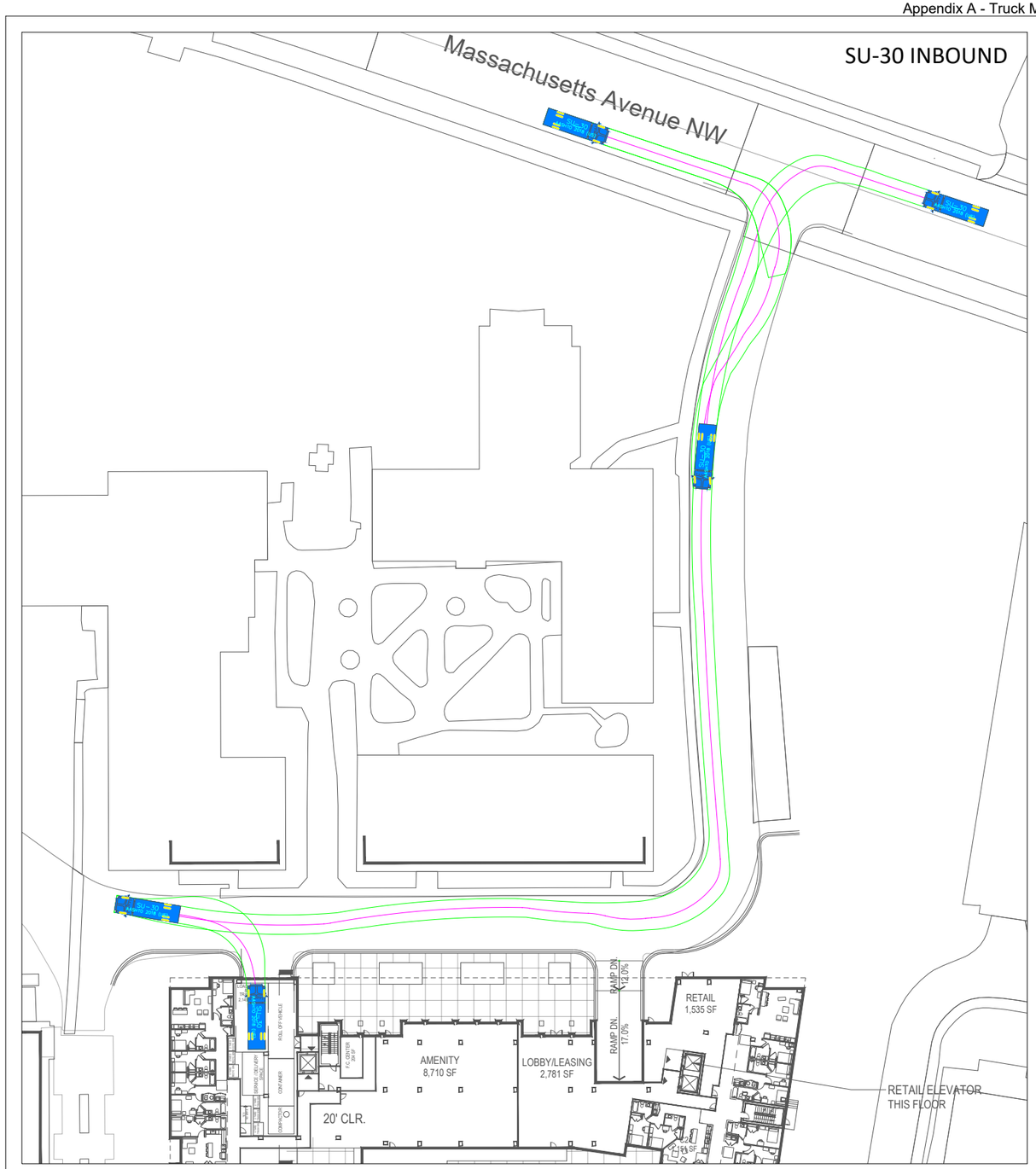

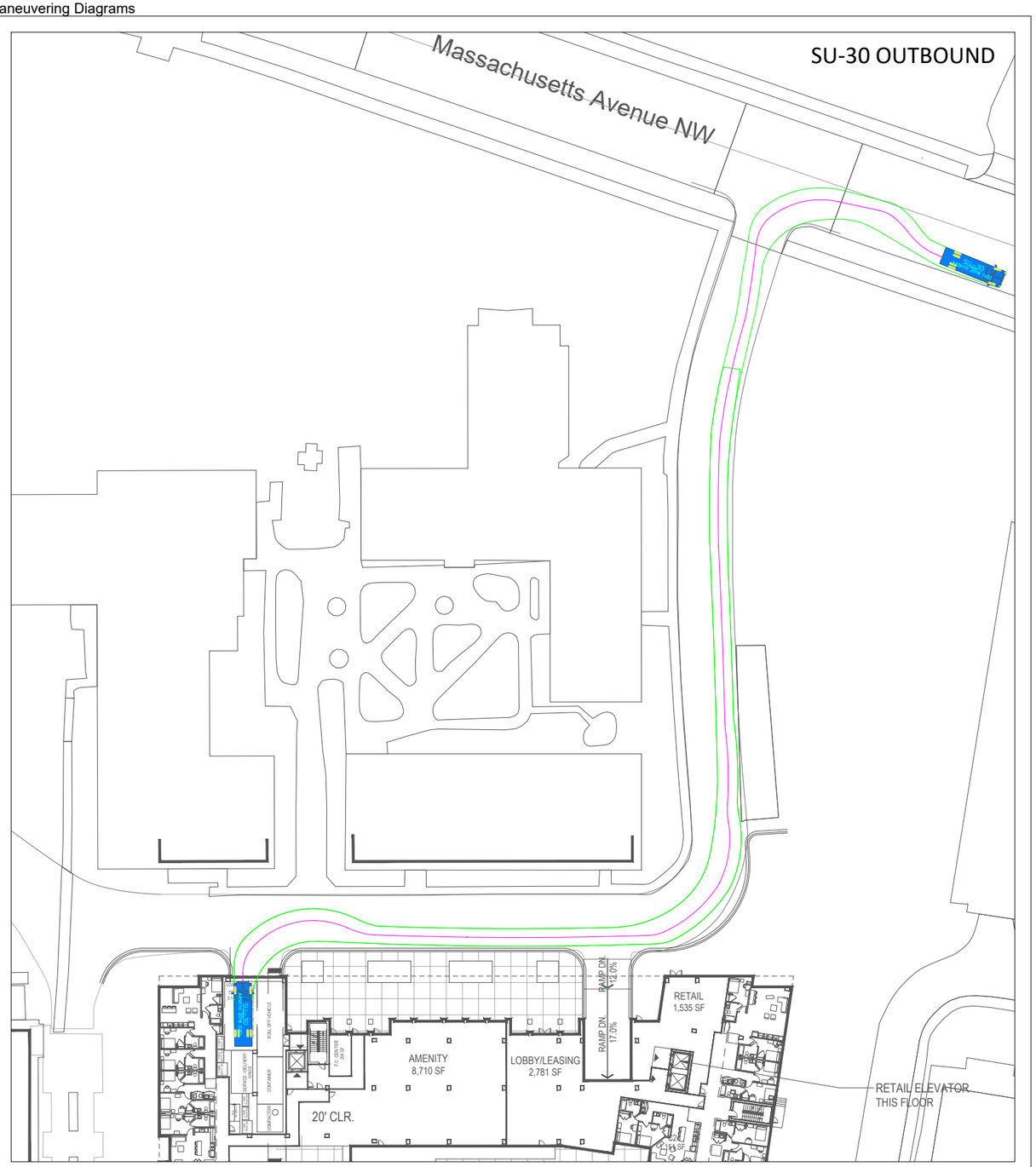

GOROVE SLADE
Transportation Planners and Engineers

Landmark Housing at Wesley Theological Seminary: Loading Analysis

Bohler DC
November 19, 2021
Sheet 1 of 7

NW, Washington, DC

SCALE: 1" = 60'

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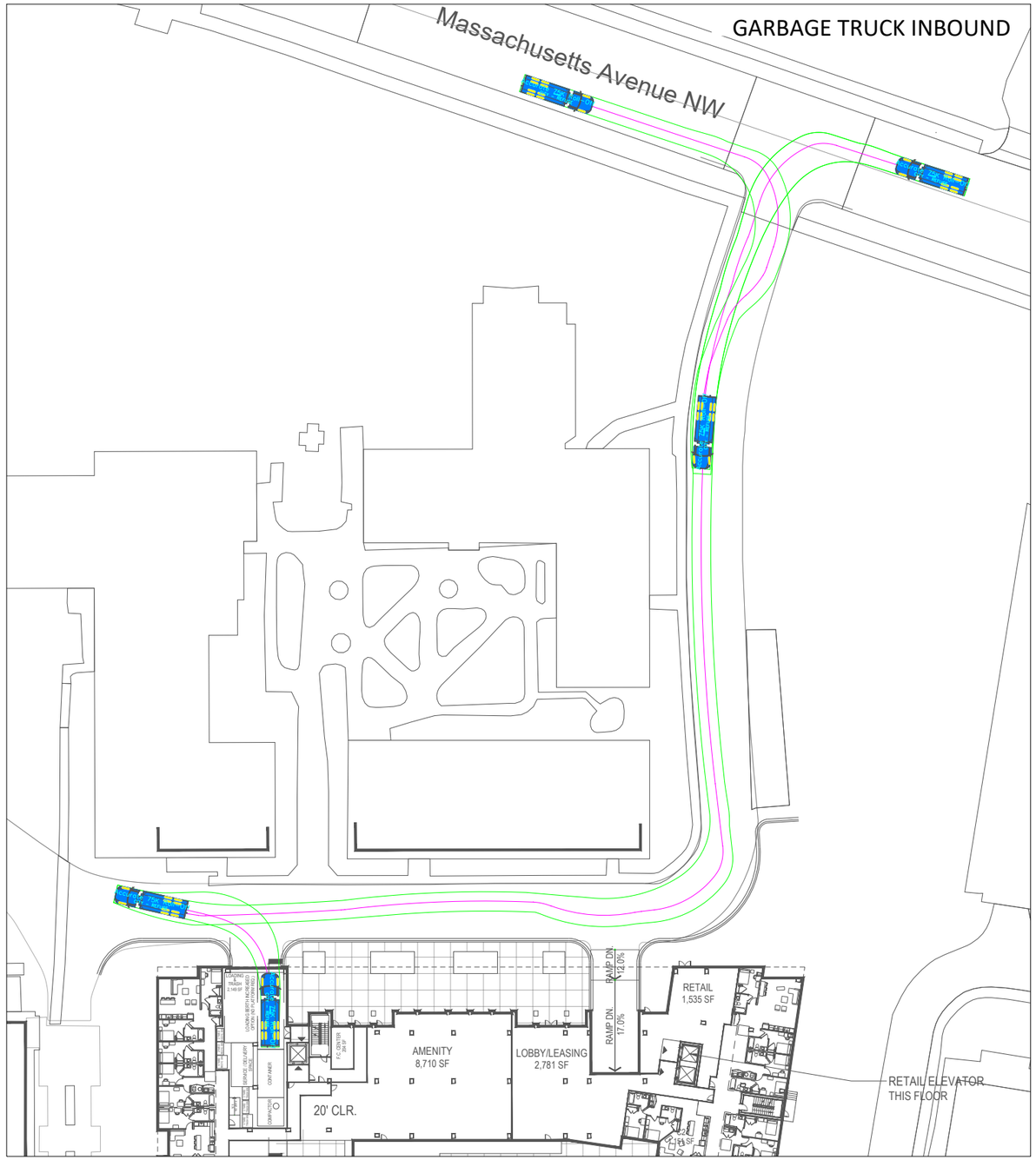

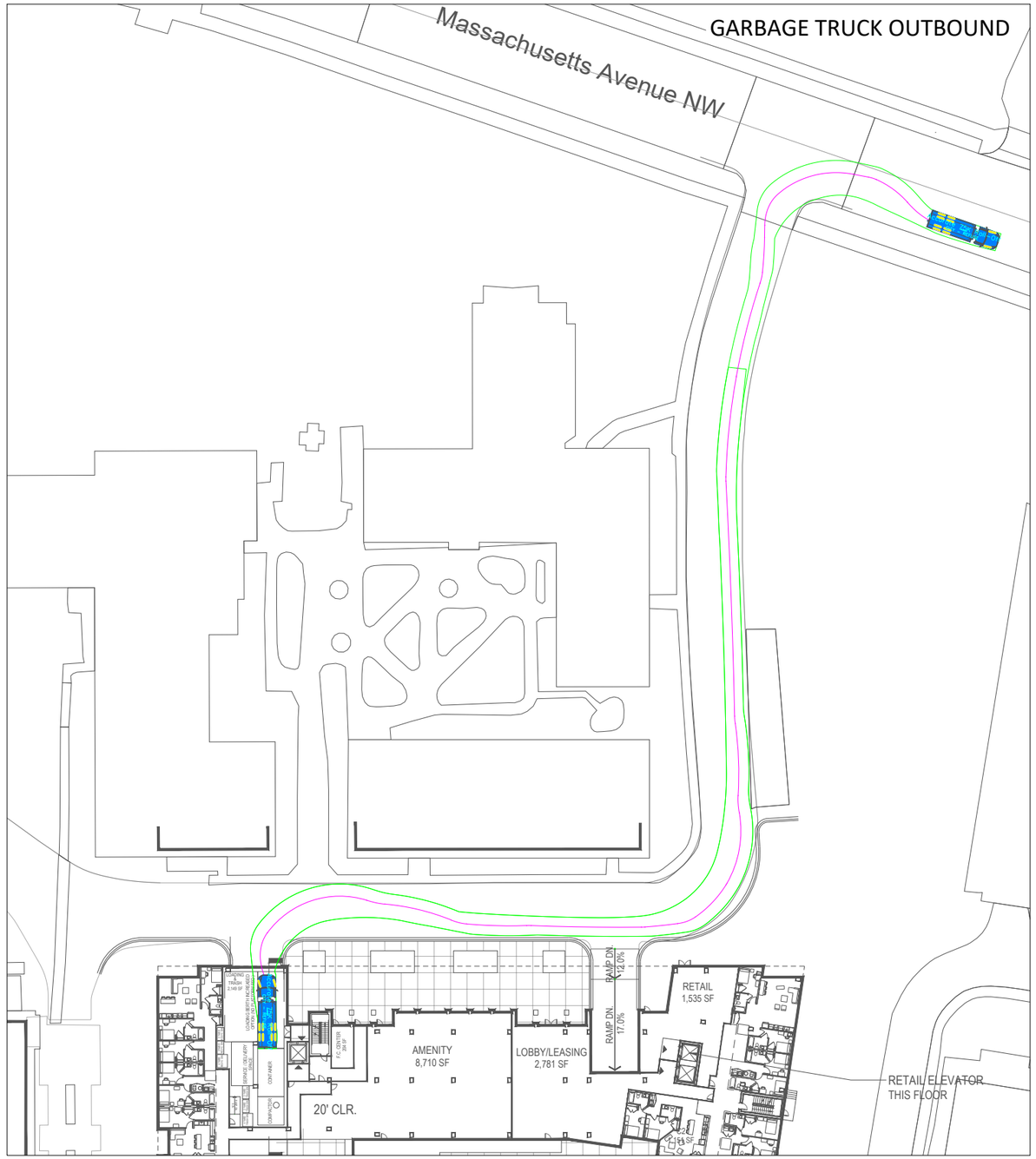

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Landmark Housing at Wesley Theological Seminary: Loading Analysis

Bohler DC
November 19, 2021
Sheet 2 of 7

NW, Washington, DC

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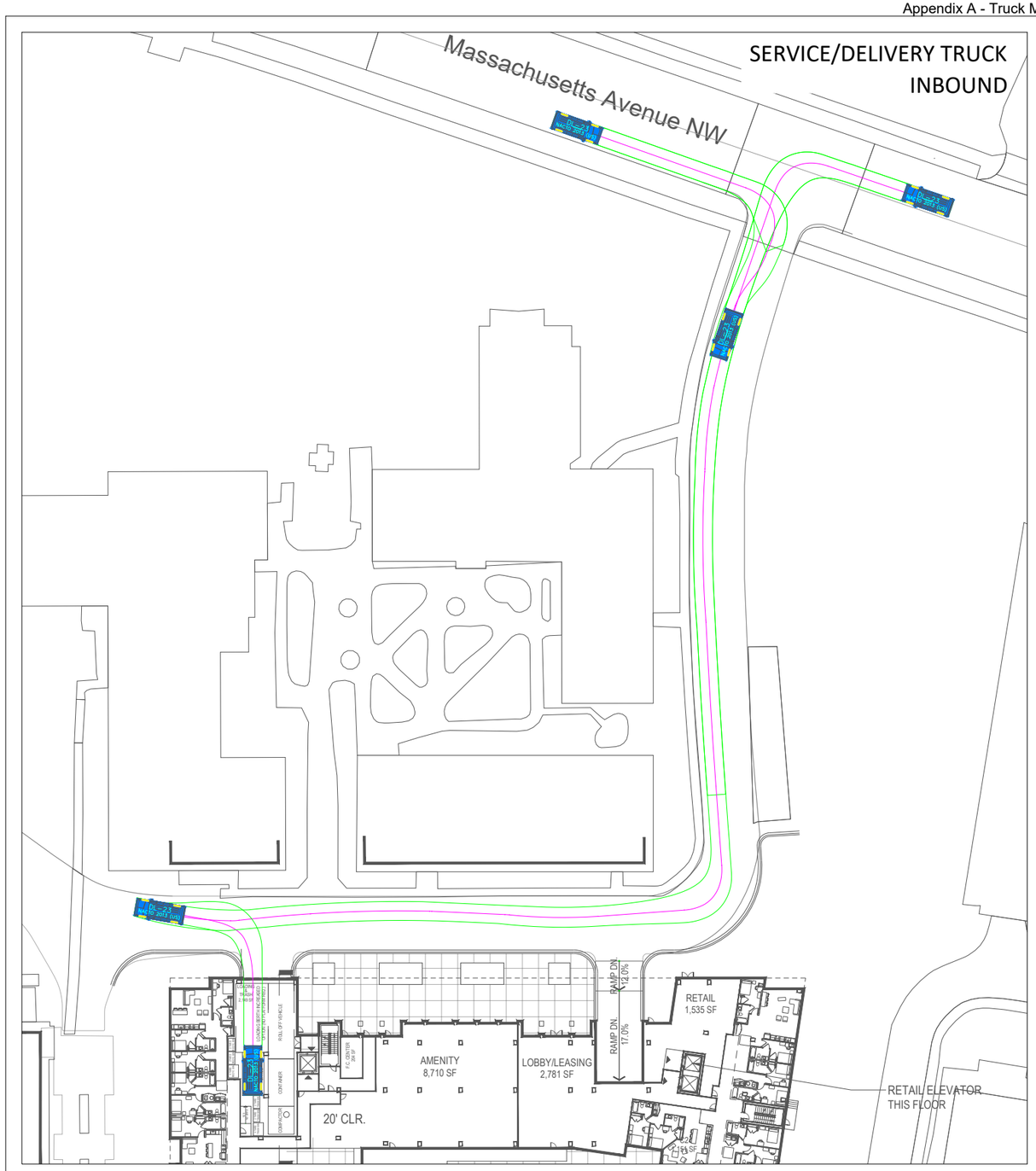

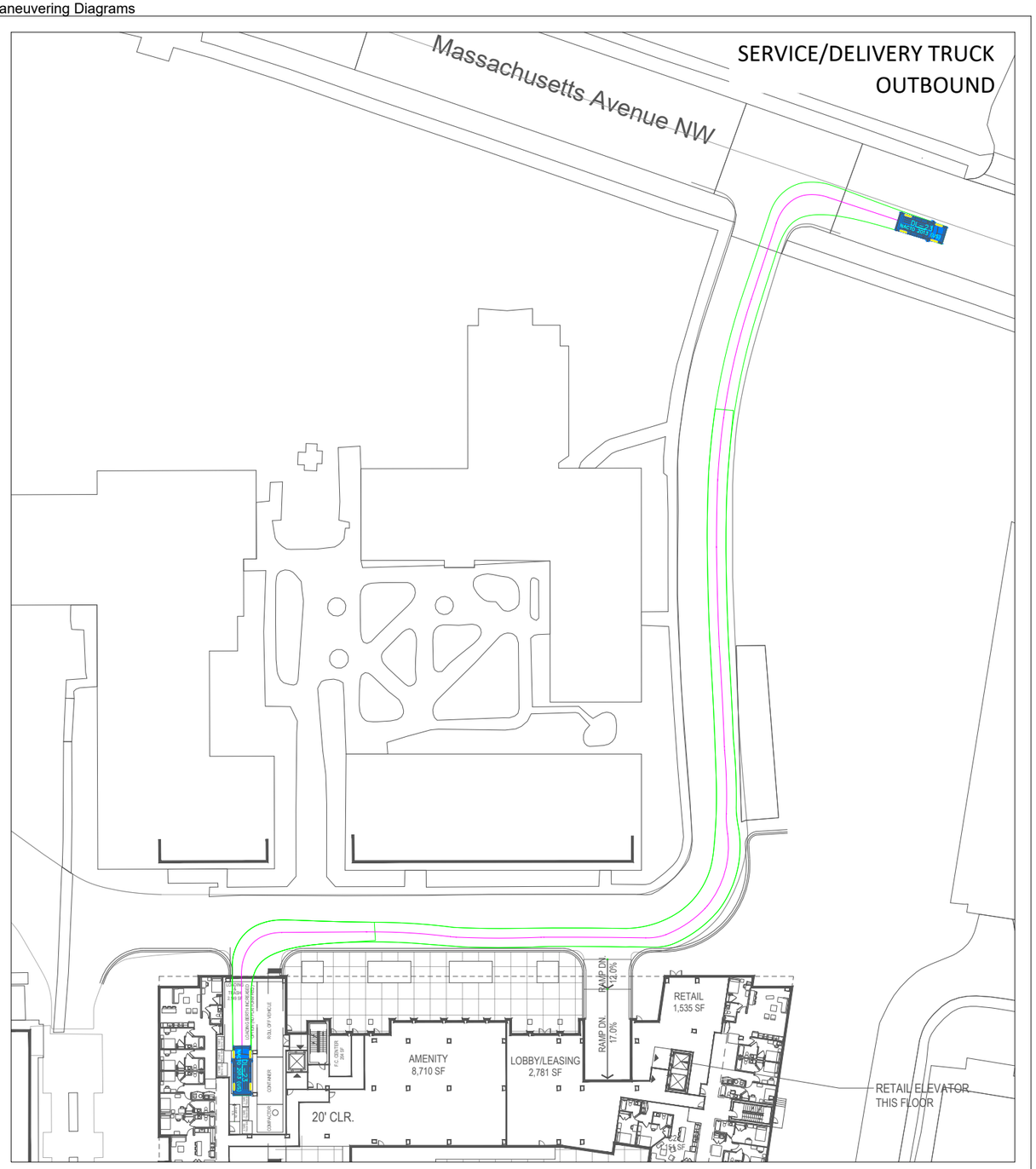

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Transportation Planners and Engineers

Landmark Housing at Wesley Theological Seminary: Loading Analysis

Bohler DC
November 19, 2021
Sheet 3 of 7

NW, Washington, DC

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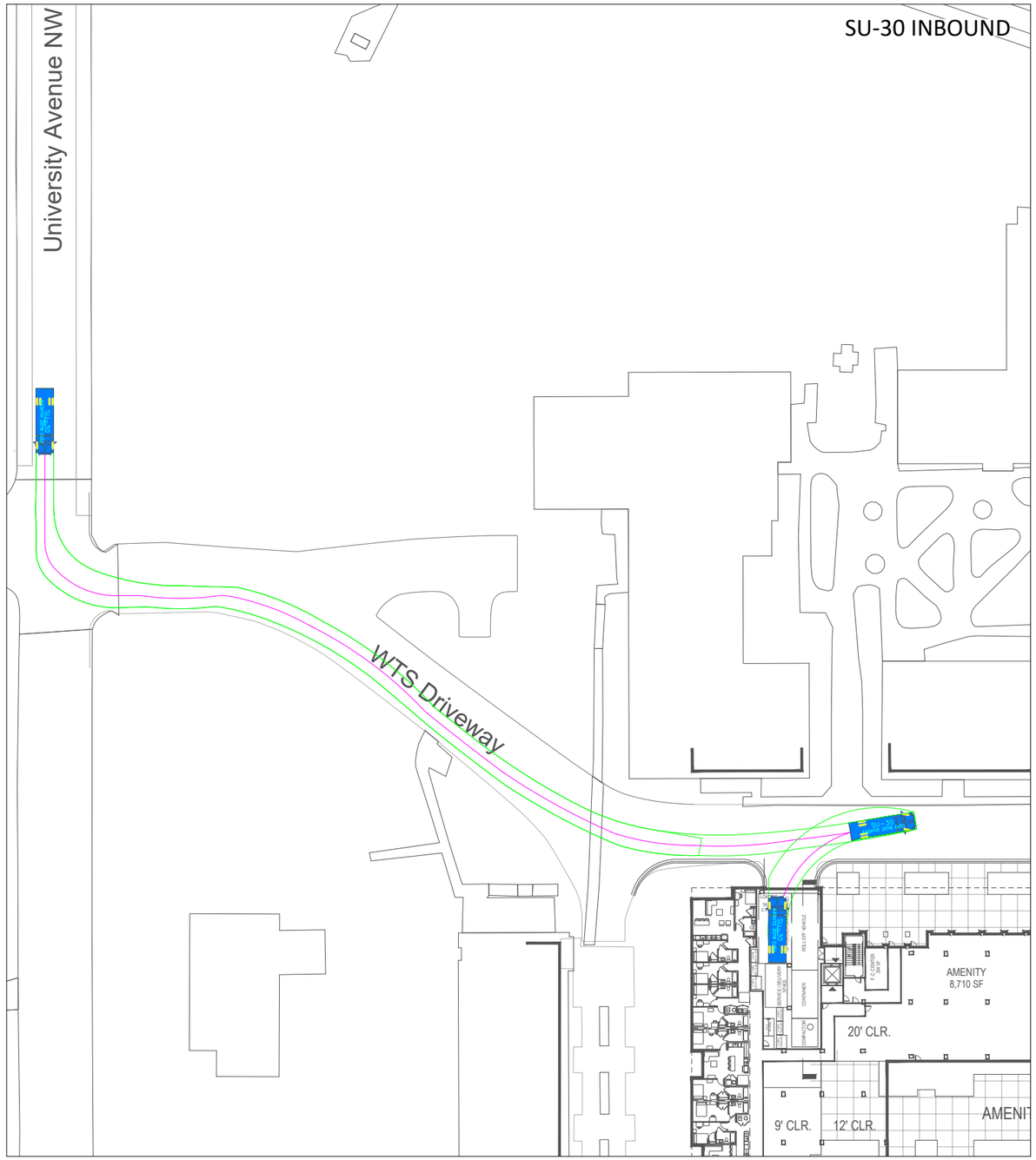

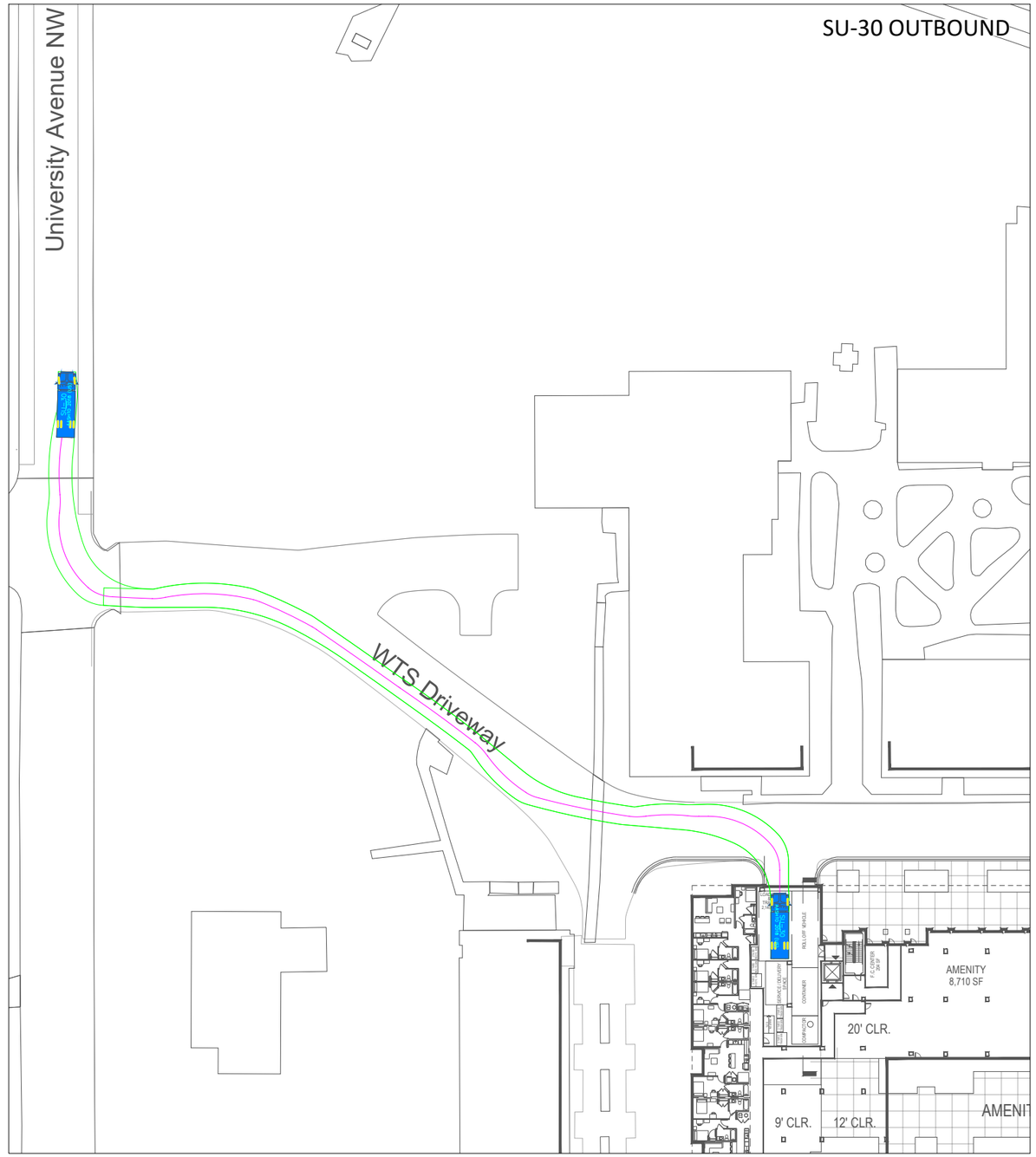

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Landmark Housing at Wesley Theological Seminary: Loading Analysis

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NW, Washington, DC

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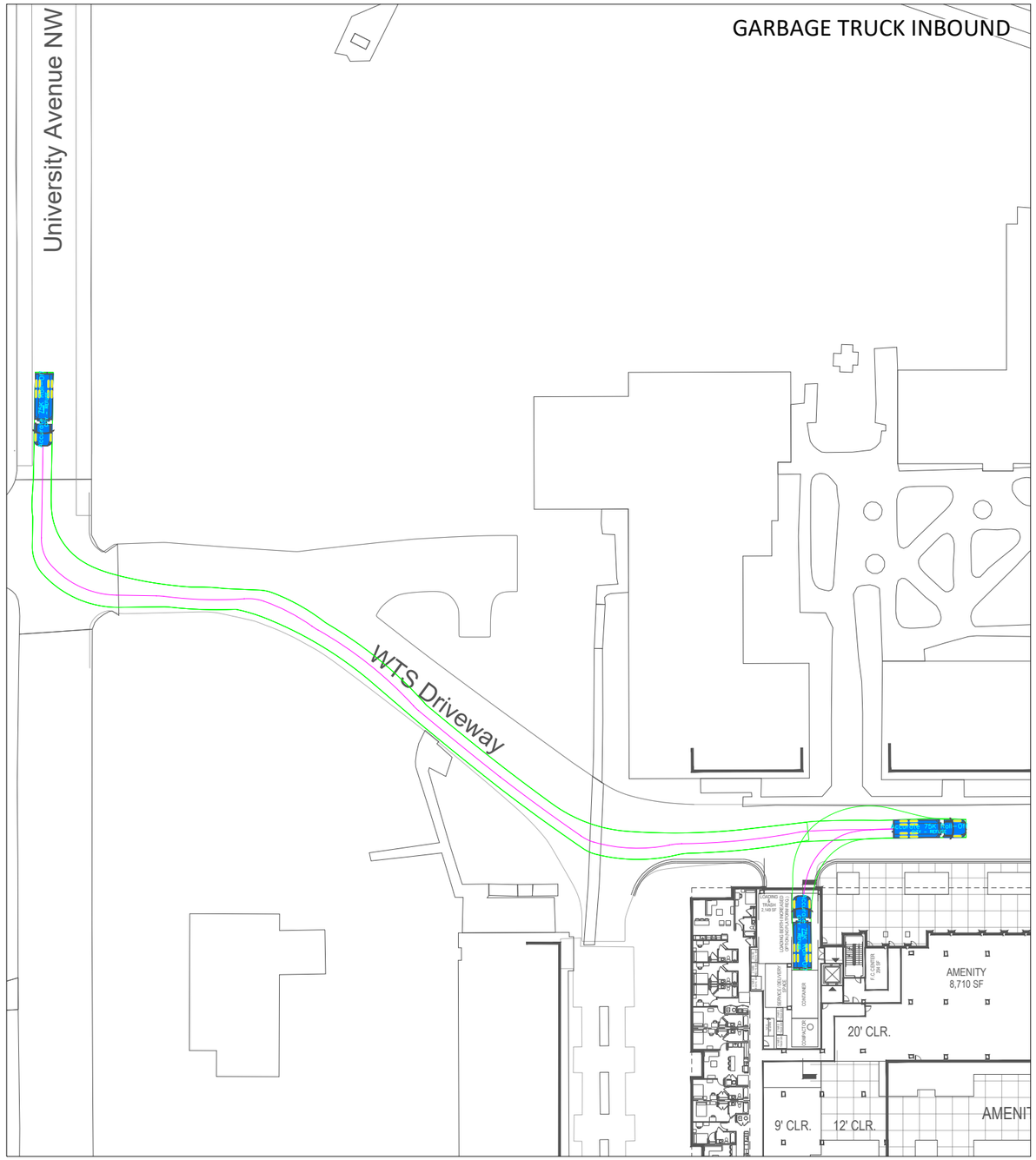

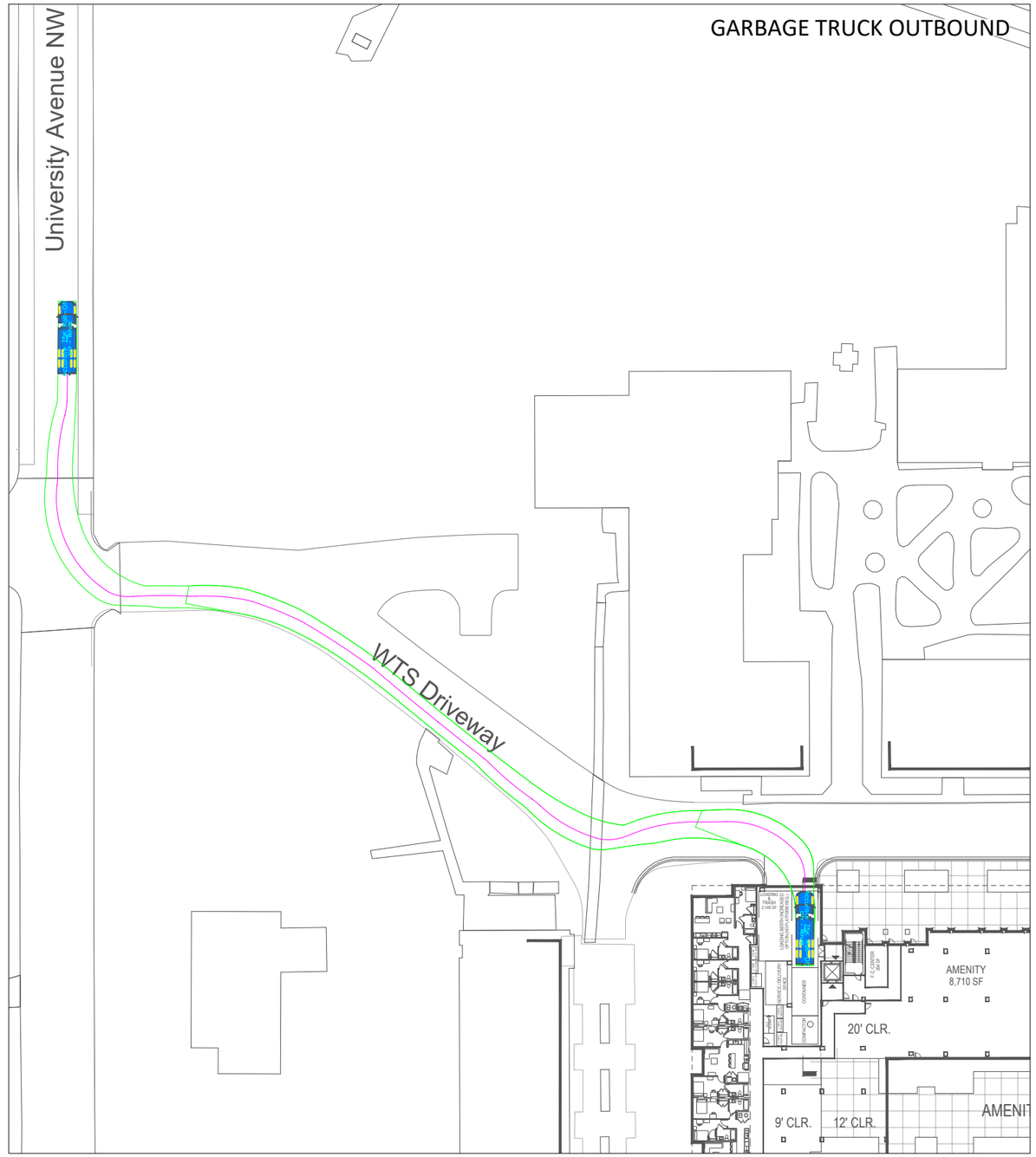

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Landmark Housing at Wesley Theological Seminary: Loading Analysis

Bohler DC
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NW, Washington, DC

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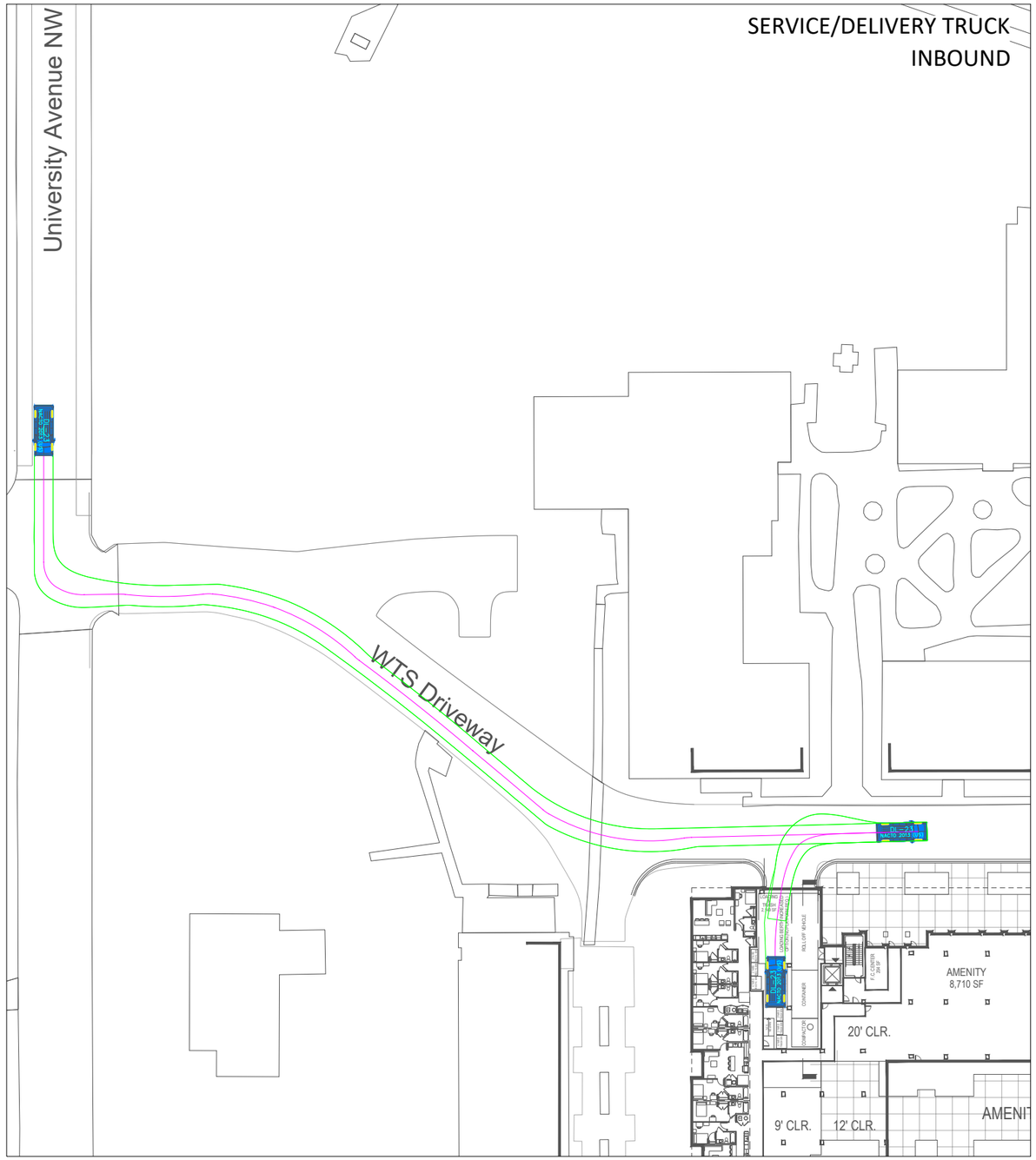

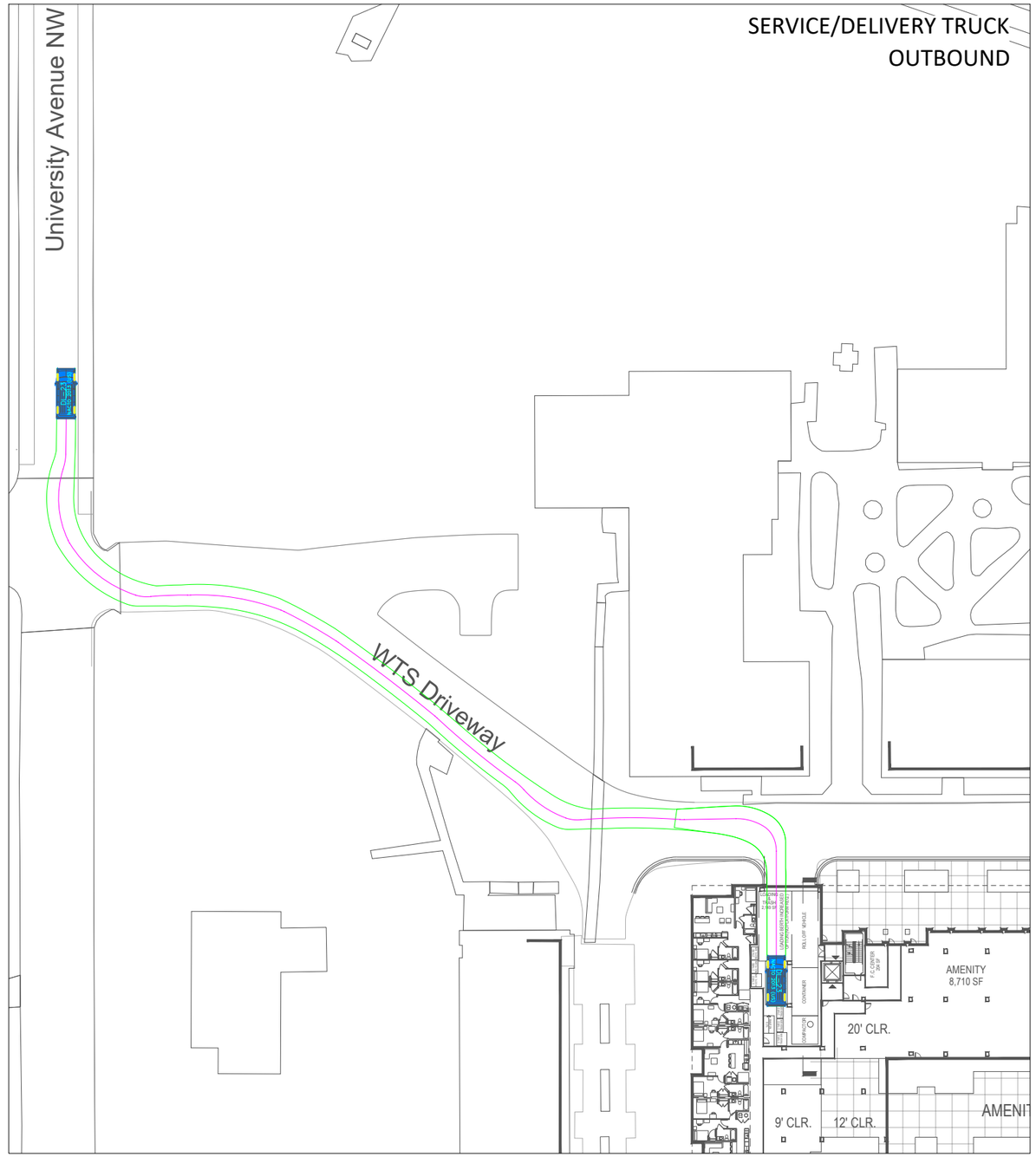

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Landmark Housing at Wesley Theological Seminary: Loading Analysis

Bohler DC
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NW, Washington, DC

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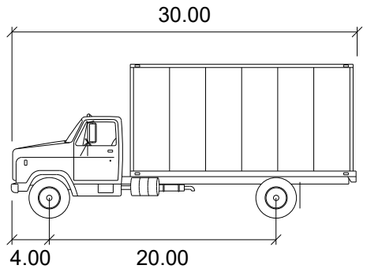
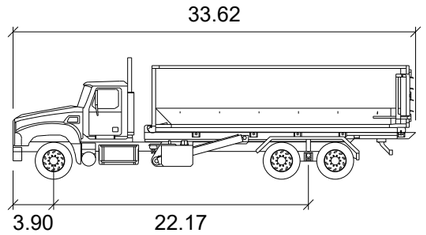


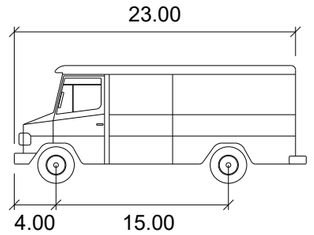
SU-30

	feet
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8



Accurate 75K Roll-Off

	feet
Width	: 8.17
Track	: 8.02
Lock to Lock Time	: 6.0
Steering Angle	: 32.7



DL-23

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 40.4

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Transportation Planners and Engineers

Landmark Housing at Wesley Theological Seminary: Loading Analysis Vehicle Profiles

Bohler DC
NW, Washington, DC
November 19, 2021
Sheet 7 of 7

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N.T.S.

B. Detailed Trip Generation and Mode Split Information

Mode Split Assumptions

Residential Component

Pertinent Mode Split data from other sources:

Information Source	Mode							
	SOV	Carpool	Rideshare	Transit	Bike	Walk	Telecommute	Other
CTPP - TAZ Residents (TAZ 10094)	17%	8%	---	22%	2%	30%	18%	3%
State of the Commute 2016 (of District residents)	35%	4%	---	42%	16%		3%	
AU 2021 Campus Plan - student commute to campus	14%	2%	4%	50%	28%		---	2%
WMATA Ridership Survey Table 9 (average for *Friendship Heights Station Area*)	55%		---	35%	10%		---	

Mode Split assumed in TIS:

Land Use	Mode				
	Drive	Transit	Bike	Walk	Telecommute/Other
Residential Mode Split	20%	50%	5%	25%	---

Notes: Mode split based primarily on census data and mode split for AU students commuting to campus, adjusted for the project site being located on campus.

Retail Component

Pertinent Mode Split data from other sources:

Information Source	Mode							
	SOV	Carpool	Rideshare	Transit	Bike	Walk	Telecommute	Other
CTPP - TAZ Workers (TAZ 10094)	40%	7%	---	22%	2%	22%	6%	1%
State of the Commute 2019 (of DC Workers)	32%	6%	---	53%	7%		---	
WMATA Ridership Survey Table 15 (Average Among Retail Sites)	36%			37%	27%		---	

Mode Split assumed in TIS:

Land Use	Mode				
	Drive	Transit	Bike	Walk	Telecommute/Other
Retail	50%	25%	5%	20%	---

Residential Trip Generation

600 net new bedrooms

Step 1: Base trip generation using ITEs' *Trip Generation*

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	225	600 br	27 veh/hr	38 veh/hr	65 veh/hr	74 veh/hr	73 veh/hr	147 veh/hr	1872 veh
		Calculation Details:	*41%*	*59%*	*=0.1X+5.31*	*50%*	*50%*	*=0.24X+2.9*	*=3.03X+54.26*

Step 2: Convert to people per hour, before applying mode splits

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	32 ppl/hr	45 ppl/hr	77 ppl/hr	87 ppl/hr	86 ppl/hr	173 ppl/hr	2209 ppl

Step 3: Split between modes, per assumed Mode Splits

Land Use	Mode	Split	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	Auto	20%	6 ppl/hr	9 ppl/hr	15 ppl/hr	17 ppl/hr	18 ppl/hr	35 ppl/hr	442 ppl
Apartments	Transit	50%	16 ppl/hr	23 ppl/hr	39 ppl/hr	44 ppl/hr	43 ppl/hr	87 ppl/hr	1105 ppl
Apartments	Bike	5%	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	5 ppl/hr	9 ppl/hr	110 ppl
Apartments	Walk	25%	8 ppl/hr	11 ppl/hr	19 ppl/hr	22 ppl/hr	21 ppl/hr	43 ppl/hr	552 ppl

Step 4: Convert auto trips back to vehicles/hour

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	5 veh/hr	8 veh/hr	13 veh/hr	14 veh/hr	16 veh/hr	30 veh/hr	375 veh

Trip Gen Summary for Residential

Mode	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Auto	5 veh/hr	8 veh/hr	13 veh/hr	14 veh/hr	16 veh/hr	30 veh/hr	375 veh
Transit	16 ppl/hr	23 ppl/hr	39 ppl/hr	44 ppl/hr	43 ppl/hr	87 ppl/hr	1105 ppl
Bike	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	5 ppl/hr	9 ppl/hr	110 ppl
Walk	8 ppl/hr	11 ppl/hr	19 ppl/hr	22 ppl/hr	21 ppl/hr	43 ppl/hr	552 ppl

Retail Trip Generation

1,535 sf

Step 1: Base trip generation using ITEs' *Trip Generation*

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Retail	820	1,535 sf	1 veh/hr	0 veh/hr	1 veh/hr	3 veh/hr	3 veh/hr	6 veh/hr	58 veh
		Calculation Details:	*62%*	*38%*	*=0.94(X/1000)*	*48%*	*52%*	*=3.81(X/1000)*	*=37.75(X/1000)*

Step 2: Convert to people per hour, before applying mode splits

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Retail	1.82 ppl/veh	2 ppl/hr	0 ppl/hr	2 ppl/hr	5 ppl/hr	6 ppl/hr	11 ppl/hr	106 ppl

Step 3: Split between modes, per assumed Mode Splits

Land Use	Mode	Split	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Retail	Auto	50%	1 ppl/hr	0 ppl/hr	1 ppl/hr	3 ppl/hr	3 ppl/hr	6 ppl/hr	53 ppl
Retail	Transit	25%	1 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	3 ppl/hr	27 ppl
Retail	Bike	5%	0 ppl/hr	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	5 ppl
Retail	Walk	20%	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	21 ppl

Step 4: Convert auto trips back to vehicles/hour

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Retail	1.82 ppl/veh	1 veh/hr	0 veh/hr	1 veh/hr	2 veh/hr	1 veh/hr	3 veh/hr	29 veh

Trip Gen Summary for Retail

Mode	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Auto	1 veh/hr	0 veh/hr	1 veh/hr	2 veh/hr	1 veh/hr	3 veh/hr	29 veh
Transit	1 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	3 ppl/hr	27 ppl
Bike	0 ppl/hr	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	5 ppl
Walk	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	21 ppl

Multimodal Trip Generation Summary

690 beds

600 net new beds

1,535 SF retail

Mode	Mode Split	Land Use	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Auto (veh/hr)	20%	Residential	5	8	13	14	16	30
	50%	Retail	1	0	1	2	1	3
		Total	**6**	**8**	**14**	**16**	**17**	**33**
Transit (ppl/hr)	50%	Residential	16	23	39	44	43	87
	25%	Retail	1	0	1	1	2	3
		Total	**17**	**23**	**40**	**45**	**45**	**90**
Bike (ppl/hr)	5%	Residential	2	2	4	4	5	9
	5%	Retail	0	0	0	0	1	1
		Total	**2**	**2**	**4**	**4**	**6**	**10**
Walk (ppl/hr)	25%	Residential	8	11	19	22	21	43
	20%	Retail	0	0	0	1	1	2
		Total	**8**	**11**	**19**	**23**	**22**	**45**

Residential Trip Generation

569 net new bedrooms

Step 1: Base trip generation using ITEs' *Trip Generation*

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	225	569 br	25 veh/hr	37 veh/hr	62 veh/hr	70 veh/hr	69 veh/hr	139 veh/hr	1778 veh
		Calculation Details:	*41%*	*59%*	*=0.1X+5.31*	*50%*	*50%*	*=0.24X+2.9*	*=3.03X+54.26*

Step 2: Convert to people per hour, before applying mode splits

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	30 ppl/hr	43 ppl/hr	73 ppl/hr	83 ppl/hr	81 ppl/hr	164 ppl/hr	2098 ppl

Step 3: Split between modes, per assumed Mode Splits

Land Use	Mode	Split	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	Auto	20%	6 ppl/hr	9 ppl/hr	15 ppl/hr	17 ppl/hr	16 ppl/hr	33 ppl/hr	420 ppl
Apartments	Transit	50%	15 ppl/hr	22 ppl/hr	37 ppl/hr	42 ppl/hr	40 ppl/hr	82 ppl/hr	1049 ppl
Apartments	Bike	5%	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	4 ppl/hr	8 ppl/hr	105 ppl
Apartments	Walk	25%	8 ppl/hr	10 ppl/hr	18 ppl/hr	21 ppl/hr	20 ppl/hr	41 ppl/hr	525 ppl

Step 4: Convert auto trips back to vehicles/hour

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	5 veh/hr	8 veh/hr	13 veh/hr	14 veh/hr	14 veh/hr	28 veh/hr	356 veh

Trip Gen Summary for Residential

Mode	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Auto	5 veh/hr	8 veh/hr	13 veh/hr	14 veh/hr	14 veh/hr	28 veh/hr	356 veh
Transit	15 ppl/hr	22 ppl/hr	37 ppl/hr	42 ppl/hr	40 ppl/hr	82 ppl/hr	1049 ppl
Bike	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	4 ppl/hr	8 ppl/hr	105 ppl
Walk	8 ppl/hr	10 ppl/hr	18 ppl/hr	21 ppl/hr	20 ppl/hr	41 ppl/hr	525 ppl

Multimodal Trip Generation Summary

659 beds

569 net new beds

1,535 SF retail

Mode	Mode Split	Land Use	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Auto (veh/hr)	20%	Residential	5	8	13	14	14	28
	50%	Retail	1	0	1	2	1	3
		Total	**6**	**8**	**14**	**16**	**15**	**31**
Transit (ppl/hr)	50%	Residential	15	22	37	42	40	82
	25%	Retail	1	0	1	1	2	3
		Total	**16**	**22**	**38**	**43**	**42**	**85**
Bike (ppl/hr)	5%	Residential	2	2	4	4	4	8
	5%	Retail	0	0	0	0	1	1
		Total	**2**	**2**	**4**	**4**	**5**	**9**
Walk (ppl/hr)	25%	Residential	8	10	18	21	20	41
	20%	Retail	0	0	0	1	1	2
		Total	**8**	**10**	**18**	**22**	**21**	**43**

C. Scoping Information

District Department of Transportation (DDOT)
Comprehensive Transportation Review (CTR) Scoping Form

The purpose of the Comprehensive Transportation Review (CTR) study is to evaluate potential impacts to the transportation network that can be expected to result from an approved action by the Zoning Commission (ZC), Board of Zoning Adjustment (BZA), Public Space Committee (PSC), a Federal or District agency, or an operational change to the transportation network. The Scoping Form accompanies the *Guidance for Comprehensive Transportation Review* and provides the Applicant an opportunity to propose a scope of work to evaluate the potential transportation impacts of the project.

Directions: The CTR Scoping Form contains study elements that an Applicant is expected to complete to determine the scope of the analysis. An Applicant should fill out this *Scoping Form* with a proposed scope of analysis commensurate with the requested action and submit to DDOT for review and concurrence. Accordingly, not all elements and figures identified in the *Scoping Form* are required for every action, and there may be situations where additional analyses and figures may be necessary. Once a completed Scoping Form is submitted, DDOT will provide feedback on the initial parameters of an appropriate analysis scope. DDOT's turnaround times are four (4) weeks for CTRs with a Traffic Impact Analysis (TIA) and three (3) weeks for all other lower tier studies. After the *Scoping Form* has been finalized and agreed to by DDOT, the Applicant is required to expand upon the elements outlined in this Form within the study.

Scoping Information
Date(s) Scoping Form Submitted to DDOT: June 15, 2021 (Responses to DDOT comments submitted August 12, 2021)
DDOT Case Manager: Aaron Zimmerman / Ted Van Houten
Date(s) Scoping Form Comments Returned to Applicant: July 28, 2021
Date Scoping Form Finalized:

Project Overview	**Proposed Development Program**
Project Name: Landmark Housing at Wesley Theological Seminary	**Use(s):** Residential (student)
Case Type & No. (ZC, BZA, PSC, etc.): ZC	**Residential (dwelling units):** 690 beds, including 90 replacement beds (600 net new beds)
ANC/SMD: 3D02	**Retail (square feet):** 1,535
Applicant/Developer Name: LCD Acquisitions, LLC 315 Oconee Street, Athens, GA 30601 Attn: Eric Leath, Eric.Leath@LandmarkProperties.com	**Office (square feet):** N/A
Transportation Consultant and Contact Info: Gorove/Slade Associates, Inc. 1140 Connecticut Avenue NW, Suite 600, Washington, DC 20036 Erwin Andres, 202-540-1925, ena@goroveslade.com Katie Wagner, 202-540-1927, klw@goroveslade.com	**Hotel (rooms):** N/A

Land Use Counsel and Contact Info: Greenstein DeLorme & Luchs, P.C. 801 17th Street NW, Suite 1000, Washington, D.C. 20006 Attn: John Patrick Brown, Jr., Esq., jpb@gdllaw.com	**Other:** 690 beds, including 90 replacement beds (600 net new beds)
Site Street Address: 4500 Massachusetts Ave NW, Washington, DC 20016	**# of Vehicle Parking Spaces:** 360
Site Square & Block: Square 1600, Lot 0819	**# of Carshare spaces:** 0
Current Zoning and/or Overlay District: RA-1	**# of Electric Vehicle Stations:** 0
Estimated Date of Hearing: N/A	**# of Bicycle Parking Spaces (long- and short-term)**
Small Area Plan (if applicable): N/A	**Long-term:** 62 required; 62 proposed
Livability Study (if applicable): N/A	**Short-term:** 11 required; 12 proposed
Within ½ Mile of Metrorail or ¼ mile of Streetcar/Circulator/Priority Bus?: No	**Loading Berths/Spaces:** Required: One (1) loading berth and one (1) service/delivery space Proposed: One (1) 30' x 12' loading berth and one (1) 20' x 10' service/delivery space

Documents to be Submitted to DDOT: *Any action requiring a CTR or some other evaluation of on-site or off-site transportation facilities must submit one of the following documents to DDOT. It must be appropriately scoped for the specific action proposed and document all relevant site operations and transportation analyses.*

☒ **CTR Study** (100 or person total person trips, or 25 or more peak hour vehicle trips in peak direction, or as deemed necessary by DDOT)

☐ **Transportation Statement** (limited scope based on specifics of project or if Low Impact Development Exemption from CTR and TIA is requested)

☐ **Standalone TIA** (project proposes a change to roadway capacity, operations, or directionality, has a site access challenge, or as deemed necessary by DDOT)

☐ **Other, specify:** _____

☐ Include one (1) hard copy of final report, PDF of report w/appendices, traffic analysis files, and traffic counts in DDOT-required spreadsheet format (total size of all digital files under 15 MB, if possible)

Existing Site and Description of Action: *Describe the type(s) of regulatory approval(s) being requested and any background information on the project relevant to the requested action such as the existing uses, amount of vehicle parking, and other notable proposed changes on-site.*

The site location is within the Wesley Theological Seminary (WTS) campus, which is generally bounded by University Avenue NW to the west, Massachusetts Avenue NW to the north, and the American University (AU) campus to the east and south. The portion of the site to be redeveloped is currently occupied by a surface parking lot. The proposed project includes removal of surface parking & an existing residence building and construction of a new student housing building with below grade parking, to include:

- Student Housing
  - Removal of 90-bed residence building
  - Construction of new building with 219 student housing units
    - 690 beds, including 90 replacement beds (600 net new beds)
- Vehicular parking
  - Removal of 143 of 174 surface parking spaces
  - Construction of 360 spaces in a new underground garage (217 net new spaces),
- Bicycle parking
  - 11 or more short-term spaces
  - 62 or more long-term spaces

Prior Related Action(s), Conditions, and Commitments: *Note any prior approvals by ZC, BZA, or PSC (Campus Master Plan, First Stage PUD, student/faculty cap, etc.) for the site and list all relevant conditions and proffers still in effect from the previous approval and status of completion. Attach a copy of the Decision section from the previous Zoning Order if still in effect.*

Pursuant to the Z.C. Order No. 05-40, effective January 16, 2007, the Commission approved a campus plan authorizing a total campus buildout of 245,000 square feet with student enrollment, employee, and student housing population caps.

Pursuant to the Original Order, effective June 14, 2012, the Commission approved a new campus plan (the "Wesley Campus Plan") instead of the application's initial request to modify the campus plan approved by Z.C. Order No. 05-40, with several conditions including:

- Condition No. 1 established the validity of the Original Order to December 31, 2025; and
- Condition No. 5 required that Wesley provide at least 172 student beds.

Pursuant to Z.C. Order No. 05-40B, effective August 17, 2016, the Commission approved a modification to the Original Order to revise:

- Condition No. 1 to extend the validity of the Original Order to December 31, 2019;
- Condition No. 5 to permit Wesley to house up to 55 non-Wesley graduate students in Straughn Hall provided no Wesley students were denied housing; and
- Condition No. 10 to clarify transportation management and community meeting requirements.

Pursuant to Z.C. Order No. 05-40C, effective August 18, 2017, the Commission approved a Minor Modification to the Original Order, as modified by Z.C. Order No. 05-40B, to revise Condition No. 5 to:

- Expand Wesley's ability to house non-Wesley graduate students to two other campus buildings – up to 6 non-Wesley graduate students at Carroll Hall and up to 26 non-Wesley graduate students at the New Residential Building;
- Extend the time period for housing all non-Wesley graduate students to December 31, 2019; and
- Prohibit Wesley from selling or leasing any part of its campus to American University.

On October 21, 2019, the Z.C. approved Wesley's Modification of Consequence to modify Conditions No. 1 and 5 of Z.C. Order No. 05-40A, as modified by Z.C. Order Nos. 05-40B and 05-40C, to read as follows:

1. Approval of the Campus Plan shall be valid until December 31, 2020.

5. The Applicant shall provide a maximum of 172 beds during the term of the Campus Plan. In the event any of the student housing in Straughn Hall ("Straughn Housing"), Carroll Hall ("Carroll Housing"), or the New Residential Building ("New Housing") is not needed to house Wesley students:

a) Applicant may allow the Straughn Housing to be leased and occupied by not more than fifty-five (55) non-Wesley graduate students through December 31, 2020;
b) Applicant may allow the Carroll Housing to be leased and occupied by not more than six (6) non-Wesley graduate students through December 31, 2020;
c) Applicant may allow the New Housing to be leased and occupied by not more than twenty-six (26) non-Wesley graduate students through December 31, 2020;
d) No Wesley students shall be denied housing to allow for housing of non-Wesley graduate students; and e. Applicant will not sell or lease any part of the Wesley Campus to the American University for university use during the term of the current Wesley Campus Plan ending on December 31, 2020.

Note: The Wesley Campus Plan ends on June 30, 2021, not December 31, 2020.

The current application is part of a Campus Plan amendment consisting of a new administrative building replacing the Old President's House, as well as a new student housing building, which is the subject of this CTR.

Section 1: SITE DESIGN

DDOT reviews the site plan to evaluate consistency with DDOT's standards, policies, and approach to access as documented in the most recent Design and Engineering Manual (DEM). If the proposal for use of public space is found to be inconsistent with the agency approach, DDOT will note this regardless of its relevance to the action. It is DDOT's position that issues regarding public space be addressed at the earliest possible opportunity to ensure the highest quality project design and to minimize project delays and the need to re-design a site in the future.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
Site Access Show site access points for all modes. Include proposed curb cut locations, curb cuts to be closed, access controls (e.g., right-in/out, signalized), sight distances and sight triangles from access points and new intersections, driveway widths and spacing, on- and off-site parking locations, inter-parcel connections, public/private status of driveways, alleys, and streets, and whether easements, dedications, or closures are proposed. *Access must be located off an adjacent existing or "paper" alley, otherwise off the lower volume street. Note any deviations from curb cut policies (DEM 31.5) w/justification and if Conceptual Approval by the Public Space Committee (PSC) has/is being sought. Subtitle I § 600-603 of ZR16 further restricts where curb cuts can be located.* *DDOT will not support curb cut design relief*	Pedestrian access to the project is proposed to be located at an entrance on the northern edge of the development along the WTS driveway. Bicycle access will be provided from the WTS driveway. The site is located approximately 0.5 miles northwest of the bike lanes on New Mexico Avenue NW and 0.5 miles southwest of the on-street signed route on 43rd Street NW. Vehicular access to the proposed garage will be via a driveway on the northern edge of the site, accessed from the WTS driveway. Loading and deliveries will occur in an internal loading area accessed from a curb cut on the WTS driveway. No new curb cuts from public space are proposed as part of this project. All vehicular access will remain from existing access locations at the two-way WTS driveway entrance/exit at Massachusetts Avenue NW and the one-way WTS driveway exit at University Avenue NW. The WTS driveway exit at University Avenue NW is one-way outbound for all vehicles except WTS food service trucks, for which two-way traffic is permitted. This arrangement is not expected to change because of the project. ☒ *Scoping Graphic: Project Location Map* ☒ *Scoping Graphic: Site Circulation Plan* ☒ *Scoping Graphic: Plat for Site's Square and Lot from Office of the Surveyor (if official plat not available, provide plans from SURDOCs)*	Acknowledged GS Response: Noted.

unless there is a clear hardship preventing a project from meeting all DDOT standards and other alternatives have been explored.

All proposed private streets connecting to a public street must be built to DDOT standards and have a public access easement. Design of driveways and drive aisles on private property must comply with Subtitle C § 711 of ZR16.

Loading

Discuss and show the quantity and sizes of loading berths/delivery spaces, trash storage locations, on- and off-site loading locations, turnaround design, nearby commercial loading zones, and anticipated demand, operations, and routing of delivery and trash vehicles. Identify the sizes of trucks anticipated to serve the site and design vehicles to be used in truck turning diagrams. Provide truck turning diagrams in the body of the report not the appendix.

DDOT requires head-in and head-out truck movements through public space (DEM 31.5) and that direct internal pedestrian connections be provided between retail bays and loading facilities. Note any proposed deviations or requested relief from ZR16 or DDOT standards with justification. If any relief is being sought

Loading and deliveries will occur in an internal loading area accessed from a curb cut on the WTS driveway. The loading area will include one (1) 30' x 12' loading berth and one (1) 20' x 10' service/delivery space.

The proposed loading facilities meet ZR16 regulations, as shown below.

Land Use	Size	ZR16 required loading		Proposed loading	
		Berths	Service/delivery spaces	Berths	Service/delivery spaces
Retail	1,535 sf	0	0	0	0
Residential	219 du	1	1	1	1
Total		**1**	**1**	**1**	**1**

All loading vehicle maneuvers will occur within the internal loading area, outside of public space. The proposed loading arrangement will accommodate head-in/head-out maneuvers from Massachusetts Avenue NW and University Avenue NW. Truck turning diagrams will be provided in the CTR.

☒ *Scoping Graphic: Location of loading area w/ internal building routing*

☐ *Scoping Graphic: Truck Turning Diagrams (to/from the site, alley, truck routes)*

Acknowledged

GS Response: Noted.

then a Loading Management Plan (LMP) is required. A template LMP is provided in Appendix E.

Vehicle Parking

Identify all off-street parking locations (on- and off-site) and justify the amount of on-site vehicle parking, including a comparison to the number of spaces required by ZR16 and any previous approvals. Provide parking calculations and parking ratios by land use, including any eligible ZR16 vehicle parking reductions (i.e., within ¼ mile of Priority Bus Route, within ½ mile of Metrorail Station, providing carshare spaces, located within a D zone, etc.).

Review the DDOT Preferred Parking Rates (Table 2). If the total parking provision proposed exceeds the amount calculated using ratios in that table then the number of spaces should be reduced or substantial TDM / non-auto improvements be provided. If parking provision is significantly out of line with appropriate parking ratios, one way or the other, then mode split and trip generations estimates will be adjusted.

Confirm whether ZR16 TDM Mitigations will be required, per Subtitle C § 707.3, for providing more than double the amount of required vehicle

The project proposes 360 parking spaces within a garage. The existing use of the site is a 174-space parking lot, from which 143 spaces will be removed; therefore, 217 net new parking spaces are proposed. Because the primary land use is student housing, there is no suitable parking standard from either ZR16 or DDOT's Preferred Parking Rates to compare it to. Per Subtitle C § 701.5, college/university land uses should provide parking as set forth in the approved Campus Plan. The 2006 Zoning Order from the approved Wesley Theological Seminary Campus Plan states that at least 200 parking spaces are to be maintained on campus.

Parking Space Description	Quantity
Minimum spaces required per previous Campus Plan	200
Existing on-campus spaces	174
Existing on-campus spaces lost to Project construction	143
Existing on-campus spaces to remain	31
Proposed new spaces in Project garage	360
Net new spaces resulting from Project	217
Total on-campus spaces after Project	391

☒ *Scoping Table: Parking Calculations with Comparison to ZR16 and DDOT's Preferred Vehicle Parking (Table 2)*

☐ *Scoping Graphic: Off-Street Parking Locations (both on- and off-site)*

DDOT finds the proposed amount of parking to be excessive. The Applicant is proposing 360 new parking spaces, while the 2006 Zoning Order from the approved Wesley Theological Seminary Campus Plan states that at least 200 parking spaces are to be maintained on campus. Please justify why 160 extra spaces are needed.

New parking facilities built in the District must charge market rate parking and the employer/institution cannot offer free/subsidized parking for that facility to employees. This is per the new Transportation Benefits Equity Amendment Act of 2020.

Please include more information about how the parking spaces will be used and if the number of parking spaces can be further reduced.

GS Response: As noted in the table, there are 143 existing parking spaces serving the Seminary that will be removed and replaced within the new garage. Therefore, of the 360 total garage spaces, only 217 will be net new spaces to serve the 600 net new beds, resulting in an effective parking ratio of 0.36 spaces per net new bed.

Within the proposed 360-space garage, 105 spaces will be reserved for general WTS use (i.e. not for residents of the proposed building). This number is in keeping with existing conditions; therefore, no net new parking is proposed for non-resident WTS usage.

parking. Coordinate with the Zoning Administrator as early in the process as possible for an official determination.

A TDM Plan is required for BZA parking reduction cases, per Subtitle C § 703.4. If relief is being requested from 5 or more spaces, then a Parking Occupancy Study is required (see Multi-Modal section).

Bicycle Parking

Identify the locations of proposed bicycle parking and justify the amount of long- and short-term spaces proposed. Provide a calculation of the number of spaces required by ZR16.

Long-term bicycle parking spaces must be easily accessible from building lobby or located in the parking garage level closest to the ground floor. Lockers and showers must be included with non-residential long-term bicycle storage rooms, per Subtitle C § 806. Provide calculations for required lockers and showers.

Short-term bicycle parking must be accommodated by installing inverted U-racks along the perimeter of the site in the 'furniture zone' of public space, near the site entrance(s).

ZR16 requires 62 long-term and 11 short-term bicycle parking spaces for the project. The proposed quantities and locations of bicycle parking are still being determined, but the project will meet or exceed zoning requirements for bicycle parking. The location and quantities of bicycle parking facilities will be noted in the CTR if that data is available.

Showers and changing facilities are not required for this project.

Land Use	Size	ZR16 bicycle parking rates		ZR16 required bicycle parking spaces *		Proposed bicycle parking spaces	
		Long-term	Short-term	Long-term	Short-term	Long-term	Short-term
Retail	1,535 sf	1 per 10,000 sf	1 per 3,500 sf	0	0	0	0
Residential	219 du	1 per 3 du's	1 per 20 du's	62	11	62	11
Total				**62**	**11**	**62**	**11**

* Note: Rate applied at 50% after first 50 spaces per ZR16 11C802.2

☒ *Scoping Graphic: Locations of internal bicycle parking spaces, routing to these spaces, and related support facilities including locker rooms, showers, storage areas, and service repair rooms*

Page 2 of the scoping form lists 12 short term bicycle parking spaces to be provided, but the calculations here list 11 spaces to be provided. Please clarify

Ensure short- and long-term bicycle parking spaces abide by the design and spacing guidelines outlined in the DDOT Bike Parking Guide (attached) with close attention paid to long-term bike parking requirements (e.g., at least 50% of long-term spaces must allow for bikes to be placed horizontally on the floor or ground without being suspended)

GS Response: Page 2 has been corrected to show 11 short-term spaces. Short- and long-term bicycle parking spaces will adhere to DDOT's Bike Parking Guide.

Streetscape and Public Realm

The Applicant will work with DDOT to ensure the design of the public realm meets current standards. A preliminary public space concept will be provided in the CTR.

Acknowledged

GS Response: Noted.

Provide a conceptual layout of the streetscape and public realm including at minimum: curb cuts, vaults, sidewalk widths, street trees, grade changes, building projections, short-term bicycle parking, and any existing bus stops. Also provide the permit tracking numbers and PSC hearing date, if known, for any approved public space designs. *DDOT expects new developments to rehabilitate the streetscape between the curb and property line and meet all public space design standards. Streetscape must meet ADA requirements and ensure nothing impedes accessible curb access or pedestrian circulation.* *Note any non-compliant public space elements requiring a DCRA code modification or PSC approval.* *A summary of public space best practices is provided in Section 1.5. DDOT standards are documented in the DEM, Public Realm Design Manual, and corridor Streetscape Guidelines (if applicable).*	☐ *Scoping Graphic: Preliminary Public Space Concept*	
Sustainable Transportation Elements Identify all sustainable transportation elements, such as electric vehicle (EV) charging stations and carshare spaces proposed to be included	Sustainable transportation elements for this development will be discussed in the CTR.	Acknowledged GS Response: Noted.

in the project. Electrical conduit should be installed in parking garage so that additional EV stations can be provided later. *DDOT recommends 1 per 50 vehicle spaces be served by an EV station. DDOT encourages providing car share spaces on-site to reduce the ZR16 parking requirement and support non-car ownership lifestyles.*		
Heritage, Special, and Street Trees Heritage Trees are defined as having a circumference of 100 inches or more and are typically located on private property. They are protected by the District's Tree Canopy Protection Amendment Act of 2016 and must be preserved if deemed non-hazardous by Urban Forestry Division (UFD). Special Trees are between 44 inches and 99.99 inches in circumference and may be removed with a permit. *Note whether there are existing Heritage Trees on-site or in adjacent public space. The presence of Heritage Trees will impact site design since they may not be cut down. Work w/the UFD Ward Arborist to determine if there are Heritage or Special Trees on-site that must be preserved and if Tree Preservation or*	The applicant will work with UFD to determine if there are any Heritage or Special Trees on-site. A screenshot from UFD's street tree website is included in the attachments. ☒ *Scoping Graphic: Street Tree Inventory Study Area*	Please coordinate with DDOT arborists and address any tree-related issues as early as possible. There are Special and Heritage Trees within and directly adjacent to the parking lot that must be considered. Apply for a Special Tree permit to remove trees 44" – 99.99" circumference within and/or directly adjacent to the limits of disturbance. It appears there are 2 Special Trees within the parking lot that will need to be removed, but if more trees exist in this area please show them on an ESC or Demo Plan for UFD to assess. Refer to the following link for Special Tree removals – DDOT Urban Forestry - Tree Permitting (arcgis.com) A Heritage Tree is shown to remain on the southwest side of the site. Confirm size and health of this tree. Non-Hazardous Heritage Trees cannot be damaged or cut down and the only options are to protect in place or relocate. If there are any trees 44" circumference and greater in size to remain, the following shall apply: • Show the Critical Root Zone and the Structural Root Zone of each tree • Critical Root Zone (CRZ) = 1.5 foot radius from the base of the tree's trunk for each 1 inch of the tree's diameter • Structural Root Zone (SRZ) = 0.5 foot radius from the base of the tree's trunk for each 1 inch of the tree's diameter • Measurements are taken at 4.5 feet above grade (also referred to as the diameter at breast height). If a tree is on a slope, multi-stemmed and/or splits below 4.5 feet, please refer to the following link for measuring DBH - http://www.phytosphere.com/treeord/measuringdbh.htm • Contact DDOT arborists Sam Doan (samuel.doan@dc.gov) and Yasha Magarik (yasha.magarik@dc.gov) to discuss the scope of work and determine the type of tree protection measures needed. Protection measures are based on the extent of impact(s) to the critical and structural root zones

Relocation Plans are required. *Conduct an inventory of existing and missing street trees within a 3-block radius of the site (design standards are in DEM 37.5). Identify any opportunities for UFD or the Applicant (as part of the mitigations package) to install missing treeboxes and street trees.*		• Refer to the following link for DDOT Urban Forestry's Tree Preservation Policies - https://ddot-urban-forestry-dcgis.hub.arcgis.com/pages/tree-preservation • Revise documents to include tree protection measures (Basic or Advanced) recommended by UFD as well as a copy of the tracking number, invoice or issued permit for any trees to be removed GS Response: Noted; the Applicant will coordinate with DDOT UFD on any tree-related issues.

Section 2: TRAVEL ASSUMPTIONS

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
Mode Split Provide mode split assumptions with sources and justification. Sources of data could include the most recent *Census Transportation Planning Products (CTPP)* the *2005 WMATA Development-Related Ridership Survey,* or previous planning studies and CTRs. Note that the walking mode share will account for internal trip synergies for mixed use developments. *Adjustments to mode split assumptions may be made, as appropriate, if the number of vehicle parking spaces proposed is significantly lower or higher than expected for the context of the neighborhood.* *The agreed upon mode split assumptions may not be revised between scoping and CTR*	Mode split assumptions are based on CTTP census data, AU students' commute to campus mode splits, and the settings of the sites surveyed for the ITE Land Use 225 data. The mode split assumptions for the project are as follows: ☒ *Scoping Table: Mode Split Assumptions*	Acknowledged GS Response: Noted.

Land Use	Mode			
	Drive	Transit	Bike	Walk
Residential	20%	50%	5%	25%
Retail	50%	25%	5%	20%

submission without DDOT concurrence.

Trip Generation

Provide site-generated person trip generation estimates, utilizing the most recent version of ITE *Trip Generation Manual* or another agreed upon methodology such as manual doorway or driveway counts at similar facilities. Estimates must be provided by mode, type of trip, land use, and development phase during weekday AM and PM commuter peaks, Saturday mid-day peak, and daily totals. CTR must also include existing site trip generation based on observed counts. Modes include transit, bicycle, walk, and automobile.

DDOT TripsDC tool will be used to determine trip generation estimates for residential-over-retail projects (see Section 2.2.4 for parameters).

Auto occupancy rates by travel purpose published in the 2017 National Household Travel Survey should be used when calculating person trips based on suburban vehicle trip data in Trip Generation Manual (see Table 3).

Adjustments to trip generation may be made, as appropriate, if the number of vehicle parking spaces proposed is significantly lower or higher than expected for

Multi-modal trip generation was calculated using ITE *Trip Generation* 10th Edition rates for Land Use 225 (Off-Campus Student Apartment) using the "adjacent to campus" setting.

The ITE trip generation for the proposed project is shown below and included in the attachments.

Mode	Mode Split	Land Use	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Auto (veh/hr)	20%	Residential	5	8	13	15	15	30
	50%	Retail	1	0	1	2	1	3
		Total	**6**	**8**	**14**	**17**	**16**	**33**
Transit (ppl/hr)	50%	Residential	16	23	39	45	44	89
	25%	Retail	1	0	1	1	2	3
		Total	**17**	**23**	**40**	**46**	**46**	**92**
Bike (ppl/hr)	5%	Residential	2	2	4	4	5	9
	5%	Retail	0	0	0	0	1	1
		Total	**2**	**2**	**4**	**4**	**6**	**10**
Walk (ppl/hr)	25%	Residential	8	11	19	22	22	44
	20%	Retail	0	0	0	1	1	2
		Total	**8**	**11**	**19**	**23**	**23**	**46**

The above trip generation is only for the proposed residential (600 beds) and retail (1,535 SF) components of the Landmark Housing project. The project's parking facility will also serve general campus trips outside of residents and staff of the Landmark Housing project itself. These existing vehicular campus trips, which were established previously with turning movement counts at the site driveways, are presented below alongside the Landmark Housing project-generated trips.

Mode	Land Use	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Auto (veh/hr)	Proposed Residential	5	8	13	15	15	30
	Proposed Retail	1	0	1	2	1	3
	Net New Trip Generation	**6**	**8**	**14**	**17**	**16**	**33**
	Existing Campus	25	11	36	31	37	68
	Total Campus Trip Generation	**31**	**19**	**50**	**48**	**53**	**101**

☒ *Scoping Table: Multi-Modal Trip Gen Summary (w/mode split and applicable reductions, as appropriate)*

Acknowledged

GS Response: Noted.

the context of the neighborhood. *Pass-by rates in the District are minimal and should only apply to major retail-dominant destinations, grocery stores, and gas stations. An adjusted pass-by/diverted trips methodology should be developed if development is not located on a road classified as arterial or higher.* *The agreed upon trip generation methodology may not be revised between scoping and CTR submission without DDOT concurrence. Consult the DDOT Case Manager if site plan, development program, land uses, or density changes significantly.*		

Section 3: MULTI-MODAL NETWORK EVALUATION

A CTR study is required if the project generates at least 100 peak hour person trips or 25 vehicle trips in the peak direction (highest of inbound or outbound) in any study period. Existing site traffic, pass-by, TDM, internal capture or other reductions may not be taken in the calculation to determine if the project meets these thresholds. However, they may be taken in the TIA, as appropriate, if a study is triggered. Analyses in the Multi-Modal Network Evaluation section are required in all CTRs, unless otherwise specified. A Transportation Statement may only require some of the following sections depending on the specifics of the project and zoning action.

The requirement for a CTR may be waived if site is within ½ mile from Metrorail or ¼ mile from Priority Transit, the total vehicle parking supply below level expected within ¼ mile of Metrorail Station (see Table 2), maximum 100 parking spaces, an Enhanced TDM Plan is implemented, site access and loading design are acceptable, there is a complete pedestrian network in the vicinity of the site, and meets all ZR16 bike parking and locker/shower requirements. Additional criteria may be found in the Low Impact Development Exemption section of *Guidance for CTR*.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
Strategic Planning Elements Identify relevant planning efforts and demonstrate how the proposed action is consistent with District-	The CTR will consider the suggested studies included in the column to the left in addition to the following studies located near the development: • Sustainable DC Plan • Rock Creek Far West Livability Study • Wesley Campus Plan (2012) • American University 2021 Campus Plan CTR	Acknowledged GS Response: Noted.

wide planning documents, as well as localized studies. Note in scoping form any recommendations from these documents relevant to the development proposal. The evaluation will consider at least the following high level/District-wide documents: • MoveDC and its relevant modal elements • DDOT Livability Study (relevant to the project) • OP Small Area Plans (relevant to the project) • DC Highway Plan (shown on official plat) • District of Columbia Comprehensive Plan • Vision Zero Action Plan • Capital Bikeshare Development Plan • Washington Metropolitan Area Transit Authority's (WMATA) Metrorail and Metrobus Plans • DDOT Corridor studies (e.g., Transit Development Plan, Streetscape Design Plans and Guidelines) *Details on additional relevant plans and studies may be provided by the DDOT Case Manager.*		

Pedestrian Network Evaluate the condition of the existing pedestrian network and forecast the project's impact. Evaluation must include, at a minimum, critical walking routes, sidewalk widths, network completeness, whether facilities meet DDOT and ADA standards, and whether pedestrian signal timings are adequate (within vehicle study area). *Study area will include, at a minimum, all roadway segments and multi-use trails within a ¼ mile radius from the site, with a focus on connectivity to Metrorail, transit stops, schools, and major activity centers.*	The study will review pedestrian walking routes to and from the site along with an assessment of facilities along these walking routes and on all pedestrian facilities within ¼ mile of the site following section 3.2 of DDOT's CTR guidelines, plus additional walking routes to major destinations. The assessment will evaluate whether facilities meet DDOT and ADA standards. ☒ *Scoping Graphic: Pedestrian Study Area w/Walking Routes to Transit, Schools, Activity Centers*	University Avenue NW adjacent to campus does not have a sidewalk on either side. DDOT would like the Applicant to fill in this sidewalk gap as part of this development. GS Response: The Applicant acknowledges DDOT's request for a sidewalk at this location and will continue to consider it as part of the forthcoming CTR.
Bicycle Network Evaluate the condition of the existing bicycle network and forecast the project's impact, including to Capital Bikeshare (CaBi). Evaluation must include, at a minimum, bicycle network completeness, types of facilities, and adequacy of CaBi locations and availability. Bikeshare station demand data can be obtained from the *CaBi Tracker* website. *Study area will include, at a minimum, all roadway segments and multi-use trails within a ½ mile radius from the site, with a focus on connectivity to Metrorail, transit stops, schools,*	The bicycle study area focuses on the routes that cyclists will take to and from major bicycle facilities. We will also highlight the internal bicycle circulation and facilities. A review of existing and planned bicycle facilities serving the site within a ½ mile will be included with an assessment of connections between the site and major facilities, including a qualitative review of how cyclists going to and from the site will access major facilities (paths, bike lanes, etc.). The review of bicycle facilities will follow DDOT's CTR guidelines found in section 3.3.1. ☒ *Scoping Graphic: Bicycle Study Area w/Bicycling Routes to Transit, Schools, Activity Centers*	Acknowledged GS Response: Noted.

major activity centers, and other bicycle trails or facilities. *Note where bike lanes conflict with access to the site or on-street loading movements associated with the project.* *If a CaBi station is currently located along the site frontage, the Applicant must assume the station will stay in place after the development has been constructed and must be designed in the public space plans. If it is not physically possible to stay in place, then DDOT expects the Applicant to demonstrate this hardship, propose a viable alternative location, and fund the station relocation. The minimum size of a new CaBi station is 19 docks with 12 bikes.*		
Transit Network Evaluate, at a minimum, existing transit stop locations, adjacent bus routes and Metro headways, planned transit improvements, and an assessment of existing transit stop conditions (e.g., ADA compliance, bus shelters, benches, wayfinding, etc.). For Metrorail stations, refer to the 2009 *WMATA Station Site and Access Planning Manual*, as well as various station capacity studies. *Study area is 1.0 mile for Metrorail stations and ½ mile for Streetcar,*	The study will discuss transit routes and schedules, including headway and span of service for Metrorail stations within one (1) mile of the site and for WMATA bus stops within ½ mile of the site. The study will evaluate the sufficiency of the identified services and access to those services from a qualitative standpoint. Additionally, transit stop locations will be evaluated. Any planned transit improvements will be included in the report. This study will not include a quantitative study of boarding and alighting volumes at specific transit stops. All transit network evaluations will follow guidance as outlined in section 3.4 of DDOT's CTR guidelines. ☒ *Scoping Graphic: Transit Study Area with Adjacent Routes and Stations* ☒ *Scoping Graphic: Screenshots from DDOT transit maps showing where the site falls within buffers from Metrorail and Priority Transit*	Acknowledged GS Response: Noted.

Circulator, and WMATA buses. *All existing bus stops and shelters must be accommodated during construction, assumed to be returned to the original location after construction, and designed into the public space plans. If a bus stop and/or shelter must be moved then the Applicant will fund the relocation and obtain approval from DDOT and WMATA for the new location. Applicant must fund the electrification of all new or relocated shelters.*		
Safety Analysis Qualitatively evaluate safety conditions at intersections and along blocks within the vehicle study area. *Perform a review of DDOT Vision Action Plan. Note whether any study intersections have been identified by DDOT as high crash locations, if any safety studies have been previously conducted, and discuss the recommendations. Depending on the results of the TIA, DDOT may require improvements to nearby intersections previously identified as having known safety issues.*	A qualitative evaluation of safety conditions within the proposed study area will be included in the CTR following the guidance set forth in section 3.6 of DDOT's CTR guidelines.	Acknowledged GS Response: Noted.
Curbside Management Propose a curbside management plan that is consistent with current DDOT policies and practices. The curbside	No changes to curbside management are proposed as part of this project.	Acknowledged GS Response: Noted.

management plan must delineate existing and proposed on-street parking designations/restrictions, including but not limited to pick-up/drop-off zones, commercial loading zones, multi-space meters, RPP, and net change in number of on-street spaces as a result of the proposal. *Note that the preliminary curbside management plan will not be approved by DDOT during the zoning process. Applicant must submit a more detailed signage and marking plan via TOPS for formal review and approval by DDOT-PGTD during public space permitting. DDOT expects the Applicant to fund the installation of multi-space meters on blocks where meters are required.*	☐ *Scoping Graphic: Existing Curbside Designations (min. 2 block radius of site)*	
Pick-Up and Drop-Off Plan This plan is required for all schools and daycares with 20 or more students. It may also be required for churches, hotels, or any other use expected to have significant pick-up and drop-off operations, as necessary. The plan will identify pick-up and drop-off locations and demonstrate adequate circulation so that the flow of bicycles and vehicles is not impeded and queueing does not occur through the pedestrian realm.	A pick-up/drop-off plan is not necessary. The intensity of the development program is not expected to have significant pick-up and drop-off operations.	Acknowledged GS Response: Noted.

DDOT will require this plan for schools and daycares currently in operation even if the relief requested from the BZA is not related to a student cap increase.		
On-Street Parking Occupancy Study This analysis is required if BZA relief from 5 or more on-site vehicle parking spaces is being requested. It may also be required as part of a ZC or permitting case if DDOT has concerns about site-generated vehicles parking in adjacent residential neighborhoods. *Vehicle parking occupancy counts will be collected hourly during periods of peak demand. These are typically the weekday evening period (6-10 PM) for residential developments, weekday morning period (7-9 AM) if within ¼ mile of Metrorail, and weekend peak periods if there is a commercial component. Parking availability must be assessed a maximum of 2 blocks in each direction from the site, unless otherwise agreed upon. Also include inventory of off-street parking garages in vicinity of site.*	Zoning relief for parking is not being sought, therefore this section is not applicable. ☐ *Scoping Graphic: Study Area/Block Faces*	Acknowledged GS Response: Noted.
Parking Garage Queueing Analysis If site contains 150 or more vehicle parking	The proposed garage does have access to a public street; therefore this section is not applicable.	Acknowledged GS Response: Noted.

spaces and direct access to a public street, evaluate on-site vehicle queueing demand and provide analysis demonstrating parking entrance and ramps can properly process vehicles without queuing onto public streets. Provide proposed parking supply, queuing analysis, and physical controls to parking area, if applicable.		
Motorcoaches Propose methodology for data collection and analysis. Describe and show the parking locations, anticipated demand, existing areas on- and off-site for loading and unloading (and desired loading times restrictions, if any), and potential routes to and from designated truck routes. If on-street motorcoach parking is proposed, a plan for installation of signage and meters is required, subjection to DDOT-PGTD approval. This section is typically only required for uses that generate significant tourist activity (hotels, museums, cruises, etc.).	No motorcoach activity is anticipated at the site.	Acknowledged GS Response: Noted.

Section 4: TRAFFIC IMPACT ANALYSIS (TIA)

The TIA component of a CTR is required when a development generates 25 or more peak hour vehicle trips in the peak direction (higher of either inbound or outbound vehicles in any study peak period), after mode split is applied. Existing site traffic, pass-by, TDM, internal capture or other reductions may not be applied when calculating whether a TIA is required. Applicable reductions may be used in the multi-modal trip generation summary and assignment of trips within the TIA, as appropriate. A standalone TIA may also be required if the project proposes a change to roadway capacity, operations, or directionality; has a site access challenge; or as otherwise deemed necessary by DDOT.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS

TIA Study Area and Data Collection Identify study intersections commensurate with the impact of the proposed project and the travel demand it will generate. Study area must include all major signalized and unsignalized intersections, intersections expected to realize large numbers of new traffic, and intersections that may experience changing traffic patterns. Additional guidance on selecting study intersections is provided in DEM 38.3.2. *Turning Movement Counts (TMC) will be collected in 15-minute increments during the weekday morning (6:30 AM to 9:30 AM) and evening (4:00 PM to 7:00 PM) peak periods on Tuesdays through Thursdays during non-holiday weeks, while schools and Congress are in session, the Fed govt is not in a shutdown, and weather is not an issue, unless otherwise agreed upon. Saturday mid-day peak period (generally 11:00 AM to 1:00 PM) will be studied if development program is retail-heavy. TMCs will include vehicles, pedestrians, bicyclists, and % truck traffic. TMCs will be collected at all existing site driveways and reported as existing*	We propose the following study intersections: 1. Massachusetts Ave & 46th St/Tilden St/Wesley Cir NW 2. University Ave & Wesley Cir NW 3. University Ave & Sedgwick St/WTS Exit NW 4. Massachusetts Ave & 45th St NW 5. Massachusetts Ave & WTS Entrance NW 6. Massachusetts Ave & Campus Dr NW 7. Massachusetts Ave & Wesley Cir NW As data collection in Spring 2021 is not representative of typical travel patterns due to the COVID-19 emergency, volumes at proposed study intersections are available from several sources, outlined below. Historical turning movement counts are available at the following intersections: • Massachusetts Ave & 46th St/Tilden St/Wesley Cir NW (2012 and Feb. 2020) • University Ave & Sedgwick St/WTS Exit NW (2012) • Massachusetts Ave & 45th St NW (Feb. 2020) • Massachusetts Ave & WTS Entrance NW (2012 and Feb. 2020) • Massachusetts Ave & Campus Dr NW (Feb. 2020) We propose comparing the volumes from the above-mentioned sources and growing them according to historical DDOT traffic volume data based on their respective years of collection to establish baseline 2021 conditions. The CTR will include detailed calculations and rationales explaining how we established these baseline conditions. ☒ *Scoping Graphic: Study Intersections* ☒ *Provide hard copies of TMCs in CTR appendix and electronic copies in DDOT-required spreadsheet format at time of submission.*	Please include the stop-controlled intersection at Wesley Circle and Massachusetts Avenue NW in the study area. GS Response: Noted; we will include the requested intersection in the study area.

conditions in trip generation summary. *Previously collected TMCs may be used if they are less than 2 years old at the time of study submission. DDOT may require counts be refreshed once TMCs reach 3 years old or if a major transportation or land use change occurs. A growth rate will be applied to TMCs older than 12 months to create present year Existing Conditions.*		
TIA Study Scenarios Propose an appropriate set of scenarios to analyze. Note the anticipated build-out year and project phasing. Analysis scenarios to be considered: • Existing Conditions (Current Year) • Background Conditions (No-Build) • Total Future Conditions (With Development) • Total Future Conditions (With Development and Mitigation) • Additional Scenarios For Each Phase, as necessary • Total Future Conditions (+5 Years), as required • Long Range +20 Years Planning Scenario, as required	We propose to include the following scenarios following section 4.3 of DDOT's CTR guidelines: • Existing Conditions (2021 Existing Conditions) • 2024 Future Conditions <u>without</u> the project (2024 Background Conditions) • 2024 Future Conditions <u>with</u> the project (2024 Total Future Conditions) o *2024 Mitigated Future Conditions <u>with</u> the project (2024 Mitigated Total Future Conditions), as necessary*	Acknowledged GS Response: Noted.

TIA Methodology Propose an appropriate methodology for the capacity analysis including the type of software program to be used. Per DEM 38.3.5.1, HCM methodology will be used to determine Level of Service (LOS), v/c, and vehicle queue lengths. LOS must be reported by intersection approach and v/c by lane group. DDOT prefers Synchro 9 or newer software for capacity and queueing analyses. SimTraffic (10 simulations averaged) should be used to further evaluate an observed queueing issue and determine a solution, as necessary. *DDOT's required standard Synchro and SimTraffic inputs/settings are provided in Appendix H.* *Merge/weave/diverge analysis is required if any of the study intersections include a highway, freeway, or Interstate ramp (DEM 38.3.5.3). HCS software should be used for this analysis.*	Capacity analyses will be performed using Highway Capacity Manual (HCM) methodologies using an industry recognized software package. We propose performing the analysis in Synchro 10 and reporting the results in delay and LOS using HCM 2000 methodologies. We propose to analyze the weekday morning and afternoon commuter peak hours, using the system peaks at all study area intersections. Synchro files will be obtained from DDOT for use in the vehicular capacity analysis. Signal timings for the study area intersections will be obtained from DDOT. Field visits will be performed to update existing geometric information into the Synchro models, and update Synchro files with current traffic signal timing plans. We will apply this methodology to the following analysis scenarios: • Existing Conditions (2021 Existing Conditions) • 2024 Future Conditions without the project (2024 Background Conditions) • 2024 Future Conditions with the project (2024 Total Future Conditions) o *2024 Mitigated Future Conditions with the project (2024 Mitigated Total Future Conditions), as necessary* The capacity analysis results will show the average delay, v/c, and the resulting LOS for each approach and for the overall intersection (where available), as well as the queuing results obtained from Synchro 10 for the average and 95th percentile queue for each lane group. • We will highlight all LOS E or LOS F conditions per intersection and approach. • We will propose mitigation measures at intersections or approaches that degrade to an LOS E or F as a result of the development, or intersections or approaches operating under LOS E or F under background conditions that observe an increase in delay of greater than 5 percent, when compared to background scenario. • We will highlight all locations where the 95th percentile queue length exceeds the length of storage. We will note where the proposed project causes the 95th percentile queue length to exceed the available capacity of a lane group when it does not in the background scenario. • We will propose mitigation measures at intersections where the proposed project causes any 95th percentile queue lengths that exceed the available capacity to experience an increase in length of greater than 150 feet along any lane group. An assessment of feasibility given the existing ROW at each location will be given for each mitigation measure. ☒ *Will provide copies of Synchro, SimTraffic, and other analysis software printouts in study appendix and electronic copies of analysis files at time of CTR submission.*	Acknowledged GS Response: Noted.
Transportation Network Improvements List and map all roadway, transit, bicycle, and pedestrian projects funded by DDOT or WMATA, or proffered by others, in the vicinity of the study area and expected to open for public use prior to the	There are no proposed improvements to the transportation network that will be assumed in background and total future conditions. ☐ *Scoping Graphic: Locations of background transportation network improvements*	Acknowledged GS Response: Noted.

proposal's anticipated build-out year. Review the STIP, CLRP, and proffers/commitments for other nearby developments.		
Local Traffic Growth List and map developments to be analyzed as local background growth. This will include known matter-of-right and zoning-approved developments within ¼ mile of site and others more than ¼ mile from site if their traffic is distributed through study intersections. Document the portions of developments anticipated to open by the projected build-out year.	There are no known matter-of-right or zoning-approved developments that meet the criteria outlined to the left. Therefore, no background developments are proposed for this analysis. ☐ *Scoping Graphic: Background development projects near study area* ☐ *Scoping Table: Completion amounts/portions occupied of background developments*	Acknowledged GS Response: Noted.
Regional Traffic Growth Propose a methodology to account for growth in regional travel demand passing through the study area. An appropriate methodology could include reviewing historic AADT traffic counts, MWCOG model growth rates, data from other planning studies, or recently conducted nearby CTRs. These sources should only be used as a guide. *Generally, maximum annually compounding growth rates of 0.5% in peak direction and 2.0% in non-peak direction are acceptable. Growth rates based should be based*	We propose to examine volumes contained in the MWCOG regional model, as well as historical DDOT AADTs (where available), to develop an average annual growth rate for study area roadways following section 4.6.2 of DDOT's CTR guidelines. A summary of COG model volumes and trends for the study area are attached to this scoping form. This methodology accounts for all future projects and developments in the COG model and allows for district growth rates by direction and time of day. We based growth rates between 2020 (data collection) and 2021 (existing conditions) on the differences between the year 2019 and 2021 COG model scenarios. We based growth rates between 2021 (existing conditions) and 2024 (project completion) on the differences between the year 2021 and 2025 COG model scenarios. Where the COG model showed negative or minimal growth, we assumed a conservative 0.1% per year minimum growth. Maximum growth rates of 0.5% in the peak direction and 2.0% in the non-peak direction were used. Proposed growth rates for each roadway for the 2020-2021 period and the 2021-2024 period are shown below.	Acknowledged GS Response: Noted.

on DDOT historical data from 10+ years, if available. Adjustments to the rates may be necessary depending on the amount of traffic assumed from local background developments or if there were recent changes to the transportation network.

Roadway	Dir.	Proposed Annual Growth Rate Between 2020 and 2021 [1]		Proposed Total Growth Between 2020 and 2021		Proposed Annual Growth Rate Between 2021 and 2024 [2]		Proposed Total Growth Between 2021 and 2024	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Massachusetts Ave NW	EB	0.10%	0.10%	0.10%	0.10%	0.30%	0.10%	0.90%	0.30%
	WB	2.00%	0.50%	2.00%	0.50%	0.10%	0.30%	0.30%	0.90%
Tilden St NW	EB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
	WB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
46th St NW	NB	2.00%	0.10%	2.00%	0.10%	0.10%	0.10%	0.30%	0.30%
	SB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
University Ave NW [3]	NB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
	SB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
45th St NW	NB	0.50%	0.50%	0.50%	0.50%	0.10%	0.10%	0.30%	0.30%
	SB	2.00%	0.10%	2.00%	0.10%	0.90%	0.10%	2.72%	0.30%
Campus Dr NW	NB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
	SB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%

[1] These rates were applied to volumes recorded in February 2020 that were used to establish 2021 existing conditions. Rates are based on MWCOG's currently adopted regional transportation model for this time period.

[2] These rates were applied to volumes grown from 2021 existing conditions. Rates are based on MWCOG's currently adopted regional transportation model for this time period.

[3] Study intersection #3 (University Ave & Sedgwick St/WTS Exit NW) only has available traffic counts from 2012, not February 2020 like the other study intersections. Therefore, to establish 2021 Existing Conditions, annual growth rates of 0.10% will be applied to the northbound and southbound volumes of University Ave NW at this intersection for every year between 2012 and 2021, totaling 0.90% for each direction.

☒ *Scoping Table: Projected regional growth assumptions (dependent on methodology), show growth rates by facility, direction, and time of day*

☐ *Scoping Graphic: Projected regional growth assumptions (dependent on methodology), show growth rates by facility, direction, and time of day*

Trip Distribution Provide sources and justification for proposed percentage distribution of site-generated trips. Additionally, document proposed pass-by distributions and the re-routing of existing or future vehicles based on any changes to the transportation network. *Percentage distributions must be shown turning at intersections throughout the transportation network and at site driveways and garage entrances to ensure appropriate routing assumptions.* *The agreed upon trip distribution methodology may not be revised between scoping and CTR submission without concurrence by DDOT Case Manager.* *Given the District's urban context and grid network, a small portion of trips (up to 5% of trips through an intersection) may be re-routed from their original routes to an alternate route due to traffic congestion.*	Trip distribution for the site was determined based on CTPP TAZ flow data. Attached to this scoping form are figures depicting the CTPP TAZ flow data for residents of the project TAZ commuting by vehicle to other TAZs. Since the retail component of the project produces an inconsequential amount of vehicle trips (1 in the AM peak hour and 3 in the PM peak hour), a distribution analysis is only provided for the residential component. The resulting proposed trip distributions are illustrated on an attached graphic. ☒ *Scoping Graphic(s): Percentage Distribution by Land Use, Direction, Time of Day*	Acknowledged GS Response: Noted.

Section 5: MITIGATION

The completed CTR must detail all proposed mitigations. The purpose of discussing mitigation at the scoping stage is to highlight DDOT's Significant Impact Policy, DDOT's approach to mitigation, and to give the Applicant an opportunity to gain initial feedback on potential mitigations that may ultimately be proposed. Any mitigation strategies discussed and included in the *Scoping Form* are considered non-binding until formally evaluated in the study and committed to as part of a related action.

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
DDOT Significant Impact Policy Vehicle Parking Supply DDOT considers a high parking provision as an 'impact' that needs to be mitigated since it is a permanent site feature that encourages additional driving and yield vehicle trips in the future that were not contemplated in the study. Appropriate mitigations include reducing vehicle parking, implementing substantive TDM strategies, off-site non-automotive network upgrades, and making monetary contributions to DDOT for non-auto improvements. See Table 2 to determine if a site is over-parked based on land use and distance to transit. Capacity Impacts at Intersections All site-generated vehicular impacts to the transportation network during study peak hours must be mitigated, per DEM 38.3.5, if any of the following occur: • Degradation of an approach or intersection to LOS	☒ *The Applicant acknowledges DDOT's Significant Impact Policy.* ☒ *The study will comply with all other policies in the Guidance for Comprehensive Transportation Review and the Category & Guidelines column of this Scoping Form not explicitly documented in the Consultant Proposal or DDOT Comments columns.* ☒ *The study will include all the required graphics, tables, and deliverables for the relevant sections determined during scoping, as shown in Table 1 of Guidance for Comprehensive Transportation Review.*	Acknowledged GS Response: Noted.

E or F or intersection v/c ratio increases to 1.0 or greater from Background to Total Future Conditions. • If an approach or intersection exceeds LOS E or F or movement/lane group exceeds 1.0 v/c ratio under Background Conditions then an increase in delay or v/c ratio by 5% or more under Total Future Conditions. • If 95th percentile vehicle queuing length exceeds available capacity of approach or turn lane under Total Future Conditions. • If 95th percentile queue length of an approach or turn lane increases by 150 feet or more from Background to Total Future Conditions.		
DDOT Approach to Mitigation DDOT's approach to mitigation is to first establish optimal site design and operations to support efficient site circulation. When these efforts alone cannot properly mitigate an action's impact, reducing on-site vehicle parking, implementing TDM measures, making upgrades to the pedestrian, bicycle, and transit networks to encourage use of non-	☒ *The Applicant acknowledges DDOT's approach to mitigation that prioritizes (in order of DDOT preference) optimal site design, reducing vehicle parking, implementing more TDM strategies, making non-automotive network improvements, and making a monetary contribution to DDOT for non-auto improvements before considering options that increase roadway capacity or alter roadway operations.*	Acknowledged GS Response: Noted.

automotive modes, or monetary contribution to DDOT for non-auto improvements must be proposed. Only when these options are exhausted will DDOT consider capacity-increasing changes to the roadway network because such changes often have detrimental impacts on non-automotive travel and are often contrary to the District's multi-modal transportation goals.		
Transportation Demand Management (TDM) A TDM Plan is typically required to offset site-generated impacts to the transportation network or in situations where a site provides more parking than DDOT determines is practical for the use and surrounding context. TDM strategies are also an integral part of the District's transportation options. As such, a Baseline TDM plan is required in all CTRs regardless of impacts to the network. An Enhanced Plan or greater is required if the site is over-parked per Table 2 or there are roadway impact identified. Sample TDM plans by land use and tier can be found in Appendix C. *Document all existing TDM strategies being implemented on-site (even outside of a formal*	☒ *The Applicant will include at least a Baseline TDM Plan. The TDM plan will increase to Enhanced Plan or beyond depending on the parking ratio and other impacts identified in the study.*	Acknowledged GS Response: Noted.

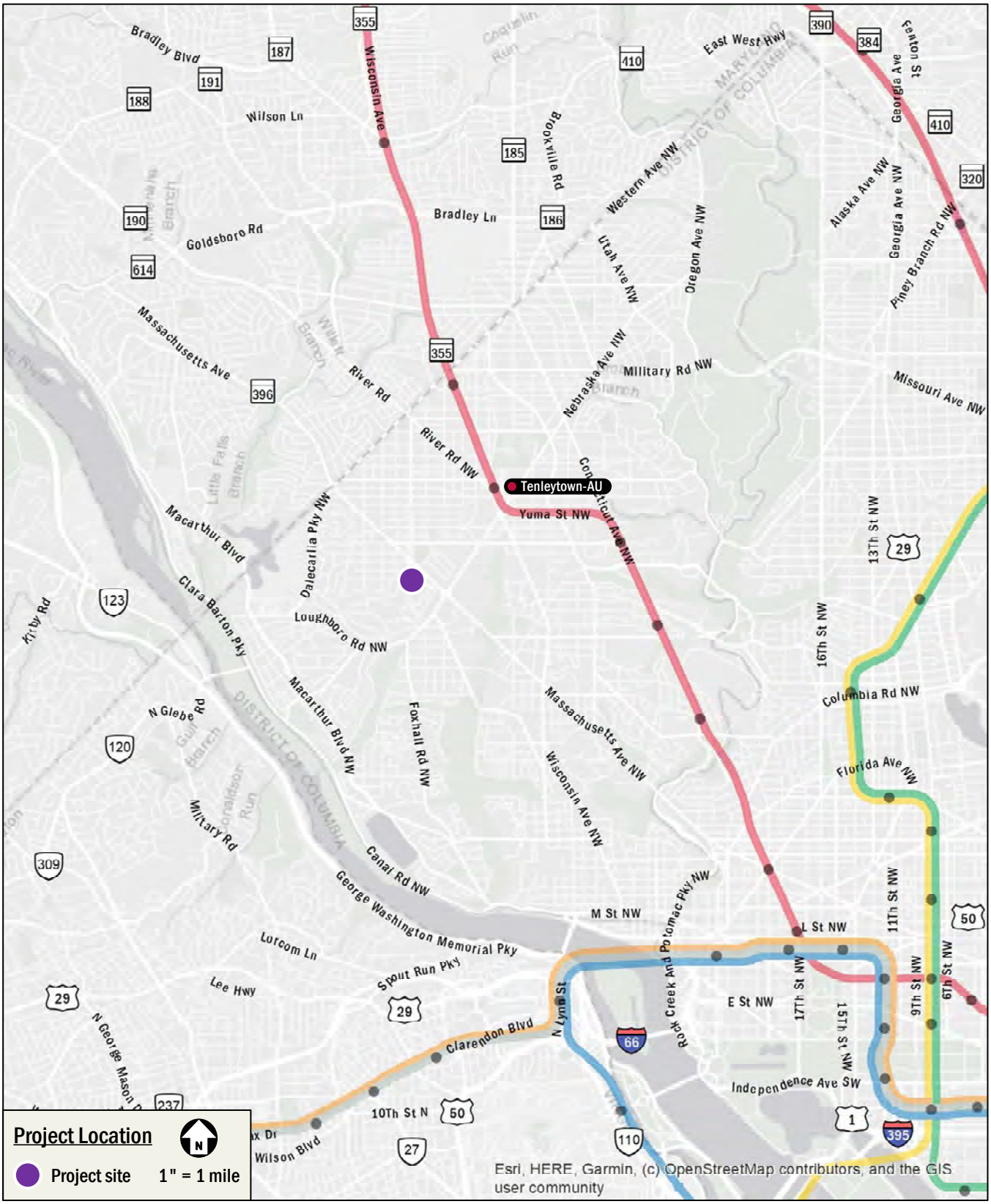
TDM Plan) and those being proposed and committed to by the Applicant. Elements of the TDM Plan included in CTR must be broken down by land use and user (i.e., employee, faculty, resident, visitor, etc.).		
Performance Monitoring Plan (PMP) DDOT may require a PMP in situations where anticipated vehicle trips are large in magnitude, unpredictable, or necessitate a vehicle trip cap. Typically, this is required for schools expected to have a significant amount of single occupancy vehicle trips or very large developments. The monitoring plan will establish thresholds for new trips a project can generate, define post-completion evaluation criteria and methodology, determine the frequency of reporting, and establish potential remediating measures (e.g., adjust trip caps or implement additional TDM strategies). *Document any existing performance monitoring Plans in effect and any proposed changes.*	Noted.	Acknowledged GS Response: Noted.

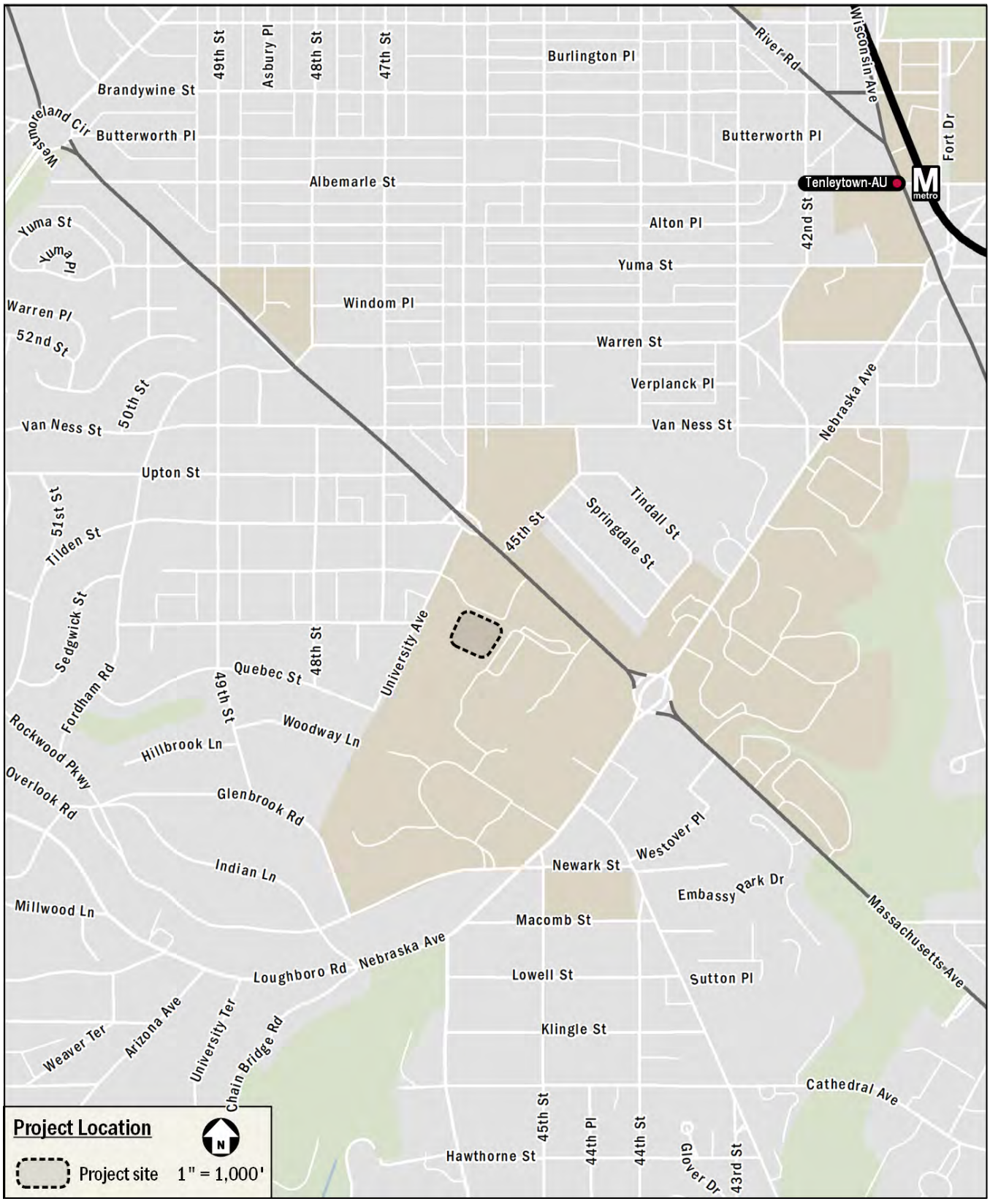
Roadway Operational and Geometric Changes Describe all proposed roadway operational and geometric changes in CTR with supporting analysis and warrants in the study appendix. Detail must be provided on any ROW implications of proposed mitigations. All proposed changes in traffic control must be conducted following the procedures outlined in the *Manual of Uniform Traffic Control Devices* (MUTCD). *Note any preliminary ideas being considered.*	There are no proposed roadway operational or geometric changes; therefore this section is not applicable.	Acknowledged GS Response: Noted.

Section 6: ADDITIONAL TOPICS FOR DISCUSSION DURING SCOPING

CATEGORY & GUIDELINES	CONSULTANT PROPOSAL	DDOT COMMENTS
ANC Discussions and Feedback Provide an update on the status of Community Benefits Agreement, any ANC concerns, or other concerns expressed by the community.	Some University Avenue NW residents oppose the sidewalk recommended in the Rock Creek West Livability Study. DDOT is aware of this.	Acknowledged GS Response: Noted.
Miscellaneous Items for Discussion These items could include relevant on-going discussions with other agencies and stakeholders or seeking direction other types of analyses to be included	N/A	Acknowledged GS Response: Noted.

(i.e., traffic calming proposal, TOPP, TMP).		


Project Location
Project site
1" = 1 mile
Tenleytown-AU
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community


Project Location
Project site
1" = 1,000'
N
Tenleytown-AU
metro
Burlington Pl
Brandywine St
Butterworth Pl
Albemarle St
Yuma St
Yuma Pl
Warren Pl
52nd St
Van Ness St
Upton St
Tilden St
Windom Pl
Alton Pl
Warren St
Verplanck Pl
Van Ness St
Springdale St
Tindall St
Quebec St
Woodway Ln
Hillbrook Ln
Glenbrook Rd
Indian Ln
Millwood Ln
Loughboro Rd
Lowell St
Klingle St
Newark St
Macomb St
Embassy Park Dr
Westover Pl
Sutton Pl
Cathedral Ave
Hawthorne St
Rockwood Pkwy
Overlook Rd
Fordham Rd
Sedgwick St
Weaver Ter
Arizona Ave
University Ter
Chain Bridge Rd
Nebraska Ave
Massachusetts Ave
River Rd
Wisconsin Ave
Fort Dr
Glover Dr
49th St
Asbury Pl
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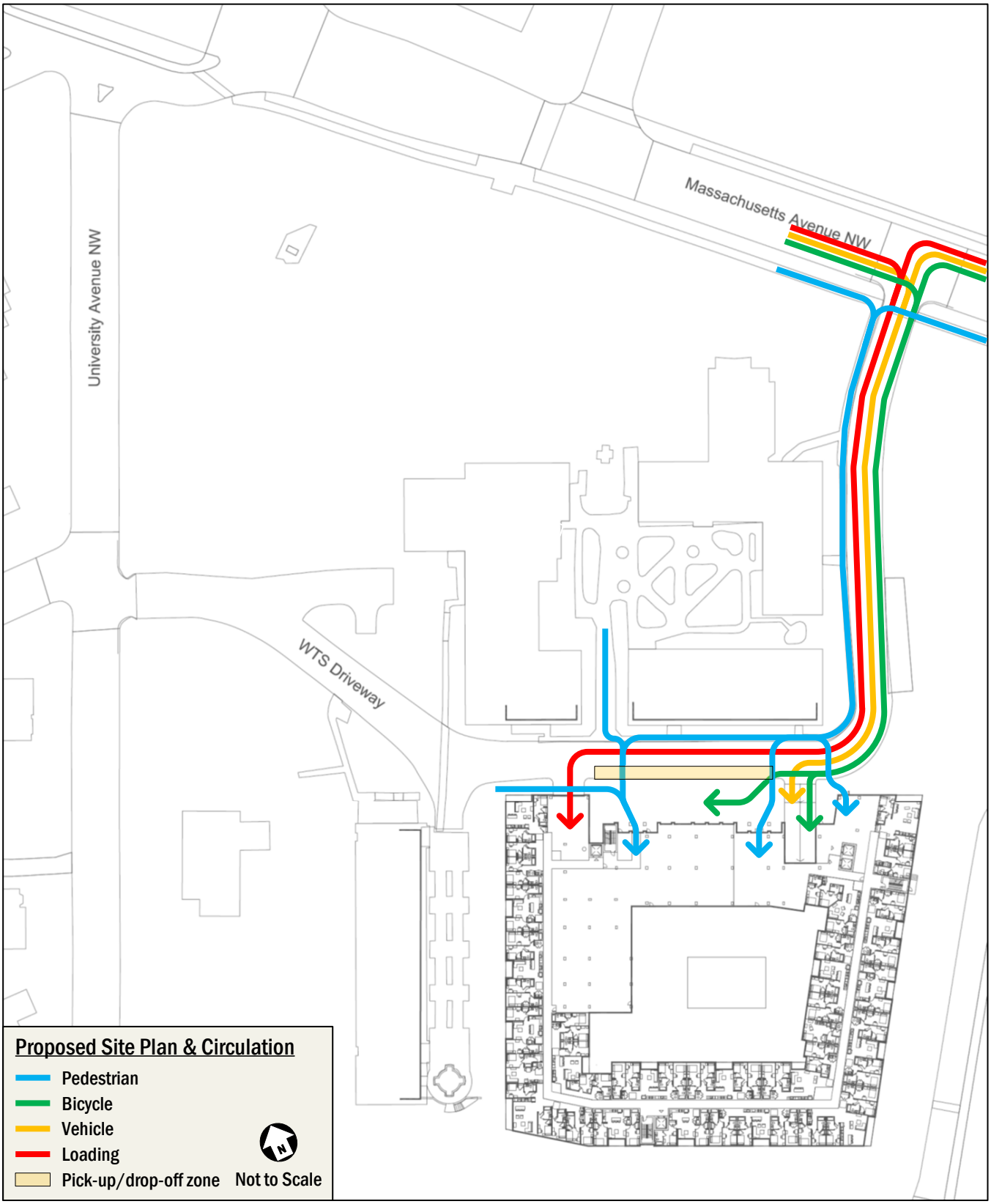
47th St
50th St
51st St
45th St
42nd St
44th Pl
44th St
43rd St
University Ave
Westmoreland Cir


Massachusetts Avenue NW
University Avenue NW
WTS Driveway
Proposed Site Plan & Circulation
Pedestrian
Bicycle
Vehicle
Loading
Pick-up/drop-off zone
Not to Scale

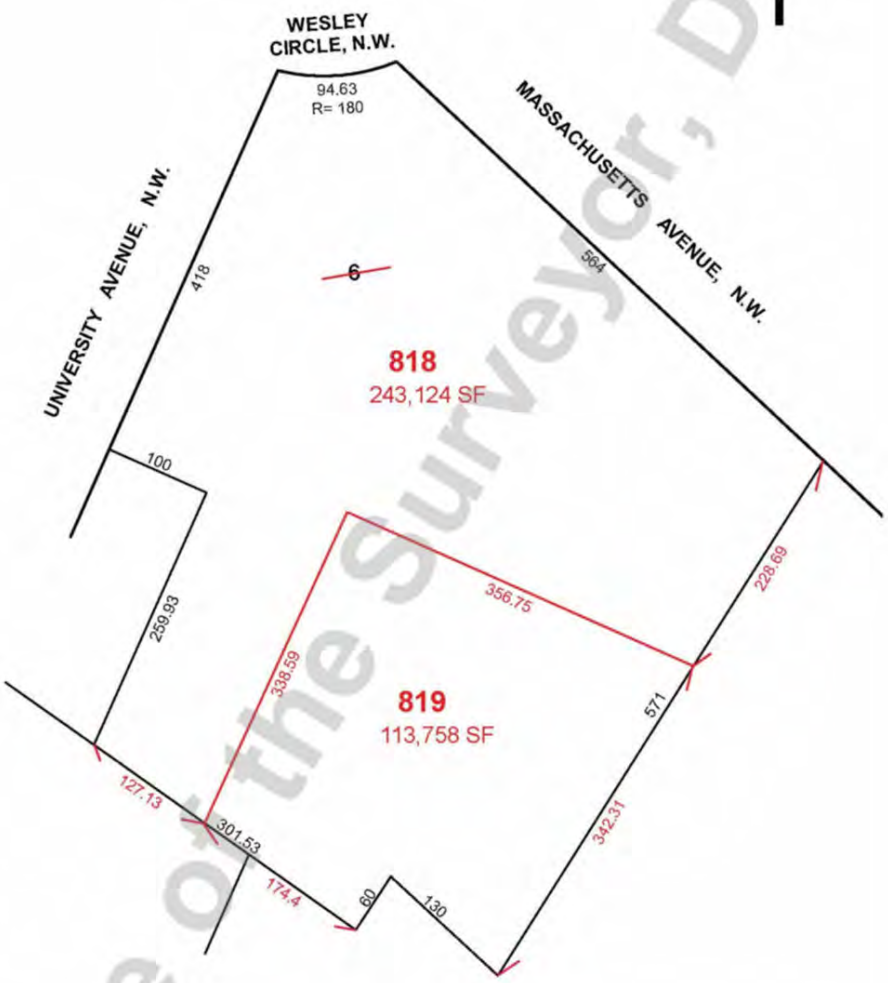
(Page 1 of 1)

OFFICE OF TAX AND REVENUE
ASSESSMENT DIVISION

3887-M

ASSESSMENT AND TAXATION PLAT

Square 1600



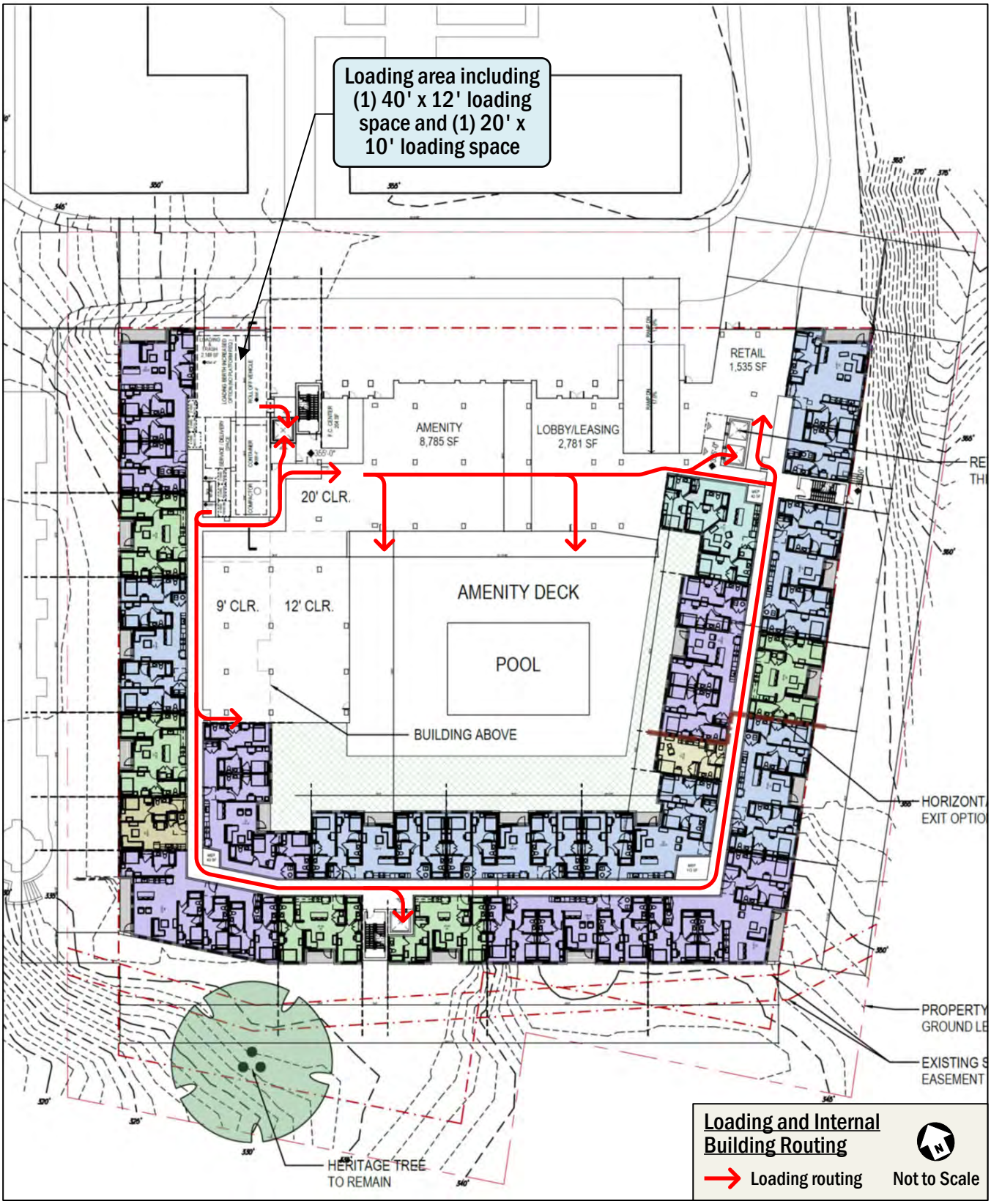
David Smith — Draftsman | A073383 — Reference | 4/9/20 — Date

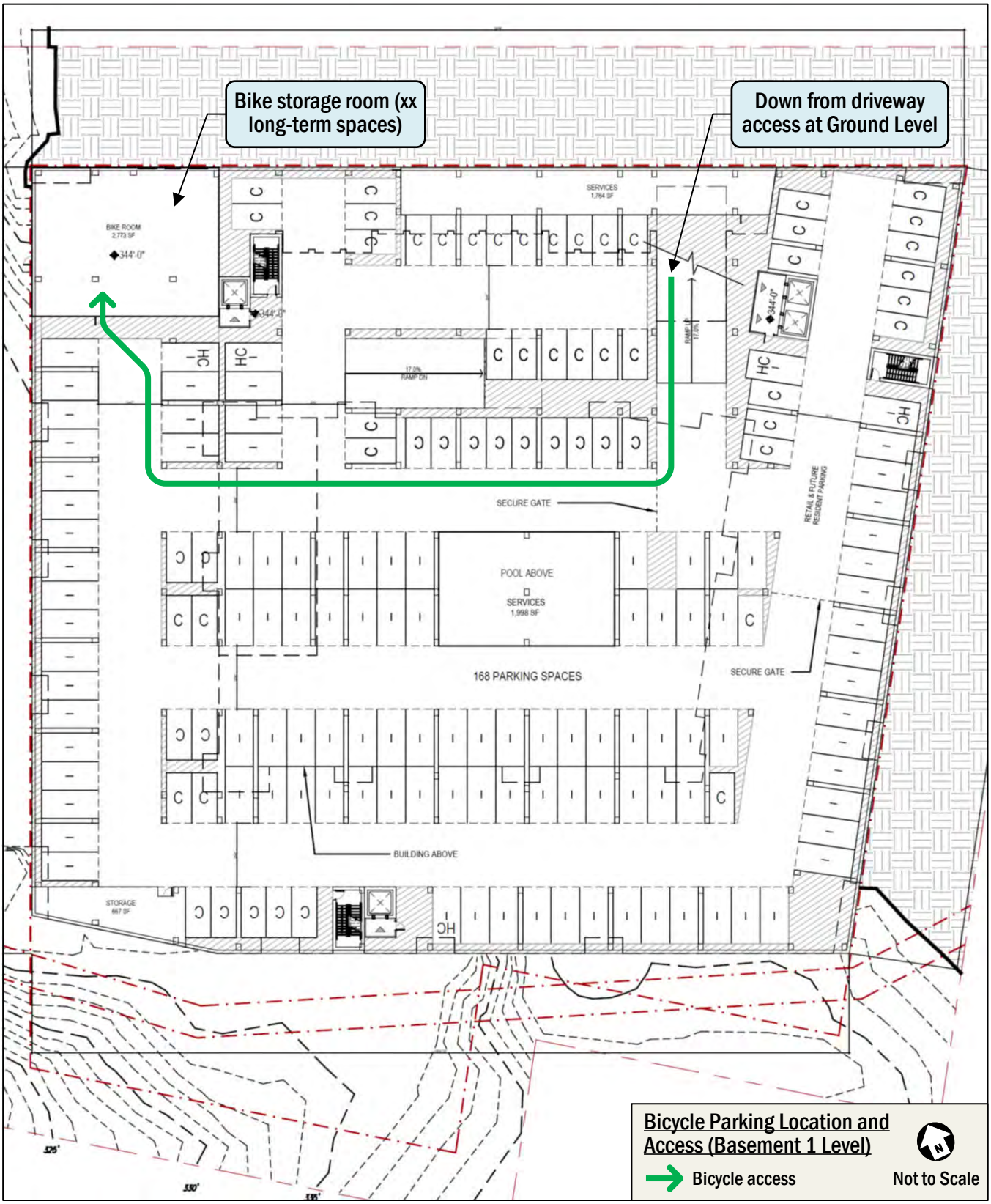
Scale, 1 inch 110 ft.

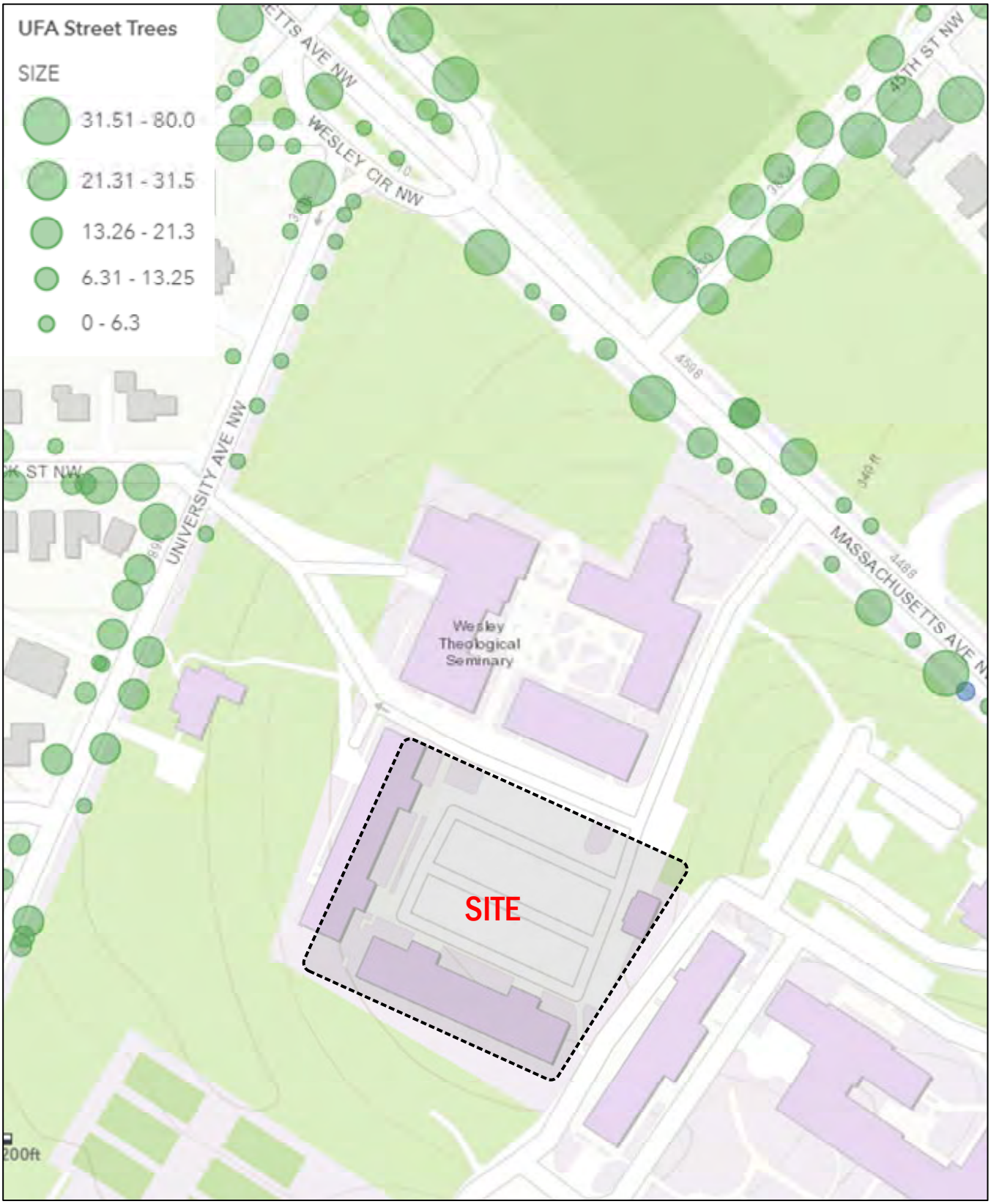
The Office of Surveyor of the District of Columbia shall admit this plat to record under the provisions of Chapter 7 of Title 47, District of Columbia Code, Designation of Real Property for Assessment and Taxation, and for other purposes.

Quincy Loney
for Chief Assessor, Office of Tax and Revenue

FP-120 (Rev. 5/98)
3/9/3451


Loading area including (1) 40' x 12' loading space and (1) 20' x 10' loading space
RETAIL 1,535 SF
AMENITY 8,785 SF
LOBBY/LEASING 2,781 SF
20' CLR.
9' CLR.
12' CLR.
AMENITY DECK
POOL
BUILDING ABOVE
HERITAGE TREE TO REMAIN
Loading and Internal Building Routing
Loading routing
Not to Scale


Bike storage room (xx long-term spaces)
Down from driveway access at Ground Level
BIKE ROOM
2,773 SF
SERVICES
1,764 SF
SECURE GATE
POOL ABOVE
SERVICES
1,998 SF
168 PARKING SPACES
SECURE GATE
BUILDING ABOVE
STORAGE
667 SF
RETAIL & FUTURE RESIDENT PARKING
Bicycle Parking Location and Access (Basement 1 Level)
Bicycle access
Not to Scale


UFA Street Trees
SIZE
31.51 - 80.0
21.31 - 31.5
13.26 - 21.3
6.31 - 13.25
0 - 6.3
WESLEY CIR NW
45TH ST NW
UNIVERSITY AVE NW
MASSACHUSETTS AVE
Wesley Theological Seminary
SITE
200ft

Mode Split Assumptions

Residential Component

Pertinent Mode Split data from other sources:

Information Source	Mode							
	SOV	Carpool	Rideshare	Transit	Bike	Walk	Telecommute	Other
CTPP - TAZ Residents (TAZ 10094)	17%	8%	---	22%	2%	30%	18%	3%
State of the Commute 2016 (of District residents)	35%	4%	---	42%	16%		3%	
AU 2021 Campus Plan - student commute to campus	14%	2%	4%	50%	28%		---	2%
WMATA Ridership Survey Table 9 (average for *Friendship Heights Station Area*)	55%		---	35%	10%		---	

Mode Split assumed in TIS:

Land Use	Mode				
	Drive	Transit	Bike	Walk	Telecommute/Other
Residential Mode Split	20%	50%	5%	25%	---

Notes: Mode split based primarily on census data and mode split for AU students commuting to campus, adjusted for the project site being located on campus.

Retail Component

Pertinent Mode Split data from other sources:

Information Source	Mode							
	SOV	Carpool	Rideshare	Transit	Bike	Walk	Telecommute	Other
CTPP - TAZ Workers (TAZ 10094)	40%	7%	---	22%	2%	22%	6%	1%
State of the Commute 2019 (of DC Workers)	32%	6%	---	53%	7%		---	
WMATA Ridership Survey Table 15 (Average Among Retail Sites)	36%			37%	27%		---	

Mode Split assumed in TIS:

Land Use	Mode				
	Drive	Transit	Bike	Walk	Telecommute/Other
Retail	50%	25%	5%	20%	---

Residential Trip Generation (ITE Land Use 225 fitted curve used for AM trips)

600 net new bedrooms

Step 1: Base trip generation using ITEs' *Trip Generation*

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	225	600 br	27 veh/hr	38 veh/hr	65 veh/hr	74 veh/hr	73 veh/hr	147 veh/hr	1872 veh
		Calculation Details:	*41%*	*59%*	*=0.1X+5.31*	*50%*	*50%*	*=0.24X+2.9*	*=3.03X+54.26*

Step 2: Convert to people per hour, before applying mode splits

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	32 ppl/hr	45 ppl/hr	77 ppl/hr	87 ppl/hr	86 ppl/hr	173 ppl/hr	2209 ppl

Step 3: Split between modes, per assumed Mode Splits

Land Use	Mode	Split	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	Auto	20%	6 ppl/hr	9 ppl/hr	15 ppl/hr	17 ppl/hr	18 ppl/hr	35 ppl/hr	442 ppl
Apartments	Transit	50%	16 ppl/hr	23 ppl/hr	39 ppl/hr	44 ppl/hr	43 ppl/hr	87 ppl/hr	1105 ppl
Apartments	Bike	5%	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	5 ppl/hr	9 ppl/hr	110 ppl
Apartments	Walk	25%	8 ppl/hr	11 ppl/hr	19 ppl/hr	22 ppl/hr	21 ppl/hr	43 ppl/hr	552 ppl

Step 4: Convert auto trips back to vehicles/hour

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	5 veh/hr	8 veh/hr	13 veh/hr	14 veh/hr	16 veh/hr	30 veh/hr	375 veh

Trip Gen Summary for Residential

Mode	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Auto	5 veh/hr	8 veh/hr	13 veh/hr	14 veh/hr	16 veh/hr	30 veh/hr	375 veh
Transit	16 ppl/hr	23 ppl/hr	39 ppl/hr	44 ppl/hr	43 ppl/hr	87 ppl/hr	1105 ppl
Bike	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	5 ppl/hr	9 ppl/hr	110 ppl
Walk	8 ppl/hr	11 ppl/hr	19 ppl/hr	22 ppl/hr	21 ppl/hr	43 ppl/hr	552 ppl

Residential Trip Generation (ITE Land Use 225 average rate used for PM trips)

600 net new bedrooms

Step 1: Base trip generation using ITEs' *Trip Generation*

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	225	600 br	30 veh/hr	42 veh/hr	72 veh/hr	75 veh/hr	75 veh/hr	150 veh/hr	1890 veh
		Calculation Details:	*41%*	*59%*	*=0.12X*	*50%*	*50%*	*=0.25X*	*=3.15X*

Step 2: Convert to people per hour, before applying mode splits

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	35 ppl/hr	50 ppl/hr	85 ppl/hr	89 ppl/hr	88 ppl/hr	177 ppl/hr	2230 ppl

Step 3: Split between modes, per assumed Mode Splits

Land Use	Mode	Split	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Apartments	Auto	20%	7 ppl/hr	10 ppl/hr	17 ppl/hr	18 ppl/hr	17 ppl/hr	35 ppl/hr	446 ppl
Apartments	Transit	50%	18 ppl/hr	25 ppl/hr	43 ppl/hr	45 ppl/hr	44 ppl/hr	89 ppl/hr	1115 ppl
Apartments	Bike	5%	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	5 ppl/hr	9 ppl/hr	112 ppl
Apartments	Walk	25%	9 ppl/hr	12 ppl/hr	21 ppl/hr	22 ppl/hr	22 ppl/hr	44 ppl/hr	558 ppl

Step 4: Convert auto trips back to vehicles/hour

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Apartments	1.18 ppl/veh	6 veh/hr	8 veh/hr	14 veh/hr	15 veh/hr	15 veh/hr	30 veh/hr	378 veh

Trip Gen Summary for Residential

Mode	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Auto	6 veh/hr	8 veh/hr	14 veh/hr	15 veh/hr	15 veh/hr	30 veh/hr	378 veh
Transit	18 ppl/hr	25 ppl/hr	43 ppl/hr	45 ppl/hr	44 ppl/hr	89 ppl/hr	1115 ppl
Bike	2 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	5 ppl/hr	9 ppl/hr	112 ppl
Walk	9 ppl/hr	12 ppl/hr	21 ppl/hr	22 ppl/hr	22 ppl/hr	44 ppl/hr	558 ppl

Retail Trip Generation

1,535 sf

Step 1: Base trip generation using ITEs' *Trip Generation*

Land Use	Land Use Code	Quantity (x)	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Retail	820	1,535 sf	1 veh/hr	0 veh/hr	1 veh/hr	3 veh/hr	3 veh/hr	6 veh/hr	58 veh
		Calculation Details:	*62%*	*38%*	*=0.94(X/1000)*	*48%*	*52%*	*=3.81(X/1000)*	*=37.75(X/1000)*

Step 2: Convert to people per hour, before applying mode splits

Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Retail	1.82 ppl/veh	2 ppl/hr	0 ppl/hr	2 ppl/hr	5 ppl/hr	6 ppl/hr	11 ppl/hr	106 ppl

Step 3: Split between modes, per assumed Mode Splits

Land Use	Mode	Split	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	Total
Retail	Auto	50%	1 ppl/hr	0 ppl/hr	1 ppl/hr	3 ppl/hr	3 ppl/hr	6 ppl/hr	53 ppl
Retail	Transit	25%	1 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	3 ppl/hr	27 ppl
Retail	Bike	5%	0 ppl/hr	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	5 ppl
Retail	Walk	20%	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	21 ppl

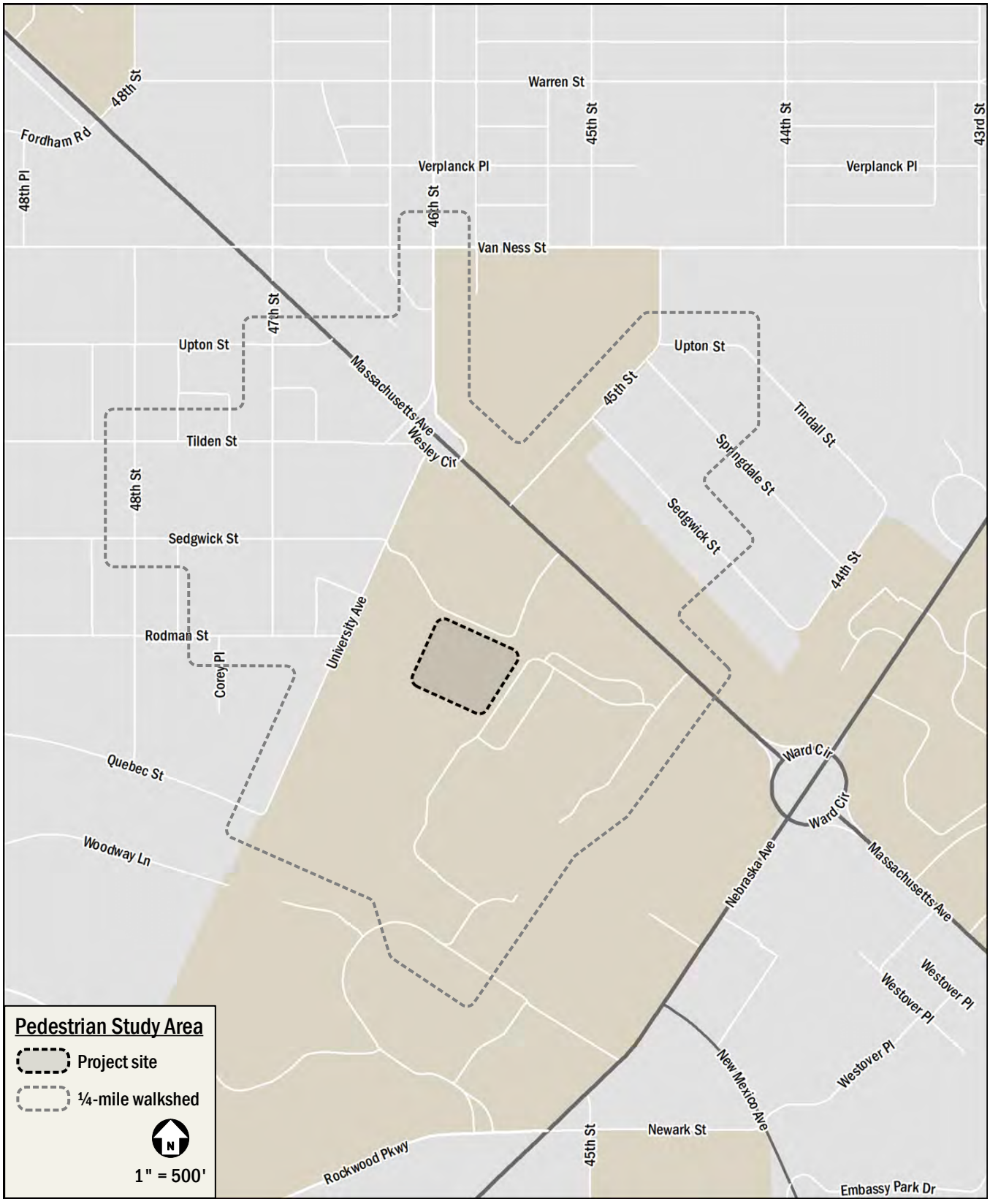
Step 4: Convert auto trips back to vehicles/hour

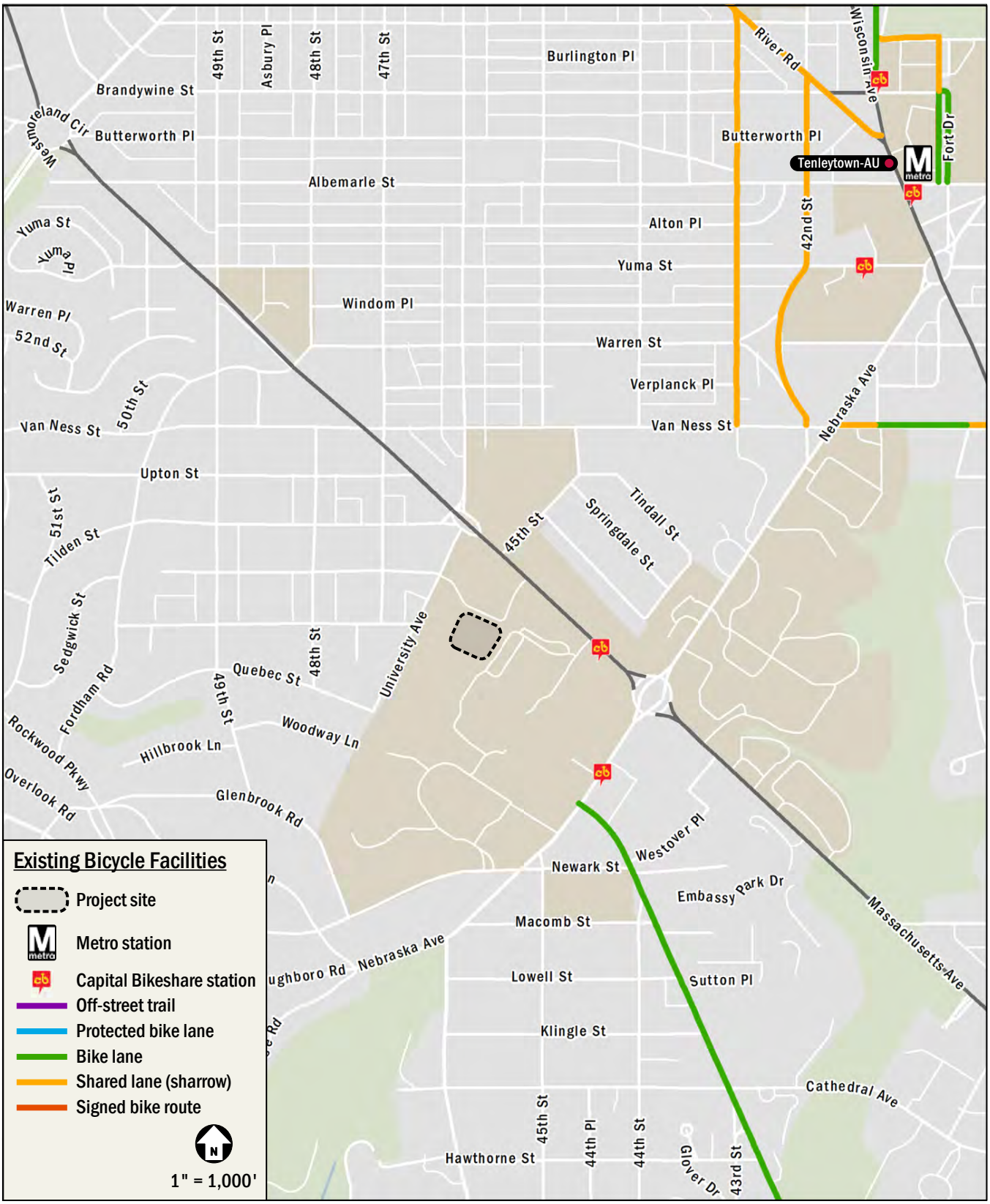
Land Use	People/Car (from 2017 NHTS, Table 16)	AM Peak Hour			PM Peak Hour			Daily
		In	Out	Total	In	Out	Total	Total
Retail	1.82 ppl/veh	1 veh/hr	0 veh/hr	1 veh/hr	2 veh/hr	1 veh/hr	3 veh/hr	29 veh

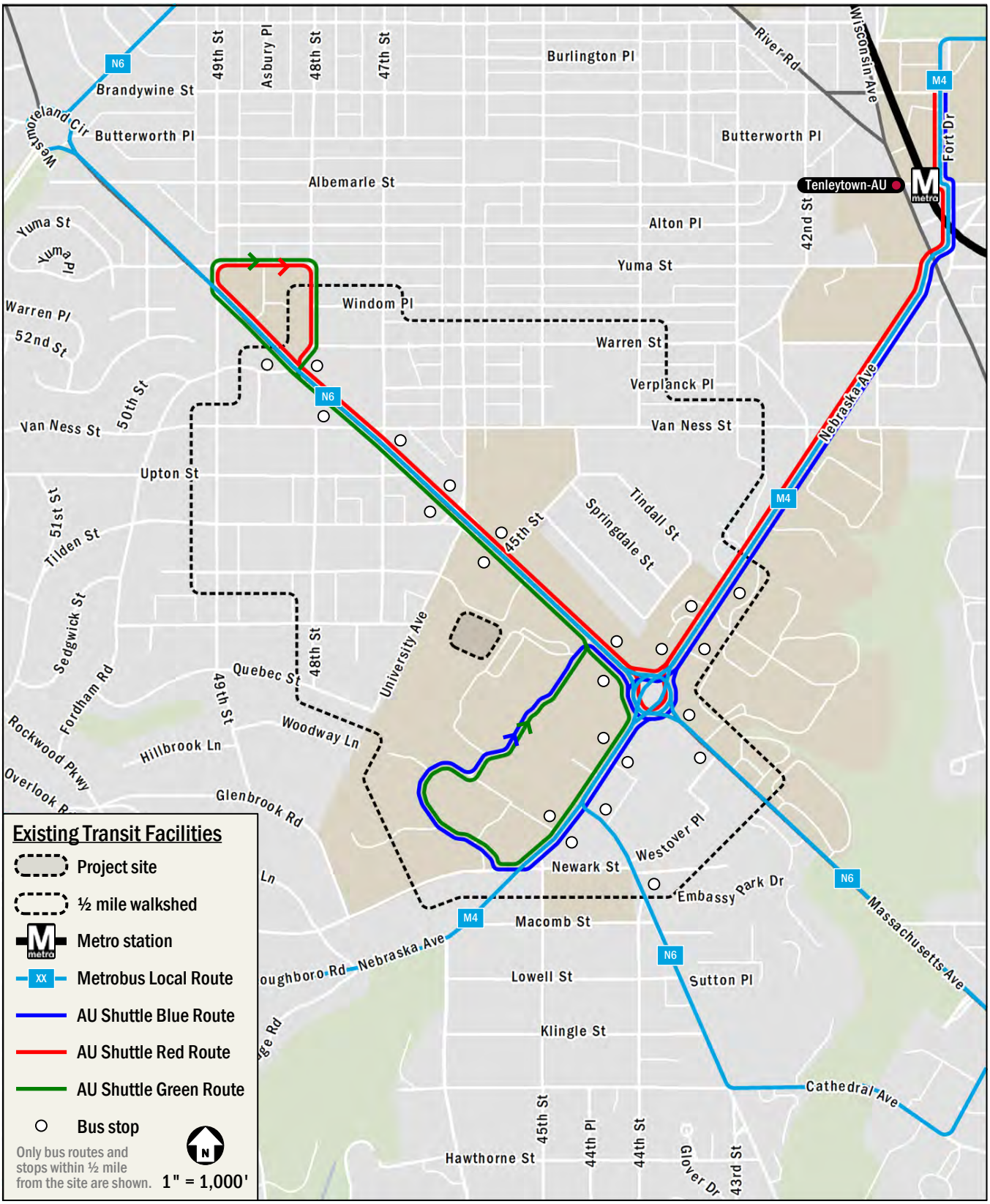
Trip Gen Summary for Retail

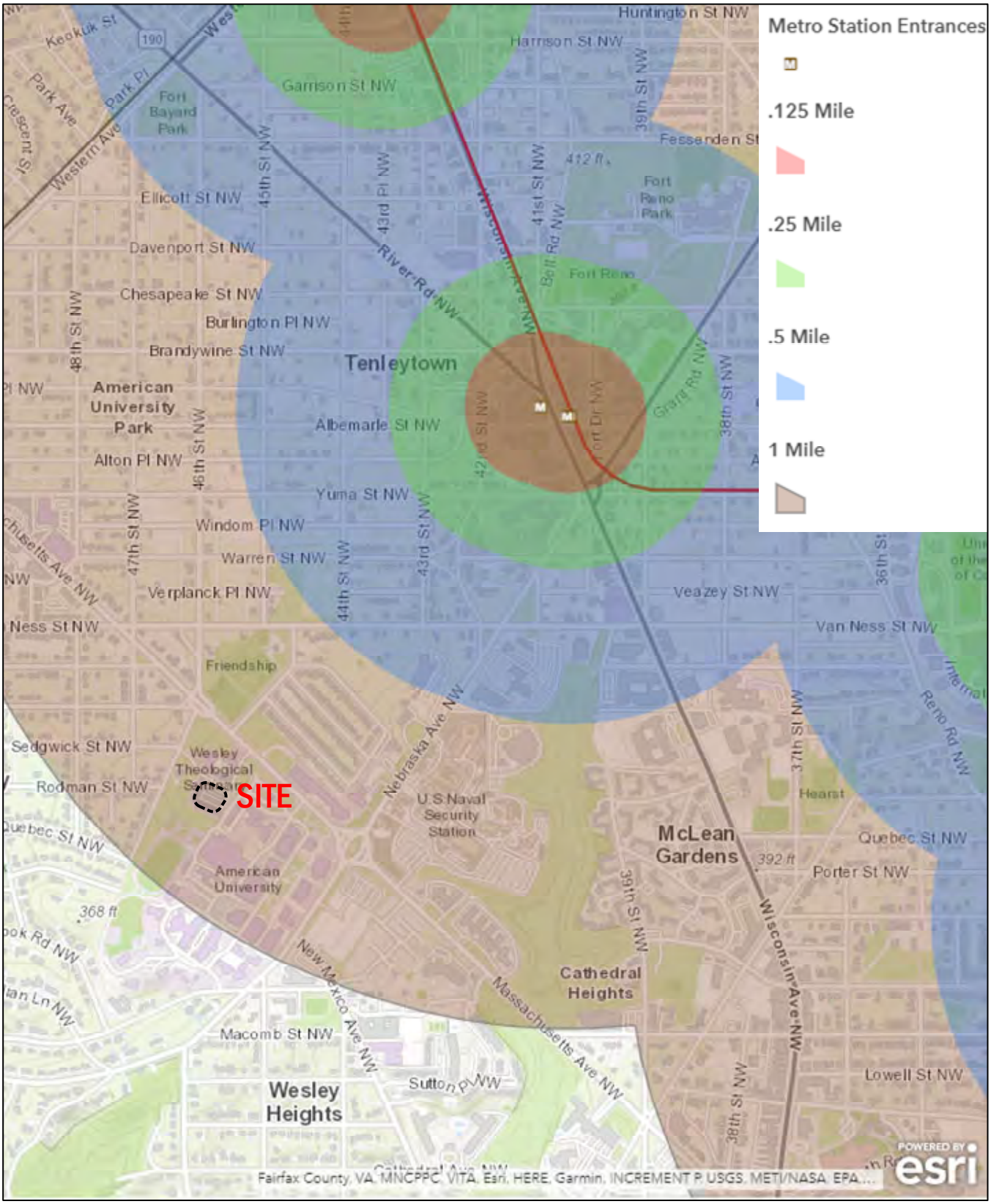
Mode	AM Peak Hour			PM Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Auto	1 veh/hr	0 veh/hr	1 veh/hr	2 veh/hr	1 veh/hr	3 veh/hr	29 veh
Transit	1 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	3 ppl/hr	27 ppl
Bike	0 ppl/hr	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	5 ppl
Walk	0 ppl/hr	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr	21 ppl

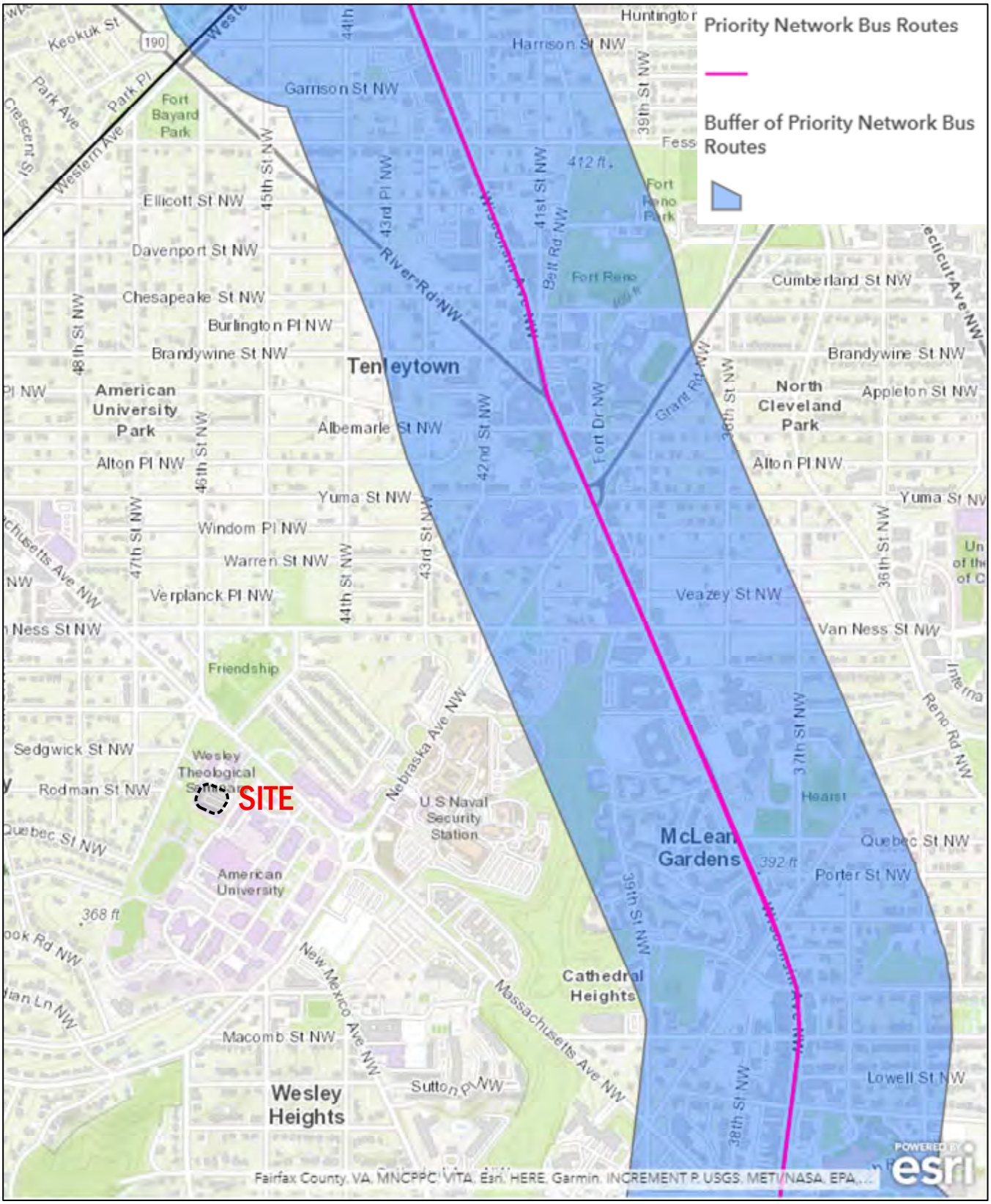
Mode	Mode Split	Land Use	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Auto (veh/hr)	20%	Residential	5	8	13	15	15	30
	50%	Retail	1	0	1	2	1	3
		Total	**6**	**8**	**14**	**17**	**16**	**33**
Transit (ppl/hr)	50%	Residential	16	23	39	45	44	89
	25%	Retail	1	0	1	1	2	3
		Total	**17**	**23**	**40**	**46**	**46**	**92**
Bike (ppl/hr)	5%	Residential	2	2	4	4	5	9
	5%	Retail	0	0	0	0	1	1
		Total	**2**	**2**	**4**	**4**	**6**	**10**
Walk (ppl/hr)	25%	Residential	8	11	19	22	22	44
	20%	Retail	0	0	0	1	1	2
		Total	**8**	**11**	**19**	**23**	**23**	**46**

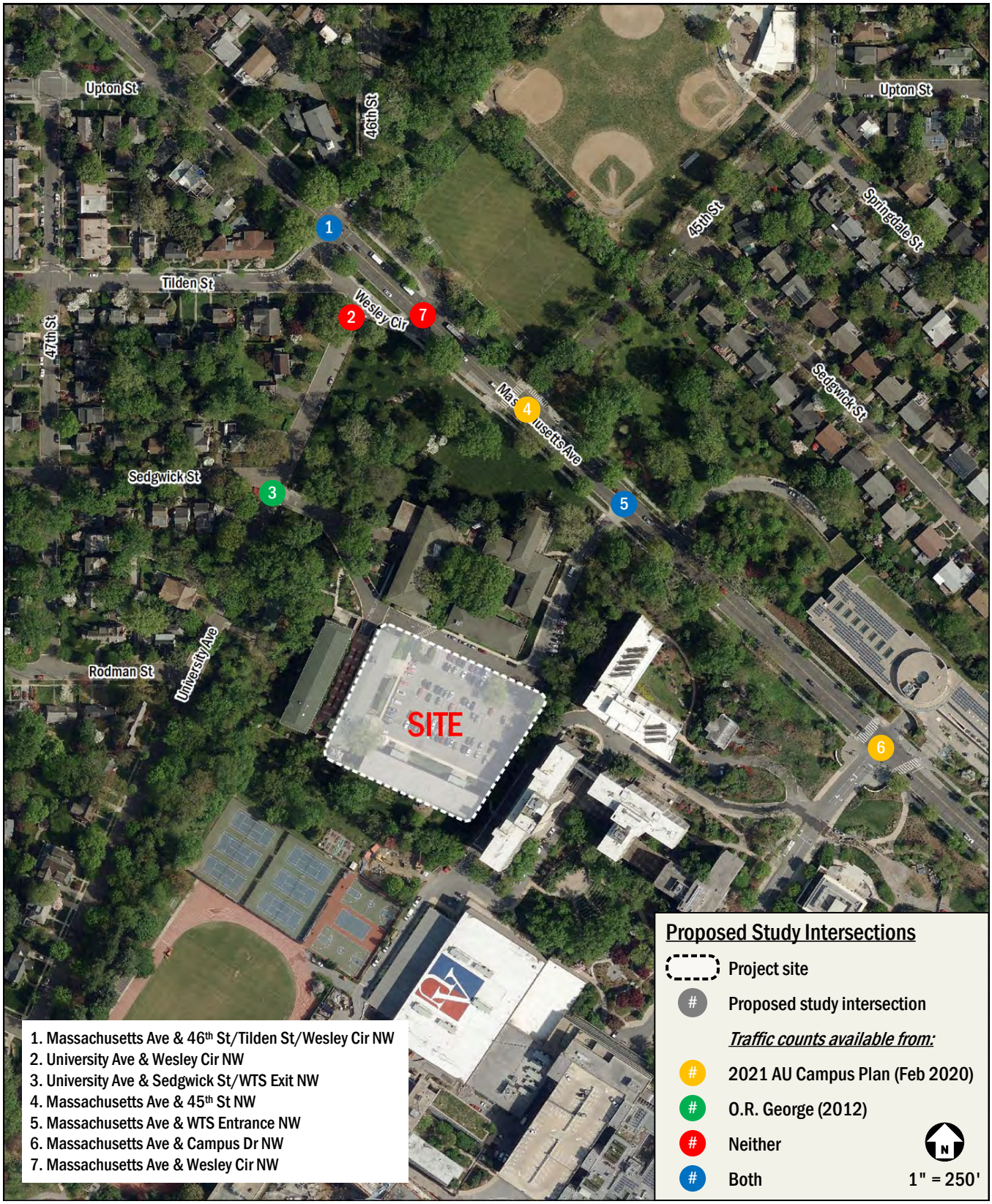

Pedestrian Study Area
Project site
¼-mile walkshed
N
1" = 500'
48th St
Fordham Rd
48th Pl
Warren St
45th St
44th St
43rd St
Verplanck Pl
Verplanck Pl
46th St
Van Ness St
47th St
Upton St
Upton St
Massachusetts Ave
Wesley Cir
45th St
Tindall St
Springdale St
Tilden St
48th St
Sedgwick St
Sedgwick St
44th St
Rodman St
University Ave
Corey Pl
Quebec St
Ward Cir
Ward Cir
Woodway Ln
Nebraska Ave
Massachusetts Ave
Westover Pl
Westover Pl
Westover Pl
New Mexico Ave
Newark St
45th St
Rockwood Pkwy
Embassy Park Dr


Existing Bicycle Facilities
Project site
Metro station
Capital Bikeshare station
Off-street trail
Protected bike lane
Bike lane
Shared lane (sharrow)
Signed bike route
N
1" = 1,000'
Tenleytown-AU
Brandywine St
Butterworth Pl
Albemarle St
Yuma St
Yuma Pl
Warren Pl
52nd St
50th St
Van Ness St
Upton St
51st St
Tilden St
Sedgwick St
Fordham Rd
Rockwood Pkwy
Overlook Rd
Hillbrook Ln
Woodway Ln
Quebec St
49th St
48th St
47th St
Asbury Pl
Windom Pl
Burlington Pl
Alton Pl
Yuma St
Warren St
Verplanck Pl
Van Ness St
Butterworth Pl
42nd St
River Rd
Wisconsin Ave
Fort Dr
Nebraska Ave
Tindall St
Springdale St
45th St
University Ave
Glenbrook Rd
Newark St
Westover Pl
Embassy Park Dr
Massachusetts Ave
Macomb St
Lowell St
Sutton Pl
Klingle St
Cathedral Ave
Hawthorne St
45th St
44th Pl
44th St
Glover Dr
43rd St


Existing Transit Facilities
Project site
½ mile walkshed
Metro station
XX
Metrobus Local Route
AU Shuttle Blue Route
AU Shuttle Red Route
AU Shuttle Green Route
Bus stop
Only bus routes and stops within ½ mile from the site are shown.
N
1" = 1,000'
Tenleytown-AU
Brandywine St
Butterworth Pl
Albemarle St
Yuma St
Yuma Pl
Warren Pl
52nd St
Van Ness St
Upton St
Windom Pl
Warren St
Verplanck Pl
Alton Pl
42nd St
Burlington Pl
River Rd
Wisconsin Ave
Fort Dr
Nebraska Ave
Tindall St
Springdale St
45th St
50th St
51st St
Tilden St
Sedgwick St
Fordham Rd
Quebec St
48th St
49th St
47th St
Asbury Pl
University Ave
Woodway Ln
Hillbrook Ln
Rockwood Pkwy
Glenbrook Rd
Newark St
Westover Pl
Embassy Park Dr
Macomb St
Lowell St
Sutton Pl
Klingle St
Massachusetts Ave
Cathedral Ave
Hawthorne St
44th Pl
44th St
Glover Dr
43rd St
N6
M4


Metro Station Entrances
.125 Mile
.25 Mile
.5 Mile
1 Mile
SITE
Tenleytown
American University Park
McLean Gardens
Cathedral Heights
Wesley Heights
U.S. Naval Security Station
Wesley Theological Seminary
Friendship
Fort Bayard Park
Fort Reno Park
Fort Reno
Garrison St NW
Harrison St NW
Huntington St NW
Fessenden St
Ellicott St NW
Davenport St NW
Chesapeake St NW
Burlington Pl NW
Brandywine St NW
Albemarle St NW
Alton Pl NW
Yuma St NW
Windom Pl NW
Warren St NW
Verplanck Pl NW
Veazey St NW
Van Ness St NW
Sedgwick St NW
Rodman St NW
Quebec St NW
Porter St NW
Hearst
Macomb St NW
Sutton Pl NW
Lowell St NW
Nebraska Ave NW
New Mexico Ave NW
Massachusetts Ave NW
Wisconsin Ave NW
River Rd NW
Reno Rd NW
Grant Rd NW
Fort Dr NW
Belt Rd NW
39th St NW
41st St NW
43rd Pl NW
45th St NW
48th St NW
46th St NW
47th St NW
44th St NW
43rd St NW
42nd St NW
38th St NW
37th St NW
36th St
412 ft
392 ft
368 ft
Fairfax County, VA, MNCPPC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA...
POWERED BY esri


Priority Network Bus Routes
Buffer of Priority Network Bus Routes
SITE
Tenleytown
American University Park
North Cleveland Park
Wesley Heights
Cathedral Heights
McLean Gardens
Friendship
American University
U.S Naval Security Station
Fort Reno Park
Fort Bayard Park
Garrison St NW
Harrison St NW
Davenport St NW
Chesapeake St NW
Brandywine St NW
Albemarle St NW
Yuma St NW
Windom Pl NW
Warren St NW
Verplanck Pl NW
Veazey St NW
Van Ness St NW
Cumberland St NW
Appleton St NW
Alton Pl NW
Sedgwick St NW
Rodman St NW
Quebec St NW
Porter St NW
Macomb St NW
Sutton Pl NW
Lowell St NW
Nebraska Ave NW
New Mexico Ave NW
Massachusetts Ave NW
River Rd NW
Fort Dr NW
Grant Rd NW
Reno Rd NW
Hearst
Fairfax County, VA, MNCPPC, VITA, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA,...
esri

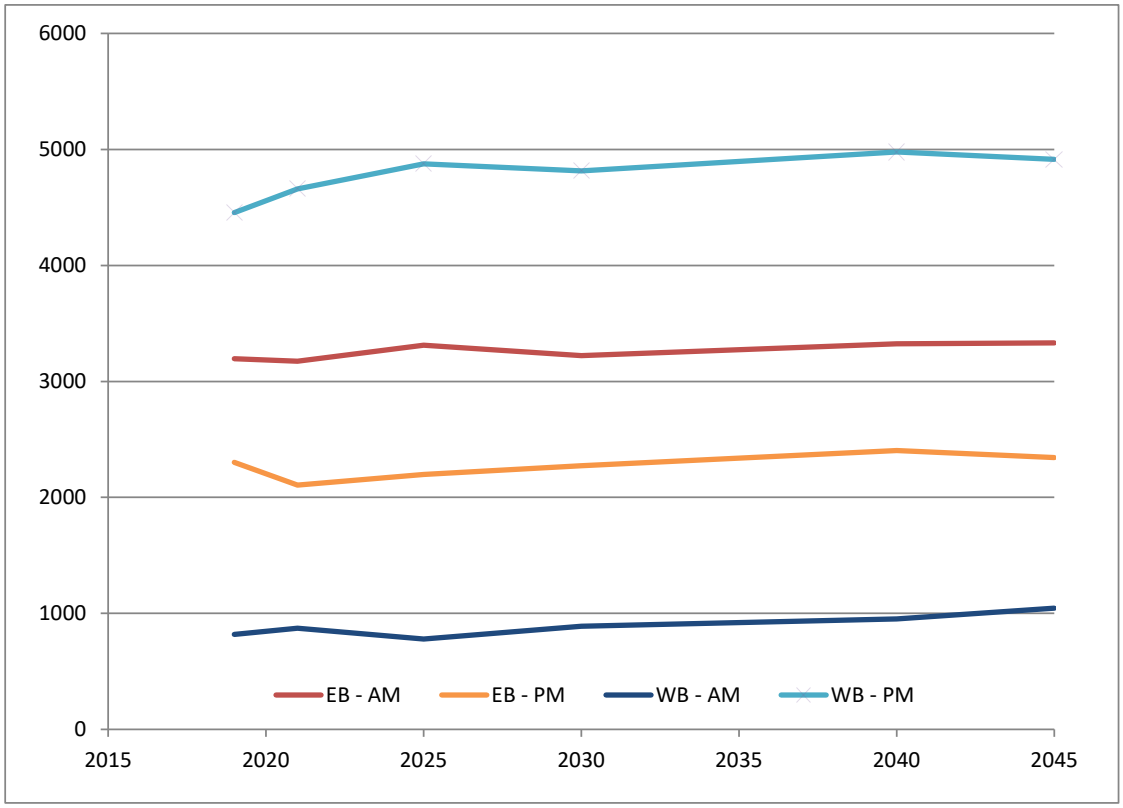

Upton St
46th St
Upton St
45th St
Springdale St
Tilden St
Wesley Cir
47th St
Sedgwick St
Massachusetts Ave
Sedgwick St
University Ave
Rodman St
SITE
1
2
3
4
5
6
7
1. Massachusetts Ave & 46th St/Tilden St/Wesley Cir NW
2. University Ave & Wesley Cir NW
3. University Ave & Sedgwick St/WTS Exit NW
4. Massachusetts Ave & 45th St NW
5. Massachusetts Ave & WTS Entrance NW
6. Massachusetts Ave & Campus Dr NW
7. Massachusetts Ave & Wesley Cir NW
Proposed Study Intersections
Project site
Proposed study intersection
Traffic counts available from:
2021 AU Campus Plan (Feb 2020)
O.R. George (2012)
Neither
Both
N
1" = 250'

Growth Rate Information & Assumptions

Massachusetts Ave NW west of Wesley Cir

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
EB - AM	3195	3174	3312	3221	3323	3332
EB - PM	2303	2106	2198	2274	2404	2344
WB - AM	819	871	779	890	952	1045
WB - PM	4455	4660	4875	4815	4978	4914



Growth Rate Information & Assumptions

Massachusetts Ave NW west of Wesley Cir

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Massachusetts Ave NW west of Wesley Cir	17.5	16.9	17	18.6	18.7	19	19.2	19.7	19.9	20.4

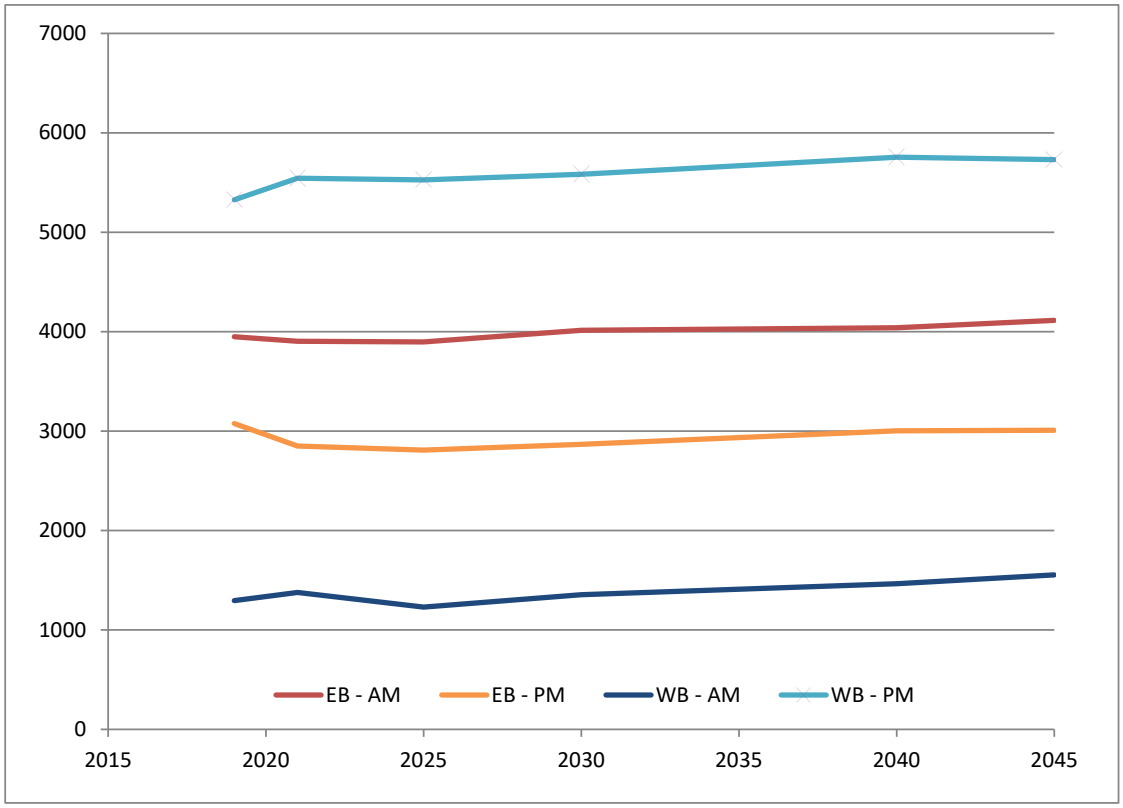
Growth per year since:	2009	2012	2015
	1.5%	1.3%	1.5%

Growth Rate Information & Assumptions

Massachusetts Ave NW btwn Wesley Cir and 45th St

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
EB - AM	3949	3904	3897	4015	4039	4114
EB - PM	3076	2851	2809	2867	3002	3008
WB - AM	1294	1378	1230	1354	1464	1554
WB - PM	5326	5544	5528	5582	5755	5731



Growth Rate Information & Assumptions

Massachusetts Ave NW btwn Wesley Cir and 45th St

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Massachusetts Ave NW btwn Wesley Cir and	22.9	22.1	22.2	22	22.1	19.7	20	20.8	20.9	21.0

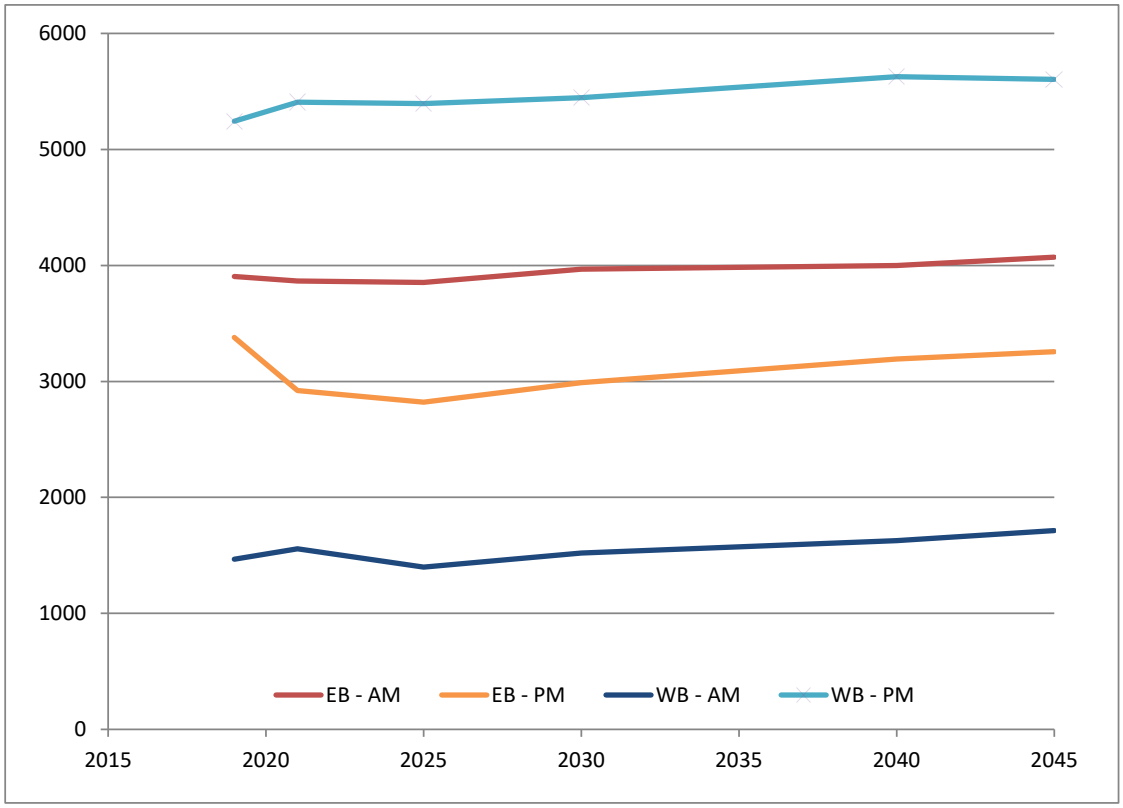
Growth per year since:	2009	2012	2015
	-0.9%	-0.7%	1.2%

Growth Rate Information & Assumptions

Massachusetts Ave NW east of 45th St

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
EB - AM	3905	3865	3853	3968	3998	4071
EB - PM	3379	2921	2821	2988	3192	3256
WB - AM	1467	1556	1399	1521	1627	1714
WB - PM	5243	5408	5394	5446	5627	5603



Growth Rate Information & Assumptions

Massachusetts Ave NW east of 45th St

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Massachusetts Ave NW east of 45th St	22.9	22.1	22.2	22	22.1	19.7	20	20.8	20.9	21.0

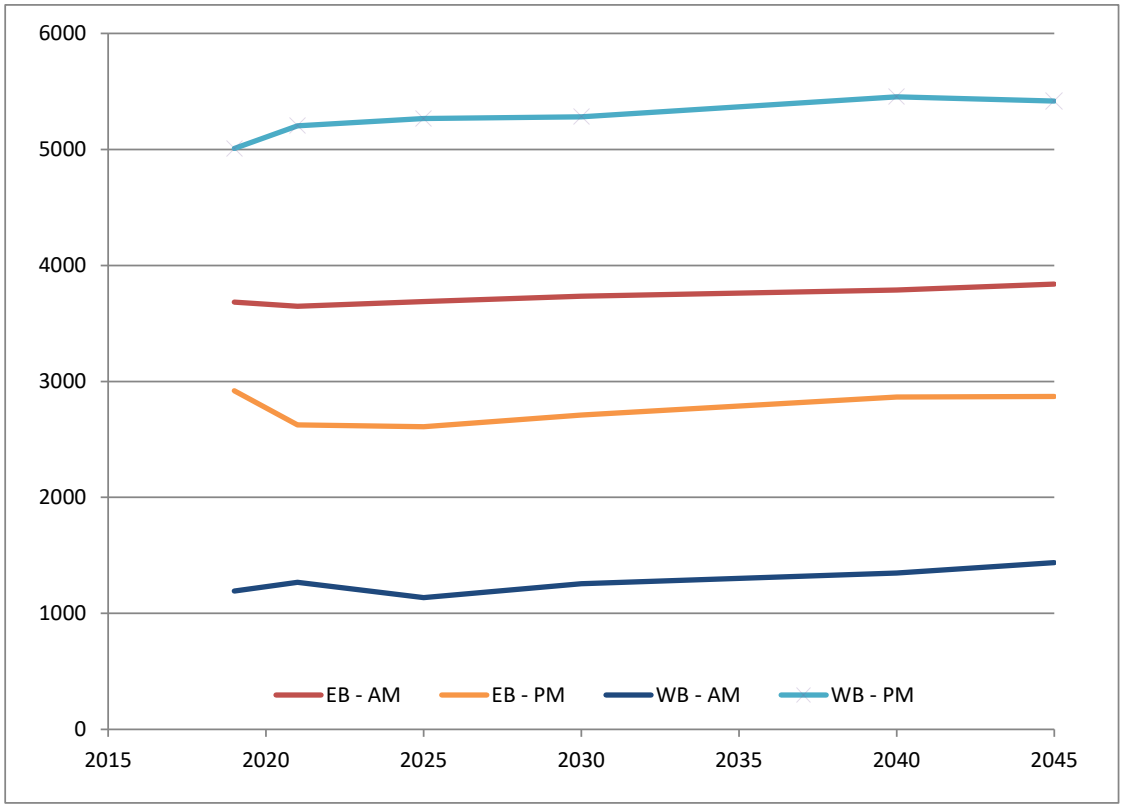
Growth per year since:	2009	2012	2015
	-0.9%	-0.7%	1.2%

Growth Rate Information & Assumptions

Massachusetts Ave NW aggregate

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
EB - AM	3683	3648	3687	3735	3787	3839
EB - PM	2919	2626	2609	2710	2866	2869
WB - AM	1193	1268	1136	1255	1348	1438
WB - PM	5008	5204	5266	5281	5453	5416



Year of data collection: 2020
Project completion date: 2021

Direction/Period	Growth per year between 2020 & 2021
EB - AM	-0.48%
EB - PM	-5.16%
WB - AM	3.09%
WB - PM	1.94%

Growth Rate Information & Assumptions

Massachusetts Ave NW aggregate

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Massachusetts Ave NW aggregate	21.1	20.4	20.5	20.9	21.0	19.5	19.7	20.4	20.6	20.8

Growth per year since:	2009	2012	2015
	-0.1%	0.0%	1.3%

Proposed Growth Rates for Use in Study:

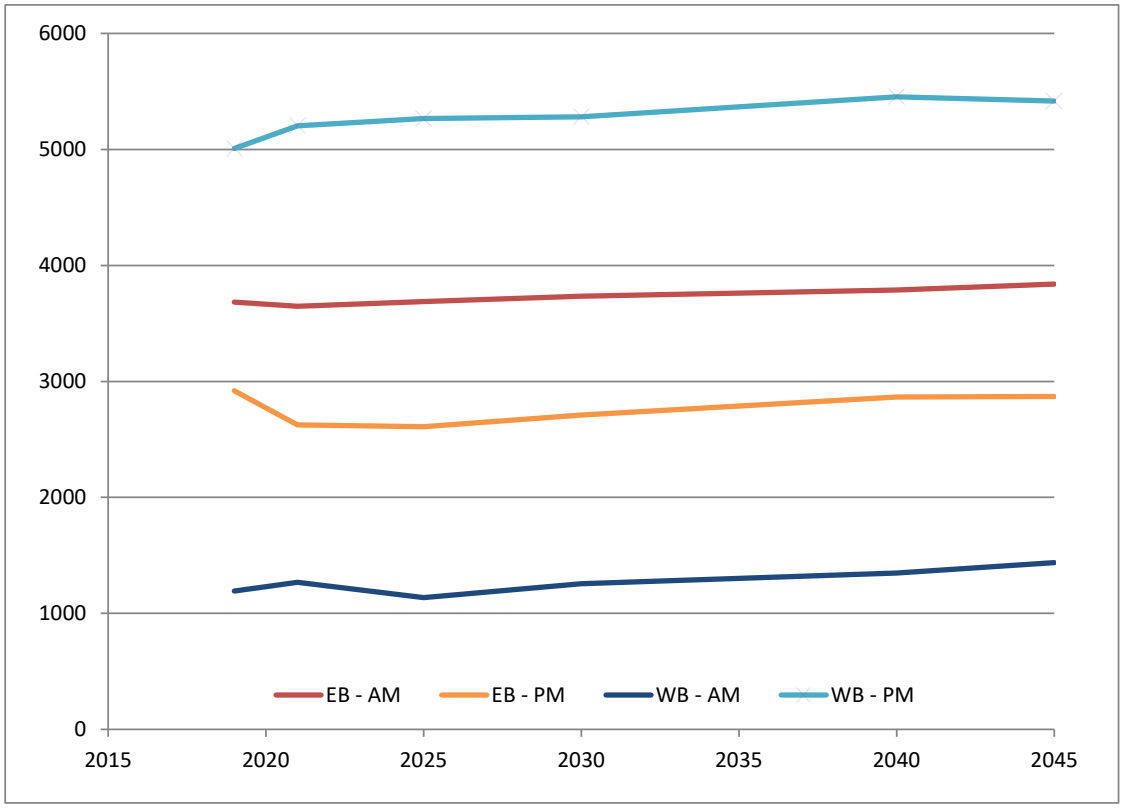
Direction/Period	Per year btwn 2020 & 2021	Total btwn 2020 & 2021
EB - AM	0.10%	0.10%
EB - PM	0.10%	0.10%
WB - AM	2.00%	2.00%
WB - PM	0.50%	0.50%

Growth Rate Information & Assumptions

Massachusetts Ave NW aggregate

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
EB - AM	3683	3648	3687	3735	3787	3839
EB - PM	2919	2626	2609	2710	2866	2869
WB - AM	1193	1268	1136	1255	1348	1438
WB - PM	5008	5204	5266	5281	5453	5416



Year of data collection: 2021
Project completion date: 2024

Direction/Period	Growth per year between 2021 & 2024
EB - AM	0.27%
EB - PM	-0.16%
WB - AM	-2.72%
WB - PM	0.29%

Growth Rate Information & Assumptions

Massachusetts Ave NW aggregate

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Massachusetts Ave NW aggregate	21.1	20.4	20.5	20.9	21.0	19.5	19.7	20.4	20.6	20.8

Growth per year since:	2009	2012	2015
	-0.1%	0.0%	1.3%

Proposed Growth Rates for Use in Study:

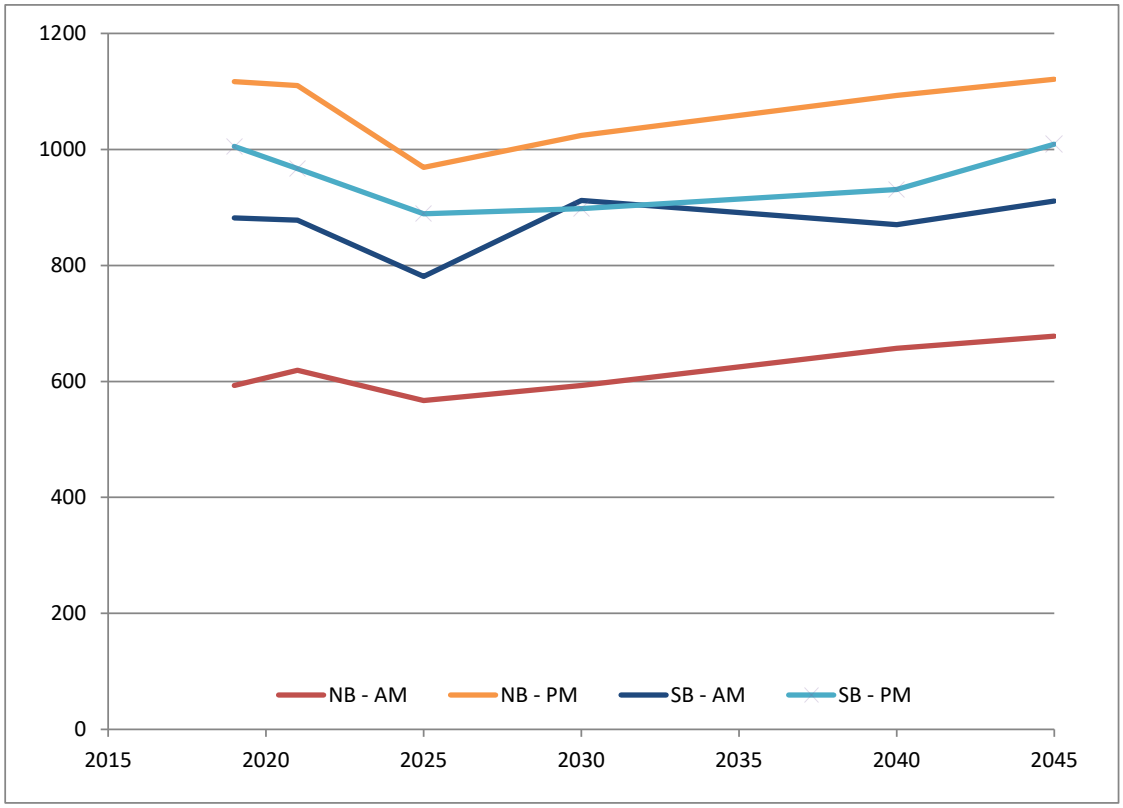
Direction/Period	Per year btwn 2021 & 2024	Total btwn 2021 & 2024
EB - AM	0.30%	0.90%
EB - PM	0.10%	0.30%
WB - AM	0.10%	0.30%
WB - PM	0.30%	0.90%

Growth Rate Information & Assumptions

46th St NW

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
NB - AM	593	619	567	593	657	678
NB - PM	1117	1110	969	1024	1093	1121
SB - AM	882	878	781	912	870	911
SB - PM	1005	967	889	898	931	1009



Year of data collection: 2020
Project completion date: 2021

Direction/Period	Growth per year between 2020 & 2021
NB - AM	2.17%
NB - PM	-0.31%
SB - AM	-0.23%
SB - PM	-1.91%

Growth Rate Information & Assumptions

46th St NW

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
46th St NW	2.3	2.2	2.2	2.2	2.2	2.6	2.7	2.8	2.8	2.8

Growth per year since:	2009	2012	2015
	2.0%	3.5%	0.9%

Proposed Growth Rates for Use in Study:

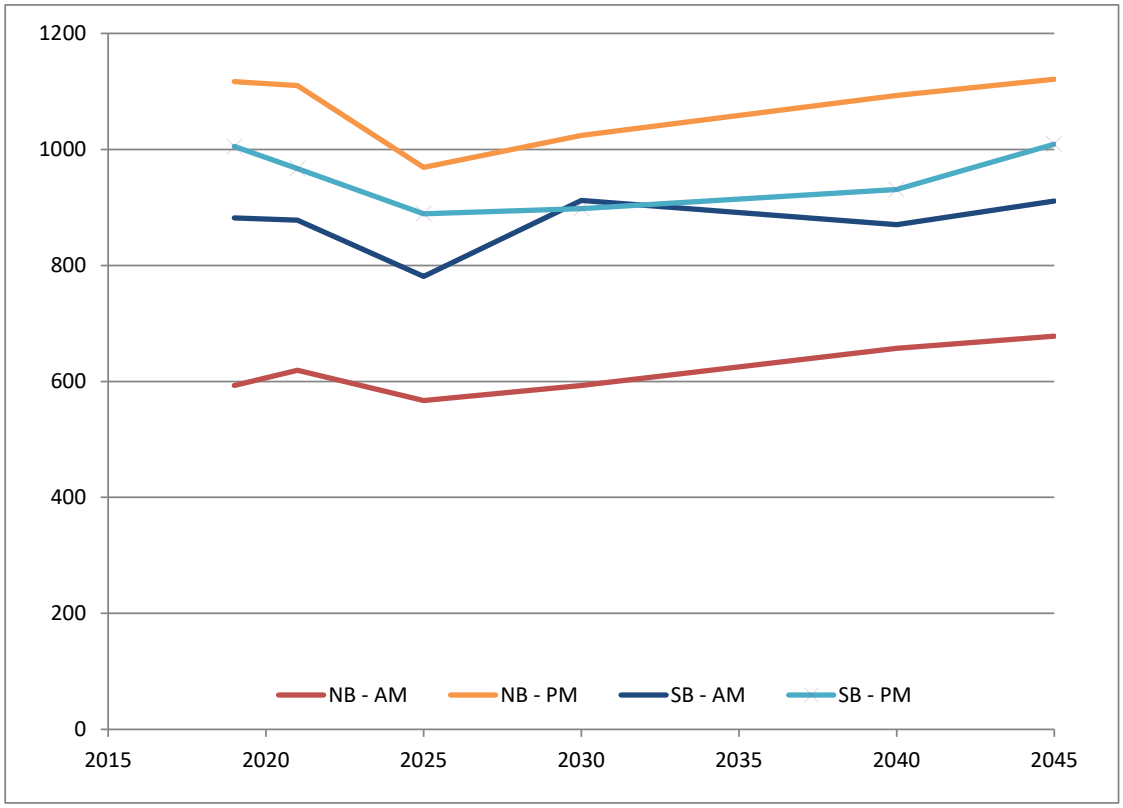
Direction/Period	Per year btwn 2020 & 2021	Total btwn 2020 & 2021
NB - AM	2.00%	2.00%
NB - PM	0.10%	0.10%
SB - AM	0.10%	0.10%
SB - PM	0.10%	0.10%

Growth Rate Information & Assumptions

46th St NW

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
NB - AM	593	619	567	593	657	678
NB - PM	1117	1110	969	1024	1093	1121
SB - AM	882	878	781	912	870	911
SB - PM	1005	967	889	898	931	1009



Year of data collection: 2021
Project completion date: 2024

Direction/Period	Growth per year between 2021 & 2024
NB - AM	-2.17%
NB - PM	-3.34%
SB - AM	-2.88%
SB - PM	-2.08%

Growth Rate Information & Assumptions

46th St NW

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
46th St NW	2.3	2.2	2.2	2.2	2.2	2.6	2.7	2.8	2.8	2.8

Growth per year since:	2009	2012	2015
	2.0%	3.5%	0.9%

Proposed Growth Rates for Use in Study:

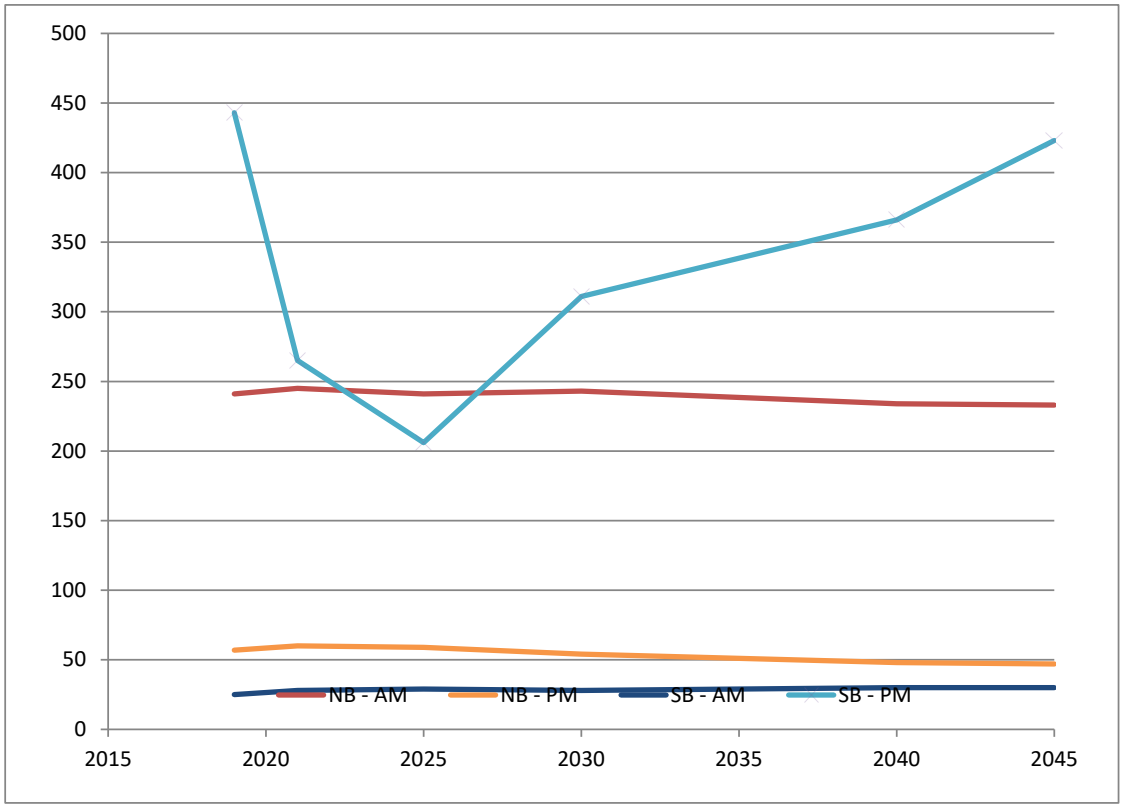
Direction/Period	Per year btwn 2021 & 2024	Total btwn 2021 & 2024
NB - AM	0.10%	0.30%
NB - PM	0.10%	0.30%
SB - AM	0.10%	0.30%
SB - PM	0.10%	0.30%

Growth Rate Information & Assumptions

45th St NW

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
NB - AM	241	245	241	243	234	233
NB - PM	57	60	59	54	48	47
SB - AM	25	28	29	28	30	30
SB - PM	443	265	206	311	366	423



Year of data collection: 2020
Project completion date: 2021

Direction/Period	Growth per year between 2020 & 2021
NB - AM	0.83%
NB - PM	2.60%
SB - AM	5.83%
SB - PM	-22.66%

Growth Rate Information & Assumptions

45th St NW

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
45th St NW										
Growth per year since:	**2009**	**2012**	**2015**							

Proposed Growth Rates for Use in Study:

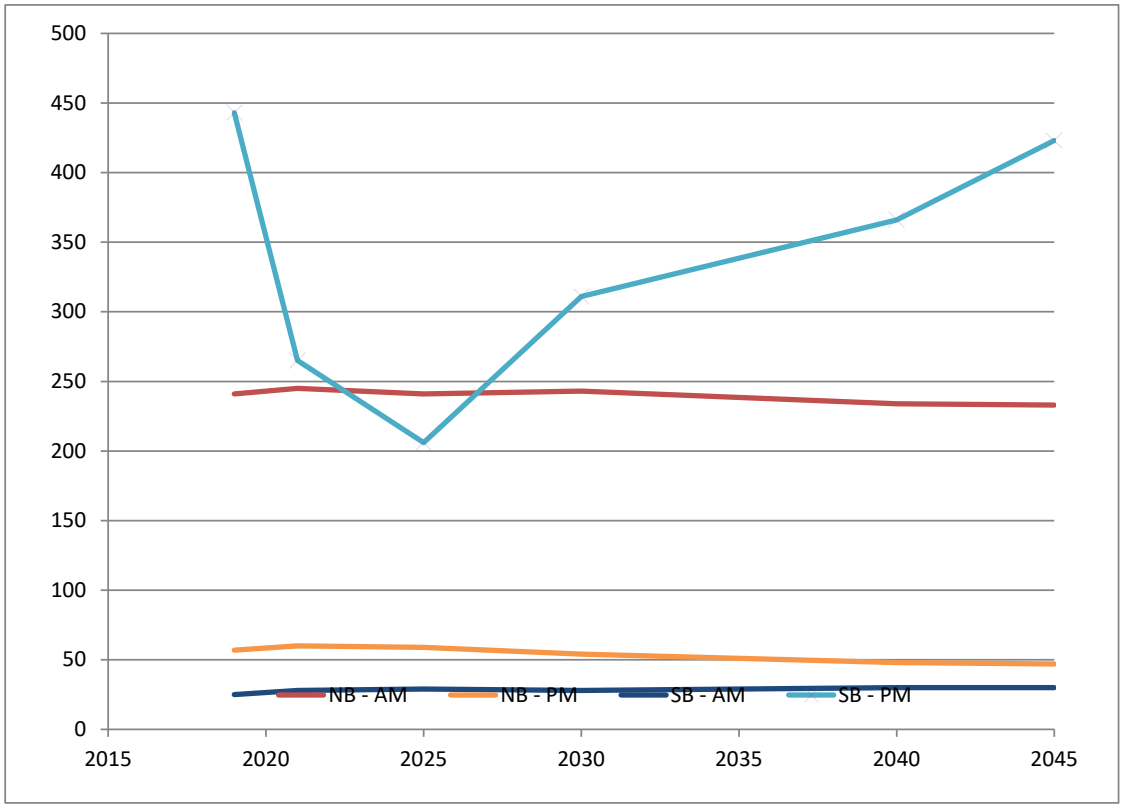
Direction/Period	Per year btwn 2020 & 2021	Total btwn 2020 & 2021
NB - AM	0.50%	0.50%
NB - PM	0.50%	0.50%
SB - AM	2.00%	2.00%
SB - PM	0.10%	0.10%

Growth Rate Information & Assumptions

45th St NW

MWCOG Model Volumes (v2.3.78)

Direction/Period	2019	2021	2025	2030	2040	2045
NB - AM	241	245	241	243	234	233
NB - PM	57	60	59	54	48	47
SB - AM	25	28	29	28	30	30
SB - PM	443	265	206	311	366	423



Year of data collection: 2021
Project completion date: 2024

Direction/Period	Growth per year between 2021 & 2024
NB - AM	-0.41%
NB - PM	-0.42%
SB - AM	0.88%
SB - PM	-6.10%

Growth Rate Information & Assumptions

45th St NW

Historical DDOT AADTs in thousands

Location	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
45th St NW										
Growth per year since:	**2009**	**2012**	**2015**							

Proposed Growth Rates for Use in Study:

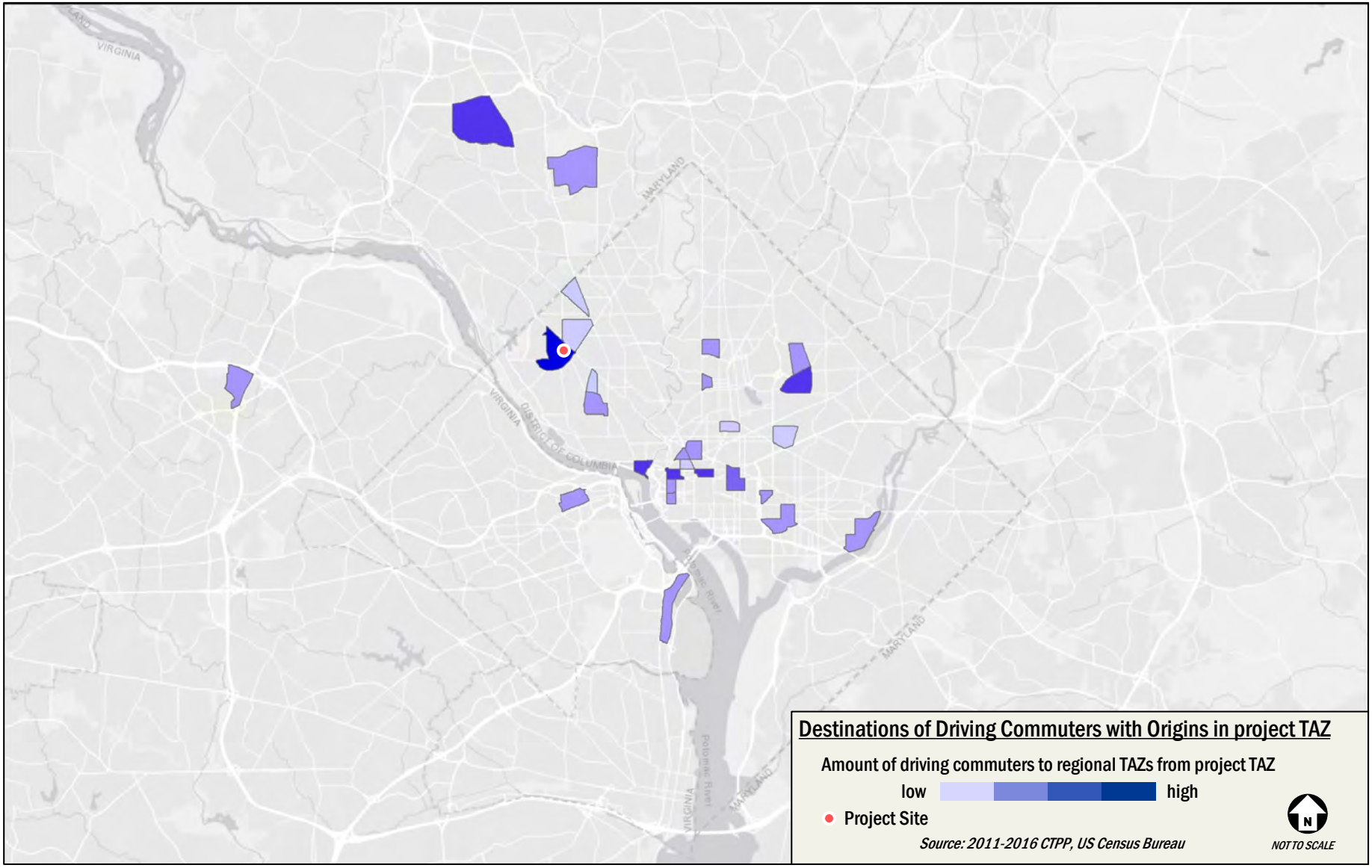
Direction/Period	Per year btwn 2021 & 2024	Total btwn 2021 & 2024
NB - AM	0.10%	0.30%
NB - PM	0.10%	0.30%
SB - AM	0.90%	2.72%
SB - PM	0.10%	0.30%

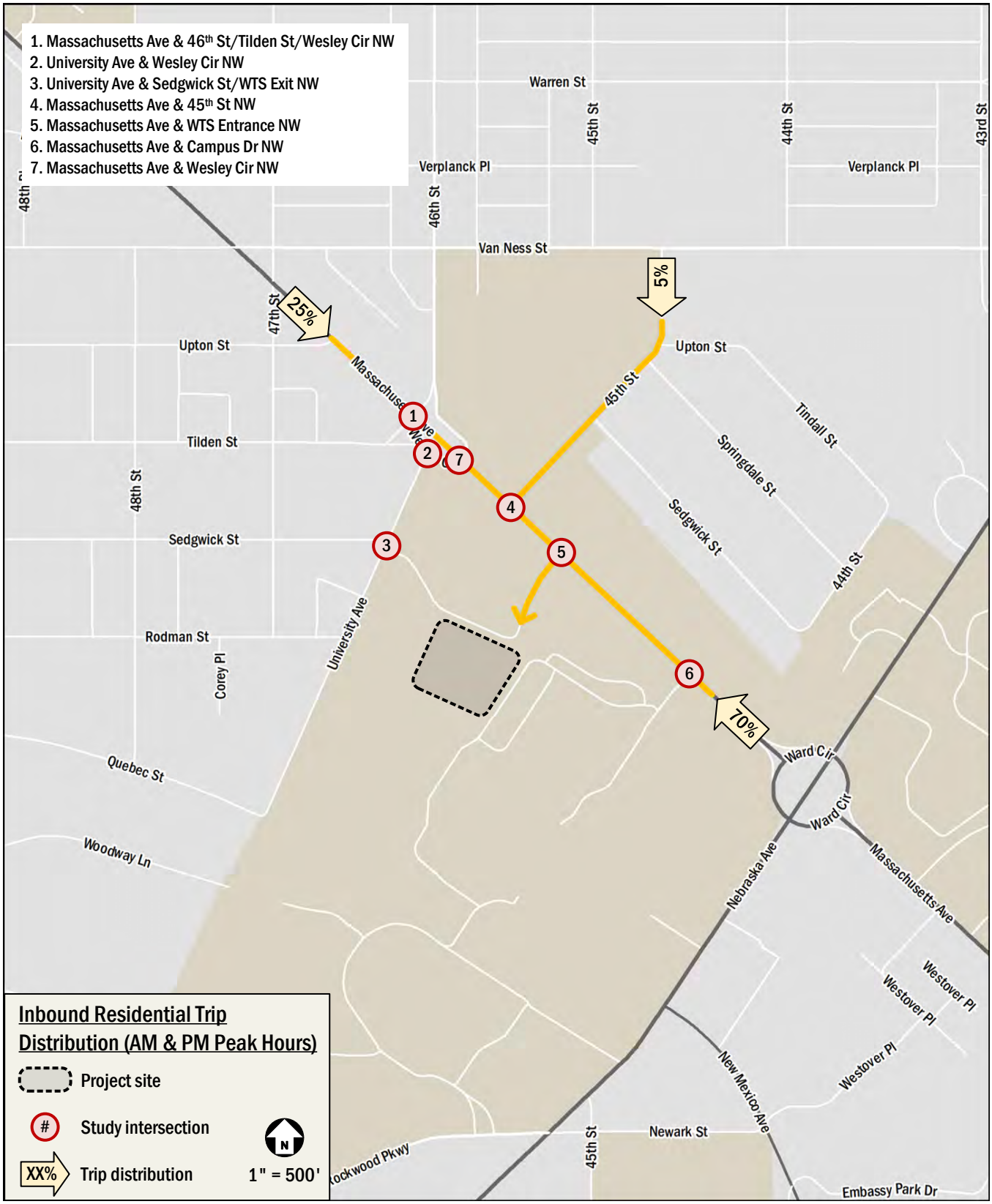
Roadway	Dir.	Proposed Annual Growth Rate Between 2020 and 2021 [1]		Proposed Total Growth Between 2020 and 2021		Proposed Annual Growth Rate Between 2021 and 2024 [2]		Proposed Total Growth Between 2021 and 2024	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Massachusetts Ave NW	EB	0.10%	0.10%	0.10%	0.10%	0.30%	0.10%	0.90%	0.30%
	WB	2.00%	0.50%	2.00%	0.50%	0.10%	0.30%	0.30%	0.90%
Tilden St NW	EB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
	WB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
46th St NW	NB	2.00%	0.10%	2.00%	0.10%	0.10%	0.10%	0.30%	0.30%
	SB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
University Ave NW [3]	NB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
	SB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
45th St NW	NB	0.50%	0.50%	0.50%	0.50%	0.10%	0.10%	0.30%	0.30%
	SB	2.00%	0.10%	2.00%	0.10%	0.90%	0.10%	2.72%	0.30%
Campus Dr NW	NB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%
	SB	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.30%	0.30%

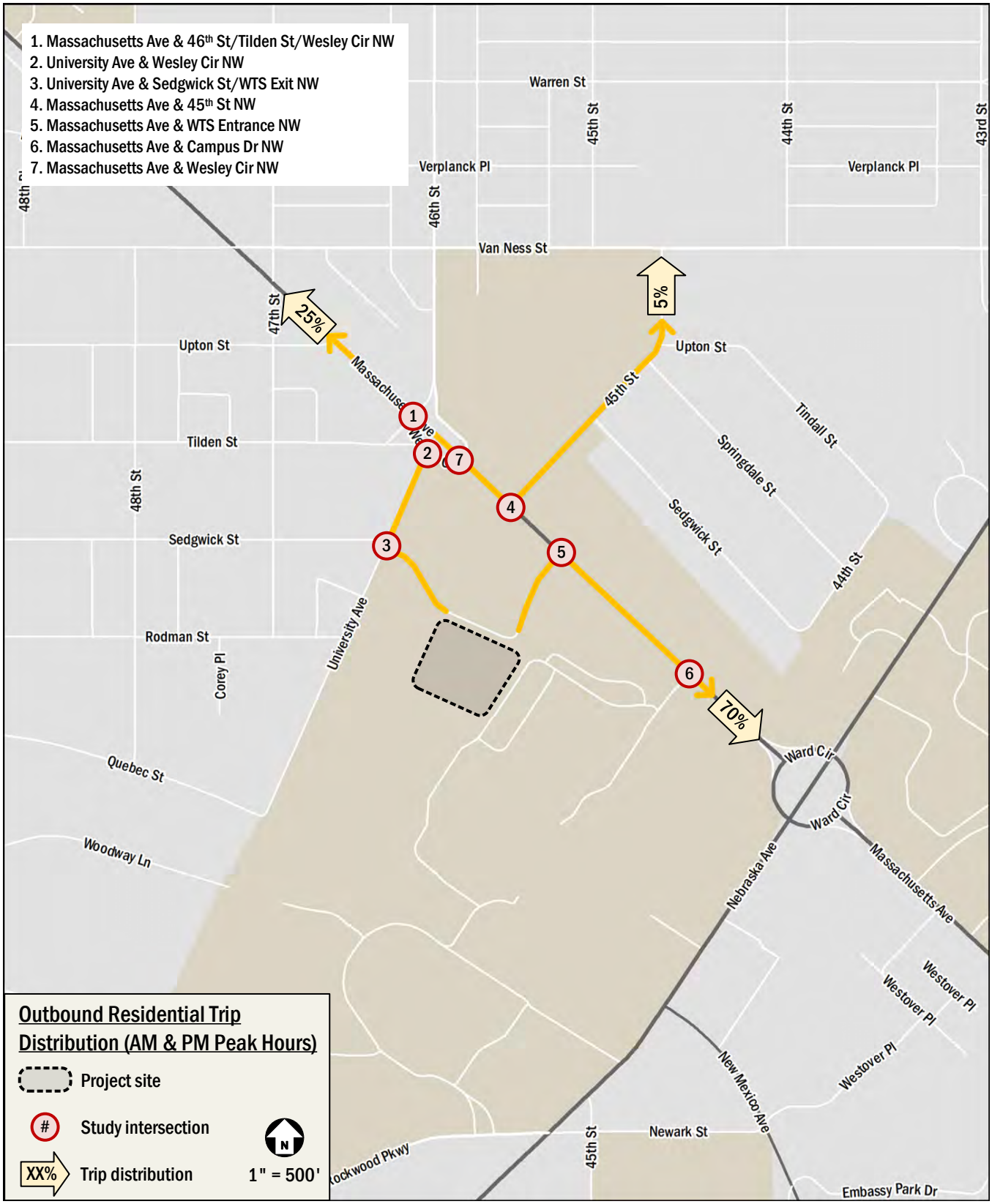
[1] These rates were applied to volumes recorded in February 2020 that were used to establish 2021 existing conditions. Rates are based on MWCOG's currently adopted regional transportation model for this time period.

[2] These rates were applied to volumes grown from 2021 existing conditions. Rates are based on MWCOG's currently adopted regional transportation model for this time period.

[3] Study intersection #3 (University Ave & Sedgwick St/WTS Exit NW) only has available traffic counts from 2012, not February 2020 like the other study intersections. Therefore, to establish 2021 Existing Conditions, annual growth rates of 0.10% will be applied to the northbound and southbound volumes of University Ave NW at this intersection for every year between 2012 and 2021, totaling 0.90% for each direction.


VIRGINIA
MARYLAND
VIRGINIA
DISTRICT OF COLUMBIA
Potomac River
MARYLAND
VIRGINIA
MARYLAND
Destinations of Driving Commuters with Origins in project TAZ
Amount of driving commuters to regional TAZs from project TAZ
low
high
Project Site
Source: 2011-2016 CTPP, US Census Bureau
N
NOT TO SCALE


1. Massachusetts Ave & 46th St/Tilden St/Wesley Cir NW
2. University Ave & Wesley Cir NW
3. University Ave & Sedgwick St/WTS Exit NW
4. Massachusetts Ave & 45th St NW
5. Massachusetts Ave & WTS Entrance NW
6. Massachusetts Ave & Campus Dr NW
7. Massachusetts Ave & Wesley Cir NW
Warren St
45th St
44th St
43rd St
Verplanck Pl
46th St
Van Ness St
47th St
25%
5%
Upton St
Massachusetts Ave
45th St
Tindall St
Springdale St
Tilden St
48th St
Sedgwick St
44th St
University Ave
Rodman St
Corey Pl
70%
Ward Cir
Quebec St
Woodway Ln
Nebraska Ave
Massachusetts Ave
Westover Pl
New Mexico Ave
Newark St
Embassy Park Dr
Inbound Residential Trip Distribution (AM & PM Peak Hours)
Project site
Study intersection
Trip distribution
XX%
1" = 500'


1. Massachusetts Ave & 46th St/Tilden St/Wesley Cir NW
2. University Ave & Wesley Cir NW
3. University Ave & Sedgwick St/WTS Exit NW
4. Massachusetts Ave & 45th St NW
5. Massachusetts Ave & WTS Entrance NW
6. Massachusetts Ave & Campus Dr NW
7. Massachusetts Ave & Wesley Cir NW
Warren St
45th St
44th St
43rd St
Verplanck Pl
46th St
Van Ness St
47th St
25%
5%
Upton St
Massachusetts Ave
45th St
Tindall St
Springdale St
Tilden St
48th St
Sedgwick St
44th St
University Ave
Rodman St
Corey Pl
70%
Ward Cir
Quebec St
Woodway Ln
Nebraska Ave
Massachusetts Ave
Westover Pl
New Mexico Ave
Newark St
Embassy Park Dr
Outbound Residential Trip Distribution (AM & PM Peak Hours)
Project site
Study intersection
Trip distribution
1" = 500'

D. Vehicle Level of Service Definitions

A. Level of Service Definitions

All capacity analyses are based on the procedures specified by the Transportation Research Board, Special Report 209: Highway Capacity Manual (HCM), 2000. Levels of service (LOS) range 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:

- **LOS 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.

- **LOS 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.

- **LOS 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.

- **LOS 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.

- **LOS 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.

- **LOS 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

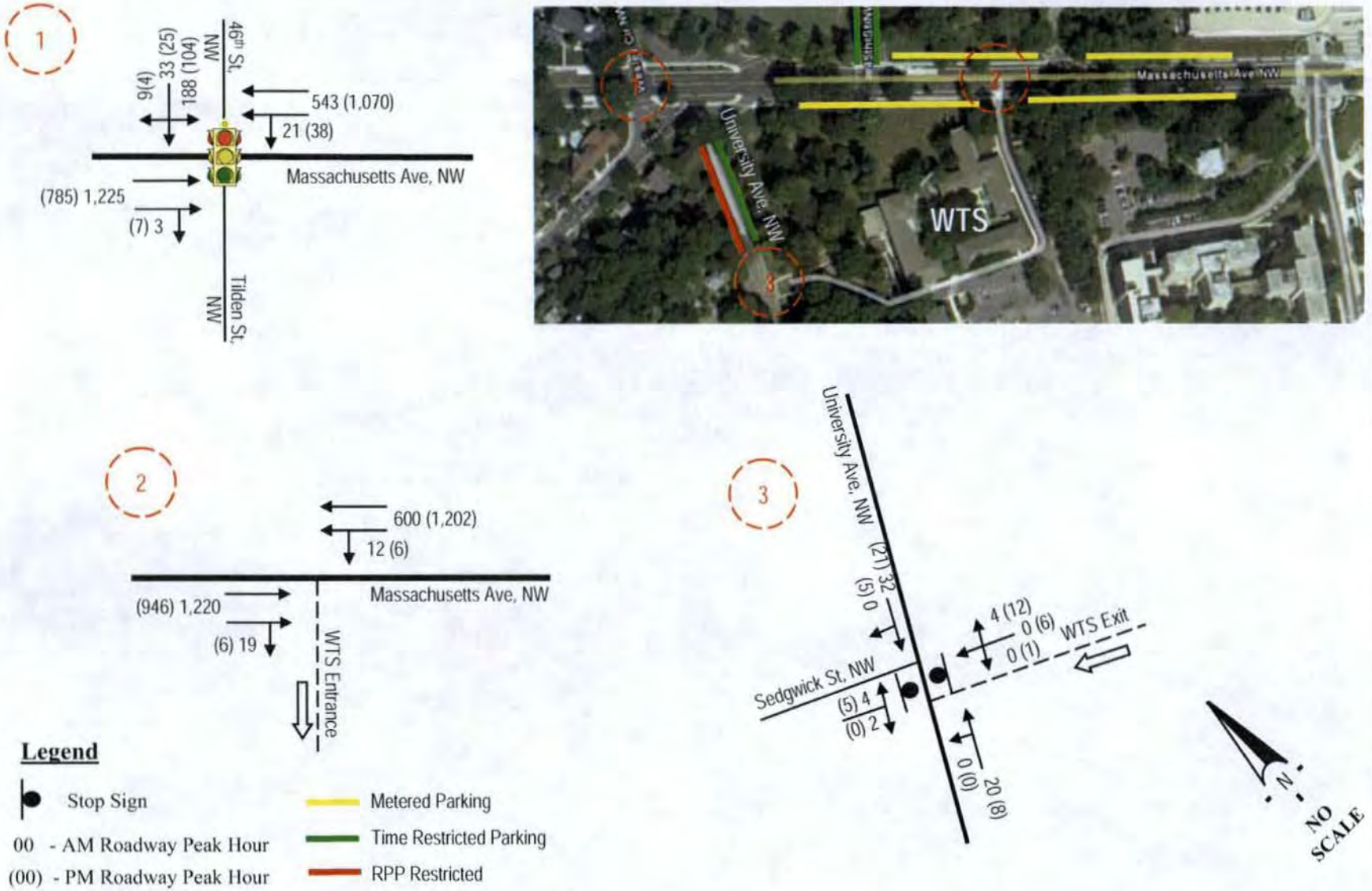
At an unsignalized intersection, the major street through traffic and right turns are assumed to operate unimpeded and therefore receive no level of service rating. The level of service for the minor street and the major street left turn traffic is dependent on the volume and capacity of the available 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:

- **LOS 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.
- **LOS B** describes operations with average total delay in the range of 10.1 to 15.0 seconds per vehicle.
- **LOS C** describes operations with average total delay in the range of 15.1 to 25.0 second per vehicle.
- **LOS D** describes operations with average total delay in the range of 25.1 to 35.0 seconds per vehicle.
- **LOS E** describes operations with average total delay in the range of 35.1 to 50.0 seconds per vehicle.
- **LOS 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. 2012 Turning Movement Counts



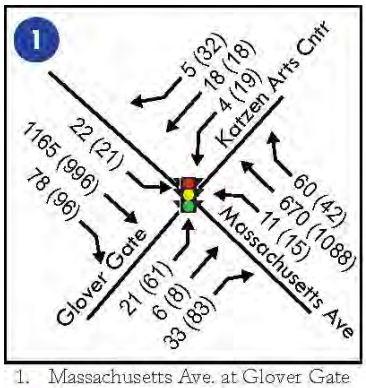
O. R. GEORGE & ASSOCIATES, INC.
Traffic Engineers - Transportation Planners

Exhibit 3: Existing Lane Configuration and Peak Hour Volumes

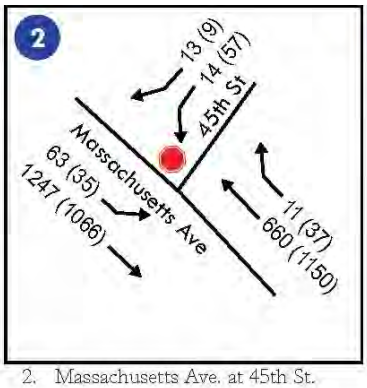
Wesley Theological Seminary Campus Plan Amendment and Further Processing Application, Northwest, Washington, D.C.

F. February 2020 Turning Movement Counts

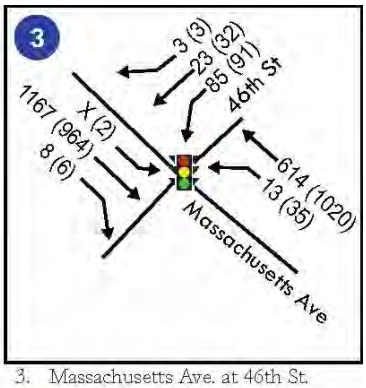
Figure 5-1 Existing Intersection Peak Hour Traffic Volumes



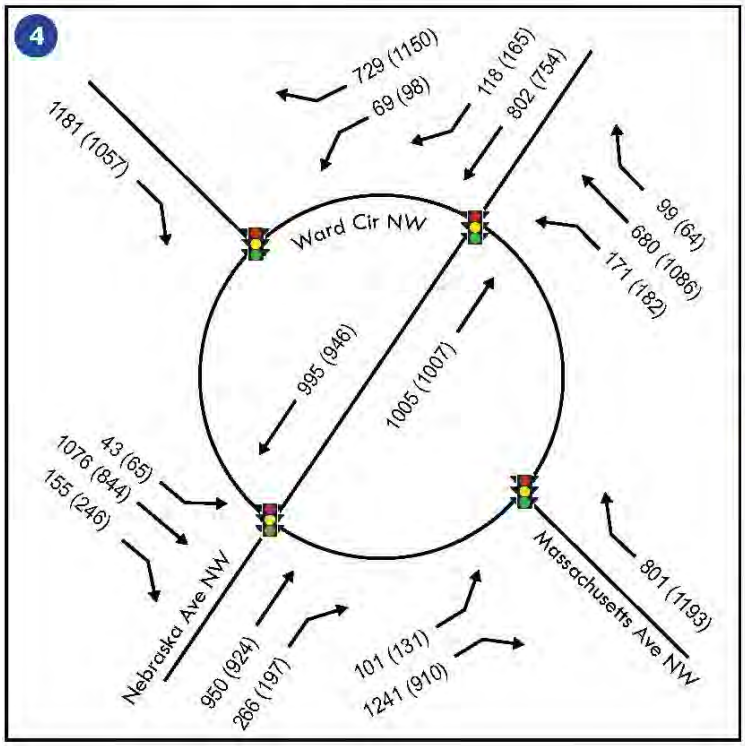
1. Massachusetts Ave. at Glover Gate



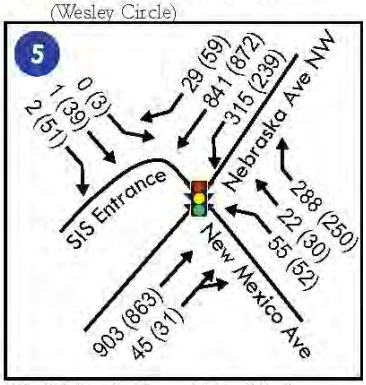
2. Massachusetts Ave. at 45th St.



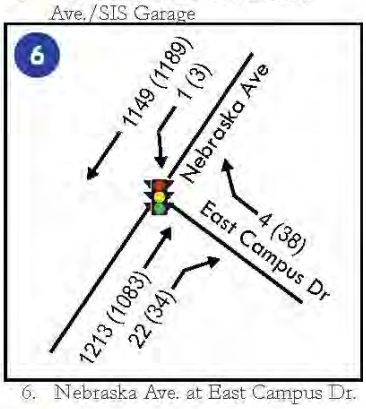
3. Massachusetts Ave. at 46th St. (Wesley Circle)



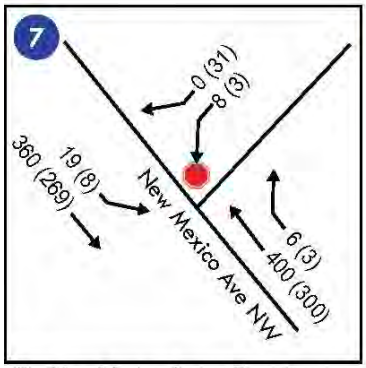
4. Massachusetts Ave. at Nebraska Ave. (Ward Circle)



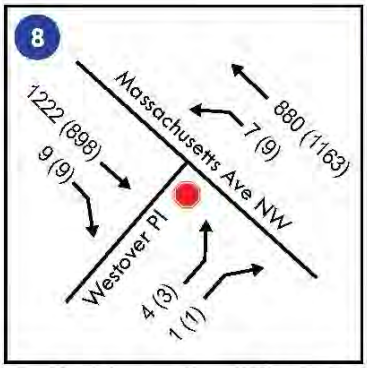
5. Nebraska Ave. at New Mexico Ave./SIS Garage



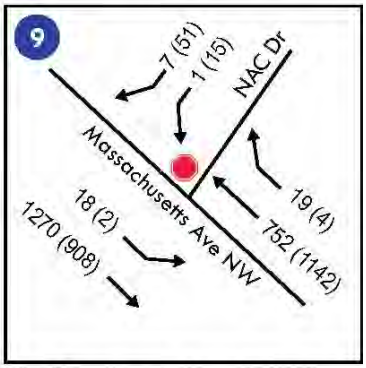
6. Nebraska Ave. at East Campus Dr.



7. New Mexico Ave. at East Campus Dr.



8. Massachusetts Ave. at Westover Pl.



9. Massachusetts Ave. at NAC Dr.