AMERICAN UNIVERSITY

WASHINGTON, DC

September 14, 2020

Ted Van Houten
Planning and Sustainability Division
DC Department of Transportation
55 M Street, SE Suite 400
Washington, DC 20003

Dear Mr. Van Houten,

American University is pleased to submit the enclosed Comprehensive Transportation Review (CTR) Report in support of the university's proposed 2021 Campus Plan.

AU embarked on the 2021 Campus Plan effort with an intentional focus on engaging effectively with members of the community who reside in the neighborhoods surrounding the campus. Over the past two years, the university has worked closely with the AU Neighborhood Partnership, the Community Liaison Committee (CLC), and a wide range of campus and community stakeholders to gather input and feedback on various planning concepts and priorities as they were developed to ensure that the campus will adapt to and meet the changing needs of AU students, faculty, and staff while at the same time respecting and enhancing the quality of life of those who live within the neighborhoods surrounding campus. As a result of this dedicated and collaborative effort, the university and the AU Neighborhood Partnership have reached consensus on the objectives, proposals, and commitments set forth in the September 8, 2020 draft 2021 Campus Plan. The draft Campus Plan has been posted online for public review and comment and is anticipated to be finalized and filed with the DC Zoning Commission later this fall.

The Comprehensive Transportation Review undertaken by our transportation consultant Nelson \Nygaard has been developed in close coordination with the Transportation and Parking Working Group of the AU Neighborhood Partnership. The CTR is being provided to DDOT and also made available to interested community stakeholders well in advance of the filing of the 2021 Campus Plan to allow for fulsome review and discussion throughout the fall, including at ANC3D and ANC3E meetings in September, October, and November, 2020.

We look forward to continuing our work together with DDOT to address any questions or comments you may have on the CTR submission and sharing your feedback with members of the community as discussions regarding the CTR and the Campus Plan continue over the next several months.

Sincerely,

Daniel Nichols
Assistant Vice President
Risk, Safety and Transportation

AMERICAN UNIVERSITY
2021 CAMPUS PLAN

Comprehensive Transportation Review

September 2020

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NYGAARD

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0 EXECUTIVE SUMMARY

The following report is a Comprehensive Transportation Review (CTR) for the American University (AU) 2021 Campus Plan. It analyzes the transportation aspects of the Campus Plan and its forthcoming Zoning Commission case, using procedures required by the District of Columbia Department of Transportation (DDOT).

The purpose of this CTR is to evaluate the Campus Plan for its impacts on the surrounding transportation network. The evaluation in the CTR is based on technical analysis and comparison among three scenarios: 1) the existing land use and transportation system, 2) adding in future background (non-AU) changes, and 3) adding in potential future AU development. This report concludes that **the implementation of the 2021 Campus Plan is not likely to have an objectionable impact** on the surrounding transportation network and neighboring properties assuming that the university continues to support and implement its Transportation Demand Management (TDM) program and follows the recommendations highlighted in this summary and detailed further in Chapter 12.

2021 Campus Plan

AU's 2021 Campus Plan is an integral component in the successful implementation of the university's five-year strategic plan, *Changemakers for a Changing World*, setting forth a thoughtful approach to managing campus growth and development over the next ten years in a manner that reflects the university's commitment to the communities of which it is a part. At the same time, the 2021 Campus Plan will play a critical role in informing and incorporating the key priorities of an ambitious fundraising campaign that will capitalize on AU's momentum as an emerging global university to support the study and scholarship of American University students and faculty for generations to come.

Given the rapidly shifting landscape and increasingly competitive marketplace of higher education, AU must remain flexible to respond to the changing needs and demands associated with educating students in a dynamic global society. At the same time, AU is cognizant of the impact that new campus development, student enrollment, and transportation capacity can potentially have – if not thoughtfully planned and managed – on the residential neighborhoods surrounding campus. Accordingly, over the past two years, the university has worked closely with the AU Neighborhood Partnership and a wide range of campus and community stakeholders to gather input and feedback on the various planning concepts and priorities considered by AU throughout the planning process. **As a result of this dedicated and collaborative effort, the university and the AU Neighborhood Partnership have reached consensus on the objectives, proposals, and commitments set forth in the proposed *2021 Campus Plan***, including:

- Strategic and measured enrollment management at a level ***lower*** than the student cap established in 2011 when adjusted to reflect the revised student count methodology set forth in the city's updated zoning regulations;

- A balanced development program of academic/administrative, residential/campus life, and athletic uses aimed at providing leading-edge research and teaching facilities and strengthening and invigorating a student-centered living and learning campus experience, including enhancing the landscape and open space elements that are distinctive to AU's urban campus – an accredited and award-winning arboretum – and actively advancing the university's culture of sustainability;
- A focus on providing student housing opportunities that encourage more students to remain on-campus during their time at AU, while also implementing robust engagement initiatives with students that choose to live off-campus to equip them to be responsible members of the community and promote positive relationships between students and their neighbors;
- Continued commitment to effective Transportation Demand Management (TDM) strategies aimed at promoting sustainable transportation options that reduce the use of single-occupancy vehicles and the demand for on-campus parking, along with vigilant enforcement of AU's existing off-campus parking policies to preserve on-street parking capacity for members of the community.

The 2021 Campus Plan recognizes that the university's diverse community – its students, faculty, staff, and visitors – travels to, from, within, and among campus destinations in complex ways. Travel patterns change over the day and season in ways significant and subtle. Travelers use a rich mix of private vehicles, shared rides, shuttles, Metrorail and Metrobus, personal and shared bicycles, feet, wheelchairs, scooters, and other fast-evolving modes.

Site Circulation

The current site circulation at the Main Campus enables vehicular access throughout the campus including transit, delivery vehicles, transportation networking companies and personal vehicles (Figure 3-2). Conceptual circulation improvements proposed in the 2021 Campus Plan would eliminate most passenger vehicular traffic passing through Main Campus through design changes and operational controls to existing campus streets. This change would create a safer environment for walking and biking on campus, while preserving the ability for shuttles and emergency vehicles to navigate through campus. Such a change would be implemented over time as campus development projects are advanced. Any changes to the access, such as traffic signal modifications at Fletcher Gate or Glover Gate would be reviewed by the Zoning Commission through the further processing approval process associated with the related enabling project.

Vehicle Parking

The approved 2011 Campus Plan requires that the university "maintain an inventory of approximately 2,200 parking spaces on campus" (with "campus" including only Main Campus and Tenley Campus). Current inventory at those two (2) locations totals 2,316 spaces. As a result of new provisions in the 2016 Zoning Regulations, three (3) additional university properties are now included in the 2021 Campus Plan (specifically 4801 Massachusetts Avenue NW, 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW). The increased campus parking inventory associated with the three (3) additional properties included in the 2021 Campus Plan results in a revised parking inventory of 3,045 spaces, 2,701 of which are currently subject to university use.

In light of this change in Campus Plan parking inventory brought about by the 2016 Zoning Regulations, and in support of the university's continued commitment to effective TDM policies that reduce the number of single occupancy vehicles (SOVs) arriving to the university (and in turn limit the need for additional parking resources), AU has proposed a **parking inventory ceiling**

of 3,000 parking spaces for university use over the term of the 2021 Campus Plan, inclusive of all five of the aforementioned 2021 Campus Plan properties.

This measured approach will ensure that AU provides an adequate parking supply across all properties included in the 2021 Campus Plan to meet the needs of its current and future population, and importantly, to also provide parking capacity for special events to mitigate any potential adverse impacts on the on-street parking supply throughout the neighborhood streets surrounding campus. To confirm that the parking inventory is appropriately priced and adequately meets the needs of the AU population, the university will continue to regularly monitor utilization of its exclusive use parking facilities.

Transportation Demand Management

The university's comprehensive Transportation Demand Management (TDM) plan will remain a priority over the term of the 2021 Campus Plan. The current TDM plan was formulated in 2011 in conjunction with the 2011 Campus Plan and has been largely implemented and routinely updated over the past 10 years. The University recognizes the importance and, crucially, the impact of the TDM plan on both the university and the adjacent communities. The backbone to the current TDM plan includes a University Shuttle Service, the AU/WMATA U*PASS Program[1], and a priced parking system for all campus students, employees, and visitors.

As part of the current 2011 Campus Plan, the University has been providing annual transportation monitoring reports to DDOT including data on parking utilization, campus mode share, TDM benefits participation and AU shuttle operations. Campus mode share in fall 2019 showed an 86% non-single-occupant vehicle share for students and 54% non-single occupant vehicle share for staff and faculty.

Multi-Modal Impacts

Transit

American University's Main Campus and 3201 New Mexico Avenue are located 0.9 miles from WMATA's Tenleytown-AU Metro Station, which provides access to the WMATA Red Line trains. The Tenley Campus is 0.2 mile from the Tenleytown-AU Metro Station and the 4200 Wisconsin Avenue location is 0.3 miles from the station. The 4801 Massachusetts Avenue building is 1.5 miles from the Tenleytown-AU Metro Station. Metrobus services are also adjacent to all campus locations. In order to enhance transit connections, AU operates three (3) campus shuttle routes that facilitate over 1.2 million trips annually between campus locations and the Tenleytown-AU Metro Station.

Although the 2021 Campus Plan may generate new transit trips, existing transit facilities have enough capacity to handle the potential new trips.

Walking

On streets bordering the 2021 Campus Plan locations, sidewalk widths range from 4' to 6.5'. Within the ¼ mile radius from the Campus Plan locations, neighborhood roadways with low vehicle volumes have narrower sidewalks, ranging between 3'-4' in width.

[1] Due to the impact of COVID-19, WMATA temporarily suspended the U*PASS Program for the fall 2020 semester.

Bicycling

Two Capital Bikeshare stations are located on the main roads bordering the Main Campus: the first station is on Massachusetts Avenue NW, northwest of Ward Circle and the intersection with Nebraska Avenue NW. The second station is located on Nebraska Avenue NW, between New Mexico Avenue NW and Massachusetts Avenue NW. Another bikeshare station is located on the northern boundary of the Tenley Campus, on Yuma Street NW east of 42nd Street NW. No bikeshare stations are located near the Spring Valley Building. Bikeshare stations are well-used by students, staff, and faculty in the area of the Main Campus and AU supports the expansion of existing stations and the location of a third station in the vicinity of Fletcher Gate.

Driving

All campus locations are well-connected to major regional arterials such as Massachusetts Avenue, Wisconsin Avenue, and Nebraska Avenue NW, and an existing network of collector and local roadways. Analysis was undertaken to evaluate the potential impacts of the implementation of the 2021 Campus Plan on the transportation network by projecting future conditions with and without potential campus development and population growth. The performance of the network using metrics such as intersection level-of-service and vehicle delay are then compared to the acceptable levels of delay set by DDOT standards to determine if the potential growth and development associated with the 2021 Campus Plan will negatively impact the study area. **The analysis summarized in this report has concluded that the projected development proposed in the 2021 Campus Plan will not significantly impact the study area's transportation network beyond the existing or background conditions as per DDOT's Significant Impact Policy for intersections.**

Specific Recommendations

This report shows through the review of existing and future conditions, and analysis of the potential future impacts of the 2021 Campus Plan, that the proposed development will not have a detrimental impact on the surrounding transportation network. In that context, a number of specific recommendations will ensure that AU will continue to effectively minimize its impact and support the transportation network surrounding the university.

1. Continue to implement a robust Transportation Demand Management (TDM) program that reduces the demand for single-occupancy vehicles on campus by students and employees. The University continues to refine the program and over the past 10 years has increased the non-auto mode share to 85% for students and 56% for staff and faculty.
2. Continue to operate the AU Shuttle Service, which in 2018 had a ridership of 1.2 million. The shuttles connect all campus locations in addition to accessing the Tenleytown-AU Metrorail station.
3. Actively support DDOT in identifying and locating a Capital Bikeshare station in the vicinity of Fletcher Gate and pursue expansion of the two existing Bikeshare stations along Nebraska Avenue and Massachusetts Avenue NW.
4. Collaborate with DDOT, ANCs and other interested community stakeholders on the recommendations contained within DDOT studies including bicycle and multi-use facilities adjacent to American University property.

5. Engage in ongoing discussions with TNCs regarding dedicated Pick -Up/Drop-Off locations on campus and continue to collaborate with members of the community and DDOT to explore other locations and alternatives for PUDO solutions.
6. Continue to provide DDOT with an annual Transportation Performance Monitoring Plan Report detailing the transportation mode split of AU students and employees and the utilization of exclusive university-use parking facilities (Main Campus, Tenley Campus, and 4801 Massachusetts Avenue, NW) on a typical semester weekday.
7. Continue to implement the university's Good Neighbor Parking Policy regarding enforcement of student, faculty, staff, and vendor off-campus parking.
8. Maintain a parking inventory of no more than 3,000 spaces for university use inclusive of all 2021 Campus Plan locations. The university shall continually evaluate its pricing policies for parking with the intention of discouraging vehicle trips to campus without generating demand for off-campus parking by university-affiliated vehicles. Parking utilization analysis for all exclusive university-use facilities will be included in the annual Transportation Performance Monitoring Plan Report.
9. Remain committed to providing sustainable transportation options as part of AU's dedication to carbon neutrality. As a demonstration of this commitment, AU currently provides a total of 18 electric vehicle charging stations at locations on Main Campus and Tenley Campus.
10. Ensure that the development of potential new parking supply, as outlined in the proposed 2021 Campus Plan on development Sites 11/12 and Site 15, will be the subject of further review and analysis in connection with the development approval process associated with each respective project.
11. Recommend any potential modifications to connections to the external roadways at Glover Gate and Fletcher Gate, such as turn restrictions or signal changes, following further analysis and review in connection with the further processing case for the associated enabling project.

1 INTRODUCTION

Purpose

This report presents the results of a Comprehensive Transportation Review (CTR) conducted and submitted on behalf of American University (AU, the Applicant) in conjunction with AU's 2021 Campus Plan. Pursuant to the 2016 Zoning Regulations the following properties are included in the 2021 Campus Plan: Main Campus (including the area known as East Campus); the Tenley Campus; 4801 Massachusetts Avenue NW (also known as the Spring Valley Building); 4200 Wisconsin Avenue NW; and 3201 New Mexico Avenue NW (See Figure 1-1).

The purpose of this CTR is to satisfy the requirements of the District Department of Transportation (DDOT) 2019 CTR Regulations to determine the impacts that the proposed development outlined in the proposed 2021 Campus Plan would have on the surrounding transportation network. To that end, representatives of American University consulted with members of the AU Neighborhood Partnership Transportation and Parking Working Group and met with DDOT staff to develop the study scope and gain concurrence on specific study parameters. A copy of the scoping documents is included in Appendix A.

Study Objectives

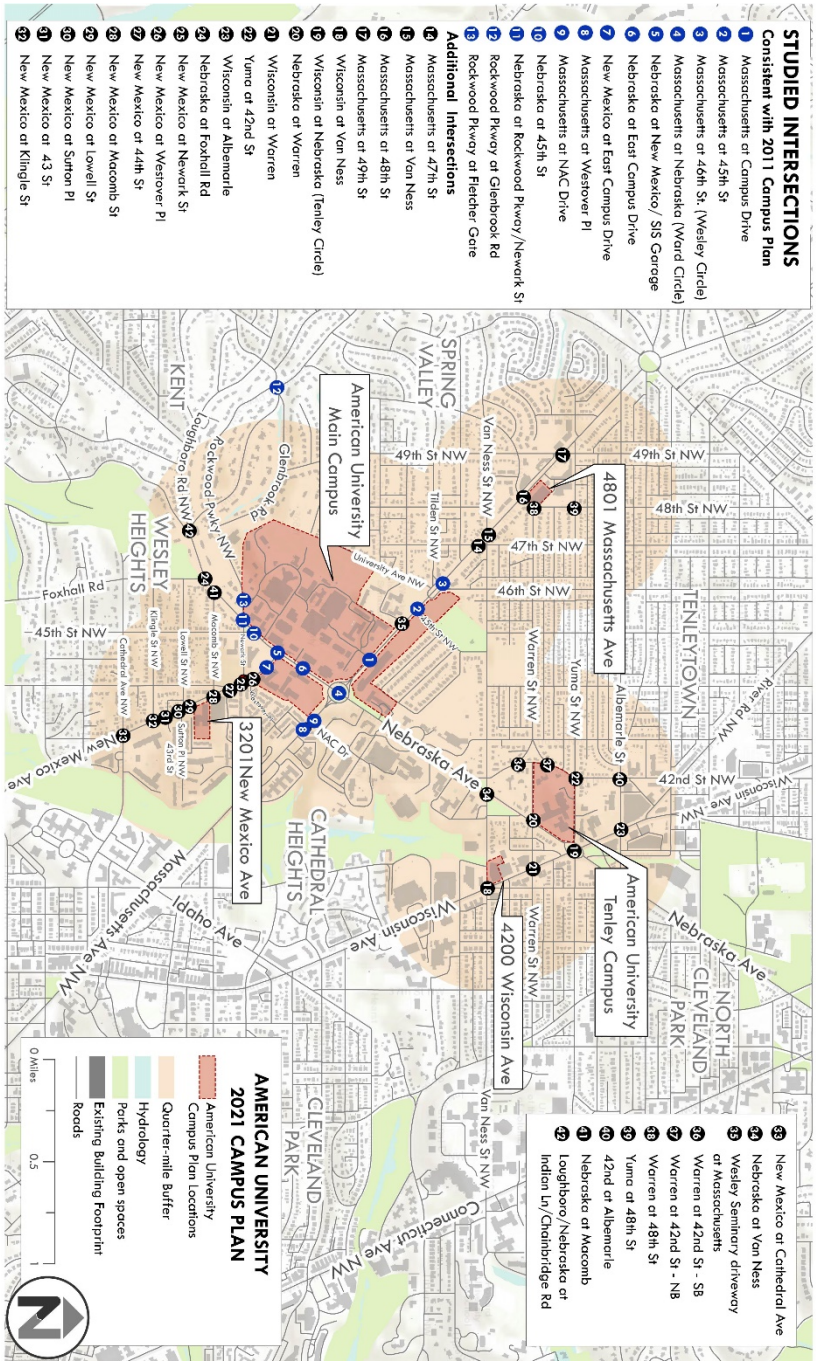
The objectives of the study are to:

1. Review the transportation elements of the proposed 2021 Campus Plan and demonstrate that the university conforms to DDOT's general policies of promoting non-automobile modes of travel and sustainability.
2. Provide information to DDOT and other agencies on how the university will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the university on all major modes of travel and where these trips will be distributed on the network.
3. Determine if the proposed 2021 Campus Plan will lead to adverse impacts on the local transportation network. This report accomplishes this by projecting future conditions with and without the proposed campus population growth and development and performing analyses of vehicular delays. These delays are compared to the acceptable levels of delay set by DDOT standards to determine if the proposed growth and development will negatively impact the study area. In those areas where adverse impacts are identified and require mitigation, the report provides recommendations for improvements to the transportation network to mitigate the adverse impacts.

Study Area

The study area was developed based on input from members of the AU Neighborhood Partnership Transportation and Parking Working Group to encompass those intersections that provide access to the Campus Plan locations and that could be impacted by the proposed development plan. As per discussions with DDOT, the intersections as shown in Figure 1-1 are to be analyzed through the study.

Figure 1-1 Study Area and 2021 Campus Plan Locations



Study Methodology

This study was conducted in accordance with DDOT's Guidelines for Comprehensive Transportation Review *(July 2019)*.

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

- Scoping discussions were held with DDOT staff and a scoping memorandum was developed by the Applicant and reviewed by the AU Neighborhood Partnership Transportation and Parking Working Group and submitted to DDOT for review in May 2020. This scope details the study assumptions and relevant background information. A copy of the scoping documents is included in Appendix A.
- Existing conditions were observed in the field to verify roadway geometry, pedestrian and bicycle infrastructure, and traffic flow characteristics.
- Traffic counts were conducted the week of February 25th, 2020 during the morning and afternoon peak periods.
- Estimation of the number of AM and PM peak hour trips that would be generated by the background developments in the study area, as well as the subject site at each stage of the redevelopment.
- Development of traffic forecasts for the year 2031 without and with the proposed campus development.
- Analysis of future levels of service at the study intersections, without and with the proposed campus development.
- Vehicular traffic analysis for the study area intersections was performed using Synchro 9.2 based on Highway Capacity Manual (HCM) 2000 and 2010 methodology. Intersection analysis was performed for existing conditions (2020) and future conditions (2031).
- Analysis of future impacts of the proposed campus development on the transit, bicycle, and pedestrian networks within the study area.

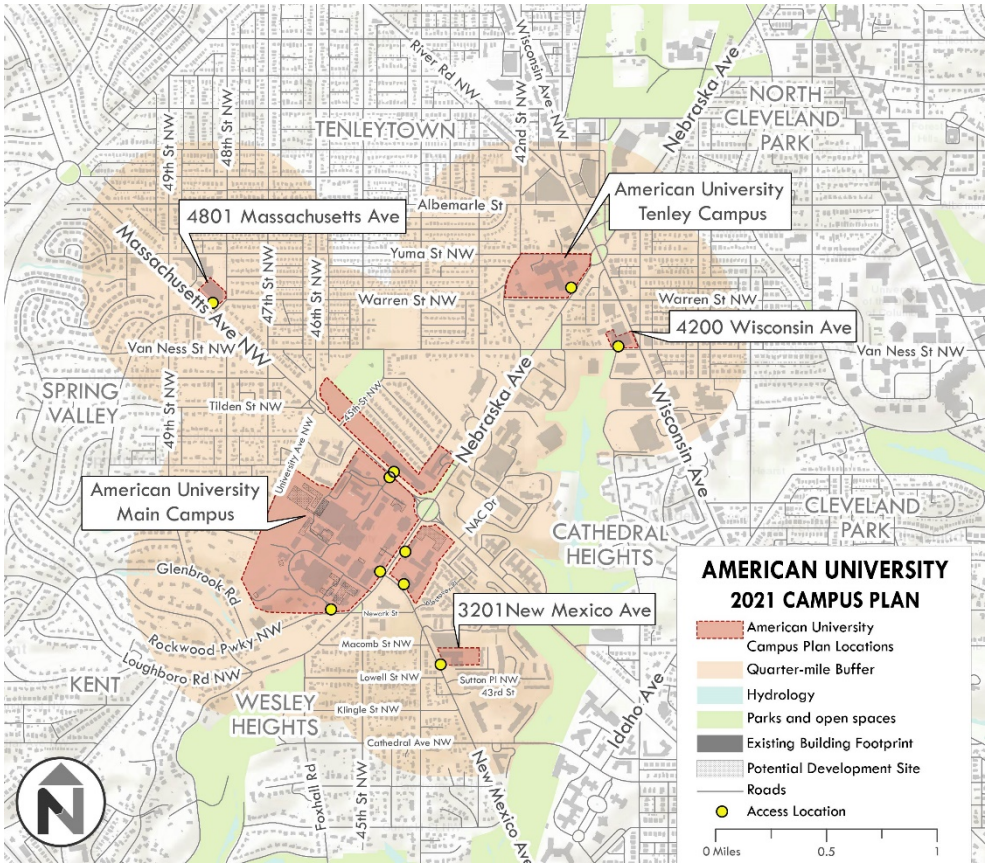
Sources of data for this study include information provided by American University, DDOT and field reconnaissance efforts of Nelson\Nygaard.

2 STUDY AREA OVERVIEW

The American University 2021 Campus Plan includes five (5) campus locations within Northwest Washington DC including the following and highlighted in Figure 2-1:

- Main Campus
- Tenley Campus
- 4200 Wisconsin Avenue, NW
- 4801 Massachusetts Avenue, NW
- 3201 New Mexico Avenue, NW

Figure 2-1 American University 2021 Campus Plan Locations



Roadway Network

The American University 2021 Campus Plan locations are highly accessible from regional roadways including principal and minor arterials such as Massachusetts Avenue NW, Nebraska Avenue NW, and Wisconsin Avenue NW. These roadways provide regional access to destinations in DC, Virginia, and Maryland as well as immediate local access.

Pedestrian Network

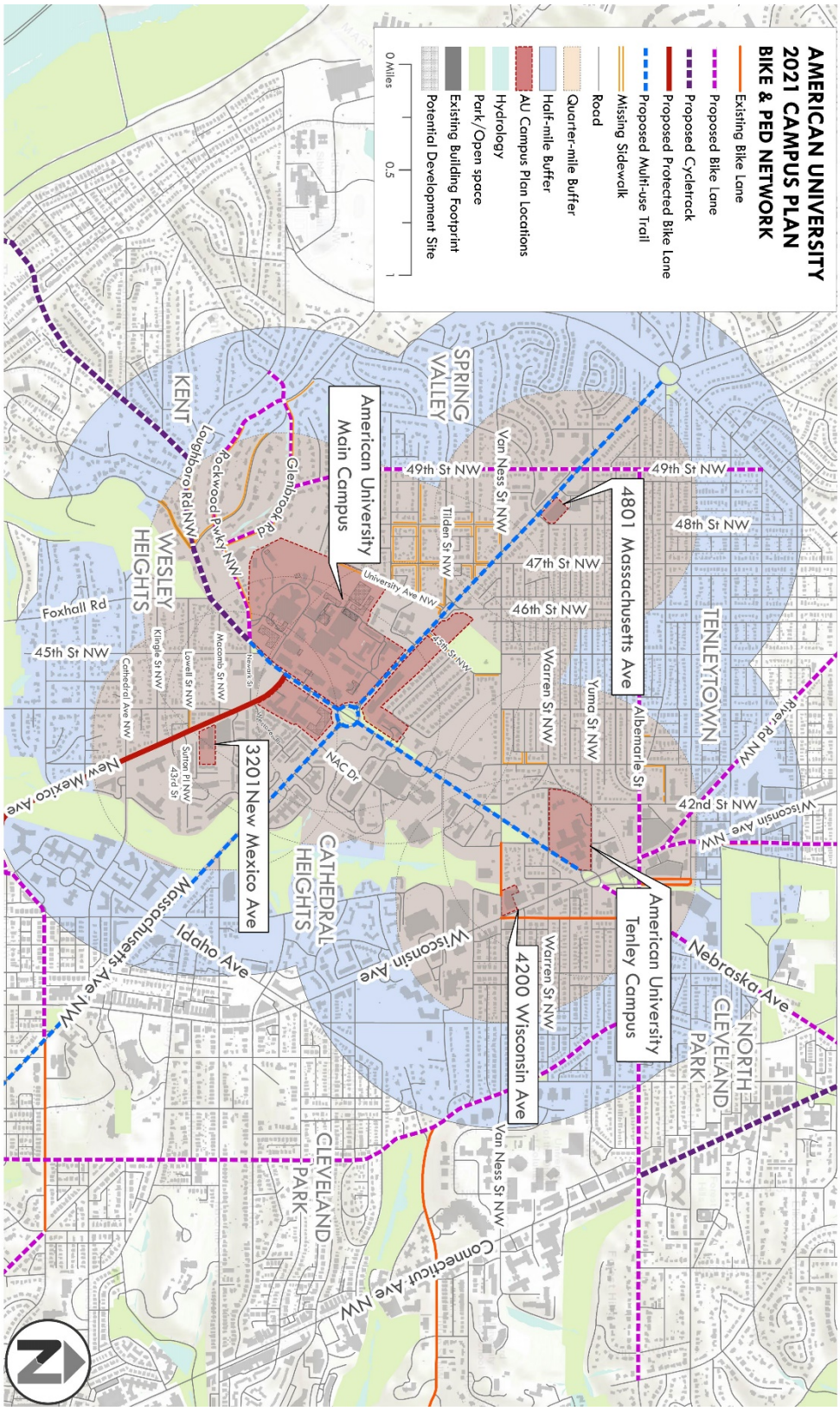
On streets bordering the American University 2021 Campus Plan locations, sidewalk widths range from 4' to 6.5'. Within the ¼ mile radius from the Campus Plan locations, neighborhood roadways with low vehicle volumes have narrower sidewalks, ranging between 3'-4' in width. Several roads within the neighborhood surrounding the Main Campus and other Campus Plan locations do not have sidewalks on either one or both sides of the street. The locations of these missing sidewalks are identified in Figure 2-2 of the Bicycle and Pedestrian Network map. DC requires a sidewalk on a least one side of non-highway streets in order to have a complete pedestrian network across the city. The Rock Creek Far West Livability Study identifies several roads where sidewalk construction should be prioritized because there is not a sidewalk on either side of the street.

Bicycle Network

Bicycling is an increasingly popular mode of transportation in the District of Columbia. However, the major roadways edging the Main Campus on two sides (Nebraska and Massachusetts Avenues) are wide roadways with high traffic volumes, high speeds, and narrow vehicular lanes. This combination of factors encourages many bicyclists to ride on the sidewalk which ranges in width from 4' to 6.5'. MoveDC's proposed widening the sidewalk on both Nebraska and Massachusetts Avenue NW will provide an off-street multi-use trail that can more comfortably accommodate pedestrians and bicyclists.

Two Capital Bikeshare stations are located on the main roads bordering the Main Campus: the first station is on Massachusetts Avenue NW, northwest of Ward Circle and the intersection with Nebraska Avenue NW. The second station is located on Nebraska Avenue NW, between New Mexico Avenue NW and Massachusetts Avenue NW. Another bikeshare station is located on the northern boundary of the Tenley Campus, on Yuma Street NW east of 42nd Street NW. No bikeshare stations are located near the 4801 Massachusetts Avenue NW (the Spring Valley Building). Bikeshare stations are well-used by students, staff, and faculty in the area of the Main Campus.

Figure 2-2: Bicycle and Pedestrian Network (Existing and Proposed)



Transit Network

American University's Main Campus and 3201 New Mexico Avenue NW are located a little less than one mile from WMATA's Tenleytown-AU Metro Station, which provides access to the red line trains. The Tenley Campus is only 0.2 mile from the Tenleytown Metro Station and 4200 Wisconsin Avenue NW is 0.3 miles from the station. The 4801 Massachusetts Avenue building is 1.5 miles from the Tenleytown-AU Metro Station. Eleven bus routes provide access to the Metro Station area, which connect the area to downtown DC as well as Northeast and Southeast DC: 30N, 30S, 31, 33, 37, 96, H2, H3, H4, M4, and N2. Four WMATA bus lines operate seven days a week along the two major roads that border the Main Campus from the south and east (Nebraska and Massachusetts Avenues): M4, N2, N4, and N6. These buses provide direct access from the Main Campus to parts of downtown DC and northwest DC. The Spring Valley Building is located along bus routes N4 and N6.

Additionally, American University operates three shuttle routes between the Main Campus and the Tenleytown Metro Station, American University's Tenley Campus, and the Spring Valley Building. Ridership of the well-utilized shuttle program exceeded 1.2 million in calendar year 2018. The Campus Plan does not include any proposed changes to the University shuttle routes.

Figure 2-3: WMATA Bus Network Surrounding American University

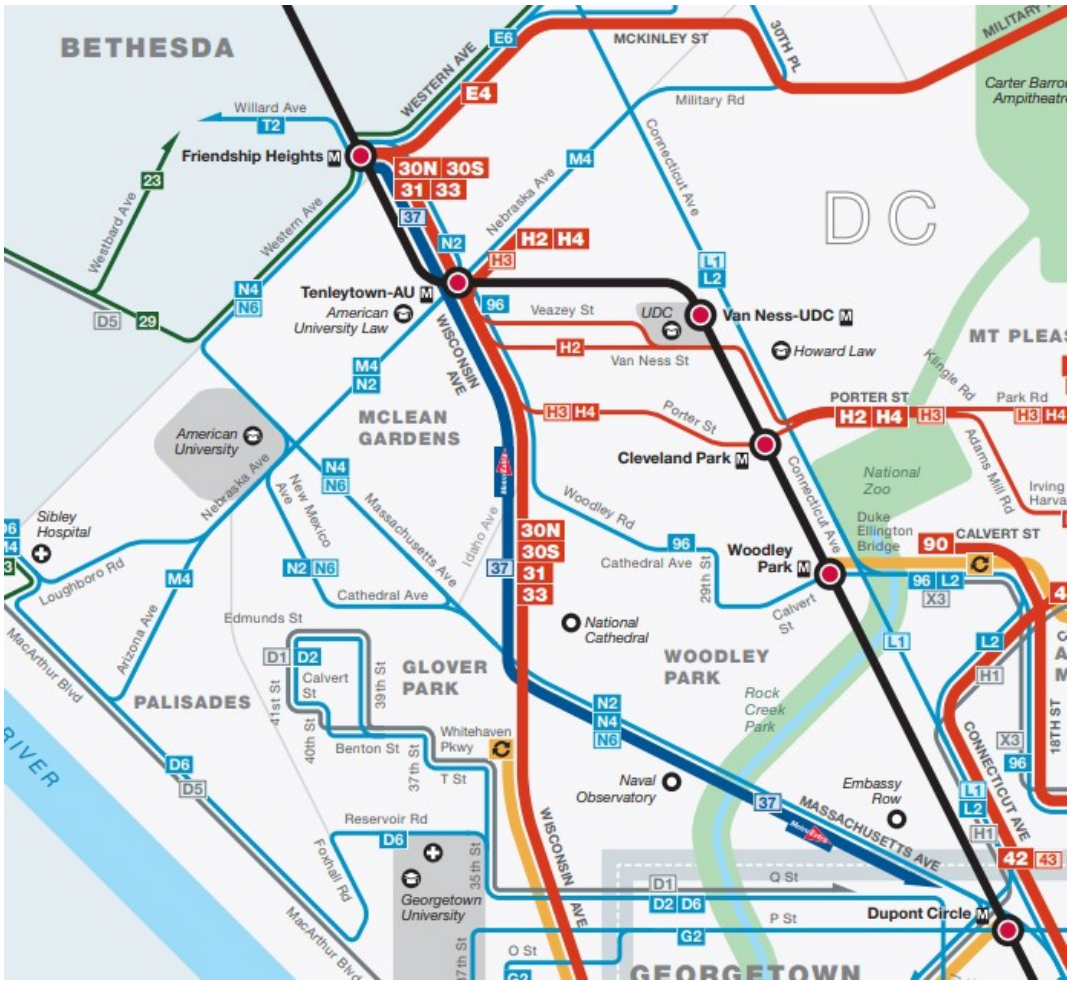
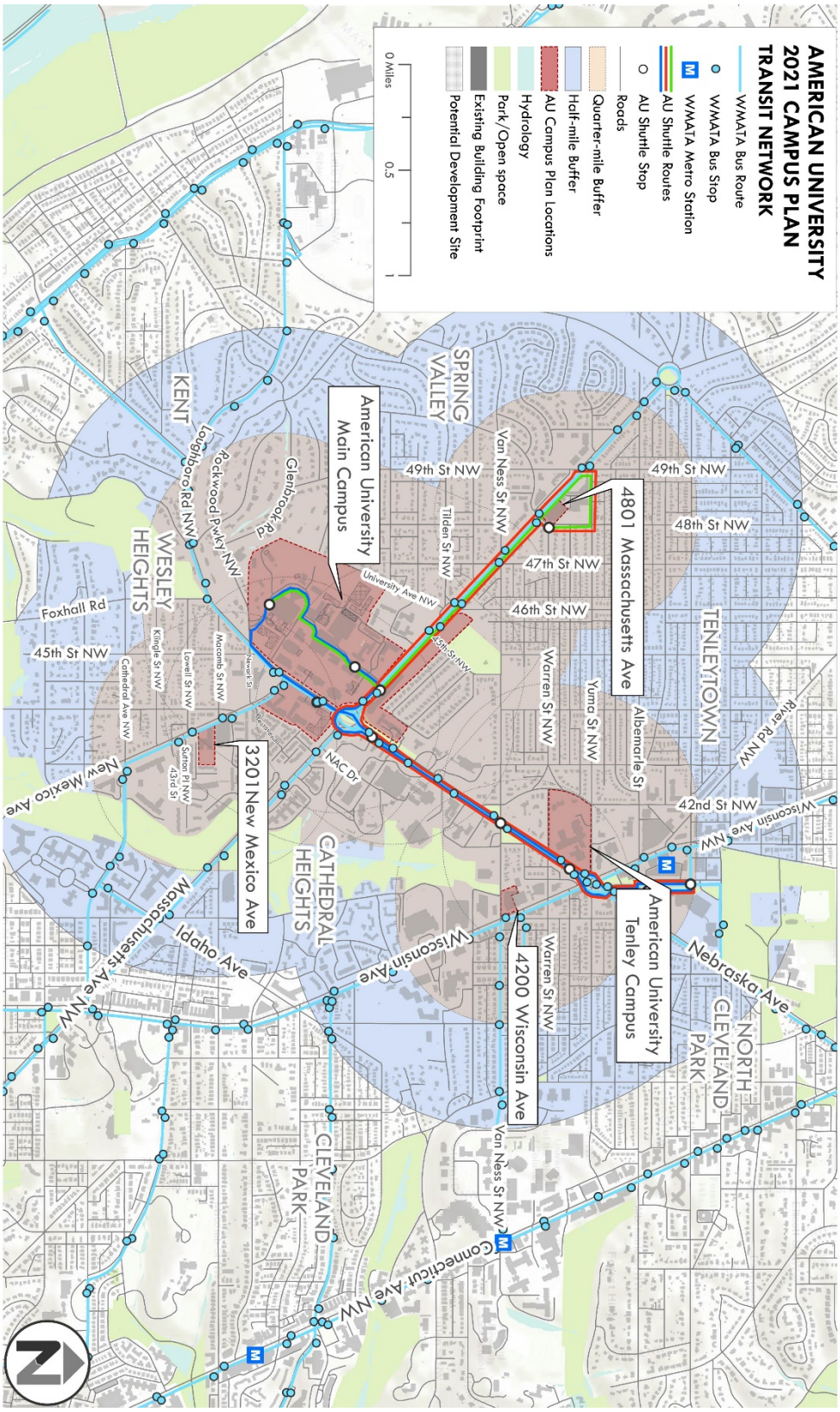


Figure 2-4: Transit Network & Shuttle Routes



Strategic Planning Elements

City-wide Transportation Plan

MoveDC, the 25-year vision for the transportation system in Washington, DC was completed in October 2014[2]. The plan recognized the need to provide a multi-modal transportation system across the district. It proposes increased investments in transit and bicycle networks in order to increase system capacity while not overloading the roadways with vehicular traffic. The plan does not propose any major changes to the vehicular network within the immediate area surrounding American University, but it is important to note is that the plan categorizes both Nebraska and Massachusetts Avenues NW near the Main Campus as primary freight routes. Since these roadways will continue to function as primary arterials, American University's 2021 Campus Plan should be sure to provide safe as well as alternate accommodations for pedestrians and bicycles in the areas that border these major roads. A major recommendation of the moveDC plan is an off-street multi-use trail along both roads, which would be constructed in the location of existing sidewalks.

Area Livability Studies

American University's 2021 Campus Plan locations are located within two of DDOT's livability study areas: the Main Campus and 3201 New Mexico Avenue NW location are located within the Rock Creek Far West area and the Tenley Campus and Spring Valley Building are located within the Rock Creek West II area. The Rock Creek Far West Livability Study[3] was recently completed in October 2019 and identified American University's Main Campus as a key pedestrian destination within the study area. The livability study recommended key improvements for the safety of pedestrians and bicyclists in the immediate area surrounding American University. The improvements proposed are:

- Add curb extensions on Rockwood Parkway NW and Newark Street NW at the 45th Street NW intersection to reduce the intersection footprint, shorten pedestrian crossing distance, and control the speed of turning vehicles.
- Install sidewalk on Sedgwick Street NW, University Avenue NW, and Tilden Street NW in areas northwest of the Main Campus.
- Initiate a Corridor Study for Massachusetts Avenue NW and provide a shared-use path along Massachusetts Avenue NW between Westmoreland Circle NW and Whitehaven Street NW by widening the existing sidewalk on one side of the street.
- Provide a bicycle boulevard[4] on 49th Street NW. This would allow bicycle connections between the Main Campus and the Spring Valley Building.
- Provide a bicycle boulevard on Rockwood Parkway NW between Dalecarlia Parkway NW and Nebraska Avenue NW, recommended due to the amount of traffic on the street, available roadway width, and attempt to minimize loss of street parking.

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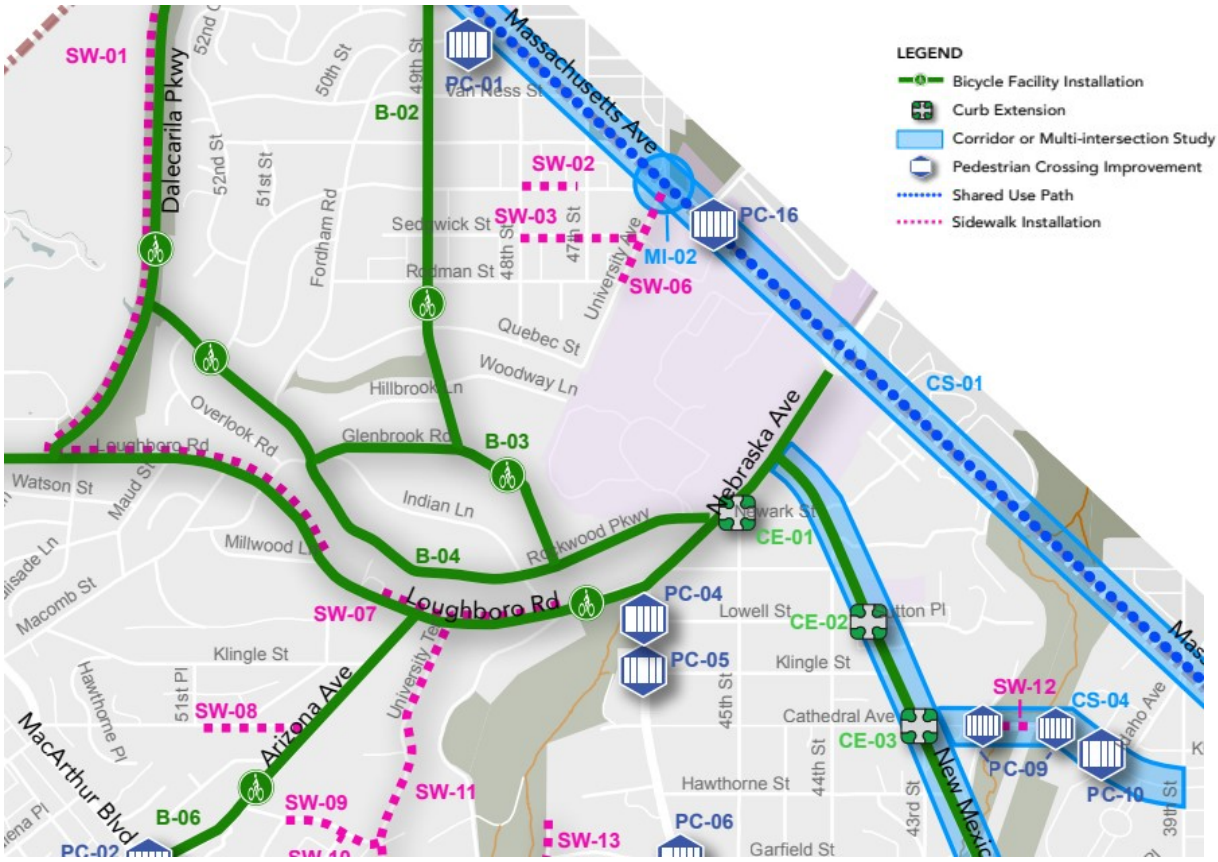
[2] http://www.wemovedc.org/

[3] https://ddot.dc.gov/page/livability-program

[4] On bicycle boulevards, bicycles share travel lanes with cars. Bicycle boulevards do not eliminate all parking on one side of the street. The bicycle boulevard could include features such as signage and pavement markings, curb extensions, other traffic calming measures, and green infrastructure.

- Provide an off-street trail on Nebraska Avenue NW between Ward Circle and Rockwood Parkway NW.
- Initiate a Corridor Study for New Mexico Avenue NW and improve the existing bicycle facility.

Figure 2-5 Rock Far West Livability Study Recommendations for American University Main Campus Area



The Rock Creek II Livability Study area was completed in 2009. Although many recommendations or other improvements in the area have been made between the time the study was completed and this study, several key recommendations are:

- Provide a bicycle boulevard along Yuma Street between Connecticut Avenue NW and Massachusetts Avenue NW. This will help connect the Tenley Campus and the Spring Valley Building by bike facility.
- Add sharrows on Albemarle Street NW between 43rd Street NW and Reno Road NW.
- Add bike sharrows on 43rd Street NW between River Road NW and Van Ness Street NW and green curb extensions at River Road NW, Albemarle Street NW, and Van Ness Street NW.

American University's focus on maintaining a low number of parking spaces per student/staff/faculty supports moveDC's vision. In addition, American University's provision of three shuttle routes between the Main Campus, Tenley Campus and Tenleytown metro station, and the Spring Valley Building are consistent with moveDC's calls to bolster the transit system in areas where there are fewer options.

Prior Campus Plans

The Applicant is currently subject to the terms and conditions of the 2011 American University Campus Plan, which was approved by the District of Columbia Zoning Commission[5]. The following Campus Plan and related Zoning Commission orders of approval are included as Appendix B.

1. Zoning Commission Order No. 11-07 (American University Campus Plan 2011); in particular see Condition 13, Condition 14 (as modified by Order No. 11-07H), and Condition 15.
2. Zoning Commission Order No. 11-07B (Relocation of Washington College of Law to Tenley Campus); in particular see Condition 3 and Condition 13.
3. Zoning Commission Order No. 11-07H (Campus Plan Modification of Consequence to Confirm Number of Parking Spaces).
4. Annual reports for 2017-2019 submitted by AU to DDOT in connection with the 2011 Campus Plan.

[5] https://www.american.edu/communityrelations/campus-plan/2011-campus-plan.cfm

3 2021 CAMPUS PLAN OVERVIEW

American University is seeking Zoning Commission approval for a special exception for a Campus Plan for the educational uses on its Main Campus, Tenley Campus, 4801 Massachusetts Avenue NW (Spring Valley Building), 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW properties pursuant to the Campus Plan Regulations of the 2016 District of Columbia Zoning Regulations (Subtitle X Section 101).

AU's 2021 Campus Plan is an integral component in the successful implementation of the AU's five-year strategic plan, *Changemakers for a Changing World*, setting forth a thoughtful approach to managing campus growth and development over the next ten years in a manner that reflects the university's commitment to the communities of which it is a part. At the same time, the 2021 Campus Plan will play a critical role in informing and incorporating the key priorities of an ambitious fundraising campaign that will capitalize on AU's momentum as an emerging global university to support the study and scholarship of American University students and faculty for generations to come.

The fundamental components of the 2021 Campus Plan have developed in partnership with university and community stakeholders, to ensure that the campus will adapt to and meet the changing needs of AU students, faculty, and staff while at the same time respecting and enhancing the quality of life of those who live within the neighborhoods surrounding campus. **It is AU's fundamental goal that the 2021 Campus Plan successfully accomplish both of these objectives.**

AU's approach to many key planning components – including enrollment and staff management, as well as parking space inventory, is directly influenced by changes brought about by the 2016 update to the Zoning Regulations. Specifically, pursuant to Subtitle X, Section 102, three AU-owned properties which had historically allowed for university use as a matter of right based on their underlying zoning, will now be included in the 2021 Campus Plan – 4801 Massachusetts Avenue NW (Spring Valley Building), 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW.

2021 Campus Plan Enrollment Projections

AU's outlook for the next ten years is premised on a clear understanding of the need to maintain flexibility with respect to what types of students AU attracts – as well as how and where they are educated – to remain competitive and thrive as a vibrant educational institution. Mindful, however, of the desire for predictability among residents of the neighborhoods surrounding campus, AU believes it can meet this objective without requiring a major shift from historical planning models with respect to the overall number of students that will come to the AU campus

for their coursework. In terms of the enrollment projections for the 2021 Campus Plan, AU has proposed to accommodate potential growth in the on-campus student population over the ten year term of the 2021 Campus Plan ***below*** the cap established in 2011, when adjusted for the revised counting methodology set forth in the 2016 Zoning Regulations (i.e., expanding the type of students to be counted under Subtitle Z, Section 302.10(d) and including students located at the three university properties noted above pursuant to Subtitle X, Section 102). To ensure its continued competitiveness as a leading global university, AU will continue to focus on opportunities that leverage its strengths in online and lifelong learning platforms, which include high-quality programs that do not bring students to the AU campus for their coursework.

The impact of the 2016 Zoning Regulations on the current campus student population and 2011 Campus Plan enrollment cap, and the relationship between the current cap and the cap proposed for the 2021 Campus Plan are summarized in the table below:

Table 3-1 2021 Campus Plan Student Enrollment Cap

	2011 – 2021 CAMPUS PLAN			2021 – 2031 CAMPUS PLAN	
	UNDER ZC 11-07 ORDER METHODOLOGY	ADJUSTED 2016 ZONING REGULATIONS	IMPACT OF 2016 ZONING REGULATIONS	AU REVISED ENROLLMENT CAP 06.01.2020	DIFFERENCE FROM 2011 ADJUSTED CAP
FALL 2019 ENROLLMENT	11,801	12,581	+780 (+ 6.61%)		
CAMPUS PLAN ENROLLMENT CAP	13,600	**14,499**	+899 (+ 6.61%)	**14,380**	-119

As shown in the table, the proposed 2021 Campus Plan enrollment cap, which would be in effect through 2031, is ***lower*** than the student enrollment cap established in the 2011 Campus Plan, when adjusted for the new methodology for counting students mandated under the 2016 Zoning Regulations.

Consistent with the requirement established in the 2011 Campus Plan, the university will continue to maintain a supply of housing sufficient to make housing available for 67% of the full-time undergraduate student population under the 2021 Campus Plan. This approach will support AU's objective to strengthen the living and learning experience on campus and also to provide an appropriate measure of predictability and control with respect to the number of undergraduate students enrolled. AU plans to meet this requirement over the ten year term of the 2021 Campus Plan through a combination of tools, including existing and proposed on-campus residence halls as well as off-campus master leased beds in strategic locations that do not adversely impact the residential neighborhoods surrounding campus.

While significant new development is not anticipated at the Tenley Campus, given that the current and anticipated enrollment of the Washington College of Law is substantially less than the existing enrollment cap of 2,000 students, AU will seek flexibility to allow students enrolled in other academic programs, including those that present opportunities for interdisciplinary collaboration, to attend classes at the Tenley Campus subject to the existing 2,000 student cap.

2021 Campus Plan Employee Population

The AU employee population is similarly impacted by the changes to the 2016 Zoning Regulations. Given that 4801 Massachusetts Avenue NW (Spring Valley Building), 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW will now be included in the Campus Plan, the university employees that work at these locations will also be included in the employee count and any cap established in the 2021 Campus Plan order of approval.

The impact of the 2016 Zoning Regulations on the current employee population and 2011 Campus Plan employee cap, and the relationship between the current cap and the cap proposed for the 2021 Campus Plan, are summarized in the table below:

Table 3-2 2021 Campus Plan Employment Cap

	2011 – 2021 CAMPUS PLAN			2021 -2031 CAMPUS PLAN
	ZC 11-07 ORDER METHODOLOGY	2016 ZONING REGULATIONS	IMPACT OF 2016 ZONING REGULATIONS	2016 ZONING REGULATIONS
FALL 2019 EMPLOYEE COUNT	2,461	2,843	+ 15.52%	
EMPLOYEE POPULATION CAP	2,900	3,350	+ 15.52%	**3,350**

As shown in the table, the proposed 2021 Campus Plan employee cap, which would be in effect through 2031, reflects no change from the employee cap established in the 2011 Campus Plan, when adjusted to count employees who work at the additional properties that will be included in the 2021 Campus Plan pursuant to the 2016 Zoning Regulations.

2021 Campus Plan Development Plan

Consistent with AU's intent to maintain enrollment below the cap established in 2011 (when adjusted to reflect the 2016 Zoning Regulations methodology), proposed new development is not aimed at accommodating increases in approved enrollment levels, but rather providing the types of high-quality facilities that are required to further the university's academic and research missions – including space for additional research labs and right-sized classrooms that promote the types of specialized instruction that is fundamental to the AU experience and differentiates the university from other peer institutions. Reflecting this measured and strategic approach, potential new development included in the 2021 Campus Plan is intended to total approximately 750,000 square feet of new gross floor area (GFA), significantly less than the 892,000 square feet of new gross floor area proposed in the 2011 Campus Plan.

Specific development site locations, uses and density have been outlined in draft Campus Plan[6] (included as Appendix C) that has been developed in close coordination with a wide range of community stakeholders and which has been affirmed by the AU Neighborhood Partnership. Development under the 2021 Campus Plan will reinforce and embody AU's culture of sustainability and commitment to promoting forward-thinking technologies and industry-leading practices in facility design, construction and operation, including repurposing existing facilities and strategic development of important campus sites, helping to strengthen and invigorate a student-centered living and learning campus experience.

[6] https://www.american.edu/communityrelations/campus-plan/index.cfm

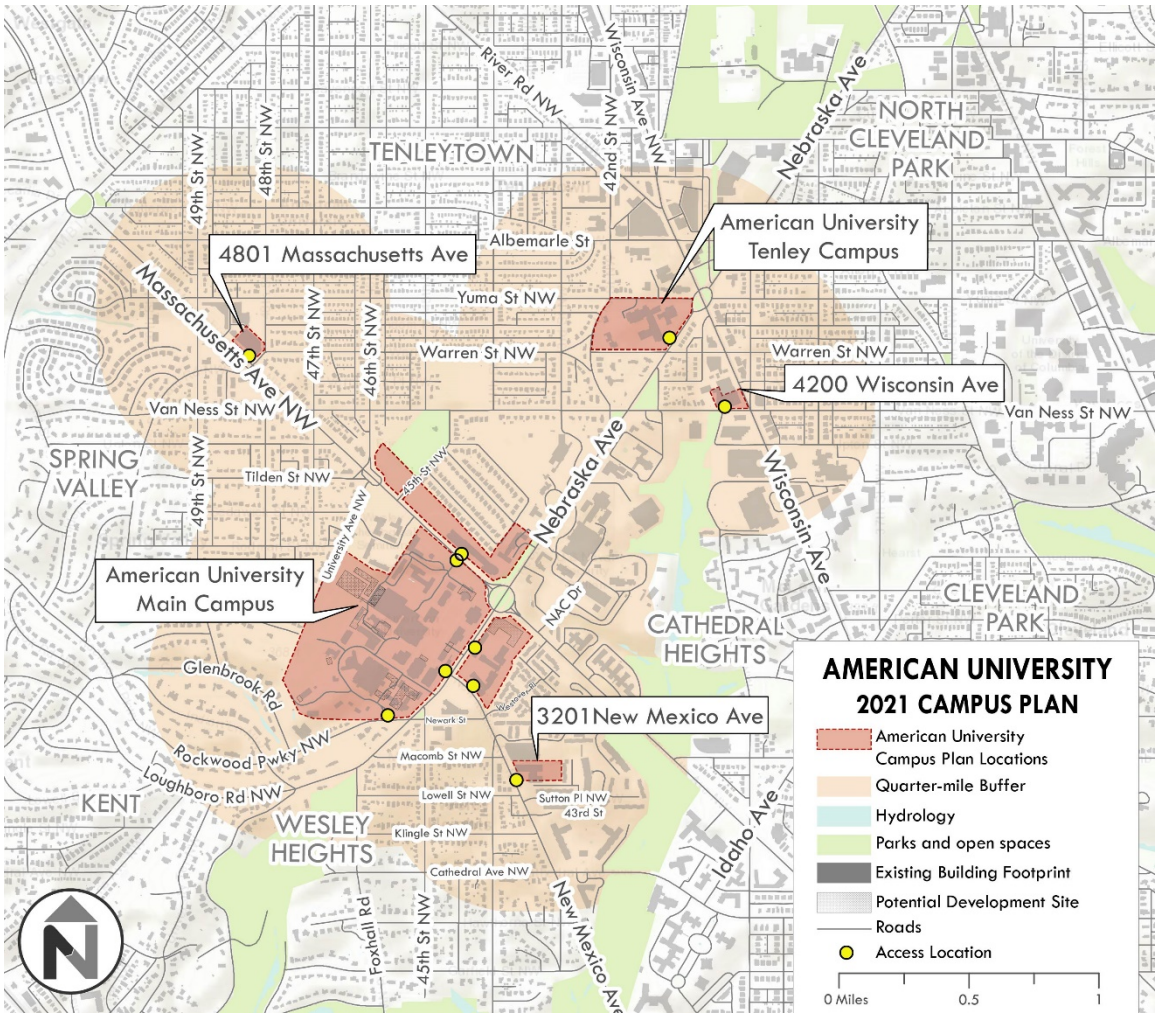
Transportation Network

Site Access

Access to the five AU 2021 Campus Plan locations will be unchanged under the 2021 Campus Plan. Existing access points to the various Campus Plan locations are shown on the maps below and include:

- Glover Gate at Massachusetts Avenue (Main Campus)
- Fletcher Gate at Rockwood Parkway (Main Campus)
- School of International Service garage at Nebraska Avenue (Main Campus)
- Massachusetts Avenue (Main Campus/Katzen Arts Center)
- Nebraska Avenue (Main Campus/East Campus)
- New Mexico Avenue (Main Campus/East Campus)
- Nebraska Avenue (Tenley Campus)
- Yuma Street (Tenley Campus)
- 3201 New Mexico Avenue garage driveway
- 4801 Massachusetts Avenue garage driveway
- 4200 Wisconsin Avenue at Van Ness Street garage driveway

Figure 3-1 2021 Campus Plan Locations Access Map



Site Circulation

The current site circulation at the Main Campus enables vehicular access throughout the campus including transit, delivery vehicles, transportation networking companies and personal vehicles (Figure 3-2). Conceptual circulation improvements proposed in the 2021 Campus Plan would be implemented over time as campus development projects are advanced. Any changes to the access, such as traffic signal modifications at Fletcher Gate or Glover Gate would be reviewed through the Zoning Commission further processing case associated with the related enabling project. These potential site circulation changes on Main Campus are illustrated in Figure 3-3.

Figure 3-2 Existing Campus Circulation

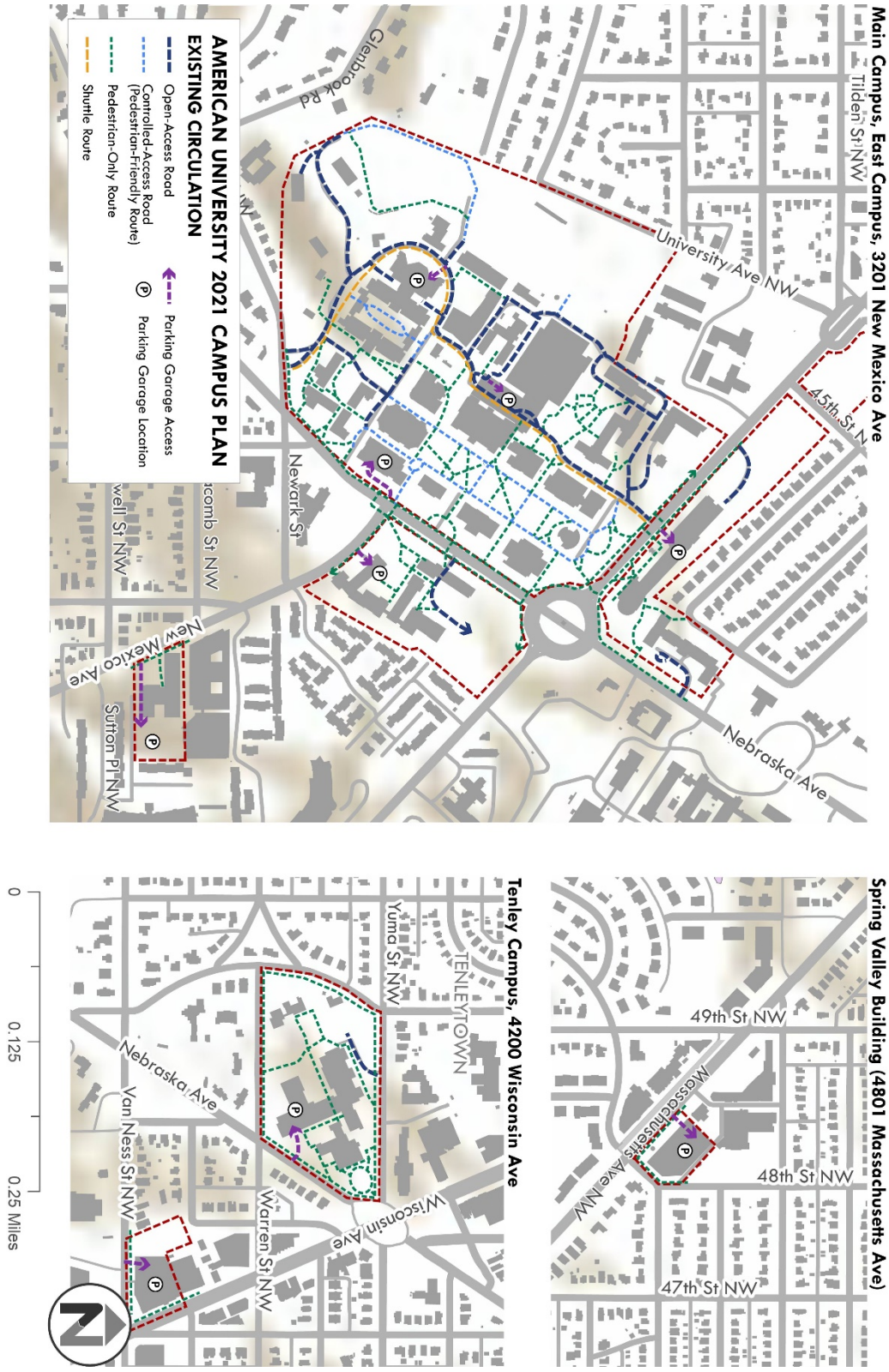
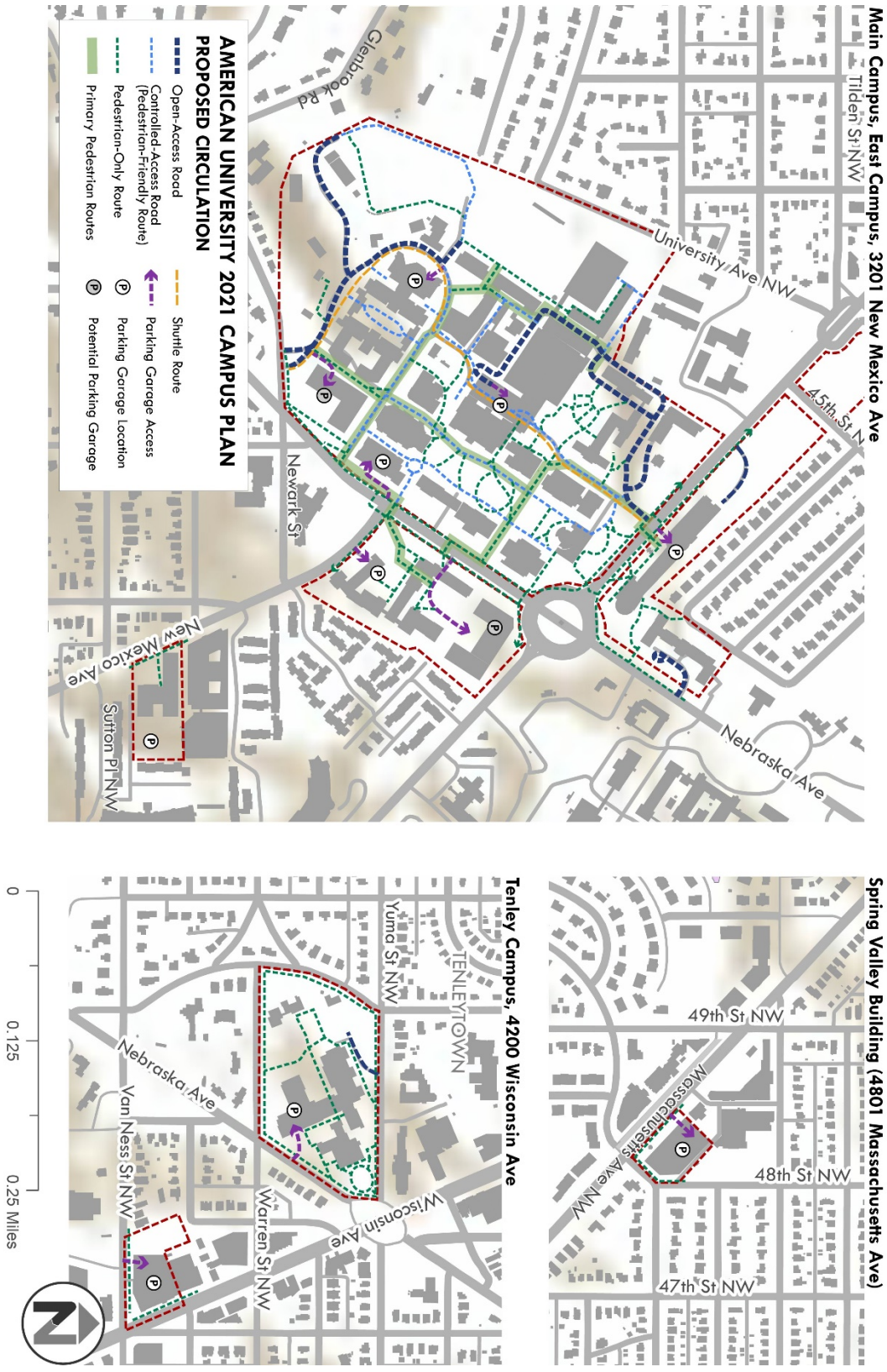


Figure 3-3: Proposed Campus Circulation



Potential changes to the Main Campus circulation in concept design may include the following:

- Bifurcation of campus vehicular traffic, creating a north (Glover Gate) access (to the residence halls and Bender garage) and south (Fletcher Gate) access (to residence halls and campus facilities).
- The existing central spine through the main campus would be limited to transit, schedule-restricted service, and emergency response vehicles only in a shared used environment (with the exception of special events).
- Transportation network company (TNC) drop-off/pick-up (PUDO) locations would continue to be included near both Glover and Fletcher Gates on Main Campus and also on East Campus. Discussions will be ongoing with TNCs regarding dedicated PUDO locations on campus and AU will continue to collaborate with members of the community and DDoT to explore other locations and alternatives for PUDO solutions.

The goal of these potential circulation changes will be to create a more pedestrian-friendly campus experience, reduce vehicles driving through the campus, limit delivery vehicles to loading areas and decrease dependence on driving for students and staff alike. It is the opinion of the university that the circulation changes will enhance safety throughout the campus particularly in the central core adjacent to the Mary Graydon Center, while still allowing cross-campus access on a limited basis for shuttles and emergency response vehicles, as well to accommodate special events.

Loading

Loading to existing campus buildings will remain unchanged in the 2021 Campus Plan. All loading will occur internal to the campus locations via dedicated loading and services or from internal roadways. No loading will occur within the public right-of-way with the exception of the following:

- Limited and infrequent loading activities that occur along Massachusetts Avenue NW at the Katzen Center (approximately twice annually for large events).
- On-street loading as per existing curbside regulations along Massachusetts Avenue NW in front of 4801 Massachusetts Avenue NW.

Truck loading areas will be located at the buildings listed below and shown in Figure 3-4. Infrequent loading activities, such as those associated with fall and spring move-ins/outs at residential halls are also identified in Figure 3-4. As the Campus Plan development site concepts are further developed, access and loading will be considered and included as part of the further processing submission for each project. It is known however, that no loading access will be proposed from public roadways with the exception of very limited and infrequent loading activities that occur along Massachusetts Avenue at the Katzen Center.

Vehicle Parking

The approved 2011 Campus Plan requires that the university "maintain an inventory of approximately 2,200 parking spaces on campus" (with "campus" including only Main Campus and Tenley Campus). Current parking space inventory at those two (2) locations totals 2,316 spaces. The increased campus parking inventory associated with the three (3) additional

properties included in the proposed 2021 Campus Plan pursuant to the 2016 Zoning Regulations (specifically 4801 Massachusetts Avenue NW, 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW) results in an increase to AU's potential parking inventory of approximately 729 spaces (from 2,316 to 3,045), of which approximately 385, or a total of 2,701 spaces across all Campus Plan properties, are currently dedicated to university use.

In light of this change in Campus Plan parking inventory brought about by the 2016 Zoning Regulations, and in support of the university's continued commitment to effective TDM policies that reduce the number of single occupancy vehicles (SOVs) arriving to the university (and in turn limit the need for additional parking resources), AU has modified its approach to the parking requirement under the 2021 Campus Plan. Specifically, AU has proposed a **parking inventory ceiling** of 3,000 parking spaces for university use over the term of the 2021 Campus Plan, inclusive of all five of the aforementioned 2021 Campus Plan properties. Given that the aggregated university use and non-university use parking space capacity of all Campus Plan locations totals 3.045 parking spaces, AU would not necessarily be required to construct any additional parking infrastructure over the term of the Campus Plan to accommodate future growth within the proposed ceiling.

This measured approach, which would allow the university to increase its current university-use parking inventory by up to 299 spaces if necessary over the 10 year term of the Campus Plan, will ensure that AU provides an adequate parking supply across all Campus Plan locations to meet the needs of its current and future population, and importantly, to also provide parking capacity for special events to mitigate any potential adverse impacts on the on-street parking supply throughout the neighborhood streets surrounding campus. To ensure that the campus parking inventory is appropriately priced and adequately meets the needs of the AU population, the university will continue to regularly monitor utilization of its exclusive-use parking facilities. Current utilization at the Main Campus taken from weekly counts by AU staff highlight that the parking supply is operating at 73% occupied spaces during peak periods which equates to 625 available spaces.

The existing university parking facility locations as well as the two potential future parking facilities are shown in Figure 3-3 and Figure 3-4.

In keeping with DDOT's Comprehensive Transportation Review guidelines, DDOT requires that parking not be over built in any development since on-site vehicle parking is a permanent feature of a development that affects the trip generation characteristics of the site. As such, DDOT has generated a preferred list of vehicle parking-rates based upon land-use and proximity to transit facilities. Table 3-5 below outlines the preferred vehicle parking rates.

Table 3-5 DDOT Preferred Vehicle Parking Rates

Land Use		Less than ¼ Mile from Metrorail	¼ to ½ Mile from Metrorail OR Less than ¼ Mile from Priority Transit**	½ to 1 Mile from Metrorail	More than 1 Mile from Metrorail
Residential *(spaces/unit)*	**DDOT:** ZR16 Min-Max:	**0.30 or less** 0.17* - 0.67	**0.40 or less** 0.17* - 0.67	**0.50 or less** 0.33 – 0.67	**0.60 or less** 0.33 – 0.67
Office *(spaces/1,000 GSF)*	**DDOT:** ZR16 Min-Max:	**0.40 or less** 0.25* - 1.00	**0.50 or less** 0.25* - 1.00	**0.65 or less** 0.50 – 1.00	**0.85 or less** 0.50 – 1.00
Hotel *(spaces/1,000 GSF)*	**DDOT:** ZR16 Min-Max:	**0.40 or less** 0.25* - 1.00	**0.45 or less** 0.25* - 1.00	**0.60 or less** 0.50 – 1.00	**0.75 or less** 0.50 – 1.00
Retail *** *(spaces/1,000 GSF)*	**DDOT:** ZR16 Min-Max:	**1.00 or less** 0.67* - 2.66	**1.25 or less** 0.67* - 2.66	**1.60 or less** 1.33 – 2.66	**2.00 or less** 1.33 – 2.66
Other Uses	**DDOT:** ZR16 Min-Max:	**75% of § 701.5 or less** 50% - 200% of § 701.5*	**90% of § 701.5 or less** 50% - 200% of § 701.5*	**120% of § 701.5 or less** 100% - 200% of § 701.5	**150% of § 701.5 or less** 100% - 200% of § 701.5

Notes:
* There is no vehicle parking requirement in Downtown "D" and several other zones. DDOT strongly encourages Applicants to provide no on-site vehicle parking where allowable by zoning.
** Priority transit includes the H Street Streetcar, Streetcar Benning Road Extension, DC Circulator, and Priority Corridor Network Metrobus Routes defined by zoning in DCMR 11, Subtitle C § 702.1(c).
*** Retail rates can be used for either standalone buildings or first floor users of mixed-use projects. The Retail category also includes a wide range of related uses such as fast casual restaurant, bank, drinking establishment, pet grooming, coffee shop, grocery, etc.

With the Main Campus being between ½ to 1 mile from the Tenleytown-AU Metrorail station, the preferred parking rate could be as high as 120% of the approved parking inventory of the current 2011 Campus Plan. The proposed 2021 Campus Plan parking inventory would be limited to 3,000 spaces which is 11% over the currently approved parking inventory and therefore well within the DDOT preferred parking rates.

Figure 3-4 Existing Parking and Loading Facilities

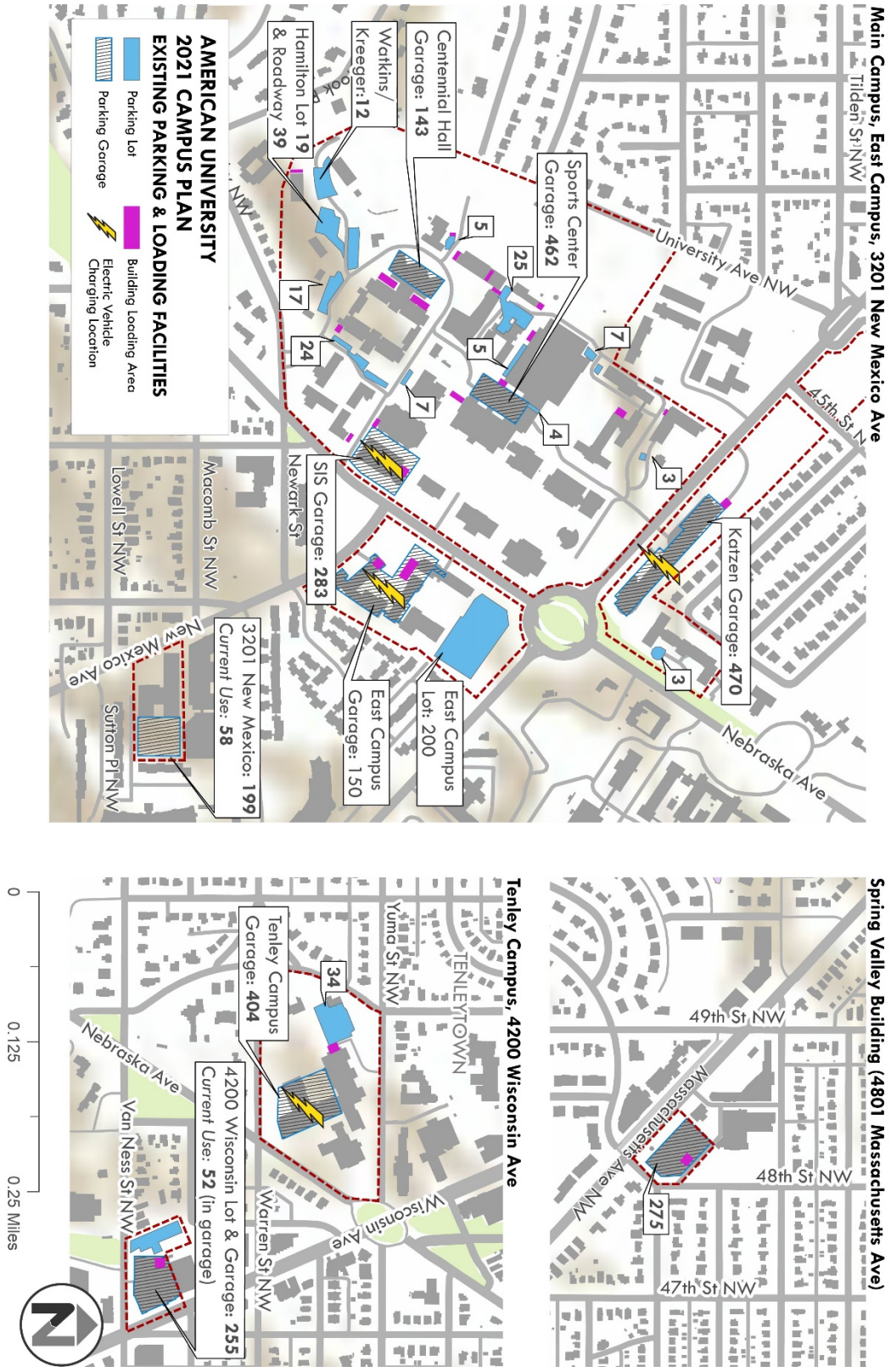


Figure 3-5 Potential Parking and Loading Facilities

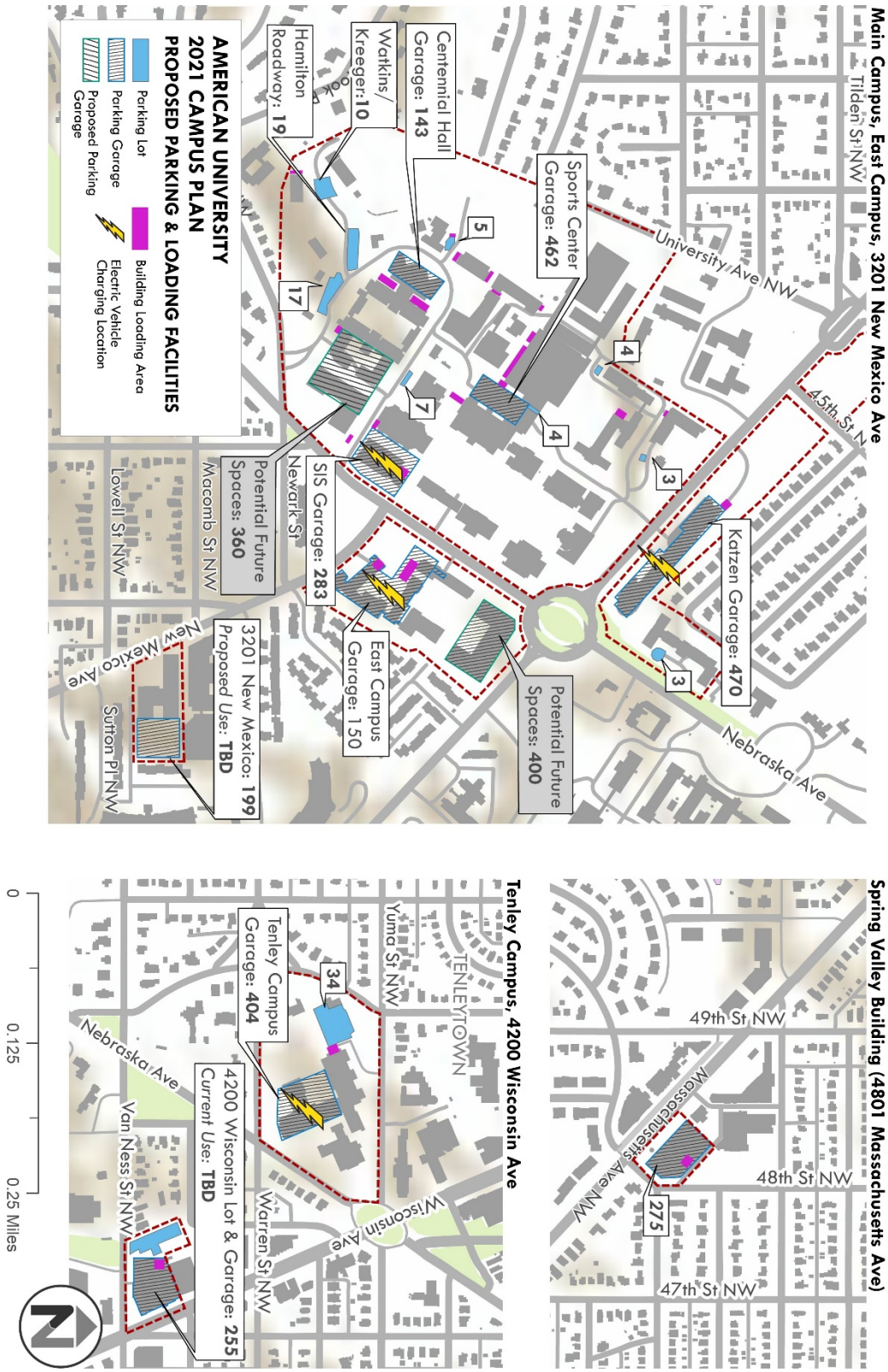


Table 3-4 Existing and Proposed Parking Inventory

2021 Campus Plan Parking Facility Locations	2011 CAMPUS PLAN Total Spaces	2021 CAMPUS PLAN AU Use Spaces	2021 CAMPUS PLAN All Spaces	2021 Campus Plan - Main Campus		
				No additional development (in use as of 2020)	Full development (minimum spaces)	Full development (maximum spaces)
Watkins/Kreeger	12	12	12	12	10	10
Centennial Hall Garage	143	143	143	143	143	143
Media Production Lot	5	5	5	5	5	5
Osborn Building Lot	25	25	25	25	0	0
Sports Center Roadway	5	5	5	5	0	0
Sports Center Garage	462	462	462	462	462	462
Tunnel Parking Area	4	4	4	4	4	4
Leonard/SCAN	7	7	7	7	4	4
Nebraska Hall Driveway	3	3	3	3	3	3
Katzen Arts Center Garage	470	470	470	470	470	470
President's Office Building	3	3	3	3	3	3
East Campus Lot (Proposed Site 15)	200	200	200	200	0	400
East Campus Garage	150	150	150	150	150	150
SIS Garage	283	283	283	283	283	283
McKinley Building Lot	7	7	7	7	7	7
Letts Hall Roadway	24	24	24	24	0	0
Rockwood/Jack Child	17	17	17	17	17	17
Hamilton Roadway	19	19	19	19	19	19
Hamilton Lot	39	39	39	39	0	0
Site 11/12	N/A			0	0	360
Main Campus Total				**1,878**	**1,580 (-298)**	**2,340 (+462)**
Tenley Campus Lot	34	34	34			
Tenley Campus Garage	404	404	404			
Spring Valley Building	N/A	275	275			
4200 Wisconsin Ave.	N/A	52	255			
3201 New Mexico Ave	N/A	58	199			
TOTALS	**2,316**	**2,701**	**3,045**			

As reported to DDOT in the American University 2019 annual TDM monitoring report[7], on a typical semester weekday, AU's parking demand is approximately 73% of the available parking inventory. During peak demand, parking surveys have indicated that AU has approximately 650 spaces available for use.

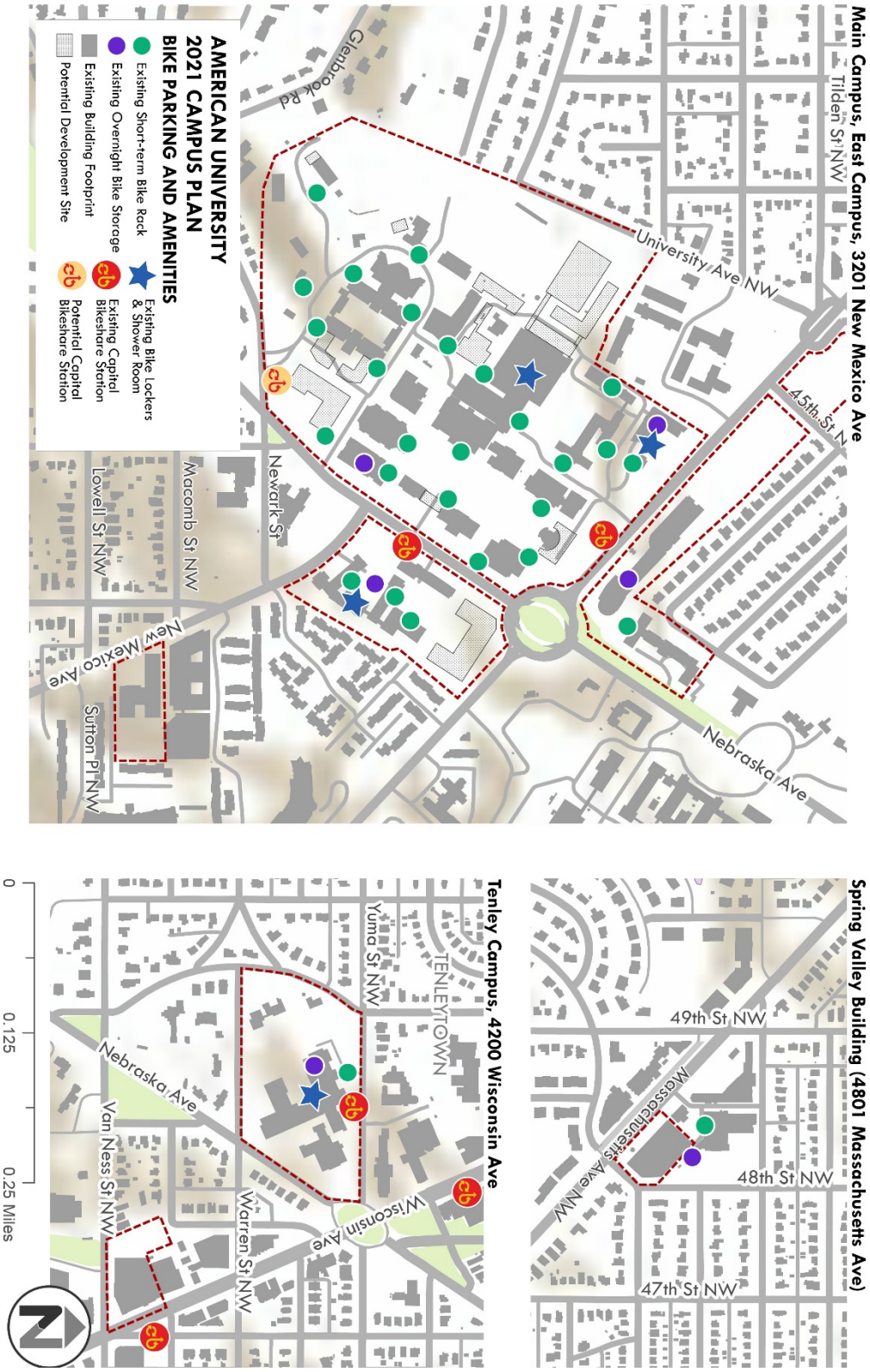
Bicycle Parking

Bicycle parking is located throughout the five (5) 2021 Campus Plan locations in front of most major buildings. Outdoor bike racks are referred to as short-term bike parking, while indoor, secure bike parking is referred to as overnight bike parking. Overnight bike parking is located in the major campus parking garages, and showers and locker room facilities are available in major fitness centers. Overnight bike parking is an important option for bicycle commuters to provide the flexibility to leave their bike on campus in cases of inclement weather or a change of plans.

Two (2) Capital Bikeshare stations are located on the main roads bordering the Main Campus: the first station is on Massachusetts Avenue NW, northwest of Ward Circle and the intersection with Nebraska Avenue NW. The second station is located on Nebraska Avenue NW, between New Mexico Avenue NW and Massachusetts Avenue NW. Other 2021 Campus Plan locations have proximate access to Capital Bikeshare: one station, which helps to serve the Tenleytown Metro station area, is located on the northern boundary of the Tenley Campus, on Yuma Street NW east of 42nd Street NW, and another is adjacent to 4200 Wisconsin Avenue NW. The closest Capital Bikeshare station to the Spring Valley Building is the station near the Main Campus's Glover Gate off Massachusetts Avenue NW. Capital Bikeshare stations are well-used by students, staff, and faculty in the area of the Main Campus, evidenced by the depletion of bikes from stations most weekday afternoons. American University will actively support the installation of an additional Capital Bikeshare station near the Main Campus and pursue expansion of the existing bikeshare stations to support demand both from the Main Campus and the surrounding community.

[7] https://www.american.edu/finance/transportation/loader.cfm?csModule=security/getfile&pageid=5420866

Figure 3-6 Existing and Potential Bicycle Parking and Amenities



Transportation Demand Management

Comprehensive Transportation Demand Management (TDM) planning will remain a priority for the university over the term of the 2021 Campus Plan. The current TDM plan[8] was formulated in 2011 in conjunction with the 2011 Campus Plan and has been routinely updated over the past 10 years. The University recognizes the importance and, crucially, the impact of the TDM plan on both the university and the adjacent communities.

Current TDM efforts include;

- **University shuttle service** program that connects Main Campus, the Spring Valley Building, and the Tenley Campus with the AU/Tenleytown Metrorail station. In 2018, the passenger count for the program was 1,214,355. AU implemented transit screen technology for its shuttles, which is a live tracking system and mobile phone application that enables students, faculty, staff, and guests to monitor shuttle arrival times[9].
- **AU/WMATA U*PASS Program[10]**, which allows for unlimited student rides on all MetroRail and MetroBus routes throughout the region, significantly reduces the number of vehicle trips to campus by students. The U*PASS utilization rate among students is over 90%. Between July 2018 and June 2019, AU students logged 1,415,087 total system rides, of which 952,943 were rail trips and 462,144 were bus trips.
- **Priced parking** permit program for students and employees and hourly/daily priced parking for visitors.
- **On Demand Corporate Ride Service:** A survey found that faculty, staff, and non-resident students were driving personal vehicles to campus every day in order to have reliable, efficient transportation to conduct university business off campus throughout the day. In order to address this transportation need and, in turn, reduce the number of vehicles being driven to campus, AU has contracted with Lyft to establish the *American University Lyft Ride Smart Program*, a corporate ride service program. This program replaced the previous corporate car-sharing program.
- **Transit subsidies**: AU employees can purchase transit fares with pre-tax income through the regional SmartBenefits program.
- **Rideshare**: The university supports ridesharing by assisting in matching riders through Zimride and additionally providing discounts for rideshare users by providing half-priced parking permits for registered carpool commuters.
- **Guaranteed/Emergency Ride Home**: AU provides information to its commuters on the regional Guaranteed Ride Home (GRH) program provided by Metropolitan Washington Council of Governments.
- **Flextime**: Flextime opportunities are available, with approval of a divisional Vice President.
- **Telecommuting**: Telecommuting opportunities are available, with approval of a divisional Vice President. As a result of COVID-19, the majority of university operations was transitioned to digital platforms in March 2020. This experience has helped identify

[8] https://www.american.edu/finance/transportation/

[9] Due to the impact of COVID-19, university shuttle service operated on a limited schedule during the fall 2020 semester.

[10] Due to the impact of COVID-19, WMATA temporarily suspended the U*PASS Program for the fall 2020 semester.

several functions that are suitable for continued telecommuting, even after in-person university operations resume.

- **Promotional campaigns**: AU's office of sustainability recently launched a "personal sustainability" website to promote and incentivize green practices, with a particular focus on sustainable transportation.
- **Good Neighbor Parking Policy**: AU shall continue its Good Neighbor Parking Policy[11] to actively enforce the prohibition of students, faculty, staff, and vendors of AU and Washington College of Law (WCL) from parking on streets adjacent to and surrounding the campus.

As part of the current 2011 Campus Plan, the University has been providing annual transportation monitoring reports to DDOT including data on parking utilization, campus mode share, TDM benefits participation and AU shuttle operations. Over the past five years the campus mode-share has remained relatively stable with employee non-vehicle commuting showing continued increases in recent years. It is proposed that this annual monitoring will continue through implementation of the 2021 Campus Plan.

Certainly COVID-19 will have a short-term impact on the university's mode split, as all instruction in fall 2020 is being delivered online and the majority of staff members are telecommuting. While AU fully anticipates strong and ongoing demand for its on-campus, face-to-face academic programs, research opportunities, and vibrant residential experience over the term of the 2021 Campus Plan, as noted above, the shift to online operations brought about by COVID-19 has helped identify several staff functions that are suitable for continued telecommuting, even after in-person university operations resume.

[11] https://www.american.edu/finance/transportation/good-neighbor-policy.cfm

Figure 3-7 AU Non-Single Occupant Vehicle Commuting Mode Share

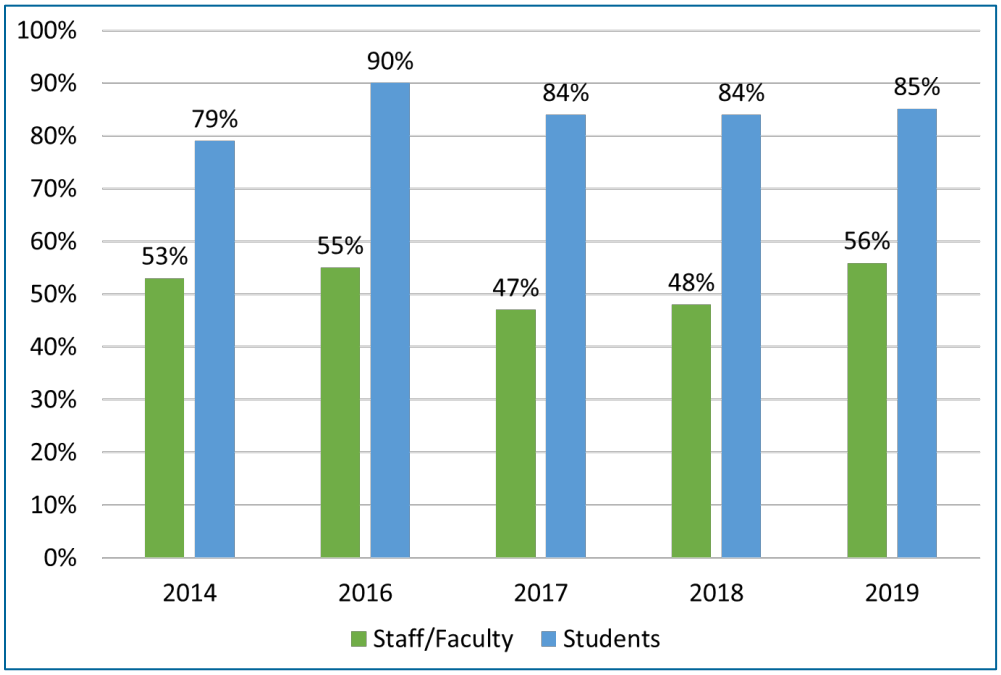
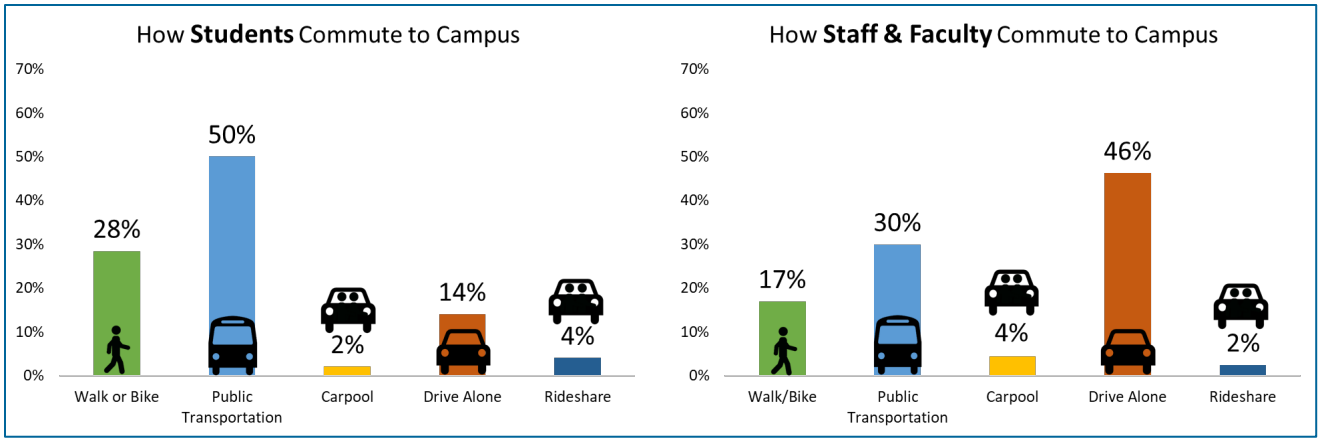


Figure 3-8 2019 American University Commuting Mode Share



The university will continue to work closely with DDOT and the community, particularly the members of the AU Neighborhood Partnership Transportation and Parking Working Group, to ensure that AU's TDM policies and programs effectively support and incentivize sustainable travel modes – including walking, biking and transit – for students, faculty, staff and campus visitors over the ten-year term of the 2021 Campus Plan.

4 TRAVEL DEMAND ASSUMPTIONS

The transportation demand assumptions of the 2021 Campus Plan are based upon the existing travel patterns of the university community. The current demand assumptions enable the projection of trip generation associated with the proposed 2021 Campus Plan by mode, which forms the basis for the chapters that follow. These assumptions were reviewed by DDOT as a part of the scoping process for the study.

Mode Split Methodology

Mode split (also called mode share) is the percentage of travelers using a particular type (or mode) of transportation when traveling. The mode split information for this report was based on the annual transportation survey of students and faculty to aid in the transportation monitoring and reporting of the university. The most recent survey was performed in fall 2019. Mode split numbers display that AU student, staff, and faculty ride metro, bike, or walk as a commute mode at much higher rates than the rest of the city. Of the AU students who commute to campus, 14% of the population drives alone, while 78% use public transportation, walk, or ride their bike. Rideshare or carpooling make up 6% of the population. Staff and faculty use public transportation, walk, or ride their bike at lower rates (47% total), while 46% of the staff/faculty drive alone.

Table 4-1 Existing Campus Mode Share vs. DC Region

Mode	Drive Alone	Public Transportation	Rideshare	Bike/Walk	Carpool	Other
Student	14%	50%	4%	28%	2%	2%
Staff/Faculty	46%	30%	2%	17%	4%	1%
DC Region*	57.2%	24.1%	1.1%	3.3%	4.6%	9.7%

*MWCOG "State of the Commute", 2019.

Trip Generation Methodology

Traffic counts were undertaken to record existing conditions in February 2020 with the study area developed with input from the AU Neighborhood Partnership Transportation and Parking Working Group and Steering Committee and reviewed and approved by DDOT. These traffic counts included all access drives to the Main Campus in order to ascertain the existing morning and afternoon vehicular trip rate. The table below highlights the calculated trip rates and proposed trip generation. Trip generation and trip rates for transit and walk/bikes modes were calculated utilizing the existing traffic data and mode split survey data.

Table 4-2 Existing Trip Rate and Proposed Trip Generation

	AM	PM	AM	PM	AM	PM
	Vehicle Trips		Person Trips			
Existing Main Campus Trips	**Automobile**	**Automobile**	**Transit**	**Transit**	**Walk/Bike**	**Walk/Bike**
In	443	439	491	486	275	273
Out	132	526	146	583	82	327
Total	575	965	637	1,069	357	600
Existing Trip Rate/Person*						
In	0.04	0.04	0.04	0.04	0.02	0.02
Out	0.01	0.04	0.01	0.05	0.01	0.03
Total	0.05	0.08	0.05	0.09	0.03	0.05
Future Trip Generation**						
Main Campus						
In	559	559	559	559	280	280
Out	140	559	140	699	140	419
Total	699	1118	699	1258	419	699
Growth	124	154	96	173	58	96
Tenley Campus						
In	73	73	73	73	37	37
Out	18	73	18	92	18	55
Total	92	147	92	165	55	92
Growth	12	18	10	19	6	10
4801 Massachusetts Ave						
In	61	61	61	61	30	30
Out	15	61	15	76	15	46
Total	76	122	76	137	46	76
Growth	0	0	0	0	0	0
4200 Wisconsin Ave						
In	10	10	10	10	5	5
Out	3	10	3	13	3	8
Total	13	20	13	23	8	13
Growth	6	10	6	11	4	6
3201 New Mexico Ave						

In	6	6	6	6	3	3
Out	1	6	1	7	1	4
Total	7	12	7	13	4	7
Growth	2	2	2	4	1	2
Future Campus Total	**887**	**1418**	**887**	**1596**	**532**	**887**
Future Growth	**144**	**184**	**115**	**208**	**69**	**115**

*With fall 2019 Main Campus population of 12,053 (students and staff)

**With potential 2021 Campus Plan population projections (see Chapter 3 and Appendix D)

Based upon the current mode share and trip generation, American University anticipates that the enhancements in the proposed bicycle network as a result of recent community studies would further decrease the single-occupancy vehicle mode split in the future, particularly for the student population. Combined with the COVID-19 era increase in telework options for university staff and faculty, it is anticipated their mode share will also shift away from single-occupancy vehicles. However, to be conservative, the analysis in this CTR utilized the existing trip rates to generate the future trips as highlighted in Table 4-2.

5 EXISTING TRAFFIC CONDITIONS (2020)

Existing Roadway Network

The major roadway facilities within the study area are summarized below in Table 5-1 and the existing lane configurations and traffic controls are shown in Figure 5-1 through Figure 5-4

Table 5-1 Existing Roadway Network

Roadway	Classification	Speed	AADT*
Massachusetts Avenue NW	Principal Arterial	30 mph	21,010
Nebraska Avenue NW	Principal Arterial	30 mph	24,843
Wisconsin Avenue NW	Principal Arterial	30mph	29,095
New Mexico Avenue NW	Minor Arterial	25 mph	6,343

Source: DDOT 2018 Annual Average Daily Traffic (AADT) Data

Existing Traffic Volumes

Turning movement counts including bicycle and pedestrian movements were undertaken during the week of February 25, 2020 at the study area intersections.

The weekday peaks hours for the roadway system were determined to generally be 8:15 AM to 9:15 AM and 5:00 PM to 6:00 PM. The existing peak hour traffic volumes for the study area intersections and the turning moving counts are included in Appendix E.

Existing Intersection Analysis

The study area intersections were analyzed for the weekday morning and afternoon peak hours under existing conditions utilized Version 9.2 of the Synchro software. Synchro is based on the Highway Capacity Manual (HCM) methodology including Level of Service (LOS) and delay for intersection.

Consistent with DDOT analysis guidelines, traffic signal timing and lane configurations were confirmed in the field and incorporated into the DDOT Synchro model. Additionally, pedestrian volumes were collected throughout the intersection traffic counts and were incorporated into the analysis.

The existing analysis results including intersection LOS for the study area intersections are included as Appendix F along with the detailed Synchro worksheets.

Operational Analysis

As shown in Figure 5-5 and Figure 5-6 all intersections within the study area currently operate at an overall acceptable level of service (i.e., LOS D or better) during the morning and afternoon peak hours with the exception of the Massachusetts Avenue NW/Nebraska Avenue NW intersection (southbound approach in the AM peak hour and northbound approach in the PM peak hour).

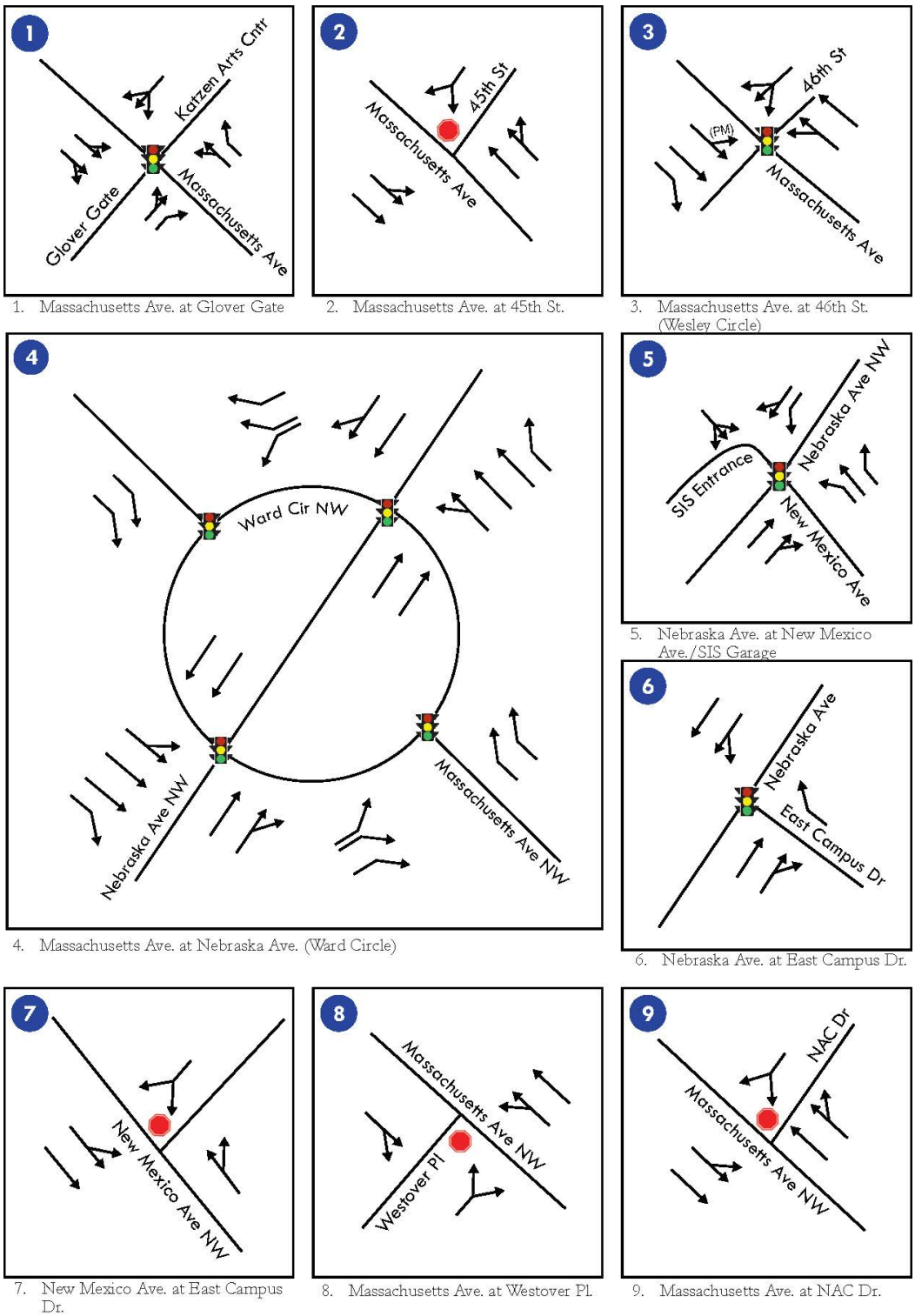
Queuing Analysis

A queuing analysis was undertaken for the study area intersections for existing conditions in order to establish a baseline to compare future conditions. The Synchro results are shown in Appendix E. Existing queue lengths according to the analysis currently operate at or below the capacity of the existing storage lengths at the majority of the study area intersections with the exception of the following intersections:

- Massachusetts Avenue NW at Campus Drive NW
- Massachusetts Avenue NW at Nebraska Avenue NW
- Nebraska Avenue NW at New Mexico Avenue NW/SIS Garage
- Wisconsin Avenue NW at Van Ness Street NW
- Wisconsin Avenue NW at Nebraska Avenue NW (Tenley Circle)
- New Mexico Avenue NW at Cathedral Avenue NW
- New Mexico Avenue NW at Newark Street NW/Westover Place NW
- Nebraska Avenue NW at Van Ness Street NW

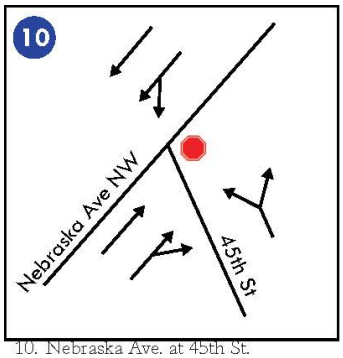
Field observations during the peak hours collaborate both the operational and queuing analysis highlighted in the tables below. In particular observations adjacent to the Main Campus showed that during the AM peak hour, queuing occurred southbound along Massachusetts Avenue NW at the approach to Ward Circle and westbound at Nebraska Avenue NW/New Mexico Avenue NW. These queues were generally cleared within one signal during the available green time. During the PM peak period the same queues were observed at Nebraska Avenue NW/New Mexico Avenue NW in the westbound direction and with the reverse traffic flow, in the northbound direction at Massachusetts Avenue NW/Nebraska Avenue (Ward Circle).

Figure 5-1 Existing Intersection Lane Configuration

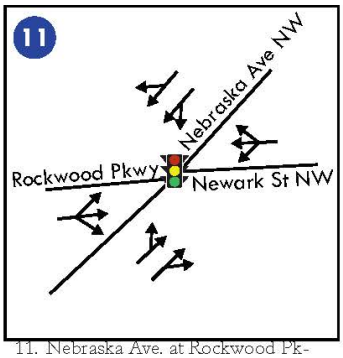


1. Massachusetts Ave. at Glover Gate
2. Massachusetts Ave. at 45th St.
3. Massachusetts Ave. at 46th St. (Wesley Circle)
4. Massachusetts Ave. at Nebraska Ave. (Ward Circle)
5. Nebraska Ave. at New Mexico Ave./SIS Garage
6. Nebraska Ave. at East Campus Dr.
7. New Mexico Ave. at East Campus Dr.
8. Massachusetts Ave. at Westover Pl.
9. Massachusetts Ave. at NAC Dr.

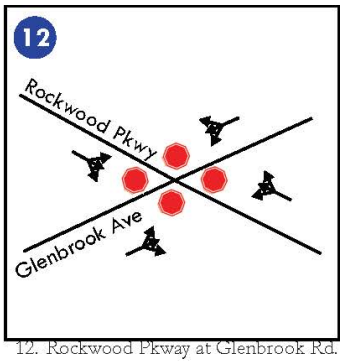
Figure 5-2 Existing Intersection Lane Configuration



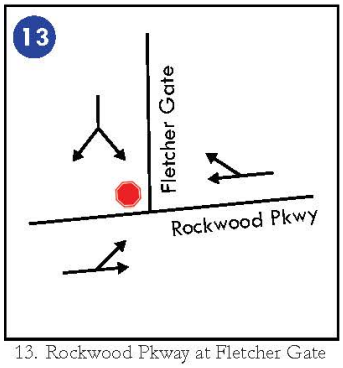
10. Nebraska Ave. at 45th St.



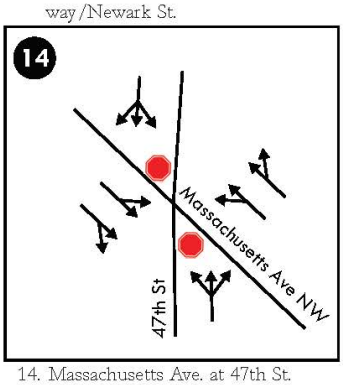
11. Nebraska Ave. at Rockwood Pkway/Newark St.



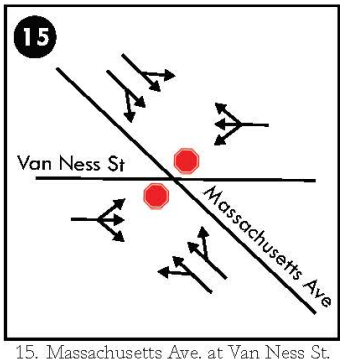
12. Rockwood Pkway at Glenbrook Rd.



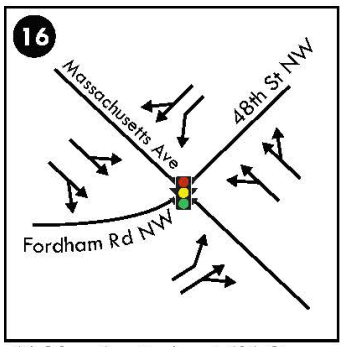
13. Rockwood Pkway at Fletcher Gate



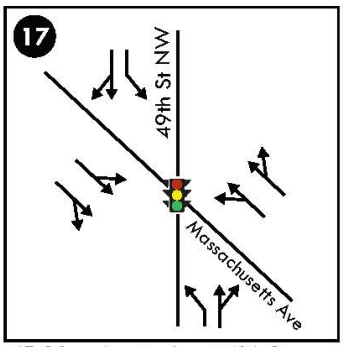
14. Massachusetts Ave. at 47th St.



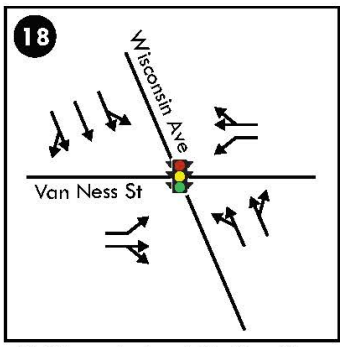
15. Massachusetts Ave. at Van Ness St.



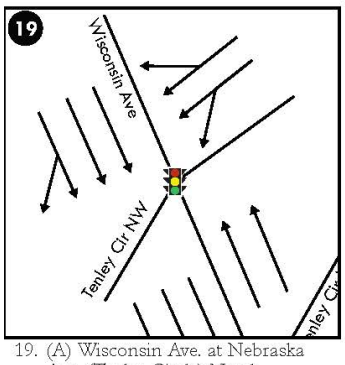
16. Massachusetts Ave. at 48th St.



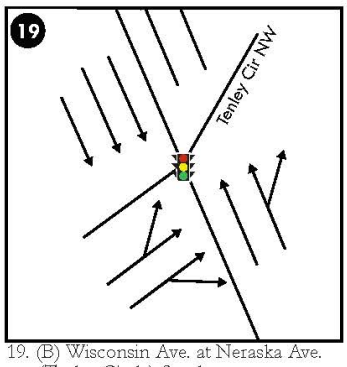
17. Massachusetts Ave. at 49th St.



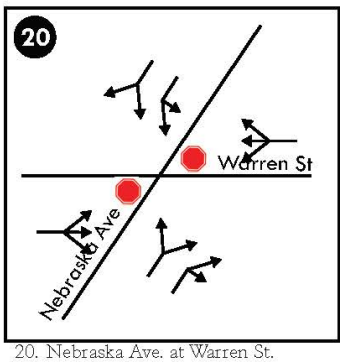
18. Wisconsin Ave. at Van Ness St.



19. (A) Wisconsin Ave. at Nebraska Ave. (Tenley Circle) North

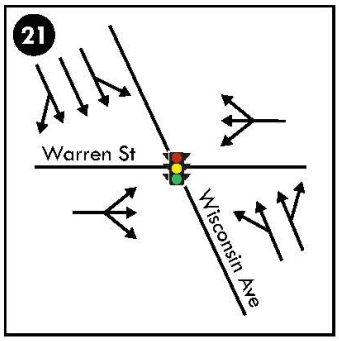


19. (B) Wisconsin Ave. at Neraska Ave. (Tenley Circle) South

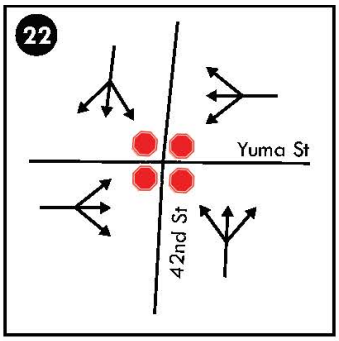


20. Nebraska Ave. at Warren St.

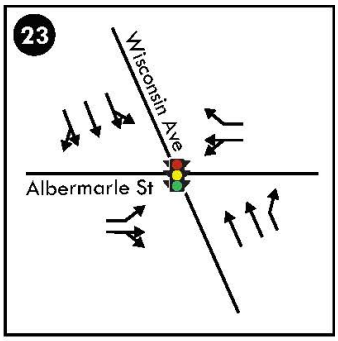
Figure 5-3 Existing Intersection Lane Configuration



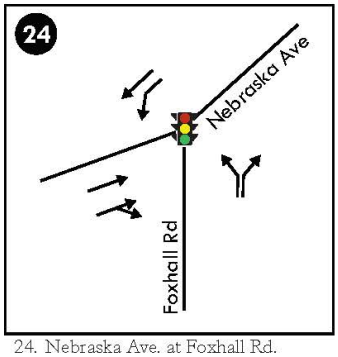
21. Wisconsin Ave. at Warren St.



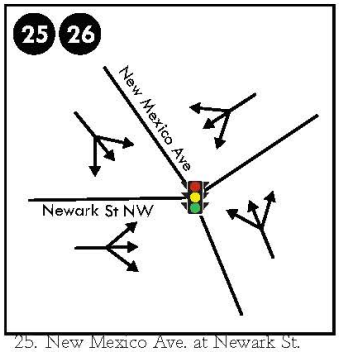
22. Yuma St. at 42nd st.



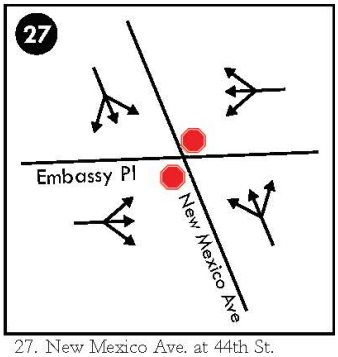
23. Wisconsin Ave. at Albemarle St.



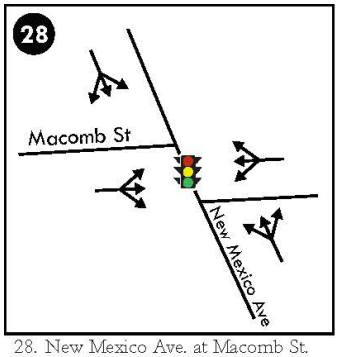
24. Nebraska Ave. at Foxhall Rd.



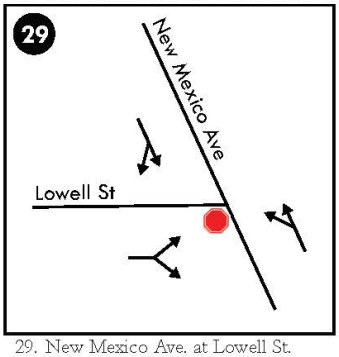
25. New Mexico Ave. at Newark St.
26. New Mexico Ave. at Westover Pl.



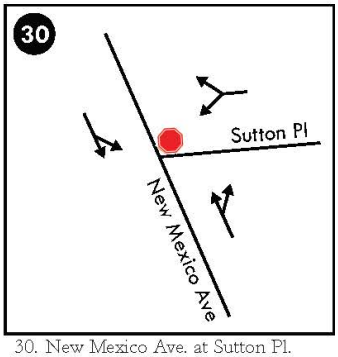
27. New Mexico Ave. at 44th St.



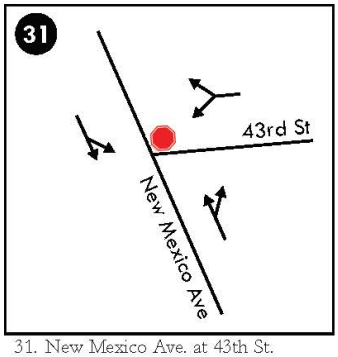
28. New Mexico Ave. at Macomb St.



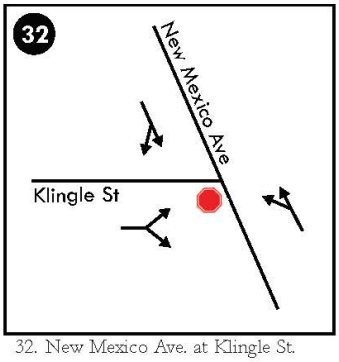
29. New Mexico Ave. at Lowell St.



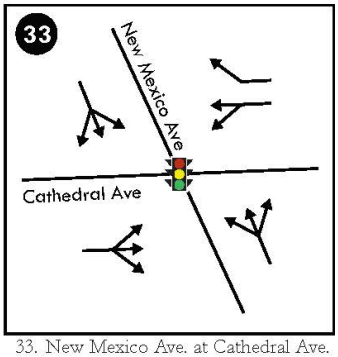
30. New Mexico Ave. at Sutton Pl.



31. New Mexico Ave. at 43th St.

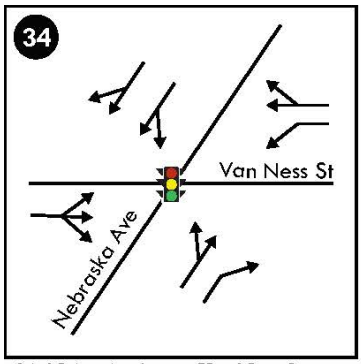


32. New Mexico Ave. at Klingle St.

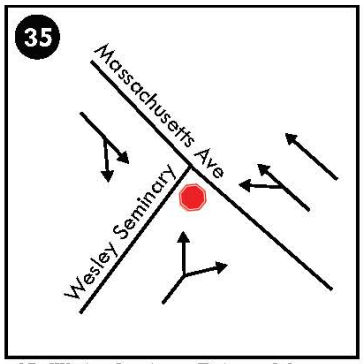


33. New Mexico Ave. at Cathedral Ave.

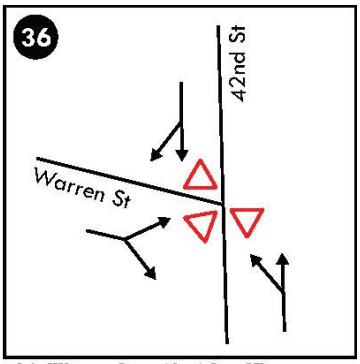
Figure 5-4 Existing Intersection Lane Configuration



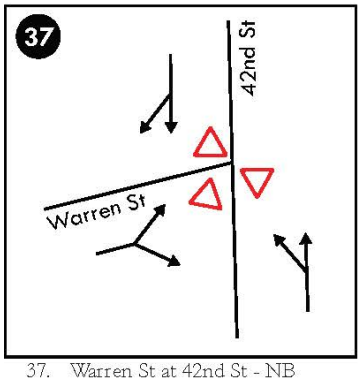
34. Nebraska Ave. at Van Ness St.



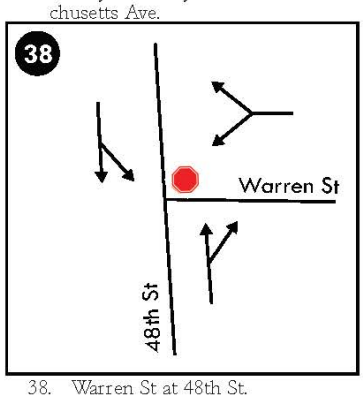
35. Wesley Seminary Drive at Massachusetts Ave.



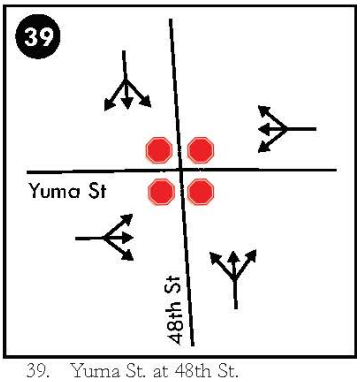
36. Warren St at 42nd St - SB



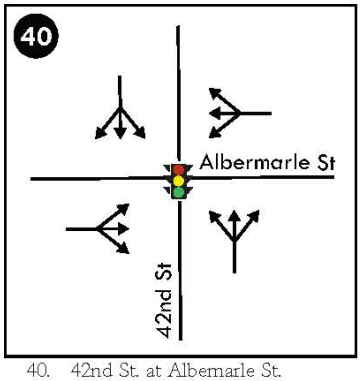
37. Warren St at 42nd St - NB



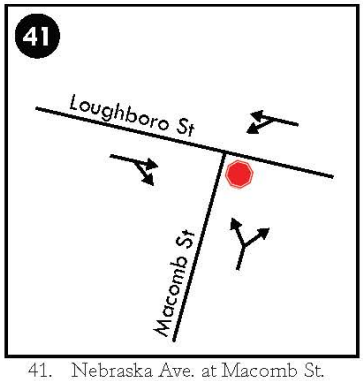
38. Warren St at 48th St.



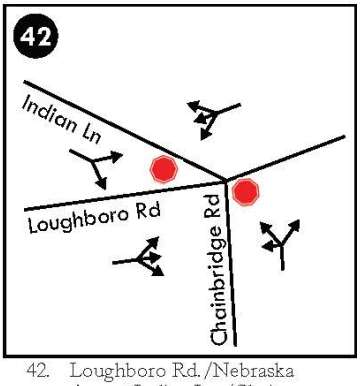
39. Yuma St. at 48th St.



40. 42nd St. at Albemarle St.



41. Nebraska Ave. at Macomb St.



42. Loughboro Rd./Nebraska Ave. at Indian Ln./Chainbridge Rd.

Figure 5-5 Existing Conditions Level of Service Analysis – AM Peak

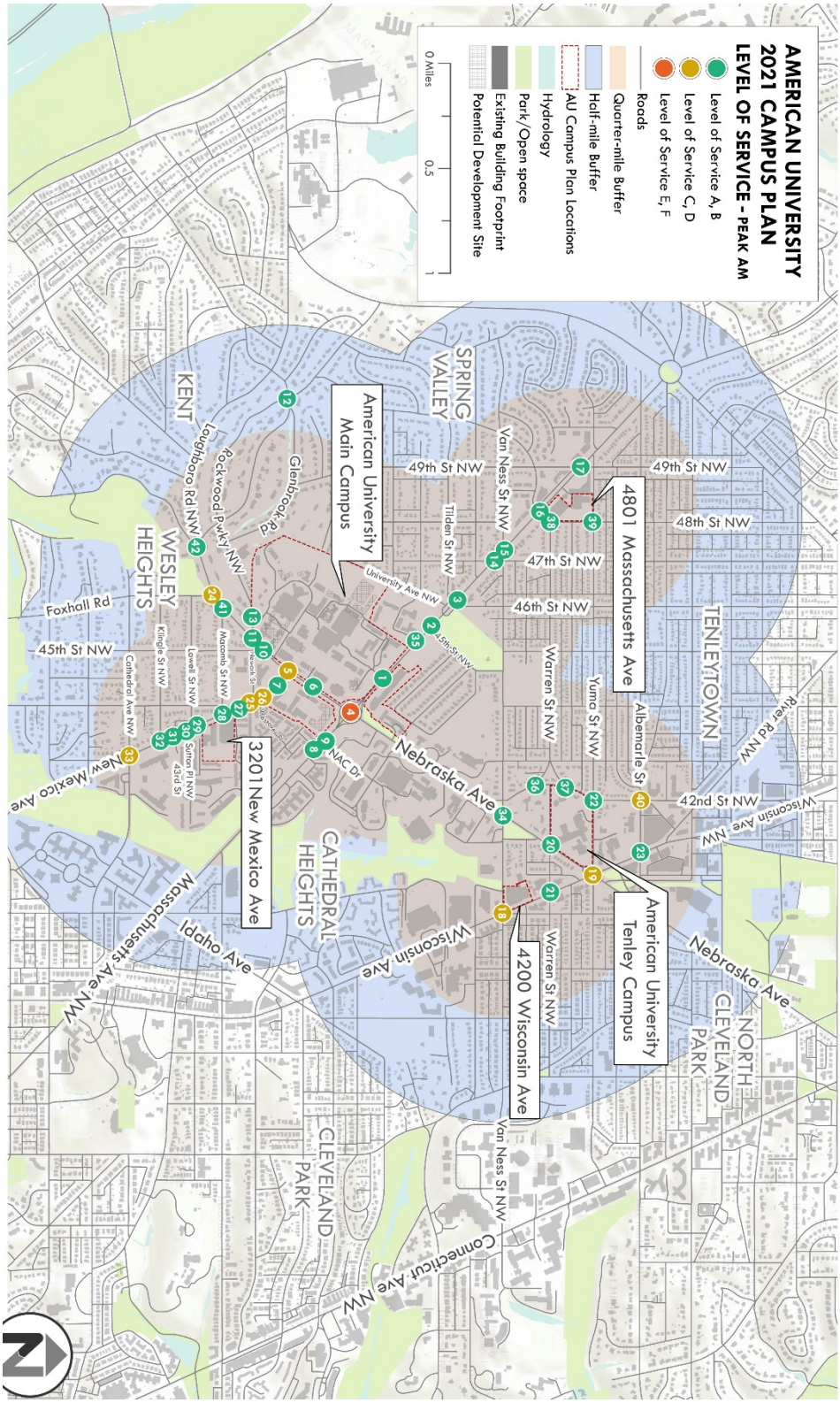
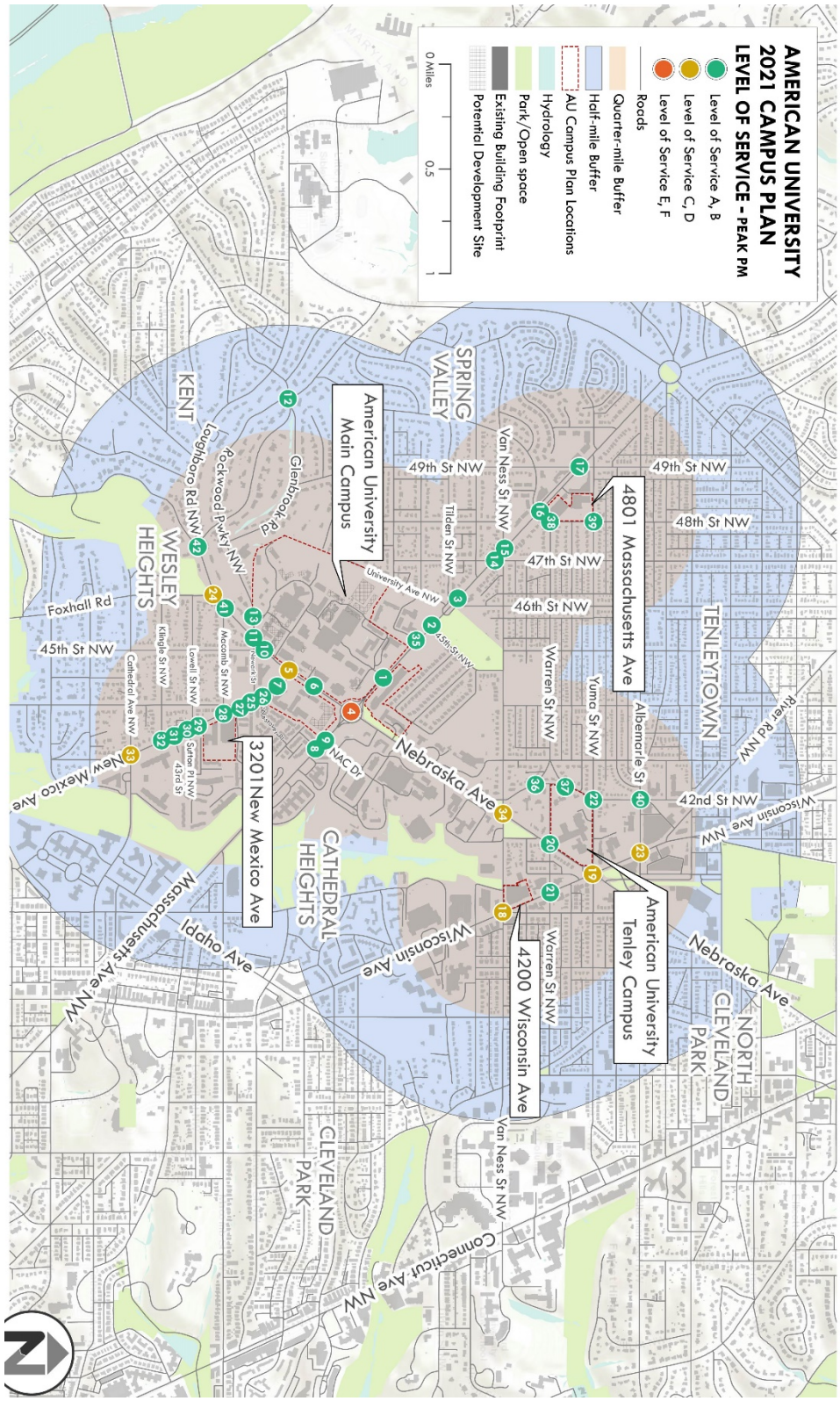


Figure 5-6 Existing Conditions Level of Service Analysis – PM Peak



6 BACKGROUND CONDITIONS WITHOUT DEVELOPMENT

Traffic Forecasts

For the purposes of this study and in accordance with the scoping submission approved by DDOT, it was assumed that the development horizon year would be the 10-year timeframe of the 2021 Campus Plan (through 2031). To develop background traffic forecasts (i.e., future traffic forecasts without the proposed 2021 Campus Plan development), a combination of existing traffic, regional growth and specific growth associated with approved, but unbuilt, developments were created.

Regional Traffic Growth

Review of historic Annual Average Daily Traffic (AADT)traffic counts from DDOT generally show a decrease in daily vehicle counts over the past 10-years of available data. Table 6-1 below shows data for the roadways adjacent to Main Campus.

Table 6-1 Historic Annual Average Daily Traffic (AADT) Counts

Year	Massachusetts Ave (North of Ward Circle)	Massachusetts Ave (South of Ward Circle	Massachusetts Ave (at 4801)	New Mexico Ave	Nebraska Ave (West of Ward Circle)	Nebraska Ave (East of Ward Circle)	Nebraska Ave (West oi Tenley Circle)
2008	22,800	25,700	24,600	9,600	30,200	20,700	16,700
2018	21,010	19,369	20,437	6,343	24,843	22,978	16,119
% Total Growth	-7.85%	-24.63%	-16.9%	-33.9%	-17.7%	11.0%	-3.5%
% Annual Growth	-0.81%	-2.79%	-1.84%	-4.06%	-1.93%	1.05%	-0.35%

For the purposes of this study, increases in traffic associated with regional growth for the analysis period through, 2031 were estimated at a conservative 0.50% per year (annually compounded) for all major roadways in the study area. This growth accounts for the potential increase in traffic generated from development outside of the study area.

Approved Projects

DDOT requested that adjacent approved development projects be included the development of total future forecasts of traffic volumes within the study area. At this time, the only local development that is proposed within the study area is the Valor Development LLC, which is adjacent to the Spring Valley Shopping Center and the American University Spring Valley Building at 4801 Massachusetts Avenue. The proposed project is a mixed-use development containing 219 apartments and replacement of a previously existing grocery store. Existing uses on the site includes a grocery store and 20,000 GSF of retail space. The estimated site trips generated by the development are summarized below:

Table 6-2 Approved Background Development Vehicle Site Trips

	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing On-Site Uses	60	40	100	195	196	391
Proposed Valor Development	55	76	131	153	130	283
Net New Trips	**-5**	**36**	**31**	**-42**	**-66**	**-108**

Background Future Traffic Forecasts

To arrive at the 2031 future background peak hour traffic forecasts shown in Appendix G, the regional growth for 10 years and the peak hour traffic forecasts of the approved development were added to the existing peak hour traffic volumes.

Background Intersection Analysis (2031)

The study area intersections were analyzed for the weekday morning and afternoon peak hours under the future background conditions utilized Version 9.2 of the Synchro software. Synchro is based on the Highway Capacity Manual (HCM) methodology including Level of Service (LOS), delay and queue length for intersection approaches. The existing traffic signal timings were utilized for the future background conditions.

Appendix G presents the background analysis results and provides intersection LOS for the study area intersections.

Operational Analysis

As shown in Appendix G all intersections within the study area would operate at an overall acceptable level of service (i.e., LOS D or better) during the morning and afternoon peak hours with the exception of the Massachusetts Avenue NW/Nebraska Avenue NW intersection (southbound approach in the AM peak hour and northbound approach in the PM peak hour).

Queuing Analysis

A queuing analysis was undertaken for the study area intersections for background conditions in order to establish a baseline to compare conditions associated with full 2021 Campus Plan

development. Background queue lengths according to the analysis would operate at or below the capacity of the available storage lengths at the majority of the study area intersections with the exception of the following intersections:

- Massachusetts Avenue NW at Campus Drive NW
- Massachusetts Avenue NW at Nebraska Avenue NW
- Nebraska Avenue NW at New Mexico Avenue NW/SIS Garage
- Wisconsin Avenue NW at Van Ness Street
- Wisconsin Avenue NW at Nebraska Avenue NW (Tenley Circle)
- New Mexico Avenue NW at Cathedral Avenue NW
- New Mexico Avenue NW at Newark Street NW/Westover Place NW
- Nebraska Avenue NW at Van Ness Street NW

7 FUTURE CONDITIONS WITH PROPOSED 2021 CAMPUS PLAN DEVELOPMENT (2031)

Traffic Forecasts

For the purposes of this study and in accordance with the scoping submission approved by DDOT, it was assumed that all development proposed in the 2021 Campus Plan would occur by 2031. The 2031 future traffic volumes with campus development were generated by combining the background traffic volumes (Figure 6-1) and the proposed new Campus Plan locations trip volumes (Table 4-2). The future 2031 traffic volumes (with potential Campus Plan development) are shown in Appendix H.

Planned Future Transportation Improvements

For the purposes of the future condition analysis, the only transportation improvements included within the analysis is the change to the internal circulation of the Main Campus. No other transportation improvements have been identified that would alter the study area roadways.

Future Intersection Analysis (2031)

The study area intersections were analyzed for the weekday morning and afternoon peak hours under the future background conditions utilized Version 9.2 of the Synchro software. Synchro is based on the Highway Capacity Manual (HCM) methodology including Level of Service (LOS), delay and queue length for intersection approaches. The existing traffic signal timings were utilized for the future conditions with campus development.

Appendix H presents the future condition analysis results and provides intersection LOS and for the study area intersections.

Operational Analysis

All intersections within the study area would operate at an overall acceptable level of service (i.e., LOS D or better) during the morning and afternoon peak hours with the exception of the Massachusetts Avenue NW/Nebraska Avenue NW intersection (southbound approach in the AM peak hour and northbound approach in the PM peak hour). This condition is reflected in both the existing and background analysis.

Queuing Analysis

A queuing analysis was undertaken for the study area intersections for future conditions in order to assess operations upon proposed campus development in 2031. The Synchro results are included as Appendix H. Future queue lengths according to the analysis would operate at or below the capacity of the available storage lengths at the majority of the study area intersections with the exception of the following intersections:

- Massachusetts Avenue NW at Campus Drive NW
- Massachusetts Avenue NW at Nebraska Avenue NW

- Nebraska Avenue NW at New Mexico Avenue NW/SIS Garage
- Wisconsin Avenue NW at Van Ness Street NW
- Wisconsin Avenue NW at Nebraska Avenue NW (Tenley Circle)
- New Mexico Avenue NW at Cathedral Avenue NW
- New Mexico Avenue NW at Newark Street NW/Westover Place NW
- Nebraska Avenue NW at Van Ness Street NW

These queuing conditions are reflected in both the existing and background analysis with the proposed future conditions.

Should the proposed campus development on Sites 11/12 and/or Site 15 include vehicular access to potential below-grade parking, additional analysis would be undertaken as part of the Zoning Commission Further Processing requirements associated with each respective project.

DDOT's Significant Impact Policy

DDOT uses two primary criteria for determining if an action will have an impact on the transportation network:

1) Presence of a significant supply of on-site vehicle parking; and

2) Unacceptable increase of delay, Level of Service (LOS), Volume-to-Capacity (V/C), or vehicle queueing at study intersections.

High Vehicle Parking Provision

As has previously been highlighted (Chapter 3), the existing and proposed parking supply throughout the 2021 Campus Plan locations has not been deemed to be "high" under the DDOT preferred vehicle parking rates with the proposed parking supply less than 120% of the current inventory.

Capacity Impacts at Intersections

An action's "significant impact" to the roadway network is defined as follows:

- When the proposed project causes any one or more intersection approaches to exceed the established LOS threshold. This threshold will be set for each project and will be defined as LOS "E" or "F" as requested by DDOT; or
- When the proposed project causes any one or more intersection approaches with an existing LOS "E" or "F" to experience an increase in vehicle delay of 5% or more; or
- When the proposed project causes the 95th percentile queue length to exceed the available capacity of an approach or turn lane; or
- When the proposed project causes the 95th percentile queue length to exceed the available
- capacity in the short- or long-term planning horizon to experience an increase in queue of 150 feet or more; or
- When the proposed project causes a movement or lane group's V/C ratio to increase above 1.0; or

- When the proposed project causes any deficient movement or lane group's V/C ratio to increase by 5 percent or more.

The Future Conditions Analysis shows that the proposed 2021 Campus Plan does not cause any of the study area intersections to be impacted "significantly" as per DDOT's guidelines. The intersections that operate below level-of-service D (Massachusetts Avenue NW/Nebraska Avenue NW) do so under existing and background conditions and are not impacted by an increase of greater than 5%. The queuing analysis also reflects that the proposed trip generation from the 2021 Campus Plan does not cause any additional intersections to exceed the available capacity of an approach or turn lane. Those intersections that currently operate beyond their queuing capacity would continue to do so under both background and future conditions with less than a 5% increase in the 95th percentile length.

8 FUTURE TRANSIT IMPACTS

Existing Transit Service

American University's Main Campus, Tenley Campus and other 2021 Campus Plan locations are connected to transit by WMATA's Metro bus and Metro rail systems. To add connectivity between the Campus Plan locations and the Metro station, AU operates free shuttle service (detailed below). Figure 2-3 in Chapter 2 shows the existing transit routes within the study area.

Metrorail

American University's Main Campus and 3201 New Mexico Avenue are located 0.9 miles from WMATA's Tenleytown-AU Metro Station, which provides access to the WMATA Red Line trains. The Tenley Campus is 0.2 mile from the Tenleytown-AU Metro Station and the 4200 Wisconsin Avenue location is 0.3 miles from the station. The 4801 Massachusetts Avenue building is 1.5 miles from the Tenleytown-AU Metro Station.

Metrobus

Eleven bus routes provide access to the Tenleytown-AU Metro Station area, which connect the area to downtown DC as well as Northeast and Southeast DC: 30N, 30S, 31, 33, 37, 96, H2, H3, H4, M4, and N2. Four WMATA bus lines operate seven days a week along the two major roads that border the Main Campus from the south and east (Nebraska and Massachusetts Avenues): M4, N2, N4, and N6. These buses provide direct access from the Main Campus to parts of downtown DC and northwest DC. The Spring Valley Building is located along bus routes N4 and N6.

Campus Shuttle Service

Three shuttle routes operate between the Main Campus and the Tenleytown-AU Metro Station, the Tenley Campus, and Spring Valley Building.

Blue Route:

- Metro – Main Campus – Tenley Campus – Tenleytown Metro Station
- The route is 2.9 miles long

Table 8-1 AU Blue Route Schedule

Service Day	Span of Service	Frequency (Min)
Monday-Thursday	6:15 AM – 12:15 AM	2-25
Friday	6:15 AM – 3:30 AM	2-25
Saturday	8:00 AM – 3:30 AM	7-14
Sunday	8:00 AM – 12:30 AM	25

Red Express Route:

- Metro – Main Campus – Spring Valley Building
- The route is 3.7 miles long

Table 8-2 AU Red Route Schedule

Service Day	Service Span	Frequency (Min)
Monday-Thursday	7:15 AM – 12:15 AM	5-15
Friday	7:15 AM – 12:15 AM	15-30
Saturday	8:00 AM – 12:15 AM	30
Sunday	8:00 AM – 12:15 AM	30

Green Route:

- East Campus – Main Campus – Spring Valley Building
- The route is 2.5 miles long

Table 8-3 AU Green Route Schedule

Service Day	Service Span	Frequency (Min)
Monday-Thursday	7:15 AM – 10:00 PM	5-15
Friday	7:15 AM – 10:00 PM	15-30

Table 8-4 Transit Services near AU Campus Locations

Route	Route Name	Route Type	Frequency
Tenley Campus, 4200 Wisconsin Ave, AU's Blue and Red Shuttle Routes, Tenleytown Metro Station			
Red Line	Shady Grove-Glenmont	Metro Rail	Frequent, 7-day service
30N, 30S	Friendship Heights-Southeast Line	Major Bus Route	Frequent, 7-day service on core route
31, 33	Wisconsin Avenue Line	Major Bus Route	Frequent, 7-day service on core route
37	Wisconsin Avenue Limited	Extra/Rapid Bus Route	Limited-stop service
96	East Capitol St-Cardozo Line	Local Bus Route	Less Frequent, some evening and weekend service available
H2, H3, H4	Crosstown Line	Major Bus Route	Frequent, 7-day service on core route
M4	Nebraska Avenue Line	Local Bus Route	Less Frequent, some evening and weekend service available
N2	Massachusetts Avenue Line	Local Bus Route	Less Frequent, some evening and weekend service available
Main Campus and 3201 New Mexico Avenue			
M4	Nebraska Avenue Line	Local Bus Route	Less Frequent, some evening and weekend service available
N2, N4, N6	Massachusetts Avenue Line	Local Bus Route	Less Frequent, some evening and weekend service available
4801 Massachusetts Avenue			
N4, N6	Massachusetts Avenue Line	Local Bus Route	Less Frequent, some evening and weekend service available

Planned Transit Service and Improvements

MoveDC, the 25-year vision for the transportation system in Washington, DC was completed in October 2014. The plan recognized the need to provide a multi-modal transportation system across the District. It proposes increased investments in transit and bicycle networks in order to increase system capacity while not overloading the roadways with vehicular traffic. The plan identifies the Wisconsin Avenue corridor between Tenleytown Metro Station and M Street in Georgetown and the current crosstown bus route of H2, H3, H4 between Tenleytown and Columbia Heights as key corridors for improved frequency and capacity for transit service. AU's provision of three shuttle routes between the Main Campus, Tenley Campus and Tenleytown metro station, and the Spring Valley Building are consistent with moveDC's calls to bolster the transit system through more frequent routes and service in areas where there are fewer options. The moveDC Plan is currently undergoing an update to reflect conditions or approaches that have since changed.

The Tenleytown-AU Station Access Study, finalized in 2016 provides guidance on potential redesign for the area around 40th Street and Fort Drive NW, which currently is constrained due to

roadway configuration, causing congestion of MetroRail riders and bus and shuttle passengers in addition to pedestrians and bicyclists travelling through the area. Recommended improvements include:

- Enhanced crossings at 40th Street NW, Fort Drive NW, and Albemarle Street NW
- Improved disability access along sidewalks and at curb cuts leading into crosswalks
- Enhanced landscape areas, additional bicycle racks, and improved bus shelters
- Expanded sidewalk space along 40th Street NW

Project improvements will be completed once funding becomes available.

Site-Generated Transit Impacts

The potential growth associated with the implementation of AU's proposed 2021 Campus Plan would generate an estimated increase in transit trips by a total of 115 AM and 208 PM trips. Divided between AU's Main Campus and four other Campus Plan locations, transit trip totals and estimated 2021 Campus Plan growth are as follows:

Table 8-5 Transit Ridership from Potential American University Population Growth

Campus Location	AM	PM
Total Growth	***115***	***208***
Main Campus		
In	559	559
Out	140	699
Total	699	1258
Growth	96	173
Tenley Campus		
In	73	73
Out	18	92
Total	92	165
Growth	10	19
4801 Massachusetts Avenue NW		
In	61	61
Out	15	76
Total	76	137
Growth	0	0

4200 Wisconsin Avenue NW		
In	10	10
Out	3	13
Total	13	23
Growth	6	11
3201 New Mexico Avenue NW		
In	6	6
Out	1	7
Total	7	13
Growth	2	4

9 FUTURE PEDESTRIAN & BICYCLE IMPACTS

Pedestrian & Bicycle Facilities

Pedestrian

Conditions for pedestrians on streets surrounding the 2021 Campus Plan locations are adequate. Sidewalk widths on streets bordering the campus locations range from 4' to 6.5', while more residential streets within the ¼ mile radius from campus locations have narrower sidewalks, ranging from 3'-4' in width. Several roads within the neighborhood surrounding the Main Campus and other Campus Plan locations do not have sidewalks on either one or both sides of the street.

Several public roadways such as Rockwood Parkway NW west of Fletcher Gate, Glenbrook Road NW and University Avenue NW border the Main Campus and do not have sidewalks on both sides of the street. Instead, the right-of-way consists of two vehicular travel lanes with sidewalk fronting residences, while the other side of the street that fronts the campus grounds does not have a sidewalk and instead has a dense tree buffer. Construction of a sidewalk on the campus side of the street would require removing the existing forested buffer between the neighborhood street and/or private residential property and campus grounds. Due to the low vehicle traffic on these roads and community interests in maintaining sound and visual barriers from future development in this area of the campus, road improvements on these segments should not be focused towards the construction of a sidewalk. DC requires a sidewalk on a least one side of non-highway streets in order to have a complete pedestrian network across the city. Therefore, sidewalk construction is encouraged to focus on those locations where a sidewalk is missing on both sides of the streets, as identified in Figure 2-2 (Bicycle and Pedestrian Network map).

Bicycling

Bicycling is an increasingly popular mode of transportation in the District of Columbia. However, the major roadways edging the Main Campus on two sides (Nebraska Avenue NW and Massachusetts Avenue NW) are wide roadways with high traffic volumes, high speeds, and narrow vehicular lanes. This combination of factors encourages bicyclists to ride on the sidewalk, which is well used by pedestrians and ranges in width from 4 feet to 6.5 feet.

Two Capital Bikeshare stations are located on the main roads bordering the campus: the first station is on Massachusetts Avenue NW, northwest of Ward Circle and the intersection with Nebraska Avenue NW. The second station is located on Nebraska Avenue NW, between New Mexico Avenue NW and Massachusetts Avenue NW. Another bikeshare station is located on the

northern boundary of the Tenley Campus, on Yuma Street NW east of 42nd Street NW. No bikeshare stations are located near the Spring Valley Building. Bikeshare stations are well-used by students, staff, and faculty around the Main Campus.

Proposed Pedestrian Infrastructure Improvements

The 2021 Campus Plan locations are within the study areas of two of DDOT's livability studies: the Main Campus and 3201 New Mexico Avenue NW location are located within the Rock Creek Far West area and the Tenley Campus and Spring Valley Building are located within the Rock Creek West II area. The Rock Creek Far West Livability Study was recently completed in October 2019 and identified AU's Main Campus as a key pedestrian destination within the study area. The livability study recommended key improvements for the safety of pedestrians in the area surrounding AU campus locations. Key improvements proposed are:

- Add curb extensions on Rockwood Parkway NW and Newark Street NW at the 45th Street NW intersection to reduce the intersection footprint, shorten pedestrian crossing distance, and control the speed of turning vehicles.
- Install sidewalks on Sedgwick Street NW, University Avenue NW, and Tilden Street NW in areas northwest of the Main Campus.
- Upgrade crosswalks around the study area with high-visibility crosswalks for increased visibility of pedestrians.

Proposed Bicycle Infrastructure Improvements

In regard to bicycle improvements, the Rock Creek Far West Livability Study recommended bicycle boulevards and off-street trails for increased safety and visibility for bicyclists. The study also noted the need for off-street multi-use trails along Massachusetts Avenue NW, but it recommended a study take place prior to the implementation of a facility.

The recommendations of the Rock Creek Far West Livability Study for the areas in the vicinity of the 2021 Campus Plan locations are listed below.

- Provide an off-street trail on Nebraska Avenue NW between Ward Circle and Rockwood Parkway NW (also proposed in moveDC Plan).
- Provide a bicycle boulevard on 49th Street NW. This would allow bicycle connections between the Main Campus and the Spring Valley Building.
- Provide a bicycle boulevard on Rockwood Parkway NW between Dalecarlia Parkway NW and Nebraska Avenue NW, recommended due to the amount of traffic on the street, available roadway width, and attempt to minimize loss of street parking.
- Initiate a Corridor Study for New Mexico Avenue NW and improve the existing bicycle facility.
- Initiate a Corridor Study for Massachusetts Avenue NW and provide a shared-use path along Massachusetts Avenue NW between Westmoreland Circle and Whitehaven Street NW by widening the existing sidewalk on one side of the street to a width of at least 10 feet (also proposed in moveDC Plan).

Current DDOT plans show proposed protected bike lanes on New Mexico Avenue, NW with an estimated installation year of 2022. Additionally, the Nebraska Avenue NW off-street trail project is in design phase.

The Rock Creek II Livability Study, which was completed in 2009 recommends several key bicycle routes that will be important for improved connectivity between the AU Main Campus and other campus locations:

- Provide a bicycle boulevard along Yuma Street between Connecticut and Massachusetts Avenues.
- Add sharrows on Albemarle Street between 43rd Street and Reno Road
- Add bike sharrows on 43rd Street between River Road and Van Ness Street and green curb extensions at River Road, Albemarle Street, and Van Ness Street.

The Capital Bikeshare Development Plan, completed in 2016, identifies a future station near the Spring Valley Building at 48th Street and Massachusetts Ave NW. The goal of this station would be to expand into more outlying areas with less bikeshare coverage.

Site-Generated Pedestrian & Bicyclist Impacts

The potential growth associated with the proposed 2021 Campus Plan would generate an estimated increase in bicycle and pedestrian trips by a total of 69 AM and 115 PM trips. Divided between AU's Main Campus and four other Campus Plan locations, bicyclist and pedestrian trip totals and estimated growth are as follows:

Table 9-1 Pedestrian and Bicycle Trips from Potential American University Population Growth

Campus Location	AM	PM
Growth	***69***	***115***
Main Campus		
In	280	280
Out	140	419
Total	419	699
Growth	58	96
Tenley Campus		
In	37	37
Out	18	55
Total	55	92
Growth	6	10

4801 Massachusetts Avenue NW		
In	30	30
Out	15	46
Total	46	76
Growth	0	0
4200 Wisconsin Avenue NW		
In	5	5
Out	3	8
Total	8	13
Growth	4	6
3201 New Mexico Avenue NW		
In	3	3
Out	1	4
Total	4	7
Growth	1	2

Proposed Infrastructure Improvements by Applicant

The circulation modifications proposed in the 2021 Campus Plan would be implemented over time as campus development projects are advanced. These improvements will significantly reduce vehicular through-traffic and help to provide a friendlier walking and biking environment on campus.

Due to the current high demand of Capital Bikeshare in the afternoon at the two Main Campus bikeshare stations and the expected increase in bicyclists at the Main Campus, AU will actively support DDOT with the installation of an additional Capital Bikeshare station near the Main Campus and pursue expansion of the two existing bikeshare stations along Nebraska Avenue and Massachusetts Avenue to accommodate and encourage use of bikeshare where it is most used by students and residents of the surrounding community.

10 CRASH ANALYSIS

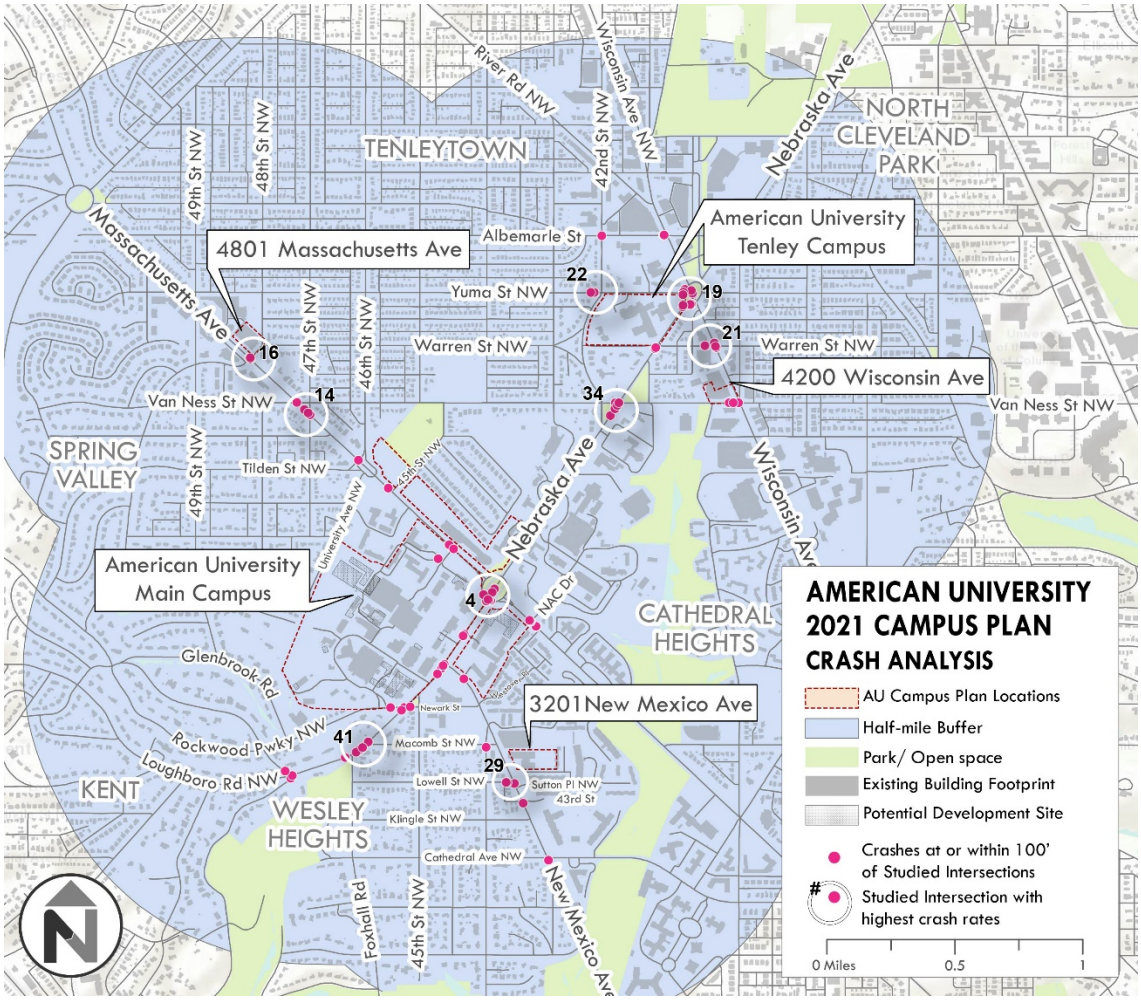
A crash analysis was performed for the 2021 Campus Plan CTR study area intersections. Table 10-1 below lists the ten (10) intersections with the highest crash rate of the studied intersections and the total number of crashes that occurred at or within 100 feet of the intersection between the four-year period of 2016-2019. The table also includes the crash rate of that intersection during this period. The crash rate is the number of crashes per million vehicles entering the intersection. The intersection at Nebraska Avenue NW and Van Ness Street NW has the highest crash rate and a high number of crashes. Crashes at this intersection also included bicyclists and pedestrians and other incidents that resulted in serious injuries. Wisconsin Avenue NW at Warren Street NW and Nebraska Avenue NW and Foxhall Road NW have been the location of 10 crashes and 7 crashes respectively over four years, resulting in high crash rates compared to the other studied intersections. Other notable intersections with a lower number of total crashes but still a high crash rate, due to the overall low daily traffic volume, is the intersection of 42nd Street NW at Yuma Street NW. The full listing of intersections is included as Appendix I.

The two major circles in the area, Ward Circle and Tenley Circle, have the highest number of crashes; both total over 20 crashes each. These circles have a much higher number of vehicles travelling through the intersection throughout the day as compared to intersections with higher crash rates.

Table 10-1 List of Top 10 Intersections by Total Number of Crashes between 2016-2019

Intersection #	Intersection	Crashes w/ Ped/Bike	Crashes w/ Serious Injuries	Total # of Crashes	Daily Intersection Traffic Volume	Crash Rate**
34	Nebraska Ave at Van Ness St	3	1	11	21,620	0.35
21	Wisconsin Ave at Warren St	1	0	10	25,100	0.27
22	Yuma St at 42nd St	2	0	2	5,760	0.24
41	Nebraska Ave at Foxhall Rd	0	0	7	21,270	0.23
19	Wisconsin Ave at Nebraska Ave (Tenley Circle)	2	0	21	68,390	0.21
29	New Mexico Ave at Lowell St	0	0	3	10,200	0.20
16	Massachusetts Ave at 48th St	2	1	6	21,740	0.19
14	Massachusetts Ave at 47th St	0	0	4	18,010	0.15
4	Massachusetts Ave at Nebraska Ave (Ward Circle)	1	0	24	110,190	0.15
1	Massachusetts Ave at Katzen Arts Center/Campus Drive	1	1	5	24,790	0.14

Figure 10-1 Top 10 Intersection Crash Locations



11 STREET TREES, SPECIAL TREES AND HERITAGE TREES

Street Trees, Special Trees, and Heritage Trees

A consistent street tree edge is present along roadways of the Main Campus, Tenley Campus, and the other properties included in the 2021 Campus Plan as well as within the surrounding neighborhood. Several streets bordering the Main Campus grounds do not have a traditional streetscape with sidewalks and planting strips. Instead, at these locations, a forested wall runs along the right-of-way – such as along Rockwood Parkway NW (without a sidewalk) or Warren Street NW (with a sidewalk). At the Spring Valley Building (4801 Massachusetts Avenue NW), overhead wires and driveways prevent the addition of street trees along a small section of Yuma Street NW. Some street trees meet criteria for Special or Heritage Tree status, however the proposed 2021 Campus Plan development sites will not require disruption of any public right-of-way or street trees.

Maintaining and nurturing a vibrant and healthy tree canopy is an important priority for AU, as evidenced by the university's recognition for ten consecutive years as a *Tree Campus USA* by the Arbor Day Foundation. Proposed 2021 Campus Plan development sites, all located on the Main Campus, have been sited and oriented to minimize the impact on existing campus trees, and new trees and other landscape elements will be included as part of proposed development projects and at other key locations around campus to mitigate for lost tree canopy, support campus green spaces, and enhance vegetative buffers near residential areas at the campus edges. Figure 11-1 displays the Special and Heritage Trees located both at Campus Plan locations and within the public right-of-way. Details regarding the impact of each proposed development site on existing Heritage and Special Trees, including any necessary permitting and protection mechanisms to be employed, will be provided as building footprints are confirmed during the further processing review process that is required for each development project. Development of one site along Nebraska Avenue NW, depending on its final design and building footprint, may impact a cherry tree that, despite its low height and modest canopy, has a robust girth with a circumference exceeding 100 inches. Potential removal of this Heritage Tree, if deemed non-hazardous or appropriate for removal by DDOT UFD (Urban Forestry Division), would require a Tree Relocation Plan.

Figure 11-1 Special and Heritage Tree Locations

12 SUMMARY AND RECOMMENDATIONS

Overview

This report presents the findings of a Comprehensive Transportation Review (CTR) for the proposed American University 2021 Campus Plan. The purpose of this CTR is to satisfy the requirements of the District Department of Transportation (DDOT) 2019 CTR Regulations to determine the impacts that the proposed development outlined in the 2021 Campus Plan would have on the surrounding transportation network. The evaluation is based upon on analysis of the existing conditions, background conditions, and future conditions of the multimodal transportation system. Upon this analysis and per the DDOT Significant Impact Policy, the study concludes that **the implementation of the 2021 Campus Plan is not likely to have an objectionable impact** on the surrounding transportation network and neighboring properties assuming that the university continues to support and implement its Transportation Demand Management (TDM) program as well as the recommendations highlighted subsequently in this chapter.

American University is seeking Zoning Commission approval for a special exception for a Campus Plan for the educational uses on its Main Campus, Tenley Campus, 4801 Massachusetts Avenue NW (Spring Valley Building), 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW properties pursuant to the Campus Plan Regulations of the District of Columbia Zoning Regulations (Subtitle X Section 101).

2021 Campus Plan Population Projections

In terms of the enrollment projections for the 2021 Campus Plan, AU has proposed to accommodate potential growth in the on-campus student population over the ten year term of the 2021 Campus Plan ***below*** the cap established in 2011, when adjusted for the revised counting methodology set forth in the 2016 Zoning Regulations (i.e., expanding the type of students to be counted under Subtitle Z, Section 302.10(d) and including students located at the three university properties noted above pursuant to Subtitle X, Section 102). Total student enrollment over the term of the Plan would be subject to an enrolment cap of 14,380, with the employment population cap of 3,350 employees. The Fall 2019 student and employee counts (including all five Campus Plan locations pursuant to the counting methodology set forth in the 2016 Zoning Regulations) were 12,581 and 2,843, respectively.

Vehicle Parking

The approved 2011 Campus Plan requires that the university "maintain an inventory of approximately 2,200 parking spaces on campus" (with "campus" including only Main Campus and Tenley Campus). Current inventory at those two (2) locations totals 2,316 spaces. As a result of new provision in the 2016 Zoning Regulations, three (3) additional university properties are now included in the 2021 Campus Plan (specifically 4801 Massachusetts Avenue NW, 4200 Wisconsin Avenue NW, and 3201 New Mexico Avenue NW). The increased campus parking inventory associated with the three (3) additional properties included in the 2021 Campus Plan results in a revised parking inventory of 3,045 spaces, 2,701 of which are currently subject to university use.

In light of this change in Campus Plan parking inventory brought about by the 2016 Zoning Regulations, and in support of the university's continued commitment to effective TDM policies that reduce the number of single occupancy vehicles (SOVs) arriving to the university (and in turn limit the need for additional parking resources), AU has proposed a **parking inventory ceiling** of 3,000 parking spaces for university use over the term of the 2021 Campus Plan, inclusive of all five of the aforementioned 2021 Campus Plan properties.

This measured approach will ensure that AU provides an adequate parking supply across all properties included in the 2021 Campus Plan to meet the needs of its current and future population, and importantly, to also provide parking capacity for special events to mitigate any potential adverse impacts on the on-street parking supply throughout the neighborhood streets surrounding campus. To confirm that the parking inventory is appropriately priced and adequately meets the needs of the AU population, the university will continue to regularly monitor utilization of its exclusive use parking facilities. Current utilization at the Main Campus indicates the parking supply is operating at a peak of 73% occupied spaces during peak periods which equates to 625 available spaces.

Multimodal Impacts and Recommendations

Transit

The Campus Plan locations are served by regional and local transit services via Metrobus and Metrorail. The five (5) Campus Plan locations range from 0.2 miles to 0.9 miles from the Tenleytown – AU Metrorail Station and the University Shuttle Services provide direct access to and from the Campus Plan locations. The potential population growth through the 2021 Campus Plan may generate new transit trips but the existing transit facilities have sufficient capacity to accommodate the additional trips.

Pedestrian

On streets bordering the 2021 Campus Plan locations, sidewalk widths range from 4' to 6.5'. Within the ¼ mile radius from the campus locations, neighborhood roadways with low vehicle volumes have narrower sidewalks, ranging between 3'-4' in width.

Bicycle

Two Capital Bikeshare stations are located on the main roads bordering the Main Campus: the first station is on Massachusetts Avenue NW, northwest of Ward Circle and the intersection with Nebraska Avenue NW. The second station is located on Nebraska Avenue NW, between New Mexico Avenue NW and Massachusetts Avenue NW. Another bikeshare station is located on the northern boundary of the Tenley Campus, on Yuma Street NW east of 42nd Street NW. No bikeshare stations are located near the Spring Valley Building. Bikeshare stations are well-used by students, staff, and faculty in the area of the Main Campus and AU will actively support the installation of an additional Capital Bikeshare station near the Main Campus and pursue expansion of the two existing bikeshare stations along Nebraska Avenue and Massachusetts Avenue to accommodate and encourage use of bikeshare where it is most utilized by students and residents of the surrounding community.

Transportation Demand Management

The University's comprehensive Transportation Demand Management (TDM) planning will remain a priority for the university over the term of the 2021 Campus Plan. The current TDM plan was formulated in 2011 in conjunction with the 2011 Campus Plan and has been routinely updated over the past 10 years. The University recognizes the importance and, crucially, the impact of the TDM plan on both the campus and the adjacent communities. The backbone to the current TDM efforts include a University Shuttle Service, the AU/WMATA U*Pass Program[12] and a priced parking system for all campus students, employees, and visitors.

As part of the current 2011 Campus Plan, the University has been providing annual transportation monitoring reports to DDOT including data on parking utilization, campus mode share, TDM benefits participation and AU shuttle operations. Campus mode share in Fall, 2019 showed an 86% non-single-occupant vehicle share for students and 54% non-single occupant vehicle share for staff and faculty.

Vehicular

All 2021 Campus Plan locations are well-connected to major regional arterials such as Massachusetts Avenue NW, Wisconsin Avenue NW, and Nebraska Avenue NW, and an existing network of collector and local roadways. Analysis was undertaken to evaluate the potential impacts of the implementation of the 2021 Campus Plan on the transportation network by projecting future conditions with and without development of the campus growth. The performance of the network using metrics such as intersection level-of-service and vehicle delay are then compared to the acceptable levels of delay set by DDOT standards to determine if the development associated with the 2021 Campus Plan will negatively impact the study area. **The analysis summarized in this report has concluded that the projected development proposed in the 2021 Campus Plan will not significantly impact the study area transportation network beyond the existing or background conditions as per DDOT's Significant Impact Policy for intersections.** Specifically, the future conditions and proposed growth of the 2021 Campus Plan would not cause the study area intersections to meet any of the significant impact metrics:

- When the proposed project causes any one or more intersection approaches to exceed the established LOS threshold. This threshold will be set for each project and will be defined as LOS "E" or "F" as requested by DDOT; or
- When the proposed project causes any one or more intersection approaches with an existing LOS "E" or "F" to experience an increase in vehicle delay of 5% or more; or
- When the proposed project causes the 95th percentile queue length to exceed the available capacity of an approach or turn lane; or
- When the proposed project causes the 95th percentile queue length to exceed the available capacity in the short- or long-term planning horizon to experience an increase in queue of 150 feet or more; or
- When the proposed project causes a movement or lane group's V/C ratio to increase above 1.0; or

[12] Due to the impact of COVID-19, WMATA temporarily suspended the U*PASS Program for the fall 2020 semester.

- When the proposed project causes any deficient movement or lane group's V/C ratio to increase by 5 percent or more.

Summary of Recommendations

While this report has shown through the review of existing and future conditions and analysis of the future impacts of the 2021 Campus Plan that the proposed development will not have a detrimental impact on the surrounding transportation network, there are a number of recommendations that will continue to enable the AU to effectively minimize its impact and support the transportation network surround the university.

1. Continue to implement a robust Transportation Demand Management (TDM) program that reduces the demand of single-occupancy vehicles on campus by students and employees. The University continues to refine the program and over the past 10 years has increased the non-auto mode share to 85% for students and 56% for staff and faculty.
2. Continue to operate the AU Shuttle Service, which in 2018 had a ridership of 1.2 million. The shuttles connect all campus locations in addition to accessing the Tenleytown-AU Metrorail station.
3. Actively support DDOT in identifying and locating a Capital Bikeshare station in the vicinity of Fletcher Gate and pursue expansion of the two existing Bikeshare stations along Nebraska Avenue and Massachusetts Avenue NW.
4. Collaborate with DDOT, ANCs and other interested community stakeholders on the recommendations contained within DDOT studies including bicycle and multi-use facilities adjacent to American University property.
5. Engage in ongoing discussions with TNCs regarding dedicated Pick -Up/Drop-Off locations on campus and continue to collaborate with members of the community and DDOT to explore other locations and alternatives for PUDO solutions.
6. Continue to provide DDOT with an annual Transportation Performance Monitoring Plan Report detailing the transportation mode split of AU students and employees and the utilization of exclusive university-use parking facilities (Main Campus, Tenley Campus, and 4801 Massachusetts Avenue, NW) on a typical semester weekday.
7. Continue to implement the university's Good Neighbor Parking Policy regarding enforcement of student, faculty, staff, and vendor off-campus parking.
8. Maintain a parking inventory of no more than 3,000 spaces for university use inclusive of all 2021 Campus Plan locations. The university shall continually evaluate its pricing policies for parking with the intention of discouraging vehicle trips to campus without generating demand for off-campus parking by university-affiliated vehicles. Parking utilization analysis for all exclusive university-use facilities will be included in the annual Transportation Performance Monitoring Plan Report.
9. Remain committed to providing sustainable transportation options as part of AU's dedication to carbon neutrality. As a demonstration of this commitment, AU currently provides a total of 18 electric vehicle charging stations at locations on Main Campus and Tenley Campus.

10. Ensure that the development of potential new parking supply, as outlined in the proposed 2021 Campus Plan on development Sites 11/12 and Site 15, will be the subject of further review and analysis in connection with the further processing review process associated with each respective project.
11. Recommendation of any potential modifications to connections to the external roadways at Glover Gate and Fletcher Gate, such as turn restrictions or signal changes, following further analysis and review in connection with the further processing case for the associated enabling project.