TRANSPORTATION IMPACT STUDY

1270 4TH STREET NE PUD

WASHINGTON, DC

January 9, 2015

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EXECUTIVE SUMMARY

The following report is a Transportation Impact Study (TIS) for the 1270 4th Street development. This report reviews the transportation aspects of the Planned Unit Development (PUD) application. The Zoning Commission Case Number is 14-07.

The purpose of this study is to evaluate whether the PUD will generate a detrimental impact to the surrounding transportation network. This evaluation is based on a technical comparison of the existing conditions and four future conditions: 2017 future background conditions without Phase 1 or Phase 2 of the PUD, 2017 future conditions with Phase 1 of the PUD, 2020 future background conditions without Phase 2 of the PUD, and 2020 future conditions with Phase 1 and Phase 2 of the PUD. This report concludes that **the PUD will not have a detrimental impact** to the surrounding transportation network assuming that all background improvements are executed, all planned site design elements are implemented, and all mitigation measures are incorporated into the PUD application.

Proposed PUD

The site is located within the Florida Avenue Market, also known as the Union Market district. Phase 1 (South Building) will replace an existing building with an 11-story mixed use building containing approximately 33,600 square feet of ground-floor retail space and approximately 420-520 apartments. Phase 2 (North Building) will contain 8,000-12,000 square feet of ground-floor retail space and 130-160 apartments constructed upon an existing surface parking lot. The ground-floor of both buildings will be filled with vibrant shops and restaurants with a wide pedestrian zone and outdoor seating to engage pedestrians. Until 3rd Street is dedicated, the Applicant has committed to a temporary pocket park that will occupy the space between the South and North Buildings. After 3rd Street is dedicated, this area will be open to vehicular traffic and become an extension of Neal Place between 4th Street and 3rd Street.

Pedestrian access to both buildings will be from 4th Street. A below-grade parking garage will serve the site, accessed from an alley, which currently sits disused to the west of the site. The garage will provide 400-550 parking spaces during Phase 1 of the development with access to the alley exclusively from Morse Street. Approximately 200 parking spaces would be reserved for residential use with the remainder serving the retail component of this project as well as parking demand from existing and future retail developments in Union Market. During Phase 2, the parking garage will be extended under the North Building using the same access as Phase 1. The number of parking phases provided for Phase 2 is currently unknown, but will be further discussed as part of the Stage 2 PUD application.

At some time in the future, when 3rd Street is reconstructed and accepted by DDOT, Neal Place will be open to vehicular traffic between 3rd Street and 4th Street offering an additional access point to the alley. Loading activities and service vehicle parking would occur within a newly created loading dock off the reestablished alley.

At present, the 1270 4th Street site is occupied by several buildings including wholesale warehouse facilities and a small surface parking lot. The existing building is currently operational, and although it generates minimal vehicular traffic during weekday peak hours, it does generate heavy truck delivery traffic throughout the day.

This project also proposes to implement public space improvements along 4th Street in front of the site, including converting 4th Street to two-way operation during Phase 1. The goal of these changes is to accommodate nearby wholesale market activities while providing ample pedestrian space in keeping with the broader goals of the *Florida Avenue Market Study Small Area Plan*. The concept accommodates public space activities as diverse as on-street truck backing maneuvers for the adjacent buildings on the east side of 4th Street and café seating for street-level retail tenants on the west side of the street, with the option to allow for redevelopment to a more urbanized streetscape as future conditions warrant.

Parking

Phase 1:

- Parking for Phase 1 will be provided in a below-grade parking garage with 400 to 550 parking spaces. Access to the garage will be from an alley along the west side of the site.
- Approximately 200 spaces within the parking garage will be reserved for residential use. This is an appropriate amount of parking for the amount of residential units.
- The remainder of the parking will serve the retail component of the site as well as parking demand from

existing and future retail developments within the Union Market district. The additional parking could service parking demand generated by the over 200,000 square feet of ground floor retail space on 4th and 5th Streets that do not have dedicated off-street parking due to fractured ownership and small parcel size. By providing additional public parking, the 1270 4th Street project will help catalyze redevelopment of these smaller parcels that may not be able to provide on-site parking in the future.

- The vehicular traffic demand generated by the additional retail parking was incorporated into the analysis, thus ensuring that any non-PUD generated traffic was accounted for in the vehicular capacity analysis results.

Phase 2:

- Upon completion of Phase 2 the garage will be extended under the North Building using the same access as Phase 1.
- The amount of parking spaces added in Phase 2 will be reviewed during Phase 2's Stage 2 PUD application.

Loading Facilities

Phase 1:

- The 1270 4th Street site proposes to include four 30' berths, which reflects the specific needs of the building's tenants.
- The loading docks are located along a re-established alley on the rear side of the development, which will greatly reduce pedestrian and truck conflicts. Current truck activity at the site occurs directly on 4th Street.
- The development is expected to generate approximately 12 truck visits per day, which is less than the amount of truck visits observed by the existing uses.
- The 1270 4th Street PUD will not only attract fewer trucks, but also smaller trucks. The site's current wholesale distribution activities use larger trucks with trailers.
- All trucks can access the loading docks without negatively impacting public space between the docks and the nearest DDOT designated truck routes. The relocation of loading areas from the front of the building to the back of the building results in an overall improvement to public space surrounding the site.
- A loading management plan is proposed to help schedule and coordinate loading activity.

Phase 2:

- Loading for Phase 2 will also occur in the reestablished alley, in a similar manner to Phase 1. The amount and type of loading facilities are unknown at this time, and will be revisited during Phase 2's Stage 2 PUD application.

Vehicular Impacts

The report includes an analysis of potential vehicular impacts of the 1270 4th Street PUD and recommendations for improvements and mitigation measures. The following conclusions are reached:

- The existing study area roadways generally operate under acceptable capacity conditions during the morning and afternoon peak hour.
- Existing areas of concern for roadway capacity are primarily focused along the heavily trafficked commuter routes: New York Avenue NE and Florida Avenue NE.
- The existing configuration of 4th Street NE as one-way southbound with one wide travel lane results in driver confusion as the roadway is wide enough to accommodate two lanes. Additionally, a lack of signage and striping along 4th Street NE, combined with heavy truck volumes, results in high vehicular speeds and elevated crash rates.
- The addition of the trips generated by the background developments and inherent growth on the study area roadways has a negligible impact on the study area roadways.
- The background roadway improvements due to the *Florida Avenue Multimodal Study* are projected to have negligible impact on the roadway capacity in the study area.
- Impacts attributable to the PUD at the intersection of 4th Street NE and Morse Street NE can be mitigated by converting the intersection from stop-controlled on the east- and westbound approaches only to all-way stop-controlled.
- The conversion of 4th Street NE to two-way operation has negligible impact on the roadway capacity in the study area.
- **The 1270 4th Street PUD will have no detrimental impacts to the study area**. With the recommended mitigation measure outlined above, no study intersections operate under unacceptable conditions following the construction of the PUD that do not also operate under unacceptable conditions in the future without the proposed PUD.

Crash Data Analysis

Crash data for the past three years was analyzed at the study intersections. The analysis came to the following conclusions:

- The combination of thoughtful site design elements and the *Florida Avenue Multimodal Transportation Study* provide the opportunity to greatly improve the overall transportation operations in the area.
- Four intersections within the study area were found to have an elevated crash rate:
  - Two of these intersections are located within the bounds of the Union Market district along 4th Street. The overall traffic operations along 4th Street will undergo extensive changes and improvements as a result of the development that are expected to improve the safety and operations along 4th Street
  - One of these intersections is along Florida Avenue, which is currently being studied by DDOT as a part of the *Florida Avenue Multimodal Transportation Study.* Although the final recommendations have not been determined, multimodal safety along the Florida Avenue corridor in the vicinity of the site is expected to improve as a result.
  - The intersection of New York Avenue with 4th Street/Penn Street also has an elevated crash rate. The crash data details suggest that this may be due to the lack of a dedicated left turn lane on New York Avenue. The recent improvements near Mt. Olivet Road, which provide a more conducive route for left-turning traffic, will likely have a positive impact at this intersection.

Transit

The following summarizes the site's access to transit and the expected site impacts:

- The site is served by the Metrorail Red Line via the NoMa Station and two Metrobus routes that travel along Florida Avenue.
- The Metrobus routes along Florida Avenue have been studied with proposed recommendations for improved service including a Metro Express route with limited-stop service.
- Transit-trips generated by the site will not have a detrimental impact on the surrounding transit system.

Pedestrian

Based on an analysis of the existing pedestrian conditions, a review of the background improvements and planned site design elements, the following conclusions were made:

- The majority of pedestrian facilities outside of the Union Market district provide a friendly pedestrian environment. Those that do not, particularly along Florida Avenue, are being studied to improve pedestrian safety as part of DDOT's *Florida Avenue Multimodal Transportation Study.*
- Within the Union Market district, pedestrian facilities reflect the industrial origins of the site. The 1270 4th Street development will greatly improve pedestrian conditions adjacent to the site by increasing the amount of pedestrian space and decreasing the width of vehicular travel lanes thus creating a streetscape that encourages safer conditions for all modes of transportation.
- The site will generate more pedestrian activity, particularly along 4th Street, than the Market currently observes. The proposed improvements along 4th Street will improve the pedestrian environment. In addition, the uses associated with the proposed development will generate much less truck traffic than existing conditions, reducing potential truck/pedestrian conflicts.
- Placing the primary vehicular access off Morse Street and 4th Street leads to smoother traffic and pedestrian operations within the Market. Although much of the site-generated pedestrian traffic will be walking through this intersection to access transit stops, the placement of vehicular access on the perimeter of the Market will reduce the amount of potential vehicular and pedestrian conflicts within the market. In addition, the intersection will be updated to accommodate safe pedestrian movements such as implementation of an all-way stop and improved or additional crosswalks and ADA compliant curb ramps at all crossings along the west side of 4th Street.

Bicycle

The bicycle facilities within the study area were evaluated and the following conclusions were made in regards to the existing and proposed bicycle facilities and the overall impact of the site on bicycle infrastructure:

- There are multiple high-quality bicycle facilities within the vicinity of the site.
- New protected bicycle infrastructure will be implemented near the site in the coming years that will further improve

the cycling conditions in the area, including a bike trail behind the building adjacent to the reestablished alley.

- There are several bicycle-focused elements of the development plan that will encourage cycling as a safe and effective transportation option for residents and patrons of the development including short- and long-term bicycle parking.
- Residents of the building will have a secure bicycle room in the parking garage to encourage cycling.
- Given the existing and proposed bicycle infrastructure in the study area, the site-generated bicycle trips will not result in detrimental impacts to the bicycle system.

Transportation Demand Management

The 1270 4th Street PUD will include a TDM plan in order to help minimize its potential traffic impacts to the surrounding neighborhood. The following TDM plan is based on the DDOT expectations for TDM programs, modified to fit the specific needs of the PUD and transportation network. The Applicant proposes that upon construction, the project incorporate several TDM measures, including the following:

- The Applicant shall designate a TDM coordinator, who is responsible for organizing and marketing the TDM plan and who will act as a point of contact with DDOT.
- All parking on site will be priced at market rates at minimum, defined as the average cost for parking in a 0.25 mile radius from the site. All residential parking will be unbundled from the costs of leasing apartments or purchasing condos.
- Bicycle parking will be provided meeting existing regulatory minimums.
- Each building lobby will display transit and other alternate mode information, using electronic messaging boards.
- A car-sharing space will be reserved in the underground garage. If this space is not desired by any car-sharing service, it shall revert to the Applicant's general use.
- Each new resident for the first year after the issuance of the Certificate of Occupancy will have the option to receive a $40 subsidy for a car-sharing or bike-sharing program, or a pre-loaded SmarTrip card worth $40.
- The Applicant will install electric car charging stations at 2 parking spaces.

INTRODUCTION

This report is a Transportation Impact Study (TIS) for the proposed 1270 4th Street Planned Unit Development (PUD) located in the Union Market district, in the Northeast quadrant of Washington DC. This TIS is submitted into the Zoning Commission record for this case, as an evaluation of the transportation impacts of construction of the application. The Zoning Commission Case Number is 14-07.

Contained within this report are a review of the of the transportation components of the application and the development's transportation impacts.

PROJECT SUMMARY

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This project is near the recently approved Gateway Market PUD (PUD/06-40C) located at 340 Florida Avenue, NE, just to the south of the site. This report carries assumptions and analyses made within the transportation evaluation of that project wherever possible.

PURPOSE OF STUDY

This report reviews the transportation elements of the PUD, supplementing material provided in the Site Plan Package that accompanied the Zoning Commission Application.

Additionally, this report determines if the construction of the PUD will lead to adverse impacts on the transportation network. This is accomplished by comparing one existing condition and four future scenarios: (1) 2017 future background conditions without Phase 1 or Phase 2 of the PUD, (2) 2017 future conditions with Phase 1 completed, (3) 2020 future background conditions without Phase 2 of the PUD, and (4) 2020 future conditions with Phase 1 and Phase 2 completed.

The methodologies and analyses contained within are tailored to reach a conclusion on the impact of the PUD, and thus this report is not a general neighborhood study that makes recommendations to solve all existing and predicted transportation concerns near the project. Although some discussions within this report do discuss non-project generated impacts including planning level suggestions on improvements.

This TIS bases what it considers acceptable conditions for transportation services on typical standards for urban environments. This means that during a roadway's (or other piece of infrastructure) peak hours of use, it is processing users efficiently and generating the most positive impact for resources dedicated. In other words, when a road has the most cars on it, the desire is for that road to be just under (or at) its capacity limit. Unacceptable conditions result when a roadway is not operating efficiently, either through too high of a delay at peak times, or having unused capacity at peak times.

In addition, this TIS attempts to strike a balance between modes of travel when making recommendations on transportation improvements. For example, roadway widening including turn lanes will typically have negative impacts to pedestrian and bicycle modes, and sometimes to transit. This report approaches its recommendations with this context in mind, only suggesting improvements when it is necessary to mitigate unnecessary conditions on one mode without negatively impacting another.

CONTENTS OF STUDY

This report contains seven sections as follows:

- *Study Area Overview*
  This section reviews the area near and adjacent to the proposed project and includes an overview of the site location.
- *Project Design*
  This section reviews the transportation components of the PUD, including the site plan and access. This chapter also contains the proposed Transportation Demand Management (TDM) plan for the site.
- *Trip Generation*
  This section outlines the travel demand of the proposed PUD. It summarizes the proposed trip generation of the project
- *Traffic Operations*
  This section provides a summary of the existing roadway facilities and an analysis of the existing and future roadway capacity in the study area. This section highlights the vehicular impacts of the project, including presenting mitigation measures for minimizing impacts.
- *Transit*
  This section 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 section summarizes existing and future pedestrian access to the site, reviews walking routes to and from the project site, outlines impacts, and presents recommendations as needed.
- *Bicycle Facilities*
  This section summarizes existing and future bicycle access to the site, reviews the quality of cycling routes to and from the project site, outlines impacts, and presents recommendations as needed.
- *Safety/Crash Analysis*
  This section reviews the potential impacts development of the project would have on safety. This includes a review of crash data at intersections in the study area and a qualitative discussion on how the Ingleside expansion will influence safety.
- *Summary and Conclusions*
  This section presents a summary of the recommended mitigation measures by mode and presents overall report findings and conclusions.

Figure 1: Site Location

STUDY AREA OVERVIEW

This section 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.

The following conclusions are reached within this chapter:

- The site is surrounded by an extensive regional and local transportation system that accommodates the multi-modal vision of the development.
- Pedestrian facilities within the market itself reflect its use as an industrial wholesale market place. This development will greatly improve the streetscape surrounding the site to allow safer travel for all modes of transportation, while retaining the industrial atmosphere.
- Outside of the market area, walking and cycling conditions are very good. There are some gaps in the network; however, these are recognized and District initiatives have been implemented to alleviate some of these issues.
- Florida Avenue and the market area itself have been studied in depth to determine the best ways to improve and build upon the area given anticipated development.

MAJOR TRANSPORTATION FEATURES

Overview of Regional Access

The 1270 4th Street site has ample access to regional vehicular- and transit-based transportation options, as shown in Figure 3, that connect the site to destinations within the District, Virginia, and Maryland.

The site is accessible from several Interstate and US highways, including I-395, I-695, I-295, US-50 (New York Avenue), US-1 (Rhode Island Avenue), and US-29 (Georgia Avenue/7th Street). These roadways also connect the site to the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs. All of these roadways bring vehicular traffic within a few miles of the site, at which point arterials and local roads can be used to access the site directly.

The 1270 4th Street site has access to the Red Line which provides connections to areas in the District and Maryland. The Red Line connects Rockville, MD with Glenmont, MD while providing access to the District core. Of particular importance, the Red Line provides a connection to Union Station, which is a hub for commuter rail – such as Amtrak, MARC, and VRE – in addition to Metrorail. In addition, the Red Line provides connections to all additional Metrorail lines allowing for access to much of the DC Metropolitan area.

Overall, the site has access to several regional roadways and transit options, making it convenient to travel between the site and destinations in the District, Virginia, and Maryland.

Overview of Local Access

There are several local transportation options near the site that serve vehicular, transit, walking, and cycling trips, as shown on Figure 4.

The site is served by a local vehicular network that includes several primary and minor arterials such as New York Avenue, Florida Avenue, and 6th Street. In addition, there is an existing network of connector and local roadways that provide access to the site.

The Metrobus system provides local transit service in the vicinity of the site. As shown in Figure 4, there are two bus lines traveling along the Florida Avenue corridor. Of the four nearest bus stops, one provides a shelter. These bus lines connect the site to many areas of the District including several Metrorail stations serving all six Lines.

There are several existing bike facilities that connect the site to areas within the District, including the pair of one-way bicycle lanes along 4th and 6th Streets that provide north-south connectivity (A temporary two-way cycle track was recently installed along 6th Street between Florida Avenue and Penn Street), the 1st Street cycle track that leads to Union Station, bike lanes along R Street, Q Street, I Street, and G Street that provide east-west connectivity, and the Metropolitan Branch Trail that provides an exclusive off-road facility. Although there are some high-volume roadways near the site, such as Florida Avenue, the majority of the bike facilities can be accessed via local and residential roadways that facilitate cycling.

The site is situated within the Florida Avenue Market, which is one of DC's primary locations for industrial wholesale distribution. Given the industrial nature of the site, pedestrian facilities within the market area itself do not meet typical DDOT standards. The majority of the roadways have sidewalks, but they are typically narrow and sometimes double as loading/unloading areas for vendors. Although the development plans to preserve the industrial feel of the site, pedestrian facilities will be updated to accommodate a multi-

modal atmosphere. Outside of the market, a pedestrian network consisting of sidewalks, crosswalks, and curb ramps connects the site to residential, office, and retail destinations within the nearby neighborhoods in addition to Gallaudet University and the NoMa Metrorail station. A detailed review of existing and proposed pedestrian access and infrastructure is provided in a later section of this report.

Overall, the 1270 4th Street site is surrounded by an extensive local network that allows for efficient transportation options via transit, bicycle, walking, or vehicular modes.

Car-sharing

Three car-sharing companies provide service in the District: Zipcar, Enterprise Carshare, and Car2Go. All three services are private companies that provide registered users access to a variety of automobiles. Of these, Zipcar and Enterprise Carshare have designated spaces for their vehicles. Carshare locations located within a half-mile of the site are listed in Table 1.

Car-sharing is also provided by Car2Go, which provides point-to-point car sharing. Unlike Zipcar, Enterprise, or Hertz on Demand, which require two-way trips, Car2Go can be used for one-way rentals. Car2Go currently has a fleet of vehicles located throughout the District. Car2Go vehicles may park in any non-restricted metered curbside parking space or Residential Parking Permit (RPP) location in any zone throughout the defined "Home Area". Members do not have to pay the meters or pay stations. Car2Go does not have permanent designated spaces for their vehicles; however availability is tracked through their website, which provides an additional option for car-sharing patrons.

Walkscore

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 1270 4th Street development is located in the Gallaudet neighborhood. This neighborhood has a walk score of 75, a transit score of 67, and a bike score of 54. Within the

Table 1: Summary of Carshare Locations

Carshare Location	Number of Vehicles
Elevation at Washington Gateway (Zipcar)	1 vehicle
Gallaudet University (Zipcar)	1 vehicle
5th/L Street NE (Zipcar)	2 vehicles
Constitution Square - Harris Teeter Garage (Zipcar)	2 vehicles
66 New York Avenue NE - Atlantic Parking Lot (Zipcar)	10 vehicles
66 New York Avenue NE (Enterprise Carshare)	6 vehicles
Total	22 vehicles

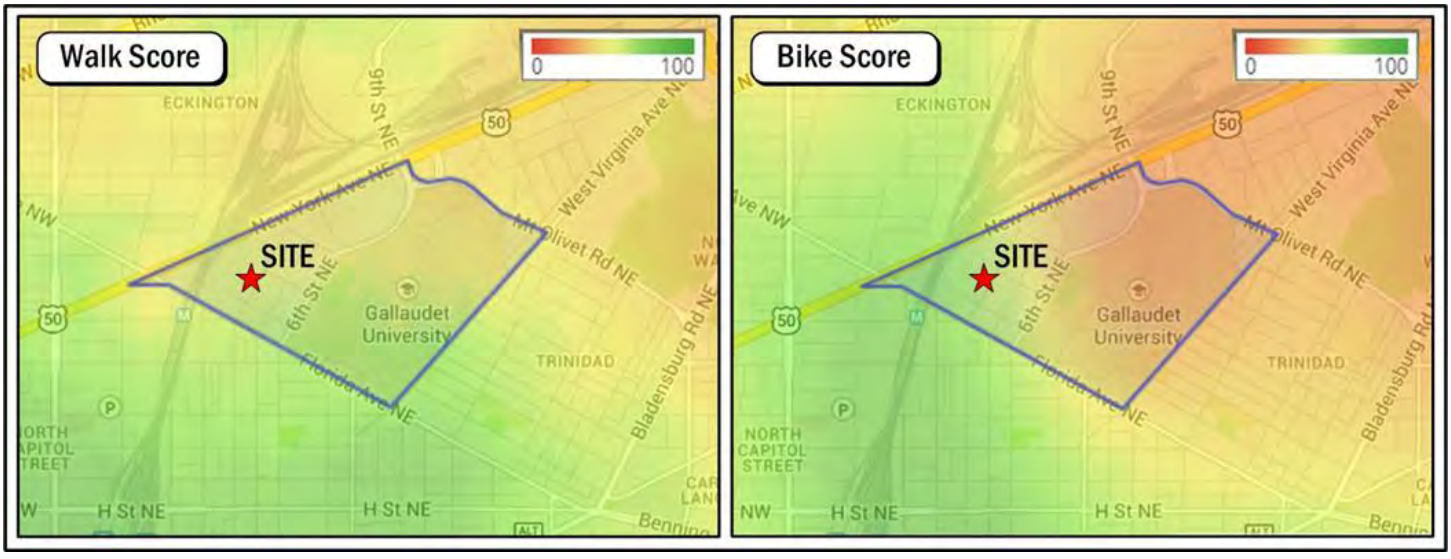

Figure 2: Summary of Walkscore and Bikescore

neighborhood, the PUD address itself has a walk score of 75, transit score of 70, and a bike score of 86. Figure 2 shows the neighborhood borders in relation to the site location and displays a heat map for walkability and bikeability.

As represented in Figure 2, the site is situated in a neighborhood that encompasses some good and some average walk scores. However, the site is in an area that provides a better walking environment than areas to the north. In addition, the more likely walking destinations are south of the site where the walk score tends to be higher.

The site is close to the border of good bike scores, but is situated in the green. Similar to the walking destinations, the majority of biking destinations are also south and west of the site, where there are plentiful on and off-street bicycle facilities which are easily accessible from the site. This is reflected in how the PUD's address has a significantly better bike score than the neighborhood as a whole.

Overall, the Gallaudet neighborhood has more average walk, transit, and bike scores; however, the site location itself is located in a part of the neighborhood that has better connectivity to pedestrian facilities, on- and off-street bicycle facilities, and transit. Additionally, the Gateway Market and 1270 4th Street PUDs will help increase the walk and bike scores in the Gallaudet neighborhood.

Future Regional Projects

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

Local Initiatives

Florida Avenue Market Study – Small Area Plan

The Florida Avenue Market Study analyzes the unique area that is the Florida Avenue Market, which encompasses 45 acres near the intersections of Florida Avenue and New York Avenue, between Penn Street and 6th Street. Currently the Florida Avenue Market houses several industrial and wholesale markets, a few small restaurants, and the recently redeveloped Union Market. Overall, the area is isolated and under-developed thus this study develops a framework for development that will help achieve the following:

- To provide opportunities, guidance, and direction for developers and property owners as they propose redevelopment solutions
- To provide the Office of Planning, the Zoning Commission, and the community with a comprehensive basis on which to evaluate proposed developments within the Study Area.

The 1270 4th Street TIS took into account the recommendations and guidelines laid out in this report while evaluating the proposed development plan.

Florida Avenue Multimodal Transportation Study

The Florida Avenue Multimodal Transportation Study is currently in progress and will evaluate safety, streetscape, and operational enhancements to improve safety for pedestrians and bicyclists along the Florida Avenue, NE corridor between New York Avenue and H Street/Benning Road.

Currently there are three lane configuration and streetscape alternatives along Florida Avenue and 6th Street. Although no single alternative has been narrowed down as most favorable, each alternative greatly improves the pedestrian and bicycle conditions along Florida Avenue. Potential improvements include widened sidewalks and buffer zones, bike lanes or cycle tracks, and dedicated turn lanes on Florida Avenue.

MoveDC: Multimodal Long-Range Transportation Plan

MoveDC is an implementation-based plan that provides a vision for the future of DC's transportation system. As the District grows, so must the transportation system, specifically in a way that expands transportation choices while improving the reliability of all transportation modes.

The MoveDC report outlines recommendations by mode with the goal of having them complete by 2040. The plan hopes to achieve a transportation system for the District that includes:

- 70 miles of high-capacity transit (streetcar of 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
- Water taxis

This report also included an update to the Bicycle Master Plan and Pedestrian Plan, which was used to determine improvements within the study area not covered by the previously discussed studies.

Planned Developments

There are ten projects approved or under construction located in the vicinity of the proposed development. Figure 5 shows the location of these developments in relation to the proposed development.

Sentinel Square II

The Sentinel Square II development is located at 1050 Street NE and includes 278,817 square feet of office space.

Washington Gateway

The Washington Gateway development is located at 100 Florida Avenue NE and includes 400 dwelling units, 5,200 square feet or retail, and 630,000 square feet of office space.

Camden NoMa Phase 1

The Camden NoMa Phase 1 development is located at 60 L Street NE and includes 321 dwelling units.

Northwest One

The Northwest One development is located at 2 M Street NE and includes 314 dwelling units and 3,000 square feet of retail.

Three Constitution Square

The Three Constitution Square development is located at 175 N Street NE and includes 385,000 square feet of office space.

Hyatt Place

The Hyatt Place development is located at 33 New York Avenue NE and includes a hotel with 192 rooms.

100 K Street

The 100 K Street development is located at 100 K Street NE and includes 210 dwelling units and 1,500 square feet of retail.

Gateway Market

The Gateway Market development is located at 340 Florida Avenue NE and includes 188 dwelling units and 27,500 square feet of retail.

1309-1329 5th Street NE – South Building

The South Building Is located within the Union Market district and will be constructed over the existing Union Market building. The building includes an Angelika movie theater with approximately 1,250 seats over 8 screens and approximately 115,000 square feet of office space.

1309-1329 5th Street NE – North Building

The North Building is located within the Union Market district and includes approximately 35,000 square feet of retail space plus either 290,000 square feet of office space or 368 dwelling units.

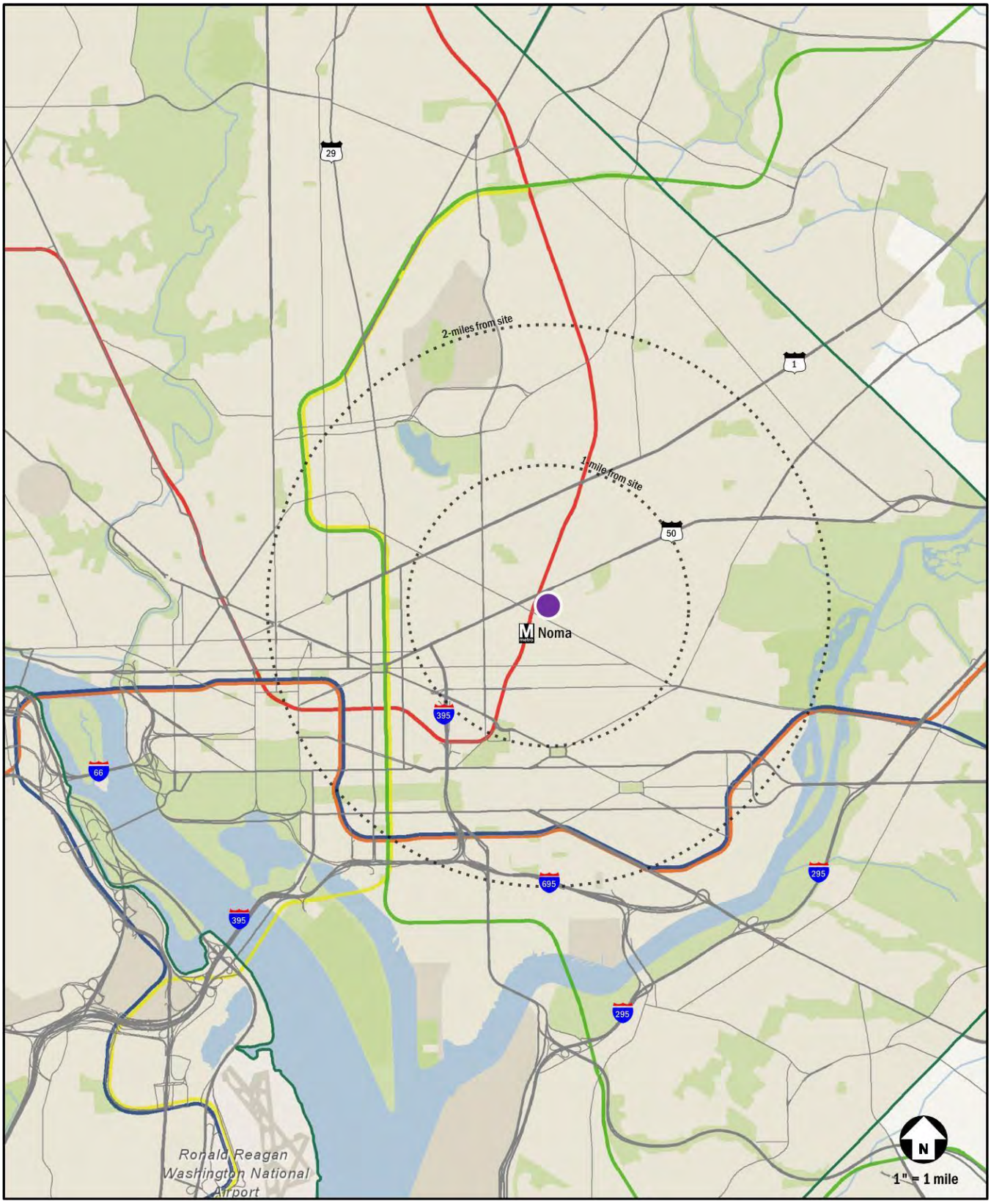

Figure 3: Major Regional Transportation Facilities

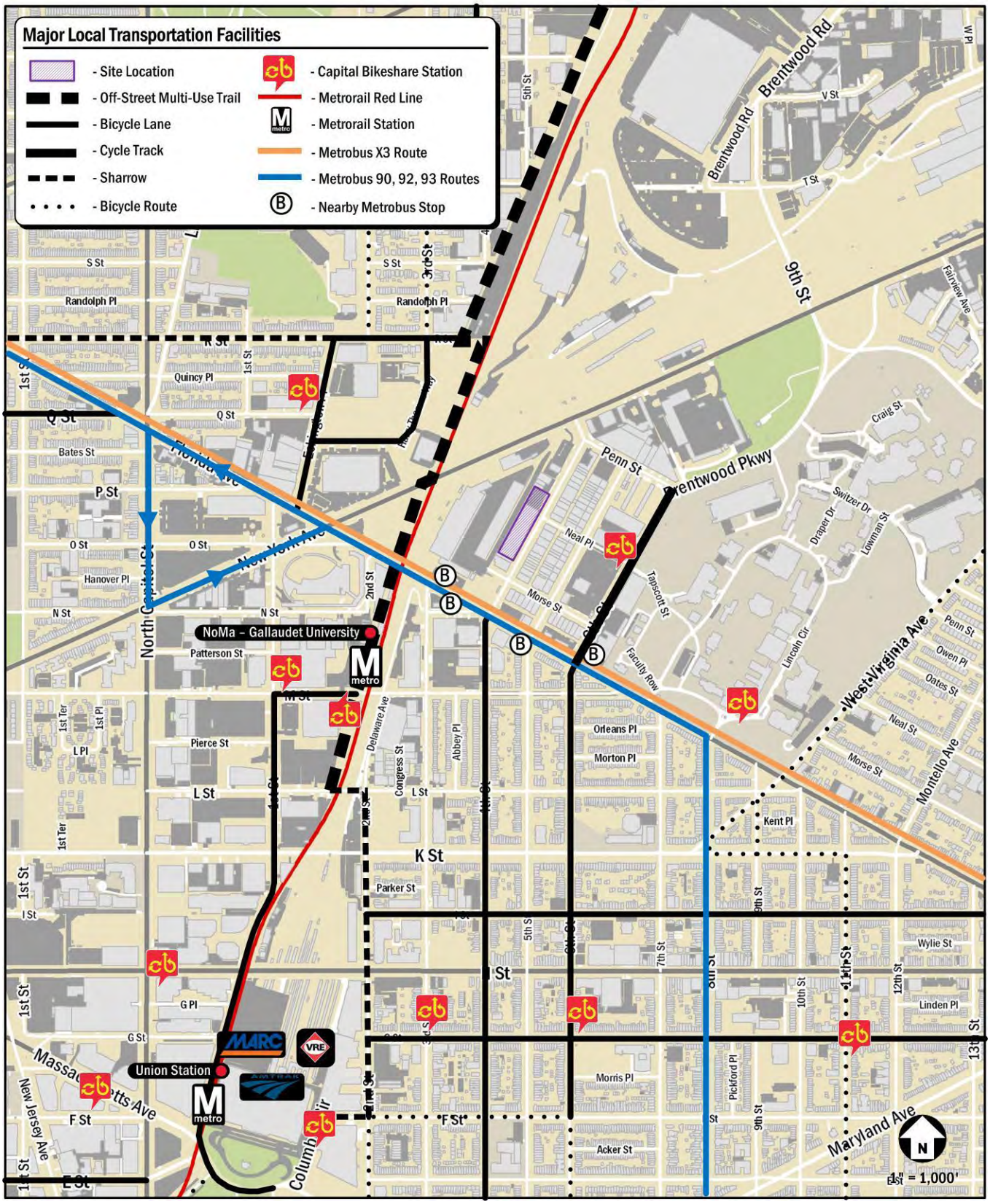

Figure 4: Major Local Transportation Facilities

Figure 5: Planned Development Map

PROJECT DESIGN

This section reviews the transportation components of the 1270 4th Street PUD, including the proposed site plan and access. It includes descriptions of the site's vehicular access, loading, and parking. This chapter also includes the project's Transportation Demand Management (TDM) plan.

OVERVIEW

Phase 1 of the 1270 4th Street PUD (South Building) proposes to replace an existing building within the Union Market district with an 11-story mixed-use building containing approximately 33,600 sf of ground-floor retail space and approximately 420-520 apartments. Phase 2 of the PUD (North Building) will contain 8,000-12,000 square feet of ground-floor retail space and 130-160 apartments constructed upon an existing surface parking lot. Until 3rd Street is dedicated, the Applicant has committed to a temporary pocket park that will occupy the space between the South and North Buildings. After 3rd Street is dedicated, this area will be open to vehicular traffic and become an extension of Neal Place between 4th Street and 3rd Street. Figure 6 shows the site plan's ground floor.

The ground-floor retail for both buildings is designed to provide an engaging street retail experience. The retail located along 4th Street will be filled with shops and restaurants whose activity will spill out onto the sidewalk – characterized by a wide pedestrian zone and vibrant outdoor seating areas. The retail spaces will be accessed through the individual, differentiated storefronts on 4th Street that will bring new life to the warehouse character of the existing building and neighborhood. The Applicant aims to provide the maximum amount of retail space on the ground floor so that the Project will engage pedestrians to the maximum extent possible.

The residential component of the South Building will be comprised of floors two through eleven of the building and will be arranged as two separate elements, each with their own cores. The residential component of the North Building will be comprised of floors two through eleven of the building with one primary lobby area. Each building will also include numerous interior amenity spaces for residents.

Pedestrian access to both buildings will be from 4th Street. A below-grade parking garage will serve the site, accessed from an alley, which currently sits disused to the west of the site.

The garage will provide 400-550 parking spaces during Phase 1 of the development with access to the alley exclusively from Morse Street. Approximately 200 parking spaces would be reserved for residential use with the remainder serving the needs retail component of this project as well as parking demand from existing and future retail developments in the Union Market district.

During Phase 2, the parking garage will be extended under the North Building using the same access as Phase 1. The number of parking phases provided for Phase 2 is currently unknown, but will be further discussed as part of the Stage 2 PUD application.

At some time in the future, when 3rd Street is reconstructed and accepted by DDOT, Neal Place will be open to vehicular traffic between 3rd Street and 4th Street offering an additional access point to the alley. Loading activities and service vehicle parking would occur within a newly created loading dock off the reestablished alley.

At present, the 1270 4th Street site is occupied by several buildings including wholesale warehouse facilities and a small surface parking lot. The existing building is currently operational, and although it generates minimal vehicular traffic during weekday peak hours, it does generate heavy truck delivery traffic throughout the day.

This project also proposes to implement public space improvements along 4th Street in front of the site, including converting 4th Street to two-way operation during Phase 1. The goal of these changes is to accommodate nearby wholesale market activities while providing ample pedestrian space in keeping with the broader goals of the *Florida Avenue Market Study Small Area Plan*. The concept accommodates public space activities as diverse as on-street truck backing maneuvers for the adjacent buildings on the east side of 4th Street and café seating for street-level retail tenants on the west side of the street, with the option to allow for redevelopment to a more urbanized streetscape as future conditions warrant.

PARKING

Phase 1:

As stated above, the PUD will include a below-grade parking garage with approximately 400 to 550 parking spaces provided during Phase 1 accessed from an alley, which currently sits disused to the west of the site. Phase 1 of the project

anticipates reserving approximately 200 parking spaces for residential use, which equates to a parking ratio of 0.38 to 0.48 spaces per unit, depending on the final unit count. This amount of parking is typical for new residential developments in the District, especially ones with multi-modal access such as this project's location.

The remainder of parking, approximately 200 to 350 spaces is proposed to serve the project's retail component of this project as well as parking demand from existing and future retail developments in the Market. For example, the garage could service parking demand generated by the over 200,000 square feet of ground floor retail space on 4th and 5th Streets that do not have dedicated off-street parking due to fractured ownership and small parcel size.

The Applicant feels that the Union Market district as a whole will need new parking supplies to serve demand. The Union Market district does not have significant reservoirs of off-street public parking. Those that exist today are surface parking lots, which will be redeveloped at some point in the future. In the future, there will be limited opportunities to establish underground parking facilities for general Union Market district use, as most parcels within the market have fractured ownership and are too small to build garages. By constructing a garage with public retail parking in the 1270 4th Street project, the Applicant is providing a supply reservoir that will help catalyze redevelopment of smaller parcels.

For purposes of this study's traffic capacity analysis, this report assumes that the PUD constructs 550 parking spaces, and accommodates demand from other retail locations within the market.

Phase 2:
Upon completion of Phase 2 the garage will be extended under the North Building using the same access as Phase 1. The number of parking spaces provided for the North Building is currently unknown and will be further discussed as part of the Stage 2 PUD.

LOADING

Phase 1:
The loading areas provided in Phase 1 of the PUD are adequate to serve the expected loading demand. Zoning Regulations state that a building of this size must contain one 55' berth and one 30' berth plus a 20' service space for the retail use in addition to one 55' berth and a 20' service space for the residential use. The PUD proposes four 30' berths; the same amount of berths/spaces, but with the sizes changed to reflect the buildings expected tenants.

Table 2 provides a summary of the expected type of commercial vehicles using the site's off-street loading area, based on typical residential turnover rates and delivery schedules for ground floor retail tenants.

Table 2: Projected Loading Operations (Daily, Phase 1)

Component	Daily Operations by Truck Type			
	Cargo Van	30' Truck	55' Truck	Total
Retail	3.29	3.78	0.00	7.08
Residential	3.00	1.64	0.00	4.64
Total	6.29	5.43	0.00	11.72

The existing use on the site generates heavy truck delivery traffic throughout the day, in excess of the approximately 12 per day projected to visit the PUD. Additionally, these trucks are larger than those expected to deliver to the PUD. Thus, the overall impact of removing the current use and replacing it with the PUD is expected to decrease the overall amount of truck activity at the Union Market district.

The retail component of the building will have a food-based anchor tenant that will occupy around half of the retail space. Discussions with this tenant were used to develop the specific loading docks provided in the PUD. None of the vendors will be large enough to require 55' truck service, instead resupplying using smaller trucks on a regular basis.

All trucks can access the loading docks without negatively impacting public space between the docks and the nearest DDOT designated truck routes. Maneuvering diagrams showing truck swept path analyses for all loading berths, under proposed public space and roadway operational conditions (two-way 4th Street), will be submitted to the Zoning Commission record in a separate document.

This report is recommending that the PUD does not need an extensive loading management plan, because loading operations occur in an alley, there are sufficient docks, and the building is close to several major truck routes. Thus, the loading management plan for Phase 1 should include the following elements:

- A loading facility manager will be designated. The loading facility manager will coordinate with residents and retail vendors to schedule deliveries.
- All tenants and residents will be required to schedule deliveries that utilize the loading docks – defined here as any loading operation conducted using a truck 20' in length or larger.

Phase 2:
Loading for Phase 2 will also occur in the reestablished alley, in a similar manner to Phase 1. The amount and type of loading facilities are unknown at this time, and will be revisited during Phase 2's Stage 2 PUD application.

BICYCLE PARKING

The PUD will meet the existing requirements to provide bicycle parking for the site (combination of the DC Zoning Regulations and the Bicycle Commuter and Parking Expansion Act of 2007). The residential component is required to provide 1 space for every 3 units, or 140 to 174 spaces depending on the final unit count. The retail component is required to provide 5% of the vehicular parking supply provided, or 10 to 18 spaces depending on the final retail vehicular parking space count. These spaces will be provided in an enclosed and secure bicycle room on the first floor of the parking garage.

Although the plans for the North Building garage are not complete, the applicant will comply with DDOT regulations when planning for secure bicycle parking. Bicycle parking for the North Building will be further discussed as part of the Stage 2 PUD.

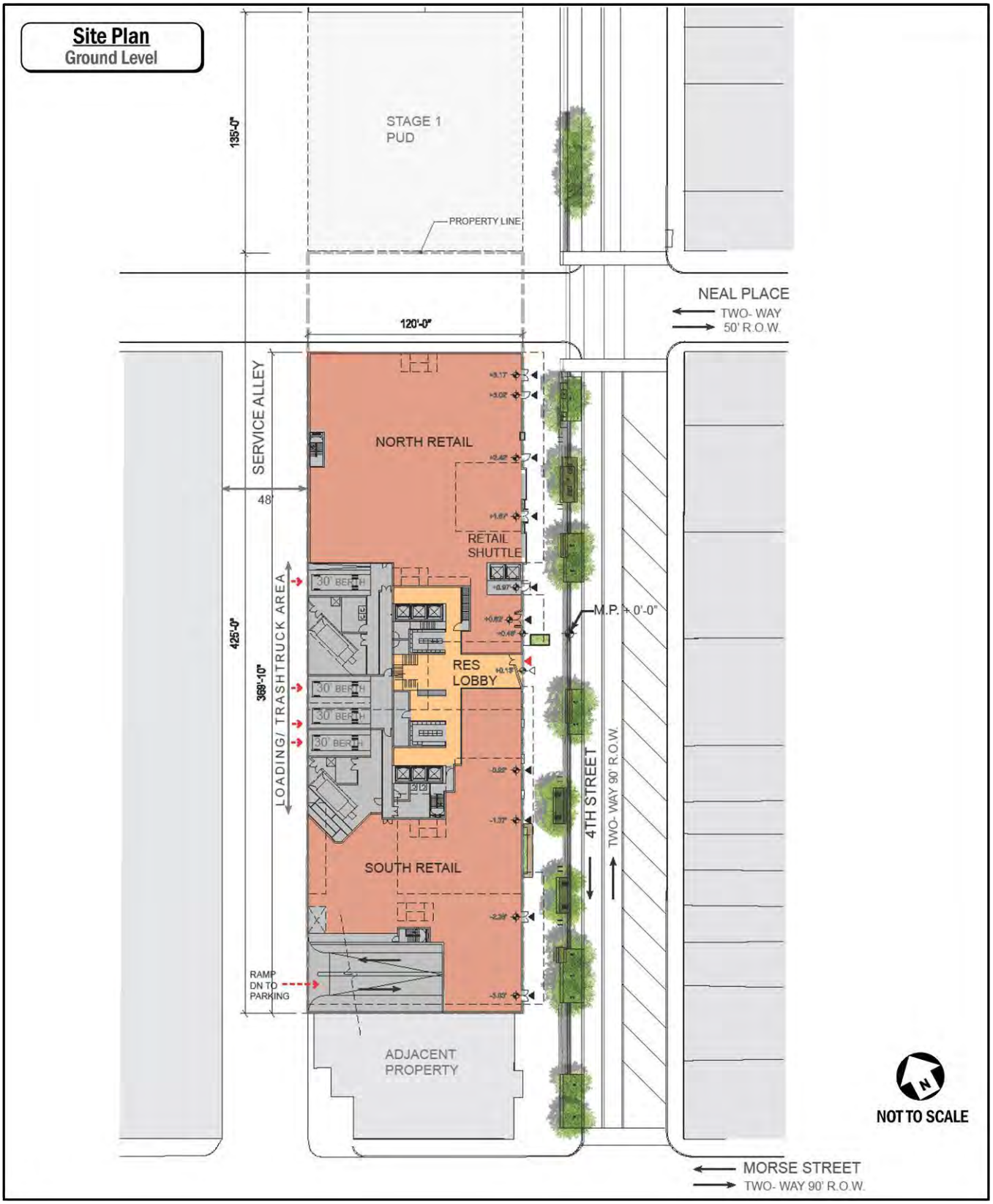

Figure 6: Site Plan

TRANSPORTATION DEMAND MANAGEMENT (TDM)

TDM is the application of policies and strategies used to reduce travel demand or to redistribute demand to other times or spaces. TDM typically focuses 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 1270 4th Street PUD will include a TDM plan in order to help minimize its potential traffic impacts to the surrounding neighborhood. The following TDM plan is based on the DDOT expectations for TDM programs, modified to fit the specific needs of the PUD and transportation network. The Applicant proposes that upon construction, the project incorporate several TDM measures, including the following:

- The Applicant shall designate a TDM coordinator, who is responsible for organizing and marketing the TDM plan and who will act as a point of contact with DDOT.
- All parking on site will be priced at market rates at minimum, defined as the average cost for parking in a 0.25 mile radius from the site. All residential parking will be unbundled from the costs of leasing apartments or purchasing condos.
- Bicycle parking will be provided meeting existing regulatory minimums.
- Each building lobby will display transit and other alternate mode information, using electronic messaging boards.
- A car-sharing space will be reserved in the underground garage. If this space is not desired by any car-sharing service, it shall revert to the Applicant's general use.
- Each new resident for the first year after the issuance of the Certificate of Occupancy, will have the option to receive a $40 subsidy for a car-sharing or bike-sharing program, or a pre-loaded SmarTrip card worth $40.
- The Applicant will install electric car charging stations at 2 parking spaces.

TRIP GENERATION

This section outlines the transportation demand of the proposed 1270 4th Street PUD. It summarizes the projected trip generation of the site by mode, which forms the basis for the chapters that follow.

The trip generation assumptions and methodologies build off of a previously approved transportation impact study dated October 2013 prepared in support of the adjacent Gateway Market PUD (PUD/06-40C) located at 340 Florida Avenue, NE, just to the south of the site. The assumptions from that report are carried through to this study wherever possible.

Traditionally, weekday peak hour trip generation is calculated based on the methodology outlined in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 9th Edition. This methodology was supplemented to account for the urban nature of the site (the *Trip Generation Manual* provides data for non-urban, low transit use sites) and to generate trips for multiple modes.

Residential trip generation (was calculated based on ITE land use 220, Apartment, with mode splits taken from the Gateway Market TIS. This analysis does not take into account the internal capture calculations, pass-by, and diverted link trip percentages used in that study because those reductions are already included in the peak hour commuting mode splits and including them would result in an underestimation of the expected future residential vehicle trip volumes.

A different methodology was used to project auto trips generated by the retail portion of the South Building since the approximately 200-350 spaces allocated to retail are intended to serve not only on-site retail space but also other nearby retail spaces or uses that will come online in future years. Typical ITE-based trip generation would only be able to account for demand from this development, thus this methodology ensures that non-PUD generated traffic is accounted for in the analysis.

ITE's *Traffic Engineering Handbook*, 6th Edition provides the necessary information to project trip generation based on the number of spaces, including hourly arrival and departure ratios for a variety of land uses. These quantities give the percentage of parking spaces that are expected to turn over during morning and evening peak hours based on land use. For a shopping center, the Handbook states that approximately 15% of spaces will turn over per hour in the morning and a little over half of the spaces will turn over in a given evening peak hour. Given these percentages and the known quantity of retail parking – assuming the maximum of 350 spaces – the peak hour trip generation was determined.

In order to calculate the non-auto retail trip generation, methodologies similar to those used to calculate the residential trip generation where used, based on ITE rates and the mode splits given in the Gateway Market TIS.

For the North Building the amount of parking dedicated to retail use is unknown at this time, thus trips for all modes were based on the amount of retail space provided.

A summary of the multimodal trip generation is provided in Table 3 and Table 4 for the South and North Buildings, accordingly. Detailed calculations are included in included in the Technical Appendix.

Table 3: Peak Hour Trip Generation - South Building

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Residential (520 Units)						
Auto	27 veh/hr	104 veh/hr	130 veh/hr	99 veh/hr	53 veh/hr	152 veh/hr
Transit	23 ppl/hr	92 ppl/hr	115 ppl/hr	88 ppl/hr	46 ppl/hr	134 ppl/hr
Bike	5 ppl/hr	19 ppl/hr	24 ppl/hr	18 ppl/hr	10 ppl/hr	28 ppl/hr
Walk	2 ppl/hr	7 ppl/hr	9 ppl/hr	7 ppl/hr	4 ppl/hr	11 ppl/hr
Retail (33,600 SF)						
Transit	6 ppl/hr	4 ppl/hr	10 ppl/hr	18 ppl/hr	20 ppl/hr	38 ppl/hr
Bike	4 ppl/hr	2 ppl/hr	6 ppl/hr	11 ppl/hr	12 ppl/hr	22 ppl/hr
Walk	1 ppl/hr	1 ppl/hr	2 ppl/hr	3 ppl/hr	3 ppl/hr	7 ppl/hr
Retail (350 parking spaces)						
Auto	67 veh/hr	42 veh/hr	109 veh/hr	189 veh/hr	203 veh/hr	392 veh/hr
Total						
Auto	**93 veh/hr**	**146 veh/hr**	**239 veh/hr**	**288 veh/hr**	**256 veh/hr**	**544 veh/hr**
Transit	**29 ppl/hr**	**96 ppl/hr**	**125 ppl/hr**	**106 ppl/hr**	**66 ppl/hr**	**172 ppl/hr**
Bike	**9 ppl/hr**	**21 ppl/hr**	**30 ppl/hr**	**29 ppl/hr**	**22 ppl/hr**	**50 ppl/hr**
Walk	**3 ppl/hr**	**8 ppl/hr**	**11 ppl/hr**	**10 ppl/hr**	**7 ppl/hr**	**18 ppl/hr**

Table 4: Peak Hour Trip Generation - North Building

Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Residential (160 Units)						
Auto	9 veh/hr	33 veh/hr	42 veh/hr	35 veh/hr	19 veh/hr	53 veh/hr
Transit	8 ppl/hr	29 ppl/hr	37 ppl/hr	31 ppl/hr	16 ppl/hr	47 ppl/hr
Bike	2 ppl/hr	6 ppl/hr	8 ppl/hr	7 ppl/hr	3 ppl/hr	10 ppl/hr
Walk	1 ppl/hr	2 ppl/hr	3 ppl/hr	3 ppl/hr	1 ppl/hr	4 ppl/hr
Retail (12,000 SF)						
Auto	5 veh/hr	4 veh/hr	8 veh/hr	15 veh/hr	16 veh/hr	32 veh/hr
Transit	2 ppl/hr	2 ppl/hr	4 ppl/hr	7 ppl/hr	7 ppl/hr	14 ppl/hr
Bike	1 ppl/hr	1 ppl/hr	2 ppl/hr	4 ppl/hr	4 ppl/hr	8 ppl/hr
Walk	0 ppl/hr	0 ppl/hr	1 ppl/hr	1 ppl/hr	1 ppl/hr	2 ppl/hr
Total						
Auto	**14 veh/hr**	**36 veh/hr**	**50 veh/hr**	**50 veh/hr**	**35 veh/hr**	**85 veh/hr**
Transit	**10 ppl/hr**	**31 ppl/hr**	**41 ppl/hr**	**38 ppl/hr**	**23 ppl/hr**	**61 ppl/hr**
Bike	**3 ppl/hr**	**7 ppl/hr**	**10 ppl/hr**	**11 ppl/hr**	**7 ppl/hr**	**18 ppl/hr**
Walk	**1 ppl/hr**	**2 ppl/hr**	**4 ppl/hr**	**4 ppl/hr**	**2 ppl/hr**	**6 ppl/hr**

TRAFFIC OPERATIONS

This section provides a summary of the existing roadway facilities, as well as an analysis of the existing and future roadway capacity in the study area. Included is an analysis of potential vehicular impacts of the 1270 4th Street PUD and recommendations for improvements and mitigation measures.

The purpose of the capacity analysis is to:

- Determine the existing capacity of the study area roadways;
- Determine the overall impact of the 1270 4th Street PUD on the study area roadways;
- Discuss potential improvements and mitigation measures to accommodate the additional vehicular trips; and
- Evaluate the proposed roadway network to determine if adequate capacity is provided in the future.

This analysis was accomplished by determining the traffic volumes and roadway capacity for the following scenarios:

- 2014 Existing Conditions
- 2017 Background Conditions (without Phase 1 or Phase 2 of the 1270 4th Street PUD)
- 2017 Total Future Conditions (with Phase 1 of the 1270 4th Street PUD)
- 2020 Background Conditions (without Phase 2 of the 1270 4th Street PUD)
- 2020 Total Future Conditions (with Phase 1 and Phase 2 of the 1270 4th Street PUD)

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

The following conclusions are reached within this chapter:

- The existing study area roadways generally operate under acceptable conditions during the morning and afternoon peak hour.
- Existing areas of concern for roadway capacity are primarily focused along the heavily trafficked commuter routes: New York Avenue NE and Florida Avenue NE.
- The existing configuration of 4th Street NE as one-way southbound with one wide travel lane results in driver confusion as the roadway is wide enough to accommodate two lanes. Additionally, a lack of signage and striping along 4th Street NE, combined with heavy truck volumes, results in high vehicular speeds and elevated crash rates.
- The addition of the trips generated by the background developments and inherent growth on the study area roadways has a negligible impact on the study area roadways.
- The background roadway improvements due to the *Florida Avenue Multimodal Study* are projected to have negligible impact on the roadway capacity in the study area.
- The addition of the trips generated by the 1270 4th Street PUD leads to unacceptable conditions at the intersection of 4th Street NE and Morse Street NE. However, these impacts can be mitigated by converting the intersection from stop-controlled on the east- and westbound approaches only to all-way stop-controlled.
- The conversion of 4th Street NE to two-way operation has negligible impact on the roadway capacity in the study area.
- The 1270 4th Street PUD will have no detrimental impacts to the study area. With the recommended mitigation measure outlined above, no study intersections operate under unacceptable conditions following the construction of the PUD that do not also operate under unacceptable conditions in the future without the proposed PUD.

ROADWAYS

As outlined previously, regionally the site is accessible from several Interstate and US highways, including I-395, I-695, I-295, US-50 (New York Avenue), US-1 (Rhode Island Avenue), and US-29 (Georgia Avenue/7th Street). These roadways also connect the site to the Capital Beltway (I-495) that surrounds Washington, DC and its inner suburbs. All of these roadways bring vehicular traffic within a few miles of the site, at which point arterials and local roads can be used to access the site directly.

Within the Union Market district itself, the roadways take on a unique character within the District. Instead of following the traditional public space design of the rest of the District, the market roadways have a distinct industrial character, with a mixture of vehicle types, activities, and pedestrian/bicycle traffic.

The roadways within the markets—Penn Street NE, Neal Place NE, Morse Street NE, 4th Street NE, and 5th Street NE—have minimal lane markings or striping, wide vehicular travel areas that accommodate car and truck parking, and minimal dedicated pedestrian and bicycle facilities.

4th Street NE and 5th Street NE between Penn Street NE and Morse Street NE are designated as one-way streets; 4th Street NE is one-way southbound, and 5th Street NE is one-way northbound. However, observations, backed by the data collected for this TIS, show that many drivers ignore or are unaware of these designations due to the lack of existing signage and striping within the Market.

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 to with the District Department of Transportation (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 analyses are performed to determine if the proposed development of the 1270 4th Street PUD will lead to adverse impacts on traffic operations. (A review of impacts to each of the other modes is outlined later in this report.) This is accomplished by comparing two future scenarios: (1) without the proposed application (referred to as the Background conditions) and (2) with the application approved and constructed (referred to as the Future conditions).

Specifically, the roadway capacity analysis examined the following scenarios:

- 2014 Existing Conditions
- 2017 Background Conditions (without Phase 1 or Phase 2 of the 1270 4th Street PUD)
- 2017 Total Future Conditions (with Phase 1 of the 1270 4th Street PUD)
- 2020 Background Conditions (without Phase 2 of the 1270 4th Street PUD)
- 2020 Total Future Conditions (with Phase 1 and Phase 2 of the 1270 4th Street PUD)

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

Study Area

The study area of the analysis is a set of intersections where detailed capacity analyses are 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 proposed development. Although it is possible that impacts will occur outside of the study area, those impacts are not significant enough to be considered a detrimental 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 for analysis:

1. 4th Street/Penn Street NE & New York Avenue NE
2. Penn Street NE & 4th Street/Alley NE
3. Neal Place NE & 4th Street NE
4. Morse Street NE & 4th Street NE
5. Florida Avenue NE & 3rd Street/Driveway NE
6. Florida Avenue NE & 4th Street NE
7. Florida Avenue NE & 6th Street NE
8. Florida Avenue NE & 5th Street NE
9. Florida Avenue NE & N Street NE

Figure 7 shows a map of the study area intersections.

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. For this study, a mix of new counts and data on record were used to assemble existing traffic volumes. Traffic data from the Gateway Market PUD was used for most intersections along Florida Avenue, while new counts were collected for the intersections within the market.

The results of the traffic counts, including the peak hour traffic volumes, are shown in the Technical Attachments. Figure 7 shows a summary of the existing data collection.

2017 Background Traffic Volumes (without Phase 1 or Phase 2 of the 1270 4th Street PUD)

The traffic projections for the 2017 Background conditions consist of the existing volumes with two additions:

- Traffic generated by developments expected to be completed prior to Phase 1 of the PUD (known as background developments); and
- Inherent growth on the roadway (representing regional traffic growth).

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 or close to the proposed development.

Based on these criteria, three developments listed are included in the 2017 Background scenario:

- *Gateway Market*
  Located at 340 Florida Avenue NE, this mixed-use development includes approximately 188 residential units and 27,500 square feet of retail spaces. Approximately 215 parking spaces will be provided in a below-grade garage, accessed via a curb cut on Florida Avenue.

- *Washington Gateway (not generating significant traffic at the time of data collection).*
  Located at 100 Florida Avenue NE, this mixed-use development includes approximately 400 residential units and 5,000 square feet of retail space in its first phase.

- *1309-1329 5th Street – South Building*
  Located within the Union Market district, this mixed-use development will be constructed over the existing Union Market building and include an Angelika movie theater with approximately 1,2500 seats over 8 screens and approximately 115,000 square feet of office space.

The traffic volumes generated by the Gateway Market and Washington Gateway developments were assigned and distributed through the roadway network using the same methodologies as the TIS for the Gateway Market PUD. Trips for the 1309-1329 5th Street PUD – South Building were distributed on the network based on that PUD's TIS.

While the background developments represent local traffic changes, regional traffic growth is typically accounted for using percentage 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. Growth rates were derived by comparing volume projections at two different time periods within the model.

These background growth rates were applied to thru movements at study area intersections, as summarized on Figure 8. The peak hour traffic volumes for the 2017 Background conditions are shown in the Technical Attachments.

2017 Future Traffic Volumes (with Phase 1 of the 1270 4th Street PUD)

The 2017 Future traffic volumes consist of the 2017 Background volumes with the addition of the traffic volumes generated by Phase 1 of the proposed development (site-generated trips). Thus, the 2017 Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and Phase 1 of the proposed 1270 4th Street PUD.

Existing traffic volumes and travel patterns in the study area were analyzed in order to determine the trip distribution for the site-generated trips. Based on this review and the existing site access locations, the site-generated trips were distributed through the study area intersections. Figure 9 shows a summary of the trip distribution and site-generated trips. The site-generated traffic volumes and the peak hour traffic volumes for the 2017 Future conditions are shown in the Technical Attachments.

2020 Background Traffic Volumes (without Phase 2 of the 1270 4th Street PUD)

The traffic projections for the 2020 Background conditions consist of the existing volumes with three additions:

- Traffic generated by Phase 1 of the 1270 4th Street PUD
- Traffic generated by developments expected to be completed prior to Phase 2 of the PUD; and
- Inherent growth on the roadway

In addition to the three developments listed above as part of the 2017 Background conditions, the following development will be included as a background development for the 2020 Background conditions:

- *1309-1329 5th Street – North Building*
  Located within the Union Market district, this mixed-use development will replace an existing building with approximately 35,000 square feet of retail space plus either 290,000 square feet of office space or approximately 368 apartments. The development will also provide a parking garage containing between 300-475 parking spaces.

Trips for the 1309-1329 5th Street PUD – North Building were distributed on the network based on that PUD's TIS. The same growth rates were utilized in the 2020 Background conditions as in the 2017 Background conditions. These background growth rates were applied to thru movements at study area intersections, as summarized on Figure 10. The peak hour traffic volumes for the 2020 Background conditions are shown in the Technical Attachments.

2020 Future Traffic Volumes (with Phase 1 and Phase 2 of the 1270 4th Street PUD)

The 2020 Future traffic volumes consist of the 2020 Background volumes with the addition of the traffic volumes generated by Phase 2 of the proposed development (site-generated trips). Thus, the 2020 Future traffic volumes include traffic generated by: the existing volumes, background developments, the inherent growth on the study area roadways, and Phase 1 and 2 of the proposed 1270 4th Street PUD.

The site-generated trips were distributed through the study area intersections based on existing traffic volume and travel patterns. Figure 11 shows a summary of the trip distribution and site-generated trips. The site-generated traffic volumes and the peak hour traffic volumes for the 2020 Future conditions are shown in the Technical Attachments.

Level of Service (LOS)

Level of service is based upon the traffic volume present in each lane on the roadway, the capacity of each lane at the intersection and the delay associated with each directional movement. The HCM defines six levels of service, ranging from A to F. LOS A represents the "best" operating conditions from a traveler's perspective (free-flowing conditions and little-to-no delay), and LOS F represents the "worst". Detailed LOS descriptions are contained in the Technical Attachments.

For cost, feasibility, and environmental impact, roadways are not typically designed to provide LOS A conditions during peak periods. Instead, roadways are typically designed to reflect a balance between individual traveler's desires, society's desires, and financial resources. In suburban areas, roadways are typically designed to a peak hour threshold of LOS D. In urban areas, such as the District, LOS E is typically used as the acceptable peak hour LOS threshold. Nevertheless, during low-volume periods of the day, a roadway or intersection may operate at LOS A.

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

The geometry and operations assumed in the existing conditions scenario are those present when the main data collection occurred. 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 in the Technical Attachments.

Of note, the 6th Street NE cycletrack was installed by DDOT at the end of October 2014. At the time of the data collection, the cycle track had not yet been installed. Therefore, the modification of the 6th Street NE cross-section is included as an improvement in the Background conditions.

2017 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 the proposed development.

Based on this criteria, the following improvements were included in the 2017 Background conditions due to the *Florida Avenue Multimodal Study*:

- Florida Avenue NE
  - Five-lane cross-section between 2nd and 3rd Streets NE (two eastbound lanes, three westbound lanes);
  - Five-lane cross-section between 3rd and 6th Streets NE (two lanes east- and westbound, with left-turn lanes); and
  - Four-lane cross-section east of 6th Street NE.
- 6th Street NE
  - Two-lane cross-section with cycle-track on east side of roadway.

Of note, these future improvements are still under development as the *Florida Avenue Multimodal Study* has not yet been published. The cross-sections above and corresponding signal timing updates were agreed to by Gorove/Slade and DDOT.

In addition to the improvements from the *Florida Avenue Multimodal Study,* it was also assumed that 5th Street NE, within the Union Market district, would be converted from one-way operation to two-way operation. This is expected to take place as part of the 1309-1329 5th Street – South Building development and will be included. The lane configurations and traffic controls for the 2017 Background conditions are shown in the Technical Attachments.

2017 Future Geometry and Operations Assumptions

The lane configurations for the 2017 Future conditions are based on the lane configurations for the 2017 Background conditions. However, as noted previously, the 2017 Future conditions include changing the existing one-way operation of 4th Street NE to a two-way configuration. The lane configurations and traffic controls for the 2017 Future conditions are shown in the Technical Attachments.

2020 Background Geometry and Operations Assumptions

The lane configurations for the 2020 Background conditions are based on the lane configurations for the 2017 Future conditions. No additional roadway improvements are assumed for this condition.

2020 Future Geometry and Operations Assumptions

The lane configurations for the 2020 Future conditions are based on the lane configurations for the 2020 Background conditions. However, as discussed previously the extension of Neal Place between 4th Street and 3rd Street is expected to occur sometime in the future, and at that time the portion of Neal Place within this project will be open to vehicular traffic, this creating an additional access to the reestablished alley. Although the timing of this is unknown, this study assumes it will be complete for this analysis scenario. If this is not the case, this analysis can be revisited during the North Building's Stage 2 PUD application.

Analysis Methodology

Following DDOT guidelines, the capacity analyses were performed using *Highway Capacity Manual* (HCM) methodologies. For signalized and unsignalized intersections, the HCM calculates the delay experienced by drivers traveling through an intersection. This delay is associated with vehicles slowing in advance of an intersection, the time spent stopped at an intersection, the time spent as vehicles move up in the queue, and the time needed to vehicles to accelerate to the speed limit. Traffic delay also results from the interaction of vehicles, primarily in a state where the traffic volumes exceed the available capacity.

The results of these delay calculations is a computed average delay (seconds per vehicle) for each approach and a Level of Service (LOS) grade. At signalized intersections, all approaches controlled by the traffic signal have a calculated average delay and associated LOS, and an overall average delay and LOS for the entire intersection are determined. At unsignalized intersections, the approaches controlled by a stop-sign have a calculated average delay and associated LOS. For all-way stop intersections, an overall average delay and LOS are also determined. For one- or two-way stop intersections, an average delay and LOS are also calculated for vehicles turning across a free-flowing approach, as the driver must yield to oncoming traffic. The major through movements and right-turns on free-flowing approaches at one- or two-way stop controlled intersections are assumed to operate with no delay.

For this report, the analysis was performed using the *Synchro, Version 7* software package, which is based on the HCM methodologies. As stated previously, the weekday morning and afternoon peak hours were analyzed in the Existing, Background, and Future conditions. The *Synchro* models were compiled using signal timings provided by DDOT and with lane configurations and traffic volumes collected by Gorove/Slade.

Of note, the intersection of Penn Street NE & 4th Street/Alley was analyzed using the VISTRO software, which is based on the HCM methodologies. The existing stop-control of the intersection is not allowed in Synchro; therefore, the results were obtained using VISTRO.

Capacity Analysis Results

The results of the capacity analyses are expressed in level of service (LOS) and delay (seconds per vehicle) for each approach. A summary of the LOS results is shown on Figure 12. The detailed capacity analysis tables and worksheets are contained in the Technical Attachments.

The capacity analysis results are split into three categories:

1. Intersections that operate at acceptable conditions during all time periods and scenarios analyzed. This study defines acceptable conditions as meeting LOS grade D or better for the overall intersection and each intersection approach.
2. Intersections that operate at unacceptable conditions regardless of the development of the project. This is either because the unacceptable conditions occur today, or unacceptable conditions occur in the future regardless of construction of the project.
3. Intersections that operate at unacceptable conditions due to construction of the project.

As shown in Figure 12, the majority of the study area intersections operate under acceptable conditions during the morning and afternoon peak hour. However, the following intersections operate under unacceptable conditions during one or more peak hour:

- *4th Street/Penn Street NE & New York Avenue NE*
  During the morning and afternoon peak hours, the westbound approach of New York Avenue NE operates below an acceptable level of delay under Existing conditions. The addition of the background developments, inherent growth along New York Avenue NE, and the site-generated trips exacerbates this existing condition; however, the capacity issues at this intersection are not a direct result of the PUD.

- *Morse Street NE & 4th Street NE*
  During the afternoon peak hour, the east- and westbound approaches are projected to operate below an acceptable level of delay in 2017 Future conditions. This failing operation is due to the addition of the site-generated trips, which must all travel through this intersection to access parking. Although the eastbound movement is improved under Phase 2 when the Neal Place connection is open to vehicular traffic, the westbound approach continues to operate below an acceptable level of delay. Capacity issues observed at this intersection are a direct result of the PUD.

- *Florida Avenue NE & 6th Street NE*
  During the morning peak hour, the northbound approach of 6th Street NE operates below an acceptable level of delay under Existing Conditions. The recommendations from the *Florida Avenue Multimodal Study* improve the northbound approach, but cause the southbound approach to operate over acceptable thresholds. Because 6th Street is converted to one-way northbound just south of the intersection, the amount of southbound left turns greatly increases resulting in excessive delay along this movement. The capacity issues observed at this intersection are not a direct result of the PUD.

Generally speaking, the proposed development is considered to have an impact at an intersection within the study area if the capacity analyses show an LOS E at an intersection or along an approach in the Future conditions where one does not exist in the Background conditions. Following these guidelines, the proposed 1270 4th Street PUD will have an impact on the intersection of Morse Street NE & 4th Street NE. The following section outlines potential improvements to mitigate this impact, as well as improvements that could be undertaken outside the scope of this study.

POTENTIAL IMPROVEMENTS

Only one of the locations in the study with unacceptable levels of delay is due to the construction of the 1270 4th Street PUD. The other locations of unacceptable conditions occur in scenarios with and without the development of the PUD—these capacity issues will occur regardless of development. Although this is the case, this section of the report reviews potential improvements that could be undertaken at these

locations, as well as improvements recommended to mitigate the site impacts.

Improvements Required by PUD

- *Morse Street NE & 4th Street NE*
  Due to the site impacts, this report recommends that this intersection be converted to all-way stop control. Changing the signalization of this intersection from two- to all-way stop control allows it to operate under acceptable conditions in the Future scenario. This report recommends that changing this configuration be included in the streetscape improvements undertaken by the Applicant.

Suggested Improvements for DDOT to Review

- *4th Street/Penn Street NE & New York Avenue NE*
  During the morning and afternoon peak hour, shifting approximately ten seconds of green time from New York Avenue NE to 4th Street/Penn Street NE would allow the intersection to operate under acceptable conditions. This report recommends that DDOT consider this improvement.

- *Florida Avenue NE & 6th Street NE*
  The future unacceptable operation of this intersection can be improved by shifting approximately 15 seconds of green time to the north-south movement during the PM peak hour. In regards to the AM peak hour, however, any green time shifted to the north-south movement results in east-west movements operating at unacceptable conditions. Therefore, no signal timing improvements are suggested for this intersection during the AM peak hour. As discussed above, some of the additional delay that occurs at this intersection is due to the conversion of 6th Street to one-way northbound just south of this intersection, which changes many through trips to left turns. It may be best to wait for the implementation of this improvements (recommended in the *Florida Avenue Multimodal Transportation Study*), and see how existing traffic adjusts to the changes before making further changes to this intersection.

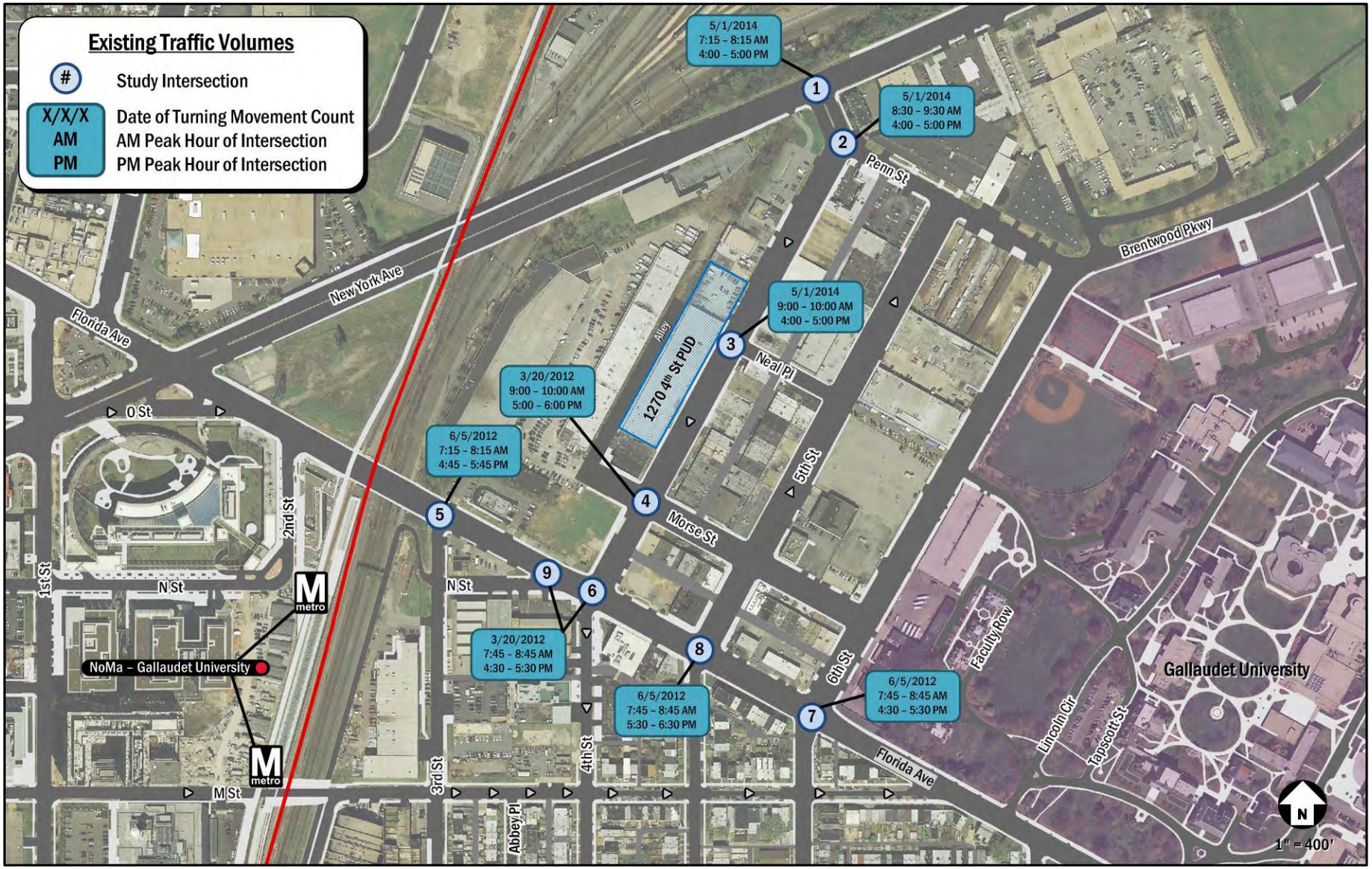

Figure 7: Study Intersections and Existing Volumes

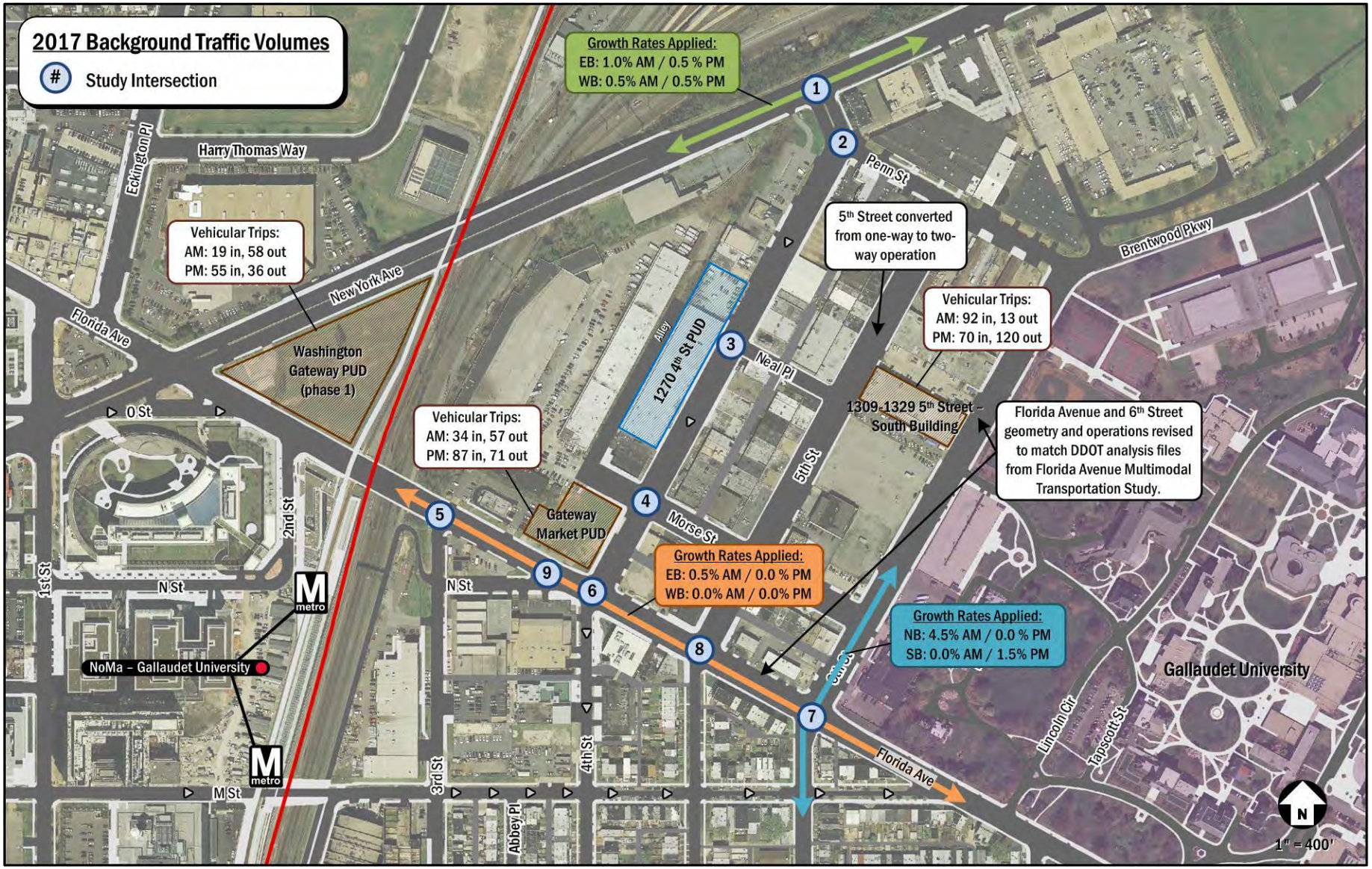

Figure 8: 2017 Background Traffic Volume Summary

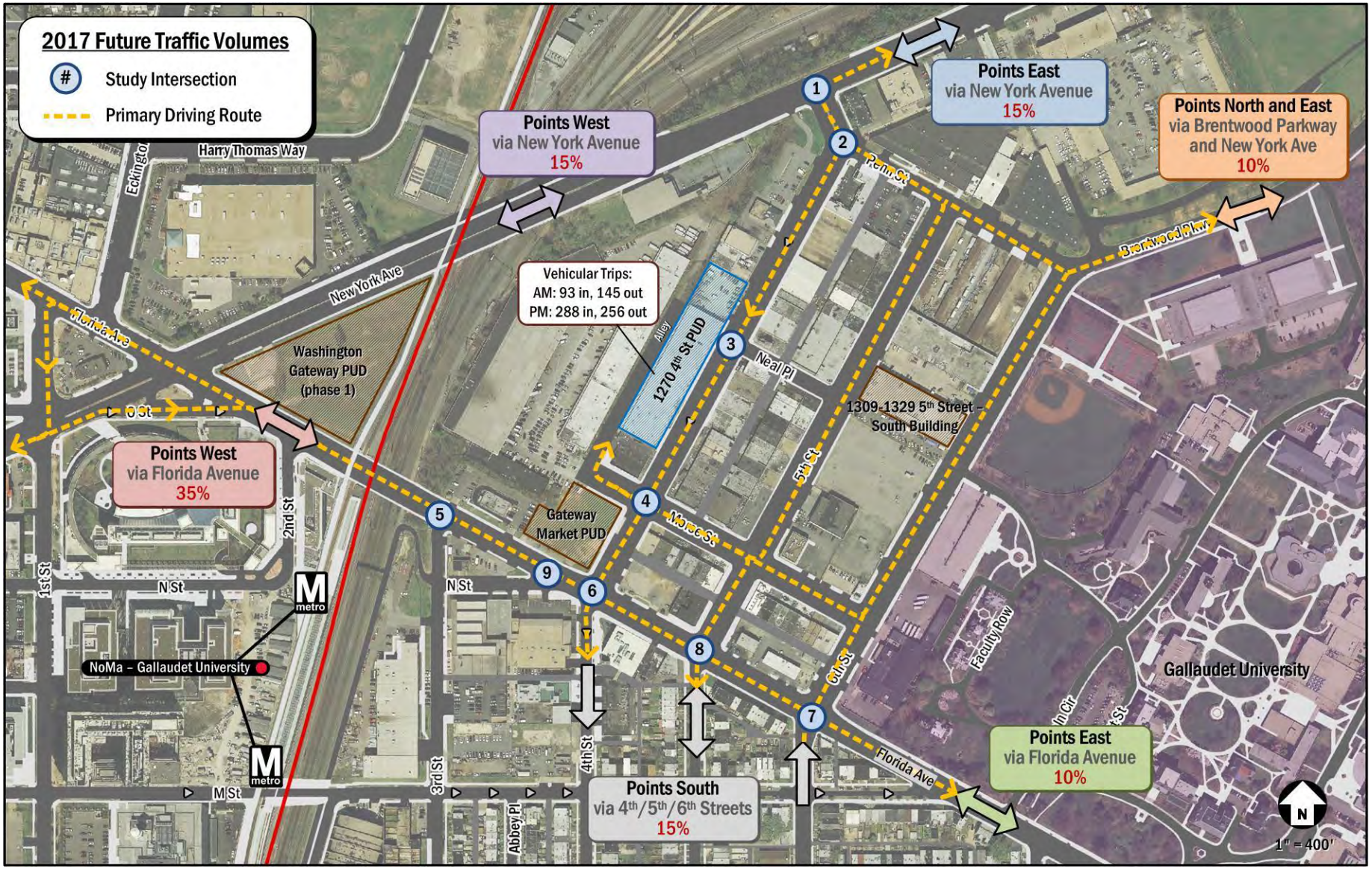

Figure 9: 2017 Future Peak Hour Traffic Volume Summary

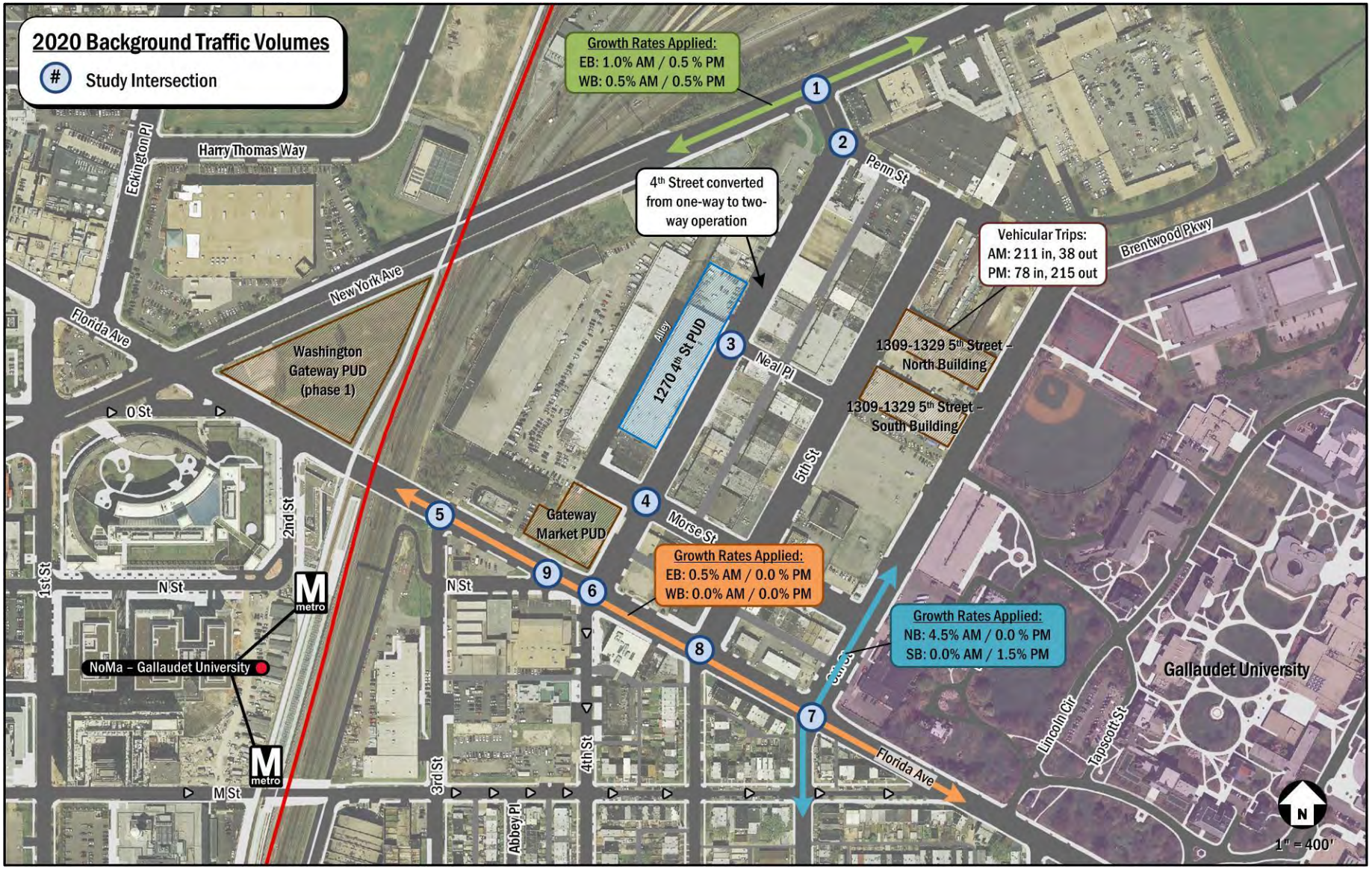

Figure 10: 2020 Background Traffic Volume Summary

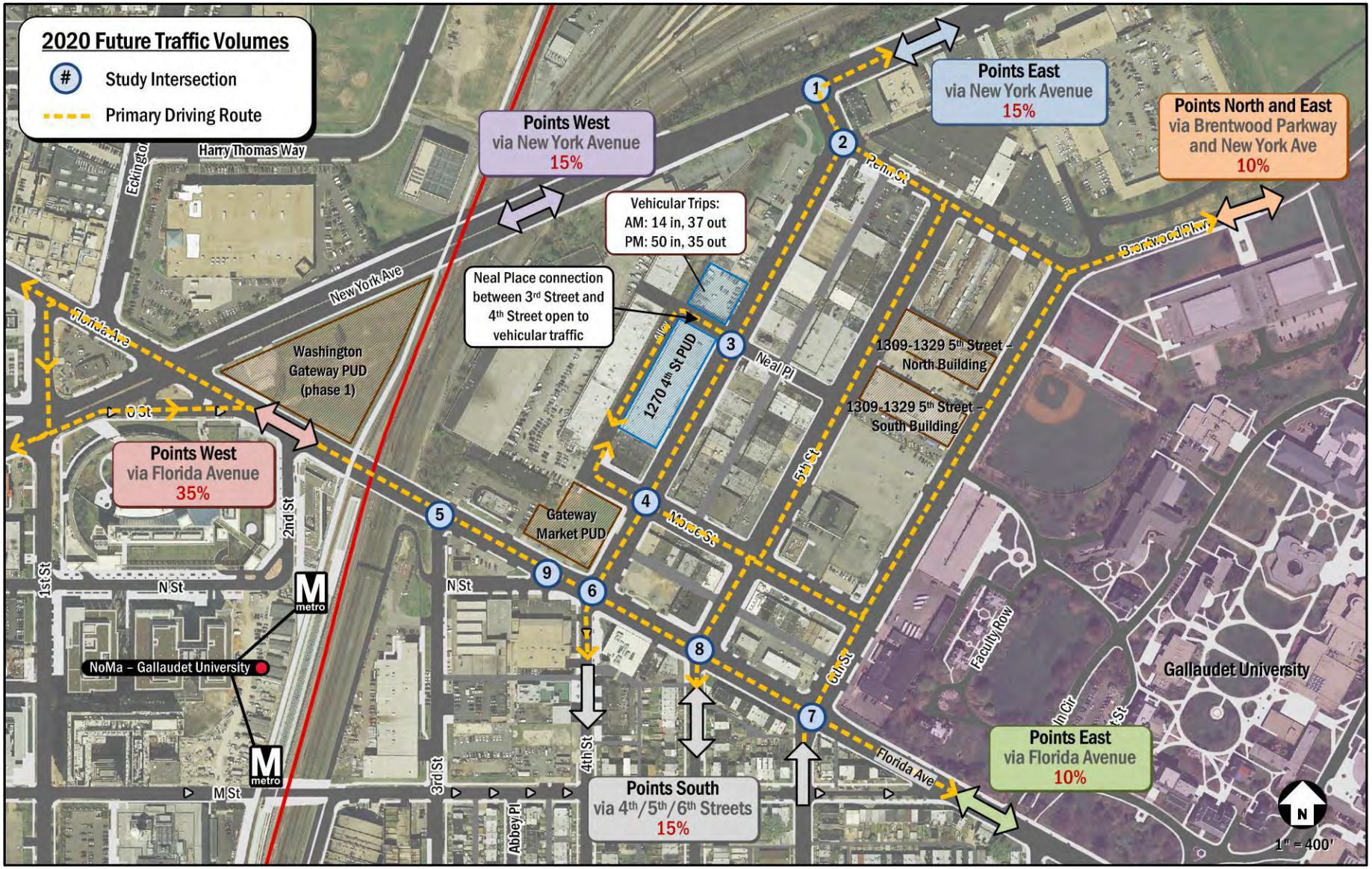

Figure 11: 2020 Future Peak Hour Traffic Volume Summary

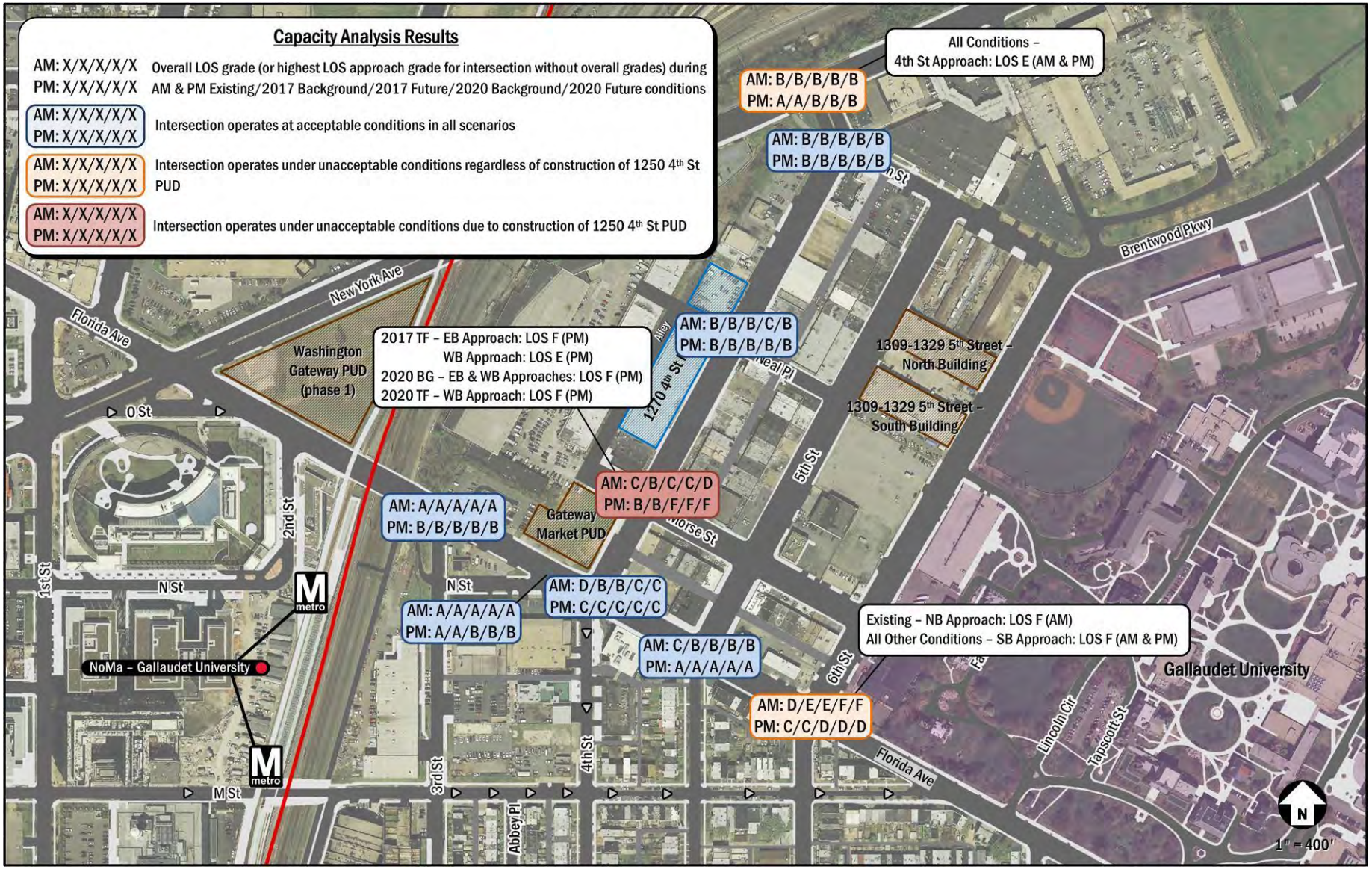

Figure 12: AM/PM Peak Hour Capacity Analysis Summary

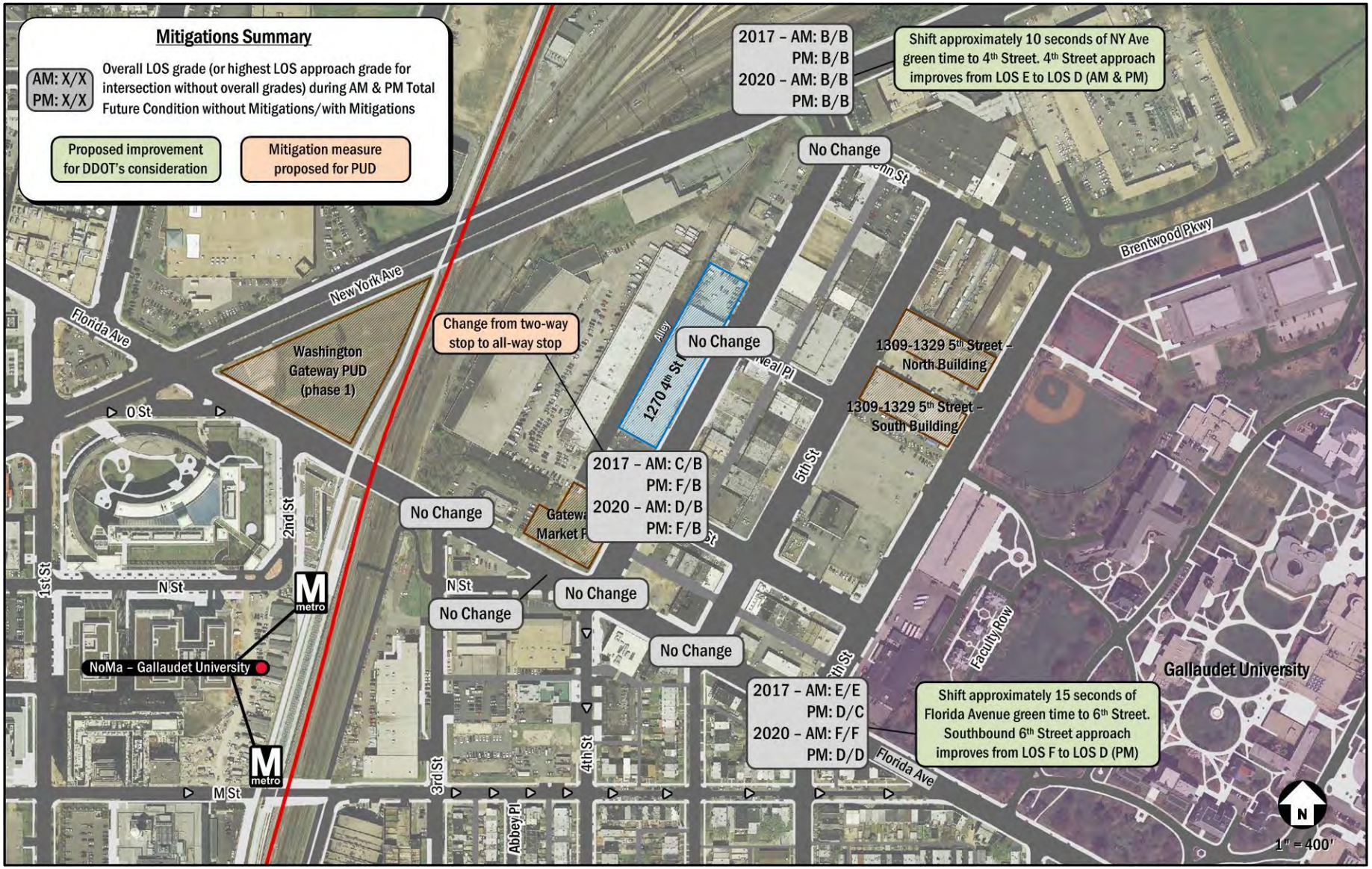

Figure 13: Summary of Mitigation Measures

TRANSIT

This section discusses the existing and proposed transit facilities in the vicinity of the site, accessibility to transit, and evaluates the overall transit impacts due to the 1270 4th Street development.

The following conclusions are reached within this chapter:

- The site is served by the Metrorail Red Line via the NoMa Station and two Metrobus routes that travel along Florida Avenue.
- The Metrobus routes along Florida Avenue have been studied with proposed recommendations for improved service including a Metro Express route with limited-stop service.
- Transit-trips generated by the site are not expected to have a detrimental impact on the surrounding transit system.

EXISTING TRANSIT SERVICE

The study area is well served by Metrorail and Metrobus. Combined, these transit services provide local, city wide, and regional transit connections and link the site with major cultural, residential, employment, and commercial destinations throughout the region. Figure 14 identifies the major transit routes, stations, and stops in the study area.

The NoMa-Gallaudet U Metrorail station is located approximately one-third of a mile from the development site and is served by the Red Line. The Red Line travels south from Shady Grove, travels through downtown DC, and continues north to Glenmont. Trains run approximately every three minutes during the morning and afternoon peak hours. They run about every 5 to 6 minutes during weekday non-peak hours, every 10 to 15 minutes on weekday evenings after 7:00 pm and 6 to 15 minutes on the weekends.

The site is also serviced by Metrobus along Florida Avenue. The routes serving this area connect the site to many stations in the Metrorail system and with various locations throughout all quadrants of the District. Table 5 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.

The nearest westbound bus stops are located on Florida Avenue at 3rd Street NE and Florida at 5th Street NE. Both are about equidistant to the site; however, the bus stop at 5th Street offers a bus shelter. The nearest eastbound stops are located on Florida Avenue between 3rd and 4th Street NE and Florida Avenue at 5th Street NE. Neither of these bus stops provides a shelter.

PROPOSED TRANSIT SERVICE

Due to growth of population, jobs, and retail in several neighborhoods in the District and the potential for growth in other neighborhoods, the District's infrastructure is challenged with the need for transportation investments to support the recent growth and to further strengthen neighborhoods. In order to meet these challenges and capitalize on future opportunities, DDOT has developed a plan to identify transit challenges and opportunities and to recommend investments. This is outlined in DC's *Transit Future System Plan* report published by DDOT in April 2010, which includes the reestablishment of streetcar service in the District.

Construction of the initial Streetcar Line, which runs along H Street and Benning Road, is complete and service is expected to start within the next few months. This line will be extended to the west in the future and connect with the Georgetown neighborhood. The nearest streetcar stop is located just over half a mile from the site at H Street and 3rd Street.

In addition to the added Streetcar service, a report was completed in 2011 that examined the U Street-Garfield Metrobus Line. This study recommends improvements

Table 5: Metrobus Route Information

Route Number	Route Name	Service Hours	Headway	Distance to Nearest Stop
90, 92, 93	U Street-Garfield Line	24 hour service	Peak: 7-15 min Non-Peak: 7-30 min Weekend: 10-20 min	0.2 miles (4 minutes)
X3	Benning Road Line	Weekdays: WB 6:00 am - 8:40 am EB 3:40 pm - 6:10 pm	AM Peak Hour: 7-15 min PM Peak Hour: 20-30 min	0.2 miles (4 minutes)

including a new Metro Express Route (99) with limited-stop service. In its initial implementation it would run bi-directionally with 15-minute headways during peak periods only. However, based on demand, service would have the potential of including weekday midday service, weekday evening service, and weekend service in the future.

SITE-GENERATED TRANSIT IMPACTS

The trip generation estimates for the 1270 4th Street development show that a substantial amount of new transit riders will be generated. The proposed development is projected to generate 166 transit trips (39 inbound, 127 outbound) during the morning peak hour and 233 transit trips (144 inbound, 89 outbound) during the afternoon peak hour.

US Census data was used to determine the distribution of those taking Metrorail and those taking Metrobus. The site lies near the border of two census tracts: census tract 88.03 and census tract 106. Based on data from these two census tracts, it is expected that about half of the transit trips will be attributed to Metrorail and the other half to Metrobus.

WMATA studied capacity of Metrorail stations in its *Station Access & Capacity Study.* The study analyzed the capacity of Metrorail stations for their vertical transportation, for example the capacity of the station at elevators, stairs, and escalators to shuttle patrons between the street, mezzanine, and platforms. The study also analyzed stations capacity to process riders at fare card gates. For both analyses, vertical transportation and fare card gates, volume-to-capacity ratios were calculated for existing data (from 2005) and projections for the year 2030. According to the study, high volume-to-capacity ratios were not observed at the NoMa Station in 2005 nor are they expected by 2030. Therefore, the station can accommodate the additional riders generated by the 1270 4th Street development.

WMATA also studied capacity along Metrobus routes. DC's *Transit Future System Plan* lists the bus routes with the highest load factor (a ratio of passenger volume to bus capacity). A load factor is considered unacceptable if it is over 1.2 during peak periods or over 1.0 during off-peak or weekend periods. According to this study both Metrobus routes near the site exceed these load factors: The U Street-Garfield Line with an all-day load factor of 1.06 and the Benning Road Line with a peak period load factor of 1.34.

Based on this load factor data, route specific studies were completed for both lines. The Benning Road Line report determined that a Metro Express route would help ease the capacity issues and thus the X9 Limited-Stop route was implemented. Over the coming years it is anticipated that this line will increase its frequency and expend service to midday rather than strictly peak hours. The U Street-Garfield Line report, as discussed above, also determined that a Metro Express route would the best option for remedying capacity concerns, but this route has not yet been implemented.

Overall, Metrobus service is constrained along the Florida Avenue corridor; however, DDOT and WMATA are aware of these issues and have implemented or have plans to implement improvements to all routes with capacity concerns. Although the development is expected to generate approximately 64 bus trips during the morning peak hour and 90 bus trips during the afternoon peak hour, enhancements to the Florida Avenue corridor routes will support the additional trips.

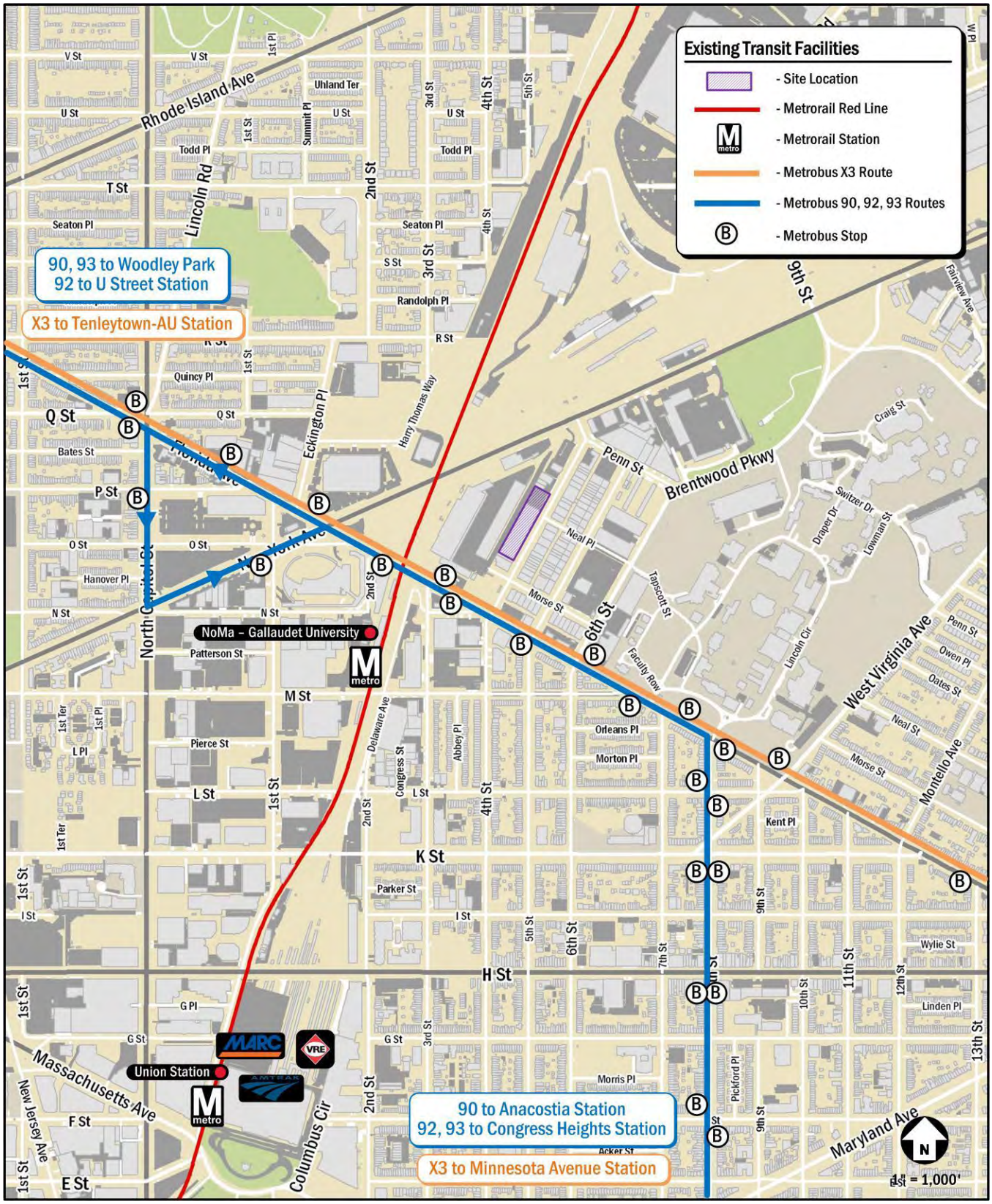

Figure 14: Existing Transit Service

PEDESTRIAN FACILITIES

This section 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:

- The majority of pedestrian facilities outside of the Union Market district provide a friendly pedestrian environment. Those that do not, particularly Florida Avenue, are being studied to improve pedestrian safety as part of DDOT's *Florida Avenue Multimodal Transportation Study.*
- Within the Union Market district, pedestrian facilities reflect the industrial nature of the site. The 1270 4th Street development will greatly improve pedestrian conditions adjacent to the site by increasing the amount pedestrian space and decreasing the width of vehicular travel lanes thus creating a streetscape that encourages safer conditions for all modes of transportation.
- The site will generate more pedestrian activity, particularly along 4th Street, than the Market currently observes. The proposed improvements along 4th Street will create a safer environment for pedestrians. In addition, the uses associated with the proposed development will generate much less truck traffic than existing conditions, reducing potential truck/pedestrian conflicts.
- Placing the primary vehicular accesses at the intersections of 4th Street with Morse Street and Neal Place leads to smoother traffic and pedestrian operations within the Market. Although Neal Place will not be open to vehicular access until Phase 2 and much of the site-generated pedestrian traffic will be walking through the intersection of 4th Street and Morse Street to access transit stops, the placement of vehicular access on the perimeter of the Market will reduce the amount of potential vehicular and pedestrian conflicts within the market. In conjunction with Phase 1, this intersection will be updated to accommodate safe pedestrian movements such as implementation of an all-way stop and improved or additional crosswalks and ADA compliant curb ramps at all crossings. Upon completion of Phase 2 and the opening of the Neal Place connection, pedestrian conditions surrounding the site will improve even more as less vehicular traffic will be traveling along 4th Street in front of the site and site traffic will be distributed between two access points as opposed to one.

PEDESTRIAN STUDY AREA

Facilities within a quarter-mile of the site were evaluated as well as routes to nearby transit facilities. The site is easily accessible to transit options such as bus stops on Florida Avenue and the NoMa Metrorail Station portal at N Street and 2nd Street NE. The site is also within walking distance of Gallaudet University, the H Street corridor, and Union Station. There are some barriers and areas of concern within the study area that negatively impact the quality of and attractiveness of the walking environment. This includes roadway conditions that reduce the quality of walking conditions, narrow or nonexistent sidewalks, and incomplete or insufficient crossings at busy intersections. Figure 15 shows suggested pedestrian pathways, walking time and distances, and barriers and areas of concern.

SURROUNDING PEDESTRIAN INFRASTRUCTURE

This section outlines the existing and proposed pedestrian infrastructure surrounding the Union Market district.

Existing Conditions

A review of pedestrian facilities surrounding the Market shows that many facilities meet DDOT standards and provide a quality walking environment. Figure 16 shows a detailed inventory of the existing pedestrian infrastructure outside of the Market study area. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Public Realm Design Manual* in addition to ADA standards. Sidewalk widths and requirements for the District are shown below in Table 6.

Within the area shown, most roadways are considered residential with a low to moderate density. Most of the sidewalks surrounding the site comply with these standards; however there are some areas, which have inadequate sidewalks or no sidewalks at all. The area of poor quality, which is expected to have the greatest effect on residents and patrons of the development, are the sidewalks along Florida Avenue. As discussed later in this section, however, pedestrian conditions are expected to improve along Florida Avenue. DDOT is aware of the safety concerns associated with Florida Avenue and has initiated the *Florida Avenue Multimodal Transportation Study* which will evaluate safety, streetscape, and operational enhancements along the roadway between

New York Avenue and H Street with the vision of improving safety for pedestrian and bicyclists while ensuring all users have safe access within and through the corridor

ADA standards require that all curb ramps be provided wherever an accessible route crosses a curb and must have a detectable warning. Additionally, curb ramps shared between two crosswalks is not desired. As shown in the figure, under existing conditions there are some issues with crosswalks and curb ramps near the site; however, several of these issues will be remedied through improvements from the *Florida Avenue Multimodal Transportation Study*.

Proposed Pedestrian Facilities

In the vicinity of the site, there are proposed streetscape improvements along 6th Street and Florida Avenue, in coordination with the ongoing *Florida Avenue Multimodal Transportation Study*. Although the final design has not been determined at this time, all potential alternatives result in pedestrian improvements along both roadways.

Under existing conditions, Florida Avenue operates as a 6-lane roadway. The majority of sidewalks are narrow and within the quarter-mile pedestrian study area, no buffers are provided. The sidewalk conditions in conjunction with the high volumes and high speeds along Florida Avenue results in an intimidating experience for pedestrians. The proposed recommendations all including reducing the number of vehicular lanes and using this extra space to support additional and improved pedestrian space.

Under existing conditions 6th Street north of Florida Avenue consists of two 22-foot travel lanes with a 6-foot painted median and 10-foot parking lanes on either side. Additionally there is an 8-foot sidewalk on the west side and a 6-foot sidewalk on the east side. The wide lanes make it easier for cars to travel at higher speeds, therefore all recommendation options for 6th Street show narrower travel lanes, extensive pedestrian space, and bicycle facilities, all while maintaining the same amount of parking.

UNION MARKET DISTRICT PEDESTRIAN INFRASTRUCTURE

This section evaluates the existing and proposed pedestrian infrastructure within the Union Market district.

Existing Conditions

The Union Market district study area consists of an industrial wholesale marketplace. Under existing conditions the area is not very pedestrian friendly, with large vehicles blocking sight lines, loading/unloading activity taking place across sidewalks, and a lack of activity at night which creates safety concerns.

Most streets within the Market, including 4th Street in the vicinity of the development, have very wide cross sections, which do very little to encourage safe vehicular speeds and creates unnecessarily long distances for pedestrian to cross. 4th Street also functions as one-way southbound under existing conditions with enough room for two-way traffic and poor signage. Vehicles are occasionally seen traveling the wrong way down the roadway, which creates unsafe conditions for vehicular and pedestrian traffic alike.

A review of pedestrian facilities within the Union Market district shows that many facilities do not meet DDOT standards. Figure 16 shows a detailed inventory of the existing pedestrian infrastructure within the Union Market district. Sidewalks, crosswalks, and curb ramps are evaluated based on the guidelines set forth by DDOT's *Public Realm Design Manual,* shown previously in Table 6, in addition to ADA standards.

Within the area shown, most roadways are considered to be commercial thus requiring a 10 foot sidewalk with a 4 foot buffer. Given that the existing sidewalks often double as loading/unloading areas, the majority of sidewalks are approximately 8 to 10 feet. Some areas even extend as wide as 15 feet. Although the sidewalks may be wide in many areas of the Market, the sidewalks are in poor condition and thus most are considered to be substandard.

As discussed above, ADA standards require that all curb ramps be provided wherever an accessible route crosses a curb and

Table 6: Sidewalk Requirements

Street Type	Minimum Sidewalk Width	Minimum Buffer Width
Residential (Low to Moderate Density)	6 ft	4 ft (6 ft preferred for tree space)
Residential (High Density)	8 ft	4 ft (6 ft preferred for tree space)
Commercial (Non-downtown)	10 ft	4 ft
Downtown	16 ft	6 ft

must have a detectable warning. Additionally, curb ramps shared between two crosswalks is not desired. As shown in the figure, the majority of intersections do not provide adequate crosswalks or curb ramps.

Proposed Improvements

As the Union Market district redevelops and evolves, even though the Market plans to maintain the industrial feel of the area, it will be necessary to improve facilities to ensure accessible routes to and from transit stops. It is expected that as the Union Market district is developed, pedestrian facilities will be replaced and improved on a parcel by parcel basis, whether by the Applicant, DDOT, or other owners. It is the hope that the streetscape improvements completed for the 1270 4th Street development will serve as a baseline for developments to come and set the stage for an improved sense of place within the Market.

As part of the development, 4th Street will be converted to a two-way street with more distinct signage to provide some much-needed organizational structure to the roadway. The streetscape improvements along 4th Street will also include a curbless design that encourages an organization of user facilities while maintaining the industrial feel of the site. This design intends to encourage vehicles, pedestrians, and cyclists to pay attention, slow down, and share the street. This is accomplished by greatly decreasing the width of the vehicular lanes, increasing the amount of pedestrian space, adding pedestrian amenities and seating within pedestrian space, and incorporating landscaped elements into the parking lane.

This design also allows the Market to grow over time. As more parcels continue to develop, this same design principle can be easily incorporated into future designs. Pedestrian-specific improvements of this design include the following:

- Café seating outside of restaurants;
- Additional pedestrian amenity space including sidewalks, tree boxes, bicycle parking, and built-in outdoor furniture;
- A shared parking and planter lane as an added buffer between pedestrian space and travel lanes

SITE IMPACTS

This section summarizes the impacts of the development on the overall pedestrian operations within and surrounding the Market.

Pedestrian Trip Generation

The 1270 4th Street development is expected to generate 14 walking trips (4 inbound, 10 outbound) during the morning peak hour and 23 walking trips (14 inbound, 9 outbound) during the afternoon peak hour. The origins and destinations of these trips are likely to be:

- Employment opportunities where residents can walk to work
- Retail locations, such as Union Market and other retail sites within NoMa and along H Street

In addition to these trips, the transit trips generated by the site will also generate pedestrian demand between the 1270 4th Street site and nearby transit stops. The majority of these transit riders will be walking to Florida Avenue to access Metrobus Service or to 2nd and N Street, NE, the nearest portal of the NoMa Metrorail station.

Based on these origins/destinations, most pedestrians generated by the development will be traveling south of the site, along Florida Avenue or 4th Street, with a small portion of pedestrians traveling within the Market itself.

Pedestrian and Vehicular Interactions

Vehicular access to the site, including passenger cars and trucks, will be from an alley on the west side of the site. During Phase 1 the alley will be accessible from 4th Street and Morse Street. Upon completion of Phase 2 4th Street and Neal Place will also provide access to the alley. As part of the development, Neal Place will be extended from 4th Street to 3rd Street and it will be opened to vehicular traffic in Phase 2.

During Phase 1, placement of the vehicular access at 4th Street and Morse Street is the most beneficial for the overall operations of the site. Given that the majority of vehicular traffic is expected to come from south of the site, a vehicular access on the south side of the site eliminates vehicular trips along 4th Street in front of the site. This parking garage is also expected to be used by retail patrons of existing and future retail sites within the Union Market district. Placing the parking access on the perimeter or the Union Market district reduces

the amount of vehicular traffic within the Market and creates a safer environment for pedestrians and cyclists. If the primary vehicular access was located on or north of 4th Street, there would be more opportunity for unnecessary vehicular and pedestrian conflicts.

Although vehicular access off 4th Street and Morse Street is the best location for overall operations of the Union Market district, much of site-generated pedestrian trips will also be traveling through this intersection. Therefore, it is vital to make improvements and adjustments to the intersection to provide a safe pedestrian environment.

Under existing conditions the intersection of 4th Street and Morse Street is two-way stop controlled in which traffic along Morse Street must stop and 4th Street is free-flowing. With the transition of 4th Street from one-way southbound to two-way, the intersection will be converted to 4-way stop controlled. This control scenario benefits pedestrians over the existing conditions since it slows vehicular traffic in all directions and ensures that pedestrians have the right-of-way at all crossings. It also simplifies the intersection for vehicular traffic and results in better clarification of roadway operations.

Further improvements that will be necessary at the intersection include restriping or adding crosswalks along all four crossings and installing or improving all curb ramps to comply with ADA requirements. Under existing conditions crosswalks are in poor condition and only provided at two crossings and curb ramps are only provided at three of the corners, none of which are ADA compliant.

In addition to the operational and signage improvements made to the intersection, the amount of truck traffic traveling through the intersection is expected to decrease. The existing use of the site is comprised of several wholesale vendors, all of which require frequent truck deliveries. The proposed development will comprise of retail establishments that generate less truck traffic and residential units that will only generate truck traffic during move ins and move outs.

When Phase 2 is complete and Neal Place is open to vehicular traffic, pedestrian conditions will improve even more. Access to the alley from 4th Street and Neal Place will capture vehicular traffic from the north and further reduce the number of vehicles circulating within the Union Market district, particularly along 4th Street in front of the site. The addition of this access point will also distribute site-generated traffic amongst two access points instead of one resulting in fewer potential encounters between vehicles and pedestrians and cyclists at the intersection of 4th Street and Morse Street.

Although the intersection of 4th Street and Neal Place is not expected to be used by pedestrians as much as 4th Street and Morse Street, it is still essential to improve the overall conditions at the intersection. Improvements should include restriping or adding crosswalks in addition to installing and improving all curb ramps to comply with ADA requirements.

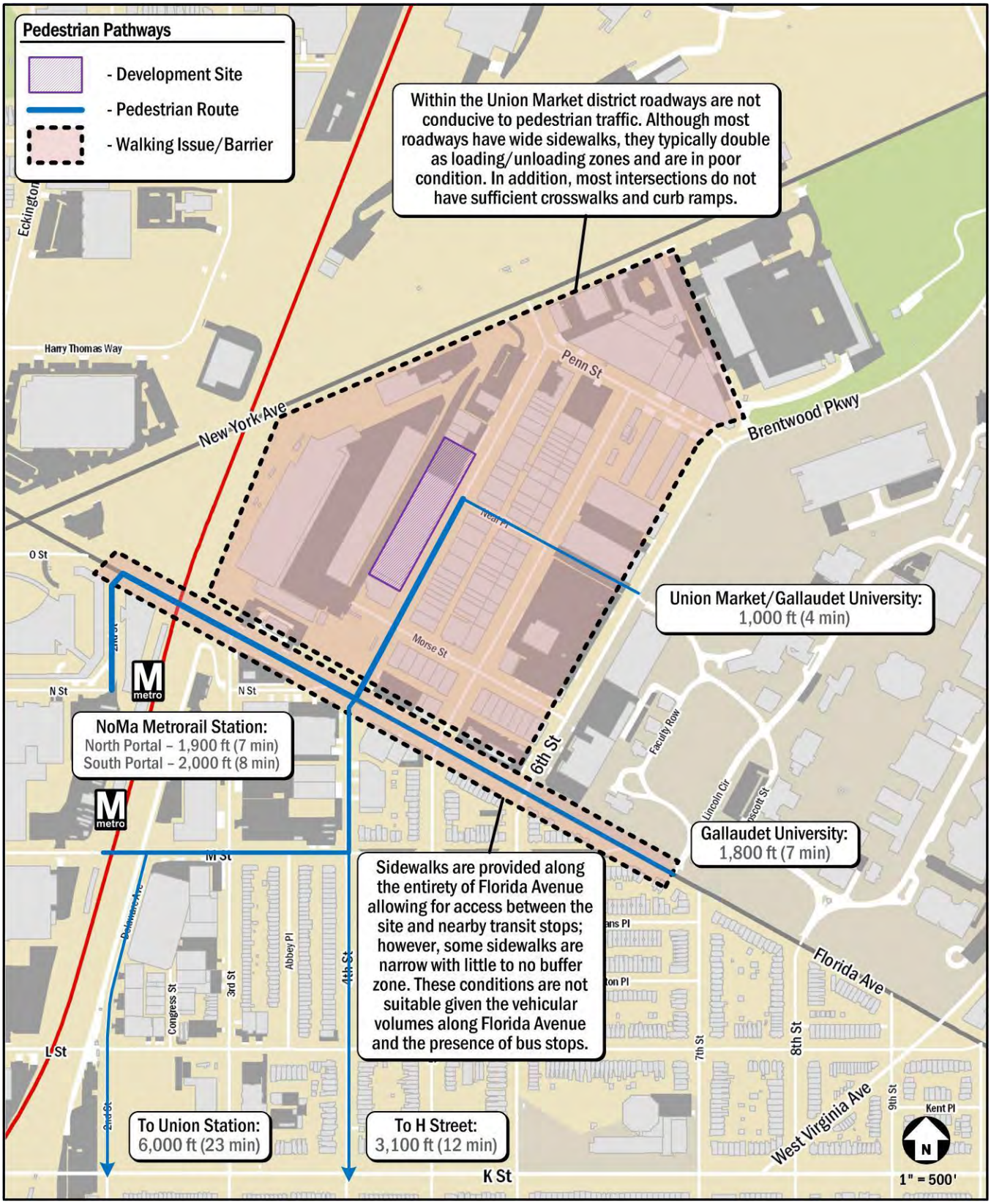

Figure 15: Pedestrian Pathways

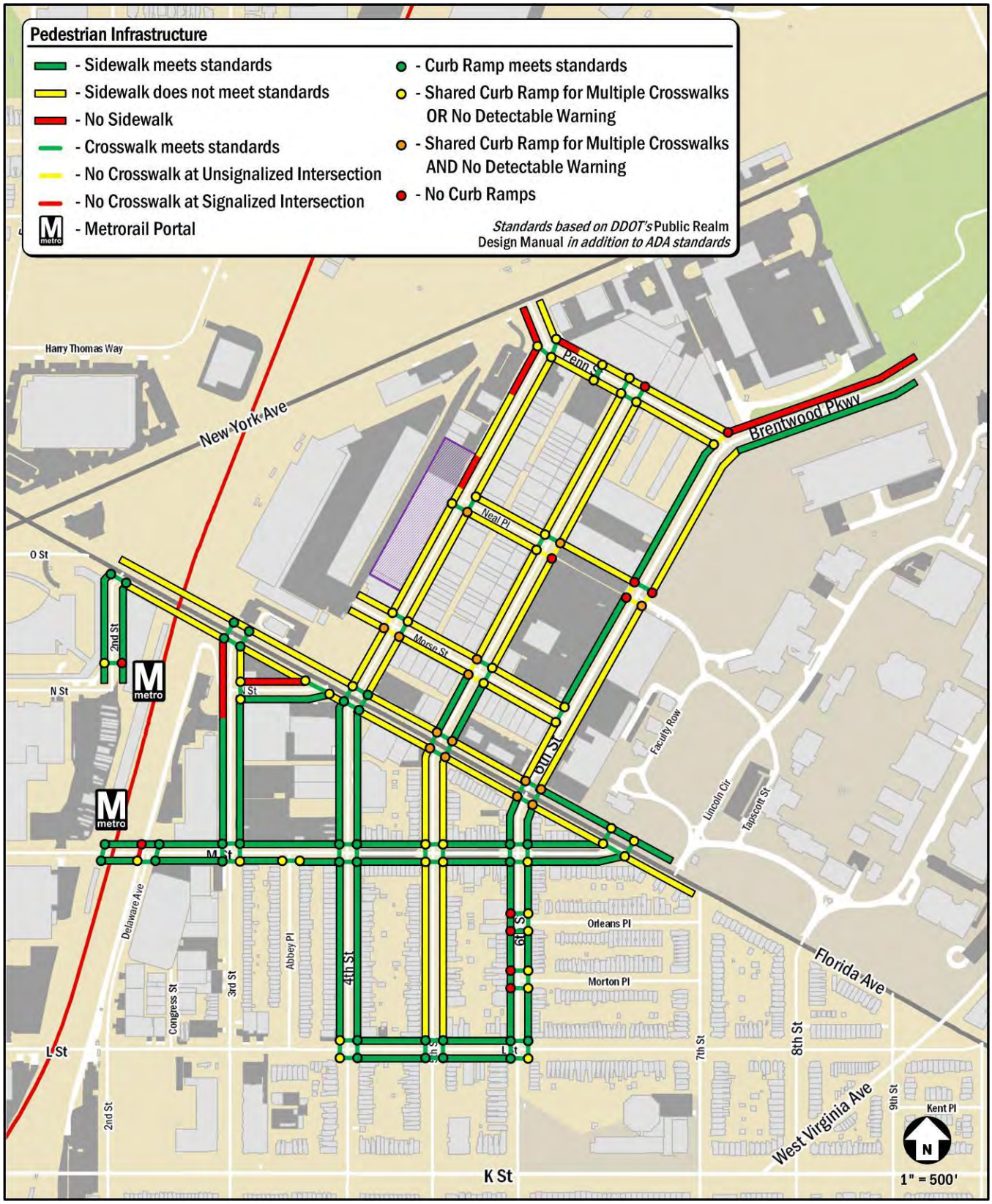

Figure 16: Existing Pedestrian Infrastructure

BICYCLE FACILITIES

This section 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 within this chapter:

- There are multiple high-quality bicycle facilities within the vicinity of the site.
- New protected bicycle infrastructure will be implemented near the site in the coming years that will further improve the cycling conditions in the area.
- There are several bicycle-focused elements of the development plan that will encourage cycling as a safe and effective transportation option for residents and patrons of the development.
- Given the existing and proposed bicycle infrastructure in the study area, the site-generated bicycle trips will not result in detrimental impacts to the bicycle system.

EXISTING BICYCLE FACILITIES

The site has excellent connectivity to existing on- and off-street bicycle facilities. Northbound bicycle lanes along 6th Street NE and southbound bicycle lanes along 4th Street NE provide two-way bicycle circulation between the site and the Navy Yard neighborhood in addition to providing a connection to the bicycle facilities on I Street and G Street. In addition, bicycle facilities along 6th Street have been extended to include a two-way cycle track between Florida Avenue and Penn Street. The site is located just a few blocks from the Metropolitan Branch Trail which provides on- and off-street bike facilities along the Red Line between Union Station and Silver Spring. The Metropolitan Branch Trail also provides connections to many east-west bicycle connections such as the R and Q Street bike lanes which run eastbound and westbound, respectively. Additionally, south of the site, the Metropolitan Branch Trail connections the site to the E Street bike lane. Figure 17 illustrates existing and planned bicycle facilities in the area.

Given the existing use of the site, little bike traffic is observed and thus no bike parking is provided in the direct vicinity of the site. Cyclists that do bike to the existing site are observed using street signs or similar objects to secure their bicycles.

In addition to personal bicycles, the Capital Bikeshare program provides an additional cycling option for residents and patrons of the 1270 4th Street development. The Bikeshare program has placed over 300 bicycle-share stations across Washington, DC, Arlington and Alexandria, VA, and most recently Montgomery County, MD with over 2,500 bicycles provided. There is one station located within a quarter-mile of the site at 6th Street and Neal Place supplying 23 docks. In addition, there are three stations within a half mile: 8th Street & Florida Avenue at Gallaudet University, M Street & Delaware Avenue at the NoMa Metrorail station, and 1st Street & M Street supplying a total of 57 docks. Figure 17 identifies existing station locations in the study area.

PROPOSED BICYCLE FACILITIES

As discussed previously, the Florida Avenue Multimodal Transportation Study is currently in the process of being completed by DDOT. This study focuses on the Florida Avenue corridor between New York Avenue and H Street and will evaluate safety, streetscape, and operational improvements for all users of the corridor. Three alternatives have been conceived for Florida Avenue and 6th Street and one, or a combination of multiple, will be implemented.

Along Florida Avenue, some of the improvements involve adding bicycle facilities along Florida Avenue; however, the potential inclusion of bicycle facilities is still undecided. Along 6th Street the most favorable alternative includes a two-way cycle track on the east side of the road. A temporary two-way cycle track was recently installed along 6th Street between Florida Avenue and Penn Street, but 6th Street may undergo more extensive improvements in the future. These additional improvements could include further narrowing the travel lanes to encourage slower vehicular speeds and widening the two-way cycle track. DDOT is also considering placing a Capital Bikeshare station near the intersection of 6th Street and Neal Place in space made available through the temporary improvements.

Along 6th Street all improvement alternatives include some kind of bicycle facility ranging from bicycles lanes to a two-way cycle track. Overall, the Florida Avenue and 6th Street corridors will become more bicycle-friendly as a result of the improvements.

In addition to updates along Florida Avenue and 6th Street, the MoveDC plan outlines several other bicycle improvements in the vicinity of the site. These improvements are broken up into four tiers that rank the priority for implementation. The four tiers are broken down as follows:

- *Tier 1*
  Investments should be considered as part of DDOT's 6-year TIP and annual work program development, if they are not already included. Some projects may be able to move directly into construction, while others become high priorities for advancement through the Project Development Process.
- *Tier 2*
  Investments within this tier are not high priorities in the early years of moveDC implementation. They could begin moving through the Project Development Process if there are compelling reasons for their advancement.
- *Tier 3*
  Investments within this tier are not priorities for DDOT-led advancement in the early years of moveDC's implementation. They could move forward earlier under circumstances such as real estate development initiatives and non-DDOT partnerships providing the opportunity for non-District-led completion of specific funding.
- *Tier 4*
  Generally, investments within this tier are not priorities for DDOT-led advancement and are lower priority for project development in the early years of implementation.

Due to the timeline of the 1270 4th Street development, this report will focus on the Tier 1 recommendations within the vicinity of the site. These include the extension of the M Street cycle track from Thomas Circle to Florida Avenue and a bike trail along New York Avenue.

Given the existing alignment of the M Street cycle track between Thomas Circle and 28th Street NW, this extension (ultimately connecting Georgetown with NoMa) would provide a safer and more convenient east-west connection through the heart of downtown. The existing east-west bicycle connections are further from the site, do not typically provide protected facilities, and do not provide as extensive of a connection.

Currently, New York Avenue serves as a vehicle-centric roadway, but provides convenient access to many residential, office, and retail destinations in neighborhoods to the east. A multi-use trail along New York Avenue would open up these areas to more modes of transportation.

On-Site Bicycle Facilities

As discussed in the previous section, the streetscape directly surrounding the site will be significantly altered to create a more favorable multimodal environment. 4th Street will implement a curbless design that greatly differs from the existing layout of the roadway. Under existing conditions 4th Street is very wide which does very little to discourage speeding. Bicycles benefit from a curbless design because it creates an environment that encourages vehicles, pedestrians, and cyclists to slow down, pay greater attention, and share the street. Further detail in regards to the streetscape and its implementation will be submitted to the Zoning Commission in a separate document. Although bicycle facilities will not be provided within the Market itself, it is expected that vehicular volumes and speeds within the Market will not be high enough to need them. Bicycles should be able to safely ride along the roadways within the Market to access the surrounding bicycle infrastructure. In addition, the conversion of 4th Street to two-way will improve the connectivity of the Market.

Behind the site, DDOT is examining the feasibility of a connection to the planned New York Avenue bike trail. This connection would utilize the abandoned CSX railroad right-of-way and abandoned railroad underpass under New York Avenue which runs parallel to the site, adjacent to the alley.

The site will provide a substantial amount of short- and long-term bicycle parking. Short-term bicycle parking will be placed along 4th Street near retail entrances. The development will provide 150 to 192 long-term bicycle parking spaces, located on the first level of the garage, depending on the finalized development plan. These numbers are based on the Bicycle Commuter and Parking Expansion Act of 2007 which states that all new residential building owners shall provide at least one secure bicycle parking space for each 3 residential units. For all other uses the number of bicycle parking spaces provided shall be at least equal to five percent of the number of automobile parking spaces required.

Site Impacts

The 1270 4th Street site is expected to generate 40 bicycle trips (12 inbound, 28 outbound) during the morning peak hour and 69 bicycle trips (40 inbound, 29 outbound) during the afternoon peak hour. Although bicycling will be an important mode for getting to and from the site, with significant bicycle facilities located on site and quality routes to and from the site, the impacts from bicycling will be relatively less than impacts to other modes. Overall, the development is not expected to have a negative impact on bicycle facilities in the area.

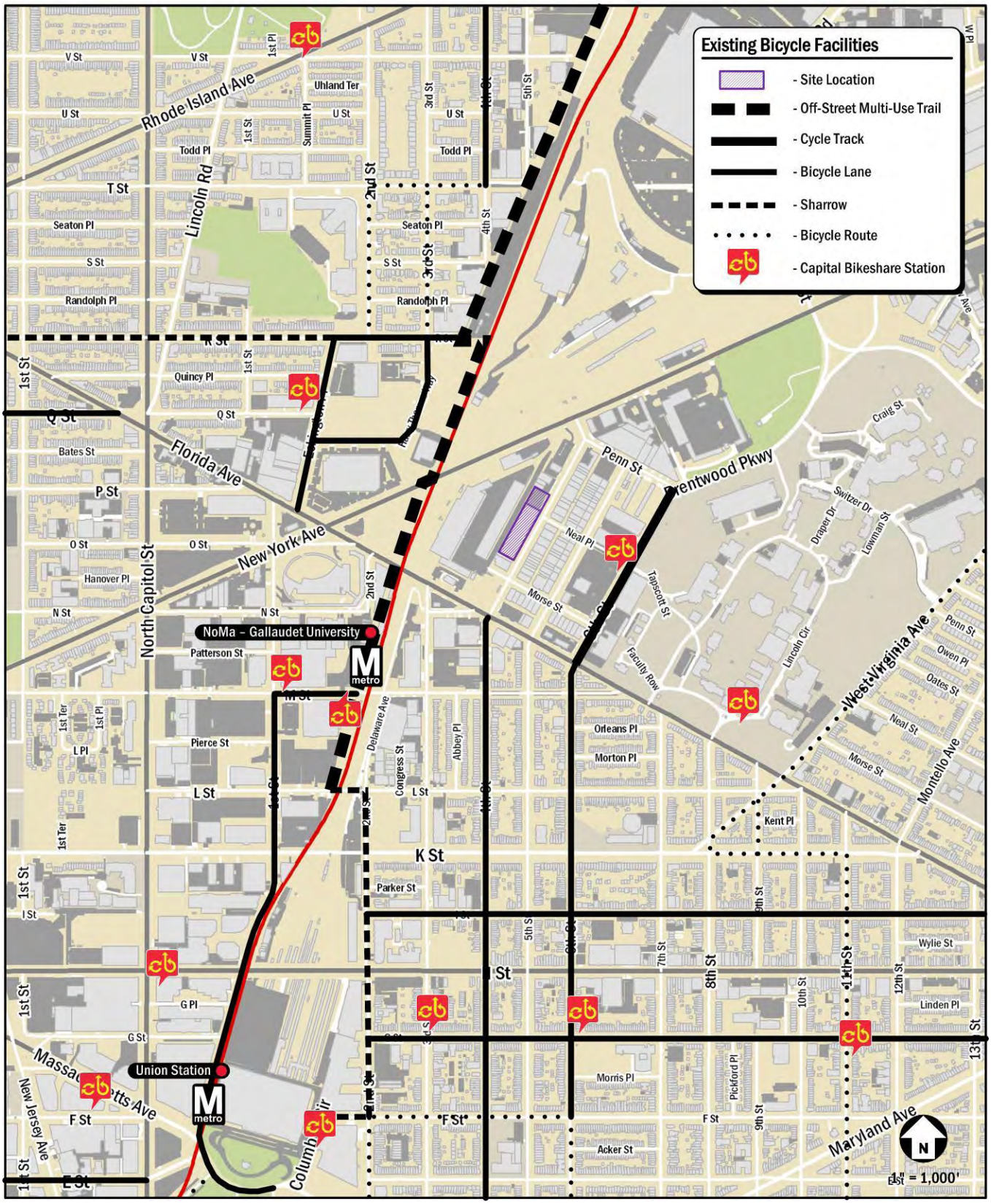

Figure 17: Existing Bicycle Facilities

CRASH DATA ANALYSIS

This section of the report reviews available crash data within the study area, reviews potential impacts of the proposed development on crash rates, and makes recommendations for mitigation measures where needed.

SUMMARY OF AVAILABLE CRASH DATA

A crash analysis was performed to determine if there was an abnormally high crash rate at study area intersections. DDOT provided the last three years of intersection crash data, from 2011 to 2013 for the study area. This data was reviewed and analyzed to determine the crash rate at each location. For intersections, the crash rate is measure in crash per million-entering vehicles (MEV). The crash rates per intersections are shown in Table 7.

According to the Institute of Transportation Engineer's *Transportation Impact Analysis for Site Development*, a crash rate of 1.0 or higher is an indication that further study is required. Four intersections in this study area meet this criterion (as shown in red in Table 7 and detailed in Table 8). The 1270 4th Street development should be developed in a manner to help alleviate, or at minimum not add to, the conflicts at these intersections.

The crash summary data in Table 7 shows four intersections with a crash rate over 1.0 crashes per million entering vehicles – the rate which is considered a threshold for further analysis. A rate over 1.0 does not necessarily mean there is a significant problem at an intersection, but rather it is a threshold used to identify which intersections may have higher crash rates due to operational, geometric, or other issues. Additionally, the crash data does not provide detailed location information. In some cases, the crashes were located near the intersections and not necessarily within the intersection.

For these four intersections, the crash type information from the DDOT crash data was reviewed to see if there is a high percentage of certain crash types. Generally, the reasons for why an intersection has a high crash rate cannot be derived from crash data, as the exact details of each crash are not represented. However, some summaries of crash data can be used to develop general trends or eliminate some possible causes. Table 8 contains a breakdown of crash types reported for the seven intersections with a crash rate over 1.0 per MEV.

POTENTIAL IMPACTS

This section reviews the four locations with existing crash rates over 1.0 MEV and reviews potential impacts of the proposed development.

- *4th Street/Penn Street & New York Avenue*
  This intersection was found to have a crash rate of 2.94 crashes per MEV over the course of the 3-year study period. The majority of the crashes at this intersection were rear end and side swiped vehicles. These are likely due to the lack of an exclusive left turn lane along New York Avenue to access the site. Those traveling through the intersection may rear end or side swipe vehicles waiting to turn left. The recent improvements near Mt. Olivet Road, which provide a more conducive route for left-turning traffic, will likely have a positive impact at this intersection. Although no mitigation measures are suggested as part of the PUD, wayfinding signage could be used to direct vehicular traffic to the Union Market district by way of Mt. Olivet Road.

Table 7: Intersection Crash Rates (2011 to 2013)

Intersection	Total Crashes	Ped Crashes	Bike Crashes	Rate per MEV*
4th Street/Penn Street & New York Avenue NE	93	0	0	**2.94**
Penn Street & 4th Street/Alley NE	3	0	0	0.50
Neal Place & 4th Street NE	14	0	0	**4.01**
Morse Street & 4th Street NE	26	2	0	**6.11**
Florida Avenue & 3rd Street NE	48	1	2	**2.96**
Florida Avenue & 4th Street NE	18	0	0	0.96
Florida Avenue & 5th Street NE	6	1	0	0.35
Florida Avenue & 6th Street NE	24	1	0	0.89
Florida Avenue & N Street NE	5	1	0	0.32

** - Million Entering Vehicles; Volumes estimated based on turning movement count data*

- *Neal Place & 4th Street NE*

  This intersection was found to have a crash rate of 4.01 crashes per MEV over the course of the 3-year study period. The majority of crashes at this intersection were rear end and side swiped vehicles. The high crash rate is partially due to the very low vehicular traffic observed at this intersection. The high crash rate is also likely due to general operations of 4th Street and the intersection itself. 4th Street is wide enough to facilitate two-way traffic however it is restricted to one-way southbound traffic. Signage in regards to the one-way nature of the roadway is infrequent and can be confusing. In addition, the prevalence of truck traffic and implementation of back-in parking creates additional obstacles along the roadway. All of these operational elements likely combine to achieve the resulting crash rate.

  The majority of these operational issues are expected to be improved as part of the development plan. 4th Street will be converted to a two-way circulation and more signage will be implemented to eliminate confusion. The streetscape will create better definition and organization within the roadway and the west side of 4th Street will eliminate back-in parking in favor or parallel parking. An additional advantage is the decrease in truck traffic as a result of the new development. Although crash data is not organized by vehicle type, trucks generally have less visibility and thus have a higher risk of crashes. Overall the improvements will encourage slower speeds along 4th Street and all the new design elements will likely reduce the number of crashes.

- *Morse Street & 4th Street NE*

  This intersection was found to have a crash rate of 6.11 crashes per MEV over the course of the 3-year study period. The majority of crashes at this intersection were side swiped vehicles. This intersection suffers from the same operational issues as Neal Place & 4th Street, discussed above and will therefore benefit from the same planned site improvements. In addition to the site improvements listed above, Morse Street & 4th Street NE will be converted from 2-way stop-controlled to 4-way stop controlled which will further reduce the confusion at this intersection and result in slower vehicular speeds.

- *Florida Avenue & 3rd Street NE*

  This intersection was found to have a crash rate of 2.96 crashes per MEV over the course of the 3-year study period. The majority of crashes at this intersection were rear end and side swiped vehicles. As discussed previously, DDOT is in the process of completing a safety study along the Florida Avenue corridor between New York Avenue and H Street. Although the specific improvements have not been finalized, it is expected that more in depth crash analyses along the corridor will result in improved safety at this intersection, and thus decrease the number of crashes.

Overall, the combination of thoughtful site design elements and the *Florida Avenue Multimodal Transportation Study* provide the opportunity to greatly improve the overall transportation operations in the area.

Table 8: High Crash Rate Intersections by Crash Type

Intersection	Rate per MEV	Right Angle	Left Turn	Right Turn	Rear End	Side Swiped	Head On	Parked	Fixed Object	Ran Off Road	Ped. Involved	Backing	Non-Collision	Under/Over Ride	Unspecified	Total
4th Street/Penn Street & New York Avenue NE	2.94	4 *4%*	10 *11%*	5 *5%*	32 *34%*	27 *29%*	4 *4%*	1 *1%*	1 *1%*	3 *3%*	0 *0%*	3 *3%*	2 *2%*	0 *0%*	1 *1%*	**93**
Neal Place & 4th Street NE	4.01	0 *0%*	2 *14%*	0 *0%*	4 *29%*	4 *29%*	0 *0%*	0 *0%*	0 *0%*	0 *0%*	1 *7%*	2 *14%*	0 *0%*	0 *0%*	1 *7%*	**14**
Morse Street & 4th Street NE	6.11	2 *8%*	1 *4%*	0 *0%*	2 *8%*	7 *27%*	1 *4%*	3 *12%*	0 *0%*	2 *8%*	2 *8%*	3 *12%*	0 *0%*	0 *0%*	3 *12%*	**26**
Florida Avenue & 3rd Street NE	2.96	6 *13%*	5 *10%*	2 *4%*	18 *38%*	11 *23%*	0 *0%*	0 *0%*	1 *2%*	0 *0%*	1 *2%*	0 *0%*	0 *0%*	0 *0%*	4 *8%*	**48**

SUMMARY AND CONCLUSIONS

The TIS for the proposed 1270 4th Street development, Zoning Case Number 14-07, reviewed the transportation aspects of the PUD application. This report concluded that **the PUD will not have detrimental impact** to the surrounding transportation network assuming completion of all background improvements and site improvements.

The purpose of this study is to evaluate whether the PUD will generate a detrimental impact to the surrounding transportation network. This evaluation is based on a technical comparison of one existing condition and four future conditions: 2017 future background conditions without Phase 1 or Phase 2 of the PUD, 2017 future conditions with Phase 1 of the PUD, 2020 future background conditions without Phase 2 of the PUD, and 2020 future conditions with Phase 1 and Phase 2 of the PUD. This report concludes that **the PUD will not have a detrimental impact** to the surrounding transportation network assuming that all background improvements are executed, all planned site design elements are implemented, and all mitigation measures are incorporated into the PUD application.

Proposed PUD

The site is located within the Florida Avenue Market, also known as the Union Market district. Phase 1 (South Building) will replace an existing building with an 11-story mixed use building containing approximately 33,600 square feet of ground-floor retail space and approximately 420-520 apartments. Phase 2 (North Building) will contain 8,000-12,000 square feet of ground-floor retail space and 130-160 apartments constructed upon an existing surface parking lot. The ground-floor of both buildings will be filled with vibrant shops and restaurants with a wide pedestrian zone and outdoor seating to engage pedestrians. Until 3rd Street is dedicated, the Applicant has committed to a temporary pocket park that will occupy the space between the South and North Buildings. After 3rd Street is dedicated, this area will be open to vehicular traffic and become an extension of Neal Place between 4th Street and 3rd Street.

Pedestrian access to both buildings will be from 4th Street. A below-grade parking garage will serve the site, accessed from an alley, which currently sits disused to the west of the site. The garage will provide 400-550 parking spaces during Phase 1 of the development with access to the alley exclusively from Morse Street. Approximately 200 parking spaces would be reserved for residential use with the remainder serving the retail component of this project as well as parking demand from existing and future retail developments in Union Market. During Phase 2, the parking garage will be extended under the North Building using the same access as Phase 1. The number of parking phases provided for Phase 2 is currently unknown, but will be further discussed as part of the Stage 2 PUD application. After 3rd Street is dedicated, Neal Place will be open to vehicular traffic between 3rd Street and 4th Street offering an additional access point to the alley. Loading activities and service vehicle parking would occur within a newly created loading dock off the reestablished alley.

At present, the 1270 4th Street site is occupied by several buildings including wholesale warehouse facilities and a small surface parking lot. The existing building is currently operational, and although it generates minimal vehicular traffic during weekday peak hours, it does generate heavy truck delivery traffic throughout the day.

This project also proposes to implement public space improvements along 4th Street in front of the site, including converting 4th Street to two-way operation during Phase 1. The goal of these changes is to accommodate nearby wholesale market activities while providing ample pedestrian space in keeping with the broader goals of the *Florida Avenue Market Study Small Area Plan*. The concept accommodates public space activities as diverse as on-street truck backing maneuvers for the adjacent buildings on the east side of 4th Street and café seating for street-level retail tenants on the west side of the street, with the option to allow for redevelopment to a more urbanized streetscape as future conditions warrant.

Parking

Phase 1:

- Parking for Phase 1 will be provided in a below-grade parking garage with 400 to 550 parking spaces. Access to the garage will be from an alley along the west side of the site.
- Approximately 200 spaces within the parking garage will be reserved for residential use. This is an appropriate amount of parking for the amount of residential units.
- The remainder of the parking will serve the retail component of the site as well as parking demand from existing and future retail developments within the Union Market district. The additional parking could service

parking demand generated by the over 200,000 square feet of ground floor retail space on 4th and 5th Streets that do not have dedicated off-street parking due to fractured ownership and small parcel size. By providing additional public parking, the 1270 4th Street project will help catalyze redevelopment of these smaller parcels that may not be able to provide on-site parking in the future.

- The vehicular traffic demand generated by the remaining parking was incorporated into the analysis, thus ensuring that any non-PUD generated traffic was accounted for in the vehicular capacity analysis results.

Phase 2:

- Upon completion of Phase 2 the garage will be extended under the North Building using the same access as Phase 1.
- The amount of parking spaces added in Phase 2 will be reviewed during Phase 2's Stage 2 PUD application.

Loading Facilities

Phase 1:

- The 1270 4th Street site proposes to include four 30' berths, which reflects the specific needs of the building's tenants.
- The loading docks are located along a re-established alley on the rear side of the development, which will greatly reduce pedestrian and truck conflicts. Current truck activity at the site occurs directly on 4th Street.
- The development is expected to generate approximately 12 truck visits per day, which is less than the amount of truck visits observed by the existing uses.
- The 1270 4th Street PUD will not only attract fewer trucks, but also smaller trucks. The site's current wholesale distribution activities use larger trucks with trailers.
- All trucks can access the loading docks without negatively impacting public space between the docks and the nearest DDOT designated truck routes. The relocation of loading areas from the front of the building to the back of the building results in an overall improvement to public space surrounding the site.
- A loading management plan is proposed to help schedule and coordinate loading activity.

Phase 2:

- Loading for Phase 2 will also occur in the reestablished alley, in a similar manner to Phase 1. The amount and type of loading facilities are unknown at this time, and will be revisited during Phase 2's Stage 2 PUD application.

Vehicular Impacts

The report includes an analysis of potential vehicular impacts of the 1270 4th Street PUD and recommendations for improvements and mitigation measures. The following conclusions are reached:

- The existing study area roadways generally operate under acceptable capacity conditions during the morning and afternoon peak hour.
- Existing areas of concern for roadway capacity are primarily focused along the heavily trafficked commuter routes: New York Avenue NE and Florida Avenue NE.
- The existing configuration of 4th Street NE as one-way southbound with one wide travel lane results in driver confusion as the roadway is wide enough to accommodate two lanes. Additionally, a lack of signage and striping along 4th Street NE, combined with heavy truck volumes, results in high vehicular speeds and elevated crash rates.
- The addition of the trips generated by the background developments and inherent growth on the study area roadways has a negligible impact on the study area roadways.
- The background roadway improvements due to the *Florida Avenue Multimodal Study* are projected to have negligible impact on the roadway capacity in the study area.
- Impacts attributable to the PUD at the intersection of 4th Street NE and Morse Street NE can be mitigated by converting the intersection from stop-controlled on the east- and westbound approaches only to all-way stop-controlled.
- The conversion of 4th Street NE to two-way operation has negligible impact on the roadway capacity in the study area.
- **The 1270 4th Street PUD will have no detrimental impacts to the study area**. With the recommended mitigation measure outlined above, no study intersections operate under unacceptable conditions following the construction of the PUD that do not also operate under unacceptable conditions in the future without the proposed PUD.

Crash Data Analysis

Crash data for the past three years was analyzed at the study intersections. The analysis came to the following conclusions:

- The combination of thoughtful site design elements and the *Florida Avenue Multimodal Transportation Study* provide the opportunity to greatly improve the overall transportation operations in the area.
- Four intersections within the study area were found to have an elevated crash rate:
  - Two of these intersections are located within the bounds of the Union Market district along 4th Street. The overall traffic operations along 4th Street will undergo extensive changes and improvements as a result of the development that are expected to improve the safety and operations along 4th Street
  - One of these intersections is along Florida Avenue, which is currently being studied by DDOT as a part of the *Florida Avenue Multimodal Transportation Study.* Although the final recommendations have not been determined, multimodal safety along the Florida Avenue corridor in the vicinity of the site is expected to improve as a result.
  - The intersection of New York Avenue with 4th Street/Penn Street also has an elevated crash rate. The crash data details suggest that this may be due to the lack of a dedicated left turn lane on New York Avenue. The recent improvements near Mt. Olivet Road, which provide a more conducive route for left-turning traffic, will likely have a positive impact at this intersection.

Transit

The following summarizes the site's access to transit and the expected site impacts:

- The site is served by the Metrorail Red Line via the NoMa Station and two Metrobus routes that travel along Florida Avenue.
- The Metrobus routes along Florida Avenue have been studied with proposed recommendations for improved service including a Metro Express route with limited-stop service.
- Transit-trips generated by the site will not have a detrimental impact on the surrounding transit system.

Pedestrian

Based on an analysis of the existing pedestrian conditions, a review of the background improvements and planned site design elements, the following conclusions were made:

- The majority of pedestrian facilities outside of the Union Market district provide a friendly pedestrian environment. Those that do not, particularly along Florida Avenue, are being studied to improve pedestrian safety as part of DDOT's *Florida Avenue Multimodal Transportation Study.*
- Within the Union Market district, pedestrian facilities reflect the industrial origins of the site. The 1270 4th Street development will greatly improve pedestrian conditions adjacent to the site by increasing the amount of pedestrian space and decreasing the width of vehicular travel lanes thus creating a streetscape that encourages safer conditions for all modes of transportation.
- The site will generate more pedestrian activity, particularly along 4th Street, than the Market currently observes. The proposed improvements along 4th Street will improve the pedestrian environment. In addition, the uses associated with the proposed development will generate much less truck traffic than existing conditions, reducing potential truck/pedestrian conflicts.
- Placing the primary vehicular access off Morse Street and 4th Street leads to smoother traffic and pedestrian operations within the Market. Although much of the site-generated pedestrian traffic will be walking through this intersection to access transit stops, the placement of vehicular access on the perimeter of the Market will reduce the amount of potential vehicular and pedestrian conflicts within the market. In addition, the intersection will be updated to accommodate safe pedestrian movements such as implementation of an all-way stop and improved or additional crosswalks and ADA compliant curb ramps at all crossings along the west side of 4th Street. When the extension of Neal Place is open to vehicular traffic, pedestrian conditions surrounding the site will improve even more as less vehicular traffic will be traveling along 4th Street in front of the site and site traffic will be distributed between two access points as opposed to one.

Bicycle

The bicycle facilities within the study area were evaluated and the following conclusions were made in regards to the existing and proposed bicycle facilities and the overall impact of the site on bicycle infrastructure:

- There are multiple high-quality bicycle facilities within the vicinity of the site.
- New protected bicycle infrastructure will be implemented near the site in the coming years that will further improve the cycling conditions in the area, including a bike trail behind the building adjacent to the reestablished alley.
- There are several bicycle-focused elements of the development plan that will encourage cycling as a safe and effective transportation option for residents and patrons of the development including short- and long-term bicycle parking.
- Residents of the building will have a secure bicycle room in the parking garage to encourage cycling.
- Given the existing and proposed bicycle infrastructure in the study area, the site-generated bicycle trips will not result in detrimental impacts to the bicycle system.

Transportation Demand Management

The 1270 4th Street PUD will include a TDM plan in order to help minimize its potential traffic impacts to the surrounding neighborhood. The following TDM plan is based on the DDOT expectations for TDM programs, modified to fit the specific needs of the PUD and transportation network. The Applicant proposes that upon construction, the project incorporate several TDM measures, including the following:

- The Applicant shall designate a TDM coordinator, who is responsible for organizing and marketing the TDM plan and who will act as a point of contact with DDOT.
- All parking on site will be priced at market rates at minimum, defined as the average cost for parking in a 0.25 mile radius from the site. All residential parking will be unbundled from the costs of leasing apartments or purchasing condos.
- Bicycle parking will be provided meeting existing regulatory minimums.
- Each building lobby will display transit and other alternate mode information, using electronic messaging boards.
- A car-sharing space will be reserved in the underground garage. If this space is not desired by any car-sharing service, it shall revert to the Applicant's general use.
- Each new resident for the first year after the issuance of the Certificate of Occupancy, will have the option to receive a $40 subsidy for a car-sharing or bike-sharing program, or a pre-loaded SmarTrip card worth $40.
- The Applicant will install electric car charging stations at 2 parking spaces.