Nyika Roberson-Ramos <nroberson-ramos@ci.manassas.va.us>
Subject: [EXTERNAL]RE: [EXTERNAL]RE: [EXTERNAL]Barracuda Networks' Email Gateway Defense Quarantine Notification

[EXTERNAL]

Nyika,

If the conversion is not going to happen by 2025 then we will not include it as background development. For the current use, the counts include the trips associated with it.

Please let me know if you would be available for a quick call. I tried to reach you on your cell, but could not leave a message as your inbox is full.

Thanks,
Niraja.

Niraja Chandrapu, PE, PTOE
Director of Engineering

Project Manager

GOROVE SLADE
Transportation Planners and Engineers
T 703.787.9595 / **C** 848.250.7327
We Moved!
4114 Legato Road / Suite 650 / Fairfax, VA 22033
nc@goroveslade.com / www.goroveslade.com

Please consider the environment before printing this email. Thank you.

From: Nyika Roberson-Ramos <nroberson-ramos@ci.manassas.va.us>
Sent: Thursday, July 7, 2022 2:14 PM
To: Niraja Chandrapu <niraja.chandrapu@goroveslade.com>
Subject: RE: [EXTERNAL]RE: [EXTERNAL]Barracuda Networks' Email Gateway Defense Quarantine Notification

Good Afternoon Niraja,

This is a new building. Therefore, no conversion yet.

However, long-term/worst case, higher numbers are preferred.

Based on the number of offices, please use the higher numbers, but revise label to actual current use.

Please call me on my cell phone to discuss further if needed.

Thank you,
Nyika Roberson-Ramos, PE
Senior Engineer
(o) 703-257-8397 |(c) 571-208-4832
nroberson-ramos@ci.manassas.va.us

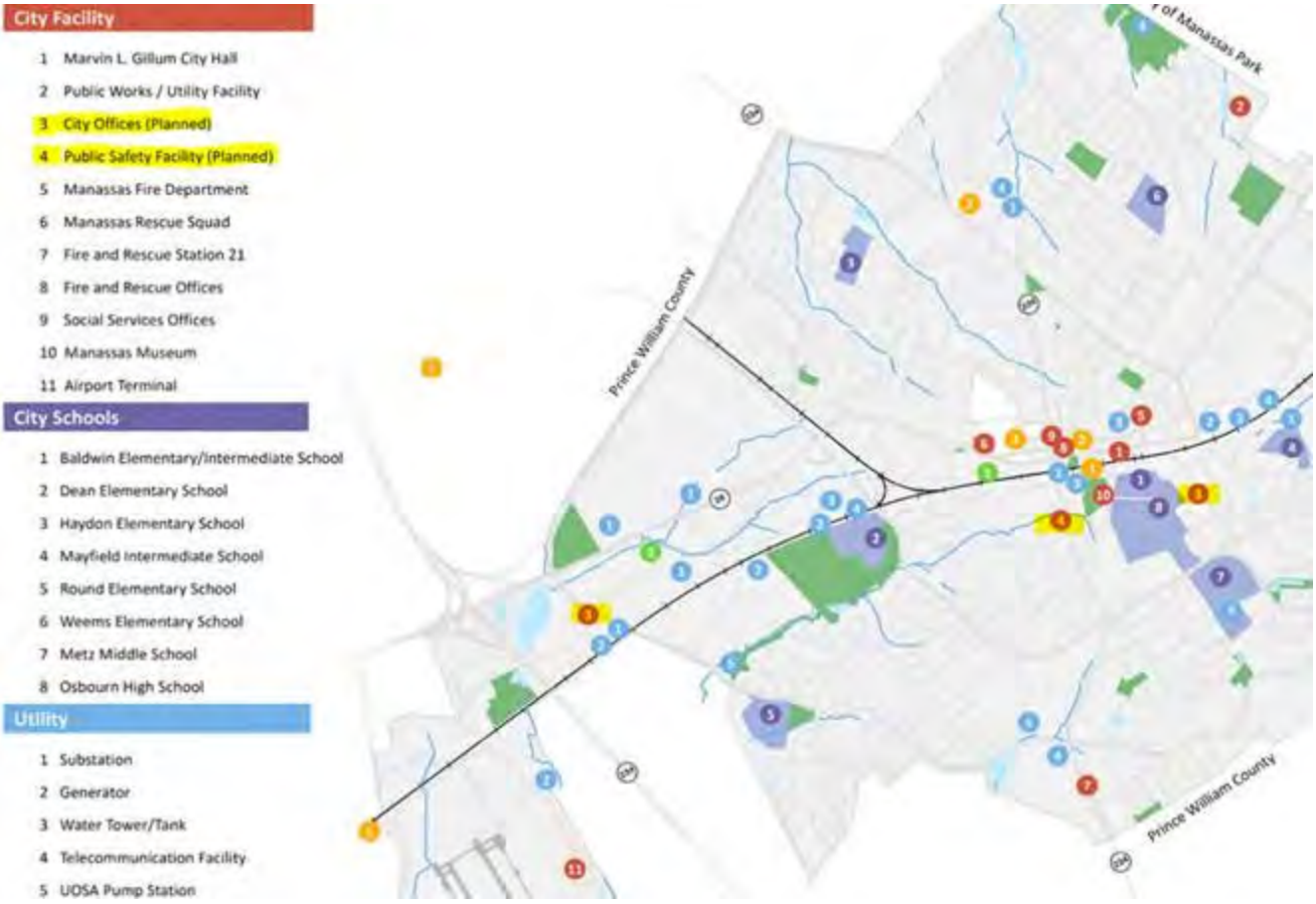
From: Niraja Chandrapu <niraja.chandrapu@goroveslade.com>
Sent: Thursday, July 7, 2022 1:16 PM
To: Nyika Roberson-Ramos <nroberson-ramos@ci.manassas.va.us>
Subject: [EXTERNAL]RE: [EXTERNAL]Barracuda Networks' Email Gateway Defense Quarantine Notification

[EXTERNAL]

Hi Nyika,

Per the Comprehensive Plan/Capital Improvements Program (see below), the police station may be converted to City Office use. See also below the trip generation for converting the existing Police Station to a government office. Please let us know if you would like us to consider the conversion as a background development for the Fairview Avenue project (Tillet Hall Special Use Permit)?

Chapter 7 Comp. Plan excerpt:



CIP Excerpt:

Public Safety Facility (P-015)

Continued construction of the Public Safety Facility at 9608 Grant Avenue is underway. The facility will include Police Headquarters, consolidated public safety logistics, 911 Center, Emergency Operations Center, Fire & Rescue Administration, and the IT Department.

Public Safety Facility

Comparison for Government Office:

Land Use	ITE Code	Size	Weekda			
			AM Peak Hour			PM
			In	Out	Total	In
Proposed Use						
Government Office Building	730	36.376 kSF of GFA	91	30	121	15
Existing Use						
Fire and Rescue Station [1][2]	575	36.376 kSF of GFA	12	5	17	5
Notes						
[1]: As no LUC exists for Police Station in ITE 11, the similar ITE LUC 575 was used.						
[2]: ITE LUC 575 (Fire and Rescue Station) does not have data for the AM peak hour nor weekday daily period in ITE 11. The AM peak hour was assumed to be simi weekday daily trips were assumed to be 10 times the PM peak hour.						
Difference (Proposed Minus Existing)			**79**	**25**	**104**	**10**

Thanks,
Niraja.

Niraja Chandrapu, PE, PTOE
Director of Engineering
Project Manager

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Transportation Planners and Engineers
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We Moved!
4114 Legato Road / Suite 650 / Fairfax, VA 22033
nc@goroveslade.com / www.goroveslade.com

Please consider the environment before printing this email. Thank you.

From: Nyika Roberson-Ramos <nroberson-ramos@ci.manassas.va.us>
Sent: Wednesday, June 15, 2022 11:08 AM
To: Niraja Chandrapu <niraja.chandrapu@goroveslade.com>
Subject: RE: [EXTERNAL]Barracuda Networks' Email Gateway Defense Quarantine Notification

Good Morning Niraja,

Great speaking with you yesterday.

I sent the signed document to Com. Dev. and they will follow-up with Developer. Please include pedestrian information and school signage and striping, ect.

Best Regards,
Nyika Roberson-Ramos, PE
Senior Engineer
(o) 703-257-8397 |(c) 571-208-4832
nroberson-ramos@ci.manassas.va.us

B. Raw Traffic Data and City-Provided Timing and Layout Sheets

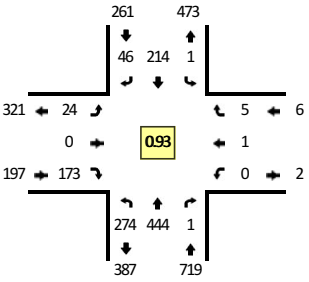
Type of peak hour being reported: Intersection Peak

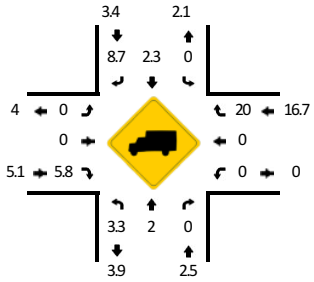
Method for determining peak hour: Total Entering Volume

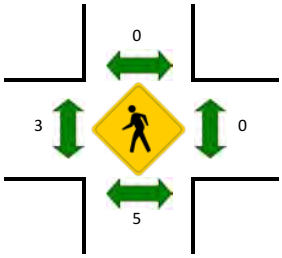
LOCATION: Fairview Ave -- Tudor Ln
CITY/STATE: Manassas, VA

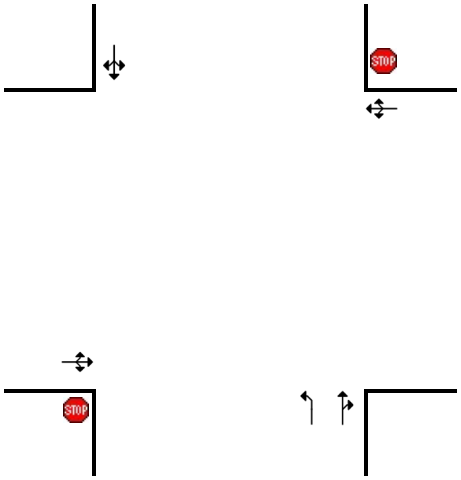
QC JOB #: 15837601
DATE: Tue, May 24 2022

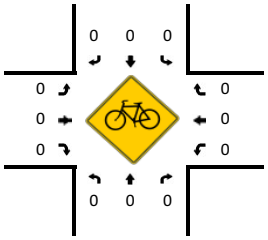
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

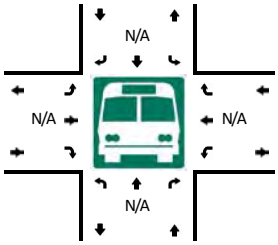


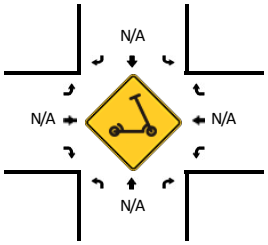












15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Tudor Ln (Eastbound)				Tudor Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	20	50	0	0	0	22	6	0	5	0	2	0	0	0	1	0	106	
6:15 AM	29	30	0	0	0	18	5	0	1	0	11	0	0	0	1	0	95	
6:30 AM	15	47	0	0	0	20	4	0	1	0	11	0	0	1	1	0	100	
6:45 AM	25	77	0	0	1	45	2	0	5	0	38	0	0	1	1	0	195	496
7:00 AM	45	94	0	0	0	51	5	0	6	0	24	0	0	1	0	0	226	616
7:15 AM	38	90	0	0	0	55	5	0	1	1	21	0	2	0	0	0	213	734
7:30 AM	53	110	0	0	0	54	7	0	2	1	31	0	0	0	2	0	260	894
7:45 AM	80	112	0	0	0	56	10	0	4	0	21	0	0	0	1	0	284	983
8:00 AM	61	131	1	0	0	66	17	0	8	0	29	0	0	1	0	0	314	1071
8:15 AM	64	104	0	0	1	46	16	0	7	0	79	0	0	0	2	0	319	1177
8:30 AM	69	97	0	0	0	46	3	0	5	0	44	0	0	0	2	0	266	1183
8:45 AM	51	114	0	0	1	57	8	0	4	1	21	0	0	0	1	0	258	1157

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	256	416	0	0	4	184	64	0	28	0	316	0	0	0	8	0	1276
Heavy Trucks	20	12	0		0	0	8		0	0	8		0	0	4		52
Buses																	
Pedestrians		16				0				0				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2022 9:32 AM

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

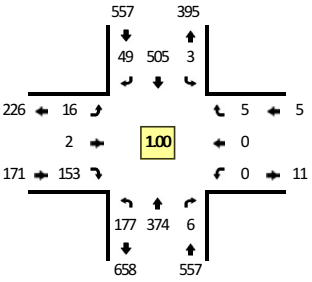
Type of peak hour being reported: Intersection Peak

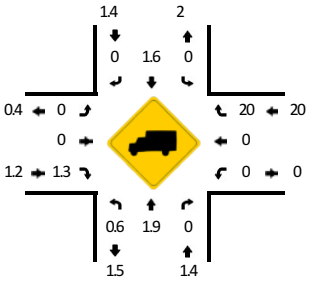
Method for determining peak hour: Total Entering Volume

LOCATION: Fairview Ave -- Tudor Ln
CITY/STATE: Manassas, VA

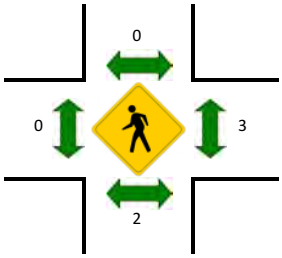
QC JOB #: 15837602
DATE: Tue, May 24 2022

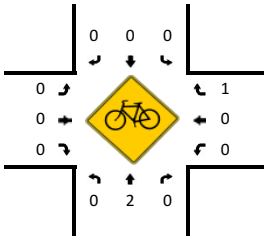
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

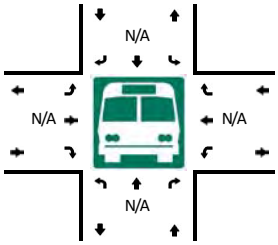


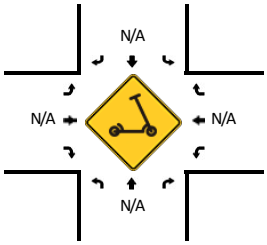


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Tudor Ln (Eastbound)				Tudor Ln (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	38	81	0	0	1	112	13	0	4	0	38	0	1	0	0	0	288	
4:15 PM	40	110	1	0	1	118	9	0	5	0	36	0	0	0	2	0	322	
4:30 PM	49	93	3	0	0	117	20	0	6	0	34	0	0	0	2	0	324	
4:45 PM	43	85	0	0	1	136	11	0	3	2	40	0	0	0	0	0	321	1255
5:00 PM	45	86	2	0	1	134	9	0	2	0	43	0	0	0	1	0	323	1290
5:15 PM	33	83	2	0	1	124	8	0	4	0	52	0	0	1	1	0	309	1277
5:30 PM	38	78	0	0	0	116	15	0	6	0	42	0	0	0	0	0	295	1248
5:45 PM	46	75	0	0	1	97	11	0	6	2	37	0	0	0	0	0	275	1202
6:00 PM	32	84	0	0	2	105	14	0	2	0	22	0	0	1	2	0	264	1143
6:15 PM	37	82	0	0	2	92	8	0	3	1	39	0	0	0	1	0	265	1099
6:30 PM	17	68	0	0	1	72	13	0	7	2	24	0	0	0	0	0	204	1008
6:45 PM	39	105	1	0	0	87	8	0	3	0	31	0	1	1	0	0	276	1009

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	196	372	12	0	0	468	80	0	24	0	136	0	0	0	8	0	1296
Heavy Trucks	0	8	0		0	8	0		0	0	4		0	0	0		20
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 6/2/2022 9:32 AM

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

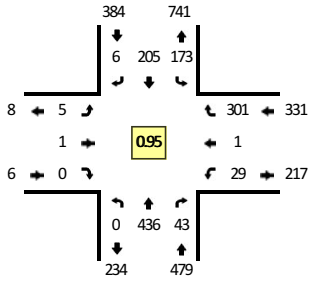
Type of peak hour being reported: Intersection Peak

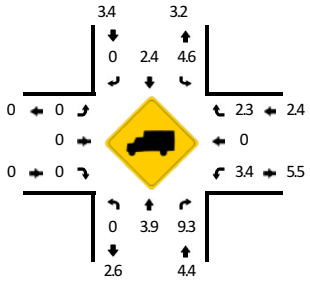
Method for determining peak hour: Total Entering Volume

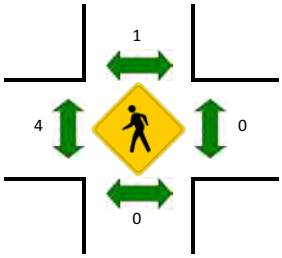
LOCATION: Fairview Ave -- Signal Hill Rd
CITY/STATE: Manassas, VA

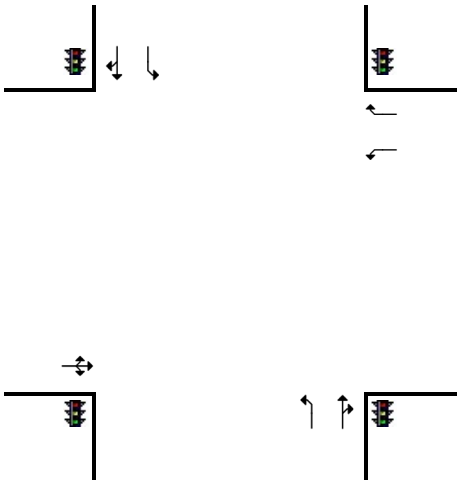
QC JOB #: 15837603
DATE: Tue, May 24 2022

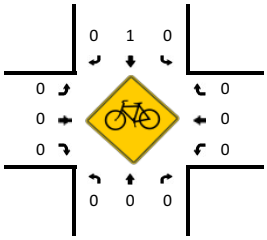
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

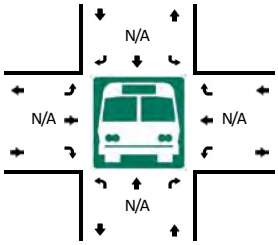


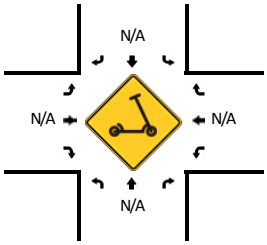












15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Signal Hill Rd (Eastbound)				Signal Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	39	2	0	6	17	1	0	2	0	0	0	2	0	25	0	94	
6:15 AM	1	32	7	0	11	17	0	0	1	1	0	0	4	1	26	0	101	
6:30 AM	0	46	12	0	15	18	0	0	0	1	0	0	4	1	15	0	112	
6:45 AM	0	63	20	0	58	22	2	0	0	0	0	0	10	0	41	0	216	523
7:00 AM	0	70	10	0	42	32	0	0	0	0	0	0	25	0	71	0	250	679
7:15 AM	1	72	10	0	30	47	0	0	0	0	0	0	15	0	49	0	224	802
7:30 AM	0	104	9	0	42	43	2	0	1	0	0	0	8	0	66	0	275	965
7:45 AM	0	100	8	0	40	36	0	0	1	0	0	0	8	0	101	0	294	1043
8:00 AM	0	137	16	0	38	59	2	0	2	0	0	0	5	0	57	0	316	1109
8:15 AM	0	95	10	0	53	67	2	0	0	1	0	1	8	1	77	0	315	1200
8:30 AM	0	116	5	0	42	43	0	0	2	0	0	0	10	0	48	0	266	1191
8:45 AM	0	117	3	0	44	36	3	0	0	0	0	0	8	0	48	0	259	1156

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	548	64	0	152	236	8	0	8	0	0	0	20	0	228	0	1264
Heavy Trucks	0	12	0		20	8	0		0	0	0		0	0	4		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2022 9:32 AM

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

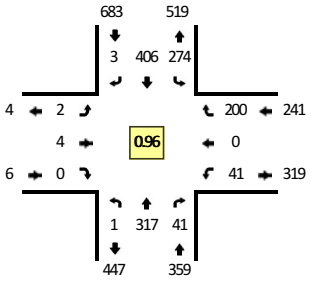
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

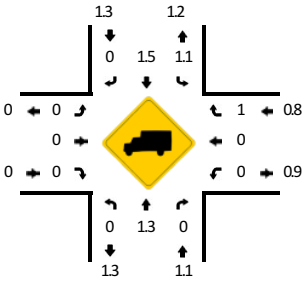
LOCATION: Fairview Ave -- Signal Hill Rd
CITY/STATE: Manassas, VA

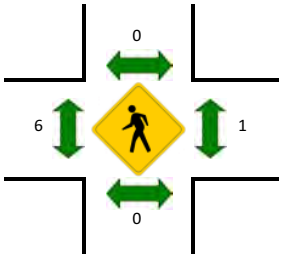
QC JOB #: 15837604
DATE: Tue, May 24 2022

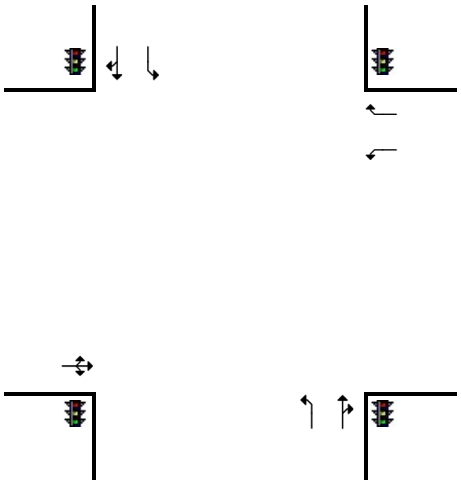
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

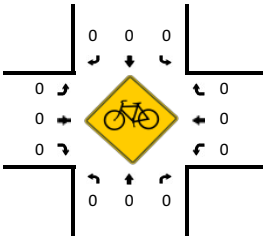


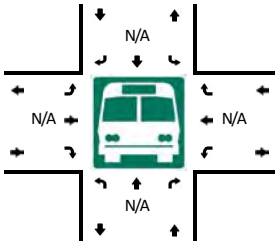
Quality Counts
DATA THAT DRIVES COMMUNITIES

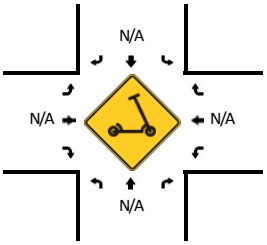












15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Signal Hill Rd (Eastbound)				Signal Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	78	10	0	58	89	0	0	0	0	0	0	10	0	56	0	301	
4:15 PM	0	87	6	0	62	87	0	0	1	0	0	0	10	0	50	0	303	
4:30 PM	1	96	8	0	62	97	0	0	1	1	0	0	7	0	46	0	319	
4:45 PM	0	76	7	0	64	107	1	0	0	0	0	0	6	0	49	0	310	1233
5:00 PM	0	72	13	0	73	102	0	0	0	1	0	0	17	0	56	0	334	1266
5:15 PM	0	73	13	0	75	100	2	0	1	2	0	0	11	0	49	0	326	1289
5:30 PM	2	76	9	0	81	76	3	0	0	0	0	0	9	0	40	0	296	1266
5:45 PM	0	70	8	0	64	64	0	0	0	1	1	0	8	0	50	0	266	1222
6:00 PM	1	73	9	0	53	74	0	0	2	0	2	0	8	0	41	0	263	1151
6:15 PM	0	69	10	0	65	64	0	0	0	0	0	0	8	0	43	0	259	1084
6:30 PM	0	57	13	0	41	54	0	0	0	0	0	0	3	1	30	0	199	987
6:45 PM	1	95	10	0	42	77	0	0	0	0	1	0	8	0	54	0	288	1009

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	288	52	0	292	408	0	0	0	4	0	0	68	0	224	0	1336
Heavy Trucks	0	8	0		4	8	0		0	0	0		0	0	4		24
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2022 9:32 AM

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

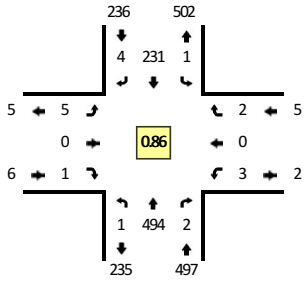
Type of peak hour being reported: Intersection Peak

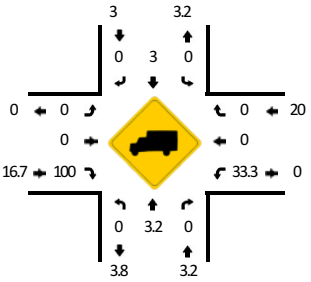
Method for determining peak hour: Total Entering Volume

LOCATION: Fairview Ave -- Wesley Ave
CITY/STATE: Manassas, VA

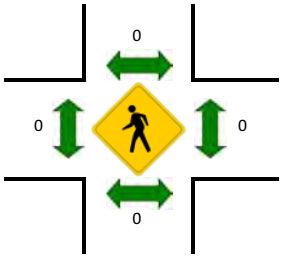
QC JOB #: 15837605
DATE: Tue, May 24 2022

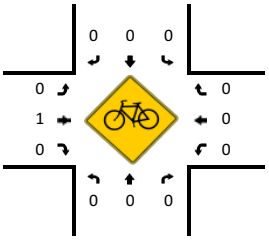
Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

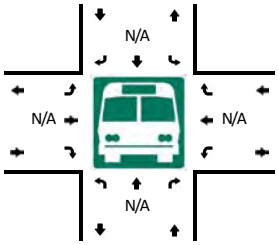


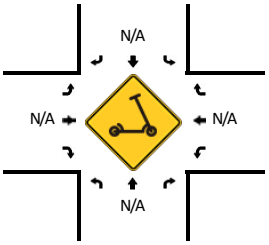


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Wesley Ave (Eastbound)				Wesley Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	41	0	0	0	18	0	0	0	0	0	0	0	0	0	0	59	
6:15 AM	0	38	0	0	0	22	0	0	1	0	0	0	1	0	0	0	62	
6:30 AM	0	55	0	0	0	22	2	0	1	0	0	0	0	0	0	0	80	
6:45 AM	0	84	0	0	1	27	0	0	2	0	0	0	1	2	0	0	117	318
7:00 AM	0	76	2	0	0	50	1	0	1	0	0	0	0	0	1	0	131	390
7:15 AM	0	87	1	0	0	68	2	0	0	1	1	0	0	0	0	0	160	488
7:30 AM	0	109	1	0	0	48	0	0	0	0	0	0	0	1	1	0	160	568
7:45 AM	0	107	0	0	0	44	1	0	2	0	0	0	1	0	0	0	155	606
8:00 AM	1	148	0	0	0	64	0	0	1	0	0	0	1	0	1	0	216	691
8:15 AM	0	109	1	0	0	75	2	1	1	0	1	0	0	0	0	0	190	721
8:30 AM	0	117	0	0	0	50	2	0	2	0	0	0	2	0	1	0	174	735
8:45 AM	0	120	1	0	0	42	0	0	1	0	0	0	0	0	0	0	164	744

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	592	0	0	0	256	0	0	4	0	0	0	4	0	4	0	864
Heavy Trucks	0	16	0		0	8	0		0	0	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

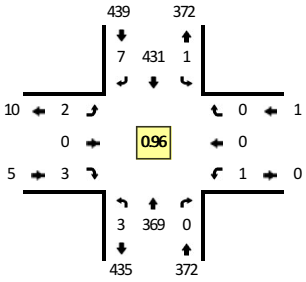
Report generated on 6/2/2022 9:32 AM

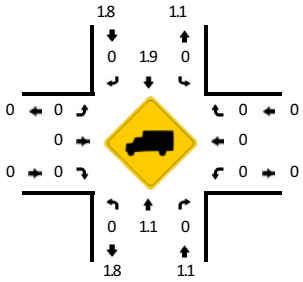
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

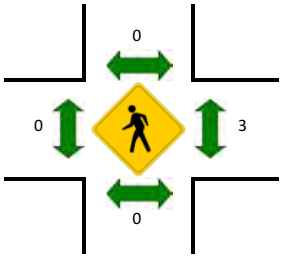
LOCATION: Fairview Ave -- Wesley Ave | **QC JOB #:** 15837606
CITY/STATE: Manassas, VA | **DATE:** Tue, May 24 2022

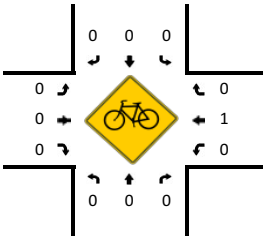
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

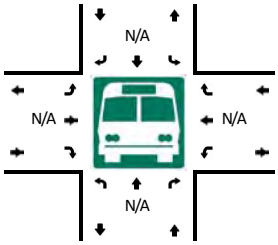


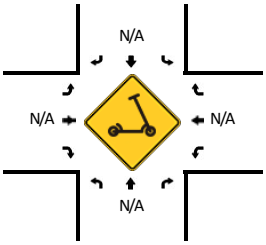


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Wesley Ave (Eastbound)				Wesley Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	83	0	0	0	90	1	0	0	0	1	0	0	0	0	0	176	
4:15 PM	1	100	0	0	0	105	3	0	0	0	3	0	0	0	0	0	212	
4:30 PM	0	100	0	0	0	100	0	0	1	0	0	0	0	0	0	0	201	
4:45 PM	1	82	0	0	0	104	3	1	1	0	0	0	1	0	0	0	193	782
5:00 PM	1	87	0	0	0	122	1	0	0	0	0	0	0	0	0	0	211	817
5:15 PM	1	79	1	0	1	103	1	0	2	0	0	0	2	0	2	0	192	797
5:30 PM	1	84	0	1	0	85	0	0	3	0	0	0	0	0	0	0	174	770
5:45 PM	0	73	1	0	1	80	3	0	4	0	1	0	0	0	0	0	163	740
6:00 PM	0	79	0	0	0	76	1	0	2	0	1	0	0	0	0	0	159	688
6:15 PM	1	82	0	0	1	71	0	0	0	0	0	0	0	0	1	0	156	652
6:30 PM	1	66	0	0	0	59	0	0	2	0	0	0	0	0	0	0	128	606
6:45 PM	0	107	0	0	0	80	1	0	0	0	0	0	0	0	0	0	188	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	400	0	0	0	420	12	0	0	0	12	0	0	0	0	0	848
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

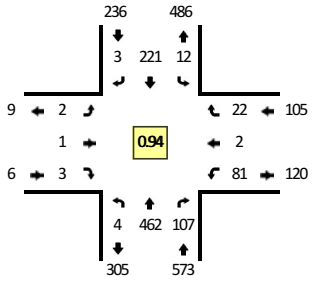
Comments:

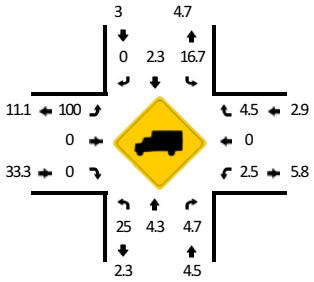
Report generated on 6/2/2022 9:32 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

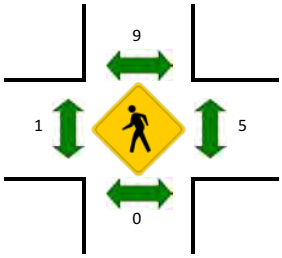
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

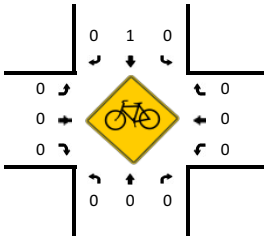
LOCATION: Fairview Ave -- Richmond Ave | **QC JOB #:** 15837607
CITY/STATE: Manassas, VA | **DATE:** Tue, May 24 2022

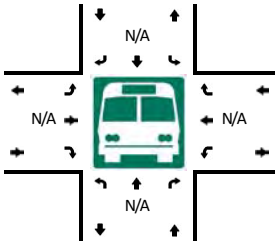
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

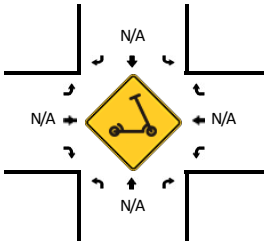












15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Richmond Ave (Eastbound)				Richmond Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	41	11	0	1	19	1	0	0	0	0	0	7	0	1	0	81	
6:15 AM	0	34	9	0	1	20	0	0	1	0	0	0	13	0	3	0	81	
6:30 AM	1	49	22	0	2	20	0	0	0	0	0	0	9	0	2	0	105	
6:45 AM	0	77	29	0	1	26	0	0	1	0	0	0	11	1	4	0	150	417
7:00 AM	1	74	34	0	1	48	0	0	2	1	0	0	24	0	2	0	187	523
7:15 AM	0	82	33	0	1	69	1	0	0	0	0	0	31	0	5	0	222	664
7:30 AM	2	105	29	0	3	46	0	0	0	1	0	0	30	1	6	0	223	782
7:45 AM	1	117	31	0	5	37	2	0	0	0	1	0	15	0	4	0	213	845
8:00 AM	0	136	22	0	2	62	0	0	1	0	0	0	15	0	7	0	245	903
8:15 AM	1	104	25	0	2	76	1	0	1	0	2	0	21	1	5	0	239	920
8:30 AM	1	114	20	0	2	49	1	0	0	0	1	0	19	0	3	0	210	907
8:45 AM	0	118	34	0	1	44	0	0	1	0	0	0	13	0	4	0	215	909

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	544	88	0	8	248	0	0	4	0	0	0	60	0	28	0	980
Heavy Trucks	0	8	0		4	4	0		4	0	0		0	0	0		20
Buses																	
Pedestrians		0				28				0				8			36
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

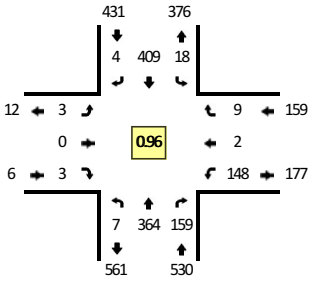
Report generated on 6/2/2022 9:32 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

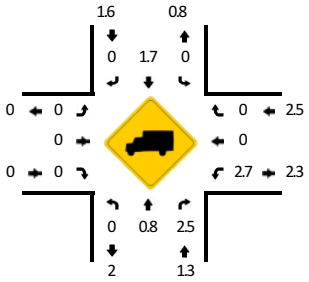
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Fairview Ave -- Richmond Ave
CITY/STATE: Manassas, VA

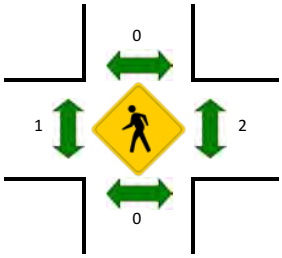
QC JOB #: 15837608
DATE: Tue, May 24 2022

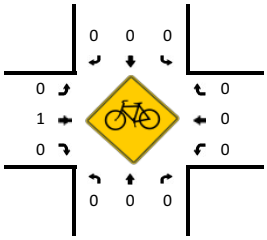
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

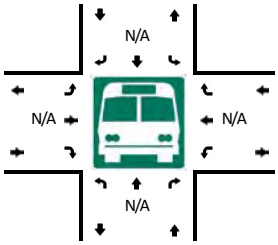


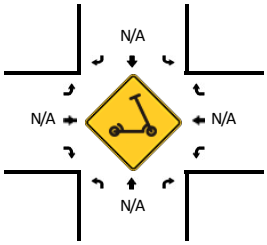


Quality Counts
DATA THAT DRIVES COMMUNITIES









15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Richmond Ave (Eastbound)				Richmond Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	76	30	0	3	89	0	0	0	1	1	0	25	0	5	0	230	
4:15 PM	2	102	42	0	7	98	2	0	0	0	1	0	29	0	0	0	283	
4:30 PM	1	98	38	0	2	97	1	0	2	0	0	0	41	0	2	0	282	
4:45 PM	1	78	42	1	4	98	0	0	1	0	0	0	38	1	4	0	268	1063
5:00 PM	2	86	37	0	5	116	1	0	0	0	2	0	40	1	3	0	293	1126
5:15 PM	1	73	42	0	3	102	0	0	2	0	0	0	31	1	5	0	260	1103
5:30 PM	1	82	52	0	2	82	1	0	0	0	1	0	36	1	5	0	263	1084
5:45 PM	2	66	40	0	5	81	0	0	1	0	0	0	27	0	2	0	224	1040
6:00 PM	0	81	38	1	3	75	0	0	1	0	0	0	31	0	2	0	232	979
6:15 PM	1	82	34	0	2	68	2	0	1	0	2	0	37	0	1	0	230	949
6:30 PM	1	60	29	0	2	54	0	0	0	0	0	0	27	0	6	0	179	865
6:45 PM	4	95	37	0	9	74	0	0	1	0	0	0	20	0	5	0	245	886

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	8	344	148	0	20	464	4	0	0	0	8	0	160	4	12	0	1172
Heavy Trucks	0	0	0		0	8	0		0	0	0		8	0	0		16
Buses																	
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2022 9:32 AM

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

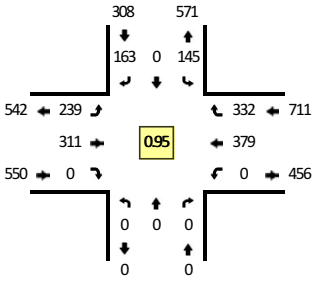
Type of peak hour being reported: Intersection Peak

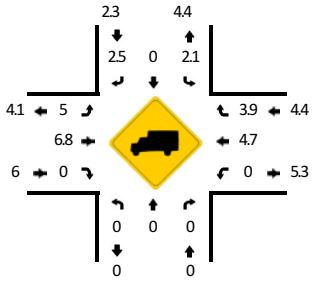
Method for determining peak hour: Total Entering Volume

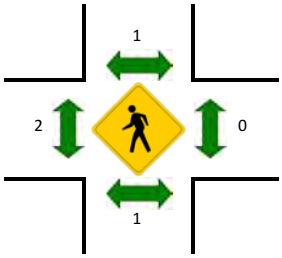
LOCATION: Fairview Ave -- Wellington Rd
CITY/STATE: Manassas, VA

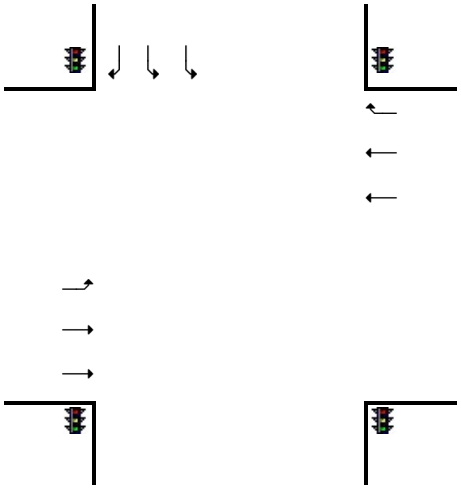
QC JOB #: 15837609
DATE: Tue, May 24 2022

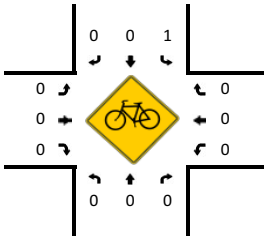
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

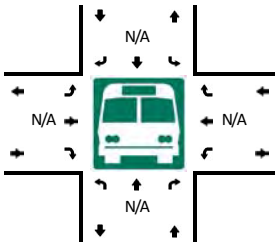


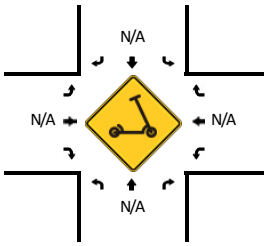












15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Wellington Rd (Eastbound)				Wellington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	13	0	10	0	33	59	0	0	0	32	18	0	165	
6:15 AM	0	0	0	0	18	0	19	0	25	68	0	0	0	37	18	0	185	
6:30 AM	0	0	0	0	12	0	17	0	45	61	0	0	0	44	28	0	207	
6:45 AM	0	0	0	0	15	0	22	0	71	56	0	1	0	72	35	0	272	829
7:00 AM	0	0	0	0	20	0	52	0	68	78	0	0	0	63	42	0	323	987
7:15 AM	0	0	0	0	28	0	70	0	67	85	0	1	0	65	48	1	365	1167
7:30 AM	0	0	0	0	21	0	56	0	64	79	0	0	0	80	72	0	372	1332
7:45 AM	0	0	0	0	28	0	32	0	64	67	0	0	0	105	82	0	378	1438
8:00 AM	0	0	0	0	38	0	33	0	55	80	0	0	0	103	105	0	414	1529
8:15 AM	0	0	0	0	58	0	42	0	56	85	0	0	0	91	73	0	405	1569
8:30 AM	0	0	0	0	40	0	33	0	46	73	0	0	0	90	90	0	372	1569
8:45 AM	0	0	0	0	26	0	31	0	66	64	0	0	0	99	87	0	373	1564

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	152	0	132	0	220	320	0	0	0	412	420	0	1656
Heavy Trucks	0	0	0		0	0	0		4	16	0		0	8	4		32
Buses																	
Pedestrians		4				4				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

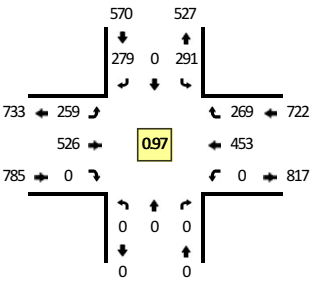
Report generated on 6/2/2022 9:32 AM

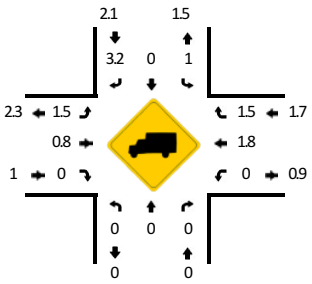
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

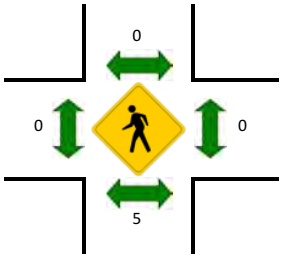
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

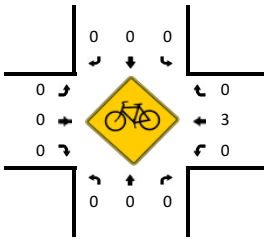
LOCATION: Fairview Ave -- Wellington Rd | **QC JOB #:** 15837610
CITY/STATE: Manassas, VA | **DATE:** Tue, May 24 2022

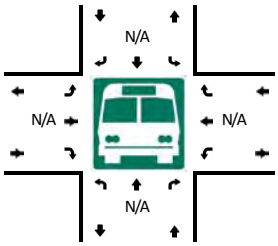
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

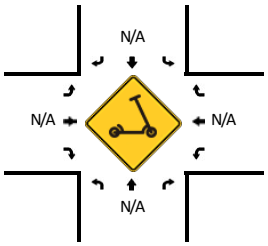












15-Min Count Period Beginning At	Fairview Ave (Northbound)				Fairview Ave (Southbound)				Wellington Rd (Eastbound)				Wellington Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	62	0	48	0	53	140	0	0	0	98	52	0	453	
4:15 PM	0	0	0	0	69	0	58	0	69	117	0	1	0	130	76	0	520	
4:30 PM	0	0	0	0	61	0	75	0	65	124	0	0	0	111	72	0	508	
4:45 PM	0	0	0	0	72	0	69	0	64	141	0	0	0	108	59	0	513	1994
5:00 PM	0	0	0	0	89	0	77	0	60	144	0	0	0	104	62	0	536	2077
5:15 PM	0	0	0	0	71	0	57	0	61	105	0	0	0	97	51	0	442	1999
5:30 PM	0	0	0	0	61	0	56	0	75	130	0	0	0	90	61	0	473	1964
5:45 PM	0	0	0	0	51	0	60	0	58	121	0	0	0	104	49	0	443	1894
6:00 PM	0	0	0	0	51	0	57	0	56	101	0	0	0	110	63	0	438	1796
6:15 PM	0	0	0	0	48	0	57	0	57	108	0	0	0	85	59	0	414	1768
6:30 PM	0	0	0	0	35	0	44	0	41	85	0	0	0	104	48	0	357	1652
6:45 PM	0	0	0	0	47	0	46	0	71	75	0	0	0	117	65	0	421	1630

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	356	0	308	0	240	576	0	0	0	416	248	0	2144
Heavy Trucks	0	0	0		4	0	16		0	0	0		0	0	4		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/2/2022 9:32 AM

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

Table: Phase Timing Plans [Timing Plan: 1]						
Phase	**1**	**2**	**3**	**4**	**5**	**6**
Walk	0	7	7	7	0	7
Ped Clear	0	5	12	11	0	16
Steady Don't Walk	0	0	0	0	0	0
Min Green	8	10	8	8	8	10
Min Green2	0	0	0	0	0	0
Passage	3	5	4	3	3	5
Passage 2	0	0	0	0	0	0
Max 1	20	40	30	30	20	40
Max 2	20	40	25	25	20	40
Max 3	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0
Yellow Change	4	4	4	4	4	4
Red Clear	2.5	2.5	2.1	2.3	2.5	2.5

Table: Phase Timing Plans [Timing Plan: 1]

Phase	1	2	3	4	5	6
Walk	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0
Steady Don't Walk	0	0	0	0	0	0
Min Green	0	10	8	0	10	10
Min Green2	0	0	0	0	0	0
Passage	0	4	3.5	1	3.5	4
Passage 2	0	0	0	0	0	0
Max 1	0	55	30	0	25	55
Max 2	0	50	30	0	45	50
Max 3	0	0	0	0	0	0
Conditional Max	0	0	0	0	0	0
Yellow Change	0	4.2	4	4	4.2	4.2
Red Clear	0	2.9	2.9	2	2.9	2.9

Table: Pattern Parameters

Pattern	Cycle Time	Offset 1	Offset 2	Offset 3	Split Number	Seq Number	Ref Point	Coord Mode	Force Off	Max Mode	Trans Ped M	Min Permissi	Correction M	Single Perm	Phase Plan	Overlap Plan	Veh Detector	Veh Detector	Ped Detector	Ped Detector	Pri/Pre Dete	Description
11	60	42	0	0	11	1	Green	Actuated Coc	Fixed	Max 2	Phase	Phase Only	Shortway (Ac	0	1	1	1	1	1	1	1	AM Peak
21	60	37	0	0	21	1	Green	Actuated Coc	Fixed	Max 2	Phase	Phase Only	Shortway (Ac	0	1	1	1	1	1	1	1	Mid Peak
31	75	13	0	0	31	1	Green	Actuated Coc	Fixed	Max 2	Phase	Phase Only	Shortway (Ac	0	1	1	1	1	1	1	1	PM Peak Lite
41	70	67	0	0	41	1	Green	Actuated Coc	Fixed	Max 2	Phase	Phase Only	Shortway (Ac	0	1	1	1	1	1	1	1	Weekend

Table: Coordination Parameters

Operational I	Coordination	Max Mode	Force Mode	Correction M	Max Cyc Limi	Min Cyc Limi	Max Dwell	Transition Ped Mode
	Actuated Coo	Maximum 2	Fixed	Shortway (Au	25	25		Pattern

Table: Split Parameters [Split: 11]

Phase	Time	Min	Max	Coord Phase	Ref Point	Trans Cover F	Force Off Mo	Mode	Pri Min	Pri Max	Pri Force Off Mode
2	36	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float
3	24	0	0	0	0	0	Fixed	None	0	0	Float
5	18	0	0	0	0	0	Fixed	None	0	0	Float
6	18	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float

Table: Split Parameters [Split: 21]

Phase	Time	Min	Max	Coord Phase	Ref Point	Trans Cover F	Force Off Mo	Mode	Pri Min	Pri Max	Pri Force Off Mode
2	36	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float
3	24	0	0	0	0	0	Fixed	None	0	0	Float
5	18	0	0	0	0	0	Fixed	None	0	0	Float
6	18	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float

Table: Split Parameters [Split: 31]

Phase	Time	Min	Max	Coord Phase	Ref Point	Trans Cover F	Force Off Mo	Mode	Pri Min	Pri Max	Pri Force Off Mode
2	40	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float
3	35	0	0	0	0	0	Fixed	None	0	0	Float
5	18	0	0	0	0	0	Fixed	None	0	0	Float
6	22	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float

Table: Split Parameters [Split: 41]

Phase	Time	Min	Max	Coord Phase	Ref Point	Trans Cover I	Force Off Mo	Mode	Pri Min	Pri Max	Pri Force Off Mode
2	49	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float
3	21	0	0	0	0	0	Fixed	None	0	0	Float
5	21	0	0	0	0	0	Fixed	None	0	0	Float
6	28	0	0	TRUE	TRUE	0	Fixed	None	0	0	Float

Table: Day Plan Events [Day Plan: 1]

Event	Hour	Minute	Action	Description
1	8	0	11	AM
2	10	0	21	MID
3	16	0	31	PM
4	19	0	50	Free

Table: Day Plan Events [Day Plan: 2]

Event	Hour	Minute	Action	Description
1	0	0	50	Free

C. VDOT Crash Data

VDOT Crash Data Summary Table

Crash Data for the Intersection of Fairview Avenue and Tudor Lane (2014 - 2019)										
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Direction of Travel	Work Zone Related	Adverse Weather Conditions	Distracted Driver
160845085	3/23/2016	PDO.Property Damage Only	2. Angle	0	0	0	South	no	no	no
180165266	1/11/2018	PDO.Property Damage Only	9. Fixed Object - Off Road	0	0	0		yes	no	no
181565196	5/30/2018	C.Nonvisible Injury	12. Ped	0	1	0		no	no	no
183515272	12/15/2018	PDO.Property Damage Only	1. Rear End	0	0	0		no	yes	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of Fairview Avenue and Signal Hill Road (2014 - 2019)										
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Direction of Travel	Work Zone Related	Adverse Weather Conditions	Distracted Driver
141255096	5/3/2014	A.Severe Injury	2. Angle	0	2	0		no	no	yes
141345201	5/14/2014	PDO.Property Damage Only	1. Rear End	0	0	0		no	no	no
163215208	10/28/2016	PDO.Property Damage Only	9. Fixed Object - Off Road	0	0	0		no	no	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of Fairview Avenue and Wesley Avenue (2014 - 2019)										
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Direction of Travel	Work Zone Related	Adverse Weather Conditions	Distracted Driver
143425209	12/6/2014	B.Visible Injury	8. Non-Collision	0	1	0		no	yes	yes

VDOT Crash Data Summary Table

Crash Data for the Intersection of Fairview Avenue and Richmond Avenue (2014 - 2019)										
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Direction of Travel	Work Zone Related	Adverse Weather Conditions	Distracted Driver
172055176	7/19/2017	C.Nonvisible Injury	2. Angle	0	1	0		no	no	no
183175462	10/26/2018	C.Nonvisible Injury	2. Angle	0	2	0		no	yes	no

VDOT Crash Data Summary Table

Crash Data for the Intersection of Fairview Avenue and Wellington Road (2014 - 2019)										
Document Number	Date	Crash Severity	Collsion Type	Pedestrain Injury	Persons Injured	Fatalities	Direction of Travel	Work Zone Related	Adverse Weather Conditions	Distracted Driver
140915058	3/25/2014	C.Nonvisible Injury	9. Fixed Object - Off Road	0	1	0		no	yes	no
143445162	12/9/2014	C.Nonvisible Injury	2. Angle	0	1	0		no	yes	no
150305084	1/29/2015	PDO.Property Damage Only	1. Rear End	0	0	0		no	yes	no
151135165	4/22/2015	C.Nonvisible Injury	1. Rear End	0	1	0		no	no	no
152015216	7/16/2015	PDO.Property Damage Only	1. Rear End	0	0	0		no	no	no
152165097	7/29/2015	A.Severe Injury	1. Rear End	0	1	0		no	yes	no
152995140	10/25/2015	C.Nonvisible Injury	2. Angle	0	2	0		no	no	no
153075130	11/2/2015	C.Nonvisible Injury	2. Angle	0	1	0	West	no	no	no
160475269	2/15/2016	C.Nonvisible Injury	6. Fixed Object in Road	0	1	0		no	yes	no
161675176	6/14/2016	PDO.Property Damage Only	2. Angle	0	0	0		no	no	no
163655184	12/29/2016	C.Nonvisible Injury	1. Rear End	0	2	0		no	no	yes
171005284	3/22/2017	C.Nonvisible Injury	2. Angle	0	3	0		no	no	no
171875229	7/4/2017	PDO.Property Damage Only	3. Head On	0	0	0		no	no	no
182995170	10/25/2018	B.Visible Injury	1. Rear End	0	1	0		no	no	no
190565158	2/22/2019	B.Visible Injury	1. Rear End	0	2	0		no	no	no

D. HCM Level of Service Definitions

TECHNICAL MEMORANDUM

Subject: Level of Service Definitions

Introduction

The purpose of this memorandum is to define the level of service (LOS) metric that commonly used as a measure of effectiveness (MOE) for traffic operations.

All capacity analyses are based on the procedures specified by the Transportation Research Board's (TRB) Highway Capacity Manual (HCM), which is currently on its sixth edition. Level of service ranges from A to F. A brief description of each level of service for signalized and unsignalized intersections is provided below.

Signalized Intersections

Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The levels of service for signalized intersections are defined below:

- **Level of Service A** describes operations with very low average delay per vehicle, i.e., less than 10.0 seconds. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop. Short signal cycle lengths may also contribute to low delay.
- **Level of Service B** describes operations with average delay in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- **Level of Service C** describes operations with delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level although many still pass through the intersection without stopping. This is generally considered the lower end of the range of the acceptable level of service in rural areas.
- **Level of Service D** describes operations with delay in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and/or high traffic volumes as compared to the roadway capacity. Many vehicles are required to stop and the number of vehicles that do not have to stop declines. Individual signal cycle failures, where all waiting vehicles do not clear the intersection during a single green time, are noticeable. This is generally considered the lower end of the range of the acceptable level of service in urban areas.
- **Level of Service E** describes operations with delay in the range of 55.1 to 80.0 seconds per vehicle. These higher delay values generally indicate poor progression, long cycle lengths, and high traffic volumes. Individual cycle failures are frequent occurrences. LOS E has been set as the limit of acceptable conditions.
- **Level of Service F** describes operations with average delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when traffic arrives at a flow rate that exceeds the capacity of the intersection. It may also occur at high volumes with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such delays.

Unsignalized Intersections

At an unsignalized intersection, the major street through traffic and right-turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left-turn traffic is dependent on the volume and capacity of the available lanes, and, the number and frequency of acceptable gaps in the major street traffic to make a conflicting turn. The level of service grade is provided for each conflicting movement at an unsignalized intersection and is based on the total average delay experienced by each vehicle. The delay includes the time it takes a vehicle to move from the back of a queue through the intersection.

The unsignalized intersection level of service analysis does not account for variations in driver behavior or the effects of nearby traffic signals. Therefore, the results from this analysis usually indicate worse levels of service than may be experienced in the field. The unsignalized intersection level of service descriptions are provided below:

- **Level of Service A** describes operations where there is very little to no conflicting traffic for a minor side street movement, i.e., an average total delay of less than 10.0 seconds per vehicle.
- **Level of Service B** describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.
- **Level of Service C** describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.
- **Level of Service D** describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.
- **Level of Service E** describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.
- **Level of Service F** describes operations with average total delay of 50 seconds per vehicle. LOS F exists when there are insufficient gaps of suitable size to allow a side street demand to cross safely through or enter a major street traffic stream. This level of service is generally evident from extremely long total delays experienced by side street traffic and by queuing on the minor approaches. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal driver behavior.

E. Intersection Capacity Analysis Worksheets – 2022 Existing Conditions

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	1	160	0	1	5	258	473	1	1	222	50
Future Vol, veh/h	21	1	160	0	1	5	258	473	1	1	222	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	20	3	3	0	0	2	6
Mvmt Flow	23	1	174	0	1	5	280	514	1	1	241	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1348	1345	268	1433	1372	515	295	0	0	515	0	0
Stage 1	270	270	-	1075	1075	-	-	-	-	-	-	-
Stage 2	1078	1075	-	358	297	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.4	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.48	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	129	153	761	113	147	526	1261	-	-	1061	-	-
Stage 1	740	690	-	268	298	-	-	-	-	-	-	-
Stage 2	267	298	-	664	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	105	119	761	72	114	526	1261	-	-	1061	-	-
Mov Cap-2 Maneuver	105	119	-	72	114	-	-	-	-	-	-	-
Stage 1	576	689	-	209	232	-	-	-	-	-	-	-
Stage 2	205	232	-	511	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20	16.2	3.1	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1261	-	-	435	328	1061	-	-
HCM Lane V/C Ratio	0.222	-	-	0.455	0.02	0.001	-	-
HCM Control Delay (s)	8.7	-	-	20	16.2	8.4	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	2.3	0.1	0	-	-

Lane Group	EBT	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	6	32	317	504	182	222
v/c Ratio	0.03	0.13	0.65	0.65	0.39	0.18
Control Delay	35.2	31.3	11.1	23.1	8.8	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	31.3	11.1	23.1	8.8	6.6
Queue Length 50th (ft)	2	12	0	143	21	25
Queue Length 95th (ft)	16	43	75	#445	89	106
Internal Link Dist (ft)	120	611		282		588
Turn Bay Length (ft)			110		260	
Base Capacity (vph)	613	597	746	855	542	1218
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.05	0.42	0.59	0.34	0.18

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	4	1	0	29	1	301	0	436	43	173	205
Future Volume (vph)	1	4	1	0	29	1	301	0	436	43	173	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.3			6.1	6.1		6.5		6.5	6.5
Lane Util. Factor			1.00			1.00	1.00		1.00		1.00	1.00
Frt			1.00			1.00	0.85		0.99		1.00	1.00
Flt Protected			0.96			0.95	1.00		1.00		0.95	1.00
Satd. Flow (prot)			1824			1761	1583		1795		1719	1856
Flt Permitted			0.96			0.95	1.00		1.00		0.25	1.00
Satd. Flow (perm)			1824			1761	1583		1795		458	1856
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)	1	4	1	0	31	1	317	0	459	45	182	216
RTOR Reduction (vph)	0	0	0	0	0	0	277	0	2	0	0	0
Lane Group Flow (vph)	0	0	6	0	0	32	40	0	502	0	182	222
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	2%	0%	4%	9%	5%	2%
Turn Type	Split	Split	NA		Split	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	4	4	4		3	3		5	2		1	6
Permitted Phases							3	2			6	
Actuated Green, G (s)			1.2			9.8	9.8		31.4		47.4	47.4
Effective Green, g (s)			1.2			9.8	9.8		31.4		47.4	47.4
Actuated g/C Ratio			0.02			0.13	0.13		0.41		0.61	0.61
Clearance Time (s)			6.3			6.1	6.1		6.5		6.5	6.5
Vehicle Extension (s)			3.0			4.0	4.0		5.0		3.0	5.0
Lane Grp Cap (vph)			28			223	200		729		435	1138
v/s Ratio Prot			c0.00			0.02			c0.28		c0.05	0.12
v/s Ratio Perm							c0.03				0.20	
v/c Ratio			0.21			0.14	0.20		0.69		0.42	0.19
Uniform Delay, d1			37.6			30.0	30.2		18.9		9.1	6.6
Progression Factor			1.00			1.00	1.00		1.00		1.00	1.00
Incremental Delay, d2			3.8			0.4	0.7		3.5		0.7	0.2
Delay (s)			41.4			30.4	30.9		22.4		9.7	6.7
Level of Service			D			C	C		C		A	A
Approach Delay (s)			41.4			30.9			22.4			8.1
Approach LOS			D			C			C			A

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	25.4
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	6
Future Volume (vph)	6
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	6
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	2	1	2	1	473	2	1	231	3
Future Vol, veh/h	4	0	1	2	1	2	1	473	2	1	231	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	100	0	0	0	0	5	0	0	3	0
Mvmt Flow	5	0	1	2	1	2	1	556	2	1	272	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	837	836	274	836	837	557	276	0	0	558	0	0
Stage 1	276	276	-	559	559	-	-	-	-	-	-	-
Stage 2	561	560	-	277	278	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	7.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	4.2	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	288	305	579	289	305	534	1299	-	-	1023	-	-
Stage 1	735	685	-	517	514	-	-	-	-	-	-	-
Stage 2	516	514	-	734	684	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	285	304	579	288	304	534	1299	-	-	1023	-	-
Mov Cap-2 Maneuver	285	304	-	288	304	-	-	-	-	-	-	-
Stage 1	734	684	-	516	513	-	-	-	-	-	-	-
Stage 2	512	513	-	732	683	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.6	15.2	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	317	358	1023	-	-
HCM Lane V/C Ratio	0.001	-	-	0.019	0.016	0.001	-	-
HCM Control Delay (s)	7.8	0	-	16.6	15.2	8.5	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

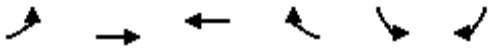
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	3	81	2	22	4	462	107	12	221	3
Future Vol, veh/h	2	1	3	81	2	22	4	462	107	12	221	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	0	2	0	5	25	4	5	17	2	0
Mvmt Flow	2	1	3	86	2	23	4	491	114	13	235	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	832	876	237	821	820	548	238	0	0	605	0	0
Stage 1	263	263	-	556	556	-	-	-	-	-	-	-
Stage 2	569	613	-	265	264	-	-	-	-	-	-	-
Critical Hdwy	8.1	6.5	6.2	7.12	6.5	6.25	4.35	-	-	4.27	-	-
Critical Hdwy Stg 1	7.1	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4	3.3	3.518	4	3.345	2.425	-	-	2.353	-	-
Pot Cap-1 Maneuver	200	290	807	293	312	530	1205	-	-	904	-	-
Stage 1	570	694	-	515	516	-	-	-	-	-	-	-
Stage 2	370	486	-	740	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	284	807	286	305	530	1205	-	-	904	-	-
Mov Cap-2 Maneuver	187	284	-	286	305	-	-	-	-	-	-	-
Stage 1	567	682	-	512	513	-	-	-	-	-	-	-
Stage 2	350	484	-	723	682	-	-	-	-	-	-	-

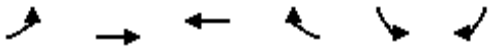
Approach	EB	WB	NB	SB
HCM Control Delay, s	16	22.4	0.1	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1205	-	-	335	317	904	-	-
HCM Lane V/C Ratio	0.004	-	-	0.019	0.352	0.014	-	-
HCM Control Delay (s)	8	0	-	16	22.4	9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.5	0	-	-



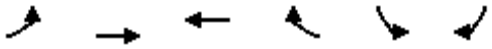
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	252	327	399	349	153	172
v/c Ratio	0.42	0.16	0.36	0.33	0.29	0.11
Control Delay	8.0	5.5	17.3	1.7	23.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	5.5	17.3	1.7	23.5	0.1
Queue Length 50th (ft)	34	22	55	0	26	0
Queue Length 95th (ft)	73	42	97	27	46	0
Internal Link Dist (ft)		1061	854		222	
Turn Bay Length (ft)	225			235		
Base Capacity (vph)	606	2065	1104	1221	978	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.16	0.36	0.29	0.16	0.11

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	239	311	379	332	145	163
Future Volume (vph)	239	311	379	332	145	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1	7.1	6.9	6.9	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	3374	3438	1553	3433	1583
Flt Permitted	0.38	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	683	3374	3438	1553	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	252	327	399	349	153	172
RTOR Reduction (vph)	0	0	0	183	0	0
Lane Group Flow (vph)	252	327	399	166	153	172
Heavy Vehicles (%)	5%	7%	5%	4%	2%	2%
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Free
Protected Phases	5	2	6	3	3	
Permitted Phases	2			6		Free
Actuated Green, G (s)	36.7	36.7	19.2	28.5	9.3	60.0
Effective Green, g (s)	36.7	36.7	19.2	28.5	9.3	60.0
Actuated g/C Ratio	0.61	0.61	0.32	0.48	0.16	1.00
Clearance Time (s)	7.1	7.1	7.1	6.9	6.9	
Vehicle Extension (s)	3.5	4.0	4.0	3.5	3.5	
Lane Grp Cap (vph)	597	2063	1100	737	532	1583
v/s Ratio Prot	c0.07	0.10	0.12	0.03	c0.04	
v/s Ratio Perm	c0.18			0.07		0.11
v/c Ratio	0.42	0.16	0.36	0.22	0.29	0.11
Uniform Delay, d1	5.9	5.0	15.7	9.3	22.4	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.9	0.2	0.4	0.1
Delay (s)	6.4	5.2	16.6	9.4	22.8	0.1
Level of Service	A	A	B	A	C	A
Approach Delay (s)		5.7	13.3		10.8	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	239	311	379	332	145	163
Future Volume (veh/h)	239	311	379	332	145	163
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1776	1810	1827	1863	1863
Adj Flow Rate, veh/h	252	327	399	349	153	0
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	7	5	4	2	2
Cap, veh/h	594	2172	1242	752	423	195
Arrive On Green	0.16	0.64	0.36	0.36	0.12	0.00
Sat Flow, veh/h	1723	3463	3529	1553	3442	1583
Grp Volume(v), veh/h	252	327	399	349	153	0
Grp Sat Flow(s),veh/h/ln	1723	1687	1719	1553	1721	1583
Q Serve(g_s), s	4.5	2.3	5.0	9.0	2.4	0.0
Cycle Q Clear(g_c), s	4.5	2.3	5.0	9.0	2.4	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	594	2172	1242	752	423	195
V/C Ratio(X)	0.42	0.15	0.32	0.46	0.36	0.00
Avail Cap(c_a), veh/h	625	2172	1242	752	981	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.5	4.2	13.8	10.3	24.2	0.0
Incr Delay (d2), s/veh	0.6	0.1	0.7	2.1	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	1.1	2.5	4.2	1.2	0.0
LnGrp Delay(d),s/veh	8.1	4.4	14.5	12.4	24.8	0.0
LnGrp LOS	A	A	B	B	C	
Approach Vol, veh/h		579	748		153	
Approach Delay, s/veh		6.0	13.5		24.8	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		45.7			17.0	28.8		14.3
Change Period (Y+Rc), s		7.1			7.1	7.1		6.9
Max Green Setting (Gmax), s		28.9			10.9	10.9		17.1
Max Q Clear Time (g_c+I1), s		4.3			6.5	11.0		4.4
Green Ext Time (p_c), s		3.1			0.4	0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	153	0	0	5	177	374	6	3	505	49
Future Vol, veh/h	16	2	153	0	0	5	177	374	6	3	505	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	0	20	1	2	0	0	2	0
Mvmt Flow	16	2	153	0	0	5	177	374	6	3	505	49

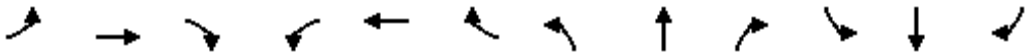
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1270	1270	530	1344	1291	377	554	0	0	380	0	0
Stage 1	536	536	-	731	731	-	-	-	-	-	-	-
Stage 2	734	734	-	613	560	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.21	7.1	6.5	6.4	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.309	3.5	4	3.48	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	146	170	551	130	165	632	1021	-	-	1190	-	-
Stage 1	532	527	-	416	430	-	-	-	-	-	-	-
Stage 2	415	429	-	483	514	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	140	551	80	136	632	1021	-	-	1190	-	-
Mov Cap-2 Maneuver	125	140	-	80	136	-	-	-	-	-	-	-
Stage 1	440	525	-	344	356	-	-	-	-	-	-	-
Stage 2	340	355	-	346	512	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.1	10.7	2.9	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1021	-	-	407	632	1190	-	-
HCM Lane V/C Ratio	0.173	-	-	0.42	0.008	0.003	-	-
HCM Control Delay (s)	9.3	-	-	20.1	10.7	8	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	2	0	0	-	-

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	42	217	1	394	275	415
v/c Ratio	0.02	0.16	0.51	0.00	0.68	0.49	0.39
Control Delay	31.8	29.3	9.9	8.0	25.7	9.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	29.3	9.9	8.0	25.7	9.6	11.3
Queue Length 50th (ft)	1	13	0	0	112	34	55
Queue Length 95th (ft)	13	53	63	2	282	123	271
Internal Link Dist (ft)	120	611			282		588
Turn Bay Length (ft)			110	260		260	
Base Capacity (vph)	739	705	779	721	1039	621	1119
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.06	0.28	0.00	0.38	0.44	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	2	0	40	0	206	1	340	34	261	393	1
Future Volume (vph)	2	2	0	40	0	206	1	340	34	261	393	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3			6.1	6.1	6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1854			1752	1615	1805	1841		1770	1862	
Flt Permitted		0.98			0.95	1.00	0.52	1.00		0.31	1.00	
Satd. Flow (perm)		1854			1752	1615	987	1841		580	1862	
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)	2	2	0	42	0	217	1	358	36	275	414	1
RTOR Reduction (vph)	0	0	0	0	0	189	0	3	0	0	0	0
Lane Group Flow (vph)	0	4	0	0	42	28	1	391	0	275	415	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	2%	0%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3	2			6		
Actuated Green, G (s)		1.1			9.3	9.3	26.7	25.6		43.5	35.9	
Effective Green, g (s)		1.1			9.3	9.3	26.7	25.6		43.5	35.9	
Actuated g/C Ratio		0.02			0.13	0.13	0.37	0.35		0.60	0.49	
Clearance Time (s)		6.3			6.1	6.1	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		28			223	206	374	647		532	918	
v/s Ratio Prot		c0.00			c0.02		0.00	c0.21		c0.08	0.22	
v/s Ratio Perm						0.02	0.00			0.23		
v/c Ratio		0.14			0.19	0.13	0.00	0.60		0.52	0.45	
Uniform Delay, d1		35.4			28.4	28.2	14.6	19.4		8.6	12.0	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.3			0.6	0.4	0.0	2.4		0.9	0.7	
Delay (s)		37.7			28.9	28.6	14.6	21.8		9.5	12.8	
Level of Service		D			C	C	B	C		A	B	
Approach Delay (s)		37.7			28.6			21.8			11.5	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	72.8	Sum of lost time (s)	25.4
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	3	1	0	0	3	369	0	1	431	7
Future Vol, veh/h	2	0	3	1	0	0	3	369	0	1	431	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	2	0	3	1	0	0	3	384	0	1	449	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	845	845	453	846	848	384	456	0	0	384	0	0
Stage 1	455	455	-	390	390	-	-	-	-	-	-	-
Stage 2	390	390	-	456	458	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	285	302	611	284	301	668	1115	-	-	1186	-	-
Stage 1	589	572	-	638	611	-	-	-	-	-	-	-
Stage 2	638	611	-	588	570	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	284	301	611	282	300	668	1115	-	-	1186	-	-
Mov Cap-2 Maneuver	284	301	-	282	300	-	-	-	-	-	-	-
Stage 1	587	571	-	636	609	-	-	-	-	-	-	-
Stage 2	636	609	-	584	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.7	17.8	0.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1115	-	-	418	282	1186	-	-
HCM Lane V/C Ratio	0.003	-	-	0.012	0.004	0.001	-	-
HCM Control Delay (s)	8.2	0	-	13.7	17.8	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

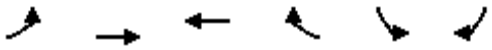
Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	3	150	2	9	7	364	159	18	415	4
Future Vol, veh/h	3	0	3	150	2	9	7	364	159	18	415	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	3	0	0	0	1	3	0	2	0
Mvmt Flow	3	0	3	156	2	9	7	379	166	19	432	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	954	1031	434	950	950	462	436	0	0	545	0	0
Stage 1	472	472	-	476	476	-	-	-	-	-	-	-
Stage 2	482	559	-	474	474	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	240	235	626	239	262	604	1134	-	-	1034	-	-
Stage 1	576	562	-	568	560	-	-	-	-	-	-	-
Stage 2	569	514	-	569	561	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	229	227	626	232	253	604	1134	-	-	1034	-	-
Mov Cap-2 Maneuver	229	227	-	232	253	-	-	-	-	-	-	-
Stage 1	571	549	-	563	555	-	-	-	-	-	-	-
Stage 2	553	509	-	553	548	-	-	-	-	-	-	-

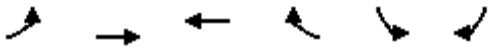
Approach	EB	WB	NB	SB
HCM Control Delay, s	16	48.3	0.1	0.4
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1134	-	-	335	241	1034	-	-
HCM Lane V/C Ratio	0.006	-	-	0.019	0.696	0.018	-	-
HCM Control Delay (s)	8.2	0	-	16	48.3	8.5	0	-
HCM Lane LOS	A	A	-	C	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	4.6	0.1	-	-



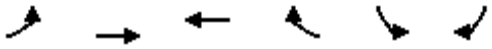
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	267	542	467	277	300	288
v/c Ratio	0.43	0.24	0.32	0.24	0.51	0.18
Control Delay	8.6	6.4	16.7	1.2	30.7	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	6.4	16.7	1.2	30.7	0.3
Queue Length 50th (ft)	44	47	75	0	66	0
Queue Length 95th (ft)	93	84	124	21	94	0
Internal Link Dist (ft)		1061	854		222	
Turn Bay Length (ft)	225			235		
Base Capacity (vph)	621	2296	1443	1436	1298	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.24	0.32	0.19	0.23	0.18

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	259	526	453	269	291	279
Future Volume (vph)	259	526	453	269	291	279
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1	7.1	6.9	6.9	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3574	3539	1599	3467	1568
Flt Permitted	0.39	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	732	3574	3539	1599	3467	1568
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	267	542	467	277	300	288
RTOR Reduction (vph)	0	0	0	117	0	0
Lane Group Flow (vph)	267	542	467	160	300	288
Heavy Vehicles (%)	2%	1%	2%	1%	1%	3%
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Free
Protected Phases	5	2	6	3	3	
Permitted Phases	2			6		Free
Actuated Green, G (s)	48.2	48.2	30.6	43.4	12.8	75.0
Effective Green, g (s)	48.2	48.2	30.6	43.4	12.8	75.0
Actuated g/C Ratio	0.64	0.64	0.41	0.58	0.17	1.00
Clearance Time (s)	7.1	7.1	7.1	6.9	6.9	
Vehicle Extension (s)	3.5	4.0	4.0	3.5	3.5	
Lane Grp Cap (vph)	615	2296	1443	925	591	1568
v/s Ratio Prot	c0.06	0.15	0.13	0.03	c0.09	
v/s Ratio Perm	c0.22			0.07		0.18
v/c Ratio	0.43	0.24	0.32	0.17	0.51	0.18
Uniform Delay, d1	6.1	5.6	15.1	7.4	28.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.6	0.1	0.8	0.3
Delay (s)	6.7	5.9	15.7	7.5	29.1	0.3
Level of Service	A	A	B	A	C	A
Approach Delay (s)		6.2	12.7		14.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	259	526	453	269	291	279
Future Volume (veh/h)	259	526	453	269	291	279
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1863	1881	1881	1845
Adj Flow Rate, veh/h	267	542	467	277	300	0
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	1	1	3
Cap, veh/h	601	2457	1627	937	438	198
Arrive On Green	0.13	0.69	0.46	0.46	0.13	0.00
Sat Flow, veh/h	1774	3668	3632	1599	3476	1568
Grp Volume(v), veh/h	267	542	467	277	300	0
Grp Sat Flow(s),veh/h/ln	1774	1787	1770	1599	1738	1568
Q Serve(g_s), s	5.1	4.2	6.2	6.5	6.2	0.0
Cycle Q Clear(g_c), s	5.1	4.2	6.2	6.5	6.2	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	601	2457	1627	937	438	198
V/C Ratio(X)	0.44	0.22	0.29	0.30	0.68	0.00
Avail Cap(c_a), veh/h	623	2457	1627	937	1302	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.1	4.3	12.6	7.8	31.3	0.0
Incr Delay (d2), s/veh	0.6	0.2	0.4	0.8	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.1	3.1	3.1	3.1	0.0
LnGrp Delay(d),s/veh	7.7	4.5	13.1	8.6	33.6	0.0
LnGrp LOS	A	A	B	A	C	
Approach Vol, veh/h		809	744		300	
Approach Delay, s/veh		5.6	11.4		33.6	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		58.6			17.1	41.6		16.4
Change Period (Y+Rc), s		7.1			7.1	7.1		6.9
Max Green Setting (Gmax), s		32.9			10.9	14.9		28.1
Max Q Clear Time (g_c+I1), s		6.2			7.1	8.5		8.2
Green Ext Time (p_c), s		5.6			0.4	2.9		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

F. Intersection Capacity Analysis Worksheets – 2027 Future without Development

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	1	164	0	1	5	259	510	1	1	262	50
Future Vol, veh/h	21	1	164	0	1	5	259	510	1	1	262	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	20	3	3	0	0	2	6
Mvmt Flow	23	1	178	0	1	5	282	554	1	1	285	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1436	1433	312	1523	1460	555	339	0	0	555	0	0
Stage 1	314	314	-	1119	1119	-	-	-	-	-	-	-
Stage 2	1122	1119	-	404	341	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.4	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.48	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	112	135	719	98	130	498	1215	-	-	1026	-	-
Stage 1	701	660	-	253	285	-	-	-	-	-	-	-
Stage 2	252	285	-	627	642	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	90	104	719	60	100	498	1215	-	-	1026	-	-
Mov Cap-2 Maneuver	90	104	-	60	100	-	-	-	-	-	-	-
Stage 1	538	659	-	194	219	-	-	-	-	-	-	-
Stage 2	190	219	-	470	641	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.3	17.3	3	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1215	-	-	395	299	1026	-	-
HCM Lane V/C Ratio	0.232	-	-	0.512	0.022	0.001	-	-
HCM Control Delay (s)	8.9	-	-	23.3	17.3	8.5	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	2.8	0.1	0	-	-

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	45	317	4	536	182	268
v/c Ratio	0.10	0.20	0.66	0.01	0.68	0.40	0.24
Control Delay	38.7	35.3	11.9	9.2	26.4	10.1	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	35.3	11.9	9.2	26.4	10.1	10.9
Queue Length 50th (ft)	7	18	0	1	158	21	32
Queue Length 95th (ft)	34	55	75	6	#494	90	176
Internal Link Dist (ft)	120	611			282		588
Turn Bay Length (ft)			110	260		260	
Base Capacity (vph)	565	560	711	809	785	522	1133
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.08	0.45	0.00	0.68	0.35	0.24

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	12	5	0	29	13	301	4	466	43	173	223
Future Volume (vph)	1	12	5	0	29	13	301	4	466	43	173	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.3			6.1	6.1	6.5	6.5		6.5	6.5
Lane Util. Factor			1.00			1.00	1.00	1.00	1.00		1.00	1.00
Frt			1.00			1.00	0.85	1.00	0.99		1.00	0.98
Flt Protected			0.96			0.97	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)			1832			1800	1583	1805	1797		1719	1833
Flt Permitted			0.96			0.97	1.00	0.59	1.00		0.26	1.00
Satd. Flow (perm)			1832			1800	1583	1129	1797		471	1833
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)	1	13	5	0	31	14	317	4	491	45	182	235
RTOR Reduction (vph)	0	0	0	0	0	0	281	0	2	0	0	3
Lane Group Flow (vph)	0	0	19	0	0	45	36	4	534	0	182	265
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	2%	0%	4%	9%	5%	2%
Turn Type	Split	Split	NA		Split	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	4	4	4		3	3		5	2		1	6
Permitted Phases							3	2			6	
Actuated Green, G (s)			2.7			10.0	10.0	41.1	39.8		56.2	48.4
Effective Green, g (s)			2.7			10.0	10.0	41.1	39.8		56.2	48.4
Actuated g/C Ratio			0.03			0.11	0.11	0.47	0.45		0.64	0.55
Clearance Time (s)			6.3			6.1	6.1	6.5	6.5		6.5	6.5
Vehicle Extension (s)			3.0			4.0	4.0	3.0	5.0		3.0	5.0
Lane Grp Cap (vph)			56			205	180	538	814		442	1010
v/s Ratio Prot			c0.01			c0.03		0.00	c0.30		c0.05	0.14
v/s Ratio Perm							0.02	0.00			0.22	
v/c Ratio			0.34			0.22	0.20	0.01	0.66		0.41	0.26
Uniform Delay, d1			41.7			35.4	35.3	12.4	18.7		9.4	10.3
Progression Factor			1.00			1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2			3.6			0.7	0.8	0.0	2.6		0.6	0.3
Delay (s)			45.3			36.1	36.0	12.5	21.2		10.0	10.6
Level of Service			D			D	D	B	C		A	B
Approach Delay (s)			45.3			36.0			21.2			10.4
Approach LOS			D			D			C			B

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	25.4
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	31
Future Volume (vph)	31
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	33
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	2	1	2	1	542	2	1	259	3
Future Vol, veh/h	4	0	1	2	1	2	1	542	2	1	259	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	100	0	0	0	0	5	0	0	3	0
Mvmt Flow	4	0	1	2	1	2	1	589	2	1	282	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	880	879	284	878	879	590	285	0	0	591	0	0
Stage 1	286	286	-	592	592	-	-	-	-	-	-	-
Stage 2	594	593	-	286	287	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	7.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	4.2	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	270	288	571	271	288	511	1289	-	-	995	-	-
Stage 1	726	679	-	496	497	-	-	-	-	-	-	-
Stage 2	495	497	-	726	678	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	268	287	571	270	287	511	1289	-	-	995	-	-
Mov Cap-2 Maneuver	268	287	-	270	287	-	-	-	-	-	-	-
Stage 1	725	678	-	496	497	-	-	-	-	-	-	-
Stage 2	491	497	-	724	677	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	15.8	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1289	-	-	300	338	995	-	-
HCM Lane V/C Ratio	0.001	-	-	0.018	0.016	0.001	-	-
HCM Control Delay (s)	7.8	0	-	17.2	15.8	8.6	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

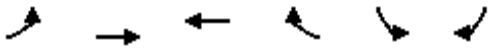
Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	3	81	2	26	4	527	107	13	248	3
Future Vol, veh/h	2	1	3	81	2	26	4	527	107	13	248	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	0	2	0	5	25	4	5	17	2	0
Mvmt Flow	2	1	3	86	2	28	4	561	114	14	264	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	935	977	266	922	921	618	267	0	0	675	0	0
Stage 1	294	294	-	626	626	-	-	-	-	-	-	-
Stage 2	641	683	-	296	295	-	-	-	-	-	-	-
Critical Hdwy	8.1	6.5	6.2	7.12	6.5	6.25	4.35	-	-	4.27	-	-
Critical Hdwy Stg 1	7.1	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4	3.3	3.518	4	3.345	2.425	-	-	2.353	-	-
Pot Cap-1 Maneuver	167	253	778	251	273	484	1175	-	-	850	-	-
Stage 1	545	673	-	472	480	-	-	-	-	-	-	-
Stage 2	333	452	-	712	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	153	247	778	244	266	484	1175	-	-	850	-	-
Mov Cap-2 Maneuver	153	247	-	244	266	-	-	-	-	-	-	-
Stage 1	542	660	-	469	477	-	-	-	-	-	-	-
Stage 2	311	449	-	694	660	-	-	-	-	-	-	-

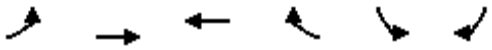
Approach	EB	WB	NB	SB
HCM Control Delay, s	17.9	27	0.1	0.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1175	-	-	286	277	850	-	-
HCM Lane V/C Ratio	0.004	-	-	0.022	0.419	0.016	-	-
HCM Control Delay (s)	8.1	0	-	17.9	27	9.3	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	2	0.1	-	-



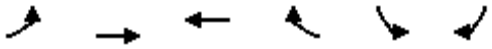
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	277	344	419	392	168	184
v/c Ratio	0.47	0.17	0.39	0.37	0.31	0.12
Control Delay	8.9	5.8	18.0	2.5	23.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	5.8	18.0	2.5	23.2	0.1
Queue Length 50th (ft)	38	23	59	9	28	0
Queue Length 95th (ft)	85	46	105	40	48	0
Internal Link Dist (ft)		1061	854		222	
Turn Bay Length (ft)	225			235		
Base Capacity (vph)	596	2046	1081	1207	978	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.17	0.39	0.32	0.17	0.12

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	263	327	398	372	160	175
Future Volume (vph)	263	327	398	372	160	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1	7.1	6.9	6.9	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	3374	3438	1553	3433	1583
Flt Permitted	0.37	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	667	3374	3438	1553	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	277	344	419	392	168	184
RTOR Reduction (vph)	0	0	0	172	0	0
Lane Group Flow (vph)	277	344	419	220	168	184
Heavy Vehicles (%)	5%	7%	5%	4%	2%	2%
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Free
Protected Phases	5	2	6	3	3	
Permitted Phases	2			6		Free
Actuated Green, G (s)	36.4	36.4	18.9	28.5	9.6	60.0
Effective Green, g (s)	36.4	36.4	18.9	28.5	9.6	60.0
Actuated g/C Ratio	0.61	0.61	0.31	0.48	0.16	1.00
Clearance Time (s)	7.1	7.1	7.1	6.9	6.9	
Vehicle Extension (s)	3.5	4.0	4.0	3.5	3.5	
Lane Grp Cap (vph)	586	2046	1082	737	549	1583
v/s Ratio Prot	c0.08	0.10	0.12	0.05	c0.05	
v/s Ratio Perm	c0.20			0.09		0.12
v/c Ratio	0.47	0.17	0.39	0.30	0.31	0.12
Uniform Delay, d1	6.1	5.2	16.0	9.6	22.3	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.2	1.0	0.3	0.4	0.1
Delay (s)	6.8	5.3	17.1	9.9	22.6	0.1
Level of Service	A	A	B	A	C	A
Approach Delay (s)		6.0	13.6		10.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	263	327	398	372	160	175
Future Volume (veh/h)	263	327	398	372	160	175
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1776	1810	1827	1863	1863
Adj Flow Rate, veh/h	277	344	419	392	168	0
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	7	5	4	2	2
Cap, veh/h	579	2164	1231	751	431	198
Arrive On Green	0.17	0.64	0.36	0.36	0.13	0.00
Sat Flow, veh/h	1723	3463	3529	1553	3442	1583
Grp Volume(v), veh/h	277	344	419	392	168	0
Grp Sat Flow(s),veh/h/ln	1723	1687	1719	1553	1721	1583
Q Serve(g_s), s	5.1	2.4	5.3	10.5	2.7	0.0
Cycle Q Clear(g_c), s	5.1	2.4	5.3	10.5	2.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	579	2164	1231	751	431	198
V/C Ratio(X)	0.48	0.16	0.34	0.52	0.39	0.00
Avail Cap(c_a), veh/h	608	2164	1231	751	981	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.8	4.3	14.1	10.7	24.1	0.0
Incr Delay (d2), s/veh	0.7	0.2	0.8	2.6	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	1.1	2.6	5.0	1.3	0.0
LnGrp Delay(d),s/veh	8.6	4.5	14.8	13.3	24.8	0.0
LnGrp LOS	A	A	B	B	C	
Approach Vol, veh/h		621	811		168	
Approach Delay, s/veh		6.3	14.1		24.8	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		45.6			17.0	28.6		14.4
Change Period (Y+Rc), s		7.1			7.1	7.1		6.9
Max Green Setting (Gmax), s		28.9			10.9	10.9		17.1
Max Q Clear Time (g_c+I1), s		4.4			7.1	12.5		4.7
Green Ext Time (p_c), s		3.3			0.4	0.0		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	154	0	0	5	179	412	6	3	537	49
Future Vol, veh/h	16	2	154	0	0	5	179	412	6	3	537	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	0	20	1	2	0	0	2	0
Mvmt Flow	16	2	154	0	0	5	179	412	6	3	537	49

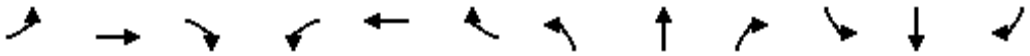
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1344	1344	562	1419	1365	415	586	0	0	418	0	0
Stage 1	568	568	-	773	773	-	-	-	-	-	-	-
Stage 2	776	776	-	646	592	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.21	7.1	6.5	6.4	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.309	3.5	4	3.48	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	130	153	528	115	149	601	994	-	-	1152	-	-
Stage 1	511	510	-	395	412	-	-	-	-	-	-	-
Stage 2	393	410	-	464	497	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	111	125	528	69	122	601	994	-	-	1152	-	-
Mov Cap-2 Maneuver	111	125	-	69	122	-	-	-	-	-	-	-
Stage 1	419	508	-	324	338	-	-	-	-	-	-	-
Stage 2	320	336	-	326	495	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	11	2.8	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	994	-	-	381	601	1152	-	-
HCM Lane V/C Ratio	0.18	-	-	0.451	0.008	0.003	-	-
HCM Control Delay (s)	9.4	-	-	22	11	8.1	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	2.3	0	0	-	-

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	44	217	2	423	275	449
v/c Ratio	0.10	0.18	0.53	0.00	0.71	0.50	0.42
Control Delay	36.2	33.9	10.8	9.0	28.7	11.1	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	33.9	10.8	9.0	28.7	11.1	12.9
Queue Length 50th (ft)	7	14	0	0	127	34	61
Queue Length 95th (ft)	36	56	63	3	309	123	300
Internal Link Dist (ft)	120	611			282		588
Turn Bay Length (ft)			110	260		260	
Base Capacity (vph)	665	643	727	681	944	577	1084
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.07	0.30	0.00	0.45	0.48	0.41

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	7	0	40	2	206	2	368	34	261	422	5
Future Volume (vph)	14	7	0	40	2	206	2	368	34	261	422	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3			6.1	6.1	6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1837			1763	1615	1805	1842		1770	1860	
Flt Permitted		0.97			0.95	1.00	0.50	1.00		0.29	1.00	
Satd. Flow (perm)		1837			1763	1615	956	1842		537	1860	
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)	15	7	0	42	2	217	2	387	36	275	444	5
RTOR Reduction (vph)	0	0	0	0	0	190	0	3	0	0	0	0
Lane Group Flow (vph)	0	22	0	0	44	27	2	420	0	275	449	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	2%	0%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3	2			6		
Actuated Green, G (s)		2.5			9.6	9.6	29.6	28.4		47.5	39.8	
Effective Green, g (s)		2.5			9.6	9.6	29.6	28.4		47.5	39.8	
Actuated g/C Ratio		0.03			0.12	0.12	0.38	0.36		0.61	0.51	
Clearance Time (s)		6.3			6.1	6.1	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		58			215	197	373	666		522	943	
v/s Ratio Prot		c0.01			c0.02		0.00	c0.23		c0.08	0.24	
v/s Ratio Perm						0.02	0.00			0.23		
v/c Ratio		0.38			0.20	0.13	0.01	0.63		0.53	0.48	
Uniform Delay, d1		37.2			31.0	30.7	15.2	20.7		9.4	12.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.1			0.6	0.4	0.0	2.7		1.0	0.8	
Delay (s)		41.4			31.7	31.2	15.3	23.4		10.3	13.4	
Level of Service		D			C	C	B	C		B	B	
Approach Delay (s)		41.4			31.3			23.4			12.2	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	25.4
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	3	1	0	0	3	401	0	1	478	7
Future Vol, veh/h	2	0	3	1	0	0	3	401	0	1	478	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	2	0	3	1	0	0	3	418	0	1	498	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	928	928	502	929	931	418	505	0	0	418	0	0
Stage 1	504	504	-	424	424	-	-	-	-	-	-	-
Stage 2	424	424	-	505	507	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	250	270	573	250	269	639	1070	-	-	1152	-	-
Stage 1	554	544	-	612	590	-	-	-	-	-	-	-
Stage 2	612	590	-	553	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	249	269	573	248	268	639	1070	-	-	1152	-	-
Mov Cap-2 Maneuver	249	269	-	248	268	-	-	-	-	-	-	-
Stage 1	552	543	-	610	588	-	-	-	-	-	-	-
Stage 2	610	588	-	549	542	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	19.6	0.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1070	-	-	377	248	1152	-	-
HCM Lane V/C Ratio	0.003	-	-	0.014	0.004	0.001	-	-
HCM Control Delay (s)	8.4	0	-	14.7	19.6	8.1	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

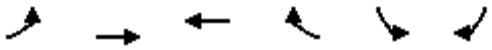
Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	3	150	2	9	7	396	159	20	460	4
Future Vol, veh/h	3	0	3	150	2	9	7	396	159	20	460	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	3	0	0	0	1	3	0	2	0
Mvmt Flow	3	0	3	156	2	9	7	413	166	21	479	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1039	1116	481	1035	1035	496	483	0	0	579	0	0
Stage 1	523	523	-	510	510	-	-	-	-	-	-	-
Stage 2	516	593	-	525	525	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	211	209	589	209	234	578	1090	-	-	1005	-	-
Stage 1	541	534	-	544	541	-	-	-	-	-	-	-
Stage 2	546	497	-	534	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	200	201	589	202	225	578	1090	-	-	1005	-	-
Mov Cap-2 Maneuver	200	201	-	202	225	-	-	-	-	-	-	-
Stage 1	536	519	-	539	536	-	-	-	-	-	-	-
Stage 2	530	492	-	516	518	-	-	-	-	-	-	-

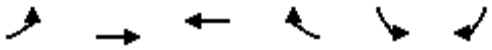
Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	67.5	0.1	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1090	-	-	299	210	1005	-	-
HCM Lane V/C Ratio	0.007	-	-	0.021	0.799	0.021	-	-
HCM Control Delay (s)	8.3	0	-	17.3	67.5	8.7	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	5.7	0.1	-	-



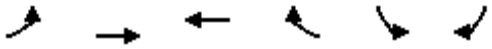
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	281	570	491	295	327	307
v/c Ratio	0.47	0.25	0.35	0.25	0.52	0.20
Control Delay	9.5	6.8	17.5	1.4	30.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	6.8	17.5	1.4	30.3	0.3
Queue Length 50th (ft)	51	54	82	4	71	0
Queue Length 95th (ft)	101	91	132	26	102	0
Internal Link Dist (ft)		1061	854		222	
Turn Bay Length (ft)	225			235		
Base Capacity (vph)	598	2260	1405	1421	1298	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.25	0.35	0.21	0.25	0.20

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	273	553	476	286	317	298
Future Volume (vph)	273	553	476	286	317	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1	7.1	6.9	6.9	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3574	3539	1599	3467	1568
Flt Permitted	0.38	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	700	3574	3539	1599	3467	1568
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	281	570	491	295	327	307
RTOR Reduction (vph)	0	0	0	113	0	0
Lane Group Flow (vph)	281	570	491	182	327	307
Heavy Vehicles (%)	2%	1%	2%	1%	1%	3%
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Free
Protected Phases	5	2	6	3	3	
Permitted Phases	2			6		Free
Actuated Green, G (s)	47.4	47.4	29.8	43.4	13.6	75.0
Effective Green, g (s)	47.4	47.4	29.8	43.4	13.6	75.0
Actuated g/C Ratio	0.63	0.63	0.40	0.58	0.18	1.00
Clearance Time (s)	7.1	7.1	7.1	6.9	6.9	
Vehicle Extension (s)	3.5	4.0	4.0	3.5	3.5	
Lane Grp Cap (vph)	592	2258	1406	925	628	1568
v/s Ratio Prot	c0.07	0.16	0.14	0.04	c0.09	
v/s Ratio Perm	c0.23			0.08		0.20
v/c Ratio	0.47	0.25	0.35	0.20	0.52	0.20
Uniform Delay, d1	6.6	6.0	15.8	7.5	27.8	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.3	0.7	0.1	0.9	0.3
Delay (s)	7.3	6.3	16.5	7.6	28.6	0.3
Level of Service	A	A	B	A	C	A
Approach Delay (s)		6.6	13.2		14.9	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	273	553	476	286	317	298
Future Volume (veh/h)	273	553	476	286	317	298
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1863	1881	1881	1845
Adj Flow Rate, veh/h	281	570	491	295	327	0
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	1	1	3
Cap, veh/h	580	2424	1595	937	469	212
Arrive On Green	0.13	0.68	0.45	0.45	0.14	0.00
Sat Flow, veh/h	1774	3668	3632	1599	3476	1568
Grp Volume(v), veh/h	281	570	491	295	327	0
Grp Sat Flow(s),veh/h/ln	1774	1787	1770	1599	1738	1568
Q Serve(g_s), s	5.5	4.6	6.6	7.0	6.7	0.0
Cycle Q Clear(g_c), s	5.5	4.6	6.6	7.0	6.7	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	580	2424	1595	937	469	212
V/C Ratio(X)	0.48	0.24	0.31	0.31	0.70	0.00
Avail Cap(c_a), veh/h	602	2424	1595	937	1302	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.6	4.6	13.1	7.9	31.0	0.0
Incr Delay (d2), s/veh	0.8	0.2	0.5	0.9	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	2.3	3.3	3.3	3.4	0.0
LnGrp Delay(d),s/veh	8.4	4.8	13.6	8.8	33.2	0.0
LnGrp LOS	A	A	B	A	C	
Approach Vol, veh/h		851	786		327	
Approach Delay, s/veh		6.0	11.8		33.2	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		58.0			17.1	40.9		17.0
Change Period (Y+Rc), s		7.1			7.1	7.1		6.9
Max Green Setting (Gmax), s		32.9			10.9	14.9		28.1
Max Q Clear Time (g_c+I1), s		6.6			7.5	9.0		8.7
Green Ext Time (p_c), s		6.0			0.4	2.9		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	12.9
HCM 2010 LOS	B

G. Intersection Capacity Analysis Worksheets – 2027 Future with Development

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	1	168	0	1	5	262	530	1	1	287	50
Future Vol, veh/h	21	1	168	0	1	5	262	530	1	1	287	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	6	0	0	20	3	3	0	0	2	6
Mvmt Flow	23	1	183	0	1	5	285	576	1	1	312	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1491	1488	339	1580	1515	577	366	0	0	577	0	0
Stage 1	341	341	-	1147	1147	-	-	-	-	-	-	-
Stage 2	1150	1147	-	433	368	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.26	7.1	6.5	6.4	4.13	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.354	3.5	4	3.48	2.227	-	-	2.2	-	-
Pot Cap-1 Maneuver	103	125	694	89	121	484	1187	-	-	1006	-	-
Stage 1	678	642	-	244	276	-	-	-	-	-	-	-
Stage 2	243	276	-	605	625	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	82	95	694	53	92	484	1187	-	-	1006	-	-
Mov Cap-2 Maneuver	82	95	-	53	92	-	-	-	-	-	-	-
Stage 1	515	641	-	185	210	-	-	-	-	-	-	-
Stage 2	182	210	-	445	624	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.9	18	3	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1187	-	-	374	283	1006	-	-
HCM Lane V/C Ratio	0.24	-	-	0.552	0.023	0.001	-	-
HCM Control Delay (s)	9	-	-	25.9	18	8.6	0	-
HCM Lane LOS	A	-	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.9	-	-	3.2	0.1	0	-	-

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	58	317	4	571	182	298
v/c Ratio	0.10	0.25	0.66	0.01	0.73	0.42	0.26
Control Delay	38.9	36.0	11.7	9.2	28.4	10.6	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.9	36.0	11.7	9.2	28.4	10.6	11.2
Queue Length 50th (ft)	8	23	0	1	176	22	37
Queue Length 95th (ft)	34	67	75	6	#544	90	198
Internal Link Dist (ft)	120	611			159		588
Turn Bay Length (ft)			110			260	
Base Capacity (vph)	563	555	709	794	781	497	1130
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.10	0.45	0.01	0.73	0.37	0.26

Intersection Summary

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

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	12	5	0	42	13	301	4	489	53	173	252
Future Volume (vph)	1	12	5	0	42	13	301	4	489	53	173	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			6.3			6.1	6.1	6.5	6.5		6.5	6.5
Lane Util. Factor			1.00			1.00	1.00	1.00	1.00		1.00	1.00
Frt			1.00			1.00	0.85	1.00	0.99		1.00	0.98
Flt Protected			0.96			0.96	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)			1832			1790	1583	1805	1792		1719	1836
Flt Permitted			0.96			0.96	1.00	0.58	1.00		0.23	1.00
Satd. Flow (perm)			1832			1790	1583	1098	1792		420	1836
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)	1	13	5	0	44	14	317	4	515	56	182	265
RTOR Reduction (vph)	0	0	0	0	0	0	280	0	3	0	0	2
Lane Group Flow (vph)	0	0	19	0	0	58	37	4	568	0	182	296
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	2%	0%	4%	9%	5%	2%
Turn Type	Split	Split	NA		Split	NA	Perm	pm+pt	NA		pm+pt	NA
Protected Phases	4	4	4		3	3		5	2		1	6
Permitted Phases							3	2			6	
Actuated Green, G (s)			2.7			10.2	10.2	41.1	39.8		56.2	48.4
Effective Green, g (s)			2.7			10.2	10.2	41.1	39.8		56.2	48.4
Actuated g/C Ratio			0.03			0.12	0.12	0.47	0.45		0.64	0.55
Clearance Time (s)			6.3			6.1	6.1	6.5	6.5		6.5	6.5
Vehicle Extension (s)			3.0			4.0	4.0	3.0	5.0		3.0	5.0
Lane Grp Cap (vph)			56			207	183	523	810		414	1009
v/s Ratio Prot			c0.01			c0.03		0.00	c0.32		c0.05	0.16
v/s Ratio Perm							0.02	0.00			0.23	
v/c Ratio			0.34			0.28	0.20	0.01	0.70		0.44	0.29
Uniform Delay, d1			41.8			35.5	35.2	12.5	19.3		10.1	10.6
Progression Factor			1.00			1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2			3.6			1.0	0.7	0.0	3.5		0.7	0.3
Delay (s)			45.4			36.6	36.0	12.5	22.8		10.8	11.0
Level of Service			D			D	D	B	C		B	B
Approach Delay (s)			45.4			36.0			22.7			10.9
Approach LOS			D			D			C			B

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	88.0	Sum of lost time (s)	25.4
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	31
Future Volume (vph)	31
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.95
Adj. Flow (vph)	33
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	17	2	1	2	33	552	2	1	277	11
Future Vol, veh/h	8	0	17	2	1	2	33	552	2	1	277	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	100	0	0	0	0	5	0	0	3	0
Mvmt Flow	9	0	18	2	1	2	36	600	2	1	301	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	984	983	307	991	988	601	313	0	0	602	0	0
Stage 1	309	309	-	673	673	-	-	-	-	-	-	-
Stage 2	675	674	-	318	315	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	7.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	4.2	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	229	251	552	227	249	504	1259	-	-	985	-	-
Stage 1	705	663	-	448	457	-	-	-	-	-	-	-
Stage 2	447	457	-	698	659	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	220	240	552	212	238	504	1259	-	-	985	-	-
Mov Cap-2 Maneuver	220	240	-	212	238	-	-	-	-	-	-	-
Stage 1	675	662	-	429	437	-	-	-	-	-	-	-
Stage 2	425	437	-	674	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.4	17.9	0.4	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1259	-	-	372	284	985	-	-
HCM Lane V/C Ratio	0.028	-	-	0.073	0.019	0.001	-	-
HCM Control Delay (s)	7.9	0	-	15.4	17.9	8.7	-	-
HCM Lane LOS	A	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-	-

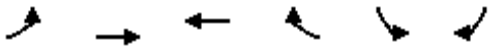
Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	3	81	2	30	4	565	107	16	279	3
Future Vol, veh/h	2	1	3	81	2	30	4	565	107	16	279	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	100	0	0	2	0	5	25	4	5	17	2	0
Mvmt Flow	2	1	3	86	2	32	4	601	114	17	297	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1016	1056	299	1001	1000	658	300	0	0	715	0	0
Stage 1	333	333	-	666	666	-	-	-	-	-	-	-
Stage 2	683	723	-	335	334	-	-	-	-	-	-	-
Critical Hdwy	8.1	6.5	6.2	7.12	6.5	6.25	4.35	-	-	4.27	-	-
Critical Hdwy Stg 1	7.1	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.1	5.5	-	6.12	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.4	4	3.3	3.518	4	3.345	2.425	-	-	2.353	-	-
Pot Cap-1 Maneuver	145	227	745	222	245	459	1141	-	-	820	-	-
Stage 1	516	647	-	449	460	-	-	-	-	-	-	-
Stage 2	314	434	-	679	647	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	131	220	745	215	237	459	1141	-	-	820	-	-
Mov Cap-2 Maneuver	131	220	-	215	237	-	-	-	-	-	-	-
Stage 1	513	631	-	446	457	-	-	-	-	-	-	-
Stage 2	289	431	-	658	631	-	-	-	-	-	-	-

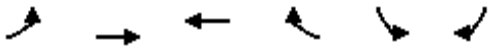
Approach	EB	WB	NB	SB
HCM Control Delay, s	19.7	31.9	0	0.5
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1141	-	-	252	251	820	-	-
HCM Lane V/C Ratio	0.004	-	-	0.025	0.479	0.021	-	-
HCM Control Delay (s)	8.2	0	-	19.7	31.9	9.5	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	2.4	0.1	-	-



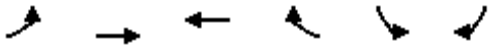
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	291	344	419	418	192	194
v/c Ratio	0.50	0.17	0.40	0.40	0.34	0.12
Control Delay	9.5	5.9	18.4	3.1	23.3	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	5.9	18.4	3.1	23.3	0.2
Queue Length 50th (ft)	42	24	61	16	32	0
Queue Length 95th (ft)	92	47	106	50	53	0
Internal Link Dist (ft)		1061	854		222	
Turn Bay Length (ft)	225			235		
Base Capacity (vph)	590	2030	1060	1193	978	1583
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.17	0.40	0.35	0.20	0.12

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	276	327	398	397	182	184
Future Volume (vph)	276	327	398	397	182	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1	7.1	6.9	6.9	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719	3374	3438	1553	3433	1583
Flt Permitted	0.37	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	663	3374	3438	1553	3433	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	291	344	419	418	192	194
RTOR Reduction (vph)	0	0	0	161	0	0
Lane Group Flow (vph)	291	344	419	257	192	194
Heavy Vehicles (%)	5%	7%	5%	4%	2%	2%
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Free
Protected Phases	5	2	6	3	3	
Permitted Phases	2			6		Free
Actuated Green, G (s)	36.1	36.1	18.5	28.4	9.9	60.0
Effective Green, g (s)	36.1	36.1	18.5	28.4	9.9	60.0
Actuated g/C Ratio	0.60	0.60	0.31	0.47	0.17	1.00
Clearance Time (s)	7.1	7.1	7.1	6.9	6.9	
Vehicle Extension (s)	3.5	4.0	4.0	3.5	3.5	
Lane Grp Cap (vph)	583	2030	1060	735	566	1583
v/s Ratio Prot	c0.09	0.10	0.12	c0.06	0.06	
v/s Ratio Perm	c0.21			0.11		0.12
v/c Ratio	0.50	0.17	0.40	0.35	0.34	0.12
Uniform Delay, d1	6.3	5.3	16.3	10.0	22.2	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.2	1.1	0.3	0.4	0.2
Delay (s)	7.1	5.5	17.4	10.3	22.6	0.2
Level of Service	A	A	B	B	C	A
Approach Delay (s)		6.2	13.9		11.3	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	276	327	398	397	182	184
Future Volume (veh/h)	276	327	398	397	182	184
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1776	1810	1827	1863	1863
Adj Flow Rate, veh/h	291	344	419	418	192	0
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	7	5	4	2	2
Cap, veh/h	574	2155	1221	750	440	203
Arrive On Green	0.17	0.64	0.36	0.36	0.13	0.00
Sat Flow, veh/h	1723	3463	3529	1553	3442	1583
Grp Volume(v), veh/h	291	344	419	418	192	0
Grp Sat Flow(s),veh/h/ln	1723	1687	1719	1553	1721	1583
Q Serve(g_s), s	5.4	2.5	5.4	11.4	3.1	0.0
Cycle Q Clear(g_c), s	5.4	2.5	5.4	11.4	3.1	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	574	2155	1221	750	440	203
V/C Ratio(X)	0.51	0.16	0.34	0.56	0.44	0.00
Avail Cap(c_a), veh/h	602	2155	1221	750	981	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	8.0	4.4	14.2	11.0	24.2	0.0
Incr Delay (d2), s/veh	0.8	0.2	0.8	3.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	1.2	2.6	5.5	1.5	0.0
LnGrp Delay(d),s/veh	8.9	4.5	15.0	14.0	25.0	0.0
LnGrp LOS	A	A	B	B	C	
Approach Vol, veh/h		635	837		192	
Approach Delay, s/veh		6.5	14.5		25.0	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		45.4			17.0	28.4		14.6
Change Period (Y+Rc), s		7.1			7.1	7.1		6.9
Max Green Setting (Gmax), s		28.9			10.9	10.9		17.1
Max Q Clear Time (g_c+I1), s		4.5			7.4	13.4		5.1
Green Ext Time (p_c), s		3.3			0.4	0.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	8	18	564	281	25
Future Vol, veh/h	17	8	18	564	281	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	9	20	613	305	27

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	666	319	332	0	-	0
Stage 1	319	-	-	-	-	-
Stage 2	347	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	408	721	1226	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	398	721	1226	-	-	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	688	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1226	-	465	-	-
HCM Lane V/C Ratio	0.016	-	0.058	-	-
HCM Control Delay (s)	8	0.1	13.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	19	0	563	270	18
Future Vol, veh/h	19	19	0	563	270	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	21	0	612	293	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	915	303	-	0	-	0
Stage 1	303	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	303	737	0	-	-	-
Stage 1	749	-	0	-	-	-
Stage 2	541	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	303	737	-	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	429	-	-
HCM Lane V/C Ratio	-	0.096	-	-
HCM Control Delay (s)	-	14.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	5	40	20	1
Future Vol, veh/h	0	5	5	40	20	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	5	43	22	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	48	0	-	0	32	27
Stage 1	-	-	-	-	27	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1559	-	-	-	982	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	1018	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	982	1048
Mov Cap-2 Maneuver	-	-	-	-	982	-
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	1018	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1559	-	-	-	985
HCM Lane V/C Ratio	-	-	-	-	0.023
HCM Control Delay (s)	0	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	2	156	0	0	5	181	426	6	3	548	49
Future Vol, veh/h	16	2	156	0	0	5	181	426	6	3	548	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	1	0	0	20	1	2	0	0	2	0
Mvmt Flow	16	2	156	0	0	5	181	426	6	3	548	49

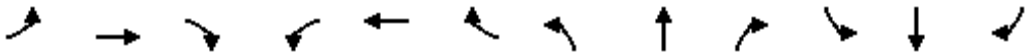
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1373	1373	573	1449	1394	429	597	0	0	432	0	0
Stage 1	579	579	-	791	791	-	-	-	-	-	-	-
Stage 2	794	794	-	658	603	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.21	7.1	6.5	6.4	4.11	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.309	3.5	4	3.48	2.209	-	-	2.2	-	-
Pot Cap-1 Maneuver	124	147	521	110	143	589	985	-	-	1138	-	-
Stage 1	504	504	-	386	404	-	-	-	-	-	-	-
Stage 2	384	403	-	457	492	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	105	120	521	65	116	589	985	-	-	1138	-	-
Mov Cap-2 Maneuver	105	120	-	65	116	-	-	-	-	-	-	-
Stage 1	411	502	-	315	330	-	-	-	-	-	-	-
Stage 2	311	329	-	318	490	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23	11.2	2.8	0
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	985	-	-	371	589	1138	-	-
HCM Lane V/C Ratio	0.184	-	-	0.469	0.008	0.003	-	-
HCM Control Delay (s)	9.5	-	-	23	11.2	8.2	0	-
HCM Lane LOS	A	-	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	2.4	0	0	-	-

Lane Group	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	50	217	2	446	275	463
v/c Ratio	0.10	0.21	0.54	0.00	0.72	0.50	0.42
Control Delay	36.9	34.9	11.0	9.0	29.5	10.9	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	34.9	11.0	9.0	29.5	10.9	12.9
Queue Length 50th (ft)	8	17	0	0	141	34	65
Queue Length 95th (ft)	36	61	63	3	330	123	312
Internal Link Dist (ft)	120	611			159		588
Turn Bay Length (ft)			110			260	
Base Capacity (vph)	634	613	703	670	900	559	1092
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.08	0.31	0.00	0.50	0.49	0.42

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	7	0	46	2	206	2	384	40	261	435	5
Future Volume (vph)	14	7	0	46	2	206	2	384	40	261	435	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.3			6.1	6.1	6.5	6.5		6.5	6.5	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt		1.00			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected		0.97			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1837			1762	1615	1805	1840		1770	1860	
Flt Permitted		0.97			0.95	1.00	0.50	1.00		0.27	1.00	
Satd. Flow (perm)		1837			1762	1615	944	1840		502	1860	
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)	15	7	0	48	2	217	2	404	42	275	458	5
RTOR Reduction (vph)	0	0	0	0	0	191	0	3	0	0	0	0
Lane Group Flow (vph)	0	22	0	0	50	26	2	443	0	275	463	0
Heavy Vehicles (%)	0%	0%	0%	3%	0%	0%	0%	2%	0%	2%	2%	0%
Turn Type	Split	NA		Split	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases						3	2			6		
Actuated Green, G (s)		2.6			9.6	9.6	31.0	29.8		50.0	42.3	
Effective Green, g (s)		2.6			9.6	9.6	31.0	29.8		50.0	42.3	
Actuated g/C Ratio		0.03			0.12	0.12	0.38	0.37		0.62	0.52	
Clearance Time (s)		6.3			6.1	6.1	6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			4.0	4.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		58			208	191	373	676		523	970	
v/s Ratio Prot		c0.01			c0.03		0.00	c0.24		c0.09	0.25	
v/s Ratio Perm						0.02	0.00			0.23		
v/c Ratio		0.38			0.24	0.13	0.01	0.66		0.53	0.48	
Uniform Delay, d1		38.5			32.4	32.0	15.5	21.4		9.5	12.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.1			0.8	0.4	0.0	3.1		1.0	0.8	
Delay (s)		42.6			33.3	32.5	15.5	24.5		10.5	13.1	
Level of Service		D			C	C	B	C		B	B	
Approach Delay (s)		42.6			32.6			24.4			12.2	
Approach LOS		D			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	25.4
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 2010 analysis expects strict NEMA phasing.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	15	1	0	0	24	399	0	1	488	14
Future Vol, veh/h	6	0	15	1	0	0	24	399	0	1	488	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	6	0	16	1	0	0	25	416	0	1	508	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	984	984	516	992	991	416	523	0	0	416	0	0
Stage 1	518	518	-	466	466	-	-	-	-	-	-	-
Stage 2	466	466	-	526	525	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	229	250	563	227	248	641	1054	-	-	1154	-	-
Stage 1	544	536	-	581	566	-	-	-	-	-	-	-
Stage 2	581	566	-	539	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	224	242	563	215	240	641	1054	-	-	1154	-	-
Mov Cap-2 Maneuver	224	242	-	215	240	-	-	-	-	-	-	-
Stage 1	527	535	-	563	548	-	-	-	-	-	-	-
Stage 2	563	548	-	524	532	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	21.8	0.5	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1054	-	-	393	215	1154	-	-
HCM Lane V/C Ratio	0.024	-	-	0.056	0.005	0.001	-	-
HCM Control Delay (s)	8.5	0	-	14.7	21.8	8.1	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0	0	-	-

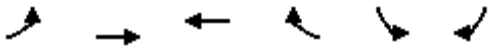
Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	3	150	2	11	7	413	159	22	480	4
Future Vol, veh/h	3	0	3	150	2	11	7	413	159	22	480	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	3	0	0	0	1	3	0	2	0
Mvmt Flow	3	0	3	156	2	11	7	430	166	23	500	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1082	1158	502	1077	1077	513	504	0	0	596	0	0
Stage 1	548	548	-	527	527	-	-	-	-	-	-	-
Stage 2	534	610	-	550	550	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.13	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.527	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	197	198	573	196	221	565	1071	-	-	990	-	-
Stage 1	524	520	-	533	532	-	-	-	-	-	-	-
Stage 2	534	488	-	518	519	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	185	190	573	189	212	565	1071	-	-	990	-	-
Mov Cap-2 Maneuver	185	190	-	189	212	-	-	-	-	-	-	-
Stage 1	519	503	-	528	527	-	-	-	-	-	-	-
Stage 2	516	483	-	499	502	-	-	-	-	-	-	-

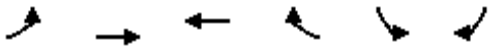
Approach	EB	WB	NB	SB
HCM Control Delay, s	18.2	80.8	0.1	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1071	-	-	280	198	990	-	-
HCM Lane V/C Ratio	0.007	-	-	0.022	0.858	0.023	-	-
HCM Control Delay (s)	8.4	0	-	18.2	80.8	8.7	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	6.4	0.1	-	-



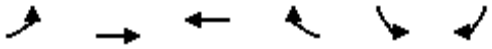
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	288	570	491	306	342	313
v/c Ratio	0.49	0.25	0.35	0.26	0.53	0.20
Control Delay	9.9	7.0	17.8	1.7	30.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	7.0	17.8	1.7	30.2	0.3
Queue Length 50th (ft)	53	54	83	7	74	0
Queue Length 95th (ft)	105	93	134	29	105	0
Internal Link Dist (ft)		1061	854		222	
Turn Bay Length (ft)	225			235		
Base Capacity (vph)	593	2245	1388	1413	1298	1568
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.25	0.35	0.22	0.26	0.20

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	279	553	476	297	332	304
Future Volume (vph)	279	553	476	297	332	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.1	7.1	7.1	6.9	6.9	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.97	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3574	3539	1599	3467	1568
Flt Permitted	0.37	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	696	3574	3539	1599	3467	1568
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	288	570	491	306	342	313
RTOR Reduction (vph)	0	0	0	109	0	0
Lane Group Flow (vph)	288	570	491	197	342	313
Heavy Vehicles (%)	2%	1%	2%	1%	1%	3%
Turn Type	pm+pt	NA	NA	pm+ov	Prot	Free
Protected Phases	5	2	6	3	3	
Permitted Phases	2			6		Free
Actuated Green, G (s)	47.1	47.1	29.4	43.3	13.9	75.0
Effective Green, g (s)	47.1	47.1	29.4	43.3	13.9	75.0
Actuated g/C Ratio	0.63	0.63	0.39	0.58	0.19	1.00
Clearance Time (s)	7.1	7.1	7.1	6.9	6.9	
Vehicle Extension (s)	3.5	4.0	4.0	3.5	3.5	
Lane Grp Cap (vph)	588	2244	1387	923	642	1568
v/s Ratio Prot	c0.07	0.16	0.14	0.04	c0.10	
v/s Ratio Perm	c0.24			0.08		0.20
v/c Ratio	0.49	0.25	0.35	0.21	0.53	0.20
Uniform Delay, d1	6.8	6.2	16.1	7.6	27.6	0.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.3	0.7	0.1	1.0	0.3
Delay (s)	7.5	6.4	16.8	7.8	28.6	0.3
Level of Service	A	A	B	A	C	A
Approach Delay (s)		6.8	13.3		15.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	279	553	476	297	332	304
Future Volume (veh/h)	279	553	476	297	332	304
Number	5	2	6	16	3	18
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1863	1881	1881	1845
Adj Flow Rate, veh/h	288	570	491	306	342	0
Adj No. of Lanes	1	2	2	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	1	1	3
Cap, veh/h	574	2407	1577	936	487	220
Arrive On Green	0.13	0.67	0.45	0.45	0.14	0.00
Sat Flow, veh/h	1774	3668	3632	1599	3476	1568
Grp Volume(v), veh/h	288	570	491	306	342	0
Grp Sat Flow(s),veh/h/ln	1774	1787	1770	1599	1738	1568
Q Serve(g_s), s	5.7	4.6	6.7	7.4	7.0	0.0
Cycle Q Clear(g_c), s	5.7	4.6	6.7	7.4	7.0	0.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	574	2407	1577	936	487	220
V/C Ratio(X)	0.50	0.24	0.31	0.33	0.70	0.00
Avail Cap(c_a), veh/h	596	2407	1577	936	1302	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	7.8	4.8	13.4	8.0	30.8	0.0
Incr Delay (d2), s/veh	0.8	0.2	0.5	0.9	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	2.3	3.4	3.5	3.5	0.0
LnGrp Delay(d),s/veh	8.7	5.0	13.9	8.9	33.0	0.0
LnGrp LOS	A	A	B	A	C	
Approach Vol, veh/h		858	797		342	
Approach Delay, s/veh		6.2	12.0		33.0	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		57.6			17.1	40.5		17.4
Change Period (Y+Rc), s		7.1			7.1	7.1		6.9
Max Green Setting (Gmax), s		32.9			10.9	14.9		28.1
Max Q Clear Time (g_c+I1), s		6.6			7.7	9.4		9.0
Green Ext Time (p_c), s		6.0			0.3	2.8		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	13.1
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	4	8	413	492	13
Future Vol, veh/h	12	4	8	413	492	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	50	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	4	9	449	535	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	785	542	549	0	-	0
Stage 1	542	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Critical Hdwy	6.63	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.83	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	2.219	-	-	-
Pot Cap-1 Maneuver	345	539	1019	-	-	-
Stage 1	582	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	341	539	1019	-	-	-
Mov Cap-2 Maneuver	341	-	-	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	775	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1019	-	375	-	-
HCM Lane V/C Ratio	0.009	-	0.046	-	-
HCM Control Delay (s)	8.6	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	15	0	404	488	9
Future Vol, veh/h	17	15	0	404	488	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	16	0	439	530	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	974	535	-	0	-	0
Stage 1	535	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	279	545	0	-	-	-
Stage 1	587	-	0	-	-	-
Stage 2	650	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	279	545	-	-	-	-
Mov Cap-2 Maneuver	279	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	650	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	362	-	-
HCM Lane V/C Ratio	-	0.096	-	-
HCM Control Delay (s)	-	16	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	10	28	15	1
Future Vol, veh/h	0	5	10	28	15	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	11	30	16	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	41	0	-	0	31	26
Stage 1	-	-	-	-	26	-
Stage 2	-	-	-	-	5	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1568	-	-	-	983	1050
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	1018	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1568	-	-	-	983	1050
Mov Cap-2 Maneuver	-	-	-	-	983	-
Stage 1	-	-	-	-	997	-
Stage 2	-	-	-	-	1018	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1568	-	-	-	987
HCM Lane V/C Ratio	-	-	-	-	0.018
HCM Control Delay (s)	0	-	-	-	8.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

H. Peer Child Care Center Site Data

10405 DUMFRIES RD

Location	10405 DUMFRIES RD	**TAX MAP**	090/ 01 00/ 57A/ /
Acct#	37760	**Owner**	ENHANCED REALTY LLC
Assessment	$2,308,900	**Building Count**	1
Model		**Legal Description**	LENGTHY LEGAL
Legal Description	SEE DEED	**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$1,409,900	$899,000	$2,308,900

Owner of Record

Owner	ENHANCED REALTY LLC	**Sale Price**	$899,000
Co-Owner		**Book & Page**	201810100074093/
Address	18403 FABLE DR BOYDS, MD 20841-4371	**Sale Date**	10/10/2018

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
10405 LLC	$0	201810100074091/	10/10/2018

Building Information

Building 1 : Section 1

Year Built: 2019
Living Area: 10,371
Building Percent Good: 87

Building Attributes	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial
Grade	Good

Stories:	1
Occupancy	
Exterior Wall 1	Single Siding
Exterior Wall 2	Brick
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Vinyl
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Typical
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	
Total Baths	
I and E Filed?	
Location	
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL/MN WL
Rooms/Prtns	AVERAGE
Wall Height	
% Comn Wall	

Building Photo

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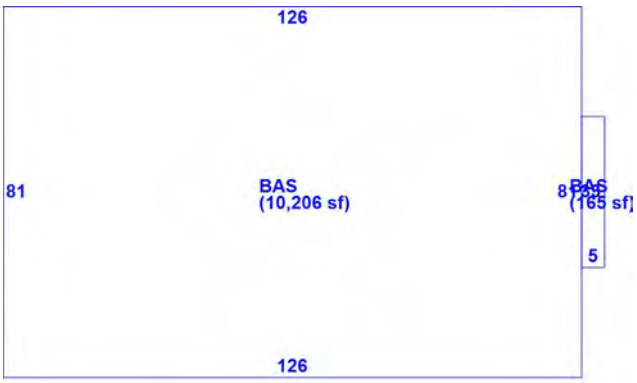
Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	B4
Neighborhood	DUMFRIES, SO.
Alt Land Appr	No

Land Line Valuation

Size (Sqr Feet)	103372
Frontage	
Depth	
Assessed Value	$899,000

Category

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
PARK	PARKING SPACE			47.00 UNITS
PRKH	HANDICAP SPACE			3.00 UNITS
PLAY	PLAYGROUND			1.00

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$1,409,900	$899,000	$2,308,900
2020	$1,651,100	$899,000	$2,550,100
2019	$0	$899,000	$899,000

Search for Child Day Care

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The Goddard School
10405 Dumfries Road
MANASSAS, VA 20110
(703) 420-7333
Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	May 24, 2024
Administrator:	Layla Miranda
Business Hours:	7:00 am - 6:00 pm, Monday - Friday
Capacity:	158
Ages:	1 month - 12 years 11 months
Inspector:	Donna Liberman: (540) 359-5244
Current Subsidy Provider	No
License/Facility ID#	1108694

Inspection Date	SHSI	Complaint Related	Violations
May 12, 2022	No	No	Yes
Dec. 14, 2021 and Jan. 4, 2022	No	No	Yes
June 11, 2021 and June 15, 2021	No	No	No
Feb. 11, 2021 and Feb. 26, 2021	No	Yes	Yes
Nov. 23, 2020	No	No	Yes
Nov. 12, 2020 and Dec. 22, 2020	No	No	No
June 9, 2020	No	No	No
Jan. 28, 2020	No	No	Yes
Nov. 14, 2019	No	No	Yes

Disclaimer:

A compliance history is in no way a rating for a facility.

The online compliance history includes only information after July 1, 2003. In addition, the online compliance history includes information regarding adverse actions that may be the subject of a pending appeal. An adverse action is not final until a provider has exhausted or waived all due process rights. For compliance history prior to July 1, 2003, or information regarding the status of pending adverse actions, please contact the Licensing Inspector listed in the facility's information. The Virginia Department of Social Services (VDSS) is not responsible for any errors in or omissions from the compliance history information.

Virginia Quality is a voluntary quality rating and improvement system for early care and education facilities serving children ages birth through pre-K. To find programs participating in Virginia Quality, click here.

10023 DUMFRIES RD

Location	10023 DUMFRIES RD	**TAX MAP**	090/01 00/ 36A/ /
Acct#	34504	**Owner**	RUBINOFF JOANNE T TRUSTEE
Assessment	$1,099,800	**Building Count**	1
Model	DAY CARE CENTER	**Legal Description**	COMMERCIAL
Legal Description		**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$233,300	$866,500	$1,099,800

Owner of Record

Owner	RUBINOFF JOANNE T TRUSTEE	**Sale Price**	$895,907
Co-Owner		**Book & Page**	1736/1793
Address	915 W FRANCIS ST	**Sale Date**	05/22/1990
	ASPEN, CO 81611-3103		

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
LA PETITE ACADEMY INC	$0	1606/1604	10/13/1988

Building Information

Building 1 : Section 1

Year Built: 1988
Living Area: 6,874
Building Percent Good: 58

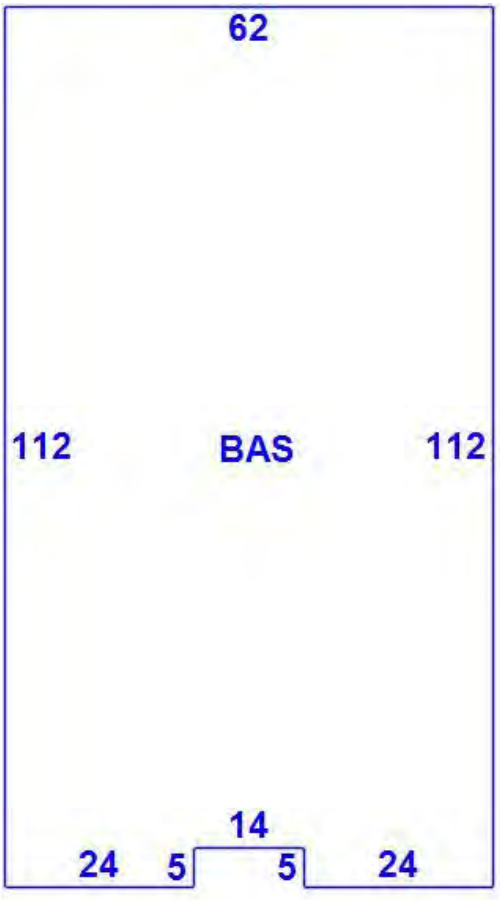
Building Attributes	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial

Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	
Location	SOUTH
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	TYPICAL
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos/\00\01\90\04.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	B4
Neighborhood	SO. DUMFRIES
Alt Land Appr	No
Category	

Land Line Valuation

Size (Sqr Feet)	52154
Frontage	
Depth	
Assessed Value	$866,500

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
LT5	MERC VAP/FLU			1.00 UNITS
PLAY	PLAYGROUND			1.00
PRKH	HANDICAP SPACE			3.00 UNITS
PARK	PARKING SPACE			25.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$233,300	$866,500	$1,099,800
2020	$351,100	$866,500	$1,217,600
2019	$318,700	$866,500	$1,185,200

Search for Child Day Care

|Return to Search Results | New Search |

La Petite Academy - Dumfries Road
10023 Dumfries Road

MANASSAS, VA 20110-7950

(703) 361-6356

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	April 23, 2023
Administrator:	Michelle Custer
Business Hours:	6:30 a.m. - 6:30 p.m., Monday - Friday
Capacity:	160
Ages:	1 month - 12 years 11 months
Inspector:	Keesha Minor: (540) 340-2672
Current Subsidy Provider	Yes
License/Facility ID#	524563

Inspection Date	SHSI	Complaint Related	Violations
May 20, 2022	No	Yes	Yes
Feb. 14, 2022	Yes	No	No
Feb. 14, 2022	No	No	Yes
Aug. 24, 2021	No	No	No
Feb. 26, 2021	Yes	No	No
Feb. 26, 2021	No	No	No
Dec. 28, 2020	No	No	No
June 2, 2020	Yes	No	No
June 2, 2020	No	No	No
Dec. 26, 2019	Yes	No	No
Dec. 26, 2019	No	No	Yes
June 19, 2019 and June 21, 2019	No	Yes	No
April 9, 2019	Yes	No	No
April 9, 2019	No	No	No
Sept. 25, 2018	Yes	No	No
Sept. 25, 2018	No	No	No
Feb. 8, 2018	Yes	No	No
Feb. 8, 2018	No	No	Yes
Aug. 28, 2017	No	No	Yes
Aug. 28, 2017	Yes	No	No

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9511 TECHNOLOGY DR

Location	9511 TECHNOLOGY DR	**TAX MAP**	101/51 00/ 2/ /
Acct#	30034	**Owner**	9511 TECHNOLOGY LLC
Assessment	$1,147,800	**Building Count**	1
Model	DAY CARE CENTER	**Legal Description**	LOT 2 DAY CARE CTR
Legal Description	MANASSAS OFFICE AND	**Legal Description**	RESEARCH PARK

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$510,800	$637,000	$1,147,800

Owner of Record

Owner	9511 TECHNOLOGY LLC	**Sale Price**	$0
Co-Owner		**Book & Page**	2785/989
Address	4300 PRINCE WILLIAM PARKWAY WOODBRIDGE, VA 22192-5361	**Sale Date**	08/17/1999

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
LEOPOLD CHARLES W AND JACQUELINE M	$700,000	2096/370	01/04/1994
MCMAHON JOHN F TRUSTEE	$0	2094/1616	12/30/1993

Building Information

Building 1 : Section 1

Year Built: 1988
Living Area: 6,300
Building Percent Good: 58

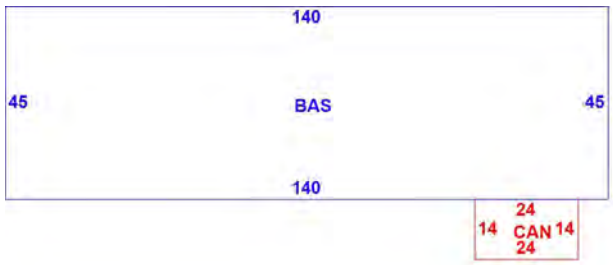
Building Attributes	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial

Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	OWNER OCCUPIED
Location	
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos/\00\00\97\84.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	I1
Neighborhood	IND SCHOOL

Land Line Valuation

Size (Sqr Feet)	48352
Frontage	
Depth	
Assessed Value	$637,000

Alt Land Appr Category No

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
FN	FENCE			300.00 L.F.
PLAY	PLAYGROUND			1.00
PARK	PARKING SPACE			19.00 UNITS
PRKH	HANDICAP SPACE			1.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$510,800	$637,000	$1,147,800
2020	$633,900	$637,000	$1,270,900
2019	$600,100	$637,000	$1,237,100

Search for Child Day Care

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Minnieland Academy at Technology (#10)
9511 Technology Drive

MANASSAS, VA 20110-4150

(703) 330-9507

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	July 2, 2022
Administrator:	Samantha Updyke
Business Hours:	7:00 a.m. - 5: 30 p.m., Monday - Friday
Capacity:	130
Ages:	Birth - 12 years 11 months
Inspector:	Stephanie Reed: (540) 272-6558
Current Subsidy Provider	Yes
License/Facility ID#	533236

Inspection Date	SHSI	Complaint Related	Violations
June 7, 2022	No	No	No
June 7, 2022	Yes	No	No
May 20, 2021 and May 24, 2021	Yes	No	No
May 20, 2021 and May 24, 2021	No	No	No
Dec. 4, 2020 , Dec. 7, 2020 and Dec. 9, 2020	Yes	No	No
Dec. 4, 2020 , Dec. 7, 2020 and Dec. 9, 2020	No	No	No
June 22, 2020 and June 23, 2020	Yes	No	No
June 22, 2020 and June 23, 2020	No	No	No
May 19, 2020 and May 20, 2020	No	Yes	No
Aug. 23, 2019	No	No	Yes
Aug. 23, 2019	Yes	No	No
Feb. 21, 2019	No	Yes	No
Jan. 31, 2019	Yes	No	No
Jan. 31, 2019	No	No	Yes
July 11, 2018	Yes	No	No
July 11, 2018	No	No	Yes
Feb. 28, 2018	Yes	No	No
July 28, 2017	Yes	No	No
July 28, 2017	No	No	Yes
Feb. 28, 2017	No	No	Yes

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9811 GODWIN DR

Location	9811 GODWIN DR	**TAX MAP**	102/01 00/ 37A/ /
Acct#	22162	**Owner**	STORE MASTER FUNDING II LLC
Assessment	$3,053,200	**Building Count**	1
Model		**Legal Description**	LENGTHY LEGAL
Legal Description	SEE DEED	**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$1,533,200	$1,520,000	$3,053,200

Owner of Record

Owner	STORE MASTER FUNDING II LLC	**Sale Price**	$3,500,000
Co-Owner		**Book & Page**	201212120119675/
Address	3520-A MAYLAND CT	**Sale Date**	12/12/2012
	RICHMOND, VA 23233-1421		

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
CHILDCARE HOLDINGS OF MANASSAS LLC	$0	200412150212154/	12/15/2004

Building Information

Building 1 : Section 1

Year Built: 2005
Living Area: 14,589
Building Percent Good: 73

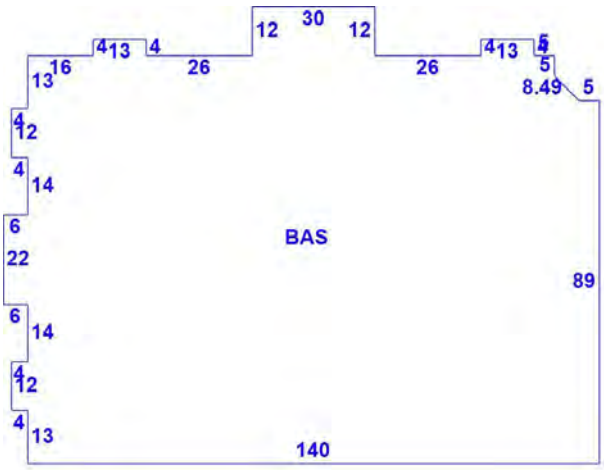
Building Attributes	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial

Grade	Good
Stories:	1
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	Concr/Cinder
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Vinyl
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	
Total Baths	
I and E Filed?	I AND E FILED
Location	SOUTH
1st Floor Use:	
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	13.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos/\00\01\60\05.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	I1
Neighborhood	L0C7

Land Line Valuation

Size (Sqr Feet)	108185
Frontage	
Depth	
Assessed Value	$1,520,000

Alt Land Appr Category No

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
LT11	W/TRIPLE LIGHT			3.00 UNITS
FN	FENCE			900.00 L.F.
PLAY	PLAYGROUND			1.00
PARK	PARKING SPACE			49.00 UNITS
PRKH	HANDICAP SPACE			2.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$1,533,200	$1,520,000	$3,053,200
2020	$1,861,300	$1,520,000	$3,381,300
2019	$1,771,300	$1,520,000	$3,291,300

Search for Child Day Care

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The Compass School of Manassas, LLC
9811 Godwin Drive

MANASSAS, VA 20110-4156

(703) 331-1303

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	June 4, 2022
Administrator:	Bailey Brenton
Business Hours:	7:00 am - 6:00 pm, Monday - Friday
Capacity:	248
Ages:	1 month - 12 years 11 months
Inspector:	Stephanie Reed: (540) 272-6558
Current Subsidy Provider	No
License/Facility ID#	1105640

Inspection Date	SHS	Complaint Related	Violations
June 2, 2022	No	No	Yes
Feb. 23, 2022	No	No	No
May 18, 2021	No	No	Yes
Dec. 9, 2020	No	No	Yes
June 18, 2020	No	No	No
Nov. 25, 2019	No	No	Yes
May 31, 2019	No	No	Yes
Feb. 21, 2019	No	No	Yes
May 10, 2018	No	No	Yes
Dec. 18, 2017	No	No	Yes

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10249 HENDLEY RD

Location	10249 HENDLEY RD	**TAX MAP**	090/77 00/ A1/ /
Acct#	25121	**Owner**	LEOPOLD CHARLES W
Assessment	$2,641,300	**Building Count**	1
Model	DAYCARE	**Legal Description**	PARCEL A1
Legal Description	WELLINGTON	**Legal Description**	COMMERCIAL

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$1,078,300	$1,563,000	$2,641,300

Owner of Record

Owner	LEOPOLD CHARLES W	**Sale Price**	$250,000
Co-Owner		**Book & Page**	2838/728
Address	4300 PRINCE WILLIAM PARKWAY WOODBRIDGE, VA 22192-5361	**Sale Date**	12/29/1999

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
WELLINGTON LAND COMPANY INC	$0	2836/572	12/23/1999

Building Information

Building 1 : Section 1

Year Built:	2003
Living Area:	9,866
Building Percent Good:	71

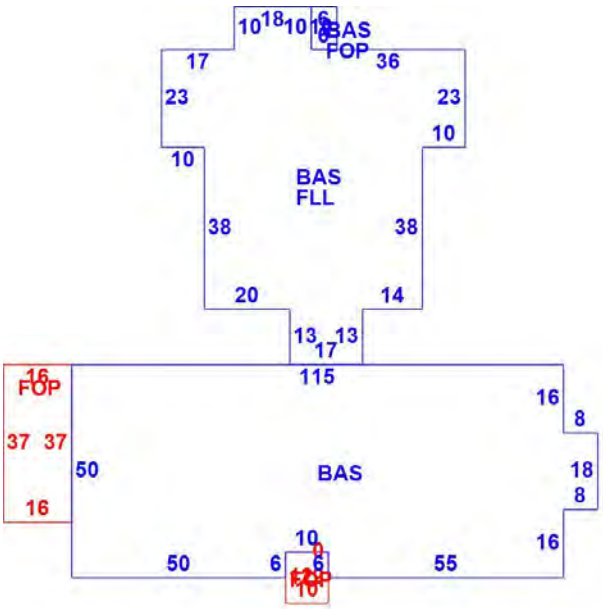
Building Attributes	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial
Grade	Average

Stories:	1
Occupancy	
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Typical
Heating Type	Heat pump
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	OWNER OCCUPIED
Location	
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//\00\00\97\74.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	B4
Neighborhood	RETAIL
Alt Land Appr	No
Category	

Land Line Valuation

Size (Sqr Feet)	113763
Frontage	
Depth	
Assessed Value	$1,563,000

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
LT5	MERC VAP/FLU			8.00 UNITS
LT6	W/DOUBLE LIGHT			1.00 UNITS
PLAY	PLAYGROUND			3.00
FN11	FENCE			84.00 L.F.
FN11	FENCE			218.00 L.F.
PRKH	HANDICAP SPACE			4.00 UNITS
PART	TRUCK SPACES			2.00 UNITS
PARK	PARKING SPACE			53.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$1,078,300	$1,563,000	$2,641,300
2020	$1,364,700	$1,563,000	$2,927,700
2019	$1,286,800	$1,563,000	$2,849,800

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The Merit School of Wellington (#20)
10249 Hendley Road

MANASSAS, VA 20110-7913

(703) 369-7929

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	June 3, 2024
Administrator:	Ms. Nancy Stewart
Business Hours:	6:00 a.m. - 6:00 p.m., Monday - Friday
Capacity:	300
Ages:	1 month - 12 years 11 months
Inspector:	Cathy Aylor: (540) 222-6352
Current Subsidy Provider	Yes
License/Facility ID#	1105285

Inspection Date	SHSI	Complaint Related	Violations
June 8, 2022	Yes	No	No
June 8, 2022	No	No	No
Feb. 14, 2022	Yes	No	No
Feb. 14, 2022	No	No	No
May 20, 2021 and May 24, 2021	Yes	No	No
May 20, 2021 and May 24, 2021	No	No	No
Dec. 4, 2020 , Dec. 7, 2020 and Dec. 9, 2020	No	No	No
Dec. 4, 2020 , Dec. 7, 2020 and Dec. 9, 2020	Yes	No	No
May 5, 2020 and May 6, 2020	Yes	No	No
May 5, 2020 and May 6, 2020	No	No	No
Dec. 16, 2019	Yes	No	No
Dec. 16, 2019	No	No	No
June 4, 2019	Yes	No	Yes
June 4, 2019	No	No	No
Nov. 29, 2018	Yes	No	No
Nov. 29, 2018	No	No	No
May 31, 2018	Yes	No	No
May 31, 2018	No	No	No
Dec. 12, 2017	Yes	No	No
Dec. 12, 2017	No	No	No

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8485 PLANTATION LN

Location	8485 PLANTATION LN	**TAX MAP**	112/01 00/ 21A/ /
Acct#	33817	**Owner**	8485 PLANTATION LANE LLC
Assessment	$2,543,300	**Building Count**	1
Model	DAY CARE CTR(AP	**Legal Description**	LENGTHY LEGAL
Legal Description	SEE DEED	**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$1,313,300	$1,230,000	$2,543,300

Owner of Record

Owner	8485 PLANTATION LANE LLC	**Sale Price**	$2,425,000
Co-Owner		**Book & Page**	201108290071078/
Address	4300 PRINCE WILLIAM PKWY WOODBRIDGE, VA 22192-5361	**Sale Date**	08/29/2011

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
APPLE TREE PRE-SCHOOL INC	$40,000	1128/845	10/06/1980

Building Information

Building 1 : Section 1

Year Built: 1982
Living Area: 14,304
Building Percent Good: 57

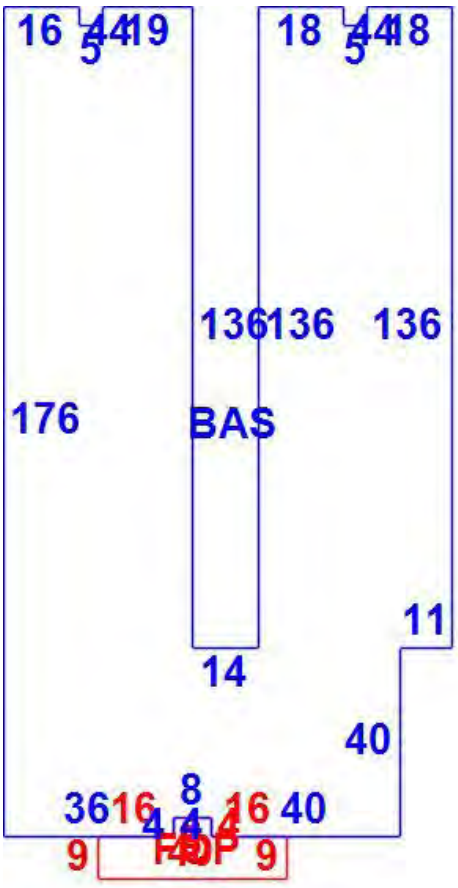
Building Attributes	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial
Grade	Good

Stories:	1
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	Concr/Cinder
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	OWNER OCCUPIED
Location	
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos/\00\00\97\81.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	210	**Size (Sqr Feet)**	84720
Description	DAY CARE MDL-94	**Frontage**	
Zone	A1	**Depth**	
Neighborhood	OTH RT 234	**Assessed Value**	$1,230,000
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
FN	FENCE			1.00 L.F.
PLAY	PLAYGROUND			2.00
EQMT	EQUIP SHED			192.00 S.F.
GAZ	GAZEBO			1200.00 S.F.
GAZ	GAZEBO			336.00 S.F.
GAZ	GAZEBO			224.00 S.F.
GAZ	GAZEBO			224.00 S.F.
PARK	PARKING SPACE			47.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$1,313,300	$1,230,000	$2,543,300
2020	$1,585,200	$1,230,000	$2,815,200
2019	$1,510,300	$1,230,000	$2,740,300

Search for Child Day Care

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The Merit School of Manassas (#47)
8485 Plantation Lane

MANASSAS, VA 20110

(703) 369-7942

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	Feb. 24, 2024
Administrator:	Tina Favara-Mullins
Business Hours:	6:30 a.m. - 6:00 p.m., Monday - Friday
Capacity:	341
Ages:	Birth - 12 years 11 months
Inspector:	Stephanie Reed: (540) 272-6558
Current Subsidy Provider	Yes
License/Facility ID#	1107032

Inspection Date	SHSI	Complaint Related	Violations
Feb. 18, 2022	Yes	No	No
Feb. 18, 2022	No	No	No
Aug. 17, 2021 and Aug. 18, 2021	Yes	No	No
Aug. 17, 2021 and Aug. 18, 2021	No	No	No
Jan. 28, 2021	Yes	No	No
Jan. 28, 2021	No	No	No
July 28, 2020 and July 29, 2020	Yes	No	No
July 28, 2020 and July 29, 2020	No	No	No
Jan. 30, 2020	Yes	No	No
Jan. 30, 2020	No	No	No
Dec. 2, 2019	No	Yes	No
Sept. 13, 2019	Yes	No	No
Sept. 13, 2019	No	No	No
June 3, 2019	Yes	No	No
June 3, 2019	No	No	No
Feb. 8, 2019	No	Yes	No
Aug. 16, 2018	Yes	No	No
Aug. 16, 2018	No	No	No
Feb. 21, 2018	No	No	Yes
Feb. 21, 2018	Yes	No	No
Aug. 29, 2017	Yes	No	No
Aug. 29, 2017	No	No	Yes

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8757 SIGNAL HILL RD

Location	8757 SIGNAL HILL RD	**TAX MAP**	100/01 00/ 196A/ /
Acct#	32619	**Owner**	C AND J LEOPOLD FAMILY PARTNERSHIP LP
Assessment	$1,683,500	**Building Count**	3
Model		**Legal Description**	LENGTHY LEGAL
Legal Description	SEE DEED	**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$934,000	$749,500	$1,683,500

Owner of Record

Owner	C AND J LEOPOLD FAMILY PARTNERSHIP LP	**Sale Price**	$0
Co-Owner		**Book & Page**	201212270124263/
Address	4300 PRINCE WILLIAM PKWY WOODBRIDGE, VA 22192-5361	**Sale Date**	12/27/2012

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
8757 SIGNAL HILL LLC	$0	2785/941	08/17/1999
LEOPOLD CHARLES W AND JACQUELINE M	$0	2247/638	06/16/1995

Building Information

Building 1 : Section 1

Year Built: 1900
Living Area: 3,310
Building Percent Good: 49

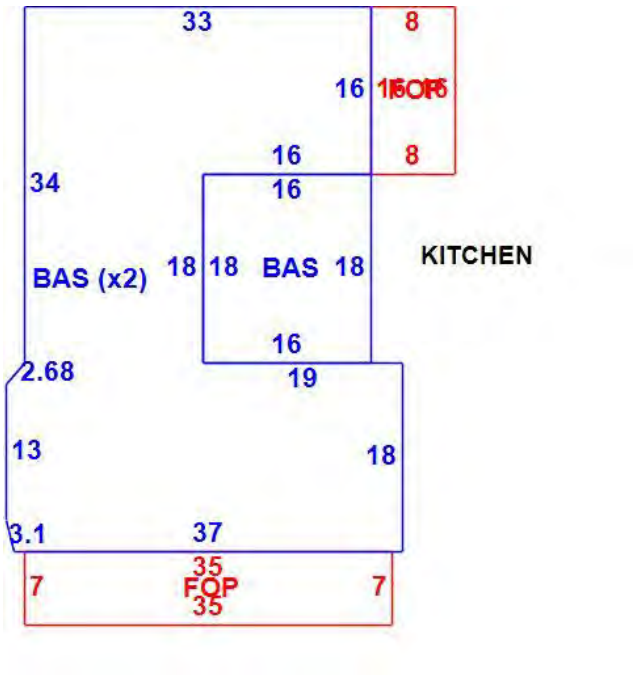
Building Attributes	
Field	**Description**
Style:	Inst Classrm
Model	Commercial

Grade	Good +15
Stories:	2
Occupancy	
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Slate
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Unit/AC
Struct Class	
Bldg Use	COM SCH
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	OWNER OCCUPIED
Location	SOUTH
1st Floor Use:	260
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//\00\01\51\19.jpg)

Building Layout



Building 2 : Section 1

Year Built: 1950
Living Area: 1,232
Building Percent Good: 61

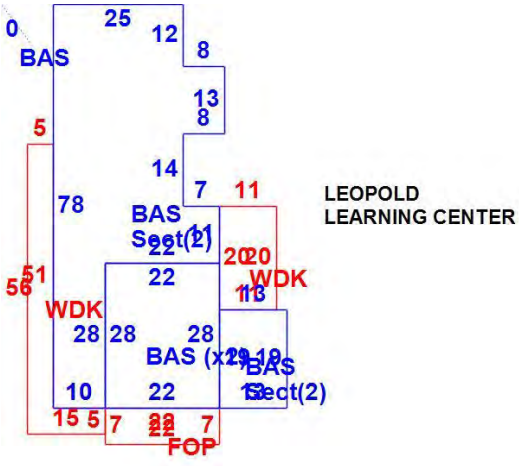
Building Attributes : Bldg 2 of 3	
Field	**Description**
Style:	Inst Classrm
Model	Commercial
Grade	Average
Stories:	2
Occupancy	
Exterior Wall 1	Aluminum Sidng

Exterior Wall 2	
Roof Structure	Hip
Roof Cover	Metal/Tin
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Unit/AC
Struct Class	
Bldg Use	COM SCH
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	
Location	
1st Floor Use:	260
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//\00\01\51\21.jpg)

Building Layout



Building 2 : Section 2

Year Built: 1950
Living Area: 1,958
Building Percent Good: 61

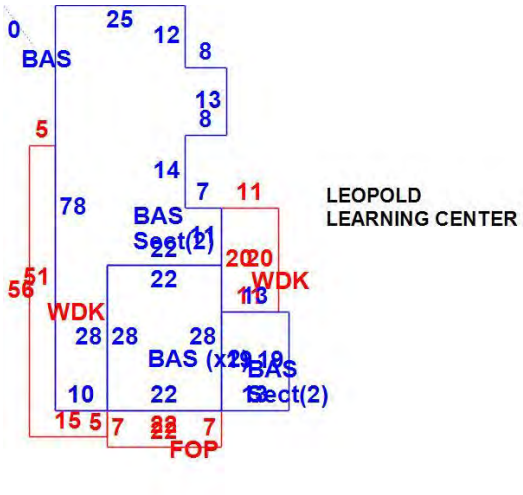
Building Attributes : Bldg 2 of 3 : Section 2 of 2	
Field	**Description**
Style:	Inst Classrm
Model	Commercial
Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//default.jpg)

Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Unit/AC
Struct Class	
Bldg Use	COM SCH
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	
Location	
1st Floor Use:	260
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Layout



Building 3 : Section 1

Year Built: 1950
Living Area: 816
Building Percent Good: 61

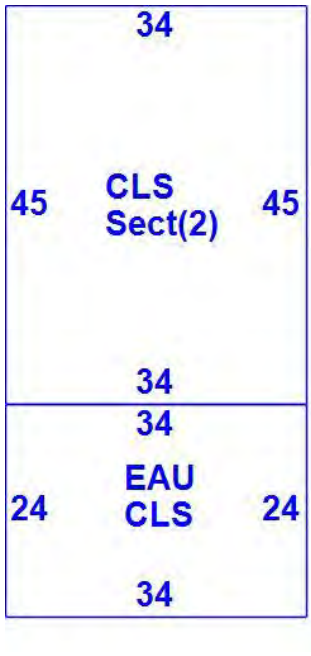
Building Attributes : Bldg 3 of 3	
Field	**Description**
Style:	Inst Classrm
Model	Commercial
Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//\00\01\51\22.jpg)

Heating Type	FA/HW/ST
AC Type	Unit/AC
Struct Class	
Bldg Use	COM SCH
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	
Location	
1st Floor Use:	260
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Layout



Building 3 : Section 2

Year Built: 1995
Living Area: 1,530
Building Percent Good: 73

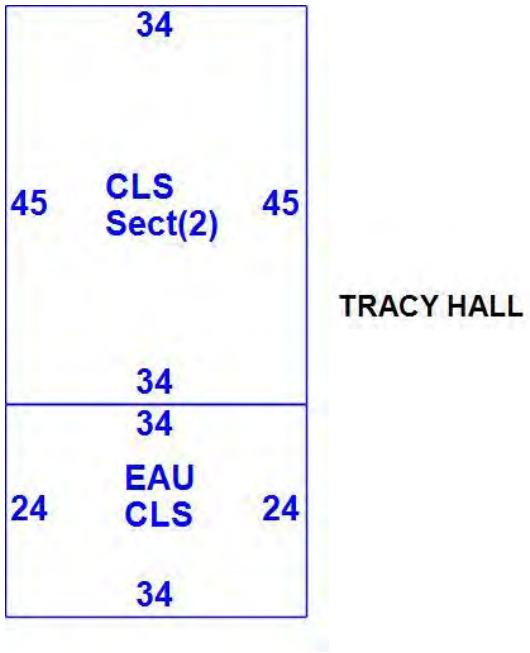
Building Attributes : Bldg 3 of 3 : Section 2 of 2	
Field	**Description**
Style:	Inst Classrm
Model	Commercial
Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Unit/AC
Struct Class	
Bldg Use	COM SCH

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//default.jpg)

Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	
Location	
1st Floor Use:	260
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	260
Description	COM SCH
Zone	B4
Neighborhood	Wellingtn/Rt28
Alt Land Appr	No
Category	

Land Line Valuation

Size (Sqr Feet)	42744
Frontage	
Depth	
Assessed Value	$749,500

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
FN5	FENCE-10'			192.00 L.F.
TEN1	TENNIS COURT			1.00 UNITS
LT1	LIGHTS-IN W/PL			4.00 UNITS
PARK	PARKING SPACE			29.00 UNITS
BIN1	BINS			90.00 S.F.
SHD1	SHED FRAME			140.00 S.F.
PLAY	PLAYGROUND			1.00
FN	FENCE			90.00 L.F.

FN1	FENCE-4'			462.00 L.F.
PAV2	PAVING-CONC			875.00 S.F.
OTHR	OTHER			900.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$934,000	$749,500	$1,683,500
2020	$983,200	$749,500	$1,732,700
2019	$971,400	$749,500	$1,720,900

Search for Child Day Care

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The Merit School of Old Town Manassas
8757 Signal Hill Drive

MANASSAS, VA 20110-5835

(703) 361-5113

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	July 12, 2023
Administrator:	Ms. Carey Michalowski
Business Hours:	6:30am - 6:00pm, Monday - Friday
Capacity:	142
Ages:	Birth - 12 years 11 months
Inspector:	Morgan Bryson: (540) 270-0057
Current Subsidy Provider	Yes
License/Facility ID#	1058049

Inspection Date	SHSI	Complaint Related	Violations
May 19, 2022	Yes	No	No
May 19, 2022	No	No	Yes
Nov. 10, 2021	Yes	No	No
Nov. 10, 2021	No	No	No
May 20, 2021	Yes	No	No
May 20, 2021	No	No	No
Jan. 27, 2021 and Jan. 28, 2021	No	Yes	No
Nov. 24, 2020	Yes	No	No
Nov. 24, 2020	No	No	No
Jan. 3, 2020	Yes	No	No
Jan. 3, 2020	No	No	Yes
July 1, 2019	Yes	No	Yes
July 1, 2019	No	No	Yes
April 26, 2019	No	Yes	No
Jan. 9, 2019	Yes	No	No
Jan. 9, 2019	No	No	No
July 18, 2018	Yes	No	No
July 18, 2018	No	No	No
Jan. 19, 2018	Yes	No	No
Jan. 19, 2018	No	No	No
July 5, 2017	No	No	Yes
July 5, 2017	Yes	No	Yes

Disclaimer:

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8461 SIGNAL HILL RD

Location	8461 SIGNAL HILL RD	**TAX MAP**	100/01 00/ 178A1/ /
Acct#	30993	**Owner**	SOO MI LLC
Assessment	$1,656,900	**Building Count**	1
Model	CHILD CARE	**Legal Description**	PARCEL A
Legal Description	COMMERCIAL	**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$489,900	$1,167,000	$1,656,900

Owner of Record

Owner	SOO MI LLC	**Sale Price**	$1,765,000
Co-Owner		**Book & Page**	201105090038738/
Address	8534 BAUER CIR SPRINGFIELD, VA 22152-2330	**Sale Date**	05/09/2011

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
CC ILVA LP	$0	200209110117268/	09/11/2002
CTC VA QBS 11-32 INC	$238,750	2189/514	10/03/1994
MCMAHON JOHN F JR TRUSTEE	$0	2183/1857	09/14/1994

Building Information

Building 1 : Section 1

Year Built: 1994
Living Area: 8,880
Building Percent Good: 62

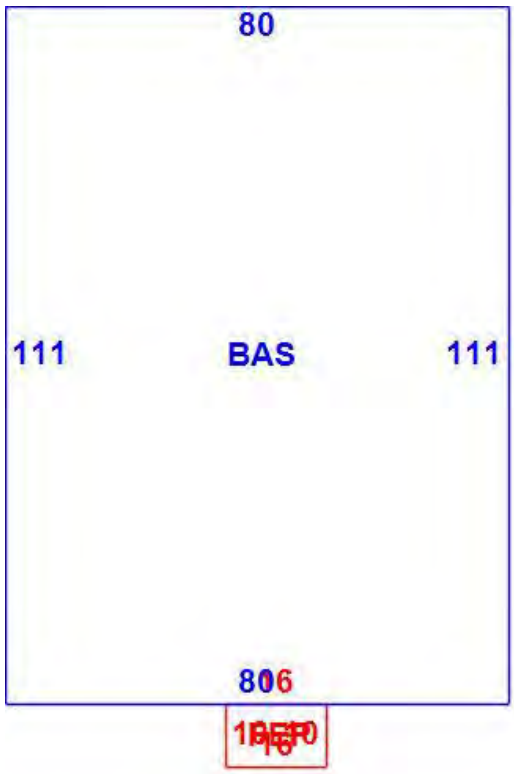
Building Attributes	
Field	**Description**
Style:	Day Care Ctr

Model	Commercial
Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Brick
Exterior Wall 2	Concr/Cinder
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	I AND E FILED
Location	SOUTH
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos/\00\01\60\06.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 210
Description DAY CARE MDL-94

Land Line Valuation

Size (Sqr Feet) 67427
Frontage

Zone	B1	**Depth**	
Neighborhood	Wellingtn/Rt28	**Assessed Value**	$1,167,000
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
PLAY	PLAYGROUND			1.00
FN11	FENCE			390.00 L.F.
PARK	PARKING SPACE			44.00 UNITS
PRKH	HANDICAP SPACE			2.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$489,900	$1,167,000	$1,656,900
2020	$668,100	$1,167,000	$1,835,100
2019	$619,200	$1,167,000	$1,786,200

Search for Child Day Care

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Childtime Learning Center #1052
8461 Signal Hill Road

MANASSAS, VA 20110-7029

(703) 330-4590

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	March 5, 2023
Administrator:	Ms. Samantha Young
Business Hours:	6:00 a.m. - 6:00 p.m., Monday - Friday
Capacity:	214
Ages:	1 month - 12 years 11 months
Inspector:	Sharon Allen: (540) 272-2941
Current Subsidy Provider	Yes
License/Facility ID#	888728

Inspection Date	SHS	Complaint Related	Violations
April 27, 2022	No	Yes	Yes
April 27, 2022	Yes	No	No
April 27, 2022	No	No	Yes
Dec. 13, 2021	Yes	No	No
Dec. 13, 2021	No	No	No
March 4, 2021	Yes	No	No
March 4, 2021	No	No	Yes
Oct. 14, 2020	Yes	No	No
Oct. 14, 2020	No	No	Yes
May 22, 2020	Yes	No	No
May 22, 2020	No	No	Yes
Sept. 4, 2019	Yes	No	No
Sept. 4, 2019	No	No	Yes
Feb. 25, 2019	Yes	No	No
Feb. 25, 2019	No	No	No
Sept. 19, 2018	Yes	No	Yes
Sept. 18, 2018	No	No	Yes
July 6, 2018	No	Yes	No
April 19, 2018	Yes	No	Yes
April 19, 2018	No	No	Yes
Sept. 7, 2017	No	No	Yes
Sept. 7, 2017	Yes	No	Yes

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9840 GRANT AVE

Location	9840 GRANT AVE	**TAX MAP**	101/01 00/ 113/ /
Acct#	24594	**Owner**	OHANIAN STEPHEN AND SUZAN
Assessment	$808,500	**Building Count**	1
Model	DAY CARE	**Legal Description**	COMMERCIAL
Legal Description		**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$212,000	$596,500	$808,500

Owner of Record

Owner	OHANIAN STEPHEN AND SUZAN	**Sale Price**	$0
Co-Owner		**Book & Page**	202112160138805/
Address	601 SUFFIELD DR GAITHERSBURG, MD 20878-2656	**Sale Date**	12/16/2021

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
OHANIAN STEPHEN AND SUZAN	$700,000	200303200052033/	03/20/2003
PLESS SHARON AND MCCAULEY STEPHANIE	$522,500	200303200052031/	03/20/2003
MOZINGO AND WILSON	$31,000	1310/514	04/08/1985

Building Information

Building 1 : Section 1

Year Built: 1985
Living Area: 4,408
Building Percent Good: 50

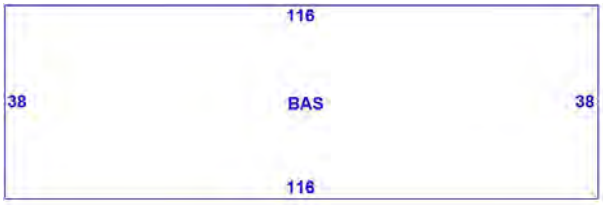
Building Attributes	
Field	**Description**
Style:	Day Care Ctr

Model	Commercial
Grade	Fair +10
Stories:	1
Occupancy	
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Electric
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	I AND E FILED
Location	SOUTH
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//\00\00\97\79.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	B4

Land Line Valuation

Size (Sqr Feet)	33207
Frontage	
Depth	

Neighborhood	O T 3RD	**Assessed Value**	$596,500
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
FN	FENCE			1.00 L.F.
PLAY	PLAYGROUND			1.00
PARK	PARKING SPACE			15.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$162,500	$646,000	$808,500
2020	$196,900	$646,000	$842,900
2019	$196,900	$646,000	$842,900

Search for Child Day Care

|Return to Search Results | New Search |

Learning Tree Academy
9840 Grant Avenue

MANASSAS, VA 20110

(703) 369-6077

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	Aug. 8, 2023
Administrator:	Pedro Cardona
Business Hours:	6:00 am - 6:30 pm, Monday - Friday
Capacity:	100
Ages:	1 month - 12 years 11 months
Inspector:	Cathy Aylor: (540) 222-6352
Current Subsidy Provider	Yes
License/Facility ID#	1108126

Inspection Date	SHSI	Complaint Related	Violations
March 22, 2022	Yes	No	No
March 22, 2022	No	No	No
Aug. 17, 2021 and Aug. 20, 2021	No	No	No
Aug. 17, 2021 and Aug. 20, 2021	Yes	No	No
April 30, 2021 and May 3, 2021	Yes	No	No
April 30, 2021 and May 3, 2021	No	No	No
Sept. 17, 2020 , Sept. 22, 2020 and Sept. 23, 2020	Yes	No	No
Sept. 17, 2020 , Sept. 22, 2020 and Sept. 23, 2020	No	No	No
Feb. 6, 2020	No	No	No
Feb. 6, 2020	Yes	No	No
July 22, 2019	Yes	No	No
July 22, 2019	No	No	Yes
May 3, 2019	Yes	No	No
May 3, 2019	No	No	No
Nov. 29, 2018	Yes	No	No
Nov. 29, 2018	No	No	No
April 19, 2018	Yes	No	Yes
April 19, 2018	No	No	Yes
Nov. 6, 2017	No	Yes	Yes
July 24, 2017	Yes	No	Yes
July 24, 2017	No	No	Yes

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9208 CENTREVILLE RD

Location	9208 CENTREVILLE RD	**TAX MAP**	100/05 5/ 6/ /
Acct#	22105	**Owner**	THE ARC OF GREATER PRINCE WILLIAM INSIGHT INC
Assessment	$624,600	**Building Count**	1
Model	CUSTOM	**Legal Description**	LOT 6 BLK 5
Legal Description	ANNABURG	**Legal Description**	COMMERCIAL

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$136,100	$488,500	$624,600

Owner of Record

Owner	THE ARC OF GREATER PRINCE WILLIAM INSIGHT INC	**Sale Price**	$600,000
Co-Owner		**Book & Page**	200510310188390/
Address	13505 HILLENDALE DR WOODBRIDGE, VA 22193-4716	**Sale Date**	10/31/2005

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
HORN PAUL L AND PRISCILLA L	$185,000	2432/1558	04/08/1997
BOYER EARL B AND HAZEL B	$20,250	417/19	01/30/1967

Building Information

Building 1 : Section 1

Year Built: 1955
Living Area: 1,692
Building Percent Good: 37

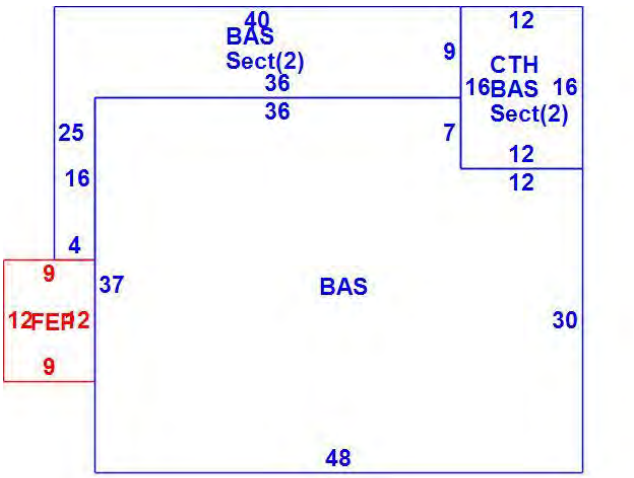
Building Attributes	
Field	**Description**
Style:	Day Care Ctr

Model	Commercial
Grade	Fair +10
Stories:	1
Occupancy	
Exterior Wall 1	Pre-cast Concr
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	03
Total Baths	1.5
I and E Filed?	OWNER OCCUPIED
Location	NORTH
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	LIGHT
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	8.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos/\00\00\97\76.jpg)

Building Layout



Building 1 : Section 2

Year Built: 1995
Living Area: 808
Building Percent Good: 62

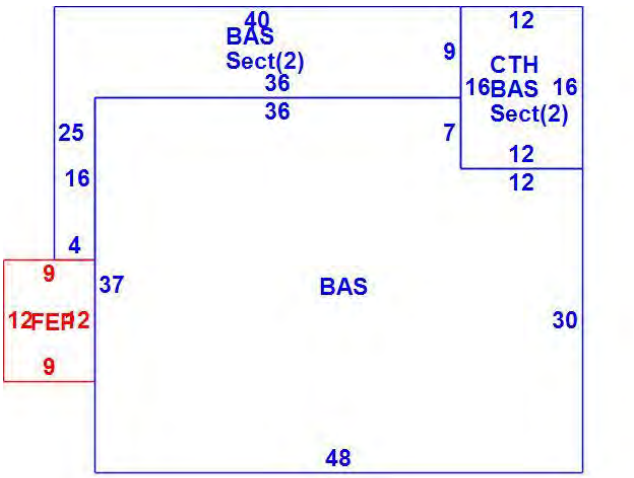
Building Attributes : Section 2 of 2	
Field	**Description**
Style:	Day Care Ctr
Model	Commercial
Grade	Fair +10
Stories:	1
Occupancy	

Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Unit/AC
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	03
Total Baths	0
I and E Filed?	OWNER OCCUPIED
Location	NORTH
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	NONE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	8.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//default.jpg)

Building Layout



Extra Features

Extra Features		Legend
Code	**Description**	**Size**
ALM	SECURITY ALARM	2416.00 S.F.

Land

Land Use

Use Code	210
Description	DAY CARE MDL-94
Zone	B1
Neighborhood	O T 3RD
Alt Land Appr	No
Category	

Land Line Valuation

Size (Sqr Feet)	17500
Frontage	
Depth	
Assessed Value	$488,500

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
FN	FENCE			450.00 L.F.
PLAY	PLAYGROUND			1.00
PARK	PARKING SPACE			8.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$136,100	$488,500	$624,600
2020	$137,400	$488,500	$625,900
2019	$137,400	$488,500	$625,900

Search for Child Day Care

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Robert Day Child Care Center
9208 Centreville Road

MANASSAS, VA 20110-5131

(703) 361-2443

Directions

Facility Type:	Child Day Center
License Type:	Two Year
Expiration Date:	April 11, 2023
Qualification:	Special Needs Program
Administrator:	Ms. Donna Shipman
Business Hours:	6:00 a.m. - 6:30 p.m., Monday - Friday
Capacity:	25
Ages:	2 years 6 months - 12 years 11 months
Inspector:	Stephanie Reed: (540) 272-6558
Current Subsidy Provider	No
License/Facility ID#	1033381

Inspection Date	SHSI	Complaint Related	Violations
March 1, 2022	Yes	No	No
March 1, 2022	No	No	No
April 8, 2021	No	No	No
Aug. 21, 2020	No	No	No
Nov. 4, 2019	Yes	No	No
Nov. 4, 2019	No	No	No
April 1, 2019	Yes	No	No
April 1, 2019	No	No	Yes
Oct. 10, 2018	Yes	No	Yes
Oct. 10, 2018	No	No	Yes
May 7, 2018	Yes	No	Yes
May 7, 2018	No	No	No
Oct. 6, 2017	No	No	No
Oct. 6, 2017	Yes	No	Yes

Disclaimer:

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Virginia Quality is a voluntary quality rating and improvement system for early care and education facilities serving children ages birth through pre-K. To find programs participating in Virginia Quality, click here.

9151 CENTREVILLE RD

Location	9151 CENTREVILLE RD	**TAX MAP**	100/01 00/ C2A/ /
Acct#	34514	**Owner**	DNA RE HOLDINGS LLC
Assessment	$1,102,500	**Building Count**	1
Model	DAY CARE CENTER	**Legal Description**	LENGTHY LEGAL
Legal Description	SEE DEED	**Legal Description**	

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2022	$379,000	$723,500	$1,102,500

Owner of Record

Owner	DNA RE HOLDINGS LLC	**Sale Price**	$1,200,000
Co-Owner		**Book & Page**	201911140084589/
Address	46624 HAMPSHIRE STATION DR STERLING, VA 20165-7394	**Sale Date**	11/14/2019

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
ADJ LLC	$1,200,000	201511130094579/	11/13/2015
QMAS GROUP LLC	$1,300,000	200708140093405/	08/14/2007
CRADLE TO CRAYONS SERVICES LLC	$157,500	2593/1414	06/29/1998
OAK STREET DEVELOPMENT CORP	$71,695	2593/1412	06/29/1998

Building Information

Building 1 : Section 1

Year Built: 1999
Living Area: 6,000
Building Percent Good: 67

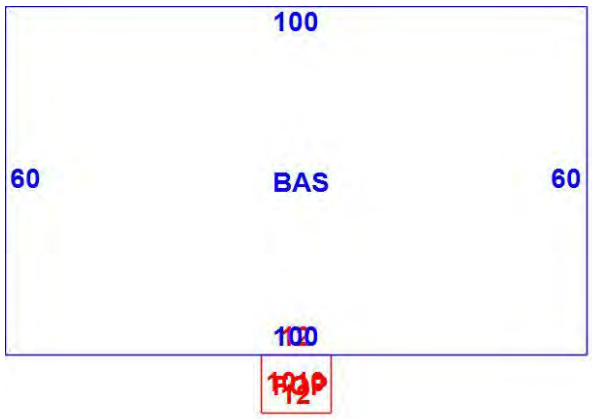
Building Attributes	
Field	**Description**

Style:	Day Care Ctr
Model	Commercial
Grade	Average
Stories:	1
Occupancy	
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Sheet Rock
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl
Heating Fuel	Gas
Heating Type	FA/HW/ST
AC Type	Central
Struct Class	
Bldg Use	DAY CARE MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
I and E Filed?	OWNER OCCUPIED
Location	NORTH
1st Floor Use:	210
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	TYPICAL
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/ManassasVAPhotos//\00\00\97\77.jpg)

Building Layout



Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 210

Land Line Valuation

Size (Sqr Feet) 47140

Description	DAY CARE MDL-94	**Frontage**	
Zone	B1	**Depth**	
Neighborhood	OFF RT 28	**Assessed Value**	$723,500
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings				Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**
PLAY	PLAYGROUND			1.00
FN11	FENCE			390.00 L.F.
PRKH	HANDICAP SPACE			2.00 UNITS
PARK	PARKING SPACE			18.00 UNITS

Valuation History

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$379,000	$723,500	$1,102,500
2020	$489,200	$723,500	$1,212,700
2019	$489,200	$723,500	$1,212,700

Search for Child Day Care

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Carousel Children's Academy
9151 Centreville Road

MANASSAS, VA 20110

(703) 365-7622

Directions

Facility Type:	Child Day Center
License Type:	Provisional
Expiration Date:	Nov. 17, 2022
Administrator:	Doreen Hecker
Business Hours:	6:00 a.m. - 6:30 p.m., Monday - Friday
Capacity:	150
Ages:	Birth - 12 years 11 months
Inspector:	Laura Brindle: (540) 905-2062
Current Subsidy Provider	Yes
License/Facility ID#	1108681

Inspection Date	SHS	Complaint Related	Violations
June 7, 2022	No	No	No
April 13, 2022	No	No	Yes
April 13, 2022	Yes	No	No
March 3, 2022	No	Yes	Yes
Nov. 23, 2021	Yes	No	No
Nov. 23, 2021	No	No	Yes
June 7, 2021	Yes	No	Yes
June 7, 2021	No	No	Yes
April 21, 2021	No	Yes	Yes
Dec. 30, 2020	No	No	Yes
Dec. 30, 2020	Yes	No	No
Oct. 6, 2020 and Oct. 27, 2020	No	Yes	Yes
May 20, 2020	Yes	No	No
May 20, 2020	No	No	No
Jan. 14, 2020	Yes	No	No
Jan. 14, 2020	No	No	Yes
Oct. 4, 2019	No	No	Yes

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