Comprehensive Transportation Review

1348 4th Street NE

Washington, DC

November 23, 2021

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Executive Summary

The following report is a Comprehensive Transportation Review ("CTR") of the Planned Unit Development ("PUD") for the 1346-1348 4th Street NE development on behalf of UM 1348 4th Street NE, LLC and 1250 4th ST EDENS LLC (collectively, the "Applicant"). The report reviews the transportation aspects of the Consolidated PUD application (Zoning Commission Case No. 19-29) and Map Amendment (from the PDR-1 zone to the MU-9 zone) for the site located at Square 3587 and Lots 0003 and 0007 in the Union Market area in Northeast, Washington, DC (and referred to herein as collectively "1348 4th Street NE" or the "site").

The purpose of this CTR is to evaluate whether the 1348 4th Street NE development (the "Project") will generate a detrimental impact to the transportation network surrounding the site. This evaluation is based on a technical comparison of the existing conditions, background conditions, and total future conditions. This report concludes that **the Project will not have a detrimental impact** to the surrounding transportation network assuming that the proposed site design elements and TDM measures are implemented.

Proposed Project

The site is located at 1346-1348 4th Street NE and is bounded by New York Avenue NE and 4th Street NE to the north, 4th Street NE to the east, and private lots to the south and west. The proposed development program includes approximately 379 residential units (+/-10%), up to approximately 68,102 square feet of retail[1] (including space in the habitable penthouse), and up to 276 below-grade parking spaces (which may be reduced by as much as a full level of parking).

As part of the proposed development, enhancements to the Union Market Streetscape Guidelines for 4th Street NE will be made. These proposed improvements include the redesign of 4th Street NE as a shared, curbless street that will feature parklets, plantings, outdoor searing, and other streetscape elements for traffic calming and pedestrian comfort. The 4th Street NE redesign will provide several pedestrian amenities for a "Market Street" that features outdoor seating and traffic calming measures such as frequent mid-block parklets and 10-or 11-foot vehicular lanes, pending further study and DDOT approval. The Project will implement these enhancements along the site's 4th Street NE frontage.

Vehicular access to the below-grade garage for the 1348 4th Street building and loading access for the 1348 4th Street building will be via a private alley to the "rear" of the site accessible from Morse Street NE and Neal Place NE. For an interim period, vehicular access to the small surface parking lot for the 1346 4th Street building will be via existing curb cuts in front of the building on 4th Street NE, as is consistent with existing conditions. Following the interim period, the curb cuts will be closed. Loading activity for the 1346 4th Street building will occur via curbside loading, consistent with existing conditions.

The loading facilities for the 1348 4th Street building consist of two (2) 30-foot loading berths, one (1) 20-foot service/delivery space, and two (2) 100 square foot loading platforms. No separate loading facilities are provided or required for the 1346 4th Street NE building as. All truck turning maneuvers will occur within a private alley easement area at the rear of the building, allowing for head-in/head-out access to and from the public roadway network. The proposed loading facilities satisfy the zoning regulations.

The 1348 4th Street NE development will satisfy the ZR16 zoning requirements for bicycle parking by providing 305 long-term bicycle parking spaces, well in excess of the required number of spaces, and will meet the requirement of at least 40 short-term bicycle parking spaces. If the P3 level of the garage is constructed, the Project will provide 105 additional long-term bicycle parking spaces in the P3 level for a total of 410 long-term bicycle parking spaces. The 1348 4th Street NE development will supply the zoning-required long-term bicycle parking in secure locations within the P1 level of the below-grade parking garage and short-term bicycle parking along the perimeter of the site on 4th Street NE. The vehicular and bicycle parking will meet the practical needs of the development's residents, patrons, and employees.

[1] "Retail" includes Eating and Drinking, PDR/Maker Space, and General Retail

Multi-Modal Overview

Trip Generation

The Project is transit-, pedestrian-, and bicycle-oriented. The Project is expected to generate new trips on the surrounding transportation network across all modes during the morning, afternoon, and Saturday peak hours. However, the new trips generated by the Project will not have a detrimental impact on the transportation network because of the TDM plan that will be implemented as part of the redevelopment. The multi-modal trip generation for the proposed project is as follows:

- The AM peak hour trip generation is projected to include 67 vehicle trips per hour, 114 transit trips per hour, 39 bicycle trips per hour, and 47 walking trips per hour.
- The PM peak hour trip generation is projected to include 146 vehicle trips per hour, 239 transit trips per hour, 79 bicycle trips per hour, and 140 walking trips per hour.
- The Saturday peak hour trip generation is projected to include 162 vehicle trips per hour, 264 transit trips per hour, 88 bicycle trips per hour, and 161 walking trips per hour.

Transit

The site is well-served by transit. It is located approximately 0.5 miles from the NoMa-Gallaudet U Metro station and is served by multiple Metrobus routes. Most Metrobus stops serving the site are located along Florida Avenue NE.

Several planned or proposed transit projects will improve transit access to the site, including nearby Transit Priority Corridors proposed in *moveDC*, the District's long-range transportation plan, as well as plans for a second entrance to the NoMa-Gallaudet U Metro station on the east side of the tracks, which will decrease the distance to/from the Project to approximately 0.3 miles.

The Project is expected to generate a manageable amount of transit trips, and the existing service can accommodate these new trips.

Pedestrian

The site is surrounded by a well-connected pedestrian network. Overall, there is an excellent, well-connected pedestrian network surrounding the site despite some incidences of missing crosswalks or sidewalks that do not meet DDOT's width standards.

The Project will significantly improve the overall pedestrian experience by improving sidewalks along the perimeter of the site.

The Project is expected to generate a manageable number of pedestrian trips, and the existing pedestrian facilities can accommodate these new trips.

Bicycle

The site has access to several on- and off-street bicycle facilities. Several planned bicycle projects will improve bicycle access to the site, including a bicycle trail along New York Avenue NE, the extension of the Florida Avenue NE cycle track, bicycle improvements at the intersection of Florida and New York Avenues, and a cycle track along 6th Street NE will improve bicycle access to the site.

The Project is expected to generate a manageable amount of bicycle trips, and the existing bicycle facilities can accommodate these new trips.

The Project will include long-term bicycle parking within the parking garage and short-term bicycle parking along the perimeter of the site that meet or exceed zoning requirements. The Project will also redesign 4th Street NE as a shared street and implement those improvements along the perimeter of the site.

Vehicular

The site is accessible from principal arterials New York Avenue NE (U.S. Route 50) to the north and Florida Avenue NE to the south. The site is also served by minor arterial 6th Street NE/Brentwood Parkway and collector Penn Street NE. These roadways connect the site to I-395, DC-295, and the Baltimore-Washington Parkway, all of which provide access to the Capital Beltway (I-495), which surrounds Washington, DC and its inner suburbs in Virginia and Maryland, as well as providing connectivity to the District core.

In order to determine the project's impact on the transportation network, future conditions were analyzed with and without the Project based on the number of trips the Project is expected to generate under the development program. Intersection analyses were performed to obtain the average delay and queue a vehicle will experience. These average delays and queues were compared to the acceptable levels of delay set by DDOT standards as well as existing and background queues to determine whether the Project will negatively impact the study area.

Based on DDOT's outlined capacity impact thresholds, the analysis concludes two (2) intersections would require mitigation as a result of impacts to delay created by the additional volumes associated with the Project. Impacts at these intersections can be alleviated via signal timing adjustments that adjust to new volume patterns associated with the proposed development. Detailed descriptions of impact and capacity at all intersections that trigger DDOT's mitigation requirements are included in the Traffic Operations section of this report.

Safety

A qualitative review of study area intersections was performed to identify areas of concern due to vehicular, pedestrian, and bicycle interactions.

The analysis concluded that conditions at two (2) intersections pose significant safety concerns. These intersections are as follows:

New York Avenue & 4th Street NE

While this intersection is not considered a hazardous/high crash intersection by DDOT, this location carries a high level of vehicle traffic and pedestrian activity. Intersection geometry or operational changes are not recommended at this time as this intersection will be improved as part of Phase 2 of DDOT's New York Avenue NE Streetscape and Trail Project.

Florida Avenue & 6th Street NE

While this intersection is not considered a hazardous/high crash intersection by DDOT, this location carries a high level of vehicle traffic and pedestrian activity. Intersection geometry or operational changes are not recommended at this time as this intersection will be improved as part of DDOT's Florida Avenue Project.

Transportation Demand Management ("TDM") Plan

Per the DDOT CTR guidelines, the goal of TDM measures is to reduce the number of single occupancy vehicles and vehicle ownership within the District. The promotion of various programs and existing infrastructure includes maximizing the use of transit, bicycle, and pedestrian facilities. DDOT has outlined expectations for TDM measures in the CTR guidelines, and this Project has proposed a TDM plan based on these guidelines, which is set forth in Project Design chapter of this report.

Summary and Recommendations

This report concludes that the Project will not have a detrimental impact on the surrounding transportation network assuming the proposed site design elements and TDM measures are implemented.

The 1348 4th Street NE Project has several positive design elements that minimize potential transportation impacts, including:

- The Project's closure of existing curb cuts on the 1348 4th Street NE lot and future closure of curb cuts on the 1346 4th Street NE lot;
- The site's close proximity to transit, particularly the NoMa-Gallaudet University Metrorail station;
- The site's proximity to existing and proposed bicycle infrastructure;
- The Project's contribution of funds to study bicycle infrastructure improvements along Mt. Olivet Road;
- The site's location in a well-connected pedestrian network;
- The improvement of existing and creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements, improving the existing pedestrian environment;
- The inclusion of secure long-term bicycle parking that meets or exceeds zoning requirements;
- The installation of short-term bicycle parking spaces along the frontage of the site that meets or exceeds zoning requirements;
- The proposed redesign of 4th Street NE to improve landscaping and streetscaping adjacent to the site to include elements such as a curbless, shared street environment with "parklet flex zones" and "streetscape flex zones" that promote traffic calming, prioritize pedestrian comfort, and provide additional pedestrian amenities; and
- A TDM plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.

Introduction

This report is a CTR reviewing the transportation aspects of the Project. The site is shown in Figure 1 and Figure 2.

Purpose of Study

The purpose of this report is to:

1. Review the transportation elements of the Project and demonstrate that it 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 Project will influence the local transportation network. This report accomplishes this by identifying the potential trips generated by the Project on all major modes of travel and where these trips will be distributed on such network;
3. Determine whether the Project will lead to adverse impacts on the local transportation network.

Project Summary

The site is located in the northeast quadrant of Washington, DC and is bounded by New York Avenue and 4th Street NE to the north, 4th Street NE to the east, and private lots to the south and west. The site is currently occupied by two structures: 1346 4th Street NE, a single-story commercial building with surface parking, and 1348 4th Street NE, a single-story bank building with surface parking and a drive-through.

The 1348 4th Street NE project will redevelop the site to include two (2) mixed-use buildings with approximately 379 residential units (+/-10%), up to approximately 68,102 square feet of retail (including space in the habitable penthouse), and up to 276 below-grade vehicular parking spaces.

Contents of Study

This report contains nine (9) chapters as follows:

- Study Area Overview
  This chapter reviews the area near and adjacent to the Project and includes an overview of the site's transportation features.
- Project Design
  This chapter reviews the transportation components of the Project, including the site plan and access. This chapter also contains the proposed TDM plan for the Project.
- Travel Demand Assumptions
  This chapter outlines the travel demand of the Project. It summarizes the expected mode splits and multimodal trip generation of the Project.
- Traffic Operations
  This chapter provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This chapter highlights the vehicular impacts of the Project, including presenting mitigation measures for minimizing impacts as needed.
- Transit Facilities
  This chapter summarizes the existing and future transit service adjacent to the site, reviews how the Project's transit demand will be accommodated, outlines impacts, and presents recommendations as needed.
- Pedestrian Facilities
  This chapter summarizes existing and future pedestrian access to the site, reviews walking routes to and from the proposed Project, outlines impacts, and presents recommendations as needed.
- Bicycle Facilities
  This chapter summarizes existing and future bicycle access to the site, reviews the quality of cycling routes to and from the proposed Project, outlines impacts, and presents recommendations as needed.
- Safety Analysis
  This chapter summarizes the potential safety considerations around the Project. This includes a qualitative review of existing and proposed safety features surrounding the site.
- Summary and Conclusions
  This chapter presents overall report findings and conclusions and a summary of the recommended mitigation measures by mode.

Figure 1: Site Location

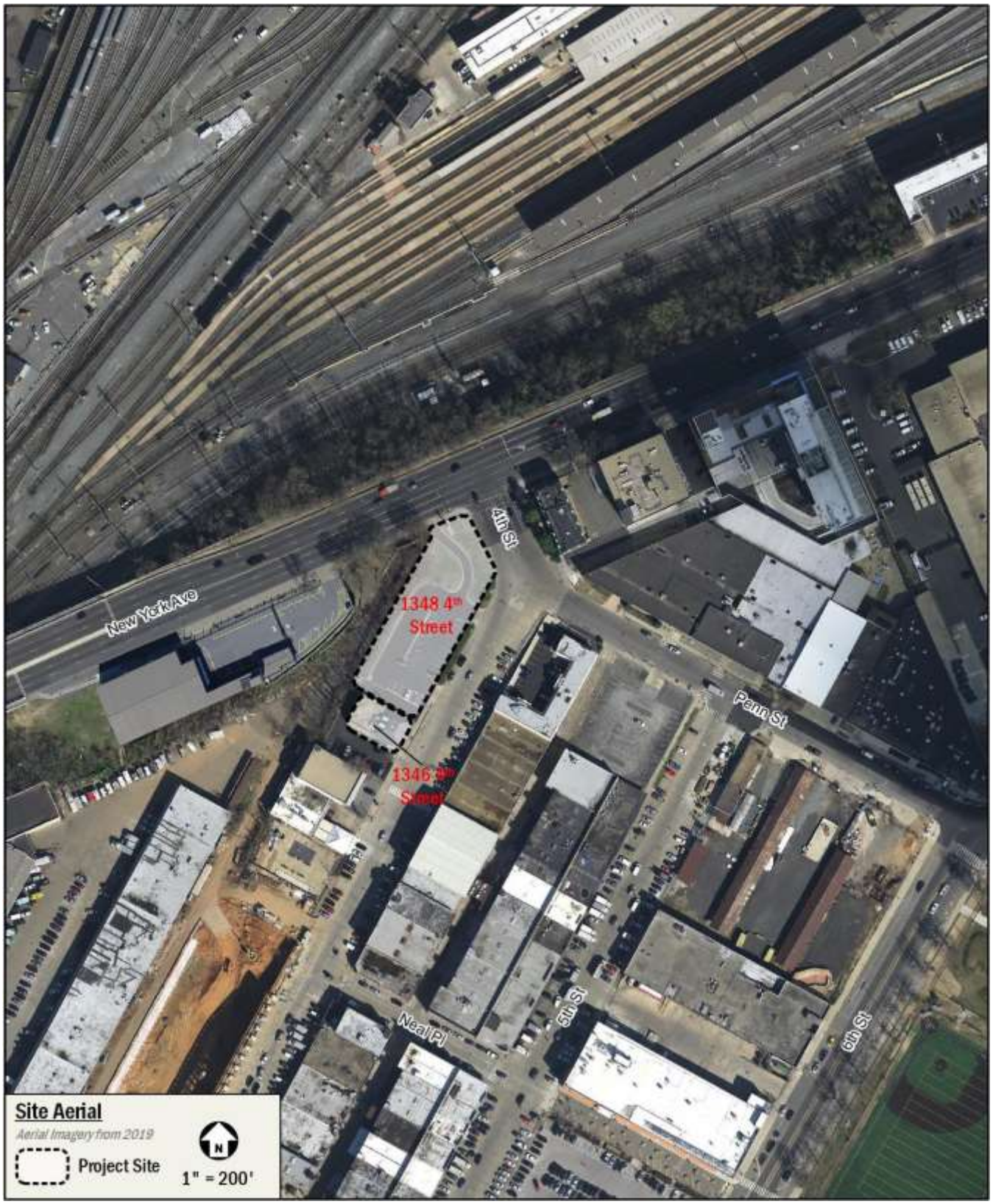

Figure 2: Site Aerial

Study Area Overview

This chapter reviews the study area and includes an overview of the site location, including a summary of the major transportation characteristics of the area and of future regional projects.

This chapter concludes:

- The site is surrounded by an extensive regional and local transportation system that will connect the residents, patrons, and employees of the proposed development to the rest of the District and surrounding areas.
- The site is served by public transportation with access to several local Metrobus routes and the NoMa-Gallaudet U Metrorail station.
- There is extensive bicycle infrastructure in the vicinity of the site, with connectivity to east-west and north-south bicycle facilities.
- Pedestrian conditions are generally good, particularly along major walking routes. Barriers exist north of the site due to Amtrak and WMATA tracks as well as to the east of Union Market due to Gallaudet University fencing.

Major Transportation Features

Overview of Regional Access

As shown in Figure 4, the site has ample access to regional, vehicular, and transit-based transportation options that connect the site to destinations within the District, Virginia, and Maryland.

The site is accessible from principal arterials such as New York Avenue NE (U.S. Route 50) to the north and Florida Avenue NE to the south. These roadways connect the site to I-395, DC-295, and the Baltimore-Washington Parkway, all of which provide access to the Capital Beltway (I-495), which surrounds Washington, DC and its inner suburbs in Virginia and Maryland, as well as providing connectivity to the District core. The principal arterials bring vehicular traffic within one half-mile of the site, at which point minor arterials, collectors, and local roads can be used to access the site directly.

The site is located 0.5 miles from the NoMa-Gallaudet U Metro station, which is served by the Red Line. The Red Line travels south from Shady Grove, MD through Bethesda, MD and the District core before turning back north at Union Station (south of the site) through Silver Spring, MD to Glenmont, MD. Connections can be made at the Metro Center and Gallery Place-Chinatown Metrorail stations to access the five (5) other Metrorail lines, allowing additional access to points in Virginia and Maryland.

Overall, the site has access to several regional roadways and transit options, making it convenient to travel between the site and destinations in the greater Washington metropolitan area.

Overview of Local Access

There are a variety of local transportation options near the site that serve vehicular, transit, walking, and bicycling trips. In addition to several principal arterials, the site is served by minor arterials, such as 6th Street NE/Brentwood Parkway NE, collectors, such as Penn Street NE, and, and an existing network of local roadways that provide access to the site.

The Metrobus system provides extensive transit service in the vicinity of the site, including connections to several neighborhoods within the District and additional Metrorail stations. As shown in Figure 5, there are three (3) Metrobus routes that serve the site. Within approximately a quarter-mile walk of the site as well as along the path to the NoMa-Gallaudet U Metrorail station and JO Wilson Elementary School, there are eight (8) bus stops. The routes serving these bus stops connect the site to areas of the District along Florida Avenue, 8th Street, and Benning Road NE. A detailed review of transit stops within approximately a quarter-mile walk of the site as well as along the path to the NoMa-Gallaudet U Metrorail station is provided in the Transit Facilities chapter of this report.

The site is in an area with several existing on-street bicycle facilities. Protected bicycle lanes are present along 6th Street/Brentwood Parkway, Florida Avenue, 4th Street, M Street, and 1st Street NE with connections to the Metropolitan Branch Trail which provides regional connections from Union Station to Silver Spring, MD. Standard bicycle lanes connect the site to neighborhood to the south such as Near Northeast, Stanton Park, and Capitol Hill. Using the available connections along the on-street and off-street routes within the study area, bicyclists have access to a number of regional and local bicycle facilities. To accommodate bicyclists, the Project will provide on-site bicycle facilities as discussed in detail in the Project Design chapter of this report. A detailed review of existing, planned, and proposed bicycle facilities and connectivity is provided in the Bicycle Facilities chapter of this report.

Anticipated pedestrian routes, such as those to public transportation stops, schools, and community amenities, are

served by adequate pedestrian facilities; however, there are a few blocks of street to the north and east of the site without sidewalks on one side of the street, and a portion of 4th Street NE adjacent to the site is missing a sidewalk. Barriers exist north of the site due to the Amtrak and WMATA tracks. However, there are safe and comfortable walking routes between the site and all nearby destinations. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later chapter of this report.

Overall, the site is surrounded by a robust local transportation network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Carsharing

Two (2) companies provide carsharing service in the District of Columbia: Free2Move and Zipcar. Both services are private companies that provide registered users access to a variety of automobiles. Free2Move operates a point-to-point model that allows customers to pick up a vehicle at a location and drop it off at any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in the defined "Home Area." Zipcar operates a reserved-space model where customers are required to borrow from and return vehicles to the same reserved carsharing space. Currently, there are no locations within approximately one quarter-mile walk; however, there are two (2) Zipcar locations within a half-mile of the site. These locations and the number of available vehicles are listed in Table 1.

Table 1: Zipcar Locations

Zipcar Location	Number of Vehicles	Walking Distance
1285 6th Street NE	2 Vehicles	0.3 miles (6 minutes)
1205 3rd Street NE	3 Vehicles	0.4 miles (8 minutes)
Total	**5 Vehicles**	**-**

Micromobility

As of November 2021, micromobility service in the District is provided by eight (8) private dockless companies operating electric-assist bicycles (e-bikes) and electric scooters (e-scooters). These include two (2) companies operating e-bikes (HelBiz and Jump) and six (6) companies operating e-scooters (Bird, Lime, Lyft, Razor, Skip, and Spin). These dockless vehicles are provided by private companies that give registered users access to a variety of e-bike and e-scooter options. These devices are used through a company-specific mobile phone application. Many dockless vehicles do not have designated stations where pick-up/drop-off activities occur ; rather, they are parked in public space, most commonly in the "furniture zone" or the portion of sidewalk between the walking path and the curb, often where other street signs, street furniture, trees, and parking meters are found. In addition to DDOT's program, dockless pilots and demonstration programs are underway in Arlington County, Fairfax County, the City of Fairfax, the City of Alexandria, and Montgomery County.

In January 2020, DDOT announced plans to install 100 off-sidewalk parking corrals throughout the District, with a number of installations complete to date. The parking corrals are installed in the no-parking or no-standing zones approaching intersections in an effort to increase intersection visibility and provide infrastructure to dockless vehicles that reduces sidewalk and crosswalk obstructions. The parking corrals provide a parking area for both shared bicycles and scooters and privately-owned bicycles and scooters. Starting October 1st 2021, District-permitted electric scooters and bicycles are required to lock to city infrastructure when parked throughout DC. In areas where no off-sidewalk parking corrals are available, those vehicles are required to be locked to bike racks, in-street bicycle and scooter corrals, parking signposts, or stop signs.

Additionally, DDOT is continuing a demonstration pilot for motor-driven cycles (mopeds) through December 31, 2021. Two (2) companies are permitted to participate in the shared moped demonstration pilot – Revel and Lime. Operated similarly to both dockless vehicle and carshare programs, registered users access company-specific mobile phone applications to rent privately-operated, shared mopeds. Users are required to wear helmets, and the mopeds must be driven and parked on the road, just like cars.

Walk & Bike Score

Walkscore.com is a website that provides scores and rankings for the walking, biking, and transit conditions within neighborhoods of the District. Based on this website, the site is located in the Trinidad-Langston neighborhood. The neighborhood has a walk score of 82 (or "Very Walkable"), a transit score of 59 (or "Good Transit"), and a bike score of 68 (or "Bikeable"). Figure 3 shows a heat map for walkability and bikeability in the vicinity of the site and the boundary of the Trinidad-Langston neighborhood. The following conclusions can be made based on the data obtained from Walkscore.com:

- The site is situated in an area with a “very walkable” walk score as most errands can be accomplished within walking distance;
- The site is situated in an area with “good” transit scores due to its proximity to frequent bus routes and Metrorail; and
- The site is situated in an area with “bikeable” bike scores due to its proximity to bike facilities and flat topography.

Overall, the site and surrounding neighborhood have pedestrian, transit, and bicycle accessibility. Additionally, other planned developments and roadway improvements will help increase pedestrian, transit, and bicycle accessibility in the neighborhood. The Project will directly improve the neighborhood and surrounding area’s walkability and bikeability by enhancing the pedestrian and bicycle network with new uses and services, improving sidewalk deficiencies along the perimeter of the site, and adding new short-term bicycle parking facilities.

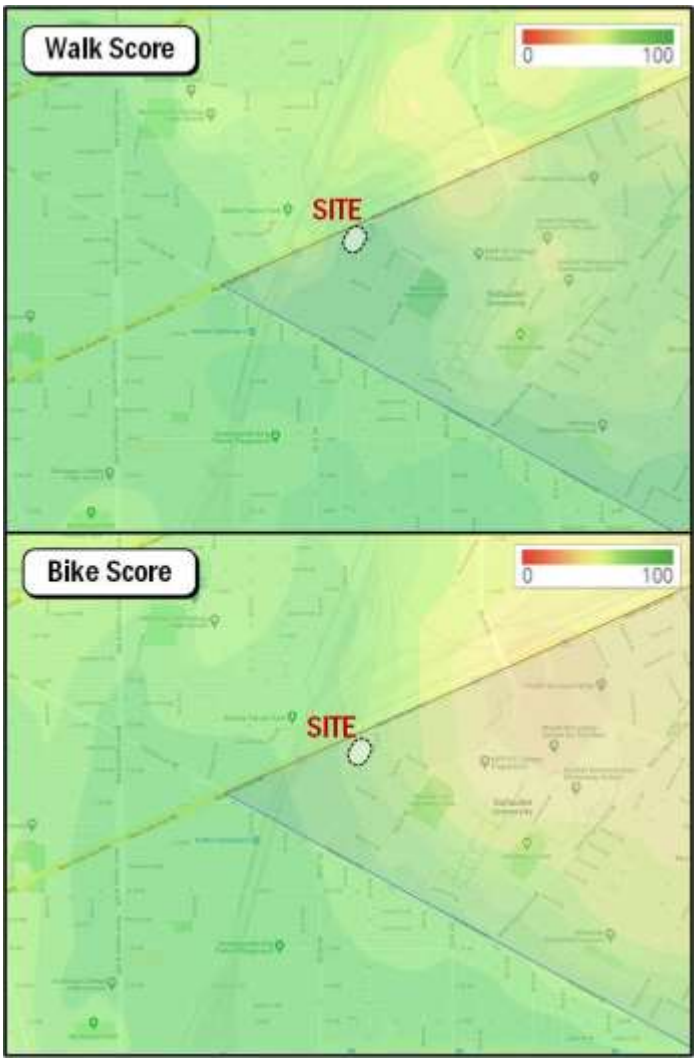

Figure 3: Summary of Site Walkscore and Bikescore

Future Projects

There are several District initiatives and approved developments located in the vicinity of the site. These planned projects are summarized below.

MoveDC

As the District of Columbia grows, so must the transportation system, specifically in a way that expands transportation choices while improving the reliability of all transportation modes. In order to meet this challenge and capitalize on future opportunities, DDOT maintains and regularly updates its long-range transportation plan, *moveDC*, to identify transit challenges and opportunities and to recommend investments.

The *moveDC* 2014 update outlined recommendations by mode with the goal of having them complete by 2040, including improvements to the District's transportation system such as:

- 70 miles of high-capacity transit (streetcar or bus);
- 200 miles of on-street bicycle facilities or trails;
- Sidewalks on at least one side of every street;
- New street connections;
- Road management/pricing in key corridors and the Central Employment Area;
- A new downtown Metrorail loop;
- Expanded commuter rail; and
- Water taxis.

As part of the ongoing *moveDC* 2021 update, DDOT has drafted mobility priority networks to show where investments in safety and mobility improvements will take place for specific modes of transportation. The Transit Priority Network highlights streets where infrastructure improvements such as dedicated transit lanes, better transit stops, and/or special intersection treatments for buses will be prioritized to improve transit travel times and reliability. The Bicycle Priority Network includes bicycle priority routes from the *moveDC* 2014 update and additions from recent planning and public engagement efforts. In direct relation to the proposed project, the draft Transit and Bicycle Priority Networks as of November 2021 include:

- Transit priority corridors along Florida Avenue and New York Avenue NE, covering a segment of two (2) existing major Metrobus routes near the site;
- Future planned on-street bicycle facilities without committed funding along 4th Street, Penn Street, Florida Avenue, Brentwood Parkway, Mount Olivet Road, M Street, K Street, 1st Street, and R Street NE; and
- A funded off-street trail along New York Avenue NE between Penn Street and 16th Street NE.

In direct relation to the proposed development, these recommendations would create additional multi-modal capacity and connectivity to the site.

DC Comprehensive Plan

The *DC Comprehensive Plan* is a high-level guiding document that sets a positive, long-term vision for the District through the lens of its physical growth and change. The existing Comprehensive Plan was enacted in 2006 and updated in 2011 and again in 2021 with the DC Council passing the updated plan in May 2021 and effectuating it in August 2021.

The Comprehensive Plan's Upper Northeast Planning Area, which includes the historic Union Market District and the site, contains the following policies which are supported by the proposed development:

- "*Policy UNE-1.1.2: Compatible Infill*. Encourage compatible residential infill development throughout Upper Northeast neighborhoods, especially in Brentwood, Ivy City, and Trinidad, where numerous scattered vacant residentially- zoned properties exist. New and rehabilitated housing in these areas should meet the needs of a diverse community that includes renters and owners; seniors, young adults, and families; and persons of low and very low-income, as well as those of moderate and higher incomes."
    - The Project supports this policy by constructing approximately 379 residential units on a parcel within the Upper Northeast Planning Area with no existing residential uses.
- "*Policy UNE-1.1.6: Neighborhood Shopping*. Improve neighborhood shopping areas throughout Upper Northeast. Continue to enhance 12th Street NE in Brookland as a walkable neighborhood shopping street and encourage similar pedestrian-oriented retail development along Rhode Island Avenue, Bladensburg Road, South Dakota Avenue, West Virginia Avenue, Florida Avenue, and Benning Road. New pedestrian-oriented retail activity should also be encouraged around the area's Metro stations."
    - The Project supports this policy by constructing new pedestrian-oriented, ground-floor commercial uses

near the Florida Avenue NE corridor and within a ½ mile of the NoMa-Gallaudet U Metrorail station.

- "*Policy UNE-1.1.8: Untapped Economic Development Potential*. Recognize the significant potential of the area's commercially and industrially zoned lands, particularly along the New York Avenue corridor, V Street NE, West Virginia Avenue, and Bladensburg Road, and around the Florida Avenue Market, to generate jobs, provide new shopping opportunities, enhance existing businesses, create new business ownership opportunities, and promote the vitality and economic well-being of the Upper Northeast community. The uses, height, and bulk permitted under the existing PDR zones are expected to remain for the foreseeable future."
    - The Project supports this policy by constructing a mix of residential and non-residential uses in the Union Market District which will generate new jobs and shopping opportunities and promote the general vitality and economic well-being of the Upper Northeast community.
- "*Policy UNE-1.2.1: Streetscape Improvements*. Improve the visual quality of streets in Upper Northeast, especially along North Capitol Street, Rhode Island Avenue, Bladensburg Road, New York Avenue, Eastern Avenue, Michigan Avenue, Maryland Avenue, Florida Avenue, West Virginia Avenue, and Benning Road. Landscaping, street tree planting, street lighting, and other improvements should make these streets more attractive community gateways."
    - The Project supports this policy by incorporating attractive landscaping, street tree planting, street lighting and other improvements such as curbless, shared street elements along 4th Street NE adjacent to the site to include "parklet flex zones" for parklets, outdoor dining, or on-street parking.
- "*Policy UNE-2.1.2: Florida Avenue Market [Union Market District]*. Redevelop the Florida Avenue Market [Union Market District] into a regional destination that may include residential, dining, entertainment, office, hotel, maker, and wholesale food uses. The wholesale market and the adjacent DC Farmers Market are historic amenities that should be preserved, upgraded, and more effectively marketed.
    - The Project supports this policy by constructing a mix of residential and retail spaces that enhance the surrounding area and contribute to the Union Market District's success as a regional destination.
- "*Policy UNE-2.1.4: Northeast Gateway Urban Design Improvements*. Improve the image and appearance of the Northeast Gateway area by creating landscaped gateways into the community, creating new parks and open spaces, upgrading key streets, and improving conditions for pedestrians along Florida Avenue and other neighborhood streets."
    - The Project supports this policy by enhancing the pedestrian network to be in compliance with DDOT and ADA standards along the perimeter of the site and implementing curbless, shared street elements along 4th Street NE adjacent to the site.

Vision Zero Action Plan

DDOT's *Vision Zero Action Plan* is the implementation strategy of DC's Vision Zero Initiative, which commits to reaching zero fatalities and serious injuries to travelers of DC's transportation system by the year 2025. The *Action Plan* is based on DC interagency workgroups, public input, local transportation data and crash statistics, and national and international best practices. Workgroups identified the guiding themes for the *Vision Zero Action Plan* and the goals of the DC government. The *Action Plan* focuses on the following themes:

- Create Safe Streets
- Protect Vulnerable Users
- Prevent Dangerous Driving
- Be Transparent and Responsive

Strategies within each theme assign lead and supporting agencies responsible for the planning and implementation of each program. The Plan also calls for partners external to District government to ensure accountability and aid in implementation.

The proposed development supports DC's overall Vision Zero goals by providing improved pedestrian facilities along the site's boundary, and redesigning 4th Street NE as a shared, curbless street that features traffic calming measures and narrow vehicular lanes. These project elements will create a safer environment for pedestrians and bicyclists by improving pedestrian comfort, increasing driver attention and reducing speeds.

Florida Avenue Project

Collectively referred to as the Florida Avenue Project, concurrent capital improvement projects are taking place near the site to address safety and operational improvements in two (2) distinct project study areas – the "Virtual Circle" or "Dave Thomas Circle"

at the intersection of Florida Avenue, New York Avenue, 1st Street, and Eckington Place NE and the Florida Avenue corridor between 2nd Street and H Street NE. The latter of these project study areas is relevant to the proposed development and is detailed below.

As part of the planning phase for the implementation of safety and operational improvements along Florida Avenue, DDOT published the Florida Avenue Multimodal Transportation Study in 2015. The study identified the following nine (9) needs to be addressed:

- History of auto and non-auto related crashes;
- High automobile speeds;
- Lack of ADA-compliant pedestrian facilities;
- Maintaining automobile access, particularly for corridor-wide trips and trucks;
- Meeting specialized needs of large deaf population due to the corridor's proximity to Gallaudet University;
- Lack of bicycle facilities within the study area;
- Need for safe access to transit;
- Florida Market access and mobility needs; and
- Resident requests for supporting multimodal access.

These identified project needs have informed both interim safety improvements and the final design that is currently undergoing construction. In Summer 2019, DDOT repurposed an existing travel lane in each direction of Florida Avenue between 3rd Street and West Virginia Avenue NE to accommodate the construction of two-way protected bicycle lanes on the south side of the roadway. This had the additional effect of reducing pedestrian crossing distances across Florida Avenue NE. Near the site, the final design includes:

- Two (2) thru lanes in each direction with dedicated left turn lanes and protected bicycle lanes along Florida Avenue from 4th Street to 6th Street NE; and
- The permanent conversion of 6th Street between K Street and Florida Avenue NE to northbound-only.

In direction relation to the proposed development, the Florida Avenue Project will enhance east-west bicycle connectivity, reduce vehicle conflicts, and improve pedestrian and bicycle safety in the vicinity of the site.

Florida Avenue Market Small Area Plan

The Florida Avenue Market Small Area Plan, adopted in 2009, outlines a framework for the strategic redevelopment of the Union Market District (sometimes called the "Florida Avenue Market" in the Small Area Plan) area into a vibrant, mixed-use neighborhood that retains the look and feel of historic retail markets. The Small Area Plan also recommends transportation and public space solutions including traffic calming measures, a more dynamic and pedestrian-friendly streetscape, and ground floors that provide retail uses in order to facilitate access to the market and integrate it with the surrounding neighborhood.

The proposed development is consistent with the Small Area Plan by redeveloping an existing bank and parking lot into a mixed-use development with ground-floor retail and providing improved pedestrian and bicycles facilities. The proposed development will redesign 4th Street NE into a shared, curbless street that will fill a gap in the pedestrian and bicycle network of the neighborhood and enhance the safety and attractiveness of the neighborhood. The proposed development will implement these enhancements along the proposed development's frontage.

New York Avenue Streetscape and Trail Project

The New York Avenue Streetscape and Trail Project identified opportunities for multimodal and streetscape improvements to the six-lane, vehicular-oriented stretch of New York Avenue between Bladensburg Road and Florida Avenue NE. The study recommended a two-way cycle track on the north side of New York Avenue, which would provide a continuous bicycle route between the Metropolitan Branch Trail and the National Arboretum, improved sidewalks, new LED lighting, and additional landscaping.

In direct relation to the proposed development, the New York Avenue Streetscape and Trail Project will add new bicycle facilities across the street from the site that will provide additional bicycle connectivity to the east and west. In addition, the New York Avenue Streetscape and Trail Project will improve pedestrian facilities near the site and will provide additional landscape to enhance the safety and attractiveness of the area.

Union Market Streetscape Design Guidelines

The Union Market Streetscape Guidelines focus on maintaining a coordinated design for the streets of Union Market as it transitions from a historical industrial distribution center to a more pedestrian-oriented, mixed-use neighborhood. The

guidelines include specifications for paving materials, street tree placement, and lighting that will retain the area's distinct industrial character while enhancing and unifying the streetscape. Flexibility is built into the guidelines to allow new projects to incorporate sidewalk cafes, vending, small parks, and public art. Moreover, the guidelines seek to create a transportation network that accommodates all users and provides a safe and comfortable experience for pedestrians, bicyclists, and vehicles alike.

As part of the proposed development, enhancements to the Union Market Streetscape Guidelines for 4th Street NE will be made. These proposed improvements include the redesign as a curbless shared street which will further enhance the pedestrian network. The Project will implement these enhancements along the site's frontage, including improved sidewalks, street trees, and outdoor seating and dining areas, creating an interesting and safe pedestrian experience with green features.

DDOT Bike Parking Guide

The District of Columbia aims to increase bicycling and walking to 25 percent of all commuter trips by 2032. The DDOT Bike Parking Guide is a resource for residents, businesses, and developers to learn about bicycle parking in the District. In particular, the guide provides information on zoning requirements for bicycle parking, bicycle rack design, and other amenities relevant to new development projects.

The bicycle amenities included as part of the proposed development are consistent with the guidelines outlined in the DDOT Bike Parking Guide.

New Entrance at NoMa-Gallaudet Metrorail Station

In 2019, DC Council approved a plan to build a new entrance to the NoMa-Gallaudet Metrorail station by constructing a pedestrian tunnel underneath the railroad tracks. The tunnel would provide access to the station from the east side of the tracks and create a physical connection between the two sides of the neighborhood. As of October 2021, no funding has been committed to the project, and there is no anticipated date for construction to begin.

Planned Developments

There are 11 potential development projects in the vicinity of the site. For the purpose of this analysis and consistent with DDOT and industry standards, only approved developments expected to be completed prior to the planned development with an origin/destination within the study should be included. All projects were ultimately included given the proximity of the developments from the site and site generated volumes of the planned developments impacting the study area intersections. The developments are described below.

500 Penn Street NE

This development was analyzed using the approved *500 Penn Street, NE* CTR prepared by Wells + Associates. The CTR analyzed a development program of 302 residential units, and 23,660 SF of retail. The CTR found that the building will generate 122 peak hour trips in the morning and 251 peak hour trips in the afternoon.

301 Florida Avenue NE

This development was analyzed using the approved *301 Florida Avenue NE* CTR prepared by Gorove Slade. The CTR analyzed a development program of 56 residential units, 4,500 SF of ground floor retail, and 6,100 SF of cellar floor retail. The CTR found that the building will generate 18 peak hour trips in the morning and 19 peak hour trips in the afternoon.

400 Florida Avenue NE

This development was analyzed using the approved *400 Florida Avenue NE PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 110 residential units and 164 hotel rooms. The CTR found that the building will generate 61 peak hour trips in the morning and 73 peak hour trips in the afternoon.

Market Terminal Redevelopment

This development consists of six buildings:

Market Terminal Building A

Building A was analyzed in two parts, as Buildings A1 and A2. These buildings were analyzed using the approved *300 Morse Street PUD* CTR prepared by Gorove Slade for the following program:

- Building A1: 442 residential units, 15,835 SF of retail
- Building A2: 307 residential units, 7,500 SF of retail
- Total (A1 and A2): 749 residential units, 23,335 SF of retail

The CTR found that the overall Building A will generate 155 peak hour trips in the morning and 214 peak hour trips in the afternoon.

The building's development program slightly decreased in its Second-Stage application (ZC Case 15-27A) in (711 residential units and 22,110 SF of retail), with a slight reduction in peak hour trips (9 fewer in the morning and 18 fewer in the afternoon). A revised vehicular analysis was not required for the Second-Stage application and background trips from this development represent a conservative approach.

Market Terminal Building B

Building B was analyzed using the approved *300 Morse Street PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 100 residential units and 9,550 SF of retail. The CTR found that the building will generate 26 peak hour trips in the morning and 42 peak hour trips in the afternoon.

Market Terminal Building C-1

Building C-1 was analyzed using the approved *300 Morse Street PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 217,558 sf of office and 10,563 sf of retail. The CTR found that the building will generate 128 peak hour trips in the morning and 125 peak hour trips in the afternoon.

Market Terminal Building C-2

Building C-2 was analyzed using the approved *Market Terminal Building C2 Second-Stage PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 226,103 sf of office space (up to 7,049 sf of which may be allocated as a bar/restaurant use) and 5,827 sf of retail. The CTR found that the building will generate 85 peak hour trips in the morning and 95 peak hour trips in the afternoon.

Market Terminal Building D

Building D was analyzed using the approved *300 Morse Street PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 143 residential units and 6,000 SF of retail. The CTR found that the building will generate 31 peak hour trips in the morning and 45 peak hour trips in the afternoon.

300 M Street NE

This development was analyzed using the approved *300M PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 441 residential units and 12,900 SF of retail. The CTR found that the building will generate 116 peak hour trips in the morning and 154 peak hour trips in the afternoon.

Press House at Union District

This development is located at 301 N Street and was analyzed using the approved *301-331 N Street NE PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 366 residential units, 25,407 SF of office, 175 hotel rooms, and 26,029 SF of retail. The CTR found that the building will generate 143 peak hour trips in the morning and 180 peak hour trips in the afternoon.

Central Armature Works

Central Armature Works is located at 1200 3rd Street NE and was analyzed using the approved *Central Armature Works PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 631 residential units, 27,200 sf of retail, and 196 hotel rooms. The CTR found that the building will generate 166 peak hour trips in the morning and 223 peak hour trips in the afternoon.

This project will also accommodate the proposed pedestrian tunnel underneath Amtrak railroad tracks from the NoMa-Gallaudet U Metrorail station east toward Florida Avenue NE to better connect Union Market to Metrorail. As of October 2021, funding has yet to be committed for the tunnel's construction.

Union Market North

Union Market North is part of the larger Union Market PUD and is located at 1329 5th Street NE. The project was analyzed using the *1329 5th Street, NE Second-Stage PUD EISF* TIS prepared by Gorove Slade. The TIS analyzed a development program of 300 residential units and 23,053 sf of retail. The CTR found that the building will generate 77 peak hour trips in the morning and 141 peak hour trips in the afternoon.

Union Market South

Union Market South is part of the larger Union Market PUD and is located at 1309 5th Street NE. The project was analyzed using the approved *1309-1329 5th Street PUD* CTR prepared by Gorove Slade. The CTR analyzed a development program of 112,000 sf of office and a 1,290-seat movie theater. The CTR found that the building will generate 105 peak hour trips in the morning and 190 peak hour trips in the afternoon.

JBG Smith/Gallaudet Project

This development consists of several parcels owned by Gallaudet University along 6th Street between Florida Avenue and Penn Street. The project was analyzed using the *Gallaudet 6th Street Development Second Stage PUD* CTR prepared by

Gorove Slade and currently under review by DDOT. The CTR analyzed the following development program:

- Parcel 2: 246 residential units, 17,487 SF of university support space, and 22,072 SF of retail
- Parcel 3: 597 residential units, 38,149 SF of retail

Together, the CTR found that the PUD will generate 96 peak hour trips in the morning and 208 peak hour trips in the afternoon. Only Parcels 2 and 3 are expected to be open at the time of the Project's opening.

411 New York Avenue NE

This development was analyzed using the approved *411 New York Avenue TIA* prepared by O.R. George & Associates. The TIA analyzed a development program of 178 hotel rooms. The CTR found that the building will generate 46 peak hour trips in the morning and 52 peak hour trips in the afternoon.

Figure 6 shows the location of the developments considered in relation to the proposed project.

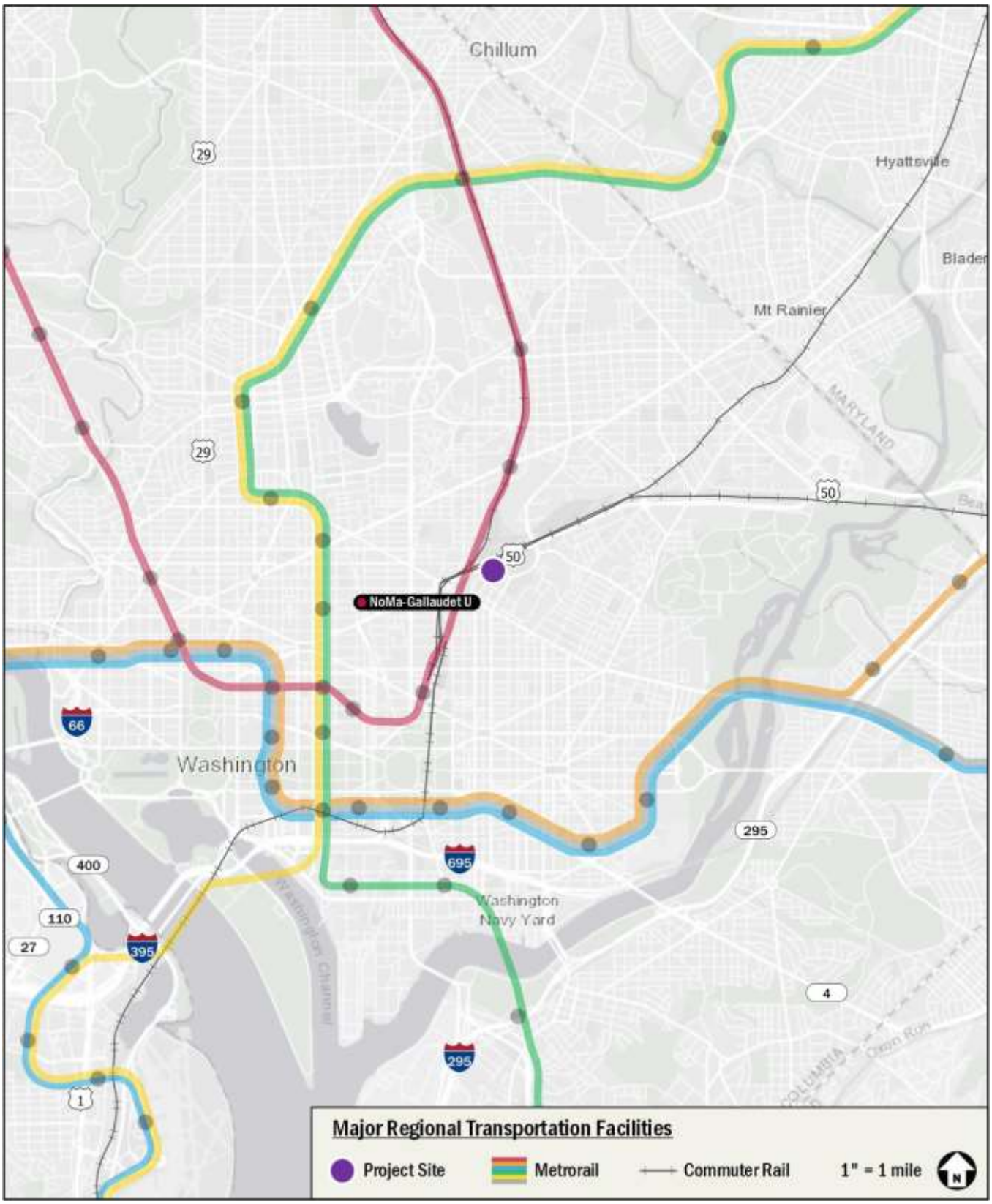

Figure 4: Project Location and Regional Transportation Facilities

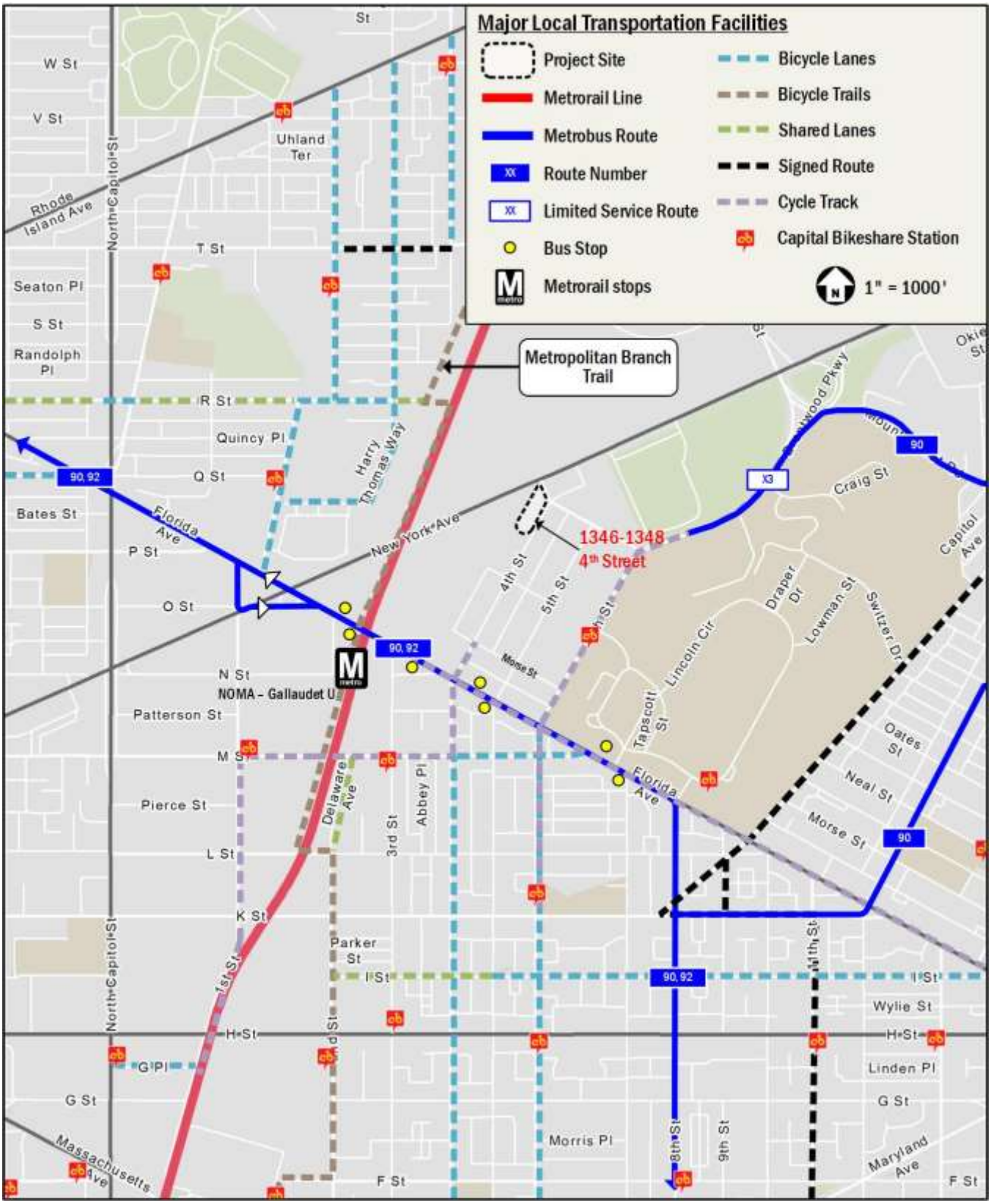

Figure 5: Major Local Transportation Facilities

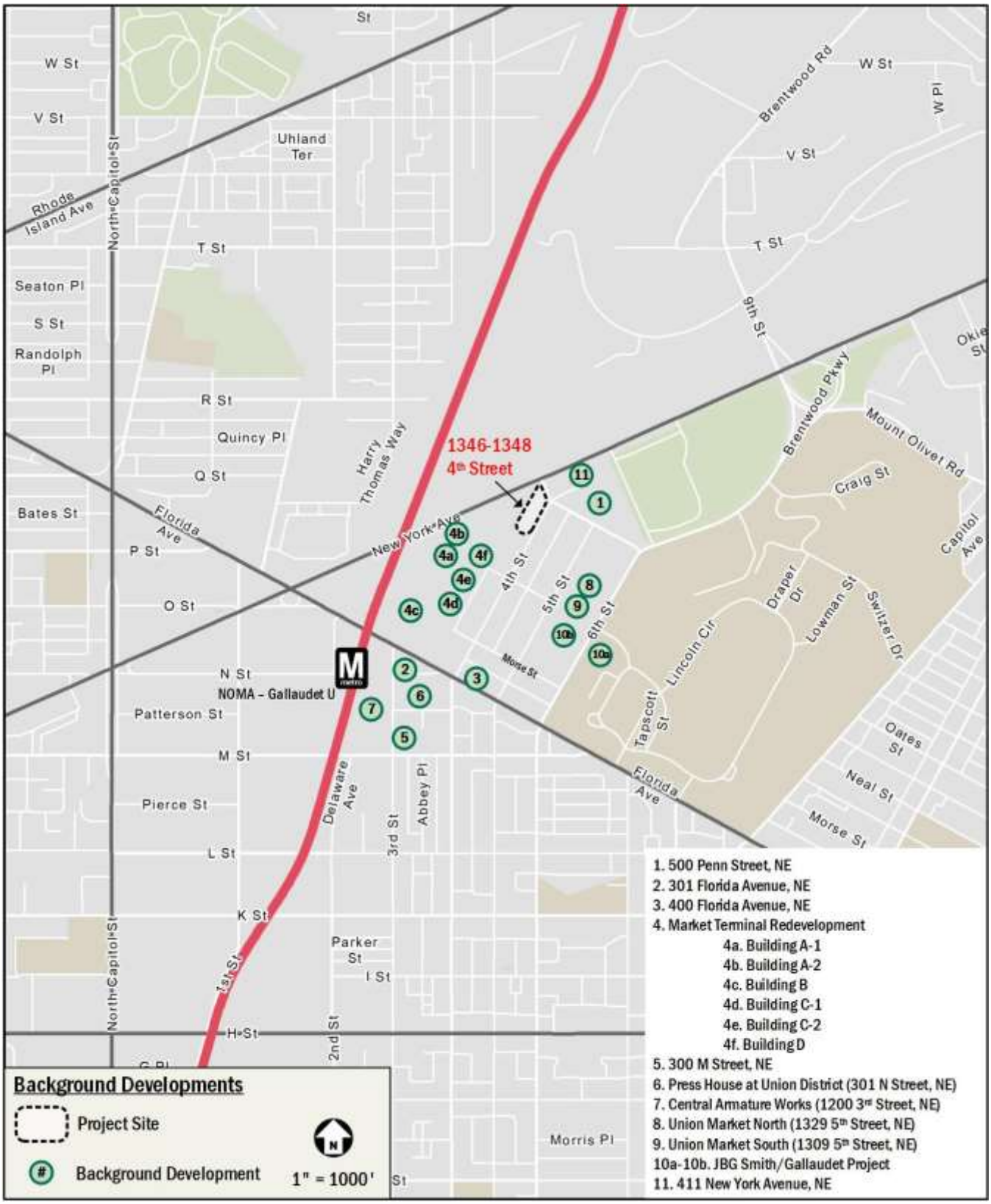

Figure 6: Background Developments

Project Design

This chapter reviews the transportation components of the Project, including the proposed site plan and access points. It includes descriptions of the Project's vehicular access, loading, parking, bicycle and pedestrian facilities, and TDM plan.

Figure 7 shows the site plan and overview of the development program.

4th Street NE Redesign

As part of the Project, enhancements to the Union Market Streetscape Guidelines for 4th Street NE will be made for the portion of 4th Street NE between Penn Street and Morse Street NE. These proposed improvements include the closure of multiple existing curb cuts and redesign as a curbless, shared street. The 90-foot right-of-way will be repurposed with the following: two (2) 10-foot travel lanes; two (2) 9-foot "parklet flex zones" for parklets, outdoor dining, or on-street parking[2]; 16 feet (seven (7) feet on the west side and nine (9) feet on the east side) of "streetscape flex zone" for pedestrian amenities such as retail display, outdoor dining, public art, and plantings; and 36 feet (19 feet on the west side and 17 feet on the east side) of sidewalk. The parklets will provide amenities for pedestrians while slowing vehicular traffic, greatly improving pedestrian comfort and the attractiveness of the streetscape. The proposed development will implement these enhancements along the proposed development's frontage, as shown in Figure 8.

The design of this new shared street will create an inviting and pleasant streetscape for users of all modes of transportation. This street will also provide a safe and comfortable bicycle connection between the existing cycle tracks on 4th Street and Florida Avenue NE and the planned New York Avenue trail.

A conceptual plan for 4th Street NE is shown in Figure 8.

Site Access and Circulation

Pedestrian Access

Primary pedestrian access to both the residential and retail portions of the site will consist of entrances along 4th Street NE.

Pedestrian access to the site is shown in Figure 7.

Bicycle Access

Bicycle access to the site will be primarily from 4th Street NE where midblock parklets and narrow vehicular lanes will be present, creating a comfortable cycling environment along 4th Street NE. Access to the secure bicycle storage rooms within the P1 level of the garage will be from an existing private alley accessible from Morse Street and Neal Place NE. Figure 10 shows the location of the secure bicycle storage rooms in the P1 level of the garage.

Vehicular and Loading Access

1346 4th Street NE

For an interim period, vehicular access to the small surface parking lot for the 1346 4th Street building will be via existing curb cuts in front of the building on 4th Street NE, as is consistent with existing conditions. The curb cuts will be closed following the interim period. During the interim period, loading activity for the 1346 4th Street building will occur via curbside loading, consistent with existing conditions. After the interim condition the 1346 4th Street building will be serviced via the alley.

1348 4th Street NE

Vehicular access to the below-grade garage for the 1348 4th Street building and loading access for the 1348 4th Street building will be via a private alley accessible from Morse Street NE and Neal Place NE. Pick-up and drop-off activity is expected to take place on 4th Street NE, adjacent to the residential entrance.

Truck routing to and from the site will be focused on designated primary truck routes, such as New York Avenue NE and Florida Avenue NE. Figure 7 shows the location of the site access points for parking garage access and loading facilities.

Curbside Management

Existing curbside uses directly adjacent to the site and within approximately two (2) blocks of the site were reviewed as shown in Figure 12. A number of improvements to the curbside management are expected in the future. Figure 13 shows the

[2] Travel lane width is subject to change. In final conditions, travel lanes will be 10 or 11 feet wide, and "parklet flex zones" will be 8 or 9 feet wide.

proposed curbside management, to include the following improvements:

- These existing parking designations will change slightly with the buildout of the 1348 4th Street NE development and several projects currently under construction in the area. The changes to parking designations in the curbside area adjacent to the site include time-restricted parking proposed along 4th Street NE.
- As part of the proposed development, five (5) existing curb cuts will be removed along the perimeter of the site: four (4) on 4th Street and one (1) on New York Avenue. The closure of these curb cuts allows for approximately four (4) additional new curbside parking space along 4th Street NE.
- Curb segments along 4th Street NE will include parklets as part of the Union Market Streetscape Guidelines.
- Curb segments along Neal Place NE and Union Street NE that are currently inaccessible due to construction will be designated for unrestricted parking or time-restricted parking in the future.

The project is expected to generate demand for loading/unloading vehicles, for example Ubers, Lyfts, taxis, food deliveries, and other similar services. As such, the project is recommending that DDOT designate a loading/unloading zone on 4th Street adjacent to the Project. The Applicant plans to request that a minimum of two (2) spaces be designated as loading/unloading to help accommodate that activity. The designation of these spaces will be determined with DDOT during the Public Space process.

Loading and Trash

Loading

The Project's enclosed loading facilities will accommodate all move-ins/move-outs and delivery demand for residential and retail uses without any detrimental impact to the surrounding network.

DDOT standards stipulate that truck movements for a development should be accommodated without back-in movements through public space. The Project has been designed to accommodate all loading activity and associated backing maneuvers within the existing private alley. As a result, any backing maneuvers will take place in private space, and all truck movements to and from public space will be head-in/head-out. Truck turning maneuvers into and out of the loading area using AutoTURN are provided in Figure 14 through Figure 18, as well as in the Technical Attachments.

The Project will provide two (2) 30-foot loading berths, one (1) 20-foot service/delivery space, and two (2) 100 square foot loading platforms. Per the Zoning Regulations, the Project is required to provide two (2) loading berths and two (2) delivery spaces. In compliance with Subtitle C § 901.8 the Project's separate uses will share loading. Separate loading facilities are not required for the 1346 4th Street building. During interim conditions any loading activity for that portion of the Project will occur via curbside loading, consistent with existing conditions. After the interim condition the 1346 4th Street building will be serviced via the alley.

The Project is expected to generate up to 14 total loading trips per day. Table 2 summarizes the site's anticipated loading activity based on similar projects analyzed by Gorove Slade and truck trip generation methodology outlined in the supplement to the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition.

Table 2: Site Daily Loading Activity

Land Use/Truck Generator	Loading Trips
Residential	2
Retail[1]	5
General	7
Total	**14**

[1] "Retail" includes Eating and Drinking, PDR/Maker Space, and general Retail.

The daily loading trip generation and assumptions for each use include the following:

- Residential: Two (2) residential loading trips, calculated based on an average unit turnover of 18 months;
- Retail: Three (3) deliveries each for the large users in the 1348 4th Street building, and two (2) deliveries for the smaller user(s) in the 1346 4th Street building;
- General: Seven (7) general deliveries consisting of trash removal, mail, and parcel delivery for the entire Project.

Based on the expected truck deliveries, the loading facilities for the Project are adequate and vehicles accessing the loading facilities will not adversely affect the local roadway network.

Trash

Trash for the Project will be accommodated using trash receptacles within the loading area accessible from the private easement at the rear of the building. No trash will be stored in public space.

Parking

Based on current District zoning requirements, the Project is required to provide approximately 138 vehicular parking spaces for residential use, and approximately 91 vehicular parking spaces for retail use. The Project will supply a total of up to approximately 276 spaces within the below-grade garage, meeting zoning requirements, as shown in Table 3.

Electric Vehicle (EV) Parking

Section 1.6 of the DDOT CTR guidelines recommends that one (1) out of every 50 spaces be served by an EV charging station. Consistent with DDOT guidance, the Applicant proposes providing a total of five (5) electric vehicle spaces within the below-grade garage.

Electric Vehicle Readiness Amendment Act of 2020

Per the Electric Vehicle Readiness Amendment Act of 2020, for building permits issues after January 1, 2022, all new construction or substantial improvement of commercial buildings and multi-unit buildings that have three (3) or more automobile off-road parking spaces are required to include EV make-ready infrastructure to accommodate the future installation of EV charging for at least 20% of parking spaces.

As of November 2021, the law has not gone into effect because it has not been funded. The Applicant is aware that this requirement may go into effect prior to pulling their building permits.

Table 3: Vehicle Parking Zoning Requirements and DDOT Preferred Parking Rates

Land Use	Size	Zoning Requirement	Minimum Required	DDOT Preferred Parking Rate *	DDOT Preferred Parking Spaces	Proposed Parking
Residential	417 du	1.00 space/3 du	138	0.35 spaces/du	146	
Retail**	68,102 sf	1.33 spaces/ksf	91	1.25 spaces/ksf	85	
Total			**229**		**231**	**276*** **

* Preferred vehicle parking rates for developments located less than ¼ mile from Priority Transit
** “Retail” includes Eating and Drinking, PDR/Maker Space, and General Retail
*** includes 98 potential vehicle parking spaces in the P3 level

Bicycle and Pedestrian Facilities

Bicycle Facilities

The Project satisfies the Zoning Regulations' long-term and short-term bicycle parking requirements.

Per the Zoning Regulations, the Project is required to provide the following bicycle facilities for the residential and retail ("retail" includes Eating and Drinking, PDR/Maker Space, and General Retail) uses:

- Long-Term Bicycle Parking Spaces (102 required)
  - Residential: One (1) space for every three (3) residential units, applied at 50% after the first 50 spaces; 95 spaces are required.
  - Retail: One (1) space for each 10,000 square feet; seven (7) are required.
- Short-Term Bicycle Parking Spaces (40 required)
  - Residential: One (1) space for every 20 residential units; 21 spaces are required.
  - Retail: One (1) space for each 3,500 square feet; 19 spaces are required.
- Showers and Lockers (four (4) showers and four (4) lockers required)
  - Residential: None required.
  - Retail: Two (2) showers required for uses that occupy more than 25,000 square feet, and an additional two (2) showers required for every 50,000 square feet of gross floor area above the first 25,000 square feet; four (4) showers are required. Number of lockers required is six-tenths (0.6) times the minimum number of required long-term bicycle parking spaces; four (4) lockers are required.

The Project will meet and exceed requirements by providing 305 long-term bicycle parking spaces within the below-grade garage, and at least 40 short-term bicycle parking spaces along the perimeter of the site on 4th Street NE. If the P3 level of vehicle parking is constructed, the Project will provide 105 additional long-term bicycle parking spaces in the P3 level for a total of 410 long-term bicycle parking spaces. The development will include four (4) showers and four (4) lockers available to employees, meeting zoning requirements.

Pedestrian Facilities

As part of the Project, pedestrian facilities around the perimeter of the site will be improved to meet DDOT and ADA standards.

New sidewalks will be installed around the perimeter of the site that will meet or exceed the width requirements, as well as curb ramps with detectable warnings and crosswalks, as needed. Additionally, as part of the proposed 4th Street NE redesign, landscaping and streetscaping along the site's frontage will be improved to include elements such as a curbless, shared street environment with "parklet flex zones" and "streetscape flex zones" that promote traffic calming, prioritize pedestrian comfort, and provide additional pedestrian amenities, consistent with the Union Market Streetscape Guidelines.

Transportation Demand Management

TDM is the application of policies and strategies used to reduce travel demand or to redistribute demand to other times or spaces. TDM elements typically focus on reducing the demand of single-occupancy, private vehicles during peak period travel times or on shifting single-occupancy vehicular demand to off-peak periods.

The TDM plan for the Project is based on DDOT expectations for TDM programs for developments of this type and size. As such, the applicant proposes the following TDM measures for the entire development and the uses onsite:

Site-Wide TDM Plan

- Identify Transportation Coordinators for the planning, construction, and operations phases of development. The Transportation Coordinators will act as points of contact with DDOT, goDCgo, and Zoning Enforcement.
- Provide Transportation Coordinators' contact information to goDCgo, conduct an annual commuter survey of employees on-site, and report TDM activities and data collection efforts to goDCgo once per year.
- Transportation Coordinators will develop, distribute, and market various transportation alternatives and options to the residents, including promoting transportation events (i.e., Bike to Work Day, National Walking Day, Car Free Day) on property website and in any internal building newsletters or communications.
- Transportation Coordinators will receive TDM training from goDCgo to learn about the TDM conditions for this project and available options for implementing the TDM Plan.
- Transportation Coordinators will subscribe to applicable goDCgo newsletter(s).

- Provide a free SmarTrip card and a complimentary Capital Bikeshare coupon good for one ride to every new resident and employee.
- Provide residents and employees who wish to carpool with detailed carpooling information and will be referred to other carpool matching services sponsored by the Metropolitan Washington Council of Governments (MWCOG) or other comparable service if MWCOG does not offer this in the future.
- Refrain from leasing unused parking spaces to anyone aside from users of the Project, except that parking spaces within the Project may be leased to users of other buildings (1) for which no parking is provided; and/or (2) within the Union Market District
- Exceed or satisfy zoning bicycle parking requirements by providing at least 40 short-term spaces (40 required) and 305 long-term spaces (102 required). Long-term bicycle space will be provided free of charge to residents and retail employees. If the P3 level of the garage is constructed, the Project will provide 105 additional long-term bicycle parking spaces in the P3 level for a total of 410 long-term bicycle parking spaces.
- Electrical outlets will be provided within each long-term bicycle storage room for the charging of electric bikes.
- Provide a bicycle repair station in the long-term bicycle parking storage room.
- Post all TDM commitments on website, publicize availability, and allow the public to see what commitments have been promised.
- Following the issuance of a certificate of occupancy for the Project, the Project's Transportation Coordinator shall submit to the Office of Zoning for inclusion in the IZIS case record of the case documentation summarizing compliance with the transportation and following TDM conditions of this Order.
- Five years after the issuance of the final certificate of occupancy for the Project, if the Transportation Coordinator has not established a relationship with DDOT or goDCgo, the Transportation Coordinator will submit a letter to the Zoning Administrator, DDOT, and goDCgo summarizing continued substantial compliance with the transportation and following TDM conditions in the Order, unless no longer applicable as confirmed by DDOT; provided, that if such letter is not submitted on a timely basis, the Applicant shall have sixty (60) days from date of notice from the Zoning Administrator, DDOT, or goDCgo to prepare and submit such letter.

Residential TDM Plan

- Unbundle the cost of vehicle parking from the lease or purchase agreement for each residential unit and charge a minimum rate based on the average market rate within a quarter mile of the site.
- Provide welcome packets to all new residents that should, at a minimum, include the Metrorail pocket guide, brochures of local bus lines (Circulator and Metrobus), carpool and vanpool information, CaBi coupon or rack card, Guaranteed Ride Home (GRH) brochure, and the most recent DC Bike Map. Brochures can be ordered from DDOT's goDCgo program by emailing info@godcgo.com.
- Install a Transportation Information Center Display (electronic screen) within the residential lobby containing information related to local transportation alternatives. At a minimum, the display should include information about nearby Metrorail stations and schedules, Metrobus stops and schedules, car- sharing locations, and nearby Capital Bikeshare locations indicating the availability of bicycles.
- Provide an annual CaBi membership to each resident for the first year after the building opens.
- Provide one (1) collapsible shopping cart (utility cart) for every 50 residential units, for a total of eight (8) to encourage residents to walk to grocery shopping and run errands.

Retail TDM Plan

- Will post "getting here" information in a visible and prominent location on the website with a focus on non-automotive travel modes. Also, links will be provided to goDCgo.com, CommuterConnections.com, transit agencies around the metropolitan area, and instructions for customers discouraging parking on-street in Residential Permit Parking (RPP) zones.
- Transportation Coordinator will demonstrate to goDCgo that tenants with 20 or more employees are in compliance with the DC Commuter Benefits Law and participate in one of the three transportation benefits outlined in the law (employee-paid pre-tax benefit, employer-paid direct benefit, or shuttle service), as well as any other commuter benefits related laws that may be implemented in the future.
- Satisfy zoning requirements for showers and lockers for use by employees.

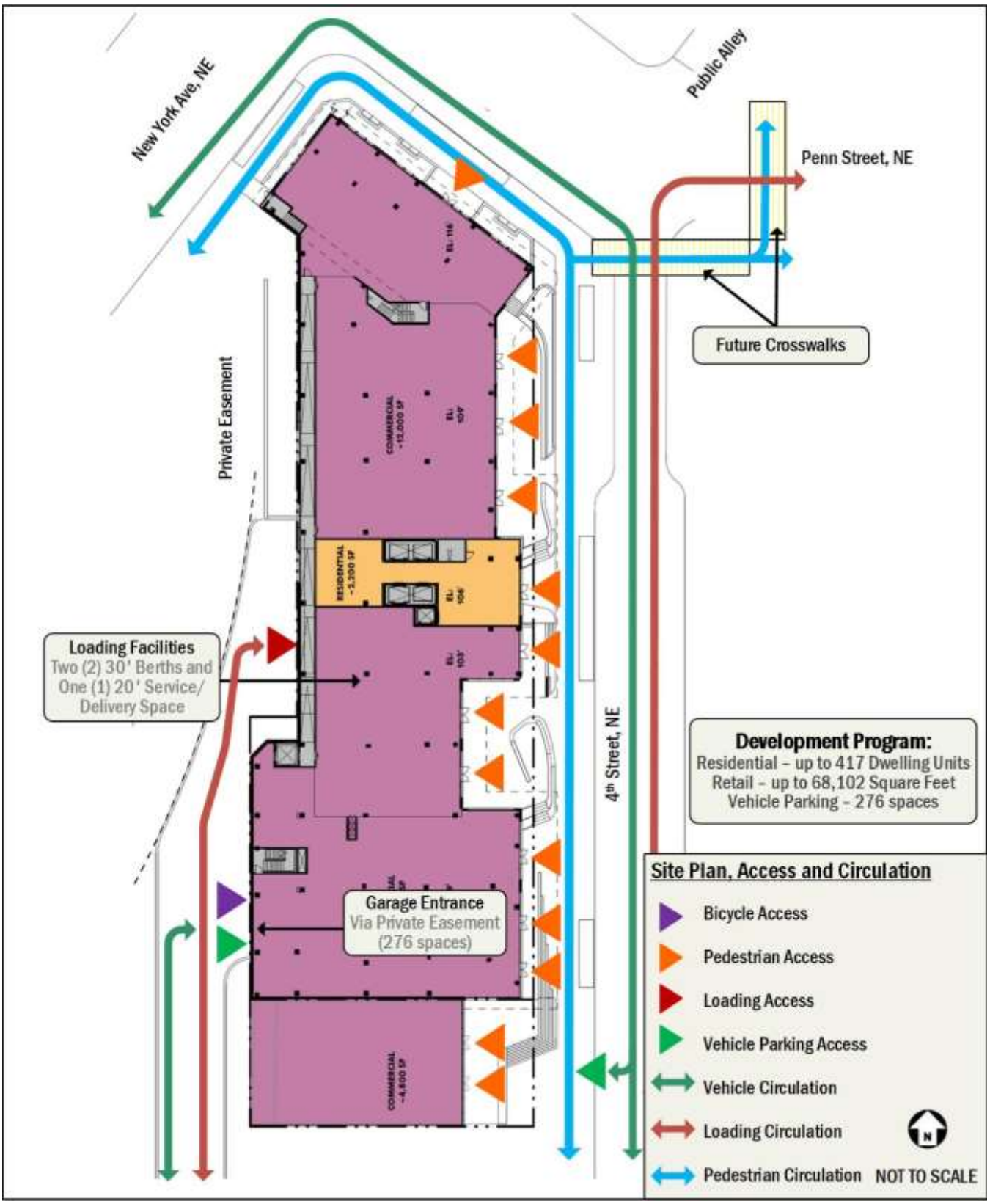

Figure 7: Site Plan, Access, and Circulation

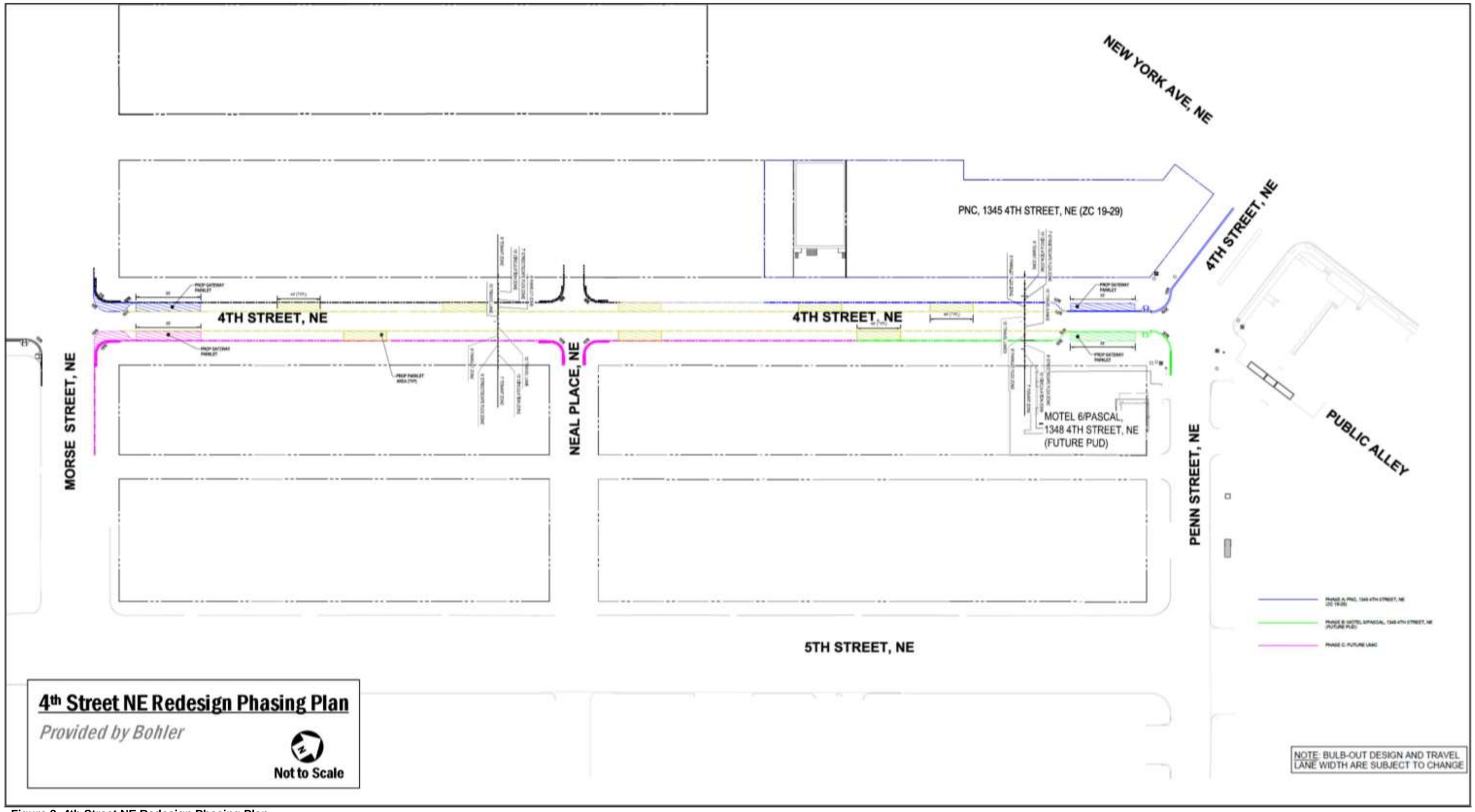

Figure 8: 4th Street NE Redesign Phasing Plan

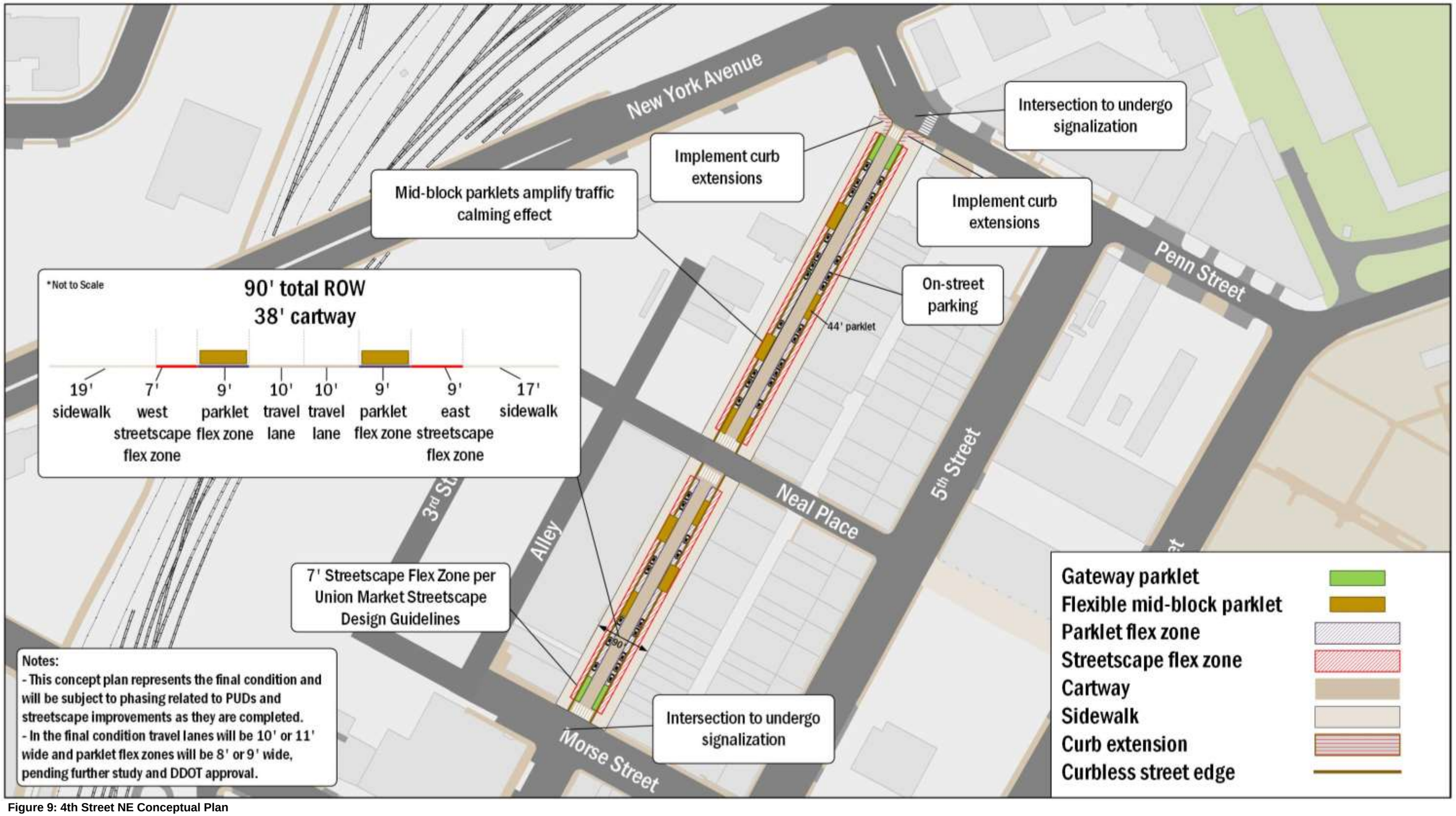

Figure 9: 4th Street NE Conceptual Plan

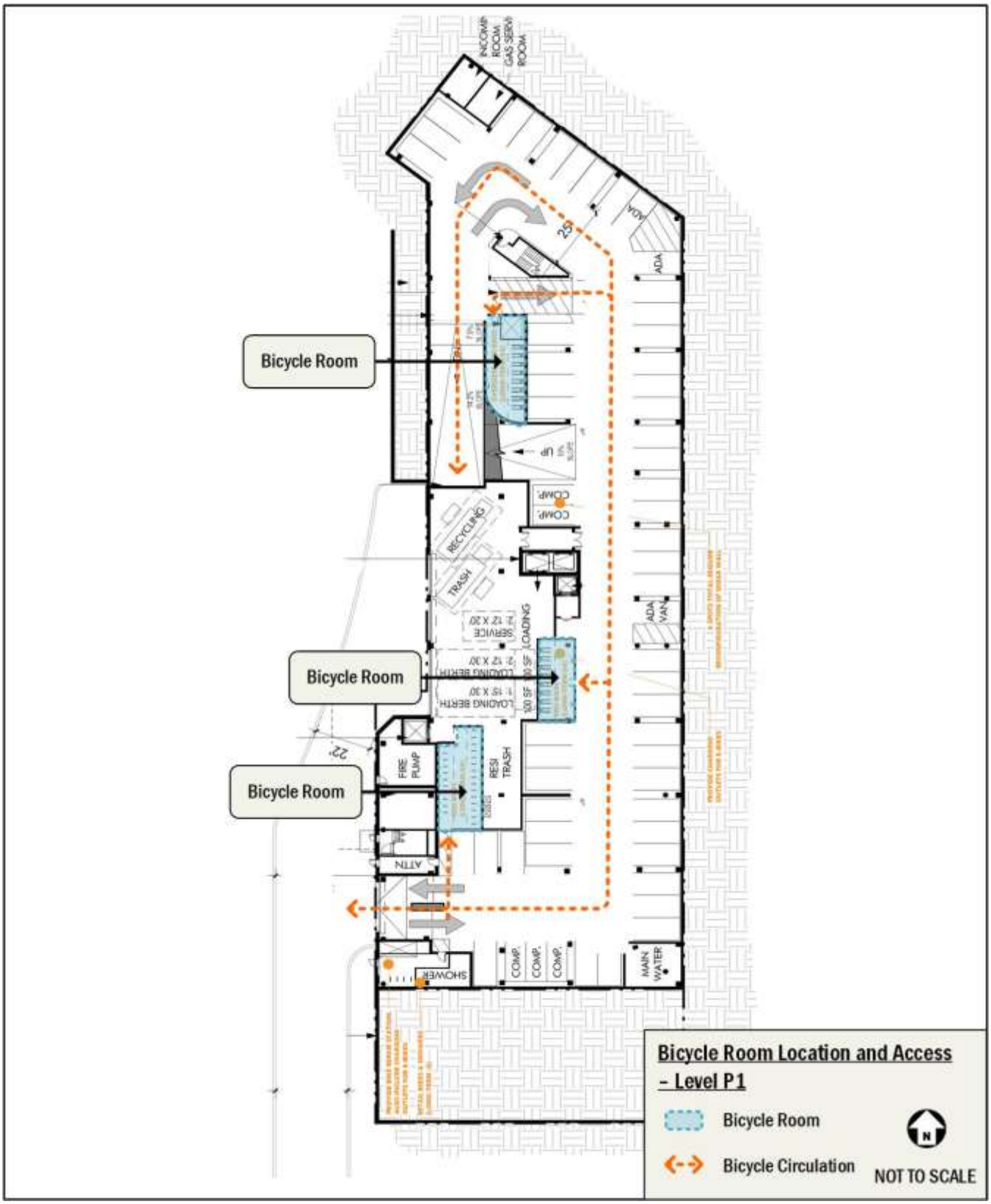

Figure 10: Bicycle Room Location and Access – P1 Level

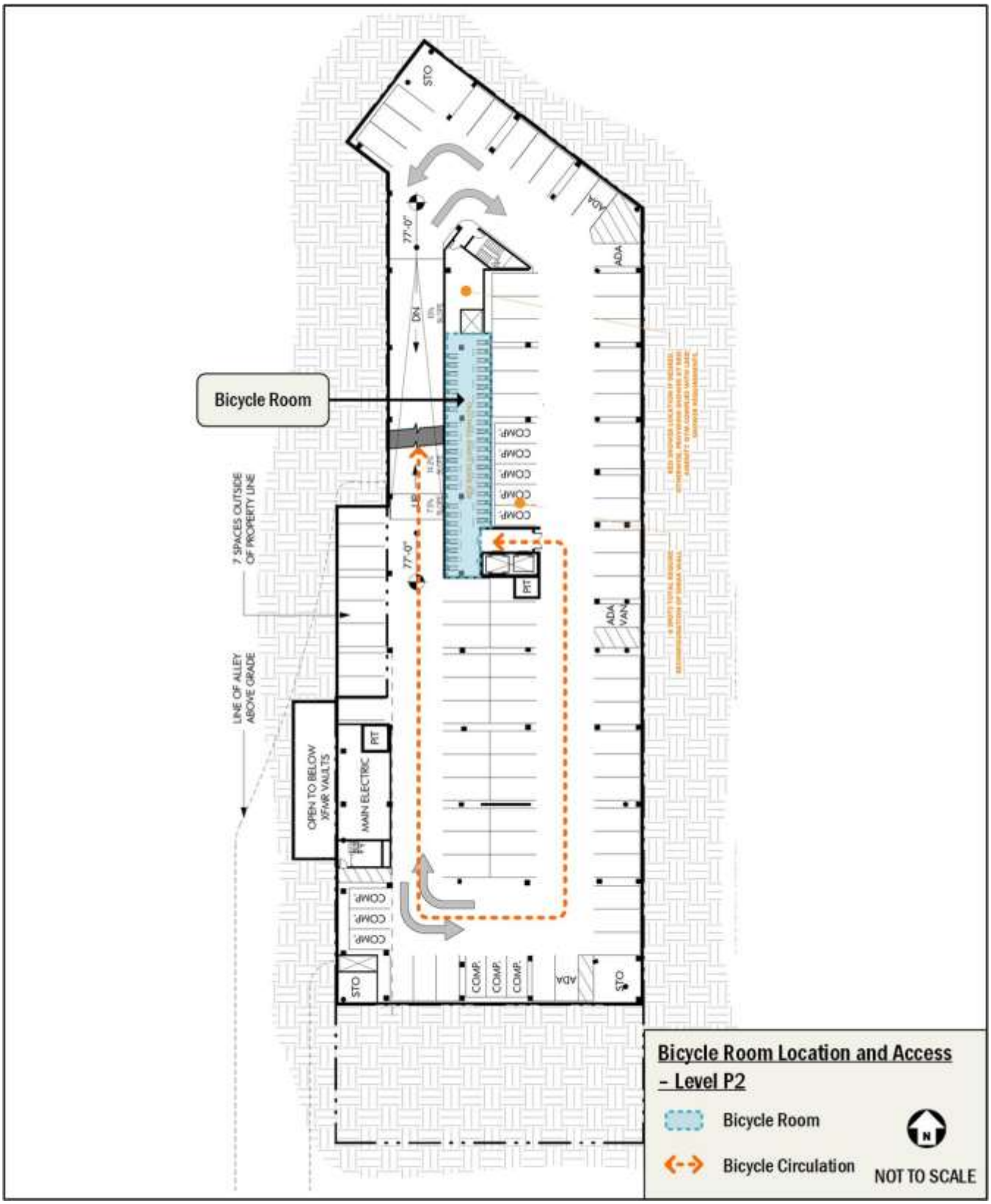

Figure 11: Bicycle Room Location and Access – P2 Level

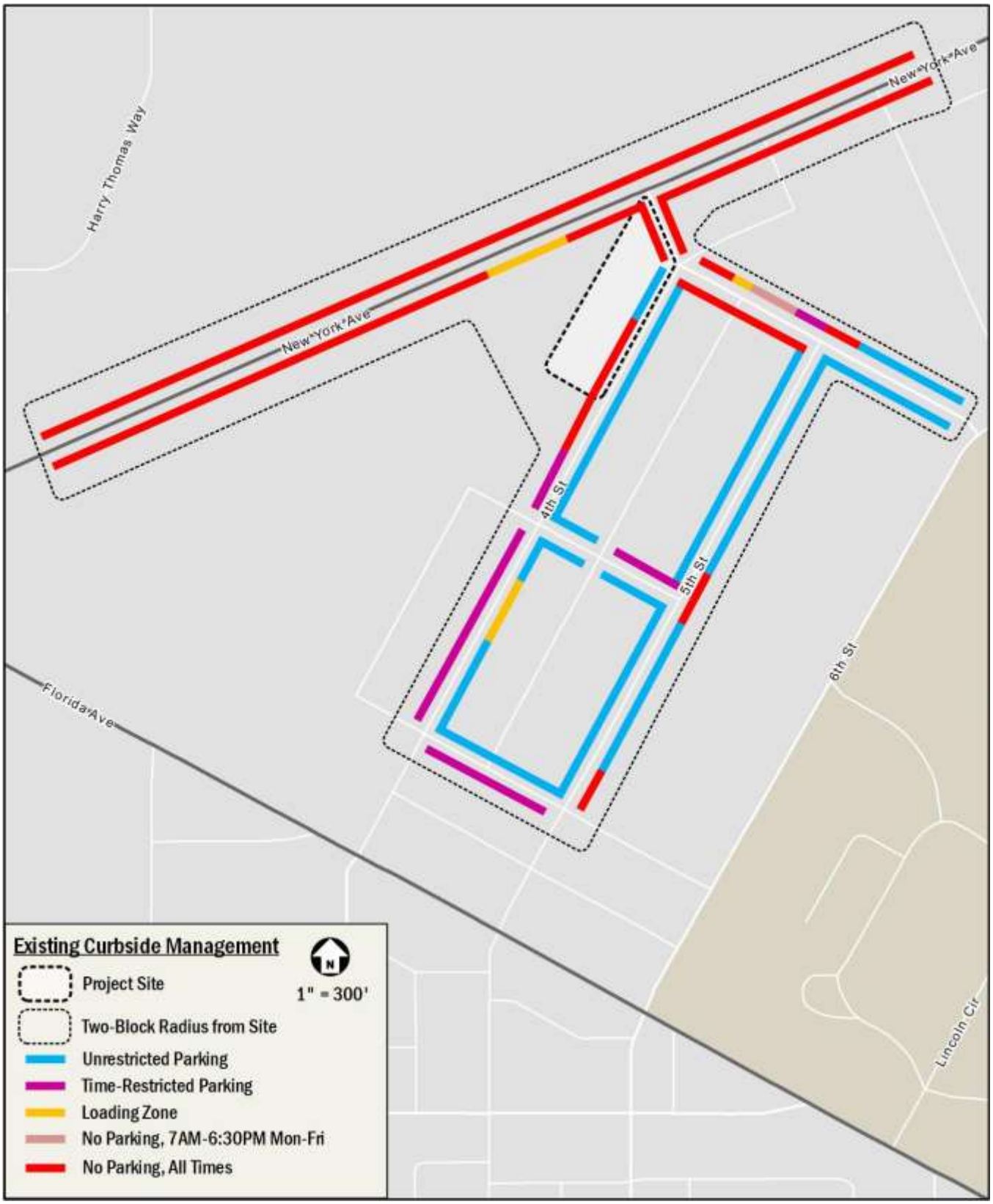

Figure 12: Existing Curbside Management

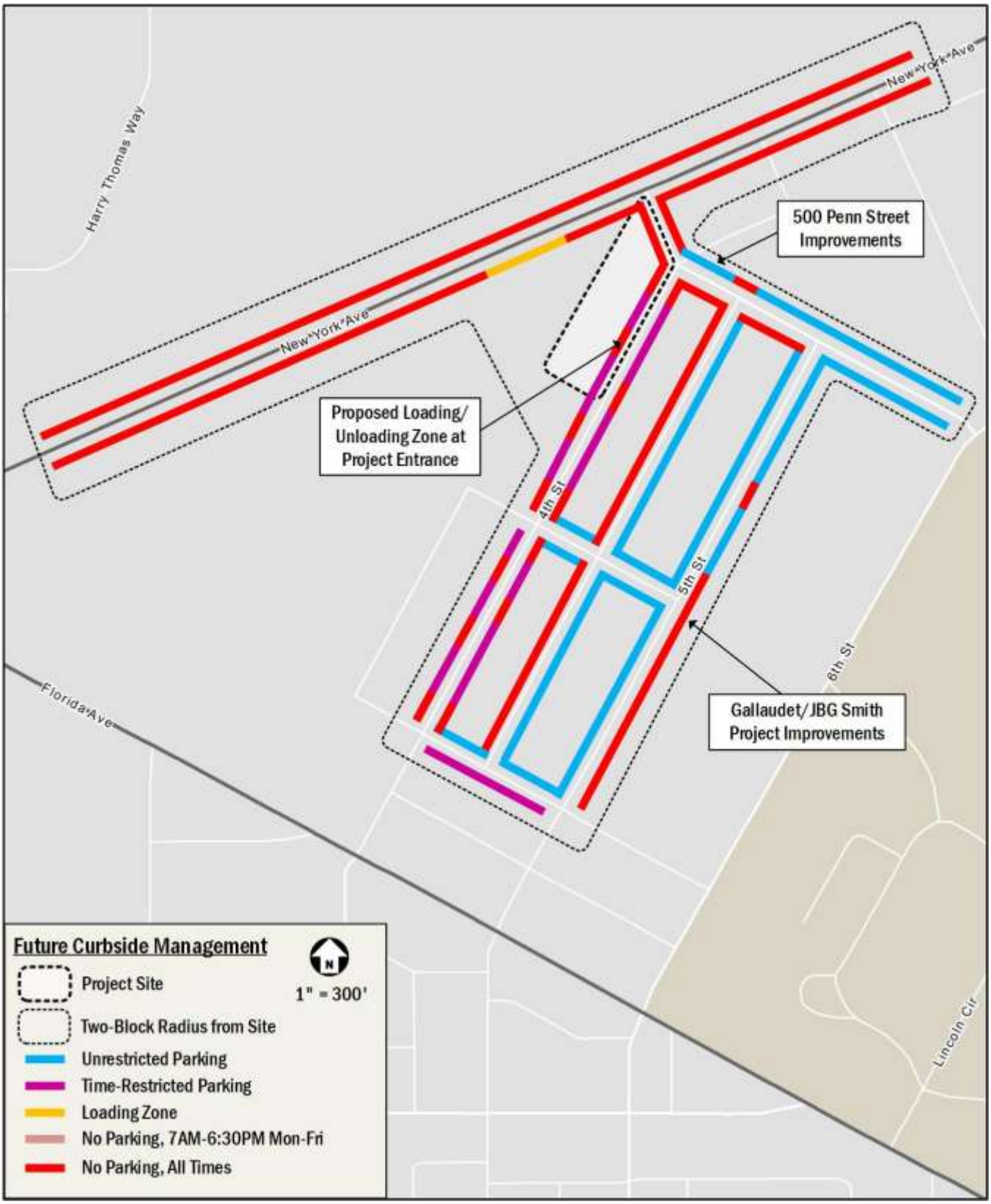

Figure 13: Future Curbside Management

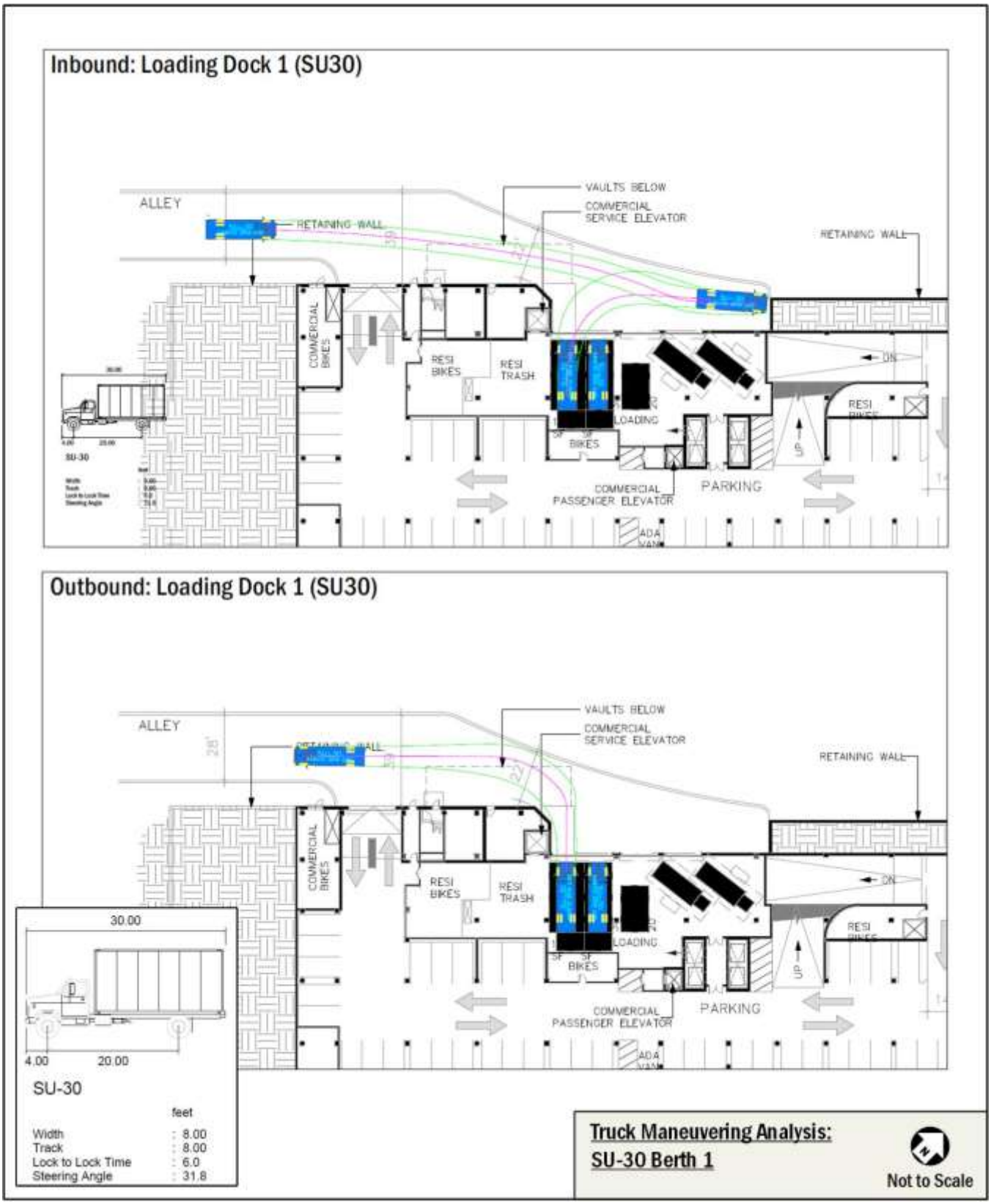

Figure 14: Truck Maneuvering Analysis: SU-30 Berth 1

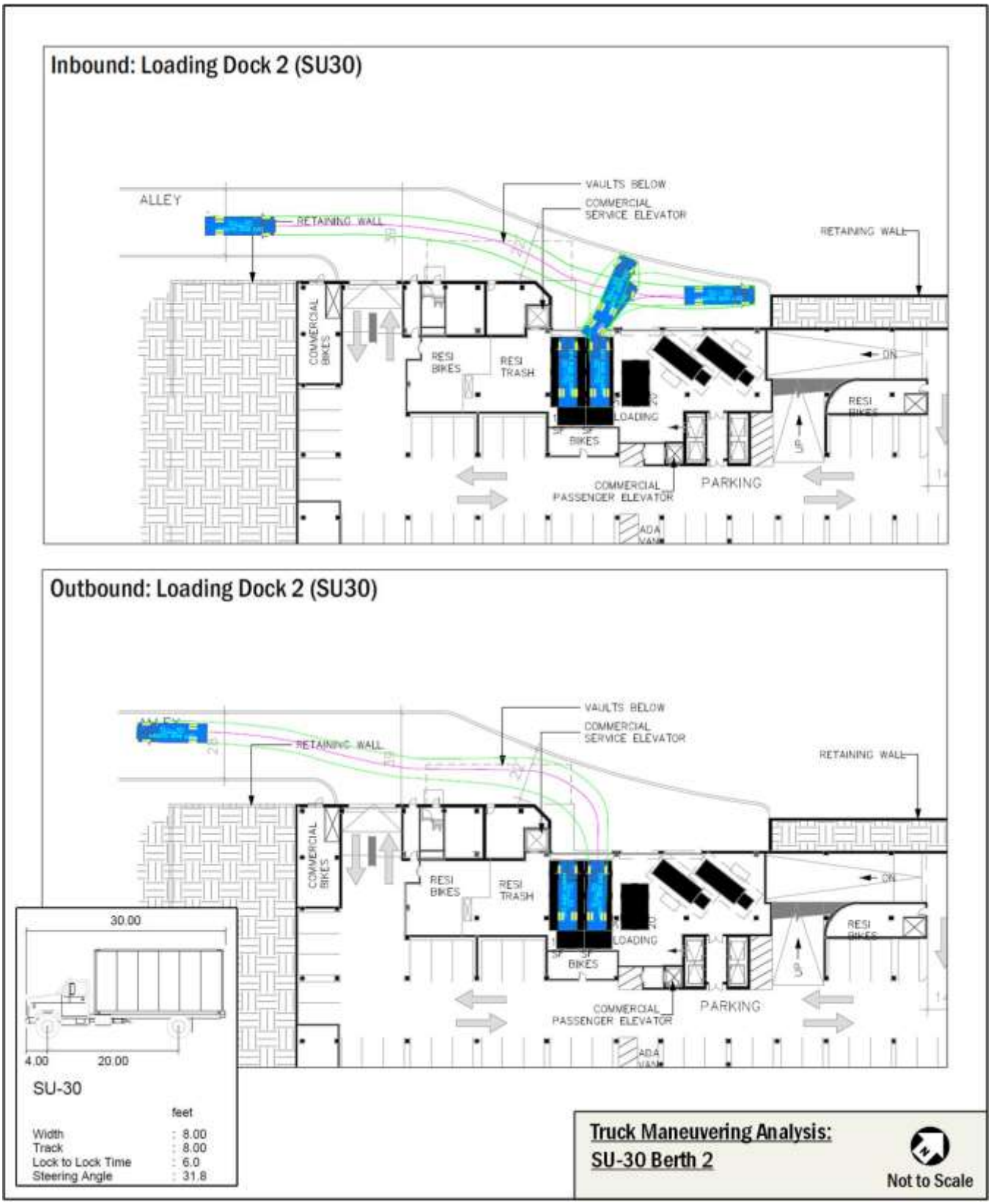

Figure 15: Truck Maneuvering Analysis: SU-30 Berth 2

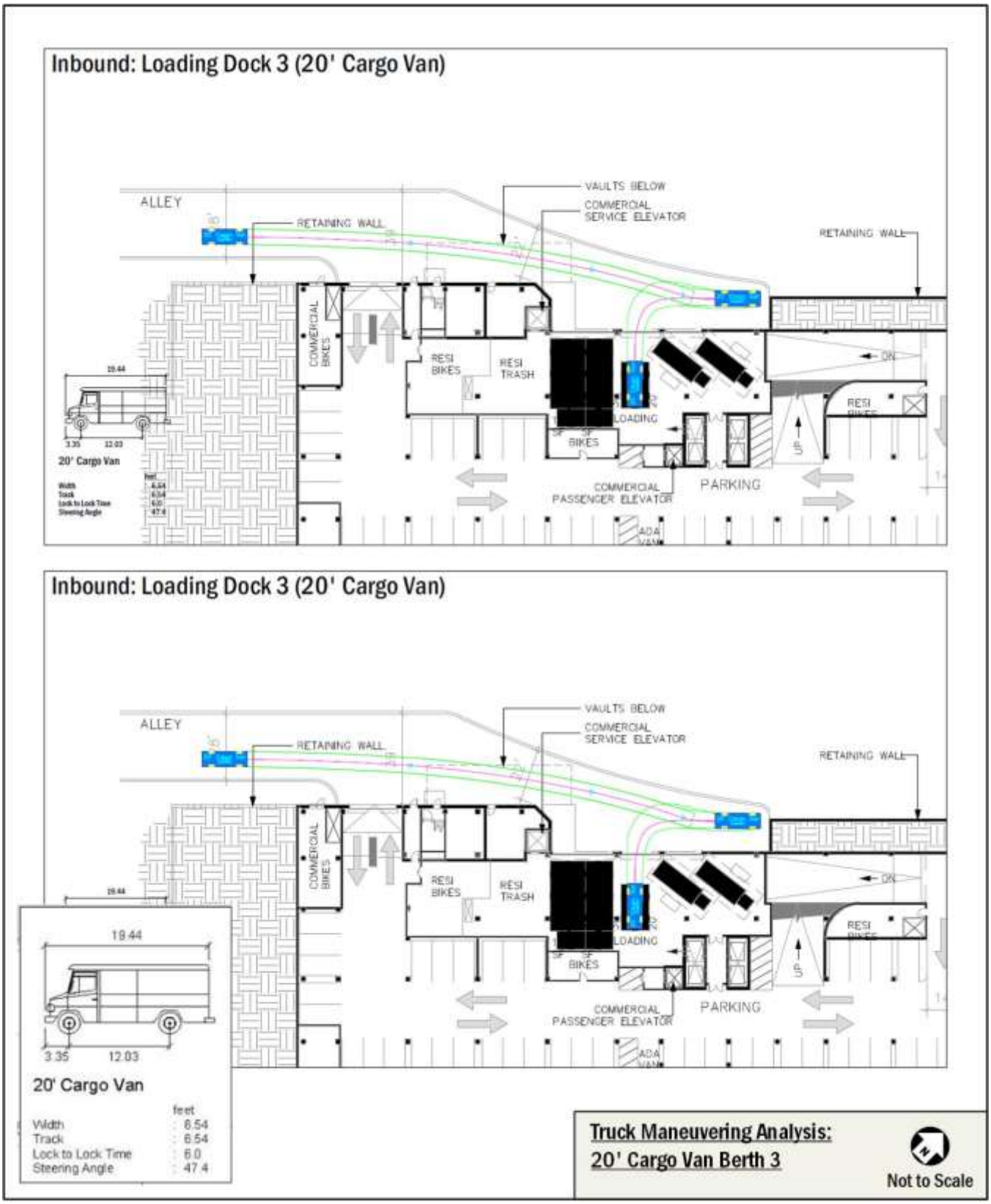

Figure 16: Truck Maneuvering Analysis: 20' Cargo Van Berth 3

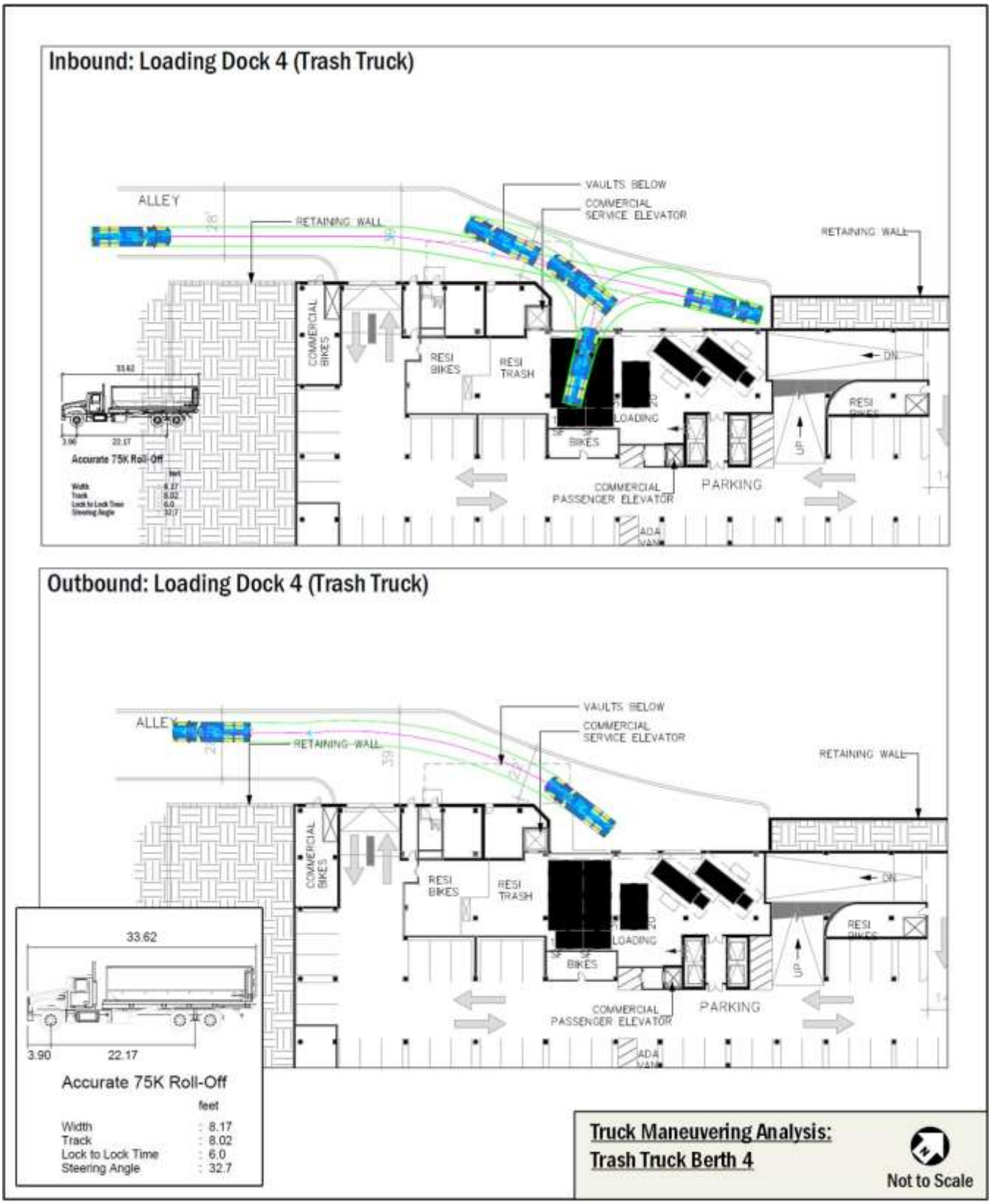

Figure 17: Truck Maneuvering Analysis: Trash Truck Berth 4

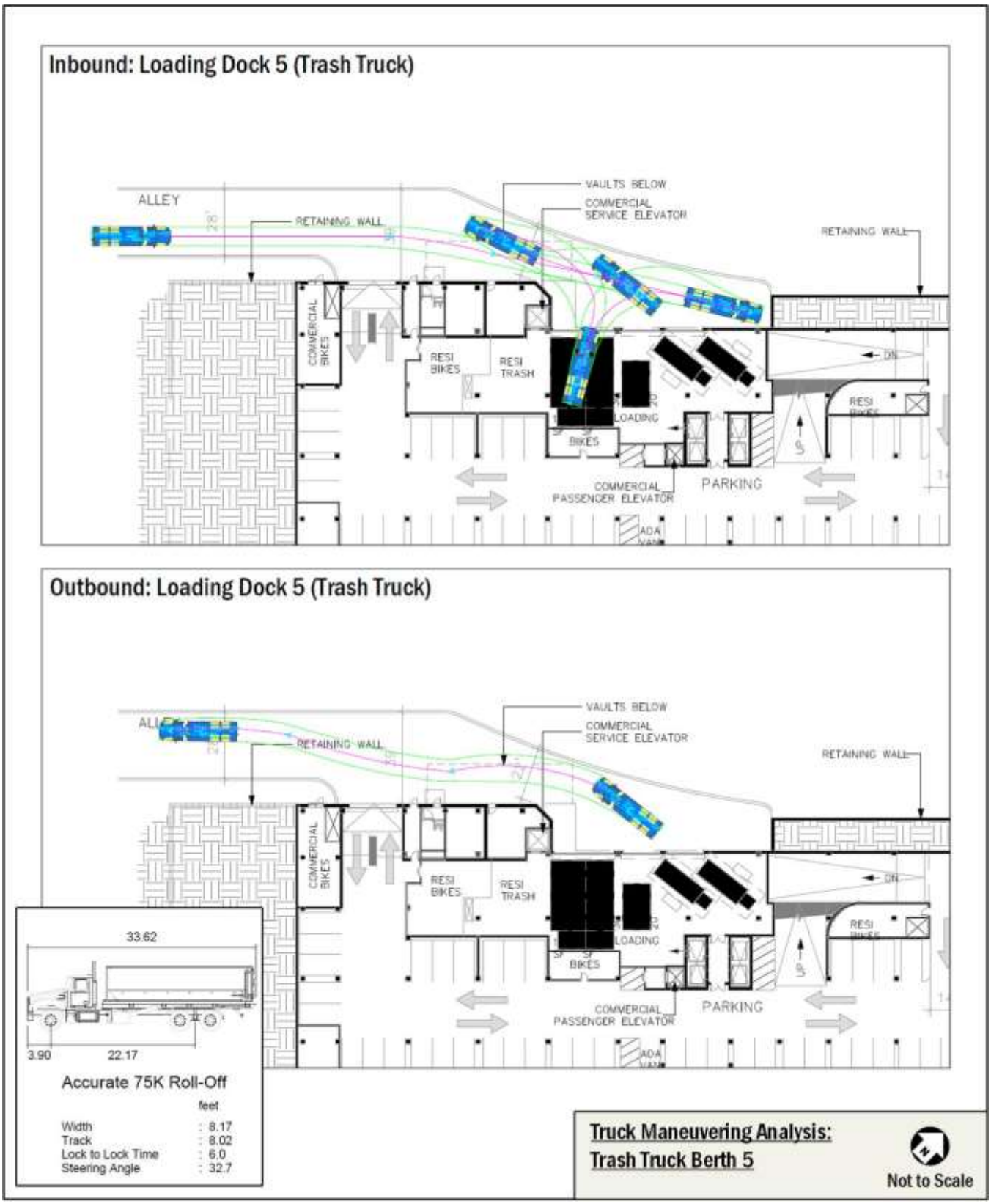

Figure 18: Truck Maneuvering Analysis: Trash Truck Berth 5

Travel Demand Assumptions

This chapter outlines the transportation demand assumptions of the Project. It summarizes the projected trip generation of the Project by mode, which forms the basis for the chapters that follow. These assumptions were vetted and approved 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 main source of mode split information for this report was based on Census data using Census Tracts, Traffic Analysis Zones (TAZs), and data contained in the WMATA Ridership Survey.

Residential Mode Splits

Residential mode splits were primarily based on Census data at the tract and TAZ level[1] for residents that live near the site, data contained in Table 10 of WMATA's *2005 Development-Related Ridership Survey* and MWCOG's *2019 State of the Commute Survey Report*, and assumptions from other approved developments in the area. Table 4 summarizes the data that were used to establish residential mode split assumptions for this report.

Table 4: Summary of Residential Mode Split Data

Source	Mode					
	SOV	Carpool	Transit	Bike	Walk	WFH/ Other
TAZ 282	27%	4%	45%	2%	17%	5%
TAZ 273	22%	3%	27%	2%	38%	8%
TAZ 281	20%	3%	42%	19%	11%	5%
TAZ 206	21%	0%	39%	6%	21%	13%
Aggregate of TAZs	24%	3%	43%	6%	18%	6%
State of the Commute[1]	41%	7%	41%	11%		-
WMATA Ridership Survey[2]	18%		56%	26%		-
1329 5th Street NE	50%		39%	8%	3%	-
1348 4th Street NE	**30%**		**45%**	**15%**	**10%**	**-**

[1] Only includes District residents
[2] Residential sites within the central business district (CBD)

Retail[2] Mode Splits

Retail mode splits were primarily based on Census data at the TAZ level for employees that live near the site, data contained in WMATA's *2005 Development-Related Ridership Survey*, and assumptions from other approved developments in the area. Table 5 summarizes the data that were used to establish retail mode split assumptions for this report. The assumed mode splits for the proposed development are summarized in Table 6.

Table 5: Summary of Retail Mode Split Data

Source	Mode					
	SOV	Carpool	Transit	Bike	Walk	WFH/ Other
TAZ 282	43%	11%	24%	1%	19%	2%
U Street Main Street Retail[1]	19%		57%	24%		-
Crystal City – Crystal Plaza Shops[1]	24%		41%	35%		-
Crystal City – The Underground[1]	27%		37%	36%		-
Market Terminal Building C2	35%		35%	5%	25%	-
1348 4th Street NE	**35%**		**30%**	**10%**	**25%**	**-**

[1] From Table C-22 of WMATA's *2005 Development-Related Ridership Survey*

Table 6: Summary of Assumed Mode Splits

Land Use	Mode					
	SOV	Carpool	Transit	Bike	Walk	WFH/ Other
Residential	30%		45%	15%	10%	-
Retail	35%		30%	10%	25%	-

Trip Generation Methodology

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. This methodology was supplemented to account for the urban nature of the Project (the *Trip Generation Manual* provides data for non-urban, low transit use sites) and to generate trips for multiple modes, as vetted and approved by DDOT.

[1] Maps of traffic analysis zones and Census tracts in the District of Columbia are available at www.opendata.dc.gov.

[2] "Retail" includes Eating and Drinking, Production, Distribution and Repair (PDR)/Maker Space, and General Retail.

Proposed residential and retail trip generation was calculated based on ITE land use 221, *Mid-rise Multifamily Housing*, and ITE land use 820, *Shopping Center*, respectively. The calculated trips were then split into different modes using assumptions outlined in the Mode Split Methodology section of this report.

As shown in Table 7, the Project is expected to generate trips on the surround network across all modes. The AM peak hour trip generation is projected to include 67 vehicle trips per hour, 114 transit trips per hour, 39 bicycle trips per hour, and 47 walking trips per hour. The PM peak hour trip generation is projected to include 146 vehicle trips per hour, 239 transit trips per hour, 79 bicycle trips per hour, and 140 walking trips per hour. The Saturday peak hour trip generation is projected to include 162 vehicle trips per hour, 264 transit trips per hour, 88 bicycle trips per hour, and 161 walking trips per hour.

Detailed mode split assumptions and trip generation calculations are included in the Technical Attachments.

Table 7: ITE Multi-Modal Trip Generation Summary

Mode	AM Peak Hour			PM Peak Hour			Saturday Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Residential (417 Units)									
Auto (veh/hr)	12	33	45	34	21	55	27	28	55
Transit (ppl/hr)	21	58	79	59	38	97	48	49	97
Bike (ppl/hr)	7	20	27	20	12	32	16	16	32
Walk (ppl/hr)	5	13	18	13	9	22	11	11	22
Retail[1] (68,102 SF)									
Auto (veh/hr)	14	8	22	43	48	91	55	52	107
Transit (ppl/hr)	22	13	35	68	74	142	87	80	167
Bike (ppl/hr)	7	5	12	23	24	47	29	27	56
Walk (ppl/hr)	18	11	29	57	61	118	72	67	139
Site Total									
Auto (veh/hr)	26	41	67	77	69	146	82	80	162
Transit (ppl/hr)	43	71	114	127	112	239	135	129	264
Bike (ppl/hr)	14	25	39	43	36	79	45	43	88
Walk (ppl/hr)	23	24	47	70	70	140	83	78	161

[1] "Retail" includes Eating and Drinking, PDR/Maker Space, and General Retail.

Traffic Operations

This chapter provides a summary of an analysis of the existing and future roadway capacity surrounding the site. Included is an analysis of potential vehicular impacts of the Project and a discussion of potential improvements.

The purpose of the capacity analysis is to:

- Determine the existing capacity of the study area roadways;
- Determine the overall impact of the Project on the study area roadways; and
- Discuss any potential improvements and mitigation measures to accommodate the additional vehicular trips.

This analysis was accomplished by determining the traffic volumes and roadway capacity for Existing Conditions, Background Conditions, and Total Future Conditions. The scope of the capacity analysis was developed based on DDOT guidelines and agreed upon by DDOT staff.

The capacity analysis focuses on the weekday morning and afternoon commuter peak hours, as determined by the existing traffic volumes in the study area.

Based on DDOT standards, a project is considered to have an impact at an intersection within the study area if any of the following conditions are met:

- The capacity analyses show a LOS E or F at an intersection or along an approach in the future with conditions with the project where one does not exist in the background conditions;
- There is an increase in delay at any approach or overall intersection operating under LOS E or F of greater than five (5) percent when compared to the background conditions;
- The 95th percentile queues exceed storage along an approach in the future conditions with the project where one does not exist in the background scenario; or
- There is an increase in the 95th percentile queues by more than 150 feet along an approach in that exceeds storage in the background scenario.

This chapter concludes:

- Under Existing Conditions, two (2) study intersections operate at an unacceptable level of service and four (4) study intersections experience queues that exceed available storage.
- The addition of background developments and growth under Background Conditions results in six (6) study intersections operating at unacceptable levels of service, indicating areas of concern along 4th Street NE and Florida Avenue NE.
- Under Total Future Conditions, two (2) intersections meet DDOT's threshold for mitigation measures as a result of minor impacts created by the Project.
- Mitigations in the form of signal timing adjustments and intersection signalization are recommended at selected intersections.
- The Project will not have a detrimental impact to the surrounding vehicular network, with the implementation of all site design elements and mitigation measures.

Study Area, Scope, & Methodology

This section outlines the vehicular trips generated in the study area along the vehicular access routes and defines the analysis assumptions.

The scope of the analysis contained within this report was discussed with and agreed upon by DDOT. The general methodology of the analysis follows national and DDOT guidelines on the preparation of transportation impact evaluations of site development.

Capacity Analysis Scenarios

The vehicular capacity analyses were performed to determine whether the Project will lead to adverse impacts on traffic operations. A review of potential impacts to each of the other modes is outlined later in this report. This is accomplished by comparing two future scenarios: (1) without the Project (referred to as the "Background" conditions and (2) with the Project approved and constructed (referred to as the "Total Future" conditions).

Specifically, the roadway capacity analysis examined the following scenarios:

- 2021 Existing Conditions;
- 2025 Future Conditions without the Project (2025 Background Conditions); and
- 2025 Future Conditions with the Project (2025 Total Future).

Study Area

The study area of the analysis is a set of intersections where detailed capacity analyses were performed for the scenarios listed above. The set of intersections decided upon during the study scoping process with DDOT are those intersections most likely to have potential impacts or require changes to traffic operations to accommodate the project. Although it is possible that impacts will occur outside of the study area, those impacts are neither significant enough to be considered a material adverse impact nor worthy of mitigation measures.

Based on the projected future trip generation and the location of the site access points, the following intersections were chosen and agreed upon by DDOT for analysis:

1. New York Avenue & 4th Street, NE
2. Penn Street & 4th Street, NE
3. Penn Street & 5th Street, NE
4. Penn Street & 6th Street/Brentwood Parkway, NE
5. 4th Street & Neal Place, NE
6. 4th Street & Morse Street, NE
7. Florida Avenue & 4th Street, NE
8. Florida Avenue & 5th Street, NE
9. Florida Avenue & 6th Street, NE

Figure 19 shows a map of the study area intersections in the Existing, Background, and Future scenarios.

Geometry and Operations Assumptions

The following section reviews the roadway geometry and operations assumptions made and the methodologies used in the roadway capacity analyses.

Existing Geometry and Operations Assumptions

Gorove Slade made observations and confirmed the existing lane configurations and traffic controls at the intersections within the study area. Existing signal timings and offsets were obtained from DDOT and confirmed during field reconnaissance.

The lane configurations and traffic controls for the Existing Conditions are shown on Figure 20.

2025 Background Geometry and Operations Assumptions

Following national and DDOT methodologies, a background improvement must meet the following criteria to be incorporated into the analysis:

- Be funded; and
- Have a construction completion date prior or close to that of the Project.

Based on these criteria, the following improvements were assumed:

Florida Avenue Project

The Florida Avenue Project final design includes the following roadway geometry and operations assumptions for Florida Avenue NE within the study area:

- The reconfiguration of the cycle track on the south side of Florida Avenue NE implemented during interim improvements in the Summer of 2019 to be protected bicycle lanes on both sides of the street. Conflicting bicycle volumes were redistributed from eastbound movements to westbound movements along Florida Avenue as appropriate.

500 Penn Street NE

The Zoning Order of the approved 500 Penn Street NE PUD includes the following roadway geometry and operations assumptions within the study area:

- The signalization of the 4th Street and Penn Street intersection, maintaining all existing movements:
  - The southeast-bound 4th Street approach will include one (1) left turn lane, one (1) thru lane, and one (1) right turn lane;
  - The northwest-bound Penn Street approach will include one (1) left/thru/right lane;
  - The northeast-bound 4th Street approach will include one (1) left/thru/right lane; and
  - The southwest-bound alley approach will include one (1) left/thru/right lane.

Market Terminal Development

The Zoning Order of the approved Market Terminal PUD includes infrastructure improvements at one (1) study intersection:

- The signalization of the 4th Street and Morse Street intersection based on approved phasing, maintaining all existing movements:
  - All approaches include one (1) left/thru/right lane.

The lane configurations and traffic controls for the Background Conditions are shown in Figure 22.

2025 Total Future Geometry and Operations Assumptions

The configurations and traffic controls for the 2025 Total Future Conditions were based on those for the 2025 Background Conditions with the addition of the Project. As part of the Project, no roadway or operational changes are proposed.

The lane configurations and traffic controls for the Total Future Conditions are shown on Figure 22.

Traffic Volume Assumptions

The following section reviews the traffic volume assumptions and methodologies used in the roadway capacity analyses.

Existing Traffic Volumes

The existing traffic volumes are comprised of turning movement count data as follows:

- Volumes collected on Thursday, September 9, 2021 from 6:30 AM to 9:30 AM and 4:00 PM to 7:00 PM.
- Volumes collected on Tuesday, October 5, 2021 from 6:30 AM to 9:30 AM and 4:00 PM to 7:00 PM.

The following intersections are based on TMC volumes collected on September 9, 2021:

- Penn Street & 5th Street, NE

The following intersections are based on TMC volumes collected on October 5, 2021:

- New York Avenue & 4th Street, NE
- Penn Street & 4th Street, NE
- Penn Street & 6th Street/Brentwood Parkway, NE
- 4th Street & Neal Place, NE
- 4th Street & Morse Street, NE
- Florida Avenue & 4th Street, NE
- Florida Avenue & 5th Street, NE
- Florida Avenue & 6th Street, NE

The existing turning movement counts are included in the Technical Appendix. For all intersections, the weekday morning and weekday afternoon system peak hours were used. Based on the turning movement counts, the morning system peak hour was from 7:45 AM to 8:45 AM, and the afternoon system peak hour was from 4:45 PM to 5:45 PM.

The 2021 existing volumes are shown in Figure 21.

2025 Background Traffic Volumes (without the Project)

The traffic projections for the 2025 Background Conditions consist of the existing volumes with two (2) additions:

- Inherent growth on the roadway (representing regional traffic growth); and
- The impacts of “background” developments, if any.

Following national and DDOT methodologies, a background development must meet the following criteria to be incorporated into the analysis:

- Be located in the study area, defined as having an origin or destination point within the cluster of study area intersections;
- Have entitlements; and
- Have a construction completion date prior to or close to the future analysis year of 2025.

Based on these criteria, and as discussed with and agreed upon by DDOT, 11 developments were considered and determined to meet the above criteria. These developments include the following:

- 500 Penn Street NE
- 301 Florida Avenue NE
- 400 Florida Avenue NE
- Market Terminal Redevelopment (300 Morse Street NE)
- 300 M Street NE
- Press House at Union District (301 N Street NE)
- Central Armature Works (1200 3rd Street NE)
- Union Market North (1329 5th Street NE)
- Union Market South (1309 5th Street NE)
- JBG Smith/Gallaudet Project
- 411 New York Avenue NE

Existing studies were available for all developments, with mode splits, trip generation, and trip distributions used from the studies wherever available.

Trip generation for Market Terminal Buildings A-1, A-2, B, C-1, and D utilized the First-Stage PUD CTR, while Building C-2 utilized its Second-Stage PUD CTR.

A summary of the trip generation for the background developments is shown in Table 8. Detailed mode splits and trip generation information is included in the Technical Attachments.

The combined background projects peak hour volumes are shown in Figure 24.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using growth rates. The growth rates used in this analysis are derived using the Metropolitan Washington Council of Government's (MWCOG) currently adopted regional transportation model, comparing the difference between the year 2021 and 2025 model scenarios as vetted and agreed to by DDOT. The growth rates observed in this model served as a basis for analysis assumptions, and where negative growth was observed, a conservative 0.10 percent annual growth rate was applied to the roadway. In addition, a maximum growth rate of 2.0 percent was used based on DDOT recommendation. The applied growth rates are shown in Table 9.

The traffic volumes generated by the inherent growth along the network are shown in Figure 23.

The existing peak hour volumes, presented in Figure 21, were combined with the background growth peak hour volumes shown in Figure 23, and the background projects' peak hour volumes shown in Figure 24 in order to establish the 2025 Background traffic volumes. Traffic volumes for the 2025 Background conditions are shown in Figure 25.

Table 8: Summary of Background Developments Trip Generation

Background Development	Trip Generation Source	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
500 Penn Street NE	Approved 500 Penn Street, NE CTR	43	79	122	136	115	251
301 Florida Avenue NE	Approved 301 Florida Avenue NE CTR	4	14	18	10	9	19
400 Florida Avenue NE	Approve 400 Florida Avenue NE PUD CTR	30	31	61	41	32	73
Market Terminal – Buildings A, B, C-1, and D	Approved 300 Morse Street PUD CTR	48	164	212	187	114	301
Market Terminal – Building C-1 & C-2	Approved 300 Morse Street PUD CTR & Approved Market Terminal Building C2 Second-Stage PUD CTR	185	28	213	44	176	220
300 M Street NE	Approved 300M PUD CTR	26	90	116	97	57	154
Press House at Union District	Approved 301-331 N Street NE PUD CTR	60	83	143	100	80	180
Central Armature Works	Approved Central Armature Works PUD CTR	55	111	166	131	92	223
Union Market North	Approved 1329 5th Street, NE Second-Stage PUD EISF TIS	27	50	77	77	64	141
Union Market South	Approved 1309-1329 5th Street PUD CTR	92	13	105	70	120	190
JBG Smith/Gallaudet Project (Parcels 2 and 3)	Gallaudet 6th Street Development Second Stage PUD CTR (Under review)	29	67	96	111	97	208
411 New York Avenue NE	Approved 411 New York Avenue TIA	26	20	46	26	26	52
	Total Background Site Trips	**625**	**750**	**1,375**	**1,030**	**982**	**2,012**

Table 9: Applied Annual and Total Background Growth Rates

Roadway	Direction	Proposed Annual Growth Rate		Total Growth (2021-2025)	
		AM Peak	PM Peak	AM Peak	PM Peak
Florida Avenue NE	EB	1.00%	0.10%	4.06%	0.40%
	WB	0.50%	0.50%	2.02%	2.02%
New York Avenue NE	EB	0.10%	0.10%	0.40%	0.40%
	WB	0.10%	0.10%	0.40%	0.40%
6th Street NE	NB	1.00%	0.10%	4.06%	0.40%
	SB	0.10%	1.00%	0.40%	4.06%
4th Street NE	SB	0.10%	0.10%	0.40%	0.40%

2025 Total Future Traffic Volumes (with the Project)

The 2025 Total Future traffic volumes consist of the 2025 background volumes with the addition of the traffic volumes generated by the residential and retail uses of the project. Thus, the 2025 Total Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and the Project.

Trip distribution for the site-generated trips was determined based on: (1) Census Transportation Planning Products (CTPP) Traffic Analysis Zone (TAZ) data, (2) existing and future travel patterns in the study area, and (3) the locations of the parking garage access.

Based on this review and the site access locations, the Project-generated trips were distributed through the study area intersections. Trip distribution assumptions and specific routing was analyzed by land use for inbound and outbound trips. Residential and retail distribution assumptions for the Project are provided in Figure 26 and Figure 27 for inbound and outbound trips, respectively. Detailed inbound and outbound distributions at each study intersection are shown in Figure 28.

Project-generated volumes for the development program are presented in Figure 29. The 2025 Total Future traffic volumes with the Project are presented in Figure 30.

Peak Hour Factors

The TRB *Highway Capacity Manual* (HCM) and the AASHTO *Policy on Geometric Design of Highways and Intersections* recommend evaluating traffic conditions during the worst 15 minutes of either a design hour or a typical weekday rush hour. Peak Hour Factor (PHF) is used to convert the hourly volume into the volume rate representing the busiest 15 minutes of the hour. The existing guidelines provide typical values of PHF and advise using the PHF calculated from vehicle counts at analyzed or similar locations. The HCM recommends a PHF of 0.88 for rural areas and 0.92 for urban areas and presumes that capacity constraints in congested areas reduce the short-term traffic fluctuation. The HCM postulates 0.95 as the typical PHF for congested roadways.

For the Existing Conditions analysis, the PHF was calculated from the turning movement data that was collected in the field, using a minimum PHF of 0.85 for each intersection. Per DDOT guidelines, the intersection PHF remained the same through all study scenarios.

Vehicular Analysis Results

Intersection Capacity Analysis

Intersection capacity analyses were performed for the three (3) scenarios outlined previously at the intersections contained within the study area during the morning and afternoon peak hours. *Synchro* version 10 was used to analyze the study intersections based on the HCM 2000 methodology.

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each approach. A LOS grade is a letter grade based on the average delay (in seconds) experienced by motorists traveling through an intersection. LOS results range from “A” being the best to “F” being the worst. LOS D is typically used as the acceptable LOS threshold in the District; although LOS E or F is sometimes accepted in urbanized areas if vehicular improvements would be a detriment to safety or non-auto modes of transportation.

The LOS capacity analyses were based on: (1) the intersection peak hour traffic volumes; (2) the lane use and traffic controls; and (3) the HCM methodologies (using *Synchro* software). The average delay of each approach and LOS is shown for the signalized intersections in addition to the overall average delay and intersection LOS grade. The HCM does not give guidelines for calculating the average delay for a two-way stop-controlled intersection, as the approaches without stop signs would technically have no delay. Detailed LOS descriptions and the analysis worksheets are contained in the Technical Attachments.

Table 10 shows the results of the capacity analyses, including LOS and average delay per vehicle (in seconds) for the Existing, 2025 Background, and 2025 Total Future scenarios. Table 11 shows a comparison of the volume to capacity (v/c) ratios for each scenario.

As shown in Table 12, two (2) of the study intersections operate at unacceptable conditions or have one or more approaches operating at unacceptable levels during the existing conditions:

- 4th Street & New York Avenue NE
  - Northbound (PM)
- 6th Street & Florida Avenue NE
  - Northbound (PM)

The introduction of background regional growth and trips from background developments result in five (5) study intersections having one or more approaches operating at unacceptable levels during the background conditions:

- New York Avenue & 4th Street NE
  - Northbound (AM/PM)
- 4th Street & Morse Street NE
  - Eastbound (PM)
- Florida Avenue & 4th Street NE
  - Eastbound (AM/PM)
  - Overall (AM)
- Florida Avenue & 5th Street NE
  - Northbound (PM)
- Florida Avenue & 6th Street NE
  - Eastbound (AM)

The introduction of the site-generated trips from the Project results in additional delays that meet DDOT's mitigation threshold at two (2) study intersections where an unacceptable delay was increased by over five (5) percent as compared to background conditions:

- Florida Avenue & 4th Street NE
  - Eastbound (PM)
- Florida Avenue & 5th Street NE
  - Northbound (PM)

Queuing Analysis

In addition to the capacity analyses presented above, a queuing analysis was performed at each of the study intersections. The queuing analysis was performed using *Synchro* software. The 50th percentile and 95th percentile maximum queue lengths are shown for each lane group at the study area signalized intersections. The 50th percentile maximum queue is the maximum back of queue on a typical cycle. The 95th percentile queue is the maximum back of queue with 95th percentile traffic volumes. For unsignalized intersections, the 95th percentile queue is reported for each lane group (including stop-controlled movements) based on the HCM calculations.

Table 10 shows the queuing results for the study area intersections. Four (4) of the study intersections exhibit one or more lane group that exceeds the given storage length during the existing conditions:

- New York Avenue & 4th Street NE
  - Northbound Left (AM/PM)
  - Northbound Right (PM)
- Florida Avenue & 4th Street NE
  - Westbound Left (AM)
- Florida Avenue & 5th Street NE
  - Westbound Left (AM/PM)
- Florida Avenue & 6th Street NE
  - Northbound Through (AM/PM)

The introduction of trips from background developments and inherent traffic growth results in six (6) study intersections that exhibit one or more lane group that exceeds the given storage length:

- New York Avenue & 4th Street NE
  - Eastbound (PM)
  - Northbound Left (AM/PM)
  - Northbound Right (AM/PM)
- Penn Street & 4th Street NE
  - Northbound (PM)
- 4th Street & Morse Street NE
  - Eastbound (AM/PM)
  - Westbound (AM/PM)
- Florida Avenue & 4th Street NE
  - Eastbound Left (AM/PM)
  - Westbound Left (AM/PM)
- Florida Avenue & 5th Street NE
  - Eastbound Left (PM)
  - Eastbound Through (AM/PM)
  - Westbound Left (AM/PM)
- Florida Avenue & 6th Street NE
  - Eastbound Left (AM)
  - Westbound (AM)
  - Northbound Through (AM)
  - Southbound Left (AM)
  - Southbound Right (AM)

The introduction of Project-generated trips did not result in any additional study intersections exhibiting a queue which exceeds the storage length or increases a queue exceeding storage in the background scenario by 150 feet. Therefore, the Project does not trigger mitigation due to the queuing analysis results.

Mitigation Measures

Based on DDOT standards, a project is considered to have an impact at an intersection within the study area if any of the following conditions are met:

- The capacity analyses show a LOS E or F at an intersection or along an approach in the future with conditions with a project where one does not exist in the background conditions;
- There is an increase in delay at any approach or overall intersection operating under LOS E or F of greater than 5 percent when compared to the background conditions;

- The 95th percentile queues exceed storage along an approach in the future conditions with a project where one does not exist in the background scenario; or
- There is an increase in the 95th percentile queues by more than 150 feet along an approach in that exceeds storage in the background scenario.

Based on these criteria, the Project has an impact on the following intersections:

- Florida Avenue & 4th Street NE
- Florida Avenue & 5th Street NE

Project Impact and Recommendations

Florida Avenue & 4th Street NE

During the afternoon peak hour, the overall intersection, the eastbound approach experiences a delay increase by more than five (5) percent as compared to Background conditions in the afternoon peak hour as a result of the Project traffic volumes.

The potential impacts can be mitigated through signal timing adjustments during the afternoon peak hour. Adding one (1) second of green time to the eastbound left movement will limit delay increase below five (5) percent as compared to Background Conditions with no negative impact to queues or level of service at the other approaches.

Signal timing adjustments will be coordinated with DDOT in the afternoon peak hour to ensure the most efficient future operation, following construction of the Project. The recommended mitigation to this intersection would have no negative impact on the amount of time pedestrians receive to navigate the intersection.

Florida Avenue & 5th Street NE

During the afternoon peak hour, the northbound approach experiences delay increase by more than five (5) percent as compared to Background conditions as a result of the Project traffic volumes.

The potential impacts can be mitigated through signal timing adjustments during the afternoon peak hour. Adding one (1) second of green time to the northbound approach will limit delay increase below five (5) percent as compared to Background Conditions with no negative impact to queues or level of service at the other approaches.

Signal timing adjustments will be coordinated with DDOT in the afternoon peak hour to ensure the most efficient future operation, following construction of the Project. The recommended mitigation to this intersection would have no negative impact on the amount of time pedestrians receive to navigate the intersection.

Figure 19: Study Area Intersections

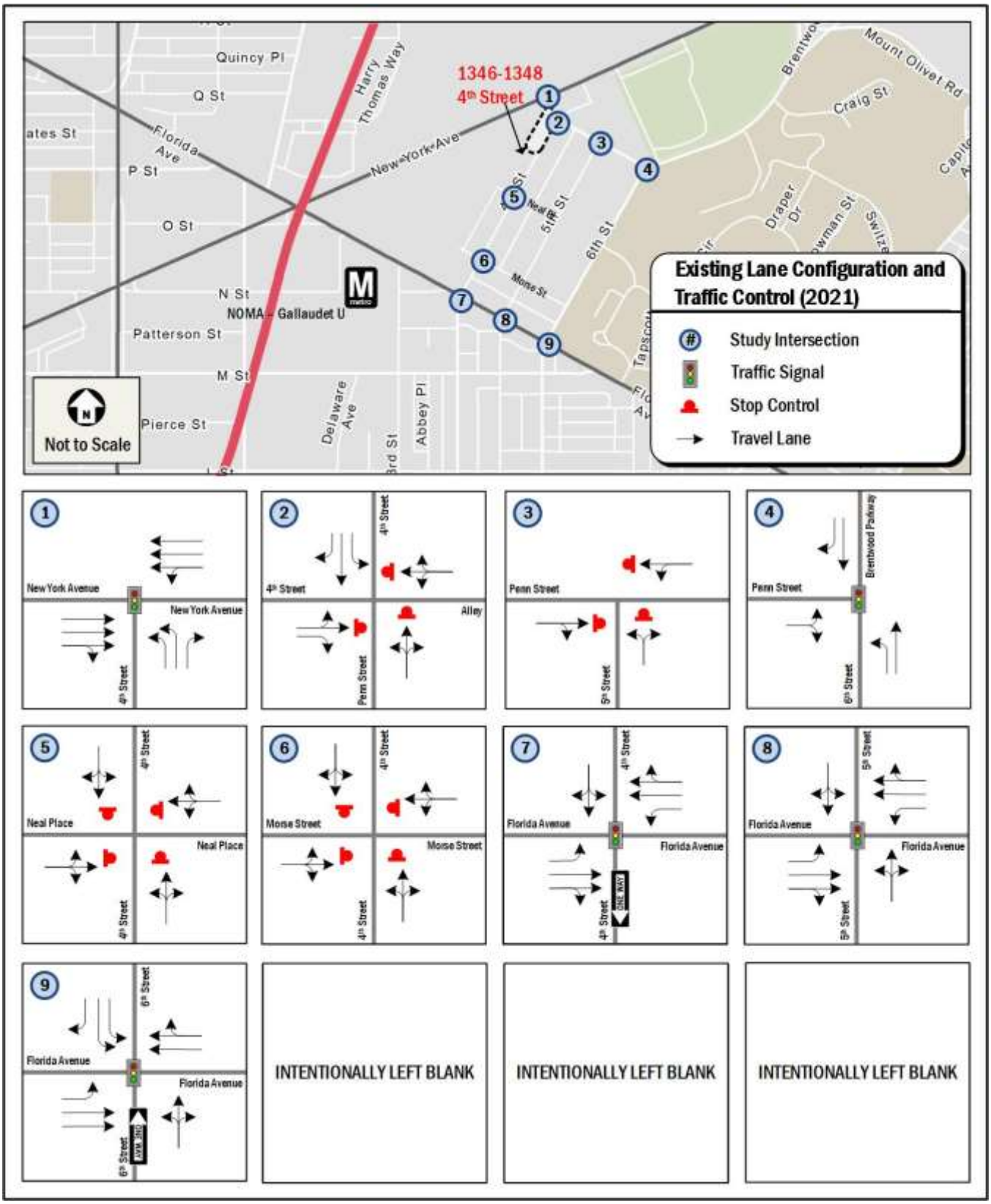

Figure 20: Existing Lane Configuration and Traffic Control (2021)

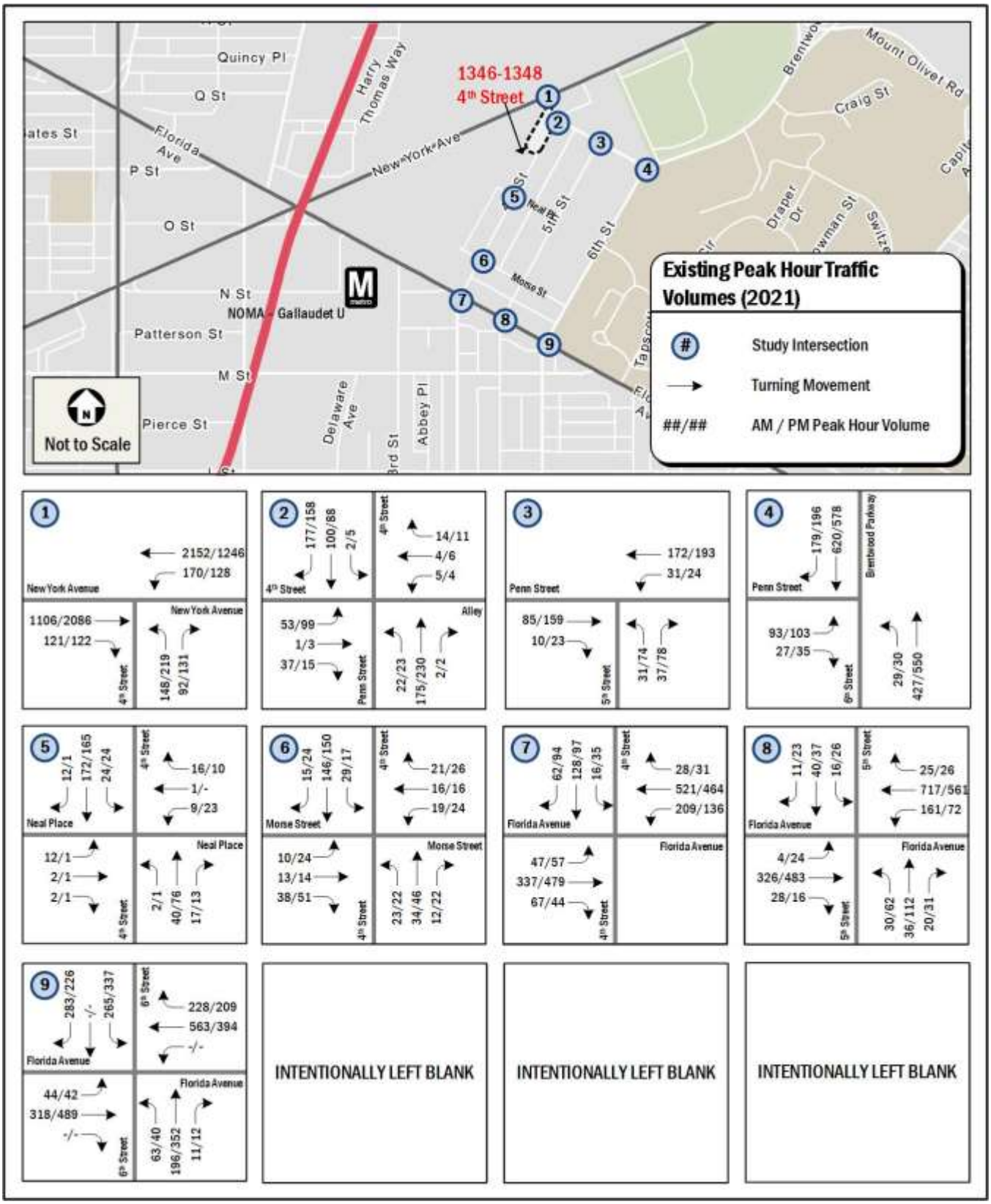

Figure 21: Existing (2021) Peak Hour Volumes

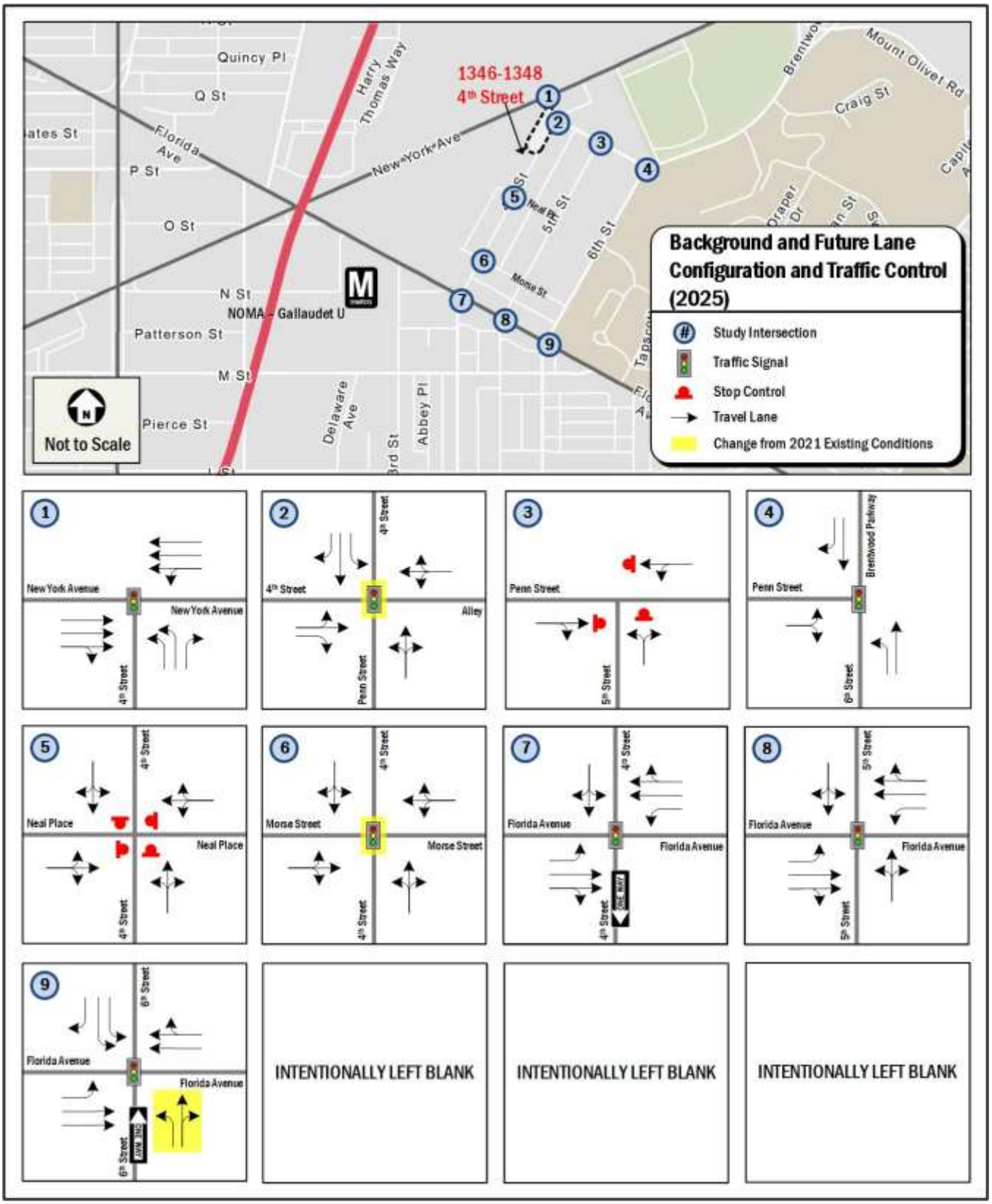

Figure 22: Background and Future Lane Configuration and Traffic Control

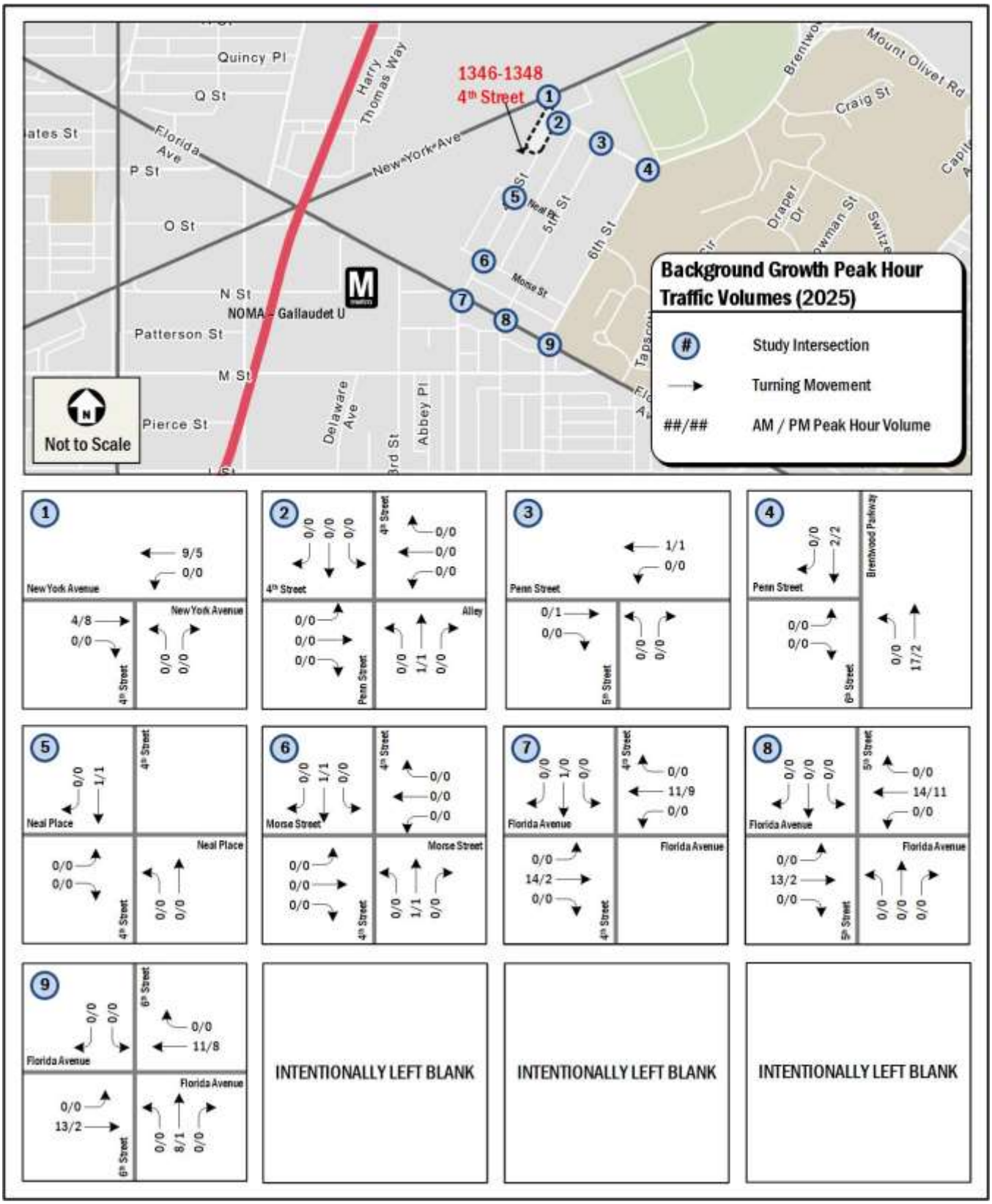

Figure 23: Background Regional Growth Peak Hour Volumes

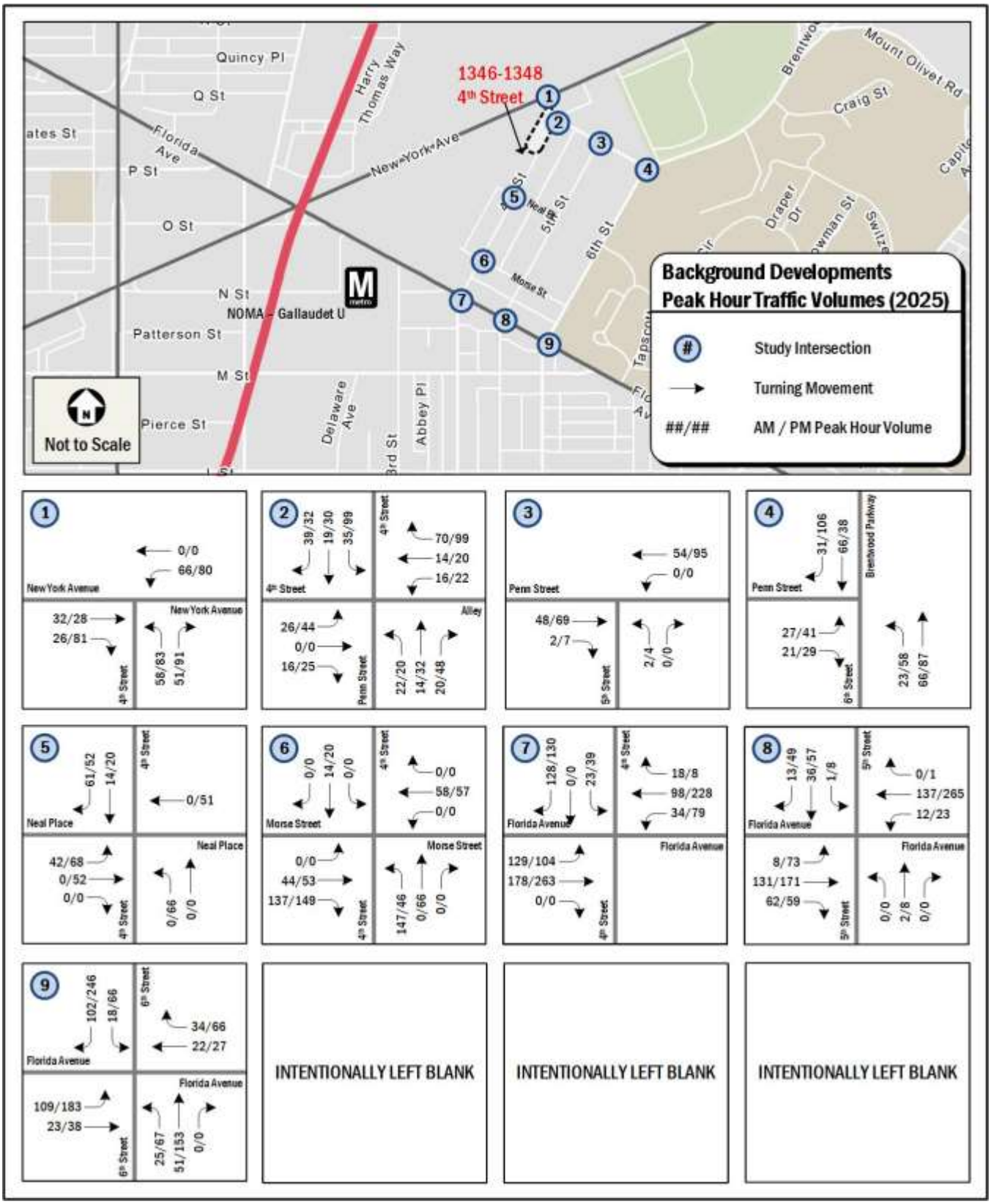

Figure 24: Background Developments Peak Hour Volumes

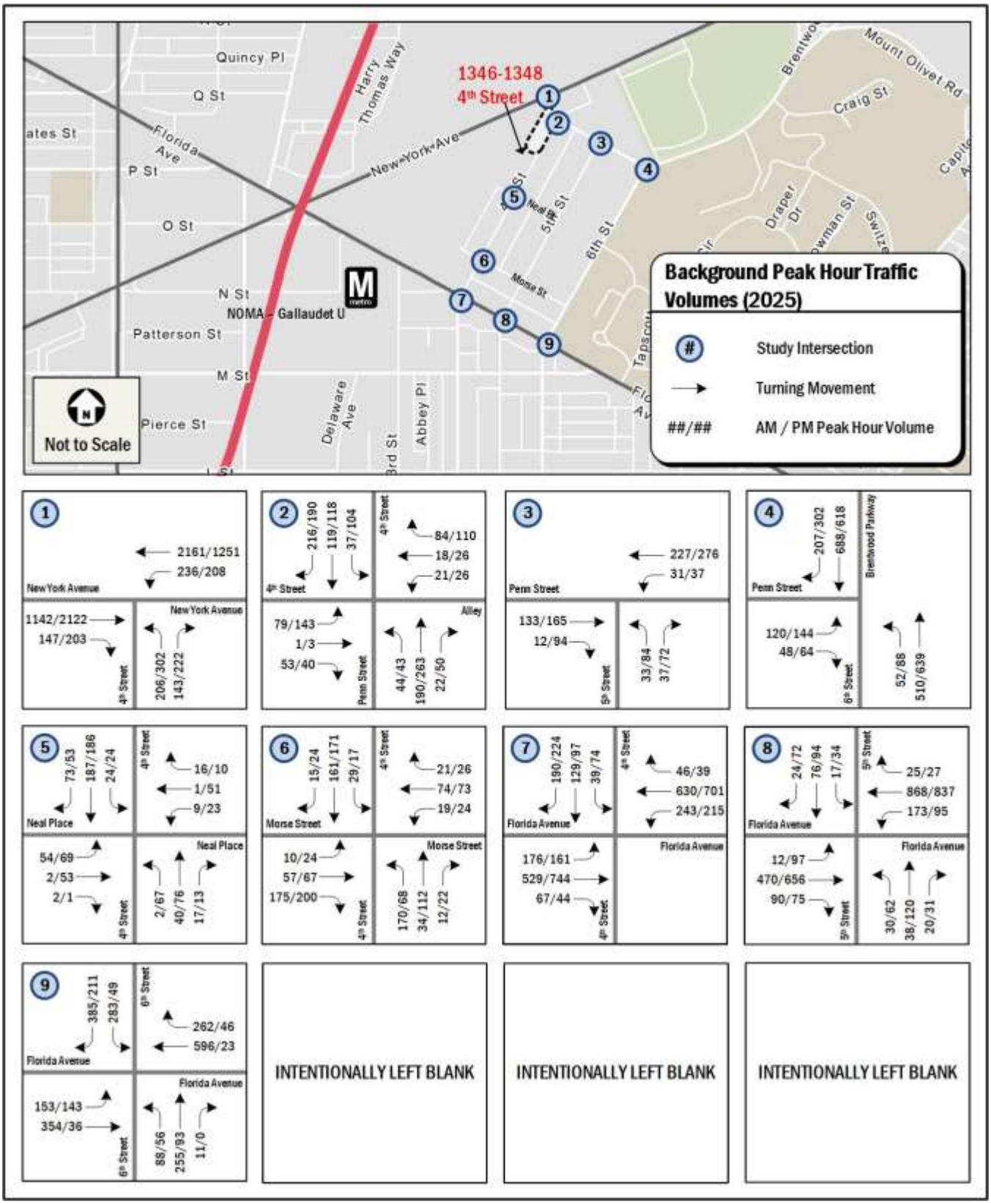

Figure 25: Total Background (2025) Peak Hour Volumes

Figure 26: Inbound Distribution/Assignment

Figure 27: Outbound Distribution/Assignment

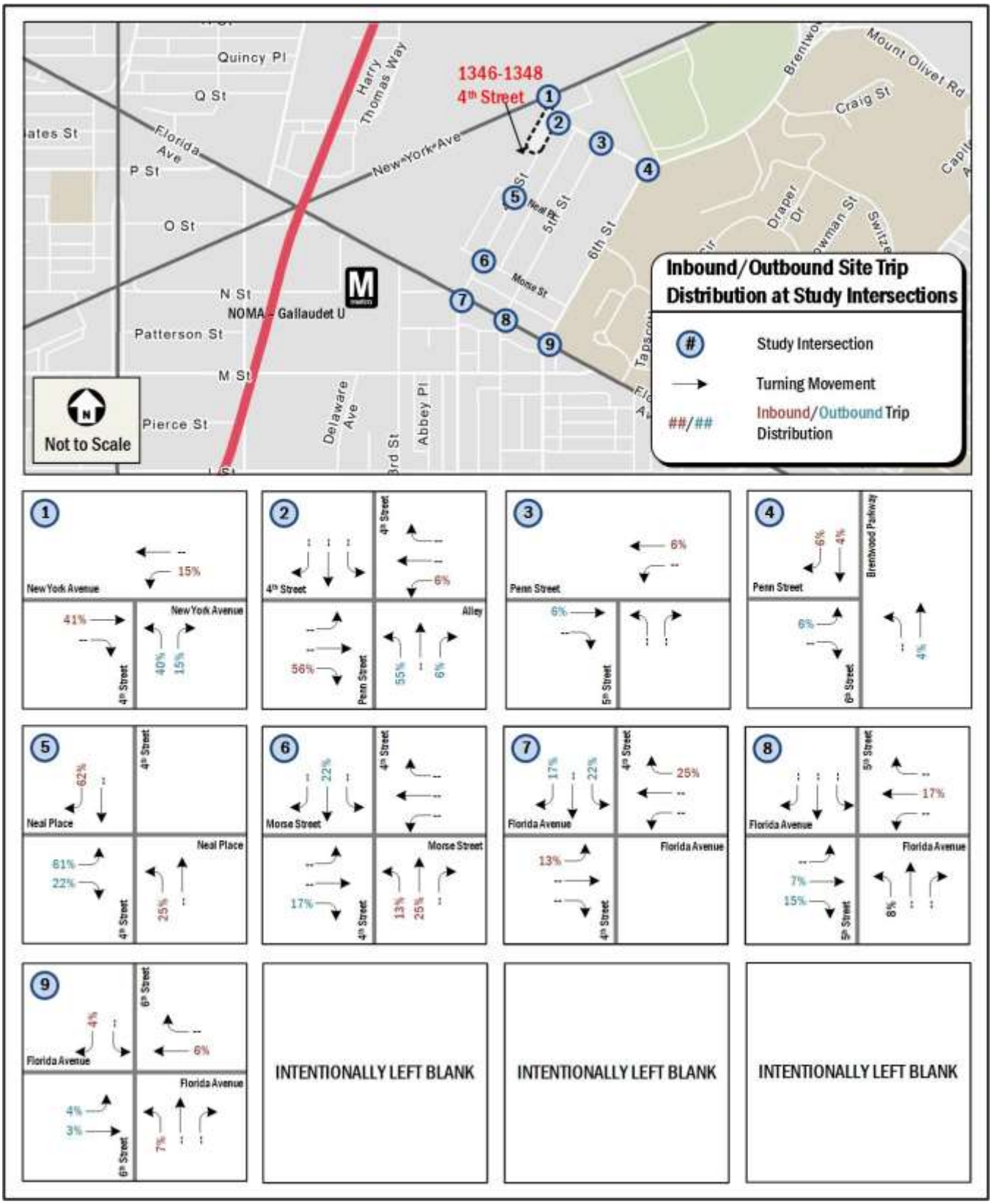

Figure 28: Site Trip Distribution/Assignment at Study Intersections

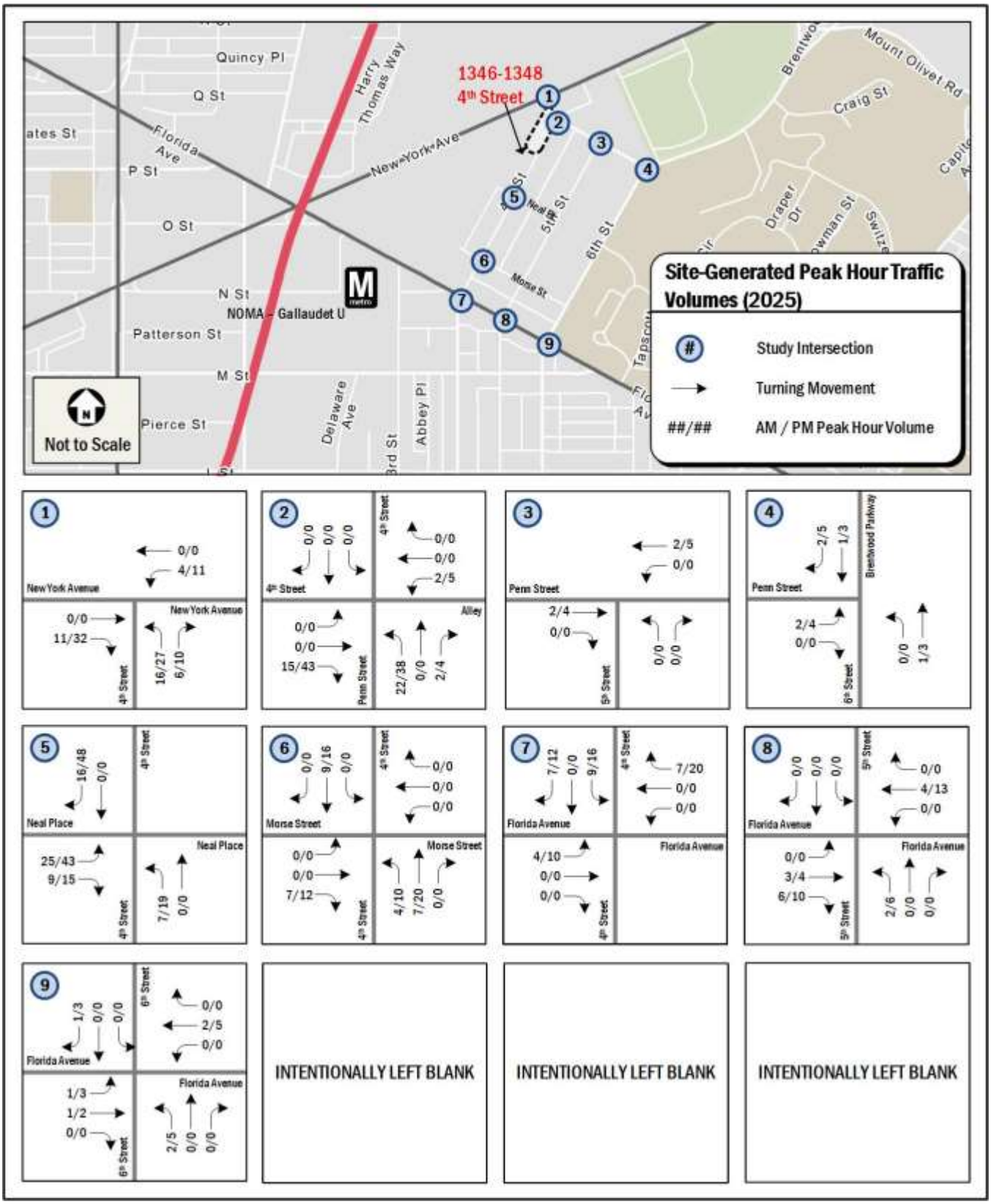

Figure 29: Site-Generated Peak Hour Volumes

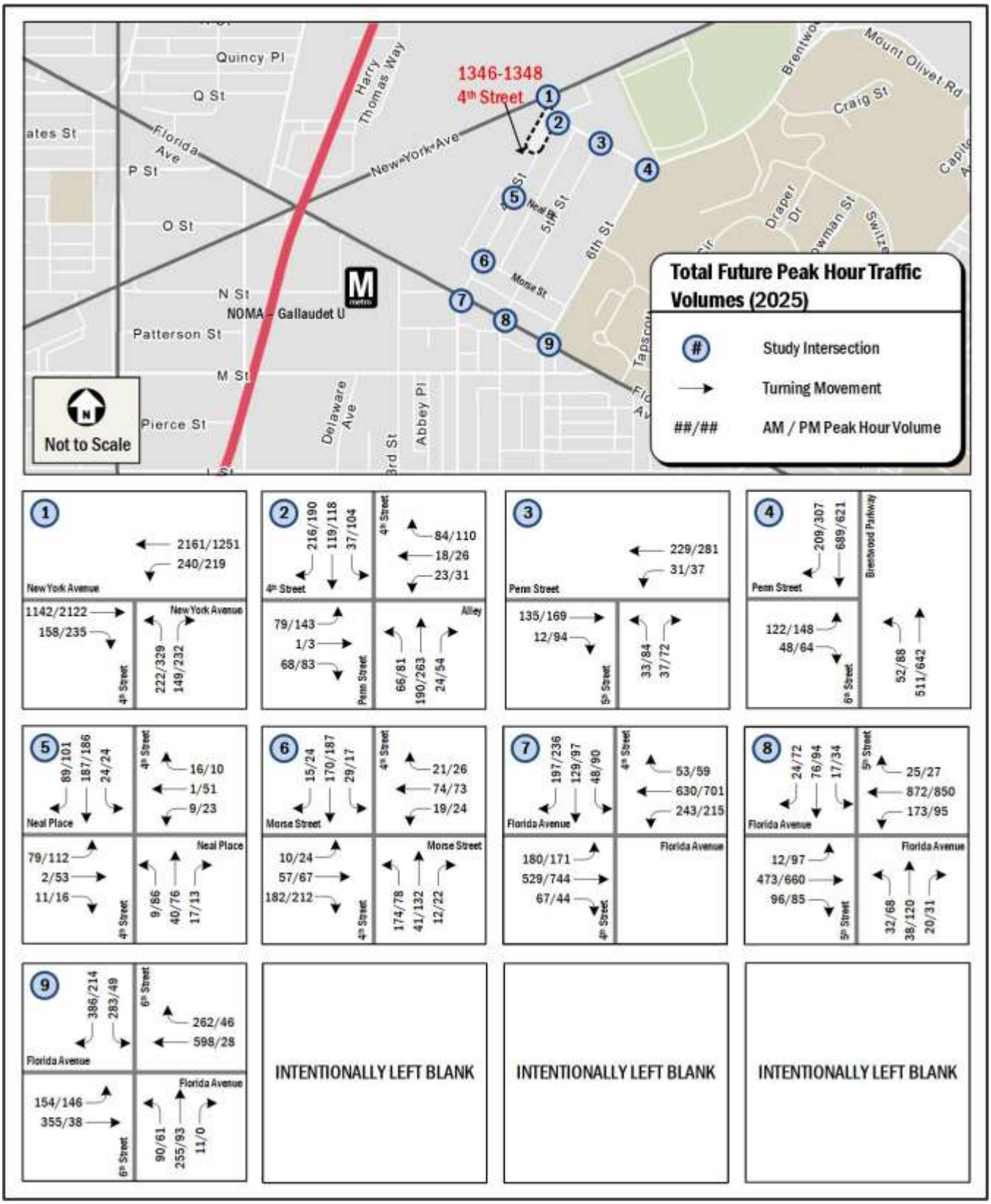

Figure 30: Total Future Peak Hour Traffic Volumes

Table 10: LOS Results

Intersection and Approach	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
	AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. 4th St NE & New York Ave NE																
Eastbound	18.5	B	19.0	B	19.7	B	42.4	D	19.7	B	45.7	D	--	--	--	--
Westbound	24.1	C	8.3	A	35.1	D	8.0	A	35.9	D	8.0	A	--	--	--	--
Northbound	49.0	D	56.3	E	60.7	E	57.6	E	60.9	E	58.3	E	--	--	--	--
Overall	**23.9**	**C**	**18.6**	**B**	**32.4**	**C**	**32.6**	**C**	**33.0**	**C**	**34.7**	**C**	**--**	**--**	**--**	**--**
2. Penn St NE & 4th St NE & Alley																
Eastbound	--	--	--	--	38.2	D	40.7	D	38.9	D	44.0	D	--	--	--	--
Westbound	--	--	--	--	34.5	C	32.2	C	34.7	C	32.7	C	--	--	--	--
Northbound	--	--	--	--	16.9	B	21.8	C	17.8	B	23.8	C	--	--	--	--
Southbound	--	--	--	--	7.6	A	4.5	A	7.1	A	4.1	A	--	--	--	--
Overall	**--**	**--**	**--**	**--**	**18.6**	**B**	**20.1**	**C**	**19.1**	**B**	**22.1**	**C**	**--**	**--**	**--**	**--**
3. 5th St NE & Penn St NE																
Eastbound	8.3	A	8.7	A	8.9	A	10.2	B	9.0	A	10.3	B	--	--	--	--
Westbound	9.4	A	9.6	A	10.4	B	11.6	B	10.5	B	11.7	B	--	--	--	--
Northbound	8.3	A	9.1	A	8.7	A	9.9	A	8.7	A	9.9	A	--	--	--	--
Overall	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
4. 6th St NE/Brentwood Pkwy NE & Penn St NE																
Eastbound	45.3	D	45.4	D	51.1	D	53.6	D	51.4	D	54.4	D	--	--	--	--
Northbound	8.4	A	10.4	B	9.7	A	12.2	B	9.7	A	12.3	B	--	--	--	--
Southbound	10.8	B	10.3	B	11.9	B	11.4	B	11.9	B	11.5	B	--	--	--	--
Overall	**13.0**	**B**	**13.6**	**B**	**15.2**	**B**	**16.5**	**B**	**15.3**	**B**	**16.7**	**B**	**--**	**--**	**--**	**--**
5. 4th St NE & Neal Pl NE																
Eastbound	8.2	A	8.1	A	8.9	A	9.6	A	9.2	A	11.1	B	--	--	--	--
Westbound	7.6	A	7.6	A	7.9	A	9.0	A	8.0	A	9.6	A	--	--	--	--
Northbound	7.5	A	7.7	A	7.8	A	9.4	A	8.1	A	10.3	B	--	--	--	--
Southbound	8.8	A	8.4	A	10.0	A	10.3	B	10.5	B	11.9	B	--	--	--	--
Overall	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
6. 4th St NE & Morse St NE																
Eastbound	7.9	A	8.2	A	29.9	C	64.0	E	30.2	C	64.1	E	--	--	--	--
Westbound	8.1	A	8.2	A	26.0	C	33.0	C	26.0	C	32.4	C	--	--	--	--
Northbound	8.1	A	8.2	A	17.9	B	5.1	A	18.1	B	6.0	A	--	--	--	--
Southbound	8.9	A	9.0	A	17.0	B	12.8	B	17.3	B	13.5	B	--	--	--	--
Overall	**--**	**--**	**--**	**--**	**22.6**	**C**	**31.9**	**C**	**22.7**	**C**	**31.4**	**C**	**--**	**--**	**--**	**--**

Intersection and Approach	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
	AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
7. 4th St NE & Florida Ave NE																
Eastbound	24.0	C	20.8	C	97.5	F	55.2	E	101.8	F	62.8	E	--	--	52.3	D
Westbound	30.2	C	18.9	B	41.3	D	39.1	D	41.1	D	38.4	D	--	--	38.5	D
Northbound	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	--	--	0.0	A
Southbound	21.2	C	31.1	C	42.9	D	46.7	D	40.7	D	47.7	D	--	--	48.7	D
Overall	**26.9**	**C**	**21.6**	**C**	**62.7**	**E**	**47.0**	**D**	**63.7**	**E**	**50.0**	**D**	**--**	**--**	**45.9**	**D**
8. 5th St NE & Florida Ave NE																
Eastbound	9.2	A	12.6	B	11.6	B	15.4	B	12.3	B	16.3	B	--	--	17.3	B
Westbound	37.3	D	13.4	B	41.0	D	21.9	C	40.9	D	21.9	C	--	--	22.5	C
Northbound	21.9	C	49.4	D	22.1	C	62.9	E	22.3	C	70.1	E	--	--	61.8	E
Southbound	19.8	B	30.8	C	21.2	C	38.9	D	21.2	C	39.0	D	--	--	37.3	D
Overall	**28.4**	**C**	**19.1**	**B**	**29.7**	**C**	**25.0**	**C**	**29.8**	**C**	**26.1**	**C**	**--**	**--**	**25.7**	**C**
9. 6th St NE & Florida Ave NE																
Eastbound	4.3	A	4.2	A	81.1	F	4.7	A	82.5	F	5.2	A	--	--	--	--
Westbound	23.9	C	26.7	C	26.8	C	19.3	B	26.8	C	19.4	B	--	--	--	--
Northbound	36.9	D	64.2	E	31.8	C	24.9	C	31.7	C	24.9	C	--	--	--	--
Southbound	35.0	C	34.0	C	39.8	D	17.4	B	39.9	D	17.3	B	--	--	--	--
Overall	**25.2**	**C**	**30.2**	**C**	**42.7**	**D**	**15.8**	**B**	**43.0**	**D**	**16.0**	**B**	**--**	**--**	**--**	**--**

Table 11: v/c Comparison

Intersection and Movement	Existing (2021)		Background (2025)		Future (2025)		Future (2025) with Mitigations	
	AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
	v/c	v/c	v/c	v/c	v/c	v/c	v/c	v/c
1. 4th St NE & New York Ave NE								
Eastbound	0.51	0.79	0.54	0.97	0.55	0.99	--	--
Westbound	0.95	0.62	1.00	0.61	1.00	0.61	--	--
Northbound L	0.35	0.47	0.48	0.65	0.52	0.71	--	--
Northbound R	0.19	0.42	0.30	0.53	0.31	0.55	--	--
2. Penn St NE & 4th St NE & Alley								
Eastbound	--	--	0.37	0.54	0.41	0.62	--	--
Westbound	--	--	0.27	0.31	0.28	0.33	--	--
Northbound	--	--	0.33	0.46	0.38	0.54	--	--
Southbound L	--	--	0.08	0.26	0.08	0.27	--	--
Southbound T	--	--	0.14	0.14	0.14	0.14	--	--
Southbound R	--	--	0.27	0.24	0.27	0.24	--	--
3. 5th St NE & Penn St NE								
Eastbound	--	--	--	--	--	--	--	--
Westbound	--	--	--	--	--	--	--	--
Northbound	--	--	--	--	--	--	--	--
4. 6th St NE/Brentwood Pkwy NE & Penn St NE								
Eastbound	0.42	0.44	0.60	0.67	0.60	0.68	--	--
Northbound L	0.09	0.09	0.18	0.27	0.18	0.27	--	--
Northbound T	0.45	0.58	0.54	0.67	0.54	0.67	--	--
Southbound T	0.56	0.52	0.63	0.55	0.63	0.56	--	--
Southbound R	0.24	0.25	0.28	0.37	0.28	0.37	--	--
5. 4th St NE & Neal Pl NE								
Eastbound	--	--	--	--	--	--	--	--
Westbound	--	--	--	--	--	--	--	--
Northbound	--	--	--	--	--	--	--	--
Southbound	--	--					--	--
6. 4th St NE & Morse St NE								
Eastbound	--	--	0.63	0.87	0.64	0.88	--	--
Westbound	--	--	0.35	0.47	0.35	0.46	--	--
Northbound	--	--	0.70	0.34	0.74	0.40	--	--
Southbound	--	--	0.37	0.29	0.38	0.31	--	--

Intersection and Movement	Existing (2021)		Background (2025)		Future (2025)		Future (2025) with Mitigations	
	AM Peak	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*	*AM Peak*	*PM Peak*
	v/c	v/c	v/c	v/c	v/c	v/c	v/c	v/c
7. 4th St NE & Florida Ave NE								
Eastbound L	0.43	0.46	1.60	1.30	1.63	1.38	--	1.24
Eastbound T	0.49	0.41	0.70	0.61	0.70	0.61	--	0.61
Westbound L	0.98	0.72	1.14	1.14	1.14	1.14	--	1.14
Westbound T	0.48	0.34	0.60	0.51	0.61	0.53	--	0.54
Southbound T	0.33	0.36	0.39	0.49	0.41	0.54	--	0.54
Southbound R	0.14	0.27	0.42	0.58	0.44	0.62	--	0.60
8. 5th St NE & Florida Ave NE								
Eastbound L	0.03	0.08	0.10	0.41	0.10	0.41	--	0.42
Eastbound T	0.33	0.34	0.53	0.50	0.54	0.51	--	0.52
Westbound L	1.22	0.75	1.31	0.98	1.31	0.98	--	0.98
Westbound T	0.52	0.33	0.62	0.49	0.63	0.50	--	0.50
Northbound	0.27	0.74	0.28	0.85	0.29	0.90	--	0.85
Southbound	0.16	0.26	0.27	0.59	0.27	0.60	--	0.57
9. 6th St NE & Florida Ave NE								
Eastbound L	0.35	0.24	1.43	0.39	1.44	0.40	--	--
Eastbound T	0.28	0.42	0.31	0.03	0.31	0.03	--	--
Westbound	0.75	0.60	0.82	0.08	0.82	0.08	--	--
Northbound L	--	--	0.26	0.14	0.27	0.15	--	--
Northbound T	0.75	0.95	0.72	0.22	0.72	0.22	--	--
Southbound L	0.83	0.71	0.88	0.10	0.88	0.10	--	--
Southbound R	0.54	0.36	0.74	0.32	0.74	0.33	--	--

Table 12: 50th and 95th Percentile Queueing Results (in feet)

Intersection and Lane Group	Storage Length (ft)	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
		AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
		50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
1. 4th St NE & New York Ave NE																	
Eastbound	900	246	286	531	594	269	311	799	#956	272	314	827	#982	--	--	--	--
Westbound	900	360	#402	145	165	~390	#524	158	180	~397	#530	160	182	--	--	--	--
Northbound L	90	68	104	105	150	106	150	160	211	114	160	175	224	--	--	--	--
Northbound R	90	4	46	98	165	50	92	170	260	53	97	181	269	--	--	--	--
2. Penn St NE & 4th St NE & Alley																	
Eastbound	560	--	--	--	--	90	155	146	234	99	167	181	287	--	--	--	--
Westbound	200	--	--	--	--	39	92	63	125	43	97	72	137	--	--	--	--
Northbound	240	--	--	--	--	136	194	217	304	155	220	259	362	--	--	--	--
Southbound L	90	--	--	--	--	10	m13	16	m22	9	m12	14	m19	--	--	--	--
Southbound T	90	--	--	--	--	32	m38	19	m26	30	m36	17	m22	--	--	--	--
Southbound R	90	--	--	--	--	3	m9	0	m0	2	m8	1	m0	--	--	--	--
3. 5th St NE & Penn St NE																	
Eastbound	240	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Westbound	260	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northbound	550	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4. 6th St NE/Brentwood Pkwy NE & Penn St NE																	
Eastbound	260	78	139	90	156	114	193	145	234	116	196	149	240	--	--	--	--
Northbound L	100	6	17	7	17	12	29	23	48	12	29	23	48	--	--	--	--
Northbound T	540	129	191	192	285	171	253	252	380	171	254	254	384	--	--	--	--
Southbound T	600	213	305	188	266	255	367	210	298	256	367	211	300	--	--	--	--
Southbound R	170	10	40	8	38	17	51	18	57	18	51	18	58	--	--	--	--
5. 4th St NE & Neal Pl NE																	
Eastbound	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Westbound	85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northbound	400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southbound	550	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6. 4th St NE & Morse St NE																	
Eastbound	120	--	--	--	--	43	126	131	218	44	128	135	229	--	--	--	--
Westbound	90	--	--	--	--	45	92	67	111	45	92	66	111	--	--	--	--
Northbound	200	--	--	--	--	120	m93	45	m119	126	m98	56	m129	--	--	--	--
Southbound	400	--	--	--	--	72	128	76	146	76	133	85	157	--	--	--	--

Intersection and Lane Group	Storage Length (ft)	Existing (2021)				Background (2025)				Future (2025)				Future (2025) with Mitigations			
		AM Peak		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*		*AM Peak*		*PM Peak*	
		50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th	50th	95th
7. 4th St NE & Florida Ave NE																	
Eastbound L	190	26	60	38	80	~143	#266	~142	#275	~148	#272	~157	#293	--	--	~147	#283
Eastbound T	380	90	132	115	158	147	205	198	261	147	205	198	261	--	--	198	261
Westbound L	200	101	#251	71	m#174	~158	#304	~175	m#323	~158	#301	~175	m#321	--	--	~175	m#322
Westbound T	250	56	85	53	87	68	91	88	m102	69	92	91	m104	--	--	90	m104
Southbound T	190	61	109	74	130	90	m158	88	m149	95	m165	99	m161	--	--	99	m161
Southbound R	190	0	0	0	13	15	95	21	m102	18	101	32	m100	--	--	26	m104
8. 5th St NE & Florida Ave NE																	
Eastbound L	50	1	m1	10	m25	2	m3	57	m114	2	m3	57	m115	--	--	58	m117
Eastbound T	235	91	137	144	197	158	227	235	311	162	232	242	320	--	--	245	324
Westbound L	75	~115	m#199	51	m#113	~129	m#190	66	#174	~129	m#190	66	#174	--	--	66	#174
Westbound T	240	71	99	37	m60	113	157	145	211	114	158	148	215	--	--	153	222
Northbound	320	35	74	127	#241	36	75	138	#273	37	77	143	#288	--	--	141	#279
Southbound	195	22	52	37	81	41	84	103	182	41	84	103	182	--	--	101	179
9. 6th St NE & Florida Ave NE																	
Eastbound L	150	3	21	3	m7	~105	#225	10	m18	~106	#228	10	m21	--	--	--	--
Eastbound T	240	11	15	20	25	10	52	1	m2	12	53	1	m3	--	--	--	--
Westbound	280	188	262	164	223	213	#297	14	30	214	#298	15	31	--	--	--	--
Northbound L	150	--	--	--	--	36	75	26	56	37	76	29	61	--	--	--	--
Northbound T	150	133	#255	260	#454	130	#246	44	85	130	#246	44	85	--	--	--	--
Southbound L	190	75	#140	109	158	80	#153	14	31	80	#153	14	31	--	--	--	--
Southbound R	190	61	137	19	63	124	#266	0	34	125	#272	0	35	--	--	--	--

95th percentile volume exceeds capacity, queue may be longer
m Volume for 95th percentile queue is metered by upstream signal
~ Volumes exceeds capacity, queue is theoretically infinite

Transit Facilities

This chapter discusses the existing and proposed transit facilities in the vicinity of the site, accessibility to transit, and evaluates the overall transit impacts of the Project.

The following conclusions are reached within this chapter:

- The site has excellent transit service for existing development near the site;
- The site is 0.5 miles or a nine-minute walk from the NoMa-Gallaudet U Metro station;
- The site has access to two (2) high-frequency Metrobus routes within a five-minute walk that provide connections to all six (6) Metrorail lines and neighborhoods from Adams Morgan and U Street to the northwest to Anacostia and Congress Heights to the southeast;
- The nearby Florida Avenue transit priority corridor included in the *moveDC* 2021 update, as well as other corridors that cover major Metrobus routes throughout the District, have the potential to improve transit access to the site;
- The Project is expected to generate a manageable amount of transit trips that the existing transit service is capable of accommodating.

Existing Transit Service

The site is served by two (2) major bus routes – WMATA routes 90 and 92 – as well as the single-trip WMATA route X3 on afternoons when KIPP DC College Prep is open. Multiple bus stops served by the 90 and 92 are within a ¼ mile walk of the site, closest of which is only five (5) minutes walking distance from the site on Florida Avenue, between 3rd Street NE and 4th Street NE. Despite only being served by two (2) routes, the site has very good, high-frequency bus service. As of October 13, 2021, both the 90 and 92 have approximately 12-minute headways from 7:00 AM to 9:00 PM on all days of the week with even more frequent service at certain times for inline destinations that can be reached by either route. These bus routes provide connections to five (5) Metrorail stations serving all six (6) Metrorail lines as well as neighborhoods from Adams Morgan and U Street to the northwest and Anacostia and Congress Heights to the southeast. Figure 31 identifies the major transit routes, stations, and stops in the study area.

The site is located within an approximately nine-minute walk or 0.5 miles from the NoMa-Gallaudet U Metrorail station (served by the Red Line). The Red Line travels south from Shady Grove, MD through Bethesda, MD and the District core before turning north at Union Station (south of the site) through Silver Spring, MD to Glenmont, MD.

Prior to the COVID-19 public health crisis, Red Line trains ran approximately every four (4) minutes during weekday morning and evening peak hours, every six (6) minutes during weekday off-peak hours, and every 15-20 minutes on weekends.

As of November 172021, the Red Line runs every six (6) minutes between 5:00am and 9:30pm on weekdays, every 10 minutes after 9:30pm on weekdays, and every eight (8) minutes on weekends. Metrorail service currently begins at 5:00am on weekdays and 7:00am on weekends. Service ends at midnight Sunday through Thursday and 1:00am on Fridays and Saturdays.

Table 13 shows a summary of the bus route information for the routes that serve the site, including service hours, headway, and distance to the nearest bus stop. Table 14 shows WMATA's recommended amenities for each type of bus stop. Table 15 shows a detailed inventory of the amenities appearing at each existing bus stop within the transit study area.

Planned Transit Improvements

moveDC Transit Priority Network

The draft Transit Priority Network in the ongoing *moveDC* 2021 update, the District's multimodal long-range transportation plan, proposes transit priority infrastructure such as dedicated transit lanes, better transit stops, and/or special treatments for buses at intersections along designated corridors. Specific treatments along given streets or route paths are not proposed but rather prioritized as part of the long-range plan. Transit priority corridors proposed near the proposed project include:

- Florida Avenue from 8th Street NE to 9th Street NW
- New York Avenue from the Maryland state line (eastern District boundary) to 7th Street NW/Mt Vernon Square

Both WMATA routes 90 and 92 are covered by the Florida Avenue transit priority corridor as well as additional corridors outside of the study area. In fact, nearly the entire alignments of both routes 90 and 92 are covered by proposed transit priority corridors as part of the ongoing *moveDC* 2021 update. Any

transit priority infrastructure improvements proposed have the potential to improve bus speeds and service to the site in the future. These corridors can be seen in Figure 32.

New Entrance at NoMa-Gallaudet University Station

Approved by the DC City Council in May 2019, a new, $23 million entrance to NoMa-Gallaudet University Metrorail station will provide better access to the Union Market/University side of the neighborhood. As of October 2021, there is no anticipated date for construction to begin.

Site-Generated Transit Impacts

Transit Trip Generation

The Project is forecast to generate 114 transit trips (43 inbound, 71 outbound) during the morning peak hour, 239 transit trips (127 inbound, 112 outbound) during the afternoon peak hour, and 264 transit trips (135 inbound, 129 outbound) during the Saturday peak hour.

It is expected that existing transit service can accommodate these new Project-generated transit trips.

Table 13: Local Bus Route Information

Route Number	Route Name	Service Hours at Stop Closest to Site [1]			Headway (minutes) [1]	Walking Distance to Nearest Stop[2]
		Weekdays	Saturdays	Sundays		
		WMATA routes				
90	U Street-Garfield Line	4:49am-11:49am 12:09pm-12:04am	4:48am-11:43am 12:08pm-12:21am	5:03am-11:42am 12:06pm-12:17am	12-32	0.25 mi (5 min)
92	U Street-Garfield Line	4:33am-11:59am 12:13pm-2:17am	4:33am-11:56am 12:20pm-2:30am	4:43am-11:54am 12:18pm-2:24am	6-60	0.25 mi (5 min)
X3	Benning Road Line	4:10pm[3]	-	-	-	0.2 mi (5 min)

[1] Service hours and headways reflect regular service effective September 5, 2021, including new high-frequency service on WMATA routes 90 and 92 to reflect approximately 12-minute headways between the hours of 7:00 AM and 9:00 PM.
[2] Walking distances are measured from the nearest on-site location.
[3] A single trip operates only on days when KIPP DC College prep is open.

Table 14: WMATA Recommended Bus Stop Amenities

Amenity	Basic Stop		Enhanced Stop	Transit Center Stop
	< 50 daily boardings	≥ 50 daily boardings		
Bus stop flag	●	●	●	●
Route map and schedule	●	●	●	●
5’ x 8’ landing pad	●	●	●	●
40’/60’ x 8’ landing pad			●	●
4’ sidewalk	●	●	●	●
Bench		●	●	●
Shelter		●	●	●
Lighting (on shelter or within 30’ if overhead)	Recommended for stops with early morning and evening service		●	●
Dynamic information signage	Contingent on presence of shelter			
Trash and recycling receptacles	Recommended where surrounding uses may generate trash			

Source: 2019 WMATA *Bus Stop Amenity Reference Guide*

Table 15: Bus Stop Inventory

Location	Stop ID	Routes Served	Amenities								
			Bus stop flag	Route map & sched-ule	Land-ing pad	Side-walk	Bench	Shel-ter	Dy-namic info sign	Light-ing	Trash Recp.
Florida Ave & 7th St NE (EB)	1001324	90, 92	●	●		●					●
Florida Ave & 7th St NE (WB)	1001337	90, 92	●	●		●				●	●
Florida Ave & 5th St NE (EB)	1001356	90, 92	●	●	●	●					●
Florida Ave & 5th St NE (WB)	1001358	90, 92	●	●	●	●	●	●	●	●	●
Florida Ave & 3rd St NE (EB)	1001378	90, 92	●	●		●				●	
Florida Ave & 2nd St NE (EB)	1003647	90, 92	●			●				●	●
Brentwood Pkwy & Penn St NE (NB)	1003838	90, X3	●		●	●				●	
Florida Ave & 2nd St NE (WB)	1003882	90, 92	●		●	●					

Figure 31: Existing Transit Facilities

Figure 32: Future Transit Facilities

Pedestrian Facilities

This chapter summarizes the existing and future pedestrian access to the site and reviews walking routes to and from the site.

The following conclusions are reached within this chapter:

- Overall, there is an excellent, well-connected pedestrian network surrounding the site despite some incidences of missing crosswalks or sidewalks that do not meet width standards;
- The Amtrak and WMATA tracks pose a barrier to the north of the site. However, there are safe and comfortable walking routes between the site and all nearby destinations;
- As part of the proposed development, enhancements to the Union Market Streetscape Guidelines for 4th Street NE will be made. These proposed improvements include the redesign of that street as a curbless, shared street which will further enhance the pedestrian network. The Project will implement these enhancements along the site's frontage;
- Future projects, such as the pedestrian tunnel to the NoMa-Gallaudet U Metrorail station will further enhance the pedestrian network; and
- The Project is expected to generate pedestrian trips to origins and destinations nearby, in addition to pedestrian trips generated by walking to and from transit stops. The pedestrian facilities surrounding the site can accommodate these new trips.

Pedestrian Study Area

Pedestrian facilities within approximately a quarter-mile walk of the site were evaluated, as well as along the path to the NoMa-Gallaudet U Metrorail station. The site has good existing connectivity to major local destinations, including the Union Market neighborhood, the NoMa-Gallaudet U Metrorail station. The 10, 20, and 30-minute walksheds for the site are shown in Figure 33, and suggested pedestrian pathways, walking time, and distances to nearby destinations are shown in Figure 34. A summary of the existing pedestrian facilities within the study area is shown in Figure 35 with a summary of sidewalk width requirements shown in Table 16.

Pedestrian Infrastructure

This section outlines existing and proposed pedestrian infrastructure within the pedestrian study area.

Existing Conditions

There are minor areas of concern within the study area that may impact the quality and attractiveness of walking, such as missing sidewalks along Brentwood Parkway, Penn Street, New York Avenue, and 4th Street NE as well as the alley between The Batley and the future Market Terminal Development site. Additionally, there are sidewalks in the study area that do not meet DDOT's minimum width or buffer requirements, including those along 5th Street, 6th Street, and Florida Avenue NE among others. Other areas of concern include missing curb ramps along 6th Street NE at its intersections with Neal Place, Orleans Place, and Morton Place NE, as well as locations along Penn Street, 4th Street, and Neal Place NE. It is generally anticipated that missing curb ramps and sidewalks as well as those that do not meet DDOT and ADA standards will be improved as the surrounding planned developments are completed.

Roadways directly adjacent to the site are considered part of a high density/light commercial area. Sidewalks are missing along the site's frontage on 4th Street NE, and sidewalks along New York Avenue NE adjacent to the site are present and generally sufficient for walking but do not meet DDOT standards of minimum width or buffer. Nevertheless, sidewalks in the study area are generally in good condition and provide sufficient connectivity.

ADA standards require that curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks are not desired but where they are present, a 48" clear space is required outside active vehicle traffic lanes and within marked crossings. As shown in Figure 35, virtually all existing curb ramps near the site meet ADA standards, but some signalized intersections lack a crosswalk and curb ramp on at least one leg and some unsignalized intersections lack crosswalks and curb ramps altogether.

Pedestrian Infrastructure Improvements

The Project will provide improved pedestrian facilities along the 4th Street NE site frontage that will meet DDOT and ADA standards. New sidewalks will be installed along the portion 4th Street NE where they are currently missing, filling in a gap in the neighborhood transportation network. The new sidewalk will meet or exceed the width requirements and will include curb ramps with detectable warnings.

The planned pedestrian tunnel under the railroad tracks between the NoMa-Gallaudet U Metrorail station and Florida Avenue NE will allow site visitors to travel between the station and the site more easily.

As part of the Project, enhancements to the Union Market Streetscape Guidelines for 4th Street NE will be made. These proposed improvements will include the redesign of that street as a shared, curbless street. The 4th Street NE redesign will provide several pedestrian amenities for a "Market Street" including outdoor seating and traffic calming measures such as frequent mid-block parklets and narrow vehicular lanes. The Project will implement these enhancements along the site's frontage.

New York Avenue Streetscape and Trail Project

The New York Avenue Streetscape and Trail Project will improve pedestrian and bicycle accommodations along New York Avenue. These improvements will include new sidewalks along both sides of New York Avenue from Florida Avenue to Bladensburg Road.

Additionally, background developments within the study area will provide improvements to the surrounding pedestrian facilities. It is expected that sidewalks, crosswalks, and curb ramps will be improved throughout the Union Market neighborhood consistent with the Union Market Streetscape Guidelines.

A summary of future pedestrian facilities within the study area is shown in Figure 36.

Site-Generated Pedestrian Impacts

Pedestrian Trip Generation

The Project is projected to generate 47 pedestrian trips (23 inbound, 24 outbound) during the morning peak hour, 140 pedestrian trips (70 inbound, 70 outbound) during the afternoon peak hour, and 161 pedestrian trips (83 inbound, 78 outbound) during the Saturday peak hour. The origins and destinations of these pedestrian trips are likely to be:

- Employment opportunities, other businesses, retail locations, and residences within the Union Market neighborhood;
- Gallaudet University; and
- Neighborhood destinations such as schools, libraries, and parking in the vicinity of the site.

In addition to these trips, the transit trips generated by the Project will also generate pedestrian demand between the site and nearby bus stops and NoMa-Gallaudet U Metrorail station. It is expected that the existing pedestrian facilities can accommodate these new Project-generated trips. The planned pedestrian improvements along the frontage of the site will further improve and expand the pedestrian network in the vicinity of the site.

Table 16: DDOT Sidewalk Width Requirements

Street Type	Curb Walk	Tree/Furnishing Zone	Sidewalk Unobstructed Clear Width	Total Minimum Sidewalk Width
Low to Moderate Density Residential	None	4 - 6 feet	6 feet	10 feet
High Density Residential or Light Commercial	1 foot	4 - 8 feet	8 feet	13 feet
Central DC and Commercial Areas	1 - 2 feet	4 - 10 feet	10 feet	16 feet

Source: DDOT *Design and Engineering Manual*

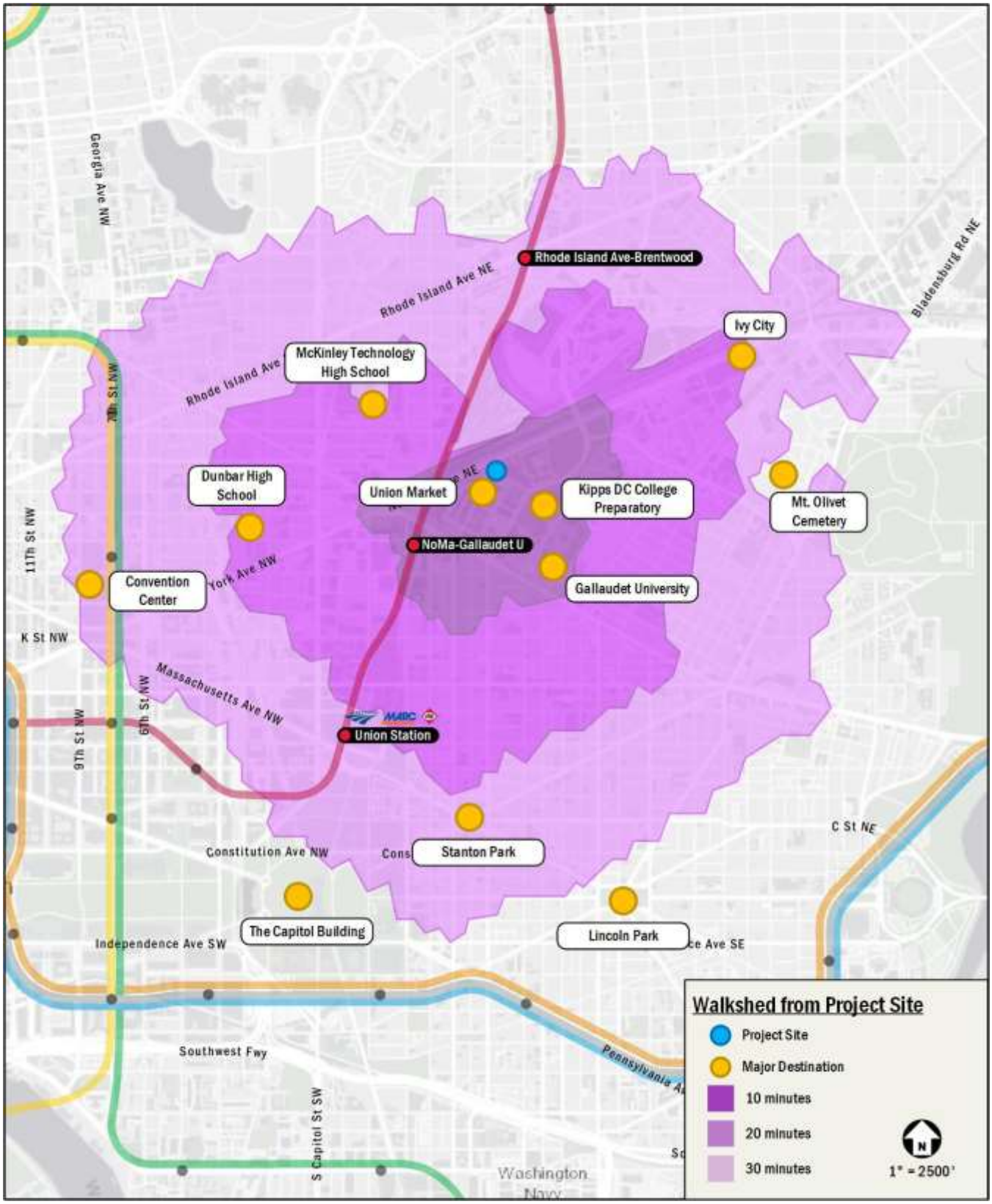

Figure 33: Walkshed from Project Site

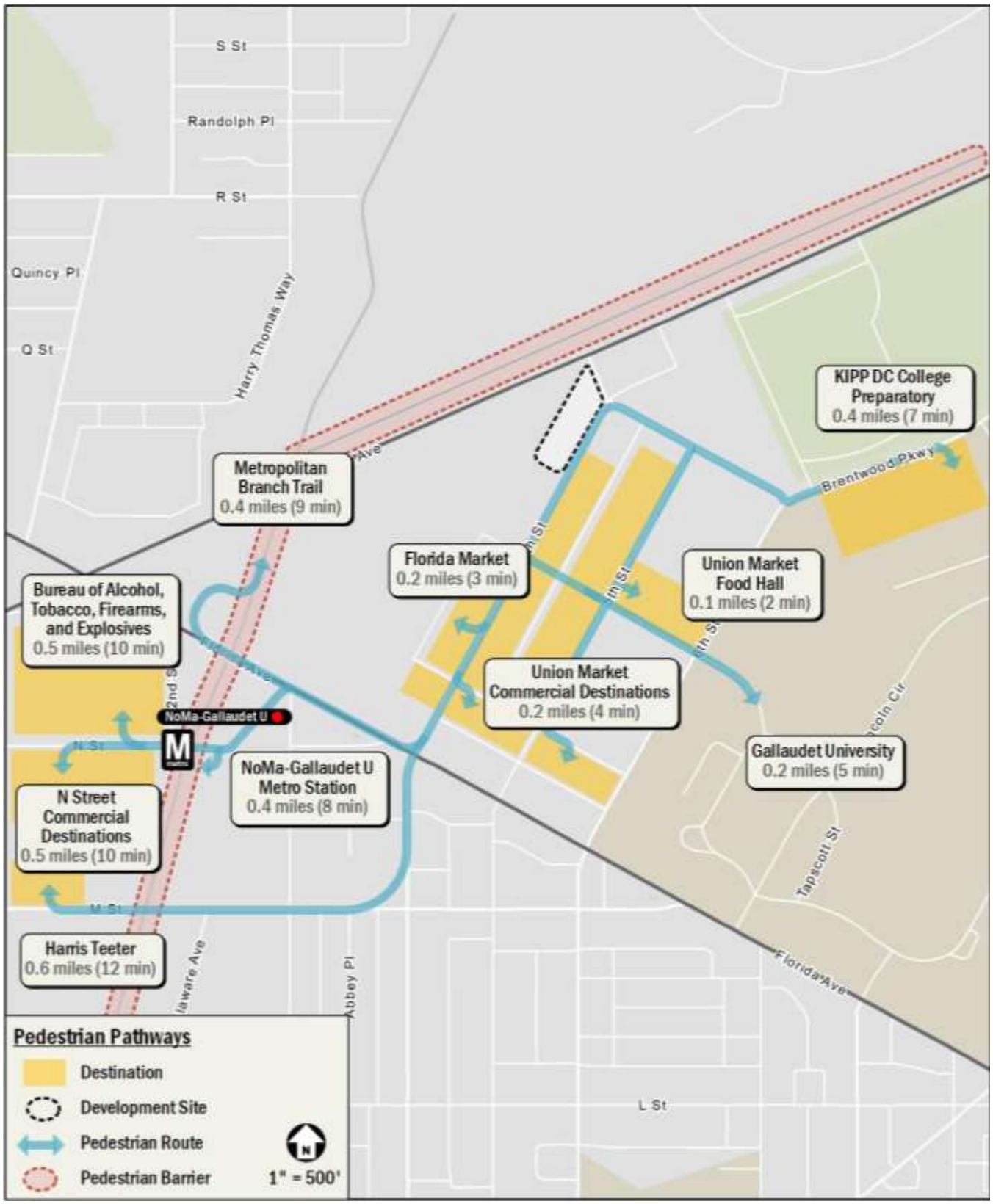

Figure 34: Pedestrian Pathways

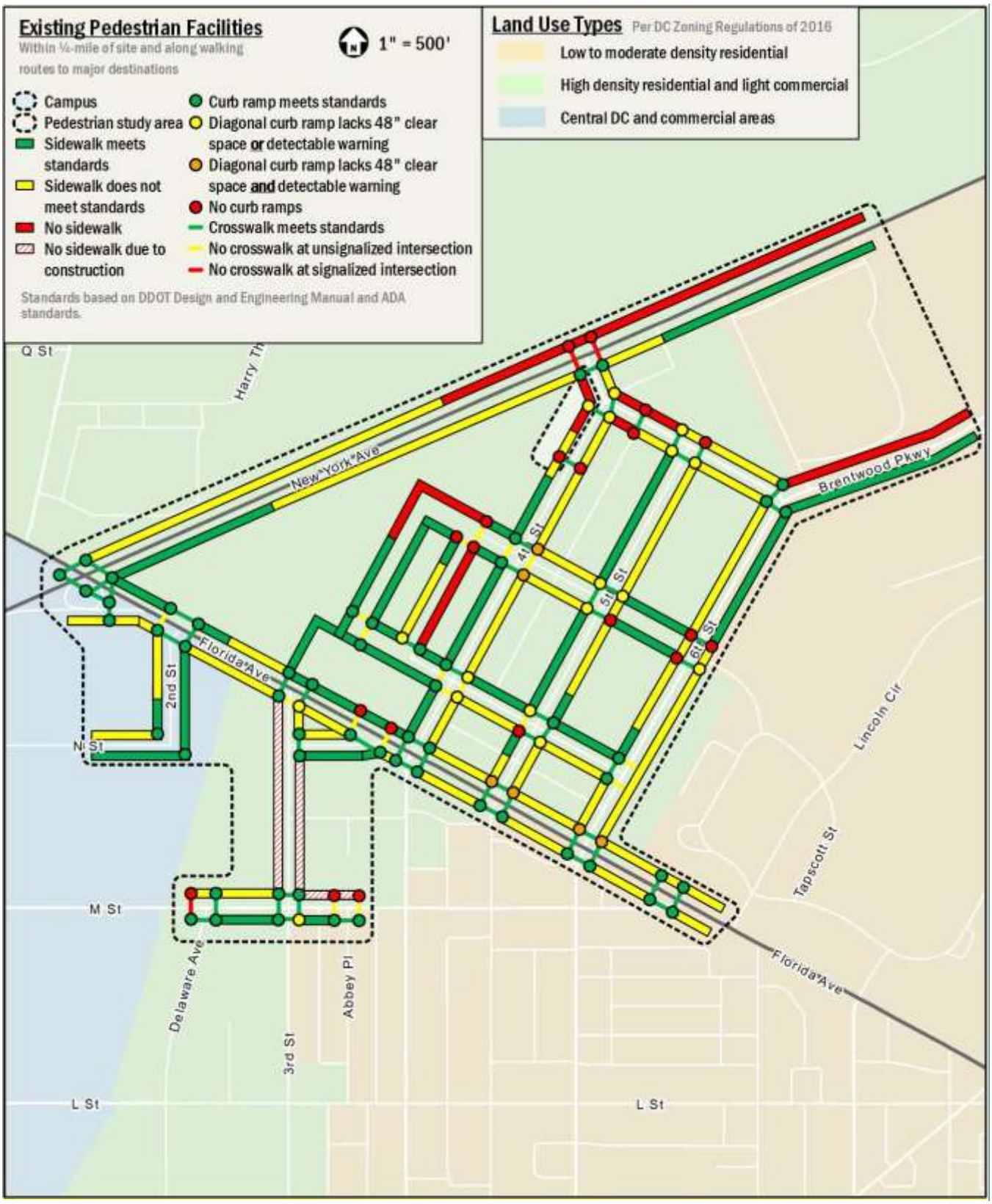

Figure 35: Existing Pedestrian Facilities

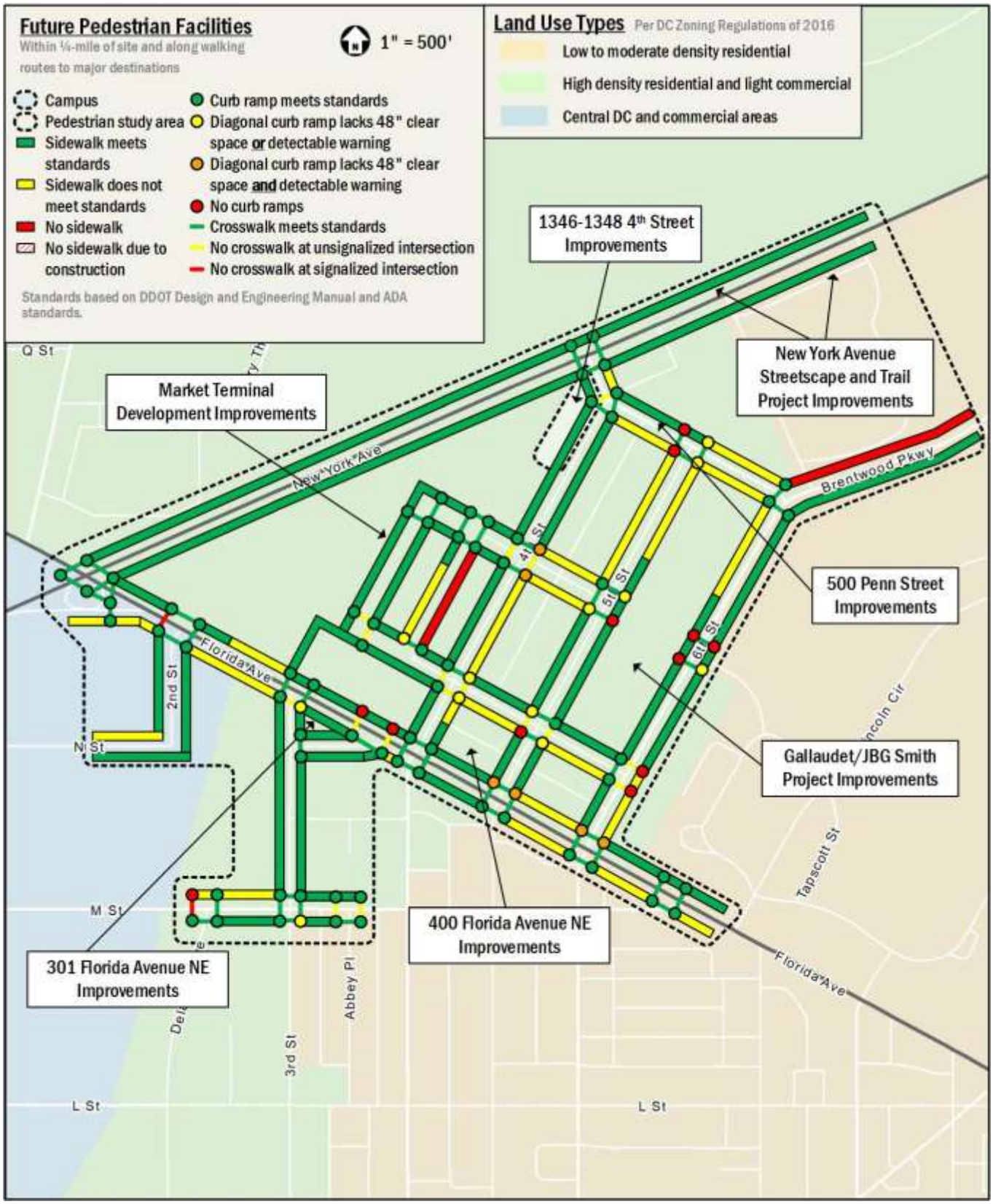

Figure 36: Future Pedestrian Facilities

Bicycle Facilities

This chapter summarizes existing and future bicycle access, reviews the quality of cycling routes to and from the site, and presents recommendations.

The following conclusions are reached in this chapter:

- The site has access to several on- and off-street bicycle facilities within the study area;
- Several planned and proposed bicycle projects will improve bicycle access to the site, including the 4th Street NE improvements;
- The Project will include long-term bicycle parking within the parking garage and short-term bicycle parking along the perimeter of the site that significantly exceed the long-term and meet the short-term zoning requirements for bicycle parking; and
- The Project is expected to generate a manageable number of bicycle trips; therefore, site-generated bicycle trips can be accommodated on existing infrastructure.

Existing Bicycle Facilities

The site has access to existing on- and off-street bicycle facilities. Existing on-street facilities consist of cycle tracks along Florida Avenue NE, 4th Street NE, 6th Street NE, Brentwood Parkway, and M Street NE, bicycle lanes along 4th Street NE, 6th Street NE, M Street NE, 2nd Street NE, 3rd Street NE, and Eckington Place NE, and shared lanes along R Street NE. These facilities connect to the Metropolitan Branch Trail, located a half-mile from the site, which upon completion will link DC's Union Station and Silver Spring, MD. Figure 37 illustrates existing bicycle facilities in the area.

Under existing conditions there are no short-term bicycle parking racks located around the perimeter of the site.

Capital Bikeshare

In addition to personal bicycles, the Capital Bikeshare program provides additional cycle options for residents, employees, and patrons of the Project. The program has placed over 500 bikeshare stations across the Washington, DC metropolitan area with over 4,500 bicycles in the fleet. Two (2) Capital Bikeshare stations are within a half-mile of the site:

- A 22-dock station at 6th Street and Neal Street NE, 0.3 miles from the site.
- A 19-dock station at 4th Street and Florida Avenue NE, 0.3 miles from the site.

Table 17: Capital Bikeshare Stations in the Study Area

Location	Distance (miles)	Docks Available
6th Street & Neal Street NE	0.3	22
4th Street & Florida Avenue NE	0.3	19
Total Docks Available		***41***

Table 17 shows the Capital Bikeshare stations that are within a half mile of the site. Figure 37 illustrates these and other Capital Bikeshare locations in the area.

Micromobility

As of November 2021, micromobility service in the District is provided by eight (8) private dockless companies operating electric-assist bicycles (e-bikes) and electric scooters (e-scooters). These include two (2) companies operating e-bikes (HelBiz and Jump) and six (6) companies operating e-scooters (Bird, Lime, Lyft, Razor, Skip, and Spin). These dockless vehicles are provided by private companies that give registered users access to a variety of e-bike and e-scooter options. These devices are used through a company-specific mobile phone application. Many dockless vehicles do not have designated stations where pick-up/drop-off activities occur; rather, they are parked in public space, most commonly in the "furniture zone" or the portion of sidewalk between where people walk and the curb, often where other street signs, street furniture, trees, and parking meters are found. In addition to DDOT's program, dockless pilots and demonstration programs are underway in Arlington County, Fairfax County, the City of Fairfax, the City of Alexandria, and Montgomery County.

In January 2020, DDOT announced plans to install 100 off-sidewalk parking corrals throughout the District, with a number of installations complete to date. The parking corrals are installed in the no-parking or no-standing zones approaching intersections in an effort to increase intersection visibility and provide infrastructure to dockless vehicles that reduces sidewalk and crosswalk obstructions. The parking corrals provide a parking area for both shared bicycles and scooters and privately-owned bicycles and scooters. Starting October 1st, 2021, District-permitted electric scooters and bicycles are required to lock to city infrastructure when parked throughout DC. In areas where no off-sidewalk parking corrals are available, those vehicles are required to be locked to bike racks, in-street bicycle and scooter corrals, parking signposts, or stop signs.

Additionally, DDOT is continuing a demonstration pilot for motor-driven cycles (mopeds) through December 31, 2021. Two (2) companies are permitted to participate in the shared moped demonstration pilot – Revel and Lime. Operated similarly to both dockless vehicle and carshare programs, registered users access company-specific mobile phone applications to rent privately-operated, shared mopeds. Users are required to wear helmets, and the mopeds must be driven and parked on the road, just like cars.

Planned Bicycle Improvements

Several bicycle improvements are planned near the site. These are shown on Figure 37.

DDOT Bikeways Expansion ("20 by 22")

DDOT has embarked on a plan to build over 20 miles of new protected bike lanes by 2022. In addition to existing and interim protected bicycle lanes along 6th Street, Brentwood Parkway, Florida Avenue, 4th Street, and M Street NE, this plan includes protected bicycle lanes to be installed along on West Virginia Avenue, Florida Avenue, 1st Street, and Harry Thomas Way NE near the site.

Metropolitan Branch Trail

Although it is largely complete near the site, the Metropolitan Branch Trail will include eight (8) miles of mixed off-street trail and on-street protected bicycle lanes connecting Union Station in Washington, DC to Silver Spring, MD when fully complete. Planned improvements north of the site will fill gaps of unprotected on-street facilities along 8th Street NE and 1st Street/McDonald Place NE and fully connect the trail from The Catholic University of America in Brookland past the Fort Totten and Takoma Metrorail stations to Silver Spring.

Florida Avenue NE Intersection Project

A combination of unusual geometry, closely spaced intersections, and high traffic volumes have created safety and operational issues at the intersection of Florida Avenue, New York Avenue, First Street, and Eckington Place NE. DDOT has chosen to address these issues through a new intersection design that prioritizes bicycle and pedestrian safety through cycle tracks and wider sidewalks and adds two-way traffic to First Street and Florida Avenue NE.

New York Avenue Streetscape and Trail Project

The New York Avenue Streetscape and Trail Project will improve pedestrian and bicycle accommodations along New York Avenue. The extent of this project spans along New York Avenue between Florida Avenue and Bladensburg Road, as well as south of New York Avenue from NoMa-Gallaudet U Metrorail station to the National Arboretum. These improvements will include a raised two-way cycle track on the north side of New York Avenue from 4th Street NE to 16th Street NE.

Capital Bikeshare Development Plan

DDOT's Capital Bikeshare Development Plan was originally released in 2016 to guide the continued growth of Capital Bikeshare in the District of Columbia. The most recent update of the Development Plan was released in 2020 and proposed several new Capital Bikeshare stations near the site, including at the following intersections:

- 8th Street and K Street NE
- 8th Street and H Street NE
- 1st Street and K Street NE

All three (3) of these intersections have Capital Bikeshare stations as of November 2021.

moveDC Bicycle Priority Network

As part of its ongoing update to the District's multimodal long-term transportation plan, *moveDC*, DDOT has designated both funded and future planned improvements to the District's Bicycle Priority Network. Funded improvements are locations that currently have funding identified for construction within six (6) years, including the planned protected bicycle lanes along West Virginia Avenue NE near the site.

Additionally, DDOT has designated future planned improvements to the network that may be added in the future but currently do not have committed funding. Along Florida Avenue, Brentwood Parkway, Mount Olivet Road, and K Street NE, planned improvements will include fully protected facilities based on the roadways' functional classification as arterials. Along Penn Street, M Street, and 1st Street NE, planned improvements may be a protected or standard bicycle lane or other facility type (e.g., advisory, buffered, contra-flow, neighborhood bikeway) given roadway conditions and the roadway's functional classification as collectors. Along 4th Street NE, a local street, planned improvements may be a neighborhood bikeway, an advisory bicycle lane, or a contra-flow bicycle lane, and likely paired with traffic calming. These improvements are not currently funded.

Proposed Bicycle Improvements

The Project will make significant bicycle related improvements over existing conditions in and around the site.

4th Street NE Redesign

As mentioned in the Project Design chapter, as part of the Project, portions of 4th Street NE from Penn Street to Morse Street NE will be redesigned as a curbless, shared street. The 4th Street NE redesign will include enhancements to the Union Market Streetscape Guidelines and will provide several desired design elements for a “Market Street”. This improved street will feature traffic calming measures such as frequent mid-block parklets and 10- or 11-foot vehicular lanes in order to provide a comfortable and safe bicycle connection, pending further study and DDOT approval. The street will provide access to the site in addition to forming a crucial link in the city’s future bicycle network between the existing 4th Street cycle track and the proposed New York Avenue trail. The Project will implement these enhancements along the site’s frontage.

Additionally, the Project will contribute with funds to study bicycle infrastructure improvements along Mt. Olivet Road NE, northeast of the site.

Bicycle Parking

The Project will provide a total of 305 long-term and 40 short-term bicycle parking spaces, meeting or exceeding zoning requirements. If the P3 level of the garage is constructed, the Project will provide 105 additional long-term bicycle parking spaces in the P3 level for a total of 410 long-term bicycle parking spaces Long-term spaces will be located within the below-grade garage. Short-term spaces will be located along the site’s frontage on 4th Street NE, near building entrances.

Site-Generated Bicycle Impacts

This section summarizes the impacts of the Project on the overall bicycle operations in the vicinity of the site.

Bicycle Trip Generation

The proposed project is projected to generate 39 bicycle trips (14 inbound, 25 outbound) during the morning peak hour, 79 bicycle trips (43 inbound, 36 outbound) during the afternoon peak hour, and 88 bicycle trips (45 inbound, 43 outbound) during the Saturday peak hour.

It is expected that existing bicycle facilities alongside the planned and proposed bicycle facilities as part of this Project and other ongoing efforts, can accommodate these new Project-generated trips.

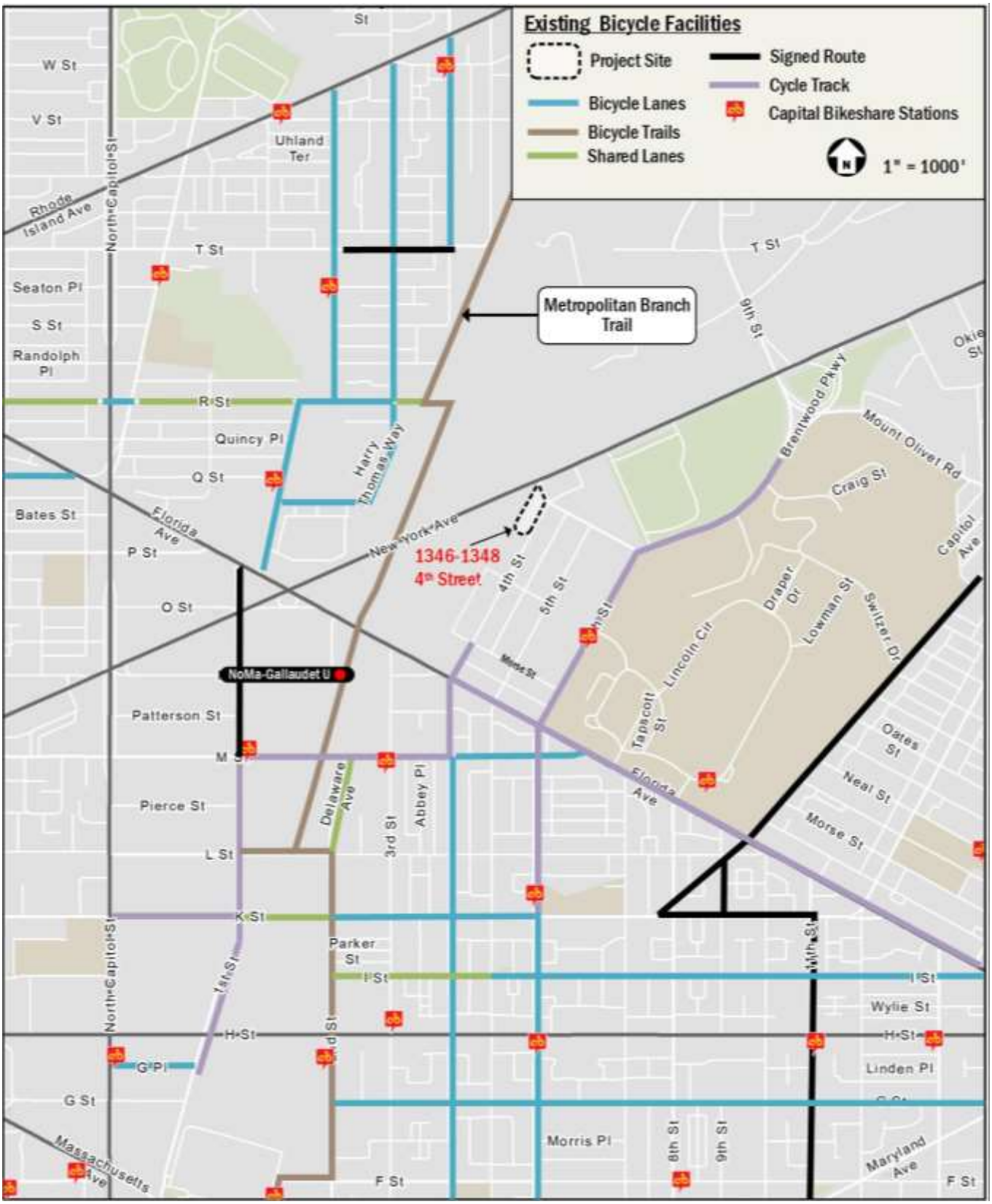

Figure 37: Existing Bicycle Facilities

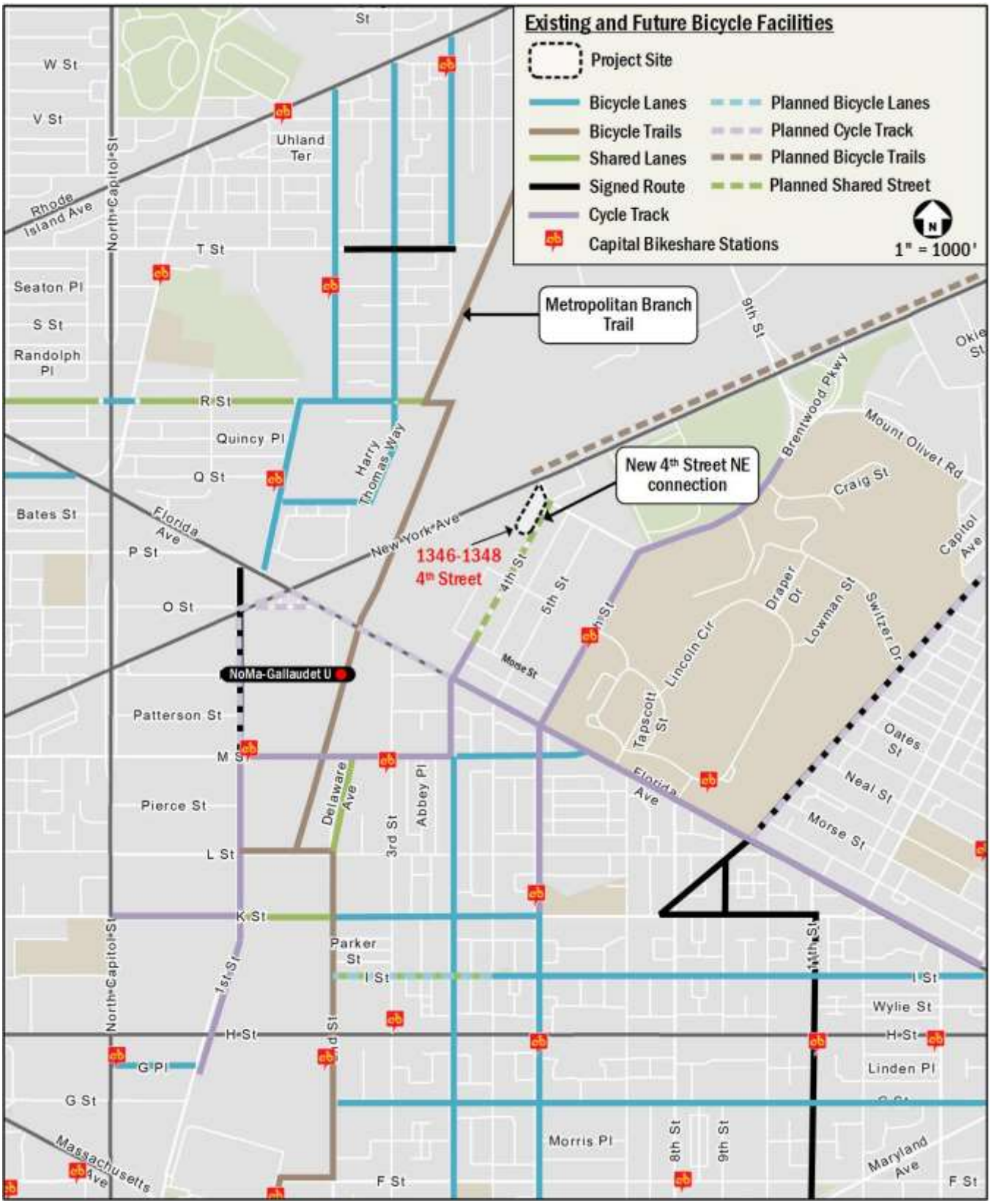

Figure 38: Existing and Future Bicycle Facilities

Safety Analysis

This chapter qualitatively reviews any vehicle, pedestrian, or bicycle conflicts at the study area intersections or street links within the study area. This review includes identifying any intersections within the study area that have been identified by DDOT as high crash locations.

Summary of Safety Analysis

A safety analysis was performed to determine if there are any intersections that pose obvious conflicts with vehicles, pedestrians, or bicyclists. This was determined based on data included in DDOT's most recent *Traffic Safety Statistics Report* (2016-2018), *Vision Zero Action Plan*, and Open Data DC Vision Zero Safety data. Based on available data, no study intersections have been identified by DDOT as a top 20 hazardous/high crash intersection. Additionally, a qualitive review of the crash data available through the DDOT-maintained and publicly available "Crashes in DC" database was performed to identify study intersections in which conditions for vehicles, pedestrians, and bicyclists can be improved.

Based on a review of facilities in the area, in addition to crash data, two (2) intersections were identified for further evaluation. The following section details the potential conflicts at the identified study area intersections.

Potential Impacts

This section reviews the two (2) intersections that were identified to pose potential conflicts to vehicles, pedestrians, or bicyclists.

4th Street & New York Avenue NE

This study intersection was identified based on a high concentration of vehicular crashes in the "Crashes in DC" database over the last three (3) years or since approximately July 2018.

New York Avenue NE, a principal arterial road, is a heavily trafficked commuter route, with peak period travel in the westbound direction during the morning and eastbound during the afternoon. Volumes at the 4th Street NE approach will continue to grow as the Union Market area matures.

While existing pedestrian and bicycle facilities near this intersection are insufficient, improvements from the New York Avenue NE Streetscape and Trail Project include a bicycle trail and sidewalk on the north side of New York Avenue. Additionally, interim improvements have already been implemented such as high visibility crosswalks across the 4th Street leg and eastern New York Avenue leg of the intersection. The improved streetscape in the vicinity of this intersection is expected to increase pedestrian and bicyclist visibility and improve safety and operations. Moreover, as part of mitigations associated with proposed developments nearby, the intersection directly south at 4th Street and Penn Street NE will become signalized and curb extensions will be installed at the southeast and southwest corners.

6th Street & Florida Avenue NE

This study intersection was identified based on a high concentration of vehicular crashes in the "Crashes in DC" database over the last three (3) years or since approximately July 2018.

Florida Avenue, a principal arterial road, carries a high volume of commuter traffic, and a gas station at the northwest corner of the intersection generates a high number of vehicle trips. Volumes along both Florida Avenue and 6th Street NE will continue to grow as the Union Market area matures.

High visibility crosswalks are provided on every leg of the intersection, as are curb ramps on every corner. Sidewalks connect to this intersection on all approaches, but some do not meet DDOT standards. Two-way protected bicycle lanes were installed in 2017 and 2019 along 6th Street NE and Florida Avenue NE, respectively, through this intersection. Moreover, safety improvements associated with the Florida Avenue Project are expected to be completed by the time this project is complete, including bike boxes, bicycle crossing pavement markings, and permanent protected bicycle lanes along Florida Avenue.

Summary and Conclusions

This report is a CTR of the PUD for the Project.

This report concludes that **the Project will not have a detrimental impact** to the surrounding transportation network assuming the proposed site design elements and TDM measures are implemented.

Multi-Modal Overview

Trip Generation

The Project is expected to generate new trips on the surrounding transportation network across all modes during the morning, afternoon, and Saturday peak hours. However, the new trips generated by the Project will not have a detrimental impact on the transportation network due to a TDM plan that will be implemented as part of the redevelopment.

Transit

The site is well-served by transit. It is located 0.5 miles from the NoMa-Gallaudet U Metro station and is served by multiple Metrobus routes. Most Metrobus stops serving the site are located along Florida Avenue NE. The site is expected to generate a manageable amount of transit trips, and the existing service can accommodate these new trips.

Pedestrian

The site is surrounded by a well-connected pedestrian network. The proposed development will significantly improve the overall pedestrian experience by improving sidewalks along the perimeter of the site. The Project is expected to generate a manageable number of pedestrian trips, and the existing pedestrian facilities can accommodate these new trips.

Bicycle

The site has access to several on- and off-street bicycle facilities. The site is expected to generate a manageable amount of bicycle trips, and the existing bicycle facilities can accommodate these new trips. The Project will include long-term bicycle parking in excess of zoning requirements.

Vehicular

Based on DDOT's outlined capacity impact thresholds, the analysis concludes two (2) intersections would require mitigation as a result of impacts to delay created by the additional volumes associated with the Project. Impacts at these intersections can be alleviated via signal timing adjustments that adjust to new volume patterns associated with the Project.

Safety

A qualitative review of study area intersections was performed to identify areas of concern due to vehicular, pedestrian, and bicycle interactions. The analysis concluded that no study intersections are considered hazardous/high crash intersections.

TDM Plan

The Project has a TDM plan based on DDOT's guidelines as set forth in Project Design chapter of this report.

Summary and Recommendations

The Project will not have a detrimental impact on the surrounding transportation network assuming the proposed site design elements and TDM measures are implemented. The Project has several positive design elements that minimize potential transportation impacts, including:

- The Project's closure of existing curb cuts on the 1348 4th Street NE lot and future closure of curb cuts on the 1346 4th Street NE lot;
- The site's close proximity to transit and existing and proposed bicycle infrastructure;
- The site's location in a well-connected pedestrian network;
- The Project's contribution of funds to study bicycle infrastructure improvements along Mt. Olivet Road;
- The improvement of existing and creation of new pedestrian sidewalks that meet or exceed DDOT and ADA requirements, improving the existing pedestrian environment;
- The inclusion of secure long-term bicycle parking that meets or exceeds zoning requirements;
- The installation of short-term bicycle parking spaces along the frontage of the site that meets or exceeds zoning requirements;
- The proposed redesign of 4th Street NE to improve landscaping and streetscaping along the site's frontage;
- A TDM plan that reduces the demand of single-occupancy, private vehicles during peak period travel times or shifts single-occupancy vehicular demand to off-peak periods.